U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
March 7, 1967 Volume 836 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of January 1967

Examiner affirmed	259
Examiner affirmed in part	39
Examiner reversed	74
Total	372

Foreign Patents Received in the Scientific Library as of January 31, 1967

Source	Date received	Highest number
Australia:		
(*Abstracts*)	Dec. 15, 1966	39,266/66
(*Patents*)	Jan. 31, 1967	263,867
Austria	Jan. 4, 1967	250,850
Belgium	Oct. 18, 1966	643,000
Canada	Jan. 27, 1967	751,585
Czechoslovakia	Jan. 27, 1967	118,730
Denmark	Jan. 12, 1967	105,060
East Germany	Jan. 24, 1967	53,032
Egypt	Dec. 14, 1965	5,228
Finland	Nov. 1, 1966	35,480
France:		
(*Patents*)	Jan. 20, 1967	1,454,750
(*Additions*)	Jan. 17, 1967	87,800
(*Medicaments*)	Dec. 21, 1966	3,800 M
(*Additions*)	Apr. 18, 1966	86 CAM
Germany:		
(*Auslegeschriften*)	Jan. 25, 1967	1,228,570
(*Patents*)	Jan. 25, 1967	1,216,780
Great Britain	Jan. 19, 1967	1,054,250
India	Dec. 16, 1966	98,890
Ireland	Nov. 4, 1966	26,048
Italy	Dec. 27, 1965	650,000
Japan	Jan. 23, 1967	22,400/66
Netherlands:		
(*Octrooiaanvragen*)	Nov. 1, 1966	10,467/66
(*Patents*)	Jan. 25, 1967	121,651
Norway	Jan. 23, 1967	109,909
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Jan. 12, 1967	52,380
Rumania	Oct. 26, 1966	43,699
Sweden	Jan. 3, 1967	208,885
Switzerland	Jan. 19, 1967	415,224
U.S.S.R.	Jan. 20, 1967	186,900

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: First received 10,000/1929
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,698,915, W. W. Piper, PHOSPHOR SCREEN, decided Sept. 29, 1966, Interference No. 90,928, claims 1, 2, 3, 4, 6, 10, 11 and 12.

Patent No. 2,698,915, W. W. Piper, PHOSPHOR SCREEN, decided Sept. 29, 1966, Interference No. 87,913, claims 8 and 9.

Patent No. 2,773,216, T. Edmonds, ANIMATED DISPLAY DEVICE, decided Sept. 30, 1966, Interference No. 90,281, claims 1, 2, 3, 4, 5, 10 and 11.

Patent No. 3,026,330. K. Folkers and D. E. Wolf, CHROMAN COMPOUNDS HAVING ANTIOXIDANT ACTIVITY, decided Dec. 23, 1966, Interference No. 94,714, claims 1, 2 and 3.

Patent No. 3,071,873, C. F. Zahner and R. L. Samson, CHART RECORDING SYSTEM, decided Dec. 22, 1966, Interference No. 94,954, claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18 and 31.

Patent No. 3,100,537, T. L. Crowe, FORMATION TESTING APPARATUS, decided Jan. 23, 1967, Interference No. 94,460, claim 3.

Patent No. 3,121,839, J. Malenick and R. P. Riche, CAPACITIVE PICKOFF FOR DISPLACEMENT SIGNAL GENERATOR, decided Jan. 17, 1967, Interference No. 95,239, claims 1, 4 and 5.

Patent No. 3,148,183, R. F. Hirschmann, A. A. Patchett, A. Rosegay and G. J. Kent, Δ^4 AND $\Delta^{4,6}$-17α-ACYLOXY-20-OXO-STEROID-[3,2-c] PYRAZOLES OF THE PREGNANE SERIES, decided Jan. 13, 1967, Interference No. 95,547, claim 1.

Patent No. 3,161,457, H. Schroeder, W. H. Puterbaugh and R. C. Meckstroth, THERMAL PRINTING UNITS, decided Jan. 13, 1967, Interference No. 95,237, claims 1 and 2.

Patent No. 3,174,698, H. J. Miller, ROTARY ROCK CRUSHER, decided Jan. 13, 1967, Interference No. 95,324, claims 3 and 8.

Patent No. 3,208,514, J. N. Dew and W. L. Martin, RECOVERY OF HYDROCARBONS BY IN-SITU HYDROGENATION, decided Dec. 28, 1966, Interference No. 95,362, claims 1, 7, 8, 10, 13, 14, 15, 16 and 17.

New Applications Received During January 1967

Patents	6606
Designs	386
Plant Patents	7
Reissues	11
Total	7010

Issue—March 7, 1967

Patents	1277	—No.	3,307,200	to No.	3,308,476, incl.
Designs	77	—No.	207,084	to No.	207,160, incl.
Plant Patents	4	—No.	2,723	to No.	2,726, incl.
Reissues	7	—No.	26,166	to No.	26,172, incl.
Total	1365				

PATENT EXAMINING CORPS

R. A. WAHL, **Assistant Commissioner**

CONDITION OF PATENT APPLICATIONS AS OF JANUARY 30, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	8-6-63	11-30-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	7-25-63	9-12-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	11-18-63	12-18-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	10-4-63	3-2-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-2-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-15-63	8-30-62
SECURITY, GROUP 220—S. BOYD, Manager Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors; Powder Metallurgy, Rocket Fuels; Radio-Active Material.	9-14-64	5-24-63
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	7-26-63	7-3-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-15-63	11-3-61
PHYSICS, GROUP 280—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager Industrial Arts; Household, Personal and Fine Arts.	10-18-65	3-12-65

Total number of pending applications (excluding Designs)	192, 187
Total number of Design applications pending	4,068
Total number of applications awaiting action (excluding Designs)	140, 112
Total number of Design applications awaiting action	2,409
Date of oldest new application awaiting action	May 15, 1963
Date of oldest amended application awaiting action	July 3, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during March 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents	Numbers 2,499,345 to 2,502,407, inclusive
Plant Patents	Numbers 926 to 929, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	4-2-65	7-18-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	12-28-64	10-2-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	9-2-64	7-16-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	5-24-65	2-18-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	3-8-65	4-26-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2-1-65	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE NATHAN N. CROUNSE

No. 7630. Decided July 28, 1966

[53 CCPA —; 363 F.2d 881; 150 USPQ 554]

1. PATENTABILITY—COMPOUND—DYESTUFF—OBVIOUSNESS—DIFFERENCE IN SHADE.
   "Although a physical property can be the type of difference that will render the compound non-obvious, we do not think the property relied on [difference in shade] does so in this case."
2. SAME—SAME—SAME—SIGNIFICANCE OF COLOR OR SHADE.
   "Although color is a significant property of a dyestuff, one having a most desirable color that is, e.g., not fast, not stable, or is subject to fading will be unsuitable for its intended use. Color, or as the application itself states, 'shade,' is only one of 'the requirements considered as essential * * *' by textile printers."
3. SAME—SAME—OBVIOUSNESS—ALL PROPERTIES SHOULD BE CONSIDERED—35 U.S.C. 103.
   "It is fundamental that section 103 requires a conclusion grounded on a *weighing of all the facts*, and thus includes a consideration of *all* the properties."
4. SAME—SAME—DYESTUFF—DIFFERENCE IN SHADE—OBVIOUSNESS DOES NOT REQUIRE ABSOLUTE PREDICTABILITY.
   "* * * we think the Board correct in its view that although the exact shade of the claimed isomer was unpredictable, it was not unexpected as being a shade somewhere in the family of reddish tints encompassed by Fischer's disclosure. The absolute predictability appellant would require is not the law."
5. SAME—SAME—SAME—SAME—OBVIOUSNESS.
   "Against the significant difference in shade is arrayed what we consider to be an overwhelming body of evidence that indicates the invention as a whole is obvious: (1) The compounds are structurally similar, being position isomers; (2, 3) they possess identical ratings as to two properties 'considered as essential,' i.e., resistance to fading and to dry-cleaning with perchloroethylene; (4–7) they have identical ratings as to other properties of washing in the presence, and the absence of chlorine bleach, resistance to discharge printing, and to strong alkali; (8) the claimed compound is producible in the same manner as are the monoazo dyestuffs of Fischer, see *In re Lohr*, supra; (9) the intended use as dyestuff for textiles is expected in view of the German (Farbwerke) patent; (10) the manner of use is the same; and (11) the shade actually obtained, while not absolutely predictable, is not unexpected."

APPEAL from the Patent Office. Serial No. 165,656.

AFFIRMED.

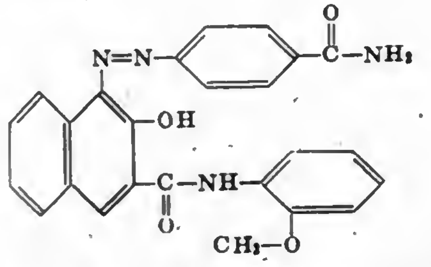
Laurence and Laurence (*Dean Laurence*, *Herbert I. Sherman*, *John L. White* of counsel) for appellant.

Joseph Schimmel (*Raymond F. Martin* of counsel) for the Commissioner of Patents.

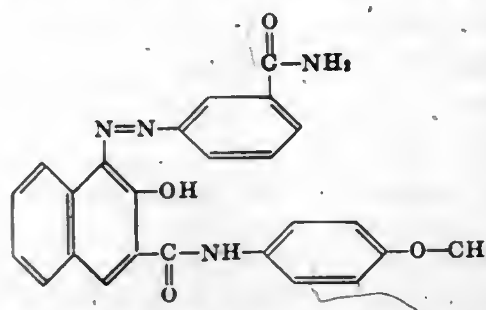
Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

MARTIN, *J.*, delivered the opinion of the court.

The sole claim on appeal[1] is to the water-insoluble dyestuff having the structural formula



The issue here is whether that monoazo dyestuff is obvious, 35 U.S.C. 103, in view of a patent to Fischer, 2,006,211, issued June 25, 1935, that discloses both a generic class of monoazo dyestuffs inclusive of the claimed compound, and, more specifically, a compound which is a position isomer of the claimed compound:



Comparing the reference with the appealed compound, it will be noted that in the ring at the upper right, Fischer's amide ($-CONH_2$) group is attached at the meta, or 3-, position, whereas appellant's amide group is attached at the para, or 4-, position. In the ring at the lower right, Fischer's methoxy ($-OCH_3$) group is in the para position, while appellant's is in the ortho, or 2-, position. The Fischer patent lists the reference isomeric compound as being of "red-orange" shade.

A second reference to Farbwerke Hoechst Aktiengesellschaft (Fischer is listed as the inventor), German Patent No. 1,019,416, November 14, 1957, was relied on to show that compounds encompassed by the Fischer U.S. patent, which preferably contain an ortho methoxy substituted arylamide moiety, are disclosed as water insoluble dyestuffs useful for coloring both rubber and textiles.

Appellant states in his brief:

> * * * The specific chemistry involved is relatively unimportant to the issues in this case, since the Board of Appeals found, and appellant will not here dispute, that the reference makes the claimed compound "structurally obvious." However, the Board further said "patentability must depend upon the demonstration of an unexpected property in the claimed compound" * * *. In this appeal, the unexpected property upon which appellant relies is its color.

That the reference compound renders the claimed compound prima facie "structurally obvious" seems consistent with the approach recently taken by a majority of this court in *In re Heyna*, 53 CCPA —, — F.2d —, 149 USPQ 692. Accordingly we shall proceed from there to determine whether or not the color of appellant's compound is such as to show the invention as a whole non-obvious.

During the prosecution, appellant filed an affidavit under Rule 132 by one Schroeder, a dyestuff expert, who prepared both the claimed and isomeric reference compound and compared them in a standard manner by preparing and testing cloth swatches dyed with various strengths (dilutions) of each compound. The affiant describes the claimed dyestuff as showing a "brilliant and strong bluish-red color

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[1] Appearing in appellant's application Serial No. 165,656, filed January 11, 1962, for "Compound."

* * *" and the referenc dyestuff as exhibiting a yellowish-red color. The affiant concludes as to the results of five tests directed to other properties relevant to textile printing:

> The remaining tests showed that *both* of the test pigments had excellent resistance to dry cleaning with perchlorethylene (Test 2), excellent resistance to washing in the absence of chorine bleach (Test 3–III) and good resistance to washing in the presence of chlorine bleach (Test 3–IV), very good resistance to fading (Test 4), good resistance to discharge printing (Test 5), and excellent resistance to strong alkali (Test 6). In these tests, no substantial difference could be observed between the respective results afforded by Test Pigment No. 1 [claimed compound] and by Test Pigment No. 2 [Fischer compound] as shown on Exhibit Sheet II. [Emphasis added.]

Schroeder concludes that the claimed compound has "highly valuable properties for textile printing," and that "the Fischer reference compound, Test Pigment No. 2, is a yellow-red pigment entirely unsuitable as a bluish-red pigment." [2]

The Examiner considered the affidavit but found it not to remove the rejection, stating:

> * * * The showing of record demonstrates no superiority as to the instant compound over a reference compound with respect to various properties, but only a difference in color. Variations in positions of substituents can be expected to result in shifts of shade, so that said showing only demonstrates that which would be expected. Furthermore, since one color cannot be considered superior to another, patentability cannot be predicted upon such a difference alone.

The Examiner in the answer referred to the color difference as "of no moment," since "differences in color can be expected by shifting positions of substituents, as also conceded by applicant." It was felt that the fact that yellowish-red is not bluish-red is "of no consequence, since the choice of one or the other is a matter of preference rather than necessity."

However, the Board in affirming did consider the physical property of color to be "the only significant difference demonstrated in this record * * *," but alone was not sufficient to render the claimed isomer non-obvious. The Board noted that "appellant's product and that of Fischer share the properties required for appellant's intended use * * *," and that:

> * * * All of the dyestuffs [of Fischer] exhibit a related reddish color and hence it is not unexpected that appellant's isomer differs in shade from the isomeric compound 1 of Fischer in being a bluish-red rather than a red-orange pigment.

Appellant contends that:

> * * * a difference in a physical property *can be* the type of difference which will render a compound, which is structurally obvious, legally unobvious. [Emphasis added.]

We agree with the statement as emphasized by us. [1] Although a physical property can be the type of difference that will render the compound non-obvious, we do not think the property relied on does in this case.

In his brief appellant also contends:

> * * * in a dyestuff, color, which is overwhelmingly the single most important property the compound has, in a most significant property, so that a difference in color *can* suffice to render a claimed compound legally unobvious. [Emphasis added.]

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[2] Those results are entirely consistent with the results described for the same tests in the specification:

> * * * The prints obtained were blue-red in shade and well within the range of shades satisfactory to textile printers, had very good resistance to fading, and had excellent resistance to dry-cleaning with perchloroethylene, *thus satisfying all three of the requirements considered as essential*; were very brilliant and strong; had excellent wash-fastness; excellent resistance to strong alkali; had good resistance to chlorine; and had excellent resistance to color discharge by hydrosulfite. [Emphasis added.]

Except for the argumentative and unsupported statement that color is overwhelmingly the single most important property, we agree with the proposition as emphasized by us. [2] Although color is a significant property of a dyestuff, one having a most desirable color that is, e.g., not fast, not stable, or is subject to fading will be unsuitable for its intended use. Color, or as the application itself states, "shade," is only one of "the requirements considered as essential * * *" by textile printers.[3]

Appellant's position is predicated on the view that all properties other than color should be ignored, and that:

> * * * while it might have been predictable that his [appellant's] dyestuff might be a different color than the reference compound, the particular specific color his dyestuff would have was absolutely unpredictable, and this unpredictability suffices to prove non-obviousness under 35 U.S.C. 103.

Appellant urges in this connection that only the reference compound, Fischer's compound number 1 of his table of 55 compounds is "sufficiently related to appellant's compound to be considered as a proper reference."

We stated in *In re Mehta*, 52 CCPA 1615, 347 F.2d 859, 146 USPQ 284 at 287, that:

> * * * The similarity of *properties* of a reference compound as compared with a claimed compound gives rise to an even stronger inference of obviousness than that of structural similarity alone, and conversely where the properties are different, they imply non-obviousness, when they are unexpected. * * *

[3] It is fundamental that section 103 requires a conclusion grounded on a *weighing of all the facts*, and thus includes a consideration of *all* the properties. *In re Mehta*, supra; *In re Lohr*, 50 CCPA 1274, 1279, 317 F.2d 388, 137 USPQ 548; *In re Graf*, 52 CCPA 1206, 343 F.2d 774, 145 USPQ 197, 199; *In re Legator*, 53 CCPA —, — F.2d —, 147 USPQ 322, 324; *In re deMontmollin*, 52 CCPA 1287, 344 F.2d 976, 145 USPQ 416.

In supporting his contention that the particular specific color the claimed dyestuff would have was absolutely unpredictable, appellant refers to the fact that the table of 55 compounds in the Fischer U.S. patent lists numerous compounds that are position isomers. As listed therein, the isomers of a given compound may have either the *same* shade or a *different* shade. Appellant states:

> We would point out that, while the compounds in the Fischer reference table * * * are structurally quite different from appellant's (with the sole exception of compound 1) the table actually does show the unpredictability of "color change" in isomeric situations. For example compounds 29 and 30 are isomers, yet both are indicated to have the exact same color. Compounds 31, 32, and 33 are all isomers, which also are indicated to have the exact same color. Since the relationship, between these isomeric compounds in the table which have the same color, is directly analogous to the isomeric relationship between compound 1 and appellant's claimed compound, one skilled in the art could well have expected that appellant's claimed dyestuff compound would have the same orange color that compound 1 had. Yet, unexpectedly and unpredictably, it does not. The color it has is quite different. The Board is clearly wrong in believing that the Fischer reference limits the range of possible colors, and makes "not unexpected" the actual color change found in appellant's compound.

We appreciate the pertinence of that evaluation and give it due weight. [4] However, we think the Board correct in its view that although the exact shade of the claimed isomer was unpredictable, it was not unexpected as being a shade somewhere in the family of reddish tints encompassed by Fischer's disclosure. The absolute predictability appellant would require is not the law. *In re Moreton*, 48 CCPA 928, 933, 288 F.2d 940, 129 USPQ 288.

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[3] Concerning the particular shade, the application states: "* * * Since the reaction temperature has some effect on the shade of the resulting water-insoluble pigment, it is ordinarily desirable to maintain adequate control of the temperature of the reaction mixture in some predetermined manner."

[5] Against the significant difference in shade is arrayed what we consider to be an overwhelming body of evidence that indicates the invention as a whole is obvious: (1) The compounds are structurally similar, being position isomers; (2, 3) they possess identical ratings as to two properties "considered as essential," i.e., resistance to fading and to dry-cleaning with perchloroethylene; (4–7) they have identical ratings as to other properties of washing in the presence, and the absence of chlorine bleach, resistance to discharge printing, and to strong alkali; (8) the claimed compound is producible in the same manner as are the monoazo dyestuffs of Fischer, see *In re Lohr*, supra; (9) the intended use as dyestuff for textiles is expected in view of the German (Farbwerke) patent; (10) the manner of use is the same; and (11) the shade actually obtained, while not absolutely predictable, is not unexpected.

For the foregoing reasons the decision of the Board is affirmed.

AFFIRMED.

Smith, *J.*, concurs in the result.

In the United States Patent Office
Before the Board of Appeals

Ex parte Robert C. Harrington, Jr., and James L. Smith

Appeal No. 410–67. Decided September 23, 1966

1. Patentability—Affidavit Under Rule 131—Exhibits.

"Appellants submitted a first affidavit under Rule 131 on January 22, 1964, and a supplemental affidavit merely advancing the date alleged was filed on June 24, 1964. A second affidavit under Rule 131 was filed February 18, 1965. In addition to the averments, the first affidavit refers to and has attached photocopies of five pages from three 'Invention Reports,' each of which is signed by the two inventors and also by two witnesses. According to the averment of the supplemental affidavit which has been referred to, these 'Invention Reports' were signed prior to the filing date of the Canarios et al. patent. The Examiner's objection is that these are not 'original' exhibits, in compliance with the provision of Rule 131 which specifies that '* * * original exhibits of drawings or records, or photocopies thereof, must accompany and form part of the affidavit or their absence satisfactorily explained.' The term 'original' is not used by the Examiner as referring to photocopies in contrast to the papers which were reproduced in photocopy form, but the Examiner's objection is that the exhibits, which are of the original invention reports, are derivative and not the primary or best evidence. We do not believe that office practice always insists upon the first records which were made and that consideration of other records made prior to the date involved is not prohibited by the rule. It should be noted that the invention reports submitted not only express conclusions but give detailed accounts of experiments with just as much particularity as is found in many laboratory notebooks * * * and are not merely generalized statements as are made in the progress report accompanying a later affidavit."

Appeal from the Examiner (George W. Rauchfuss) of Group 140. Serial No. 4,187.

REVERSED.

R. Frank Smith and *Charles L. Good* for appellants.

Before Federico and Rosa, *Examiners-in-Chief*, and Stone, *Acting Examiner-in-Chief*

Federico, *Examiner-in-Chief*.

This is an appeal from the final rejection of the claims 1 to 5 and 8 to 12, all the claims in the application. The claims stand rejected on a patent to Canarios et al., No. 3,030,334, which issued April 17, 1962 on an application filed September 21, 1959, in combination with several subsidiary references. There is no dispute as to the subject matter involved. Appellants have submitted affidavits under Rule 131 for the purpose of overcoming the filing date of the Canarios patent, which would then overcome the rejection, and the Examiner holds that the affidavits are insufficient and cannot be considered. The main question involved is whether the affidavits should be considered.

[1] Appellants submitted a first affidavit under Rule 131 on January 22, 1964, and a supplemental affidavit merely advancing the date alleged was filed on June 24, 1964. A second affidavit under Rule 131 was filed February 18, 1965. In addition to the averments, the first affidavit refers to and has attached photocopies of five pages from three "Invention Reports," each of which is signed by the two inventors and also by two witnesses. According to the averment of the supplemental affidavit which has been referred to, these "Invention Reports" were signed prior to the filing date of the Canarios et al. patent. The Examiner's objection is that these are not "original" exhibits, in compliance with the provision of Rule 131 which specifies that "* * * original exhibits of drawings or records, or photocopies thereof, must accompany and form part of the affidavit or their absence satisfactorily explained." The term "original" is not used by the Examiner as referring to photocopies in contrast to the papers which were reproduced in photocopy form, but the Examiner's objection is that the exhibits, which are of the original invention reports, are derivative and not the primary or best evidence. We do not believe that office practice always insists upon the first records which were made and that consideration of other records made prior to the date involved is not prohibited by the rule. It should be noted that the invention reports submitted not only express conclusions but give detailed accounts or experiments with just as much particularity as is found in many laboratory notebooks (for instance, see Example 1, on Sheets 4 and 5) and are not merely generalized statements as are made in the progress report accompanying a later affidavit.

The second affidavit under Rule 131 has been properly criticized by the Examiner with respect to the substance of the exhibits and it alone would be wholly insufficient.

The decision of the Examiner is reversed for the reasons given above. However, the Examiner may, if the entire substance of the exhibits attached to the first affidavit are considered, with the second affidavit also being considered supplementary thereto, and found insufficient, reopen the case on this basis.

REVERSED.

U.S. Court of Customs and Patent Appeals

In re Serge Virgile Beaune, Deceased, by Catherine Louise Albert Beaune, Roberte Louis Beaune, Guy Joseph Beaune, and Daniel Charles Beaune, Legal Successor and Heirs.

No. 7637. Decided July 28, 1966

[53 CCPA —; 363 F.2d 893; 150 USPQ 557]

1. Patentability—Process—Combining Old Steps—Obviousness—Evidence.

Where all the steps of the process are old in the art and patentability is alleged to reside in combining these various steps, "we believe it was incumbent upon appellants to establish, through factual proofs, the alleged valuable results made possible by the claimed invention. Absent such evidence and any further argument demonstrating that the claimed subject matter is unobvious in view of the prior art, the Board's decision must be *affirmed*."

2. SAME—PARTICULAR SUBJECT MATTER—"METHOD AND DEVICE FOR CARRYING OUT COPPER PLATE ENGRAVING PRINTING IN MULTIPLE COLOURS OF EACH OF THE COMPONENTS ON A SELECTION OF MATERIALS SUCH AS FIDUCIARY PAPER AND PAPER OBTAINED ACCORDING TO THIS METHOD."

The refusal of a certain claim in an application entitled "Method and Device for Carrying Out Copper Plate Engraving Printing in Multiple Colours of Each of the Components on a Selection of Materials Such as Fiduciary Paper and Paper Obtained According to This Method," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 155,897.

AFFIRMED.

John E. Lind for appellants.

J. Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK[1]

SMITH, *J*., delivered the opinion of the court.

The issue is whether the invention, a process, defined in the single claim[2] on appeal is obvious under the terms of 35 U.S.C. 103. The claim is as follows:

> 4. Process for the impression of multiple colors upon supports such as fiduciary papers starting from several engraved polychrome elements, comprising forming for each element an engraved copper plate reproducing the motif relative to each element, then forming for each element a plate called the impression plate comprising the motif of relative colors for the corresponding element and differing from the motif to be reproduced, transferring the motif of the impression plate uopn inking rollers, cutting each of said inking rollers in order to allow to remain in relief only the motif relative to the color assigned to said roller, inking one of said rollers with a fundamental color, inking each of the other rollers with an altered or derivative color of the fundamental color, inking one of the engraved plates successively with each of said rollers, then wiping said plate so that only the engraved lines contain the ink attributed to such lines, doing the same operation for the other engraved plates by attributing to each of said plates a different fundamental color and colors altered or derivatives for said different fundamental color, superposing successively upon said support each of the engraved plates so inked while using for each of the transfers upon said support except the last a cylinder having a blanket to transfer the ink attributed to the engraved lines of each plate with a very slight pressure without deforming said support, and then effecting the last transfer directly of the engraved plate upon the support by a cylinder having a blanket pressing the support upon the engraved plate to transfer the ink attributed to the engraved lines with a pressure causing simultaneously a deformation of said support.

The prior art references relied on are as follows:

Lee, 282,995, August 14, 1883.
Schultz et al., 1,379,365, May 24, 1921.
Yetter, 1,581,151, April 20, 1926.
Lohmann, 2,085,435, June 29, 1937.
Lathey, 2,303,646, December 1, 1942.
British patent, 610,943, October 22, 1948.

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[1] United States Senior District Judge for the Eastern District of Pennsylvania, designated to participate in place of Chief Judge WORLEY, pursuant to provisions of section 294(d), Title 28, United States Code.

[2] In application Serial No. 155,897, filed November 28, 1961, entitled "Method and Device for Carrying Out Copper Plate Engraving Printing in Multiple Colours of Each of the Components on a Selection of Materials Such as Fiduciary Paper and Paper Obtained According to This Method." No claims have been allowed.

Appellants' invention will be considered first. It concerns a process for the impression of multiple colors on paper from several engraved elements. The embodiment described in the application and discussed in the briefs relates to three engraved elements. Each of the three engraved elements, mounted on rolls, operates successively on the paper and receives ink from sets of three mutually exclusive inkers. Each engraved element thus receives three inks, a fundamental color and two derivatives of that color. Concerning the first two engraved elements, the ink deposited on the engraved element is transferred to the paper via a roll covered with a blanket of plastic material with "slight pressure." In the third or last printing the ink on the engraved element is deposited directly on the paper. A roll exerts pressure directly on the paper as it passes over the third engraved element causing deformation of the paper.

Appellants comment in their brief on the invention as follows:

> * * * the first transfers or printings are made with a very slight pressure and as they are small in number (two in the example cited in the application) the deformation of the paper is zero and consequently the registration can be exact which permits documents whose production is simple and highly protected against counterfeiting.
>
> The transfer of the last printing element is carried out under pressure in order to obtain deformation which modifies the general design and makes more difficult still the counterfeiting of the document.
>
> In addition to the above feature of the invention the invention also comprises a combination of the following:
>
> 1. The superpositioning upon a paper of copper plate engraved elements, each inked with a fundamental color and colors derived or obtained from the fundamental color.
>
> 2. The inking of each element by inking rollers carrying in relief the color motif attributed to such roller (the fundamental color or the derived or faded color).
>
> 3. The constitution of the motif of the colors of the printing rollers starting from a plate called the impression plate comprising the complete motif of color, this complete motif being transferred upon each of the said rollers which are then engraved in such a manner so as only to allow in relief the motif of the color assigned to such roller.

Claim 4 was rejected as "unpatentable over Schultz et al. in view of the teachings of Lathey and British." Lee was "cited only to show that plate printing wherein the ink is transferred directly from the engraved plate to the paper takes place under heavy pressure between the printing plate and the impression cylinder." Lohmann was cited to show that the pressure between the intaglio type die and the resilient impression cylinder is such as to emboss the paper. Yetter was relied on "only to show it to be conventional to use different colors or shades and times [sic, tints] of a single color in intaglio printing."

The Board in its opinion adopted the following reasoning of the Examiner:

> The British patent teaches the technique recited in lines 3 to 11 for making cut out inking rollers and indicates that they are to be used for inking intaglio plates with several colors * * * Lathey has a clearer showing of inking intaglio plates with cut out inking rollers and then wiping to leave the ink only in the engraved lines. Having the colors of the inks as "fundamental" (or primary) and "altered or derivative colors," as called for in this claim, is the use of shades and times [sic, tints] of a color, in different inks, and a matter of choice in the art, as in Yetter, for example. Schultz et al. disclose multicolor printing wherein the last ink impression is made directly upon the paper by an intaglio printing plate and the preceding ones are made indirectly, by using a blanket to transfer the ink from the printing plates to the paper. This reference also indicates that intaglio printing plates may be used for these preceding impres-

> sions. It is not seen to be unobvious to one skilled in the art to have all the printing plates on the cylinders * * * of Schultz et al. as intaglio plates, to ink each of these plates with several inks, as taught by Lathey and the British patent, using inking rollers made as shown in the British patent. Having the last, direct impression made with heavy pressure, so as to deform or emboss the paper is common in the art, as exemplified by Lee or Lohmann, and is not considered to make the claim patentable over the references.

The Board added the following comments in affirming the Examiner's rejection:

> While Schultz et al. appears to apply the preliminary printings * * * simultaneously to the paper * * * through the common impression roller * * * and not "successively" as called for in the claim, we do not believe that successive application of the printings would exceed routine choice or skill of persons having ordinary skill in the art. We stress also that a reading of the Schultz et al. specification has left no doubt in our minds that the preliminary printing by roller * * * does not deform the paper and that the intaglio roller * * * does deform it, which is in effect the inventive concept urged as patentable in the instant application.

It is appellants' position here that the Examiner and Board interpreted every reference correctly save one, the patent to Schultz. Appellants argue:

> The present application presents a new and novel feature according to which the transfer of ink contained in the lines of the last engraved plate is assured by a cylinder * * * covered with a hard blanket allowing the transfer of the ink under a pressure so that the support paper is deformed.
>
> The first transfers are carried out under the slightest pressure possible in such a way as not to deform the support paper while preserving all the suitable characteristics of the copper engraving process.
>
> This feature is not found in Schultz et al. where there is no deformation of the support paper during the last ink transfer.
>
> * * * * * * *
>
> The other patents relied upon by the Examiner and the Board of Appeals show only a single step of the combination claimed and to combine these various steps in one process as called for in the claim on appeal involves invention, particularly when the valuable results accomplished are viewed.

We shall first determine, as a factual matter, what Schultz fairly teaches before proceeding to the issue under section 103. *In re Chupa*, 53 CCPA —, — F.2d —, 149 USPQ 628.

Schultz discloses a method and apparatus for making multicolor prints. Three printing rolls and an intaglio impression cylinder cooperate with a main impression cylinder. They are located at 90° intervals about the periphery of the main cylinder. A second intaglio impression cylinder cooperates with the first intaglio cylinder. The paper to be printed passes between the first intaglio cylinder and the main cylinder and then between the two intaglio cylinders.

The three printing rolls transfer successively yellow, red and blue color inks to the same surface area of the main cylinder. Planographic (surface printing) plates are preferred for the printing rolls over intaglio (relief printing) plates. The second intaglio cylinder prints black ink directly on the paper after the color ink has been transferred from the main cylinder to the paper.

Both intaglio cylinders are mounted on eccentrics in order that they may be moved in and out of contact. As the surface area of the main cylinder carrying the ink approaches the point of contact between the first intaglio cylinder and the main cylinder the eccentric operates to throw the intaglio cylinder into impression contact. Similarly, as the color printed portion of the paper approaches the point of contact between the two intaglio cylinders, the eccentric of the second cylinder operates to throw the cylinders into impression contact with the consequence that,

> * * * a roto-gravure print will be superimposed upon the impression carried by the paper and thereby those portions of the original copy which corresponds to the shades will be received from said intaglio cylinder.

Schultz discloses the following advantages:

> Our invention, which is applicable alike to the printing on paper or textile, renders it possible to produce on continuous web-presses even more faithful reproductions than is obtained by laborious offset lithographic processes when employing as many as six colors. Further advantages are the virtual elimination, owing to the register being positive throughout, of register difficulties such as are experienced in ordinary offset color printing wherein the sheet travels over numerous cylinders during the application of the color thereto and the reduction to a minimum of the possibility of blurs occurring due to stretching of the large blankets employed in most offset color printing. Besides the latter advantage in respect to minimizing blurs, the small sections of blanket used are far easier and more economical to replace when soiled or worn than are the large blankets usually employed in such work.
>
> * * * * * * *
>
> While offset printing has certain advantages in that the yielding blanket compensates for irregularities in the paper, as distinguished from direct printing wherein an unyielding metal plate is in contact with the paper, thus enabling one to reproduce delicate shades very faithfully, nevertheless, one of the objections to the offset printing is the fact that one cannot produce the key color varying from the intense depths up to the finest gradations of tones as is possible when a direct intaglio print in the key color is superimposed in the manner herein described. Accordingly, our process while, enabling one to utilize the advantages of the intaglio for the key color and thus obtain all gradations of color from the intense depths to the softest tones, at the same time preserves all the advantages of offset printing including that of the relatively cheap cost of same.

Appellants argue that Schultz does not disclose a last transfer step under pressure. Their brief states:

> Particular attention is invited to the term "roto-gravure" in the above. Actually a "roto-gravure" is a process of photogravure in which the impression is produced by etched cylindrical plates affixed to the rollers of a rotary printing press; hence, an illustration so printed. It is well known in the art that such a printing is not done under pressure so as to produce embossing.
>
> The claim on appeal, however, calls for several transfers with slight pressure and the last transfer is effected with strong pressure so as to secure the embossing effect.
>
> * * * * * * *
>
> The last transfer under pressure allows a simultaneous deformation of the support in order to emboss and render the document more difficult to reproduce. The transfers that are made in Schultz et al. are made without deformation of the support and in an entirely different manner.
>
> * * * * * * *
>
> The pressures to be exerted upon the support are totally different and the effects obtained can not be compared.

The Solicitor in his brief does not support the Board's conclusion, quoted supra, that the second intaglio cylinder in Schultz deforms the paper and the first does not. His argument is as follows:

> * * * the question to be decided is not only whether the roller * * * [second intaglio cylinder] *does* deform the paper but also whether it would be *obvious* to have the roller * * * deform or emboss the paper. Schultz et al. do not state whether the roller * * * deforms the paper, but it does certainly appear that the direct pressure contact of the engraved roller with the paper as disclosed by Schultz et al. would deform the paper surface to some extent. Moreover, it is common in the printing art to deform or emboss a paper with an engraved roller as shown by Lohmann * * * Therefore, it would be clearly obvious to regulate the pressure contact of the engraved roller with the paper in Schultz et al. to control deformation of the paper as desired.

> * * * Lohmannn shows the embossing feature. Appellant acknowledges the disclosure of Lohmann and argues that the reference only shows a single transfer * * * but appellant's embossing step is also only a single transfer. * * *

We think that the Solicitor's comment that Schultz does not disclose that the second intaglio cylinder embosses the paper is correct and thus appellants have the better of the argument in this respect. However, the fact that Schultz does not disclose embossing is not dispositive of the issue whether the claimed subject matter is obvious in view of all of the teachings of the prior art of record.

Turning to the section 103 issue, appellants concede that all of the steps of the process are old in the art. The patentability of the process allegedly resides in combining "these various steps in one process * * * particularly when the valuable results accomplished are viewed." However, appellants did not introduce any evidence for consideration showing facts tending to prove that valuable results are achieved. Accordingly, the valuable results alleged are limited to appellants' allegations that counterfeiting is made more difficult by employing the claimed process. Appellants' brief states:

> Finally, a document is obtained whose forgery is impossible, on the one hand, owing to the complexity of the design, the superimposing of several engravings, the large number of colors utilized, and the changing of colors in the lines of each plate, and on the other hand, because during the successive printings, the document remains exactly identical with itself, i.e., that the divergences between printings of the documents are absolutely minimum, and finally, by the embossing given at the last transfer which takes place under pressure.
>
> Finally, all the elements of the process help to make the forgery of the document more difficult, both because it enables the superimposing of several etched engravings, because the distribution of the colors is complex, and because the printings remain identical with themselves, while effecting the deformation of the support paper by the direct copper-plate engraving.

Lathey and British both state that multicolor intaglio printing makes forgery or counterfeiting of bank notes or other fiduciary papers more difficult. Schultz teaches that positive registry throughout and direct intaglio printing in the key color enables reproduction of delicate shades very faithfully, as quoted supra.

As we view the references, the advantages of each step of the process are taught by the references excepting the final embossing step as an operation to make forgery more difficult. Lohmann discloses an embossing and intaglio printing step which occur simultaneously as appellants' does. However, Lohmann contemplates that his device is useful for making seals. The specification states:

> Commonly, seals and the like are printed upon a continuous web of sheet material from which they are cut. Usually a seal press includes a reciprocating die which cuts the printed seal from the web, the web moving forwardly intermittently between successive cuts by the reciprocating die. The cutting die may include an embossing die so that the cutting and embossing are simultaneous operations. Such presses are bulky and slow in operation and it is an object of this invention to manufacture such articles continuously and economically and to provide a machine for carrying out the manufacture which is continuous in operation and economical to manufacture and operate.
>
> * * * * * * *
>
> The printing mechanism is of the intaglio type for effecting raised printing and consists of a recessed die which is opposed by a resilient roll. * * *

[1] In view of the teachings of record, we believe it was incumbent upon appellants to establish, through factual proofs, the alleged valuable results made possible by the claimed invention. Absent such evidence and any further argument demonstrating that the claimed subject matter is unobvious in view of the prior art, the Board's decision must be *affirmed*. Each of the steps of the process argued by appellants to make forgery and counterfeiting more difficult is suggested by the prior art.

[2] AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE WILHELM WALLES, WILLIAM F. TOUSIGNANT AND THOMAS HOUTMAN, JR.

No. 7400. Decided October 6, 1966

[54 CCPA —; 366 F.2d 786; 151 USPQ 185]

1. PATENTABILITY—INVENTION—PATENT ACT OF 1952—35 U.S.C. 100–103, 112.

"The term 'invention' as used in the 1952 Patent Act means an 'invention or discovery' (35 U.S.C. 100), or as stated in 35 U.S.C. 112, it is the 'subject matter which the applicant regards as his invention.' Before such 'invention' may be *patented* it must meet the requirements of 35 U.S.C. 101–103."

2. SAME—DOUBLE PATENTING—PATENT ACT OF 1952—35 U.S.C. 112.

"Whatever meaning the term 'invention' may have possessed prior to the 1952 Patent Act, it is clear that the term 'invention' now means the *subject matter* which the applicant claims and regards as his 'invention.' 35 U.S.C. 112. Accordingly, before two sets of claims may now be said to claim the 'same invention,' they must *in fact* claim the *same subject matter*."

3. SAME—SAME—SAME SUBJECT MATTER OR INVENTION—35 U.S.C. 101.

"We think the proper way to determine whether claims in two applications or in an application and a patent define the same subject matter is to determine *independently* precisely what subject matter is defined in the two sets of claims. Where it may be concluded after comparing these independent determinations that the subject matter is in fact the same, the appealed claims are properly rejected in view of the patent claims. 35 U.S.C. 101. The inquiry is factual and requires that *all* of the subject matter defined by the claim be considered. We may not ignore or discard any portions of the claimed subject matter."

4. SAME—SAME—SAME.

"Turning to the merits of this appeal, considering the patent claims, the subject matter defined therein is a hair setting composition comprising a resin dispersed in a solvent. Considering the appealed claims, the subject matter defined therein is a resin per se. Comparing the respective subject matter, we must conclude that the subject matter is not the same and therefore the respective claims do not define the 'same invention.' Numerous decisions of this court support this conclusion."

5. SAME—COMPOSITION—PREAMBLE SETTING OUT INTENDED USE.

"* * * we do not agree that the portion of the patent claims which recite 'a composition for setting hair,' may be ignored in determining what invention is defined by the patent claims. An examination of the patent specification, including the objects of the invention, the discussion of the prior art, and the examples set forth, reveals that it is directed solely to compositions for setting hair. The only interpretation of the patent claims consistent with the disclosure is that the invention, the subject matter claimed therein, is a hair setting composition. 'In our judgment those introductory words give life and meaning' to the claims. *Kropa* v. *Robie*, supra, 88 USPQ at 480–81; *In re Sinex*, supra, 135 USPQ at 305."

6. SAME—DOUBLE PATENTING.

"We know of no authority * * * where, in a rejection based on double patenting, it is permissible to disect and discard portions of claims in a search for or an attempt to isolate 'the essential element for patentability,' whatever that means, common to two sets of claims."

7. SAME—SAME—RESIN AND RESIN IN HAIR SETTING COMPOSITION ARE PATENTABLY INDISTINCT.

"In summary, the invention defined by the appealed claims is a resin per se and the invention defined by the patent claims is a hair setting composition. There are no other references before us. As we view the record, appellants discovered a resin which is novel and unobvious. They also discovered that this resin was a useful element in a hair setting composition. The hair setting composition now protected by a patent is not a bar per se to the appealed claims. Based on the facts of record, we know no theory of law concerning 'double patenting' which permits us to find that the inventions are 'patentably indistinct.' "

APPEAL from the Patent Office. Serial No. 798,861.

REVERSED.

John A. Blair for appellants.

Clarence W. Moore (*Joseph Schimmel* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

Appealed claims 1–7 were rejected as "unpatentable over" the claims of a patent to Tousignant et al. This rejection was affirmed by the Board of Appeals. We find the rejection to be improper and therefore reverse the decision of the Board.

After an extensive prosecution, the appealed claims stood rejected in view of the patent previously issued to appellants. While the rejection has been sometimes couched in terms of "double patenting" below, we will first set forth the relationship between the appealed claims and the patent claims before attempting to ascertain the basis for the rejection.

The Applications

The facts are relatively simple and not in dispute. Appellants are the inventors of record in the appealed application[1] and the patent.[2] The appealed application results from a division of a parent case. The patent relied upon for the rejection issued on a continuation-in-part application based on the parent case. The parent case is not involved here. No requirement for restriction was made by the Patent Office between the appealed application and the continuation-in-part application and appellants do not claim any benefit here under 35 U.S.C. 121. The patent is not prior art under 35 U.S.C. 103 because it is not entitled to an earlier filing date than the appealed application. It is not prior art under 35 U.S.C. 102(e) because it was filed by the same inventors.

The Inventions

The subject matter defined in the patent claims and the appealed claims may be described as follows. *All* of the appealed claims define a resin *per se.*[3] *All* of the patent claims relied on in the rejection

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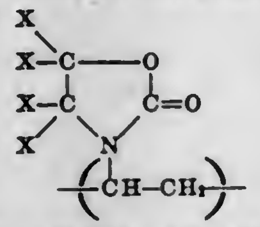
[1] Serial No. 798,861, entitled "N-Vinyl-X-Alkyl-2-Oxazolidinone Polymers," filed March 12, 1959, a division of patent application Serial No. 696,317, filed November 14, 1957.

[2] Issued August 9, 1960, entitled "Hair Setting Composition Containing a Ring Substituted N-Vinyl-2-Oxazolidinone Polymer," and resulting from patent application Serial No. 711,560, filed January 28, 1958 as a continuation-in-part of patent application Serial No. 696,317, filed November 14, 1957.

[3] Appealed claim 1 is representative of appealed claims 1–6, and reads as follows:

1. A composition of matter comprising an addition polymer having, as an essential constituent of its polymeric structure, a characterizing plurality of units of:



wherein each X is independently selected from the group consisting of hydrogen and alkyl radicals of from 1 to about 4 carbon atoms with the limitation that at least one of said X substituents must be an alkyl group, the chain of said polymer terminating with a valence-satisfying unit selected from the group consisting of hydrogen and copolymerized units of another ethylenically unsaturated monomeric material that is copolymerizable by addition polymerization with an N-vinyl-2-oxazolidinone monomer.

Claim 7 covers a copolymer of the same basis monomer with another ethylenically unsaturated monomeric material.

define a hair setting composition.[4] The patent claims define a hair setting composition in which the resins of appealed claims 1–6 provides one component.[5]

The Rejection

The Examiner rejected the appealed claims as "unpatentable over" the patent claims. The Examiner's answer before the Board states:

> The Examiner's position, succinctly stated, is that *a polymer is not patentable over the same polymer dispersed in water.* * * *
>
> * * * * * * *
>
> Applicant firmly maintains that [the patent] * * * is not prior art because the application on appeal takes priority to the filing date of [the patent] * * *. That such a position is untenable is clearly shown by *In re Ockert*, [44 CCPA 1024, 245 F.2d 467, 114 USPQ 330] * * * :
>
> > That if only one inventive concept is present, two patents cannot be granted *regardless of the order in which the applications were filed.* [Italics added.]
>
> * * * * * * *
>
> In summary the Examiner submits that a clear unequivocal case of double patenting has been made out. * * *

The Board in its opinion expressly declined to indicate whether the basis of the rejection was "double patenting" or whether its rejection was based on the patent as prior art. The Board found instead that the appealed claims and the patent claims claimed the "same invention," citing 35 U.S.C. 101; that the claims "differ in scope only"; and that there was no "patentable distinction" between the appealed claims and the patent claims. The Board agreed with the Examiner's reasoning and added:

> * * * We do not consider such solutions of a soluble polymer to constitute patentably separate and distinct subject matter. * * * aqueous solutions of the [resin per se] * * * such as those claimed in appellants' patent, would be apparent to the polymer chemist of no more than ordinary knowledge and skill. * * *

A terminal disclaimer as to the appealed claims was filed but was given no legal effect in overcoming the rejection.

The Solicitor in his brief, apparently recognizing the contradiction between the Board's positions—that the appealed claims and the patent claims claimed the "same invention" but also claimed different inventions which were "patentably indistinct"—argues primarily the broader ground that the patent claims and the appealed claims are "patentably indistinct." However, concerning the terminal disclaimer, the Solicitor argues that our decisions in *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485; and *In re Kaye*, 51 CCPA 1465, 332 F.2d 816, 141 USPQ 829, are not controlling because of a

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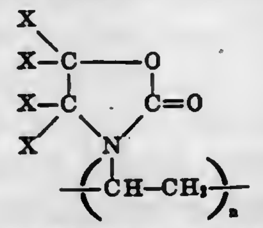
[4] Claim 1, quoted by the Examiner and the Board, is illustrative.

1. A composition for setting hair comprising a ring substituted N-vinyl-z-oxazolidinone polymer of the structural formula:



wherein each X is independently selected from the group consisting of hydrogen and alkyl radicals containing from 1 to about 4 carbon atoms with the limitation that at least one of said substituents is an alkyl radical, and *n* is a whole number of average value from about 10 to about 5000, said polymer being dispersed in a solvent therefor that is selected from the group consisting of water, lower alkyl alcohols containing from 1 to 4 carbon atoms and their mixtures.

[5] Appellants allege claim 7 covers a copolymer which is not claimed in a hair setting composition. The Solicitor states that the appealed claims stand or fall together. Our disposition of this appeal does not require us to resolve this dispute.

difference in "facts." It is reasoned that in *Kaye* and *Robeson* there were "separate inventions" and the claims defined "mutually exclusive subject matter" whereas here the appealed claims and the patent claims differ only in "scope" based upon "the same subject matter." The Solicitor's brief[6] concludes:

> * * * the fact that the appeal claims will dominate the patent claims is a sufficiently important difference to make those decisions [*Kaye* and *Robeson*] inapplicable.

From this background, only briefly commented on, we must determine what is the basis for the rejection. It is readily apparent that the terms "same invention" and "patentably indistinct" provide little assistance in making this determination.

"Same Invention"

Do the appealed claims and the patent claims define the "same invention?" We would comment at this point that the patent bar was cautioned some 33 years previously by Stringham, in his book entitled Double Patenting, 22, 24 (1933), as follows:

> * * * The term "same invention" is too broad a term to fit in with the law of double patenting, because of the diversity of meanings of "invention."
>
> • • • • • •
>
> The undue breadth of the term "same invention" has occasioned, at least in part, the difficulty which inventors have had in getting proper protection on more than one related achievement. It is not even approximately true to say that the law does not permit more than one patent on the "same invention." * * *

We think the 1952 Patent Act recognized this warning. [1] The term "invention" as used in the 1952 Patent Act means an "invention or discovery" (35 U.S.C. 100), or as stated in 35 U.S.C. 112, it is the "subject matter which the applicant regards as his invention." Before such "invention" may be *patented* it must meet the requirements 35 U.S.C. 101–103.

[2] Whatever meaning the term "invention" may have possessed prior to the 1952 Patent Act, it is clear that the term "invention" now means the *subject matter* which the applicant claims and regards as his "invention." 35 U.S.C. 112. Accordingly, before two sets of claims may now be said to claim the "same invention," they must *in fact* claim the *same subject matter.*

The failure to conform to the terminology of the 1952 Patent Act has created unnecessary problems in communication and resulted in confusion. Nowhere is this confusion more evident than in the maze of law included in the term "double patenting." We need look no further than the record here for confirmation of that fact.

[3] Do the appealed claims and the patent claims define the same subject matter, that is, the same invention? We think the proper way to determine whether claims in two applications or in an application and a patent define the same subject matter is to determine *independently* precisely what subject matter is defined in the two sets of claims. Where it may be concluded after comparing these independent determinations that the subject matter is in fact the same, the appealed claims are properly rejected in view of the patent claims.

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[6] Our disposition of this appeal does not require reference to our decisions in *Kaye* and *Robeson*. The Solicitor's brief was prepared prior to our decision in *In re Borah*, 53 CCPA —, 354 F.2d 1009, 148 USPQ 213, our most recent decision wherein "dominating" claims and "double patenting" are discussed.

35 U.S.C. 101. The inquiry is factual and requires that *all* of the subject matter defined by the claim be considered. We may not ignore or discard any portions of the claimed subject matter.

[4] Turning to the merits of this appeal, considering the patent claims, the subject matter defined therein is a hair setting composition comprising a resin dispersed in a solvent. Considering the appealed claims, the subject matter defined therein is a resin per se. Comparing the respective subject matter, we must conclude that the subject matter is not the same and therefore the respective claims do not define the "same invention." Numerous decisions of this court support this conclusion.[7]

There is evidence of record that the Patent Office considered that the appealed claims and the patent claims did in fact claim the "same invention" *meaning* the "same subject matter." The reasoning in support thereof is that both sets of claims include the resin. This method of comparing the inventions defined by the claims is improper as it compares only a portion of the subject matter defined by the patent claims with the subject matter defined by the appealed claims. Finding that we are dealing here with different inventions, we will now consider whether we are dealing with "patentably indistinct" inventions.

"Patentably Indistinct Invention"

Considering all of the arguments of the Patent Office and the opinions of the Board, we think that claims 1–7 were primarily rejected on the ground that they claim subject matter which is not patentably distinguishable from subject matter claimed in a patent previously issued to appellants. While the Board stated at one point the basis for the rejection was that the respective claims defined the "same invention," we think the real objection is that though there are in fact two inventions, only one of them is considered to be entitled to a patent.

The Arguments

The Solicitor argues primarily that the appealed claims are "patentably indistinct" from the patent claims. Appellants traverse this argument and also argue that the Patent Office has, in effect, utilized the patent as prior art in rejecting the appealed claims. We will first consider the Solicitor's position.

The Solicitor in his brief explains how the patent claims and the appealed claims define subject matter which is "patentably indistinct." The explanation involves an interpretation of the patent claims. First, in interpreting the patent claims, we are asked to ignore that portion of the patent claims which states that the composition therein defined is "for setting hair." It is reasoned that portion indicates "only an intended use" which "is of no patentable significance" citing *In re Sinex*, 50 CCPA 1004, 309 F.2d 488, 135 USPQ 302; *Kropa* v. *Robie*, 38 CCPA 858, 187 F.2d 150, 88 USPQ 478. Second, it is argued that the portion of the patent claims which recites that the polymer is dispersed in "a solvent," as an element of the "composition for setting hair," "that is selected from the group consisting of water, lower alkyl alcohols containing from 1 to 4 carbon atoms and their mixtures" is of no "patentable significance." The Solicitor reasons:

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[7] See *In re Allen*. 52 CCPA 1315, 343 F.2d 482, 145 USPQ 147; *In re Heinle*, 52 CCPA 1164, 342 F.2d 1001, 145 USPQ 131; *In re Coleman*, 38 CCPA 1156, 189 F.2d 976, 90 USPQ 100; *In re Sorett*, 51 CCPA 1180, 327 F.2d 1005, 140 USPQ 474; *In re Stanley*, 41 CCPA 956, 214 F.2d 151, 102 USPQ 234.

> * * * Common sense and common experience indicate that it is common practice to dissolve resinous materials in various solvents to produce coating compositions for various uses, and that the lower alkyl alcohols, such as methyl or ethyl alcohol, are common solvents for that purpose. * * *

Interpreting the patent claims in the above manner, the Solicitor concludes:

> * * * Therefore, it is manifest that the claims of the patent and the instant claims depend upon the same essential element for patentability, namely the specific polymeric material. * * *

We do not agree that the patent claims before us can be interpreted in the above manner nor is such a method of analysis proper in determining whether two sets of claims are "patentably indistinct." [5] First, we do not agree that the portion of the patent claims which recite "a composition for setting hair," may be ignored in determining what invention is defined by the patent claims. An examination of the patent specification, including the objects of the invention, the discussion of the prior art, and the examples set forth, reveals that it is directed solely to compositions for setting hair. The only interpretation of the patent claims consistent with the disclosure is that the invention, the subject matter claimed therein, is a hair setting composition. "In our judgment those introductory words give life and meaning" to the claims. *Kropa* v. *Robie*, supra, 88 USPQ at 480–81; *In re Sinex*, *supra*, 135 USPQ at 305.

We also find it improper to ignore the introductory portions of the patent claims for another reason. The record shows that during prosecution in the Patent Office the claims were rejected as being obvious in view of hair setting compositions disclosed in prior art patents. The Patent Office then considered that the patent claims did in fact define a hair setting composition and not a polymer dispersed in a solvent or a resin per se. Appellants successfully argued the distinctions between their claimed subject matter and the cited prior art and the rejection was removed. In view of this circumstance it seems to us that any argument here as to whether the patent claims define a hair setting composition is foreclosed. The arguments here must be consistent with the position taken by the Patent Office in the file of the patent.

Second, we think the Solicitor's method of analysis whereby the appealed claims are found to be "patentably indistinct" is incorrect and contrary to well established principles of law. It appears that the analysis is based on a principle of subtraction wherein all that is old (water and lower alcohols) and all that is allegedly obvious (dissolving resins in solvents) may be deleted from the claim. That which remains is the subject matter upon which "patentability" is predicated.

[6] We know of no authority, and the Solicitor cites none, where, in a rejection based on double patenting, it is permissible to disect and discard portions of claims in a search for or an attempt to isolate "the essential element for patentability," whatever that means, common to two sets of claims. Following the Solicitor's reasoning, no other patent may issue which includes, as part of the subject matter sought to be patented, the resin per se. Also, we note that this reasoning process looks to what elements in the claims are the *same* and casts out the *differences*. We believe this is also improper.

The Solicitor infers, however, on the facts of this case, that all appellants did was to disperse the resin in a solvent. And, apparently for emphasis, the Solicitor points out that the patent claims include dispersing the resin in *water*. The Solicitor's position apparently endorses the Examiner's question:

> * * * where resides patentability when claiming a polymeric product, whose dispersion has been earlier claimed. [?]

As we view the proceedings below, we think the objections and reasoning of the Patent Office are improper. The inquiry below is consistently cast in terms of 35 U.S.C. 103 which is not permitted in view of the facts of record. The subject matter defined in the appealed claims is treated as prior art and we are asked to determine whether it would be obvious to one of ordinary skill in the art to construct a hair setting composition utilizing the resin as an element. But the patent is not prior art.

Perhaps the real basis for the position here taken by the Solicitor is that a patent on the hair setting composition never should have issued. Concerning that invention and patent, the Solicitor states in his brief:

> * * * While method claims, such as claims 12 and 13 of the patent might be patentable as a new use under 35 U.S.C. 100(b), the composition itself would be unpatentable. Consequently, it is submitted that only a single patentable concept exists, and that under the established principles two patents cannot be granted.

The patent is presumed valid, 35 U.S.C. 282. The gist of the above argument again requires that we utilize the appealed claims as prior art and additionally take judicial notice that the specific resin defined therein may be dispersed in the solvents disclosed in the *patent*. We are to *assume* that the *composition* is *old* in the art and that appellants merely discovered that the composition was *useful* for setting hair.

[7] In summary, the invention defined by the appealed claims is a resin per se and the invention defined by the patent claims is a hair setting composition. There are no other references before us. As we view the record, appellants discovered a resin which is novel and unobvious. They also discovered that this resin was a useful element in a hair setting composition. The hair setting composition now protected by a patent is not a bar per se to the appealed claims. Based on the facts of record, we know no theory of law concerning "double patenting" which permits us to find that the inventions are "patentably indistinct."

Our analysis of the rejection before us is in no way dependent upon the fact that appellants have filed a terminal disclaimer in this case. In view of our disposition of the rejection, the terminal disclaimer is not necessary to overcome the rejection.

The decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, concurs in the result.

MARTIN, *J.*, concurring.

As I review the record here, this case is one falling within the principles of *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485 and *In re Kaye*, 51 CCPA 1465, 332 F.2d 816, 141 USPQ 829. I concur in the result reached here solely on the ground that the terminal disclaimers should be given effect, and that they obviate any rejection for double patenting of the obviousness type. I agree with the portion of the majority opinion that holds the inventions here involved are not the same. Compare *In re Siu*, 42 CCPA 864, 222 F.2d 267, 105 USPQ 428.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,419,125, Dorfman and Freese, CIRCUIT BREAKER; **2,458,151**, same, CIRCUIT BREAKERS; **2,492,009**, Sandin and Lindstrom, RESILIENT STOP AND POSITION LIMITING MEANS FOR CIRCUIT INTERRUPTERS; **2,492,009**, same; **2,508,178**, Lindstrom and Tremblay, CIRCUIT INTERRUPTERS; **2,586,326**, G. G. Grissinger et al., CIRCUIT INTERRUPTER TRIP DEVICE; **2,590,543**, J. A. Kalaway, SPACED PLATE CIRCUIT INTERRUPTER; **2,719,251**, P. V. Stewart, SWITCHBOARD; **2,788,421**, C. L. Jones, CIRCUIT BREAKER CONTACT STRUCTURE; **2,795,766**, Dyer and Jones, TERMINAL CONSTRUCTION FOR CIRCUIT BREAKER; **2,821,596**, Bires and Slebodnik, TRIP DEVICE FOR CIRCUIT BREAKERS; **3,009,035**, H. E. Reichert et al., CIRCUIT INTERRUPTERS; **3,009,036**, Dorfman and Reichert, same; **3,009,037**, C. L. Jones et al., CURRENT LIMITING CIRCUIT BREAKER; **3,009,038**, Dorfman and Reichert, CIRCUIT INTERRUPTER; **3,077,525**, L. W. Dyer, same, filed Jan. 4, 1965, D.C.N.J. (Newark), Doc. 1–65 (transferred from N.D., Ill. (Chicago), Doc. 64c593), *Westinghouse Electric Corporation* v. *Federal Pacific Electric Company*. Consent decree, case dismissed Dec. 19, 1966.

U.S. GOVERNMENT PRINTING OFFICE: O—1967

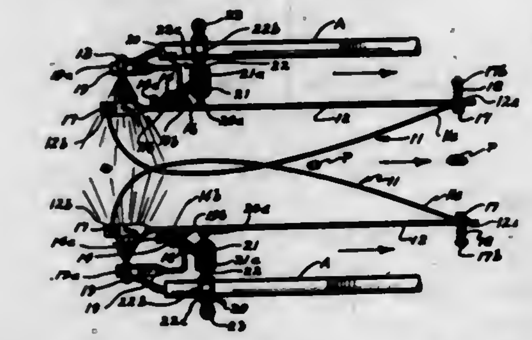
REISSUES

MARCH 7, 1967

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,166
WEED SPRAYING DEVICE

Harold G. Inhofer, 114 Scenic Drive,
Vinton, Iowa 52349
Original No. 3,147,568, dated Sept. 8, 1964, Ser. No. 247,737, Dec. 27, 1962. Application for reissue July 9, 1965, Ser. No. 471,794
10 Claims. (Cl. 47—1.7)

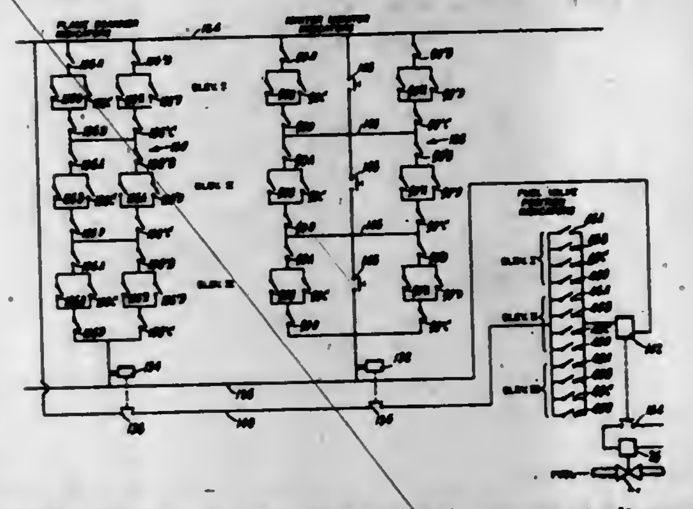


1. Weed spraying apparatus comprising supporting means adapted to be mounted on a transportable vehicle, a pair of spray nozzles horizontally spaced in a direction transverse to the direction of travel of such vehicle and being disposed to direct the liquid spray discharged therefrom onto only the lowermost portion of the crop plant stems and the ground surrounding said stem, *and* a pair of opposed leaf-lifting elements *having front and rear ends* mounted on said supporting means in preceding relation to said spray nozzles *means loosely anchoring both ends of said elements, said elements being inclined upwardly toward the rear, converging toward the rear so as to engage the undersides of the lowermost leaves and slide upwardly along the leaves and stem as the vehicle moves and thus progressively elevate the leaves from their free ends toward their stem ends out of the path of the spray from the nozzles, and having their extreme rear end portions diverging to release the leaves and stem, and said elements* [and] being resilient to permit engagement with the leaves and stem of the individual plants without damaging the same[,]. the initial plant engaging portions thereof being disposed below the portions therebehind so that leaves engaged thereby will be elevated out of the path of the spray pattern produced by said spray nozzles to prevent contact between the leaves and the spray liquid.]

26,167
FLAME FAILURE CONTROL FOR A VAPOR GENERATOR BURNER SYSTEM

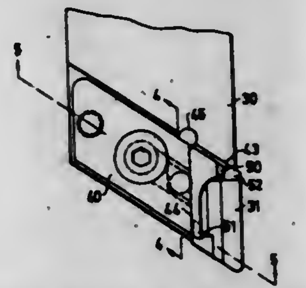
Jack A. Schuss, Hartford, and Virginius Z. Caracristi, West Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Original No. 3,195,610, dated July 20, 1965, Ser. No. 240,797, Nov. 29, 1962. Application for reissue Nov. 23, 1965, Ser. No. 522,337
12 Claims. (Cl. 158—28)

11. In a vapor generator having a furnace, a plurality of burners operative to fire into said furnace, a main fuel line for supplying fuel to said burners, a main fuel supply valve in said main fuel line, burner fuel lines connecting said burners to said main fuel line, burner valves in said burner fuel lines, operator means associated with said burner valves, igniter means associated with each of said burners providing ignition energy therefor; a control system comprising first sensing means associated with each igniter to indicate the presence of a sufficient amount of ignition energy to ignite said burners, second sensing means associated with each burner to indicate the absence of flame thereat, circuit means operable to actuate said main fuel valve operator to close said valve, said circuit means including first circuit arming means actuated when at least one of said burner valves is open, second circuit arming means actuated when a predetermined number of said first sensing means indicate an insufficient amount of ignition energy to ignite their associated burners, third circuit arming means actuated when a predetermined number of said second sensing means indicate the absence of flame at their associated burners, and means operable to actuate said main fuel valve operator to close said main fuel valve only upon the cumulative actuation of said first, second and third circuit arming means.



26,168
CUTTING INSERT AND TOOL HOLDER THEREFOR

Evert Gustav Lundgren, Sandviken, Sweden, assignor to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden
Original No. 3,156,032, dated Nov. 10, 1964, Ser. No. 266,994, Mar. 21, 1963. Application for reissue Oct. 25, 1965, Ser. No. 544,637
11 Claims. (Cl. 29—96)

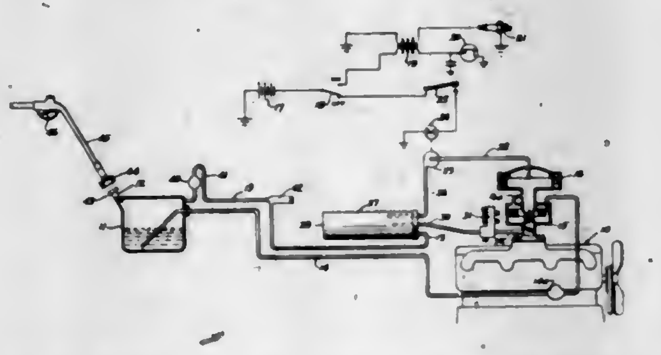


1. A cutting insert having a bottom surface, a top surface, side surfaces between said bottom and top surfaces and corners at the junctures of adjacent side surfaces, a cutting edge along the intersection of at least one of said side surfaces and said top surface, one only of the two corners between which said one side surface extends being a cutting corner, a clamp contact surface constituting only a minor part of said top surface adjacent to the other of said two corners, said clamp contact surface being outwardly and downwardly inclined in relation to

said bottom surface, and approaching said bottom surface in the direction toward said one side surface, said outwardly and downwardly inclined clamp contact surface having a length in the direction of said one side surface which is only a minor part of the length thereof, and another part of said top surface spaced from said outwardly and downwardly inclined clamp contact surface providing a second clamp contact surface.

26,169
DEVICE FOR CONTROLLING THE HYDROCARBON EVAPORATION LOSSES FROM AUTOMOTIVE VEHICLES

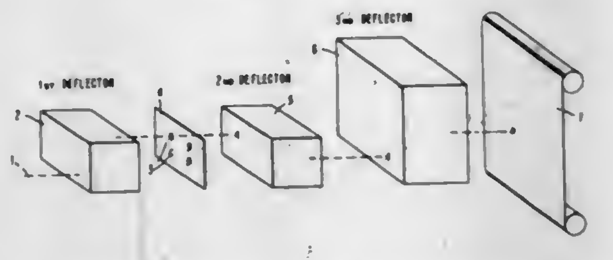
Fred V. Hall, San Francisco, Calif., assignor to Brooks Walker, San Francisco, Calif.
Original No. 3,191,587, dated June 29, 1965, Ser. No. 50,509, Aug. 18, 1960. Application for reissue Feb. 28, 1966, Ser. No. 536,530
20 Claims. (Cl. 123—136)



18. A device for the control of evaporation losses from an automobile having an engine, a carburetor and a carburetor bowl associated with said engine, a fuel tank, a fuel line extending from said fuel tank to said carburetor bowl, a breather line for said fuel tank including in combination a fuel vapor absorbing device separate from the carburetor air intake connected in said breather line, and conduit means for conducting the fuel vapors from said carburetor bowl to said fuel vapor absorbing device after said engine is shut off.

26,170
HIGH SPEED ELECTRO-OPTIC PRINTER OR DISPLAY

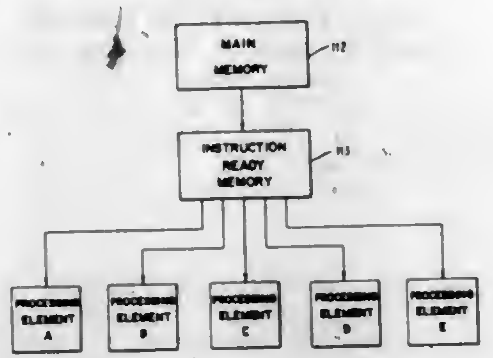
Thomas J. Harris, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original No. 3,220,013, dated Nov. 23, 1965, Ser. No. 317,754, Oct. 21, 1963. Application for reissue Feb. 25, 1966, Ser. No. 536,173
15 Claims. (Cl. 346—107)



1. An electro-optic printer comprising, in combination, means for providing a beam of collimated, plane polarized light, means for forming said beam, at points spaced laterally of each other, into the shape of any desired character, means including electro-optic devices for deflecting any character-shaped beam to a common path, a sheet of light sensitive material arranged perpendicular to said predetermined path, and means for directing said character-shaped light beam from said common path to the surface of said light sensitive material.

26,171
MULTIPROCESSING COMPUTER SYSTEM

Adin D. Falkoff, Croton-on-Hudson, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original No. 3,229,260, dated Jan. 11, 1966, Ser. No. 176,940, Mar. 2, 1962. Application for reissue June 1, 1966, Ser. No. 560,366
20 Claims. (Cl. 340—172.5)



1. In a computing system capable of simultaneously operating upon

a plurality of independent sequences of instructions, each of said instructions comprising, a first field to indicate the relative position of the particular instruction in its associated sequence of instructions, a second field to indicate which class of elements can execute the particular instruction,

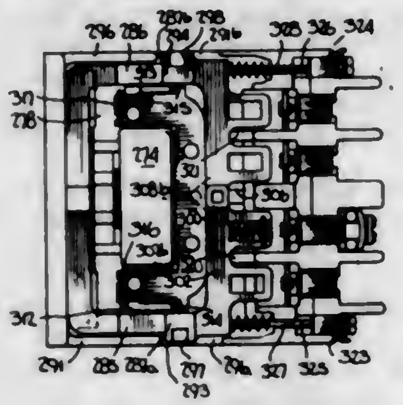
a plurality of simultaneously operable autonomous computing elements, said computing elements being divided into several different classes, each class of elements having different computing capabilities, each computing element including means for requesting an instruction when it is idle,

a memory system having a plurality of registers for storing instructions, indicating means for indicating those instructions which are logically ready for execution,

means responsive to a request for an instruction from a particular computing element and to said indicating means for reading out of memory and for sending to said particular computing element an instruction which is ready for execution and which has an indication in the second field thereof, which indicates that the particular instruction can be executed by the particular computing element.

26,172
ELECTRICAL CONTACTOR

John Scheib, Jr., Elmsford, N.Y., assignor to Ward Leonard Electric Co., Mount Vernon, N.Y., a corporation of New York
Original No. 3,194,920, dated July 13, 1965, Ser. No. 377,333, June 23, 1964. Application for reissue Oct. 5, 1966, Ser. No. 589,171
21 Claims. (Cl. 335—131)



1. An electrical contactor comprising a coil and core assembly including a movable armature actuated by said coil and core assembly, a generally planar shaped contact carrier having contacts normal thereto at one end and supporting means at the other end for holding said armature normal to said carrier, a mounting base with two matching holding members supportably attached thereto and extending normal thereto for enclosing said coil and core assembly, said matching holding members having a dimension lateral to said contact carrier substantially narrower than the dimension longitudinal to said carrier, each of said holding members having fixed contact holding means at the opposite end of said holding members from said mounting base and on opposite sides of the plane of movement of said carrier, each of said holding means having a set of fixed contacts supported thereby to form pairs of contacts for engagement by said carrier contacts on actuation, said holding members having means for [firmly] supporting said coil and core assembly and having guide surfaces extending longitudinally and parallel to the plane of movement of said contact carrier and at least one holding means having surfaces extending longitudinally to and normal to said plane of movement of said contact carrier for linearly guiding said contact carrier in a plane on actuation by said coil and core assembly.

PLANT PATENTS

GRANTED MARCH 7, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,723
POMEGRANATE TREE

Benjamin Y. Kamada, 24627 E. Adams, Orange Cove, Calif. 93646
Filed Dec. 10, 1965, Ser. No. 512,835
1 Claim. (Cl. Plt.—33)

A new and distinct variety of pomegranate tree substantially as illustrated and described and which is characterized by its vigorous growth and its regular and heavy bearing of early-maturing fruit which ripen about three weeks earlier than the fruit of the Wonderful pomegranate tree (unpatented), which the new variety most nearly resembles, but from which it is distinguished by its fruit providing a lower ratio of acid to the total soluble solids of the fruit at such early date of maturity and by its fruit being more uniformly roundly formed and having a thinner, more brightly dark red colored rind surface which has a greater resistance to splitting.

2,724
ROSE PLANT

Herbert C. Swim, Ontario, and O. L. Weeks, Chino, Calif., assignors to Swim and Weeks, Chino, Calif., a copartnership
Filed Dec. 22, 1965, Ser. No. 515,706
1 Claim. (Cl. Plt.—26)

A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of long and relatively straight flower stems as compared with other greenhouse varieties of the floribunda or polyantha classes, an ability to produce successive crops of flowers without delay under glass and without regard to the season, a distinctive and attractive flower shape beginning at the bud stage and progressing to the fully open flower, good flower petalage, a distinctive channelled shape of the flower petals which becomes more pronounced as the petals age, good flower substance, with consequent good lasting qualities both on the plant and as cut flowers, and a distinctive and attractive medium pink general color tonality of the flowers.

2,725
ROSE PLANT

Robert V. Lindquist, Hemet, Calif., assignor to Hemet Wholesale, Hemet, Calif., a partnership
Filed Feb. 21, 1966, Ser. No. 529,163
1 Claim. (Cl. Plt.—22)

A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a bushy and low-growing plant habit which is ideal for group plantings and borders, attractive dark green and leathery foliage, urn-shaped buds, double flowers of high-centered to open form and which are borne in good clusters, distinctive and attractive bi-colored flowers which are yellow at their base, shading to bright orange-red over the remainder of each flower; and a moderate tea fragrance of the flowers.

2,726
GINKGO TREE

William Flemer, Jr., Princeton, N.J., assignor, by mesne assignments, to Treesearch, Kingston, N.J., a partnership
Filed Sept. 28, 1965, Ser. No. 491,050
1 Claim. (Cl. Plt.—51)

A new and distinct variety of Ginkgo tree, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a naturally narrow and perfectly symmetrical tree crown composed of short and evenly spaced fastigiate branches, a strong central leader or trunk which grows naturally straight and vertical, ease of propagation by both grafting and cuttings, good resistance to marginal leaf scorch, and complete freedom from the production of ill-smelling fruit.

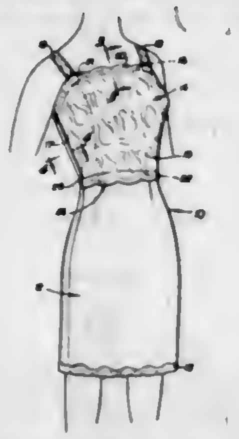
PATENTS

GRANTED MARCH 7, 1967

GENERAL AND MECHANICAL

3,307,200
SLIP-TYPE UNDERGARMENT

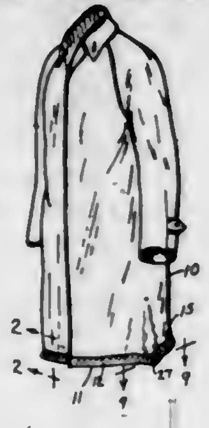
Olga Erteszek, Los Angeles, Calif., assignor to Olga Company, Van Nuys, Calif., a corporation of California
Filed Jan. 4, 1965, Ser. No. 423,254
7 Claims. (Cl. 2—73)



1. A combination garment of the character described, comprising a slip undergarment having waist and skirt portions, and a decorative waist front adapted for partially exposed wear beneath a jacket or the like, said decorative front overlying and covering the entire front portion of the waist above said skirt portion and being sewn to the waist along transversely spaced opposite edges of the decorative front, the bottom of said decorative front being free of attachment to the slip and the top of the decorative front terminating adjacent the neck portion of the wearer leaving uncovered the entire back area of the slip.

3,307,201
RAINCOAT AND WATER RUNWAY MEANS THEREFOR

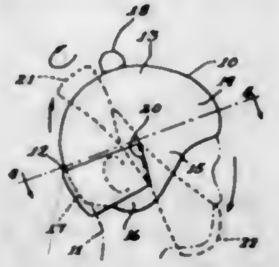
Raymond C. Pearson, 28 Grant Ave., East Rockaway, N.Y. 11518
Filed Feb. 8, 1965, Ser. No. 430,908
14 Claims. (Cl. 2—87)



1. A raincoat having a lower edge, said entire lower edge being folded upwardly and inwardly and secured to the inner side of said raincoat, forming an enclosed rain collecting and disposal runway; the outer side of said formed enclosed runway having a multiplicity of openings formed therein, whereby water running down the outer surface of said raincoat may enter and be collected in said runway; said runway having distender means therewithin; drainports formed in said runway and means for outwardly bending the runway at said drainports to allow said drainports to act as spouts.

3,307,202
FACEBAND EQUIPPED HEADWEAR

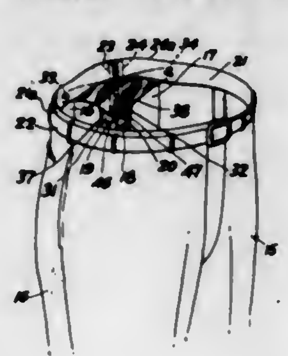
Walter E. Schuessler, 800 Redbud Lane, Wilmette, Ill. 60091
Filed Mar. 3, 1965, Ser. No. 436,736
3 Claims. (Cl. 2—173)



1. A head cover and face mask combination comprising a fabric body having forehead-, temple-, ear-, and neck-covering portions joined together in a continuous band adapted to be fitted about the head of a wearer; and an elongated rectangular knitted faceband capable of stretching longitudinally and transversely and having its end edges permanently secured to diametrically opposite temple-covering portions of said body by generally vertical lines of stitching extending transversely of said faceband and positioned well in front of the ear-covering portions of said body; the length of said faceband in an unstretched state being substantially equal to one-half of the circumference of the continuous band of said body; said faceband being movable between a first position wherein the same overlies and is stretched rearwardly about said neck-covering portion in surface-engagement therewith; and a second position stretched forwardly in spaced relation beneath said forehead-covering portion for covering and protecting the lower portion of a wearer's face; said faceband also being movable into any of a variety of selected head-covering positions between said first and second positions; the surface of said faceband engaging said neck-covering portion when said faceband is in said first position facing outwardly away from said body when said faceband is in said second position.

3,307,203
TROUSER ADJUSTERS

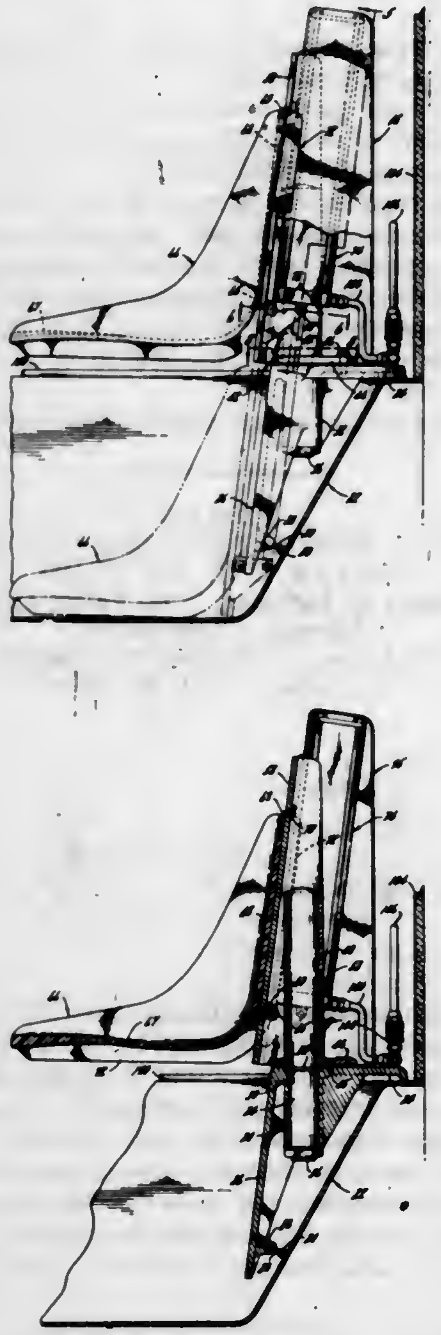
William Parsont and Rosalie S. Wilson, Forest Hills, N.Y., assignors of one-tenth to Michael J. Parsont, Forest Hills, N.Y.
Filed Dec. 30, 1964, Ser. No. 422,111
15 Claims. (Cl. 2—231)



1. In a pair of trousers including a peripheral waistband portion and a seat portion, the combination of a trouser adjuster, said adjuster comprising an elastic lifting member, means fastening said member in the region of its end portions to the rear interior portion of said waistband portion, at least the major portion of said member being below the top edge of said waistband portion, second fastening means on said member, cooperative fastening means on the interior portion of the seat of said trousers disposed below said second-mentioned fastening means and operatively engageable with said second-mentioned fastening means when the elastic member is yieldably pulled downwardly to the level of said cooperative fastening means, whereby upon the operative upward return of said member from said lower level the said seat portion of the trousers will be correspondingly lifted upwardly.

3,307,204
SITZ BATH

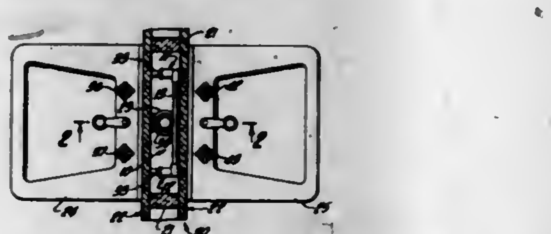
John C. Cotner, 117 E. Roselawn Drive, Logansport, Ind. 60447
Filed Sept. 8, 1964, Ser. No. 394,978
24 Claims. (Cl. 4—185)



1. A lift for a sitz bath, comprising a base mountable on a bathtub rim, a post mounted on said base and projecting upwardly therefrom, a support bracket carried on said post and rotatable about the axis of said post, a carrier vertically slidable on said support bracket and rotatable therewith, at least one cylinder connected to said bracket and having a piston connected to said carrier for moving said carrier vertically relative to the base and support bracket, a chair mounted on said carrier for rotational movement therewith between a loading and unloading position at an angle to the longitudinal tub axis and a raising and lowering position parallel with the longitudinal tub axis for vertical movement with said carrier into and out of the tub, and means for connecting said cylinder to a source of fluid under pressure for effecting vertical movement of said piston to raise and lower said chair.

3,307,205
BACK-TO-BACK PLUMBING FITTING

John A. Moeschler, Los Angeles, Calif., assignor of one-half to William Douglas Sellers, Pasadena, Calif.
Filed June 14, 1963, Ser. No. 287,968
14 Claims. (Cl. 4—192)

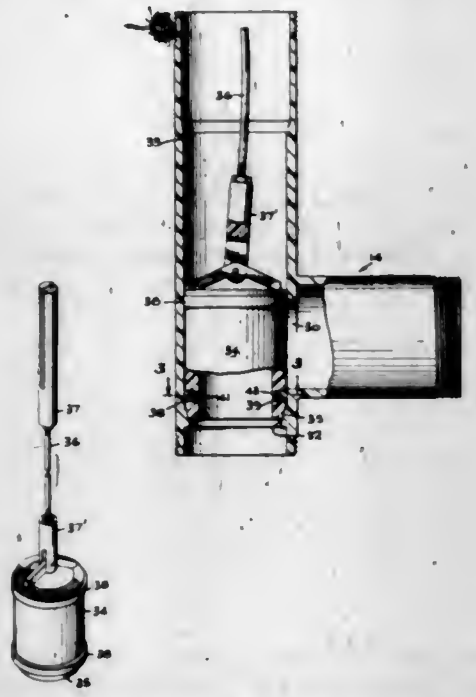


1. A one-piece elongated plumbing fitting suitable for use in pairs along with a pair of identical straight lengths of tubing in completing hot and cold water connections from vertically disposed service pipes to closely associated outlets for cold and hot water and which plumbing fitting is adapted to be installed between the faces of a building wall with its longitudinal axis lying in a vertical plane extending transversely of the wall and extending selectively either vertically or horizontally of said vertical plane, said fitting comprising an elongated unitary tubular member having first and second oppositely facing openings extending axially of one another through its opposite ends for discharging hot and cold water respectively, a third opening through the side of said member adapted to be connected to a source of water, a fourth and a fifth opening extending in the same direction laterally through the side of said tubular member in parallel closely spaced relation in a plane normal to the plane of the first, second, and third openings in the member, and a single internal partition extending crosswise of said member between said fourth and fifth openings and so arranged and constructed that said first and fifth openings are in unobstructed communication with one another and that the second, third and fourth openings are in unobstructed communication with one another.

3,307,206
DRAINAGE STOPPER

Carl H. Kreuger, Seal Beach, Calif., assignor to A. H. Voss Company, Hollywood, Calif., a corporation of California
Filed Feb. 21, 1964, Ser. No. 346,516
5 Claims. (Cl. 4—199)

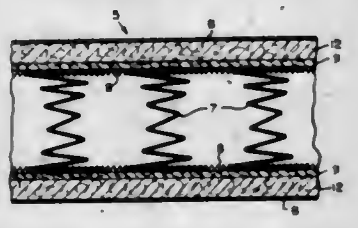
1. In a manually operated drainage control which comprises a T-shaped tubular housing having a through passage and a side inlet port and defining a conical valve seat in said through passage adjacent the lower edge of said inlet port and manually actuatable lever means mounted on said housing, the combination of: an open ended hollow cylindrically shaped plastic drain valve slidably mounted in said housing and movable therein between an open position with respect to said inlet port and valve seat, and a closed position with respect to said inlet port in engagement with said conical valve seat; said valve having an end annular shoulder wall dimensioned to seat upon said conical seat when said valve is in its closed position, and said valve having a loose fit with respect to said through passage of said housing;



radially expandable ring means carried by said valve member and providing a fluid tight seal between said valve member and said housing; lever means mounted on said housing for manual actuation of said drain valve between said open and closed positions; and an elastic plastic rod adapted to return to a substantially straight line condition after insertion in said housing, said rod connecting said lever means to said drain valve.

3,307,207
INSULATOR FOR MATTRESSES, SEATS, OR THE LIKE

Thomas D. Cole, Lockport, N.Y., assignor to Lockport Mills Research and Development Corporation, Lockport, N.Y., a corporation of New York
Filed Apr. 18, 1962, Ser. No. 188,483
9 Claims. (Cl. 5—354)



1. A cushioning device having springs held in operative position to support a person, an insulation sheet directly in contact with said springs and comprising a compacted layer of soft small diameter fibers comprising mainly cotton laid at random and crossing each other in all directions, and impregnated with a resinous material throughout the entire layer and adhering to the fibers and bonding the fibers to each other at intervals lengthwise thereof, said resinous material adding to the resilience of the fibers and increasing the adhesion of the same to each other to limit the entrance of the insulation sheet into spaces within and between the springs.

3,307,208
PORTABLE LANTERN FLOAT

Don L. Jacobson, 303 NE. Queenstown,
Bartlesville, Okla. 74003
Filed Feb. 19, 1965, Ser. No. 434,043
5 Claims. (Cl. 9—8.3)

3. A lantern float comprising:

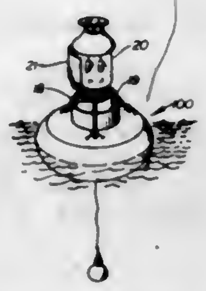
a rigid, hollow, toric body member having a platform portion tangentially covering and integral with said body member;

a plurality of eyelets extending upwardly from said platform portion;

a plurality of coil springs, each having a first and a second end, whereby each of said first ends is attached to one of said eyelets;

a circular retaining spring positionable substantially horizontally above said platform and attached to each of said second ends of said springs, said retaining spring positionable around a lantern to hold said lantern on said platform;

a balance arm connection depending centrally downwardly from under surface of said platform;



a balance arm connection eyelet at lower end of said balance arm connection;

an anchor rope guide extending downwardly from under surface of said platform, said guide being an eyelet having an elongated stem;

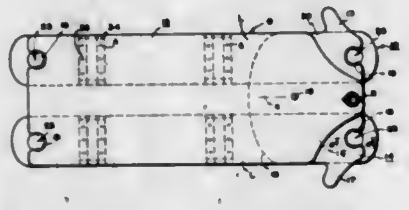
an anchor rope having one end secured to said balance arm connection eyelet, said rope then passing through said anchor rope guide, then said rope passing around said anchor rope pulley whereby a second end of such rope is removably secured to a remote object;

an anchor rope swivel attached to said anchor rope pulley; and

an anchor attached to said anchor rope swivel.

3,307,209
PONTOON SUPPORT DEVICE FOR USE IN WATER AND ON SNOW

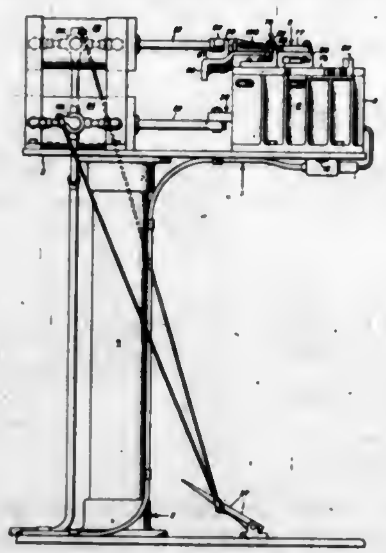
Robert R. Jackman, 7 W. Valley Drive,
Murray, Utah 84107
Filed Apr. 1, 1965, Ser. No. 444,699
6 Claims. (Cl. 9—310)



1. In combination, a platform type, horizontal, rigid support member, a steering member pivotally secured to said rigid support member along the longitudinal axis of the former, said steering member including respective side steering means constructed for user actuation, and a pair of inflatable pontoons disposed beneath and affixed to said rigid support member and also directly to said steering member on opposite sides of and forwardly of the pivotal securement of said steering member to said rigid support member.

3,307,210
SHOE UPPER SHAPING MACHINE

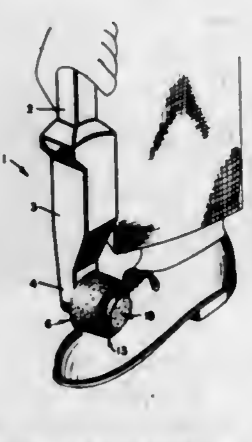
Piacentino Lauretti, R.D. 2, Newville, Pa. 17241
Filed Oct. 4, 1963, Ser. No. 313,987
13 Claims. (Cl. 12—8.2)



1. A shoe upper shaping machine comprising a stationary inner mold, and an outer mold movable relative to and closeable on said inner mold, said outer mold including a plurality of pivoted members having separate laterally spaced pivots and together embracing an aperture for receiving said inner mold, means lining said aperture, and means on said lining means and members and responsive to a force applied through said lining means against said inner mold for forcing said outer mold to close on said inner mold.

3,307,211
SHOE POLISHER

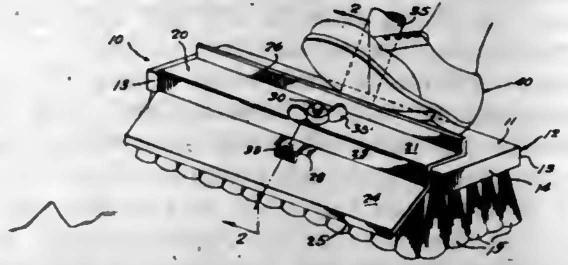
Stanley L. Gaines, Wayland, Mass., assignor to General Electric Company, a corporation of New York
Filed Oct. 18, 1965, Ser. No. 497,313
5 Claims. (Cl. 15—4)



1. A shoe polisher comprising:
(a) a manually manipulable shoe polisher including a power drive means;
(b) a shoe polishing implement connected to said power drive means for rotation thereby;
(c) bristles extending radially outwardly from said shoe polishing implement to form a generally cylindrical shoe brush; and
(d) a circular buffing pad fixed to the outside of said shoe polishing implement so that said shoe polishing implement is physically located between said manually manipulatable power drive means and said circular buffing pad, the approximate center of said circular buffing pad being in line with the axis of rotation of said shoe polishing implement, and the diameter of said circular buffing pad being somewhat less than the diameter of said generally cylindrical brush whereby when said cylindrical brush is rotated so that the bristle tips brush against and are deflected by the shoes being polished the flexing or radially inwardly movement of the bristles will not be so great as to permit the buffing pad to make contact with the shoes, said circular buffing pad having shoe buffing surfaces at its approximate center and extending radially outwardly therefrom.

3,307,212
COMBINED SURFACE CLEANING AND SURFACE SCRAPING DEVICE

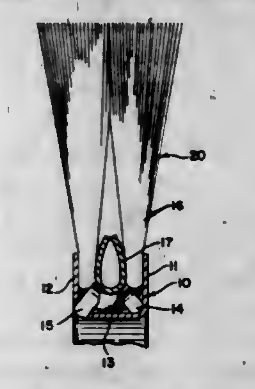
Peter A. MacInnes, 28200 Westbrook,
Farmington, Mich. 48024
Filed Dec. 31, 1964, Ser. No. 422,703
3 Claims. (Cl. 15—111)



1. In combination with a brushing element including a rigid elongated backing having an under and an upper face, opposed side edges, an end edge connecting each of the adjacent ends of the side edges together, and bristles extending over and projecting from the under face of said backing, there being diverging sockets lying along the transverse center line of said backing and opening out of the upper face of said backing, of a scraper attachment comprising an elongated base plate member having opposed side edges, said plate member being provided with an opening lying along a transverse center line, a first leg extending along and projecting perpendicularly from one of the side edges of said plate member, a sloping apron extending along and projecting from the free edge of said leg, the free edge of said apron being shaped to a knife edge, and a second leg extending along and projecting perpendicularly from the other of the side edges of said plate member, said second leg extending perpendicularly in a direction opposite to said first leg, said attachment being disposed so that the first leg extends along and abuts against one of the side edges of said backing with the opening in the plate member overlying and in registry with one of the sockets resting upon the upper face of said plate member and the second leg projecting away from said plate member, a fastening element extending through said registering socket and opening and through an aperture provided in said first leg and detachably secured to said plate member, and a handle having an end portion extending into and removably attached to the other of the sockets, said bristles serving as a sweeper for cleaning a surface, said knife edge of said apron serving as a scraper for cleaning a surface, and the free edge of said second leg serving as a scraper for cleaning debris from the soles and heels of a shoe of a user.

3,307,213
ROTARY BRUSH

Arthur T. Schofield, Brecksville, Ohio, assignor to The Manufacturers Brush Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 21, 1964, Ser. No. 405,375
7 Claims. (Cl. 15—179)



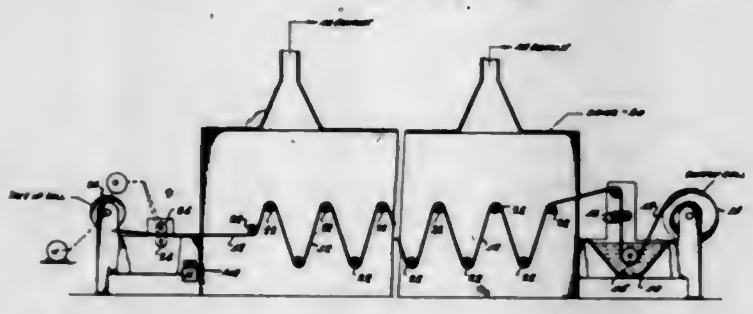
1. The method of constructing a rotary brush which includes the steps of forming a cylindrical hub having circumferentially spaced pairs of outwardly extending axially

spaced prongs extending radially from the surface thereof, assembling brush material transversely on the exterior surface of the hub between said prongs, placing a locking ring over the brush material encircling the hub member, flanging up the opposed edge portions of the hub and bringing the ends of the prongs into engagement with opposed axially spaced positions on the locking ring by compressing the flared sides of the hub ring until the edges of the locking ring substantially contact.

7. A cylindrical rotary brush comprising a hub ring of substantially channel form in cross-section having a base and outwardly extending side walls, transversely aligned axially spaced prongs angularly projecting from the intersection of the base and side walls of said hub ring into the channel of the hub ring at circumferentially spaced points thereabout and serving to defined pockets between axially spaced prongs for the reception of brush material, a locking ring disposed in the channel and engaging the ends of the prongs, brush material disposed in the channel pockets between said hub ring and said locking ring, said locking ring having wall portions arranged with respect to the walls of said channel to securely clamp the brush material therebetween.

3,307,214
TACK CLOTH

Anthony C. Belvedere, Downey, Calif., assignor to Harrison Auto Paint Shop, Inc., Los Angeles, Calif., a corporation of Illinois
Filed Oct. 21, 1963, Ser. No. 317,687
8 Claims. (Cl. 15—506)



1. A tack cloth, which comprises: a fibrous material impregnated with a combination consisting essentially of a brominated monomeric triallyl phosphate and the glycerol ester of hydrogenated rosin, the ratio of said glycerol ester of hydrogenated rosin to said brominated monomeric triallyl phosphate lying in the range between about 1:2 and 1.5 to 1.

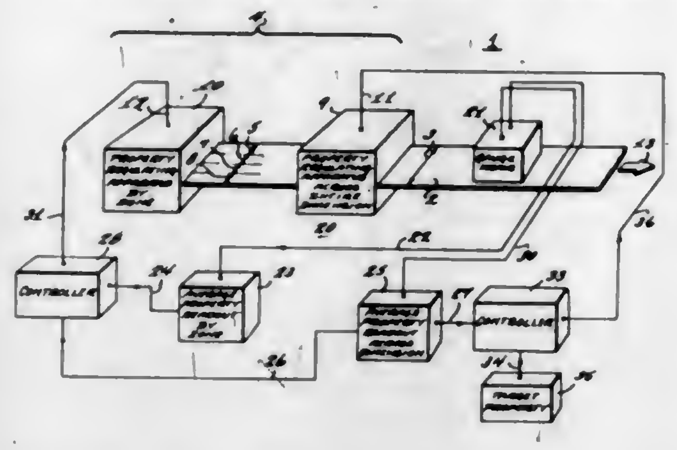
3,307,215
CONTROL APPARATUS FOR INDUSTRIAL APPARATUS

George R. Gerhard and George I. Doering, Columbus, Ohio, assignors to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Apr. 9, 1964, Ser. No. 358,573
8 Claims. (Cl. 18—2)

3. Control apparatus for a regulating apparatus having a formable material extruding from a die and passing on a cooling roll, a number of pull rolls to a winding roll, the extruder die having actuators that can separately vary the thickness of the material extruding from the die at individual zones along the material width, and the regulating apparatus having a first means for uniformly varying the material thickness across the width either by altering the material input rate to the die or by altering the relative speed of one or all of the cooling roll, pull rolls, and winding roll, the control apparatus comprising,

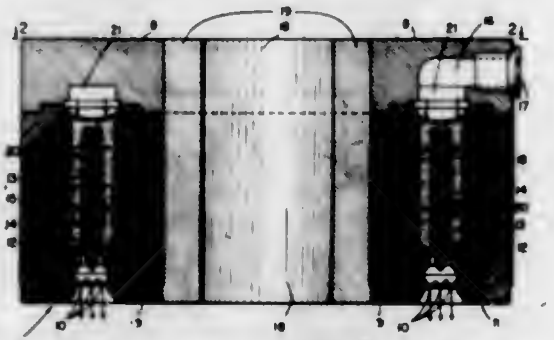
means for measuring the average material thickness of each of said zones and for measuring the average material thickness across the material width including said zones,

controller means coupled to said measuring means to produce a first control signal to be coupled to said extruder die actuators to energize the respective actuators when the average material thickness in the respective zones deviates from the material average thickness and to produce a second control signal for energizing said first means when said average material thickness across the width including said zones deviates from said target thickness.



3,307,216
ANNULAR SPINNING APPARATUS

Albert Dunn, Kings Mountain, and Luther Russell, Gastonia, N.C., assignors to Fiber Industries, Inc., a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 401,498
2 Claims. (Cl. 18—8)



1. An annular melt spinning pack having a spinneret containing a plurality of orifices for shaping filament-forming material as molten polymer is extruded therethrough wherein said spinning pack is internally confined in an annular shape surrounding an external space void, a granular bed of finely divided inert material contained within said spinning pack, inlet means for said molten polymer surrounding the outer perimeter of said granular bed other than the perimeter lying adjacent to and in parallel plane to said spinneret, outlet means for said molten polymer establishing a base for said granular bed in a corresponding spaced relationship with said inlet means to provide a substantially uniform depth of said inert material throughout said granular bed between said inlet means and said outlet means and collecting means for said molten polymer in the form of an internal annular space in said spinneret pack connecting said outlet means and said spinneret orifices.

3,307,217
EXTRUDER VALVE

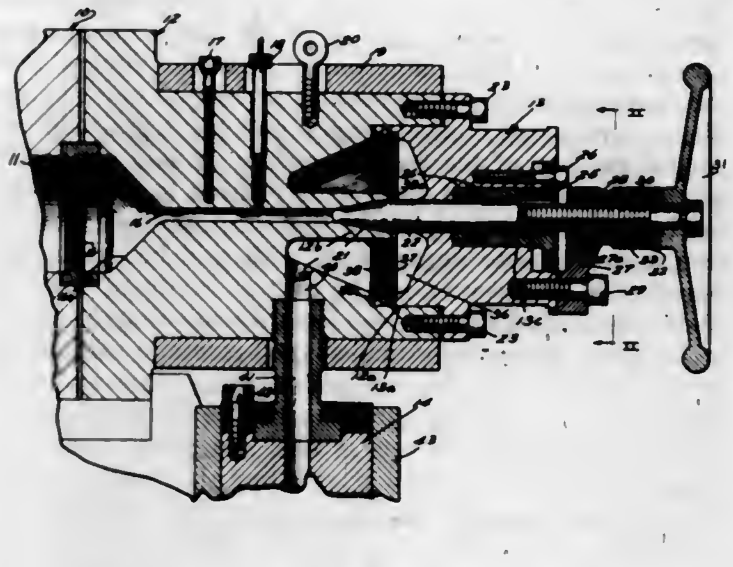
Raymond A. Cameron, Palatine, Ill., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Mar. 12, 1964, Ser. No. 351,368
7 Claims. (Cl. 18—12)

1. In a plastic extruder the combination comprising,

a housing member having a passage for receiving heated plastic melt and having a valve seat,

a screen pack mounted on said member receiving melt from said passage,

a second housing member removably mounted on said first housing member and having an adjustable valve element coacting with said valve seat for controlling back pressure in said passage and flow to said screen pack,



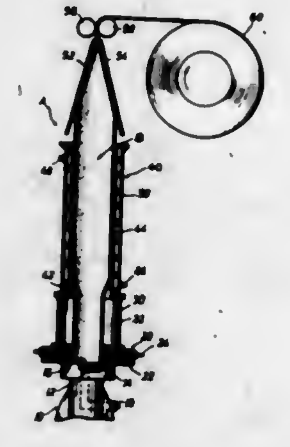
said screen pack being removable with removal of said second housing member from said first housing member,

and a die adapter mounted on the first housing member,

said first housing member having a die passage leading from the screen pack for delivery of melt to said die adapter.

3,307,218
APPARATUS FOR FORMING THIN PLASTIC TUBING

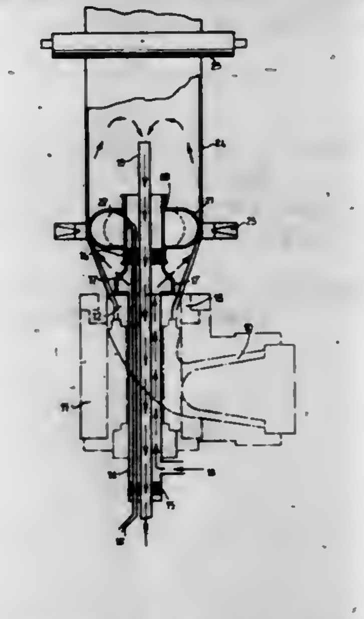
Fritz Reifenhauser, Troisdorf, Germany, assignor to Reifenhauser K.G., Troisdorf, Germany
Filed Jan. 31, 1964, Ser. No. 341,646
Claims priority, application Germany, Feb. 11, 1963, R 34,424
2 Claims. (Cl. 18—14)



1. In an apparatus for forming folded plastic tubing comprising means for vertically extruding a tubular element of thin plastic material at a temperature above its deformation temperature and below its liquid phase temperature, means for inflating said tubular element with a gas at a pressure above atmospheric pressure before said element cools below said deformation temperature, a sizing and cooling sleeve adjacent the exit end of said extruder means and surrounding said extruded tubular element, said sleeve having an inner sizing and cooling surface with a peripheral shape corresponding to the desired final peripheral shape of said plastic tubing and said surface having a length sufficient to cool said element below said plastic deformation temperature, said sleeve having a cooling chamber in heat exchange relationship with said inner surface, the improvement comprising: said sleeve being spaced from said extruding means by a chamber surrounding said tubular element and having inner dimensions greater than those of said sizing sleeve, and means for filling said chamber with a gas at a pressure substantially the same as the gas pressure used to inflate said tubing.

3,307,219
MANUFACTURE OF PLASTIC FILM

Bernard K. Bigland, Ainsworth, Bolton, England, assignor to Bemis Company, Inc., Minneapolis, Minn., a corporation of Missouri
Filed Feb. 16, 1966, Ser. No. 527,875
7 Claims. (Cl. 18—14)



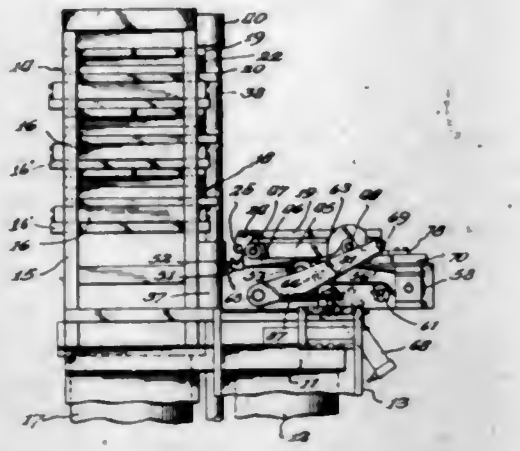
1. Apparatus for forming an extruded tube of plastic material comprising a die for extruding a tubular film of said material, a convex former adjacent to said die, said former being of greater diameter than the die orifice, and having its outer periphery convexly curved relative to the inner surface of the film, means beyond the former for applying tension to said film, means for escape of air from beyond the former, means for directing a stream of air at such velocity into the angle between the inner face of the film and the outer face of the former to provide and maintain an air cushion on the surface thereof to prevent contact of said tube with said former, means for pulling said tube over the air cushion on a substantial arc of said former so partially setting said tube by said air cushion, said tube resisting tension thereon, a ring of air jets adapted to impinge air on the outer face of said tube at said arc area to cool and set said plastic material simultaneously with stretching of said film, whereby the tension of said means is sufficient to physically stretch said tube over the area of said arc to reduce the thickness of said film by both longitudinal and transverse stretching.

3,307,220
MOLD HANDLING APPARATUS

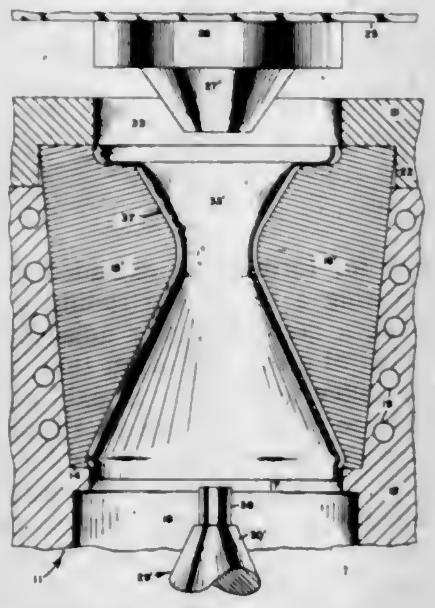
George A. Underwood, Skokie, Ill., assignor to Felt Products Mfg. Co., a corporation of Illinois
Filed Apr. 30, 1964, Ser. No. 363,741
21 Claims. (Cl. 18—16)

1. An apparatus for handling a mold comprising a top master plate and a lower master plate, said apparatus comprising means for moving said mold in opposite directions in a horizontal plane into and out of a press, means

for moving said top master plate relative to said lower master plate to open said mold, and means for pivotally moving one edge portion of said top master plate about a horizontal axis adjacent the opposite edge thereof to provide access to the interior of said mold whereby said mold may be loaded or unloaded.

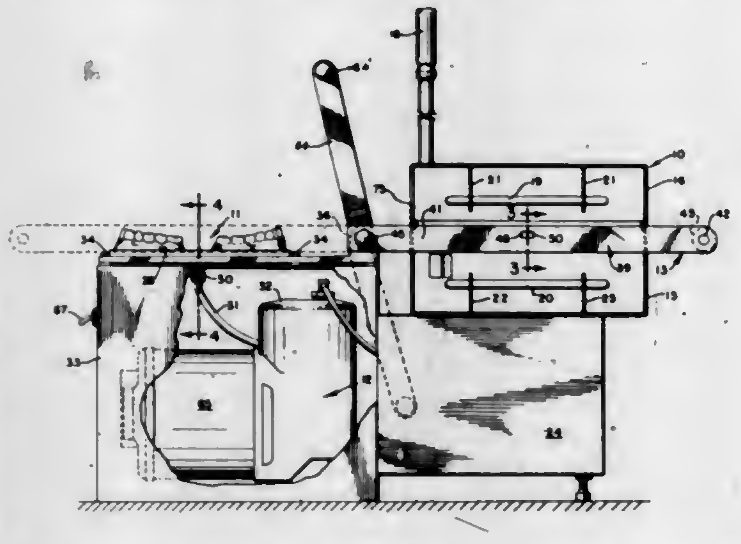


3,307,221
MOLD FOR MAKING INSULATED ROCKET MOTOR NOZZLES
Thomas E. Bolner, Fayetteville, Tenn., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 322,880
1 Claim. (Cl. 18—16.5)



A molding apparatus for simultaneously molding and shaping the insulation and shell of a rocket motor nozzle comprising, a bed plate having a central truncated conical-shaped cavity therein, said bed plate having a cylindrical-shaped cavity therein that is contiguous with said central cavity and in axial alignment therewith at one end thereof, said cylindrical cavity being of reduced dimensions in relation to said central cavity, said cylindrical cavity terminating in and contiguous wth a cylindrical-shaped recess, said recess being of greater dimensions than said cylindrical-shaped cavity, but of smaller dimensions than said central cavity, said bed plate having a plurality of passageways positioned therein in angular relation to said central cavity for introducing a heating medium into said bed plate, said bed plate having a plurality of guide pin receiving sockets therein, a pair of preformed die sections positioned in said central cavity, a keeper plate having in the undersurface thereof a cylindrical-shaped recess, a cylindrical-shaped cavity that is contiguous with said recess in axial alignment therewith but of smaller dimensional area than said cylindrical-shaped cavity, and a plurality of guide pin receiving bores, said keeper plate being positioned on the upper surface of said bed plate so that the upper ends of said die sections are received in said cylindrical-shaped recess and said guide pin receiving bores are in alignment with the guide pin receiving sockets in said bed plate, said keeper plate being positioned on said bed plate to retain said die sections in the central cavity in said bed plate, an upper movable plunger section having an aligning plate on the bottom surface thereof that is of the same dimensional size as said bed plate, a cylindrical portion integral with the central portion of the bottom surface of said aligning plate, a truncated conical-shaped punch integral with the central portion of the bottom surface of said cylindrical portion, a plurality of guide pins secured to and depending from said aligning plate so that when said plunger section is moved into engagement with said bed plate said punch will be received in the central cavity of said bed plate, the cylindrical portion on said aligning plate will be received in the cylindrical-shaped recess in said keeper plate and the guide pins on said aligning plate will enter the guide pin receiving bores in said keeper plate and the guide pin receiving sockets in said bed plate, a movable mandrel for cooperation with said bed plate at the bottom thereof, said mandrel having a centrally located inner truncated conical portion thereon that will enter the central cavity of said bed plate, a reduced cylindrical inner portion that is disposed between said conical portion and said mandrel, said cylindrical inner portion being contiguous with said central portion and integral therewith and with said mandrel, said cylindrical inner portion and said inner conical portion entering the cylindical cavity and the central cavity of said bed plate as said mandrel enters the cylindrical-shaped recess in said bed plate when said punch and said mandrel apply simultaneous compression to the shell and the insulation to mold the rocket motor nozzle.

3,307,222
VACUUM-FORMING APPARATUS
Leoniel C. Baldwin, Toledo, Ohio, and Robert A. Jensen, Dolton, Ill., assignors to Howe Sound Company, a corporation of New Jersey
Filed Aug. 20, 1965, Ser. No. 481,223
5 Claims. (Cl. 18—19)



5. Vacuum-forming apparatus for vacuum-molding precision articles from thermoplastic sheet materials comprising:

(a) an oven located in the back portion of said apparatus having separable top and bottom sections with heating elements mounted thereon in parallel spaced relationship and defining a space therebetween in the closed position into which a sheet of said material can be located for softening,

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(b) a molding platform mounted adjacent said oven in the front portion of the apparatus and defining a molding surface with a raised marginal ridge extending therefrom, said surface within said ridge being graduated in depth, said molding platform surface and said space between the heating element being substantially uniplanar,

(c) vacuum pump means connected to said platform with a vacuum exhaust outlet opening into said molding surface at the deepest portion thereof,

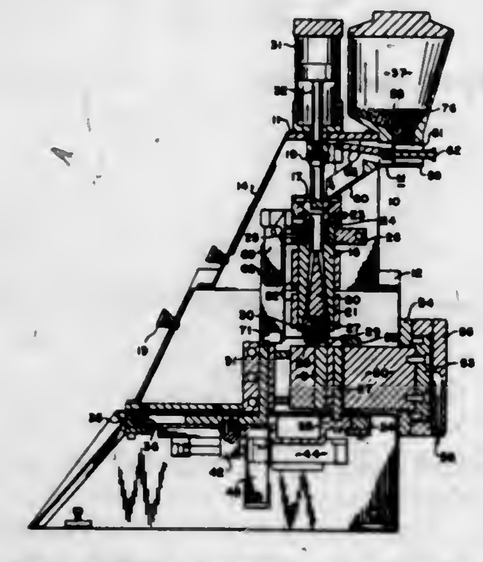
(d) a clamping frame assembly having parallel spaced support arms pivotally mounted about a horizontal axis extending laterally across said apparatus between said oven and said platform to pivot backward to a first heating position between said heating elements and frontward to a second molding position adjacent said molding platform, a sheet frame for holding the thermoplastic sheet mounted between said arms, a pressure frame mounted on said arms with the sheet therebetween, said pressure frame having a raised peripheral ridge projecting from said frame for holding a peripheral portion of said sheet material between it and one of said ridge and said graduated surfaces of the molding platform in its molding position to effect a seal therebetween upon application of pressure on said pressure frame downward against said platform,

(e) a handle on said arms against which hand pressure can be applied to the frame in the molding position to seal said peripheral portion of the sheet material between the pressure frame and the molding platform,

(f) means for swinging said top section of the oven and one of said heating elements laterally away from said bottom section so that said frame can be pivoted to position said sheet material in and out of said first position, and

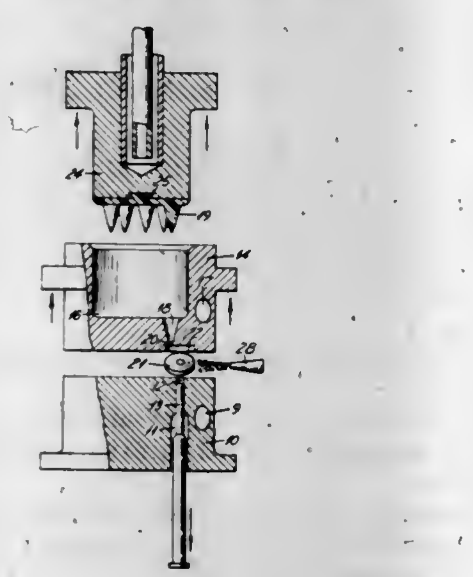
(g) lever means connected to said frame and extending frontward therefrom toward said molding platform when said frame is in said first position for initially pivoting said frame toward said second position out of the oven and bringing said handle within reach at the front of the apparatus.

3,307,223
INJECTION MOLDING MACHINE
Arthur W. Jacobs, 5994 Columbia Road, North Olmsted, Ohio 44070
Filed Mar. 25, 1964, Ser. No. 354,548
10 Claims. (Cl. 18—30)



5. Injection molding apparatus comprising a cylinder having a feed opening for plastic material at one end and an injection nozzle at the other end for flow of such material therethrough into a mold engaged thereby; a first resilient mounting for said cylinder for movement of said cylinder toward a mold for engagement of the nozzle therewith; a second resilient mounting for said nozzle urging the same to a position blocking flow of plastic material therethrough except upon continued movement of said cylinder following engagement of said nozzle with a mold; displacement means in said cylinder effective to apply pressure on plastic material in said cylinder thus to sequentially move said cylinder and nozzle against said first and second resilient mounting means respectively; and stop means to arrest movement of said cylinder after said nozzle has been opened and while the nozzle is engaged with a mold solely by force applied through said second resilient mounting.

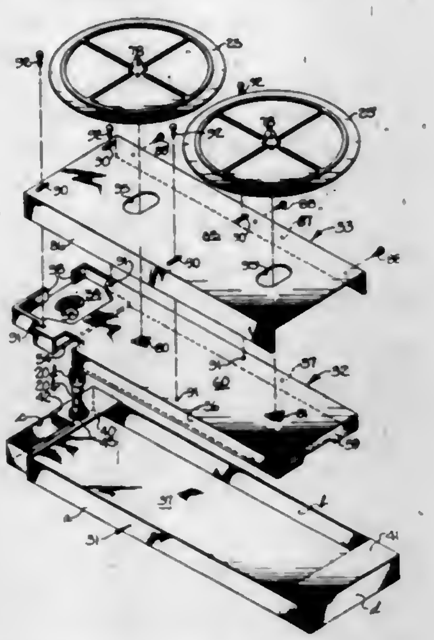
3,307,224
APPARATUS FOR MOLDING PLASTIC ARTICLES
Peter H. Hofer, Berkeley Heights, and Herbert A. Swallow, North Branch, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Aug. 13, 1964, Ser. No. 389,254
5 Claims. (Cl. 18—42)



1. Apparatus for molding thermoplastic articles which comprises means forming a lower mold portion, means forming an upper mold portion surmounting said lower mold portion, said lower and upper mold portions being adapted to cooperatively define at least one mold cavity therebetween and being further adapted to be separated for removing a molded article from therebetween, a transfer cylinder in said upper mold portion, a passageway in said upper mold portion in communication with said cylinder and which progressively decreases in cross section from said cylinder, a sprue forming channel in said upper mold in communication with said passageway and said mold cavity, said channel having a maximum diameter which is less than the minimum diameter of said passageway and progressively decreasing in cross section from said passageway and being sufficiently small to cause a molten thermoplastic material flowed therethrough to undergo molecular shear and thereby generate frictional heat, said transfer cylinder being adapted to receive a metered charge of molten thermoplastic material in an amount in excess of that required to fill said mold cavity and said sprue forming channel, piston means adapted to slide in said transfer cylinder to cause said molten thermoplastic material to fill said mold cavity and said sprue forming channel, means to cool said lower and upper mold portions and said piston means, said piston means being provided with means for removing cooled thermoplastic material from said sprue forming channel and cooled thermoplastic material in excess thereof.

3,307,225
TURNTABLE MOUNTING UNIT FOR TEXTILE COILERS

Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed July 10, 1964, Ser. No. 381,746
9 Claims. (Cl. 19—159)

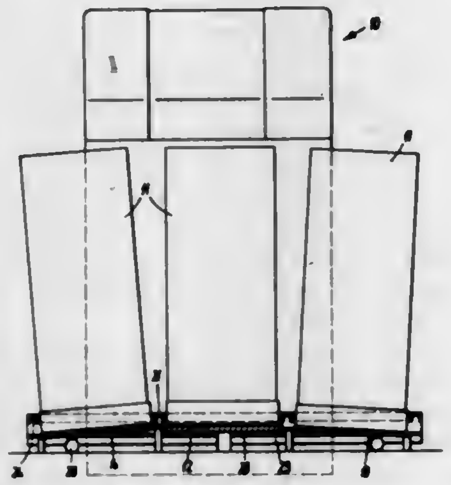


7. In a coiler apparatus for laying sliver in cans and having at least one coiler plate provided with an eccentric throat through which sliver passes to a can therebeneath, and an upright coiler shaft operatively connected to said plate and having a first gear on its lower portion; the combination of
(a) a turntable carriage spaced beneath said coiler plate,
(b) a turntable journaled in said carriage,
(c) a second gear fixed in axial relation to said turntable,
(d) means supporting said carriage for adjustment in a horizontal plane toward and away from the vertical axis of said coiler plate,
(e) gear means carried by said carriage and effecting a driving connection between said first and second gears, said gear means being adjustable, at least in part, to compensate for variation in the distance between said first and second gears resulting from adjustment of said carriage, and
(f) said turntable carriage comprising a substantially horizontal wall, said turntable being located above said wall, and said second gear and said gear means being located beneath the level of the lower surface of said wall and being contained by said carriage.

3,307,226
METHOD AND DEVICE FOR AUTOMATICALLY CHANGING SLIVER CANS ON SLIVER PRODUCING MACHINES

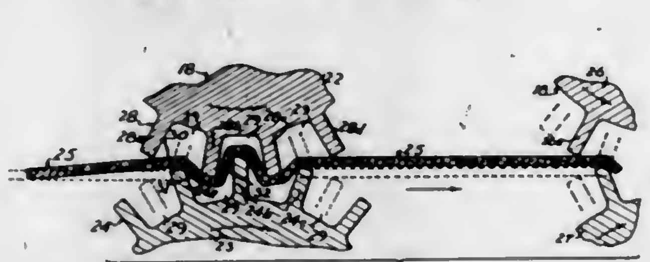
Heinz Müller, Kornbergweg 12, Plochingen, Germany
Filed June 18, 1965, Ser. No. 464,996
Claims priority, application Germany, June 22, 1964,
Z 10,925
14 Claims. (Cl. 19—159)

4. A can changing device for transfering cans onto and from a rotating disk having an upper surface at a given elevation and located beneath the delivery end of a sliver producing machine comprising, in combination, support means; a carriage movable in one direction along said support means toward and beyond said rotating disk; at least one can carried by the carriage; a pair of engaging means fixed to said carriage at an elevation lower than said given elevation spaced in a direction transverse to said one direction and engaging transversely spaced bottom portions of the can while leaving an intermediate bottom portion between said transversely spaced bottom portions and unengaged; guide means fixed to said carriage at an elevation higher than the given elevation and guiding said can for movement toward and away from said engaging means while substantially preventing said can to move in said one direction relative to said carriage; an upwardly inclined member fixed to said support means extending in said one direction and having a leading edge substantially at the elevation of said engaging means and a trailing edge adjacent said disk and located substantially at said given elevation, said fixed upwardly inclined member arranged and constructed to engage said intermediate bottom portion of said can during movement of said carriage toward said disk to lift the bottom of said can from said engaging means and to raise the bottom to the elevation of the upper surface of the disk; and a downwardly inclined member fixed to said support means extending in said one direction and having a leading edge adjacent said disk diametrically opposite said trailing edge of said upwardly inclined member and substantially at said given elevation and a trailing edge substantially at the elevation of said engaging means, said downwardly inclined member constructed and arranged to engage said intermediate bottom portion of said can during movement of said carriage beyond said disk to lower said can in a shock free manner into re-engagement with said engaging means.



3,307,227
METHOD AND APPARATUS FOR CLEANING COTTON

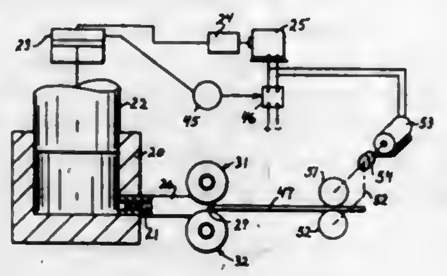
Morris M. Bryan, Jr., Jefferson, Ga., assignor to The Jefferson Mills, Inc., Jefferson, Ga., a corporation of Georgia
Filed Apr. 19, 1965, Ser. No. 449,118
10 Claims. (Cl. 19—200)



6. A method for cleaning a carded fibrous web comprising the steps of conducting a carded fibrous web along a path from a carding operation to a condensing operation, oscillating said web in a direction substantially normal to said path and drafting said web while said web is being conducted along said path to thereby dislodge and separate trash which is initially entrained within said web.

3,307,228
CONTINUOUS CASTING CONTROL METHOD AND APPARATUS

Albert W. Scribner, 6 Country Club Road, Darien, Conn. 06820
Filed Nov. 1, 1963, Ser. No. 320,760
4 Claims. (Cl. 22—57.2)



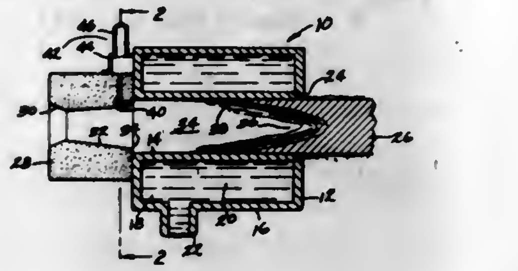
1. A method of continuously casting work metal and the like: comprising the steps of
providing a source of work metal;
providing an open ended casting passage through which said work metal may flow and be progressively hardened;
applying a pumping force to the work metal so as to progressively force the same into said casting passage;
simultaneously applying a drawing force to the hardened work metal leaving the casting passage; and
increasing both of the said forces when the resistance to metal flow through said casting passage increases, and decreasing both of said forces when said resistance decreases.

3. In a continuous casting device:
mold means defining an open ended casting passage that is adapted to progressively receive molten work material that is to be cast in passing therethrough;
cooling means for extracting heat from the work material in said casting passage;
withdrawing means disposed downstream from said mold passage for pulling cast work material from said mold passage at variable rates;
pumping means for forcing work material into and along said casting passage;
sensing means for sensing the resistance to the sliding movement of the work material along the mold surfaces defining said casting passage; and
control means operated by said sensing means for controlling the operation of said withdrawing means and said pumping means so as to thereby control the rate of entry and withdrawal of cast work material into and from said casting passage.

3,307,229
VENT FOR HORIZONTAL CONTINUOUS CASTING APPARATUS

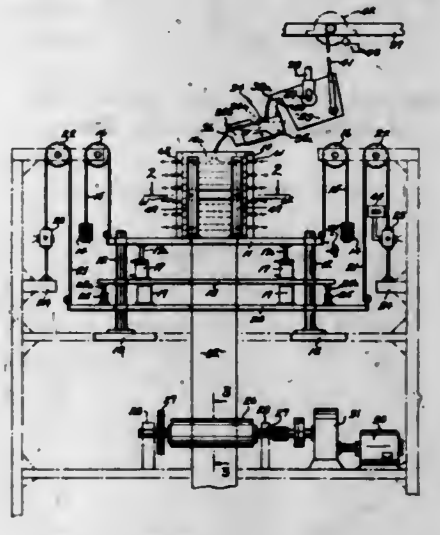
James E. Dore, Milford, Conn., and Avery L. Kearney, Birmingham, Mich., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Original application Oct. 22, 1963, Ser. No. 317,883, now Patent No. 3,286,310, dated Nov. 22, 1966. Divided and this application Feb. 16, 1966, Ser. No. 541,052
9 Claims. (Cl. 22—57.2)

1. Continuous casting apparatus comprising:
(A) a horizontal elongate mold having a wall defining a molten metal solidification cavity therewithin, said mold having
  (1) an inlet and an outlet end and
  (2) cooling means disposed in heat transfer relationship with said cavity for rapidly inducing solidification of molten metal within said cavity,
(B) a distribution nozzle associated with said inlet end of said mold, and
(C) vapor escape means disposed in said nozzle and communicating between said mold cavity and ambient atmosphere for removing vapor or gases from said solidification cavity formed during solidification of molten metal therewithin whereby said cooling means is in more effective heat transfer relationship with said solidifying metal.



3,307,230
CONTINUOUS CASTING APPARATUS WITH POSITIVE DRIVE OSCILLATING MEANS

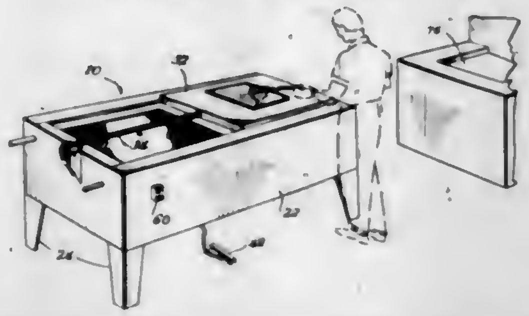
Norman P. Goss, Cleveland, Ohio, assignor to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware
Filed May 9, 1963, Ser. No. 279,101
4 Claims. (Cl. 22—57.3)



4. In apparatus for continuously casting metal from the molten stage, a cooled mold open at both ends, means for introducing molten metal at one end of said mold whereupon it immediately forms a thin skin against said cooled mold, means for controlling the removal of the metal bar formed in said mold out of the other end of said mold at a controlled rate, wherein normal friction exists between said bar and said mold when said bar is moving through said mold at said controlled rate and abnormal friction exists there when said bar sticks to said mold, means mounting said mold for movement back and forth in the direction of bar movement, oscillatory means continuously positively driving said mold back and forth in the direction of bar movement, and said oscillatory means yieldingly urging said mold in the direction upstream of said bar movement with a force less than that sufficient to rupture said thin skin and greater than said normal friction, whereby under abnormal friction said mold moves downstream with said bar, and means for stopping said molten metal introducing means and for stopping said bar removal means responsive to a predetermined movement of said mold downstream.

3,307,231
APPARATUS FOR MAKING ELECTROTYPE PLATES

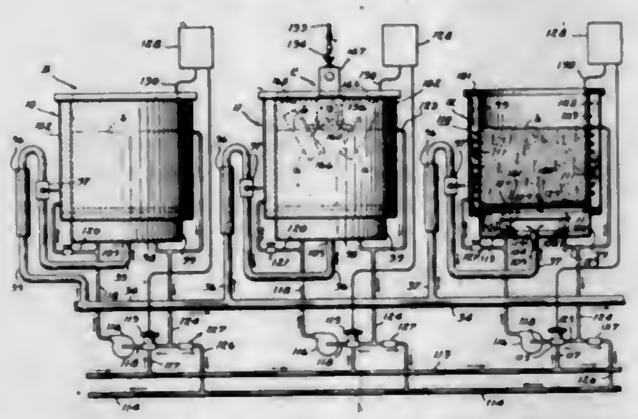
John W. Andrews, 1238 Oakmont,
Flossmoor, Ill. 60422
Filed Apr. 8, 1963, Ser. No. 271,194
5 Claims. (Cl. 22—58)



1. Apparatus for casting back-up metal on an electrotype shell, comprising a heating station, a cooling station, and a perforated transfer plate arranged for slidable movement between said stations, said cooling station having a rectangular box-like shape, the upper surface of which is formed to provide a waffle plate configuration, said box-like shape having a sleeve extending from the upper surface for evacuation of air from the upper surface, and means to circulate a cooling medium through the box-like shape.

3,307,232
METHOD AND APPARATUS FOR FORMING SHELL MOLDS BY THE USE OF A FLUIDIZED BED DRYING SYSTEM

Robert J. de Fasselle, Gates Mills, and Albert J. Vidmar, Parma, Ohio, assignors to Edward J. Mellen, Jr., Cleveland, Ohio
Filed Jan. 4, 1965, Ser. No. 423,081
17 Claims. (Cl. 22—196)

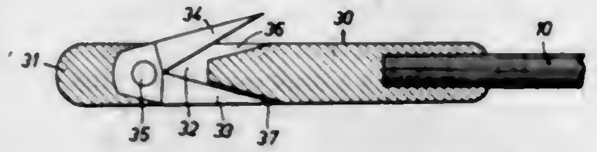


6. Apparatus for forming refractory shell molds for investment casting on destructible patterns comprising a dip tank containing a ceramic slurry comprising refractory particles and a liquid vehicle, means for maintaining the temperature of the slurry at a predetermined value below the softening temperature of the pattern, a fluidized bed having a receptacle containing a body of refractory granules, pressure means forcing a heated conditioned gas upwardly through said refractory body under a pressure sufficient to fluidize said body, suspending means for carrying the pattern from said dip tank to said fluidized bed and for continually moving the pattern vertically in the bed to cause the heated refractory granules to contact the entire outer surface of the ceramic layer applied to the pattern, and air conditioning means for maintaining the dry-bulb temperature of said gas at a predetermined value at least 5° F. above the slurry temperature and for maintaining the vehicle wet-bulb temperature of said gas at a predetermined value at least 5° F. below the slurry temperature.

15. A process for producing a refractory shell mold on a destructible pattern comprising the steps of applying a ceramic slurry to the outer surface of the pattern to form a wet ceramic layer, placing the coated pattern in a fluidized bed containing a body of refractory granules, rapidly removing the slurry vehicle from the coated pattern by forcing a conditioned gas upwardly through said refractory body under pressure to fluidize said body while maintaining the dry-bulb temperature and the condensable vapor content of said gas entering said body at predetermined values to maintain the dry-bulb temperature of said gas entering said body at a predetermined value above the temperature of the pattern and to maintain the vehicle wet-bulb temperature of said gas entering said body at a predetermined value below the temperature of the pattern to prevent damage to the mold by overcooling, and removing the pattern from the refractory body.

3,307,233
CLASP FOR BANDAGES

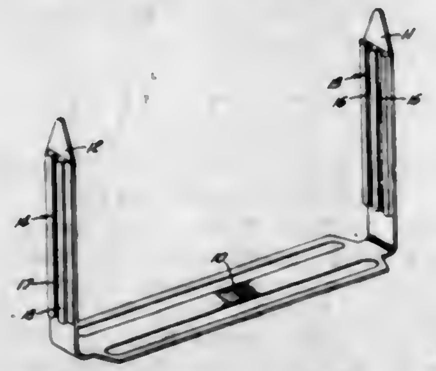
Klaus Mählmann and Ewald Schäfer, Wolfstein, Rhenish Palatinate, Germany, assignors to Karl Otto Braun, K.G., Wolfstein, Rhenish Palatinate, Germany
Filed Dec. 1, 1964, Ser. No. 415,001
Claims priority, application Germany, Dec. 7, 1963, B 74,571; Jan. 29, 1964, B 56,115
5 Claims. (Cl. 24—87)



1. A clasp for bandages comprising a blank having at least one opening and, in the opening, a triangular spike attached to, and pointing away from, the edge of the blank, characterized in that the blank and spike may be moved out of the opening to both sides, said blank having two semi-circular loops positioned opposite to each other and connected with each other, on the free ends thereof, by a crosspiece carrying a triangular elastic spike profile, the loops having edges chamfered towards the inside for being punched into the fabric of the bandage, the loops being folded upon each other prior to punching.

3,307,234
FILE FASTENER

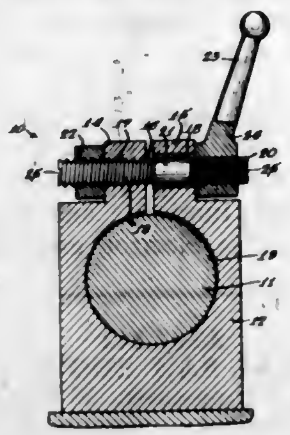
Raymond S. Murphy, Bakersfield, Calif., assignor to Intex Oil Company, Bakersfield, Calif., a corporation of California
Filed Sept. 21, 1964, Ser. No. 397,902
2 Claims. (Cl. 24—153)



1. A file fastener comprising a base, a pair of tongues integral with said base and extending one from each end thereof, said base and tongues being formed of a malleable material, a first plastic member cemented to the inside of one of said tongues, and a second plastic member cemented to the outside of the other of said tongues, one of said plastic members having a pair of longitudinal grooves and the other of said plastic members having a matching pair of longitudinal ridges adapted to fit in said grooves to hold said tongues together when folded inwardly into contacting position.

3,307,235
CLAMPING DEVICE

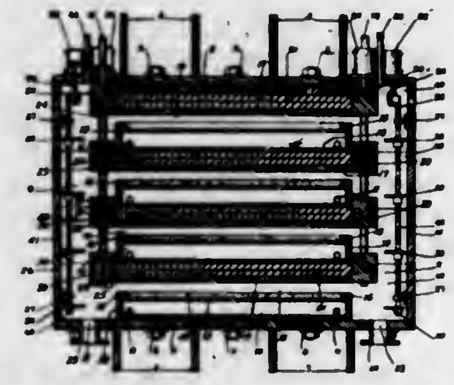
Louis W. Hennings, Marion, Va., assignor to Brunswick Corporation, a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,357
3 Claims. (Cl. 24—243)



3. A clamping device having a pair of spaced-apart clamping members each having an opening in alignment with the other, a stud extending through said openings and having threads adjacent the ends thereof, the threads adjacent one of said ends being of relatively larger lead than threads adjacent the other of said ends, means coacting with the threads of one lead for locking said stud in place, the threads of the other lead extending loosely through one of said members sufficiently far to accommodate a handle nut for opening and closing of said clamp device, and means at one of the ends of said stud for rotating said stud when said means for locking said stud are released to provide take-up adjustment of said clamp device.

3,307,236
MACHINE FOR THE MANUFACTURE OF ASBESTOS CEMENT PIECES

Sebastian Bonet Sirera, Calle Conte Altea 4, Valencia, Spain
Filed Feb. 3, 1964, Ser. No. 341,891
Claims priority, application Spain, Feb. 19, 1963, 285,244
3 Claims. (Cl. 25—84)

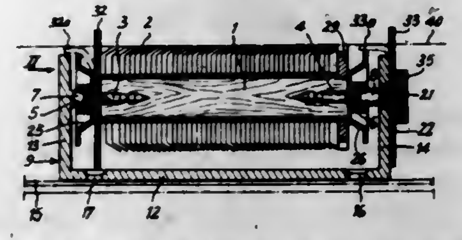


1. A machine for the manufacture of plaques from paste substances which have the characteristic of hardening upon dehydration, the machine comprising:

a plurality of cases arranged in superposed relation to form a pile thereof, each case having opposite ends and filter press means associated with the cases;
a support base for the pile;
a cover for the pile;
elongated screw means connecting the cover and support case and securing the pile therebetween;
substantially vertical wall means at the opposite ends of each case, said wall means including longitudinally extended portions;
said extended portions of the respective cases being vertically aligned to collectively form chambers at the sides of the pile;
articulated door means for each of the chambers;
means for the introduction and expelling of the paste substance for each of said chambers; and
air inlet and exhaust means for each of the chambers.

3,307,237
METALLIC ROTARY TEAZLES FOR TEXTILE MACHINES

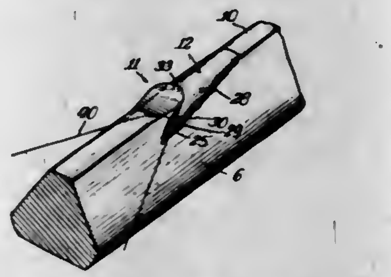
Albert Cesar Scholaert, Residence Malmaison 503B, Tourcoing, France
Filed Sept. 2, 1964, Ser. No. 393,962
Claims priority, application France, Sept. 20, 1963, 948,196
3 Claims. (Cl. 26—31)



1. A cloth napping assembly for textile machines comprising: a support consisting of a base-plate mounted on a textile machine and two end walls up-standing from the base-plate, a bobbin rotatably mounted in the end walls of the support, metallic card clothing covering the circumferential surface of the bobbin, two circular cheeks, one at each end of the bobbin, each spaced slightly inwardly from the adjacent end wall of the support, and two resilient, radially extending protective elements, one at each end of the assembly, the radial extent of the protective members being greater than that of the bobbin and clothing thereon and adapted, when the cloth to be napped comes into contact with them, to bend over and cover the gap between the cheek and the adjacent end wall of the support on each side of the assembly remote from the base-plate.

3,307,238
FELTING NEEDLE

Edson P. Foster, 409 S. 29th St., Manitowoc, Wis. 54220
Filed Mar. 5, 1965, Ser. No. 437,442
5 Claims. (Cl. 28—4)



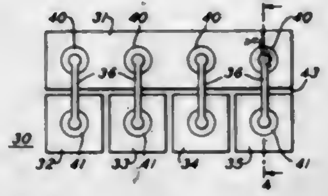
1. As a new article of manufacture, a felting needle comprising a body portion and a spur having a convex material engaging surface at its lower end formed between downwardly converging lateral surfaces of the spur.

3,307,239
METHOD OF MAKING INTEGRATED SEMICONDUCTOR DEVICES

Martin P. Lepselter, Franklin Park, and Daniel A. Naymik, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 18, 1964, Ser. No. 345,696
5 Claims. (Cl. 29—25.3)

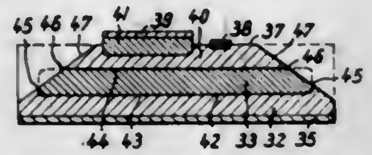
1. The method of making an integrated circuit element comprising fabricating a mosaic of vitreously bonded individual semiconductor wafers in the form of a slice, diffusing into at least a portion of said wafers significant impurities to form pn junctions in said wafers, forming a

protective oxide coating on said diffused surface, opening holes through said oxide coating to expose underlying semiconductor material, depositing a thin layer of a first metal on said oxide and said exposed semiconductors material, depositing a heavier layer of a second metal on said first metal, depositing on a limited portion of said mosaic a heavy layer of gold interconnecting individual semiconductor devices of said array thereby defining integrated circuit elements, subjecting said array to a chemical treatment to remove the vitreous bonding between said individual wafers thereby separating said slice into said circuit elements, removing from said circuit elements the layers of said first and said second metals not covered by said gold, said circuit elements being mechanically supported thereafter by said metal interconnections.



3307,240
METHOD FOR MAKING A SEMICONDUCTOR DEVICE

Karl-Heinz Ginsbach, Belecke-Mohne, and Aloys Sonntag, Sichtigvor uber Soest, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Dec. 23, 1963, Ser. No. 332,807
Claims priority, application Germany, Dec. 24, 1962, L 43,779
11 Claims. (Cl. 29—25.3)



1. In a method of making a semiconductor device wherein a semiconductor slab of one type conductivity has a continuous zone of the opposite conductivity diffused thereinto and about the entire surface thereof to form an at least substantially uniform thickness using doping material of the opposite conductivity type, the improvement comprising the steps of:

(a) alloying an ohmic contact into one surface of the semiconductor slab which has a portion of one type conductivity extending at least substantially parallel to the slab surface and which portion is surrounded on all sides by a zone of the opposite conductivity type formed by diffusion, said contact extending up to the slab edge;

(b) connecting a rectifying contact and an ohmic contact on the other slab surface in a position spaced a certain distance from the slab edge; and then

(c) grinding a chamfer at the slab edge starting from said other slab surface, the chamfering being performed along the entire periphery so that the pn-junction between the diffusion zone and the portion encompassed by the diffusion zone is separated into two pn-junctions which are no longer connected with each other and whose lines of intersection with the chamfered surface have a minimum spacing from each other along this surface which is larger than the shortest distance between the two pn-junctions which are formed.

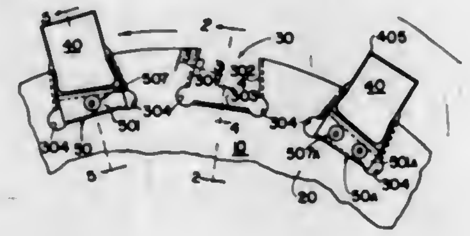
3,307,241
PROCESS FOR MAKING CATHODES

Paul Wythe Crapuchettes, Atherton, Calif., assignor to Litton Precision Products, Inc., San Carlos, Calif.
No Drawing. Filed Oct. 14, 1963, Ser. No. 316,176
3 Claims. (Cl. 29—25.17)

1. The process for preparing a cathode for an electron discharge device which comprises the steps of drawing a refractory metal cup having external dimensions at at least its emitting portions slightly smaller than the cathode to be prepared, flame-spraying a matrix of tungsten on said cup in such amounts as to bring the cathode up to size, vacuum-firing said sprayed cup to remove any impurities from said tungsten, and impregnating said tungsten matrix with an electron emitting substance.

3,307,242
SEGMENTAL SAW TOOTH CLAMP

Louis L. Cofran, Youngstown, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed July 17, 1964, Ser. No. 383,458
5 Claims. (Cl. 29—105)



1. In a segmental saw including a blade provided with a socket arranged in its peripheral edge and having a salient inner wall and a pair of recessed side walls, a cutting tooth inserted in said socket and having a salient inner edge facing said inner wall and a pair of salient side edges received in said side walls, the combination therewith of a clamping means for securing said tooth in said sockets and urging said tooth against said side walls comprising a pair of elongated plates of laterally diminishing cross sections and having their narrower sides facing each other, an outer pair of recessed edges engaging said inner edge of said cutting tooth and an inner pair of recessed edges engaging said inner wall of said socket, said outer pair of recessed edges engaging said inner edge substantially along its entire length, said inner pair of recessed edges engaging said inner wall substantially along its entire length, and means for fastening said plates together.

3,307,243
ROTARY TOOL

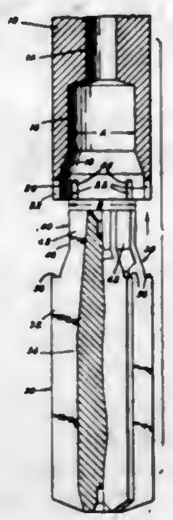
Rudolf W. Andreasson, 780 W. Maple Road, Birmingham, Mich. 48009
Filed Dec. 21, 1964, Ser. No. 419,665
4 Claims. (Cl. 29—106)

1. In a coolant carrying rotary tool of the type using a driving shank and a co-axial bit on the working end thereof,

(a) an elongate bit having a flute and land configuration in cross-section between a cutting end and a shank end, the shank end having a portion with walls shaped to engage with a hollow driving shank,

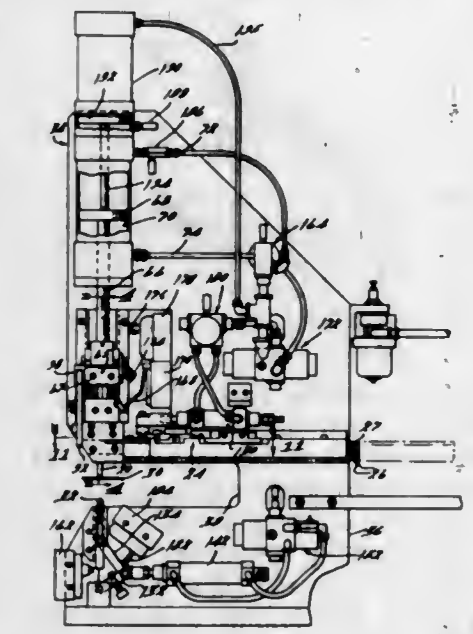
(b) a hollow driving shank having at the bit end a skirt portion to engage axially in a flute of a bit, and a recess portion having walls shaped to receive and engage the shank end of the bit,

the inner dimension of said walls of said shank being smaller than the outer dimension of the walls of said bit to the degree that said shank can be heated to expand to receive the shank end of the bit with the skirt portion of the shank engaged in a flute of the bit and cooled to grip said bit in a tight radial and axial bond, said flute having communication with the interior of said hollow shank in a passage at the surface of one of said walls.



3,307,244
METHOD OF APPLYING TERMINAL PINS TO PRINTED CIRCUIT BOARDS

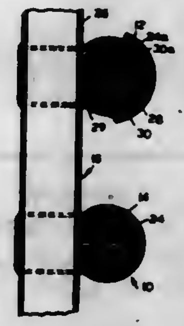
George T. De Shong, Camp Hill, Pa., assignor to Berg Electronics, Inc., New Cumberland, Pa., a corporation of Pennsylvania
Filed May 25, 1964, Ser. No. 369,789
6 Claims. (Cl. 29—155.5)



1. That method of securing a terminal pin to a circuit board having a hole therein which comprises vertically supporting the upper end of such pin by supporting means so that the lower end of said pin projects downwardly from said supporting means and is freely exposed as a pilot for attachment to said circuit board positioning said board while transversely disposed below said pin so as to align said hole with said pin, raising said board so as to position the rim of the hole therein around said pin, applying pressure against the lower surface of said board around said hole so as to move said board toward said supporting means and axially of said pin and, while said board is supported against said pin, applying pressure to said pin for moving it lengthwise thereof relative to said board so as to accurately position said pin in said hole.

3,307,245
METHOD OF MAKING A MEMORY MATRIX

Palmer H. Craig, % Florida Atlantic University, College of Science, Boca Raton, Fla. 33432
Filed July 2, 1963, Ser. No. 292,310
5 Claims. (Cl. 29—155.5)



1. A method of making a memory matrix structure comprising:

disposing a set of bare conductors perpendicularly to a second set of insulated conductors, said sets being in substantial mechanical contact to provide two junction areas each defined by a bare conductor and an insulated conductor; masking the junction areas; applying insulation material to the unmasked area; removing the masking;

applying a conductive material to said junction areas to encircle the conductors at the junction area to form a mechanical connection of the set of the bare conductors;

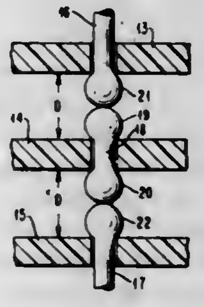
connecting the ends of the set of bare conductors together to form an electrodepositing cathode array;

electrodepositing magnetic material about the junction areas by using the connected ends of the bare conductors as a cathode,

and disassembling the cathode array by separating the connected bare wire ends to form a magnetic memory.

3,307,246
METHOD FOR PROVIDING MULTIPLE CONTACT TERMINATIONS ON AN INSULATOR

John T. Gulliksen, Peekskill, and Frank J. Bolda, Herbert J. Hallstead, and Alfred E. Oldaker, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,442
4 Claims. (Cl. 29—155.55)



1. The method of forming a mechanically secure contact protuberance of predetermined dimensions integral with the end of a conductive member comprising the steps of:

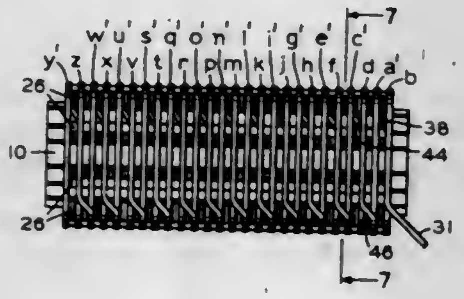
providing a metallic conductive member,

forming an aperture, in a supporting ceramic substrate, capable of snugly receiving said conductive member;

inserting a predetermined length of said conductive member through said aperture;

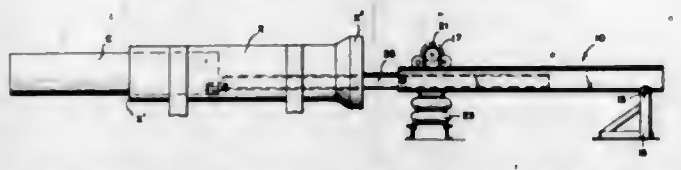
- clamping said conductive member to prevent movement thereof relative to said supporting substrate;
- flame heating said member at one end thereof to form a spherical contact protuberance of predetermined diameter at one surface of said substrate;
- removing said clamping;
- cutting said conductive member to form an opposed end of predetermined length opposite said contact protuberance;
- and flame heating said predetermined length of said opposed end to form a spherical contact protuberance adjacent to the opposite surface of said substrate.

3,307,247
METHOD OF WINDING COILS
Shannon D. Parker, St. Louis, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Feb. 12, 1964, Ser. No. 344,370
7 Claims. (Cl. 29—155.57)



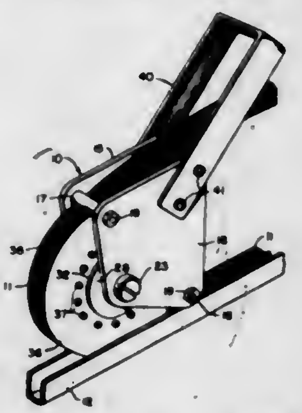
1. A method of winding a plurality of axially disposed disc coils onto a coil form comprising the steps of rotating the coil form in one direction while feeding insulated wire from a supply thereof to the coil form to produce a first spirally wound disc coil having concentric turns, without interrupting the continuity of the wire from the supply thereof rotating the coil form in said one direction while feeding wire thereto to produce a second spirally wound disc coil having concentric turns and disposed on the coil form axially spaced from said first coil, severing the wire from said supply at the outer turn of said second coil, collapsing the first coil, rotating the coil form in the opposite direction while preventing the second coil from unwinding and feeding the wire from the collapsed first coil onto the coil form to produce a spirally wound rewound first coil having concentric turns and with the second coil adjacent one side of the rewound first coil, rotating the coil form in said one direction while preventing the second and said rewound first coils from unwinding and feeding insulated wire from a supply thereof to the coil form to produce a third spirally wound disc coil having concentric turns on the coil form sufficiently axially spaced from and on the opposite side of the first rewound coil to provide space on the coil form for a fourth coil between the third and said rewound first coils, without interrupting the continuity of the wire from the third coil rotating the coil form in said one direction while preventing the second and said rewound first coils from unwinding and feeding wire thereto to produce a fourth spirally wound coil having concentric turns disposed between the third coil and said rewound first coil with one side of the fourth coil adjacent said opposite side of said rewound first coil severing the wire from the supply at the outer turn of said fourth coil, collapsing the third coil, and rotating the coil form in the opposite direction while preventing the second, said rewound and the fourth coils from unwinding and feeding the wire from the collapsed third coil onto the coil form to produce a rewound third coil on the opposite side of said fourth coil.

3,307,248
PULLING BEAM ASSEMBLY
Burton D. Smith, Atlanta, Ga., assignor to Vulcan Materials Company, Birmingham, Ala., a corporation of New Jersey
Filed Sept. 16, 1965, Ser. No. 487,865
2 Claims. (Cl. 29—234)



1. A pulling beam assembly for longitudinally propelling an inner core member into a horizontally disposed outer form, comprising an elongated, open-ended housing, a pulling beam longitudinally slidable in said housing, anti-friction means supporting said pulling beam in said housing, a motor fixed externally on said housing, a main sprocket driven by said motor, a slot in the top wall of said housing adjacent said sprocket, a pair of idler sprockets mounted on said housing on opposite sides of said driven sprocket, an elongated chain connected at opposite ends to said pulling beam and engaging said sprockets through said slot, whereby operation of said motor in either direction will transmit corresponding motion to said chain and pulling beam, and means at one end of said pulling beam for connecting the same to said inner core member.

3,307,249
GASKET INSERTING TOOL
Leo Hohoff, Park Ridge, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Mar. 26, 1965, Ser. No. 442,919
3 Claims. (Cl. 29—235)

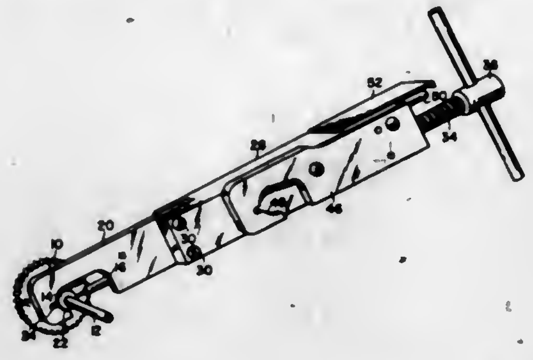


2. A gasket inserting tool of the type wherein a pair of rotatably mounted disks receive a gasket, compress the gasket and rotate the gasket into a channel including:
- at least one plate member having at least three corners;
- means mounted on the plate member at one of the corners for rotatably supporting the disks;
- means mounted on the plate member at a second of the corners for forcing a gasket into engagement with the disks, and
- means mounted on the plate member at a third of the corners for removing the gasket for engagement with the disks after the disks have rotated the gasket into the channel.

3,307,250
TAPER PIN DRIVER HAVING A HOOK SHAPED END WITH A RECESS
Harvey Richard Goodwin, Burbank, and Robert B. Mothersbaugh, Simi, Calif., assignors to General Precision, Inc., a corporation of Delaware
Filed Dec. 21, 1965, Ser. No. 515,342
5 Claims. (Cl. 29—257)

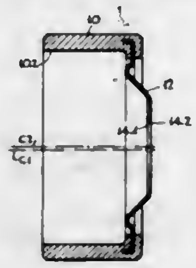
1. A taper pin driver comprising in combination:
- (a) a housing having a longitudinal threaded bore extending therethrough,

- (b) a screw member in said threaded bore and adapted to be threaded in and out of said threaded bore of said housing,
- (c) a replaceable jaw member detachably connected to one end of said housing,
  - (1) said jaw member being provided with a drive pin hole coaxial with the threaded bore in said housing,
  - (2) said jaw member having a hook for engaging the hub of a connecting member on a shaft,



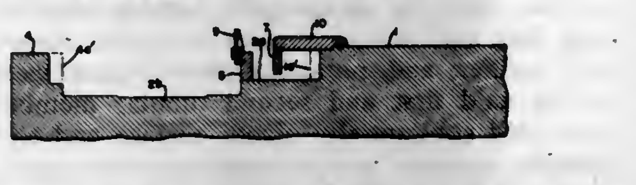
  - (3) said hook being centered upon the axes of the threaded bore in said housing and the drive pin hole in said jaw member,
  - (4) said hook being provided with a relief slot centered upon the axis of the drive pin hole in said jaw member, and
- (d) a drive pin slidably positioned within the drive pin hole in said jaw member,
  - (1) said drive pin being shaped at one end to mate with the taper pin and the opposite end adapted to mate with the end of said threaded screw member within said housing.

3,307,251
METHOD OF PRODUCING BALANCED ROTATABLE BODIES
Peter F. Magyar, Warren, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 6, 1965, Ser. No. 469,427
7 Claims. (Cl. 29—406)



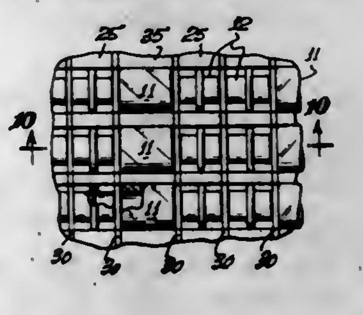
1. The method of forming a balanced rotatable body having an annular portion and an anchoring web portion, which comprises, gripping the body on its outer periphery and machining the internal surface of the article while turning about the axis established by the external gripping to bring the body into approximately a balanced condition about said first turning axis, balancing the body about said first turning axis to establish the direction and amount of unbalance, locating a correctional second turning axis from the balancing data, and finishing the machined body concentrically to final shape about said correctional turning axis.

3,307,252
METHOD FOR PROVIDING A NARROW FLANGE ON A LARGE ROTOR FORGING
Lloyd P. Grobel and Durward R. De Forest, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Sept. 16, 1964, Ser. No. 396,937
3 Claims. (Cl. 29—416)



1. The method of providing a fan ring and a centering ring on a generator rotor forging having a body portion and a coupling flange spaced by a reduced diameter spindle portion, comprising the steps of:
- providing extra metal on said coupling flange having a width slightly greater than the width of said fan ring, and also providing extra metal on the body portion having a width slightly greater than that of said centering ring,
- providing a fan ring by making radial and axial cuts into said extra metal portion of the coupling flange,
- providing a centering ring by making radial and axial cuts into said extra metal on the body portion,
- moving said fan ring axially to a location separated from the body portion by the centering ring and attaching it to said rotor spindle portion, whereby the centering ring is disposed between the fan ring and the body portion.

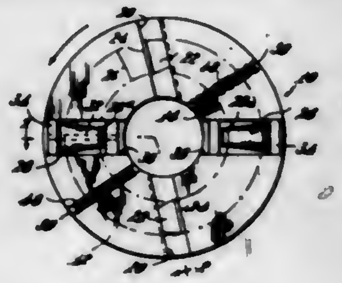
3,307,253
METHOD OF ASSEMBLING COAXIALLY ALIGNED FIRST AND SECOND TUBULAR MEMBERS
Robert W. Wullenwaber, Rolling Hills Estates, Calif., assignor to TRW Semiconductors, Inc., a corporation of Delaware
Filed Apr. 23, 1962, Ser. No. 189,353
6 Claims. (Cl. 29—433)



6. The method of assembling coaxially aligned first and second tubular members into telescoping arrangement wherein said first tubular members have a greater outer diameter than the outer diameter of said second tubular members and wherein said second tubular members include means to limit the telescoping position of said first members relative to said second members, said method comprising: providing in a substantially planar surface spaced apart first cavities adapted to receive said first tubular members in coaxial alignment; providing in said substantially planar surface spaced apart second cavities adapted to receive said second tubular members in coaxial alignment with said first tubular members, two of said second cavities being spaced between each two of said first cavities and in communication therewith; randomly disposing a large number of said first tubular members on said substantially planar surface; agitating said substantially planar surface to selectively position one each of said first tubular members in each of said first cavities; removing the excess of said first tubular members from said substantially planar surface without disturbing the tubular members disposed within said first cavities;

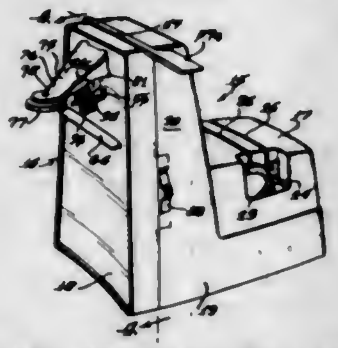
randomly disposing a large number of said second tubular members on said substantially planar surface; agitating said substantially planar surface to selectively position one each of said second tubular members in each of said second cavities; removing the excess of said second tubular members from said substantially planar surface without disturbing the tubular members disposed within said cavities; inserting an elongate member coaxially through said first and second tubular members disposed within said cavities; and, removing said elongate members containing said first and second tubular members thereon from said substantially planar surface and agitating said elongate member to place said first and second members in coaxial telescoping alignment.

3,307,254
CUTTING AND BURNISHING TOOL
Thurston V. Williams, Wilton, N.H., assignor to The O.K. Tool Company, Inc., Milford, N.H., a corporation of New Hampshire
Filed Apr. 5, 1965, Ser. No. 445,615
4 Claims. (Cl. 29—567)



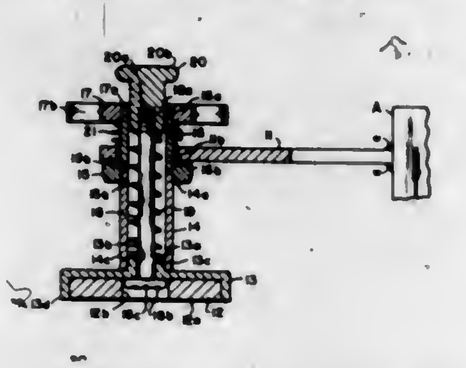
1. For cutting and burnishing a work surface, a tool comprising a rotary head having a driving shaft at one end and recesses distributed around the other end, radially disposed cutter blades projecting from recurrent recesses and radially disposed burnishing rollers mounted in intermediate recesses, and brushes that extend from said other end and each of which is obliquely disposed between one of said cutter blades and said roller that follows said blade.

3,307,255
CONTROL MEANS TO ENERGIZE A COMBINATION CAN OPENER AND KNIFE SHARPENER
Frederick M. Hubrich, Newark, Del., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 18, 1964, Ser. No. 390,285
14 Claims. (Cl. 30—4)



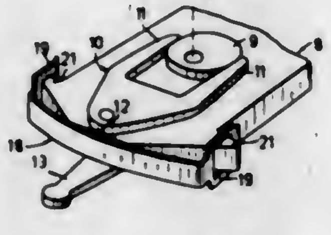
9. In an automatic can opener, the combination comprising a power driven can rotating wheel supported on an upright frame, support means for movably mounting a cutter on said frame, said cutter being movable between a can loading position in which said cutter and wheel are vertically spaced and a can cutting position in which said cutter overlaps said feed wheel, a magnetic lid retainer pivotally mounted on said frame above said cutter, said lid retainer being mounted on said frame independently of said support means, stop means on said lid retainer to limit downward pivotal movement of said retainer to a position in engagement with the lid of a can being opened therein, and cam means on said support means positioned to engage said lid retainer when said cutter moves to the can loading position to pivot said retainer upwardly to a retracted position.

3,307,256
MAGNETIC LID RETAINER FOR CAN OPENER HAVING LID RELEASE MEANS
Joseph B. Powers, 117 E. Grant St.,
New Castle, Pa. 16101
Filed Aug. 20, 1965, Ser. No. 481,237
10 Claims. (Cl. 30—6.4)



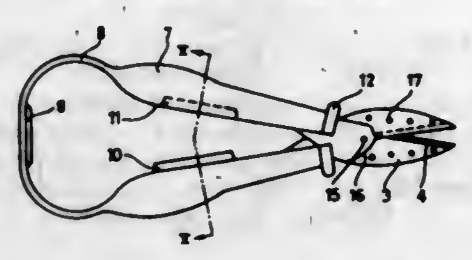
1. A lid manipulating device for a can opener which comprises, a support arm, a magnet for holding the lid of a can to be opened, positioning means carried by said support arm and projecting downwardly therefrom for carrying said magnet, said positioning means being movable with respect to said support arm toward the lid of the can to move said magnet into a holding position with respect to the lid, and means operatively positioned within and along said positioning means for relative movement with respect to the magnet into engagement with the lid for releasing the lid from the holding action of said magnet.

3,307,257
HAIR CLIPPER
Eduard Willem Tietjens, Drachten, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 273,023, Apr. 15, 1963. This application July 26, 1965, Ser. No. 474,556
Claims priority, application Netherlands, Apr. 17, 1962, 277,370
4 Claims. (Cl. 30—34.1)



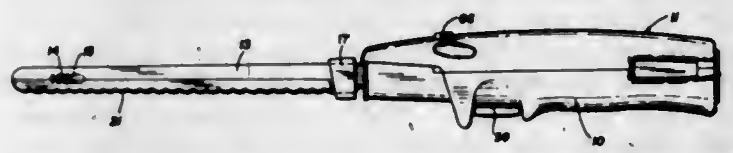
1. A hair clipper for a dry shaving apparatus having at least one drive shaft and a cutter mounted therein comprising a frame plate for mounting said hair clipper laterally of said cutters, an eccentric mounted on said drive shaft, a bifurcated element having the legs thereof engaged by said eccentric, a driving arm having one end connected to said hair clipper, said frame plate having a peripheral slot, and an intermediate connecting part being a spindle journalled in said slot, a blade spring enclosing said spindle in said slot, said spindle being connected at one end to the other end of said driving arm and at the other end to said bifurcated element.

3,307,258
SHEET METAL PLIER TOOL WITH INTERFOLIATED PIVOT JOINT
Rune Rolf Sigvard Hammeborg, Huddinge, and Inge Pilskär, Enskede, Sweden, assignors to Skandinaviska Telekompaniet AB, Stockholm, Sweden
Filed Mar. 11, 1965, Ser. No. 438,984
Claims priority, application Sweden, Mar. 19, 1964, 3,402/64
4 Claims. (Cl. 30—261)



1. A tool comprising two shanks articulated to one another at a joint, each shank comprising a jaw portion located at one side of said joint and a shaft portion located at the other side of said joint, each shank consisting of two blanks of sheet metal enclosing between them at said joint one blank of the other shank, the jaw portion of the outermost blank of each shank being bent inwardly towards the jaw portion of the other blank of the same shank and firmly joined thereto.

3,307,259
POWER OPERATED KNIFE
Arthur C. Christensen, Menomonee Falls, Wis., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed June 22, 1964, Ser. No. 376,670
7 Claims. (Cl. 30—272)



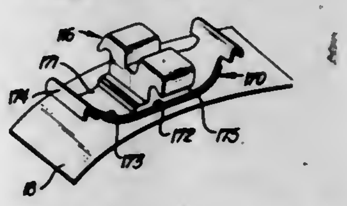
1. A power operated slicing knife comprising
(a) a housing,
(b) a pair of blades having tangs removably mounted in the housing,
(c) blade reciprocating means in the housing adapted to be connected to a source of power,
(c-1) said means including blade carriers and blade retainers attached to the carriers,
(d) means on the blade tangs engaged by the retainers, and
(e) manually operable blade releasing means mounted on the housing provided with an actuator within the housing located to bear simultaneously on the proximate faces of the retainers to move the retainers away from each other and out of tang engaging positions.

3,307,260
DENTAL PROSTHESIS FROM NORMALLY CRYSTALLINE THERMOPLASTIC POLYMERS
Robert H. Allen, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 5, 1964, Ser. No. 373,088
3 Claims. (Cl. 32—2)

1. A method of preparing dentures having a thermoplastic base plate which may be readily fitted to the mouth, said method comprising the sequential steps of:
(1) Forming a preform of said base plate from a normally crystalline vinylidene chloride resin while said resin is in a supercooled, essentially non-crystalline state;
(2) Warming said supercooled resin to a temperature above its second-order transition temperature, but at a temperature tolerable to human flesh;
(3) Finally shaping said base plate to the mouth while said resin is in a flexible, essentially amorphous condition, and
(4) Allowing said resin to crystallize to form a rigid, essentially non-deformable article.

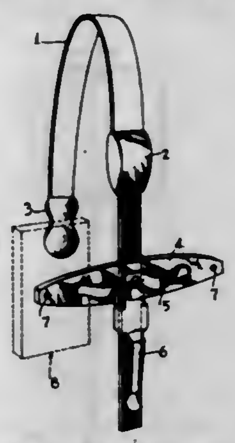
3. A denture having a base plate formed essentially from a crystalline vinylidene chloride resin.

3,307,261
ORTHODONTIC DEVICE
Cecil C. Steiner, 153 S. Lasky Drive,
Beverly Hills, Calif. 90212
Filed May 8, 1961, Ser. No. 112,153
2 Claims. (Cl. 32—14)



1. An orthodontic device comprising a bracket and rotation arm unit including a forward portion and a rearward portion, the forward portion being adapted to have an arch wire seated therein, and the rearward portion being adapted to have secured thereto a tooth engaging band, said unit comprising a bracket formed of relatively hard non-yielding material, and a laminated plural leaf rotation arm affixed to the bracket, each leaf embodying flexible wings formed of spring material extending laterally from the bracket, the extreme free end portions of one of said wings of one leaf being adapted to bear upon the arch wire at a point spaced from the bracket sufficient for the wing to be flexed, whereby force may be stored in the wings of the leaves of the rotation arm by initial deformation of the same from their position of repose to bear upon the arch wire and the force be delivered over a period of time as the wings seek return to their position of repose.

3,307,262
DEVICE FOR LOCATING THE EXACT CENTER OF THE CONDYLE BY USING EXTRA ORAL RADIOGRAPHY
Hyman F. Chaiken, Wilkes-Barre, Pa., assignor to The J. Bird Moyer Company, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 4, 1963, Ser. No. 321,234
2 Claims. (Cl. 32—19)



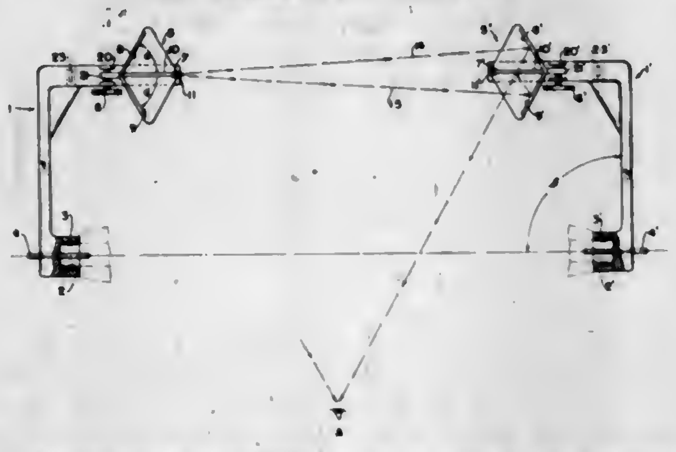
1. Device for locating externally the center of an interior anatomical member such as a condyle, said device comprising: (A) a flexible head bow adapted to fit over and grip the head of a patient and having at least one continuation sufficiently long to extend across the external surface overlaying said interior anatomical member of said patient; (B) a transparent indicating member adjust-

ably fastened to said continuation and having at least one small metal mass embedded therein near an extremity thereof; and (C) film-holding means fastened to said indicating member and adapted to removably hold X-ray film over said metal mass.

3,307,263

TOE-IN GAUGE

Leo B. Castiglia and John Castiglia, Plainview, and Thomas Castiglia, Hicksville, N.Y., assignors to Wheel Aligning Necessities, Inc., a corporation of New York
Continuation of application Ser. No. 89,843, Feb. 16, 1961. This application June 25, 1964, Ser. No. 379,440
15 Claims. (Cl. 33—46)

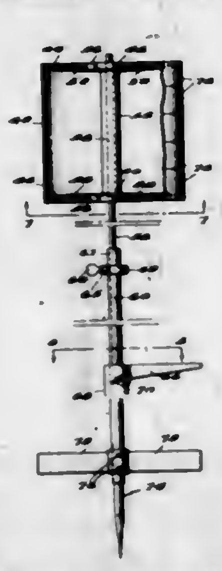


1. A device for adjusting wheel toe-in of a vehicle comprising two separate matching members, a positioning means for positioning said matching members with respect to the wheel spindle and parallel to the wheel plane of said vehicle, an adjustable support arm secured to each said matching member, a leveling means attached to each said matching member, and an optical alignment unit secured to each said matching member, each said optical alignment unit in turn comprising a reference marker, a split image reflecting means for presenting a split image of the other said reference marker, and a control means for controlling the position of each optical unit with respect to the longitudinal axis of the vehicle; whereby the correct toe-in of the said wheels is accomplished when the split image of each said reference marker in the opposite optical alignment unit is brought into alignment by adjustment of said wheels.

3,307,264

GRADING INSTRUMENTS

Charles Wolfe, Jr., 269 N. Washington St., Bloomfield, Ind. 47424
Filed Nov. 17, 1965, Ser. No. 514,742
7 Claims. (Cl. 33—73)

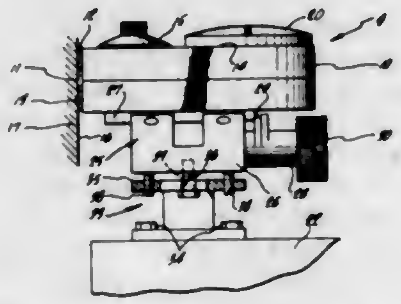


1. A grading instrument comprising a post, a target, said post including a rod and a tube, said rod mounted in telescoping relation in said tube, means for releasably clamping together said rod and tube, said target having a longitudinal bore therein, said tube and a portion of said rod having substantially the same outside diameter, said target bore having a larger diameter than said tube and rod, means for clamping said target selectively to said tube and said rod, and means for supporting the tube upright, whereby the height of the target relative to the post is adjustable.

3,307,265

DISTANCE MEASURING BY FRICTION WHEEL INSTRUMENTS

Frederick P. Jenks, Los Angeles, and Edward J. Williams, Woodland Hills, Calif., assignors, by mesne assignments, to Primus Mfg., Inc., San Lorenzo, Puerto Rico
Filed Mar. 1, 1965, Ser. No. 436,049
7 Claims. (Cl. 33—141)



1. In a measuring instrument having a circular metal metering wheel of precisely predetermined circumferential extent, means for rotatably mounting the wheel so that the periphery of the wheel is engaged in rolling engagement with a metal surface along which measurements are to be made and for movement relatively along the surface, means for urging the wheel mounting means toward the surface so that the wheel frictionally engages the surface with sufficient force that the wheel rotates solely and faithfully in response to relative movement of the wheel mounting means along the surface, and means operable in response to rotation of the wheel for indicating precisely the distance the wheel mounting means moves relative to the surface, the improvement comprising a peripheral surface on the metering wheel curved convexly radially outwardly of the wheel about the circumference of the wheel, said radially outwardly convex curvature having a radius of curvature in cooperation with the extent of the peripheral surface axially of the wheel sufficient that the plane of rotation of the wheel is pivotable about a line parallel to the measurement surface to vary, by an amount adequate to compensate for localized deformation phenomena in the wheel and the measurement surface, the effective circumference of the wheel relative to said precisely predetermined circumferential extent.

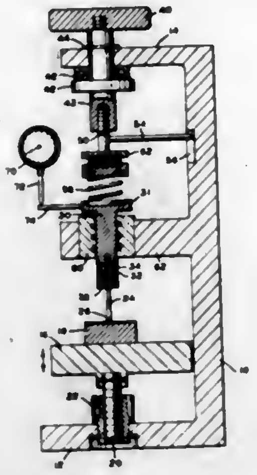
3,307,266

METHOD AND APPARATUS FOR MEASURING THE THICKNESS OF A LAMINAR LAYER

Henry F. Miserocchi, Cos Cob, Conn., assignor, by mesne assignments, to Branson Instruments, Inc., Stamford, Conn., a corporation of Delaware
Filed Mar. 11, 1965, Ser. No. 438,896
12 Claims. (Cl. 33—172)

1. Method of measuring the thickness of a laminar layer on material, said layer and material having different surface compliances, comprising:
applying a mechanical resonating probe having a contact surface to said layer and causing said probe to vibrate at a resonant frequency;
applying to said probe increasing force to cause said contact surface to increasingly penetrate said layer;
denoting the shift in resonant frequency of said probe as a function of increasing force, and

establishing the depth of penetration of said contact surface through said layer into said material upon

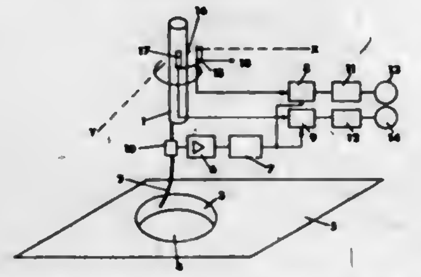


the occurrence of a significant change in frequency shift.

3,307,267

METHOD AND APPARATUS FOR ASSESSING THE COORDINATES OF THE CENTRE OF A ROUGHLY CIRCULAR FORM RELATIVE TO A FIXED AXIS

John D. Barr and Richard E. Reason, Leicester, and Peter Frederic Thomas Cryer Stillwell, Aldershot Hampshire, England, assignors to The Rank Organisation Limited, London, England, a British company
Filed Dec. 19, 1963, Ser. No. 331,892
Claims priority, application Great Britain, Dec. 19, 1962, 47,990/62
5 Claims. (Cl. 33—174)

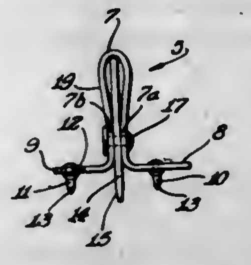


1. An apparatus for determining the co-ordinates of the centre of an approximately circular form, such as the form of the surface of a shaft or a hole lying in a predetermined plane, relative to a predetermined system of co-ordinates, comprising a feeler for sensing said approximately circular form, rotatable spindle means mounting the feeler for rotation about an axis located within said approximately circular form in a known position relative to said system of co-ordinates for sensing said approximately circular form, a transducer mounted on said spindle and connected to said feeler for generating an electrical signal containing a fundamental component representative of the eccentricity of the centre of said approximately circular form, a filter connected with the output of said transducer for separating said fundamental component from the remainder of the signal generated by said transducer during a given revolution of said feeler, sampling means coordinated respectively to each of two different sampling points located 90° apart around the axis of rotation of said feeler in a known position relative to said system of co-ordinates, means connecting the output from said filter to each of said sampling means, switching means coordinated respectively to said sampling means for controlling the operating instants thereof, said switching means being mounted for actuation in succession at said sampling points by rotation of said spindle means, and means connected to the respective outputs of said sampling means for indicating the respective amplitudes of said fundamental component at said locations of said different sampling points during the same revolution of said feeler in which said fundamental component is separated out from the remainder of the signal generated by said transducer.

3,307,268

SASH LOCK TEMPLATE

William H. Deacon, Sr., 1041 Marengo Ave., Forest Park, Ill. 60130
Filed May 26, 1964, Ser. No. 370,208
5 Claims. (Cl. 33—189)

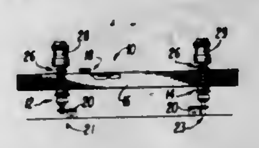


1. A sash lock template comprising a heavy gauge sheet metal member including a folded upstanding body having opposed rear and front walls and oppositely extending rearward and forward foot flanges respectively on the lower ends of said walls,
depending sash lock mounting screw spotting projections on said flanges,
and a guide flange plate fixedly secured in said body between said walls and projecting downwardly below said projections to enter guidingly between check rails of a window assembly.

3,307,269

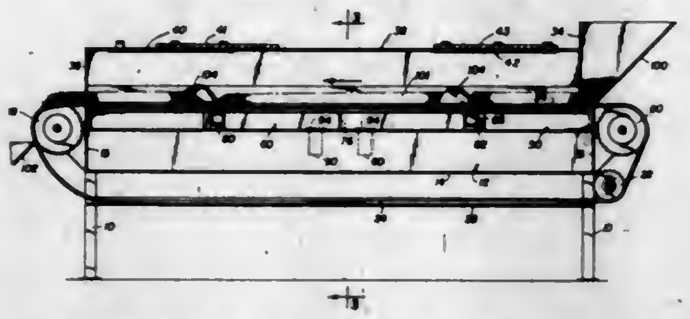
PRECISION LEVELING METHOD

Edward S. Karstens, P.O. Box 2093, Davenport, Iowa 52804
Filed Apr. 16, 1963, Ser. No. 273,457
3 Claims. (Cl. 33—214)



3. The method of leveling utilizing a level mechanism comprising a leveling bar having an adjustable bubble level thereon, said leveling bar also having a first adjustable pedestal secured adjacent one end and a second adjustable pedestal secured adjacent the other end, each pedestal having graduated adjustment means thereon, the relation between said adjustment means being such that for equal adjustments according to the graduations the second pedestal will move twice as far as the first pedestal, which method comprises the steps of mounting the leveling bar generally horizontally by placing said first pedestal over a first place and said second pedestal over a second place, said first and second places to be leveled with respect to one another, setting the adjustment means on the first and second pedestals to a zero position, adjusting the bubble level until it indicates level, moving the leveling bar so as to transpose the positions of said pedestals over the first and second places, adjusting the second pedestal to move said adjacent other end of the leveling bar substantially vertically until the bubble level indicates level, adjusting the first pedestal to move said adjacent one end of the leveling bar substantially vertically until the reading of the adjustment means thereon matches the reading of the adjustment means on the second pedestal, shimming the lower of the places to be leveled in an amount indicated by the reading of the graduated adjustment means, and verifying the leveling by repositioning the leveling bar over the first and second places in the same way said leveling bar was originally positioned over said places and noting whether the bubble level indicates level.

3,307,270
DRYING APPARATUS AND METHOD
Herbert W. Kruger, Portland, Oreg., assignor to Lamb-Weston, Inc., Portland, Oreg., a corporation of Oregon
Filed Oct. 21, 1965, Ser. No. 507,604
6 Claims. (Cl. 34—10)



1. The method of drying a wet, particulate product comprising:

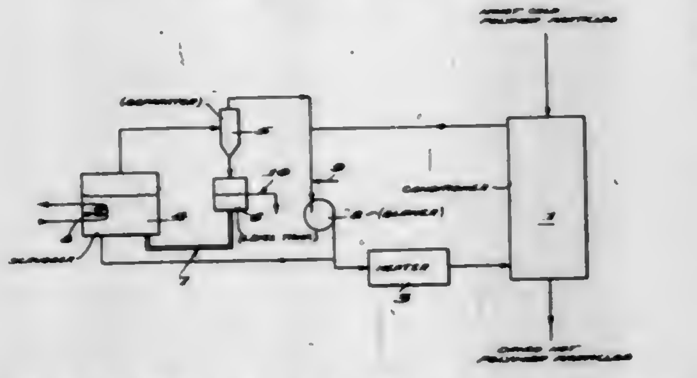
continuously feeding such product onto one end of a perforate support,

forcing a drying gas upwardly through said support at a velocity such that said product is substantially undisturbed thereby,

at predetermined intervals of time agitating said product by directing upwardly through said support a stream of gas having sufficient force to lift said product from said support and moving said stream, while maintaining the same in said upward direction, through said support, lengthwise of said support only in the direction from the opposite end of said support to said one end thereof, and

continuously removing said product from said opposite end of said perforate support.

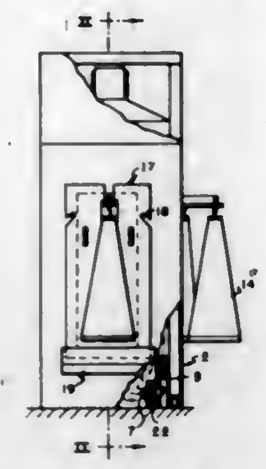
3,307,271
PROCESS FOR DRYING POLYMERS
Donald Lanny Simpson, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 6, 1964, Ser. No. 342,902
5 Claims. (Cl. 34—32)



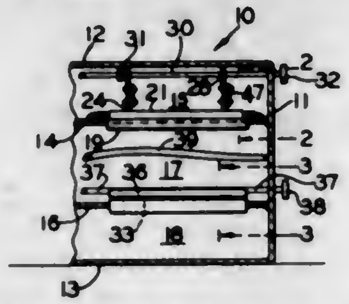
1. A single-stage process for drying polymer particles comprising circulating a gaseous drying medium in countercurrent flow with polymer particles bearing vaporizable liquid and keeping the vapor content of said drying medium lowered by recirculation of a portion of said drying medium through a volume of said vaporizable liquid.

3,307,272
HOT AIR CURING OVEN
Marvin E. Maynard, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Apr. 8, 1964, Ser. No. 358,345
7 Claims. (Cl. 34—219)

1. A hot air curing oven for continuously curing presensitized garments comprising a chamber having entrance and exit portions equipped with removable templates cut to the shape of the garment, heater and blower means for directing heated air to said chamber, a continuous conveyor member extending through said chamber and garment members carried by said conveyor, said garment members effecting a heat seal at the entrance and exit portions of said oven.



3,307,273
DAMPER SYSTEM FOR HOT GAS DRYING OVEN
Anthony F. Cafiero, Fairfield, and Arthur Vitagliano, Hawthorne, N.J., assignors to A. F. Cafiero & Co., Caldwell Township, N.J., a corporation of New Jersey
Filed Mar. 24, 1965, Ser. No. 442,443
5 Claims. (Cl. 34—225)



1. A damping system for a hot gas drying oven having a top, sides, bottom, and having a gas supply chamber superimposed over a web line chamber which, in turn is superimposed over a recirculation-exhaust chamber, comprising,

a gas supply chamber floor having a series of spaced laterally-elongated slots serving as discharge vents for hot gas,

a flat plate angularly disposed over each of said slots and generally of parallelogram shape and having a width greater than that of each slot and adequate to cover the entire slot, when in closed position, and having track-engaging means on its ends,

a track disposed over and near each end of said slot and designed to engage said plate-engaging means and to permit sliding of said plate over said slot so as to open one side of said slot or the other side thereof or the entire slot, when in open position, whereby the amount of hot gas passing therethrough into a recirculation-exhaust chamber may be controlled with respect to the slot area, and hand control means connected to the top of said plate and extending out of the side of said oven for adjusting the position of said plate over said slot.

3,307,274
TEACHING APPARATUS
David Glaser, 256 Greenbrook Road, Greenbrook, N.J. 08812
Filed June 4, 1964, Ser. No. 372,523
14 Claims. (Cl. 35—35)

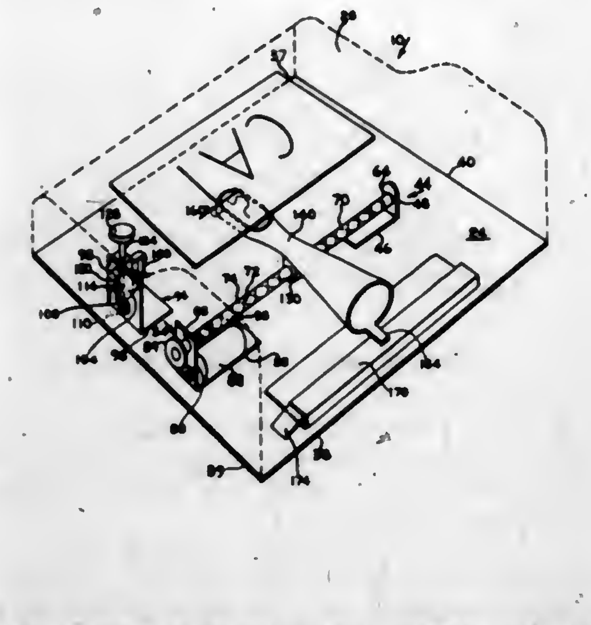
1. Teaching apparatus including

a message-carrier which carries a message in a plurality of different forms,

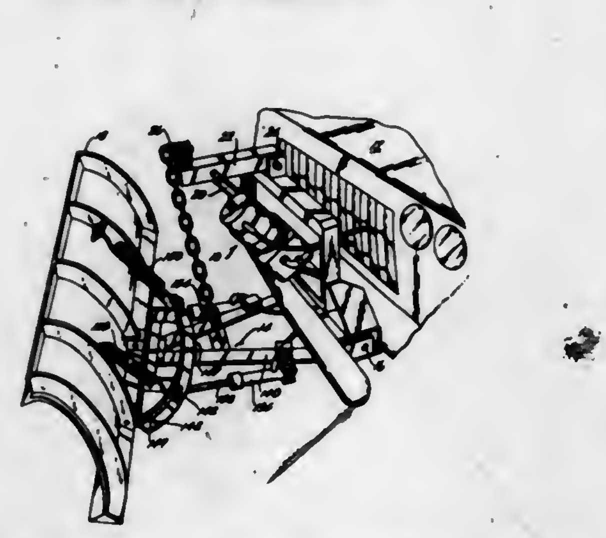
a message-reader mounted in operative relation with said message-carrier,

drive means coupled to said message-reader for driving said reader along first and second paths of travel back and forth adjacent to said message-carrier, and

auxiliary means adjacent to said message-reader and in operative relation with a portion thereof for (1) holding said message-reader out of reading contact with said message-carrier and unable to read a message on said first path of travel and (2) holding said message-reader in reading contact with said message-carrier and able to read a message on said second path of travel.



3,307,275
VEHICLE ACCESSORY UNIT AND POWER UNIT THEREFOR
Edward A. Simi, Milwaukee, Wis., assignor to Douglas Motors Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 12, 1965, Ser. No. 479,181
17 Claims. (Cl. 37—42)



2. A vehicle accessory system comprising, in combination, an operative member,

means for connecting said operative member to said vehicle for vertical movement and for additional movement independent of said vertcial movement,

an integral power unit including a ram connected to said member,

means supporting said ram for vertical movement to move said member vertically,

means in said power unit defining a reservoir for hydraulic fluid,

pump means in said power unit and communicating with said reservoir,

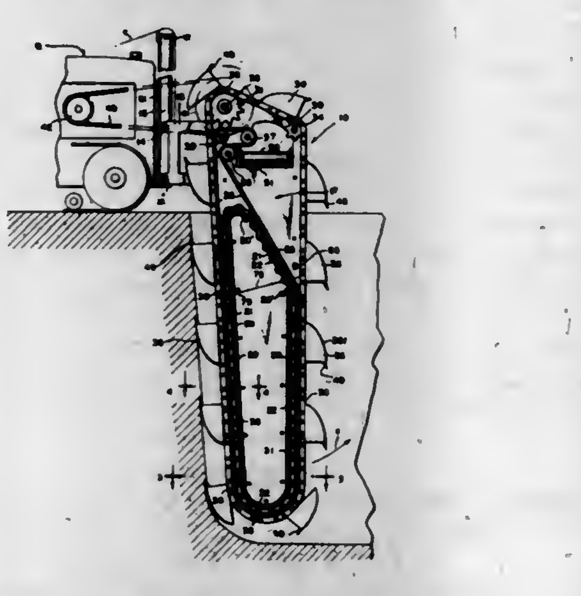
means defining a channel within said power unit extending between said pump and said ram through which hydraulic fluid is delivered to said ram to apply hydraulic pressure to and raise said ram,

means connected to said operative member and effective when energized to move said operative member independently of said ram and in addition to said vertical movement,

means defining a hydraulic fluid take-off in said power unit and in communication with said channel,

and means connecting said hydraulic fluid take-off to said means for moving said operative member independently of said ram so that said power unit can effect both movements of said operative member.

3,307,276
CONTINUOUS DIGGING APPARATUS
James C. Russell, Yakima, Wash., assignor to Landmark Engineering, Inc., a corporation of Washington
Filed Mar. 4, 1964, Ser. No. 349,213
12 Claims. (Cl. 37—90)



1. A trench excavating apparatus comprising:

an upright supporting boom adapted to be carried by a powered mobile vehicle travelling in a forward direction along a supporting ground surface;

chain support means mounted on said boom:

first endless chain means aligned longitudinally relative to the intended forward movement of said boom relative to the supporting ground surface and movably guided on said chain support means, said first endless chain means including an upright forward flight extending upwardly from the lower end of said boom and leading to a rearwardly directed upper flight;

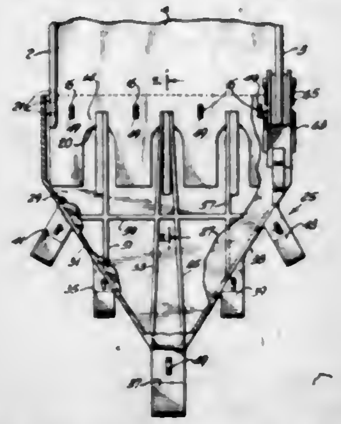
inwardly open dirt cutting and conveying means mounted on said first endless chain means for motion relative to said boom conjointly with first chain means and protruding outwardly therefrom, said dirt cutting and conveying means being directed upwardly along said forward flight of said first chain means;

power means on said boom operatively connected to said first chain means to impart longitudinal movement thereto in a manner such as to cause the forward flight of said first chain means to move relative to said boom in an upward direction;

and transverse belt means mounted on said boom inwardly adjacent to said dirt cutting and conveying means along the forward flight of said first chain means for motion conjointly with the forward flight of said first chain means, said belt means being of a width sufficient to span the inwardly open width of the dirt cutting and conveying means.

3,307,277
BUCKET ATTACHMENT

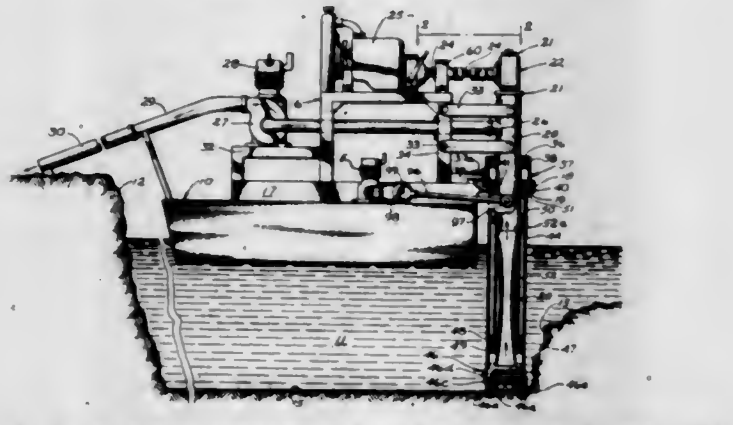
Joseph Kondracki, R.D. 1, Chester, N.Y. 10918
Filed Nov. 4, 1963, Ser. No. 321,309
2 Claims. (Cl. 37—141)



1. For an earth scooping bucket of the type having side walls apertured to receive connecting means for attaching side cutters and a lip portion having spaced apertures to receive a plurality of teeth securing wedges, an attachment to replace said side cutters and teeth comprising a body portion, a plurality of digging teeth and a pair of bracket members, said body portion having forwardly converging sides, curved rear portions to engage said bucket lip and conform to the curvature thereof, and rearwardly projecting upper and lower plates spaced to accommodate said bucket lip therebetween and having apertures spaced to align with the spaced apertures of the bucket lip, said digging teeth being integral with said attachment body sides, said bracket members having apertures to align with the apertures of the bucket side walls to receive through said brackets and side walls securing bolts.

3,307,278
SONIC DREDGING PROCESS AND APPARATUS

Albert G. Bodine, Jr., 7877 Woodley Ave.,
Los Angeles, Calif. 91406
Filed Nov. 24, 1964, Ser. No. 413,495
21 Claims. (Cl. 37—195)

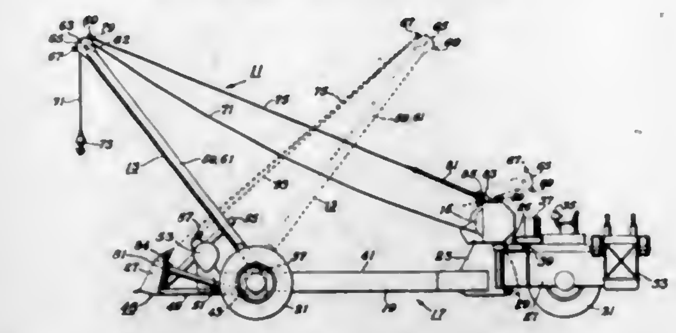


1. In a sonic apparatus for dredging earth material from the earthen bottom of a body of water, the combination of:

a dredge tube extending downwardly to a position adjacent to said earthen bottom,
a resonant sonic vibration radiator at the lower end of said dredge tube for stirring up earthen material at said bottom and bringing it into suspension in the water so as to form a slurry adjacent said lower end of said dredge tube,
a resonant elastic vibration system vibratorily coupled to said radiator,
sonic generating means for driving said sonic wave radiator, said generating means being operable at a frequency which will produce sonic wave vibration, and
means for circulating said slurry up said dredge tube.

3,307,279
MULTI-PURPOSE WORK VEHICLES

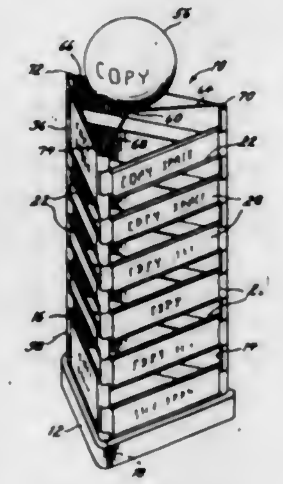
Robert G. LeTourneau, P.O. Box 2307,
Longview, Tex. 75601
Filed June 12, 1964, Ser. No. 374,776
2 Claims. (Cl. 37—117.5)



2. A multi-purpose work vehicle comprising:
(a) a chassis;
(b) a freely pivotable crane boom mounted on said chassis adjacent one end portion of the vehicle to pivot about a horizontal axis which is normal to the vehicle longitudinal axis;
(c) a dozer blade mounted to pivot about an axis parallel to said horizontal axis and protruding outwardly therefrom, said dozer blade having a portion engageable with the crane boom at a region intermediate the length thereof;
(d) powered means for pivoting said dozer blade; and
(e) with said dozer blade being interconnected with the crane boom by means comprising a tension member releasably secured to and spanning between the dozer blade and the crane boom when the blade and boom are positioned so that gravitational forces urge them away from each other.

3,307,280
DISPLAY APPARATUS

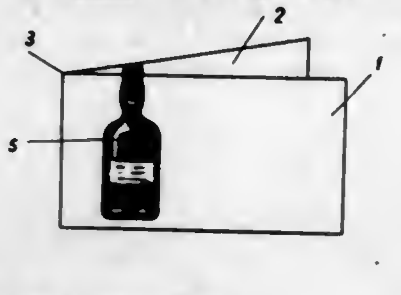
Harry G. Mazur, Melrose Park, Pa., assignor to Display Corporation of America, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 7, 1964, Ser. No. 402,212
13 Claims. (Cl. 40—124)



1. A display device comprising three posts at equally spaced apart distances, a plurality of copy retaining means, said retaining means extending between and being connected to selected pairs of said posts, said retaining means that extend between any selected pair of posts being mounted in vertically spaced apart relationship, means protruding from said retaining means for connecting said retaining means to said posts, at least one of said posts being common to more than one of said pairs of posts, said means protruding from said retaining means being connected to said common posts in alternate relationship, the lowermost and uppermost of said retaining means extending between one of said pairs of posts being greater in height than the remainder of said retaining means, whereby the edges of the uppermost retaining means extending between at least two of said pairs of posts are equal in height.

3,307,281
POSTAL CARD

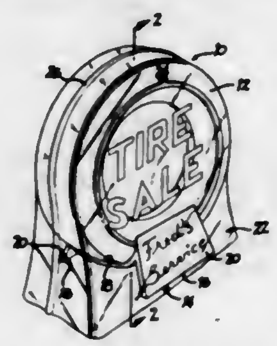
Fernando O. Mateo, Dr. Esquerdo 33, Madrid, Spain
Filed Sept. 10, 1965, Ser. No. 486,471
3 Claims. (Cl. 40—124.1)



1. A postal card, comprising
a front sheet,
a rear sheet secured by a fold to said front sheet,
a container of plastic material secured to the top face of said rear sheet and hermetically sealed, and receiving an alcohol-containing beverage therein,
a profile of said container provided at the top face of said front sheet and being identical in size, shape and position with said container to be superimposed on the latter in the folded position of said sheets.

3,307,282
TIRE DISPLAY

Bruce D. Caulkins, 19925 Varnier Road, Harper Woods, Wayne County, Mich. 48213
Filed Apr. 20, 1965, Ser. No. 449,427
1 Claim. (Cl. 40—125)

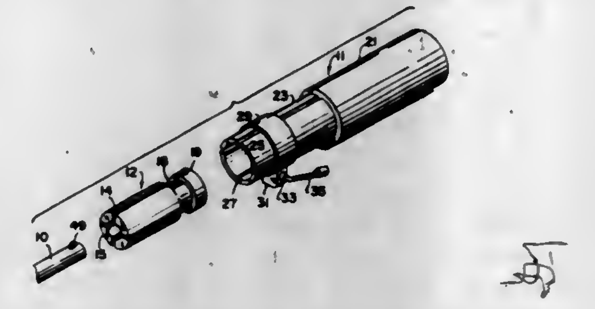


In combination, a substantially worn-out tire, and a ground engaging support holding the tire in a generally vertically upright position and a hollow plastic envelope completely enclosing the tire, said plastic envelope comprising (1) two sheets of plastic film, (2) a heat sealed joint between said sheets along three common sides of the envelope with the fourth side being open, (3) a pigmented coloration concealing the worn-out appearance of the tire from the view of onlookers, and (4) advertising indicia carried by at least one of said sheets, said support comprising a U-shaped recess engaging the lower side of said tire, indicia on exposed walls of said support viewable through said envelope.

3,307,283
FIREARM GRENADE LAUNCHER

Wilbur C. Cox, Lyndhurst, Ohio, assignor to Lake Erie Chemical Company, Rock Creek, Ohio, a corporation of Ohio
Filed Sept. 29, 1965, Ser. No. 491,274
2 Claims. (Cl. 42—1)

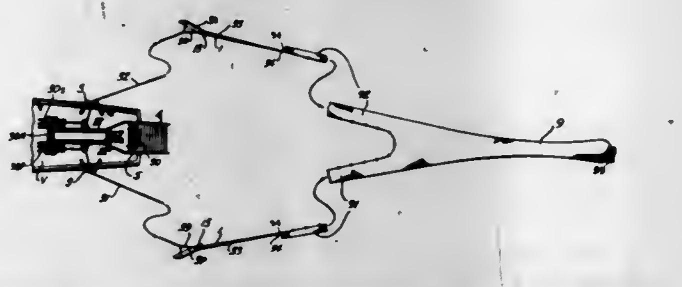
1. A projectile launcher for mounting on the barrel of a firearm comprising
(i) an elongated cylindrically-shaped projectile seating forward section,
(ii) a cylindrically-shaped muzzle mounting rearward section of resilient material fixedly jointed to and in coaxial position with said projectile seating section,
(iii) a plurality of narrow longitudinal slots extending a majority of the length of said muzzle mounting section and intersecting the end of said muzzle mounting section remote from its junction point with said projectile seating section,



(iv) an annular shoulder located interiorly of said muzzle mounting section at its junction point with said projectile seating section,
(v) a split strap externally mounted circumferentially about the rearward portion of said muzzle mounting section,
(vi) adjustment means fixedly joined to said split strap to vary its diameter thereby altering the diameter of said muzzle mounting section along its length, and
(vii) means externally mounted upon said projectile seating section to retain said projectile in its deactivated position until launch.

3,307,284
METHOD AND APPARATUS FOR DRUM TRAWLING

Frank J. Luketa, 5567 Greenwood Ave. N.,
Seattle, Wash. 98103
Continuation of application Ser. No. 448,442, Apr. 15, 1965. This application Dec. 13, 1965, Ser. No. 517,175
10 Claims. (Cl. 43—4.5)



1. A method of hauling a trawl net assembly aboard a trawler, which assembly has at least a codend and a divergent section including wings extending forwardly from said codend, and which is towed during trawling by a set of towing warps extending aft from the trawler to the net, which set of towing warps is provided with trawl doors ahead of the wings to spread the wings divergently as they lead forwardly, by gear aboard the trawler comprising a pair of horizontally spaced apart door stanchions for the said doors, separately operable first and second towing warp winch means for hauling in the towing warps, and a single, separately operable net winch means situated to haul in a hauling line means and at least some of the net wings together along a haul-in path passing between the said door stanchions; said method comprising:
(a) trawling with the trawl net assembly until it is desired to haul in the net;

(b) hauling in the towing warps on their respective said towing warp winch means until the said doors are in the vicinity of the respective said door stanchions;

(c) slackly connecting hauling line means between said net winch means and respective juncture points in the divergent section;

(d) tensioning said hauling line means and transferring at least the codend load from portions of the trawl net assembly forwardly of the said juncture points to the said hauling line means and thereby bypass the said towing warps and doors insofar as concerns bearing of at least the codend load; the said juncture points being situated aft of the said doors at locations inaccessible from on board the trawler at the time of transfer of at least the said codend load from portions of the trawl net assembly situated forwardly of said juncture points, and sufficiently aft of the doors to enable slackening of the portions of the trawl net assembly forwardly of the said juncture points after the said hauling line means are tensioned, the components of the said divergent section aft of the said juncture points being thereby reoriented from an initial forwardly diverging attitude to an attitude wherein they are substantially brought together and oriented along the said haul-in path between said door stanchions;

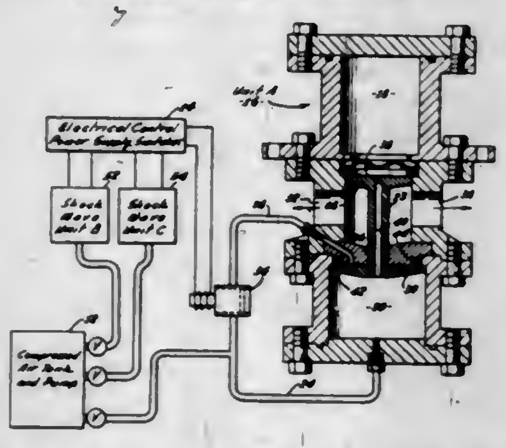
(e) rotating the said single, separately operable net winch means until the said hauling line means and at least a part of the net are wound thereon.

3,307,285
PNEUMATIC METHOD FOR CATCHING OR SCARING FISH

Melvin J. Wells, Torrance, Calif., assignor to Western Geophysical Company of America, Los Angeles, Calif., a corporation of Delaware

Original application Apr. 22, 1964, Ser. No. 361,725. Divided and this application Dec. 13, 1965, Ser. No. 513,228

8 Claims. (Cl. 43—4.5)


Electrical Control Power Supply Switches
Unit A
Compressed Air Tank and Pump

1. A method of preventing movement of aquatic organisms in a body of water toward a prohibited region thereof comprising:

placing at least one pneumatic shock wave generating device in said body of water between said prohibited region and said aquatic organisms; and

actuating said device to explosively release high pressure gas, thereby producing a shock wave in said body of water rising to an initial pressure peak within five milliseconds and propagating at high velocity.

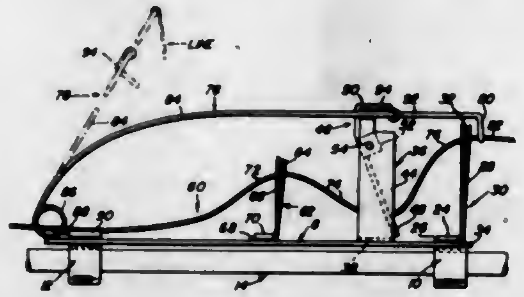
3,307,286
AUTOMATIC SPRING ARM FISHING DEVICE

Cecil C. Unger, % Broadway Imports, Inc., 2nd and Broadway, Harrods Creek, Ky. 40027

Filed Dec. 22, 1964, Ser. No. 420,356

8 Claims. (Cl. 43—15)

1. A spring loaded automatic fishhook setting and catching device comprising: a base having means thereon adapted to operatively mount the same on a fishing rod or the like, line positioning and guiding eyes carried by said base and through which the fishing line can be slidingly threaded to make a catch, an arm having spring biasing means connecting one end of the arm to said base, the other end of said arm being free, normally springable in a direction away from said base and having a line seating guide oriented and cooperable with said guide eyes and adapted to forcibly yank the line in a manner to set the fishhook in the mouth of the fish, said arm having a keeper spaced rearwardly from said guide, a trigger latch, means pivotally and operatively mounting said trigger latch on said base, said trigger latch having a catch releasably engageable with said keeper, and also having means for engaging a portion of the line therewith in a manner to trip the latch when the fish takes the fishhook and, in so doing, the arm exerts a lengthwise pull on the trippable line, said base comprising an elongated flat narrow plate, said line guiding eyes being spaced longitudinally from each other, said trigger latch being spaced from and situated in the space between said eyes, the means pivotally mounting said trigger latch on said plate comprising a U-shaped bracket having a bight portion secured atop said plate and spaced parallel limbs at right angles to the plane of said plate, said trigger latch being interposed in the space between said limbs and pivotally connected thereto and swingable back and forth in the space between said limbs.

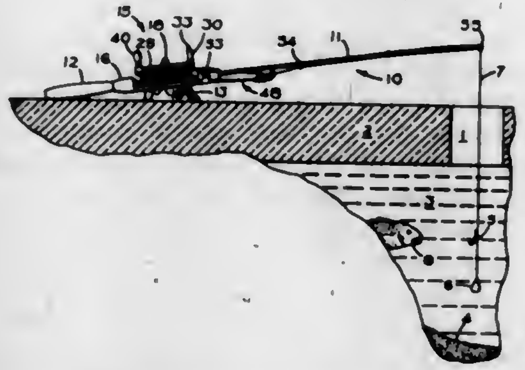


3,307,287
FISHING TACKLE

Herman L. Hagen, 420 Madison St., Walworth, Wis. 53184

Filed Mar. 5, 1965, Ser. No. 437,475

17 Claims. (Cl. 43—20)



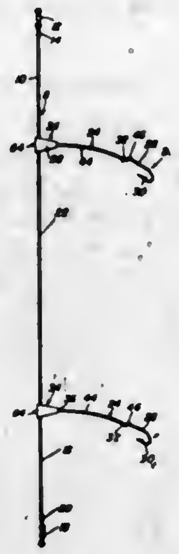
14. A fishing reel comprising a spool rotatable about a fixed pivot, a line fastened to and at least partially wound on said spool, means including a brake operable upon presence of slack in a portion of said line not wound on the spool to prevent rotation of the spool, said brake comprising a lever having one end engaging said line and the other end movable into engagement with said spool, and means for catching a selectable segment of said line and in cooperation with said spool preventing a portion of the line wound on said spool beyond the segment from being unwound.

3,307,288
TERMINAL TACKLE RIGGED WITH SELF-CONTAINED SPREADERS

Joseph Spina, 3420 Washington Road, West Palm Beach, Fla. 33405

Filed Nov. 2, 1964, Ser. No. 408,210

14 Claims. (Cl. 43—42.74)



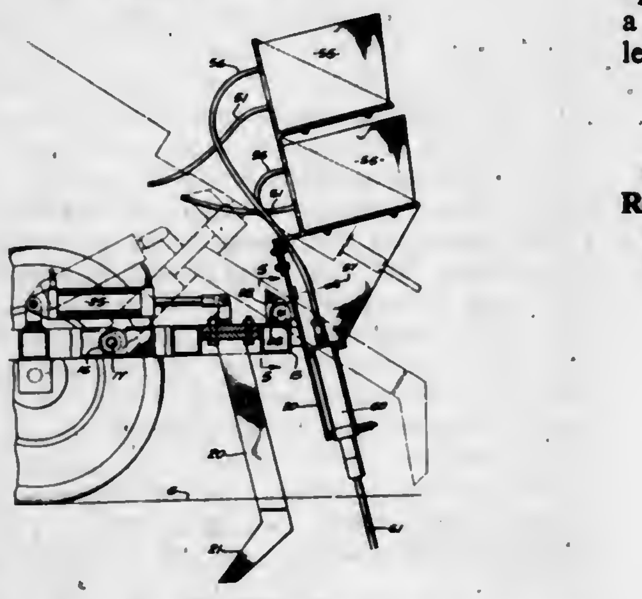
7. In combination with a leader adapted to hang vertically straight and of the type including at least one elongated laterally and generally horizontally outwardly projecting loop-type spreader intermediate its upper and lower ends adapted, at its outer end remote from said leader, to be removably interlocked with a loop carried on the end of an associated hook, a spreader loop closing and stiffening attachment comprising an elongated generally horizontally disposed tubular member telescoped over the inner end of said spreader adjacent said leader, said leader and said tubular member including coacting portions securing the inner end of said tubular member adjacent said leader to the latter.

3,307,289
ULTRASONIC APPARATUS FOR SUBSURFACE SOIL STERILIZATION

Lester F. Lemm, 8180 E. 21st St., Westminister, Calif. 92683

Filed Nov. 1, 1965, Ser. No. 505,920

5 Claims. (Cl. 43—124)



1. Apparatus for subsurface soil sterilization, comprising, in combination:

a transportable unit including a plurality of cutting blades adapted to be substantially vertically positioned in the ground and being spaced apart in a direction transverse to the direction of forward travel;

electrical power generating means carried by said transportable unit;

a plurality of ultrasonic transducers carried by said transportable unit, each being adapted to extend downwardly behind an associated one of said cutting blades;

a plurality of electrical oscillators carried by said transportable unit, each being adapted to oscillate at a predetermined ultrasonic frequency;

means coupling said power generating means to the inputs of all said oscillators for supplying energy thereto; and

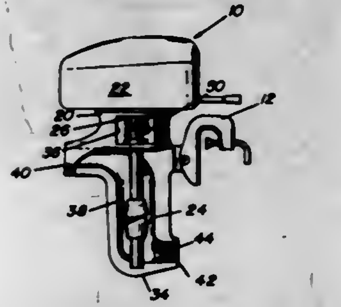
separate means coupling the output of each of said oscillators to a respectively associated one of said ultrasonic transducers for drivingly energizing the same.

3,307,290
TOY HYDROJET OUTBOARD MOTOR

Haakon O. Pedersen, 102 Timothy Drive, Maple Glen, Pa. 19002

Filed June 9, 1964, Ser. No. 373,685

6 Claims. (Cl. 46—39)



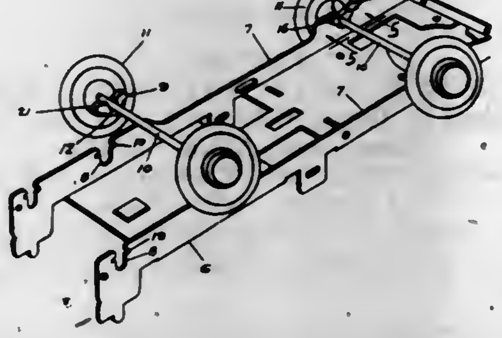
1. A toy hydrojet outboard motor for attachment to toy boats to propel them in water comprising, in combination; a casing formed of a pair of longitudinal, symmetrically opposite, complementary abutting halves defining an upper enclosure, a lower enclosure having a communicating inlet positioned below the surface of the water and a discharge nozzle visibly positioned above said surface; an axial flow impeller rotatably mounted in said lower enclosure; and a driving motor supported in said upper enclosure and connected to said impeller to rotate said impeller, draw water in the inlet, and expel it at high speed through said nozzle to provide a forward impelling thrust; said casing including means forming an opening spacing said upper and lower enclosures to form a water drainage path to protect said motor against water leakage from said lower enclosure.

3,307,291
PLASTIC AXLE BEARING FOR USE ON TOYS

Robert L. Cremer, Freeport, Ill., assignor, by mesne assignments, to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan

Filed Mar. 30, 1965, Ser. No. 443,879

13 Claims. (Cl. 46—222)



1. An axle bearing construction comprising, in combination, a bearing support having a generally rectangular opening with an entrance at one edge of said support

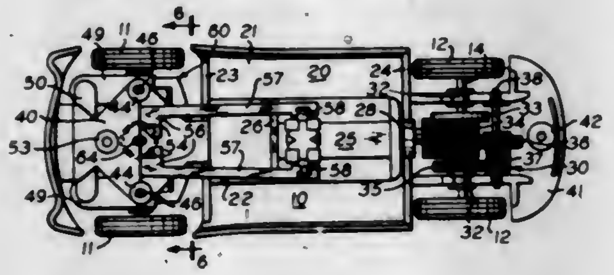
to accommodate an axle in transverse relation to said support, there being shoulders defined on opposite sides of said opening in the entrance, and generally U-shaped bearing means of flexible, resilient, nonmetallic bearing material to embrace said axle and be entered in said opening with said axle with the cross-portion of the U foremost and the arms of the U extending outwardly so as to engage and be retained at their outer ends behind the aforesaid shoulders.

3,307,292
STEERING AND CURRENT PICKUP MEANS FOR MINIATURE RACING CAR

Eugene W. Fileger, Girard, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York

Filed Apr. 2, 1964, Ser. No. 356,891

3 Claims. (Cl. 46—243)



1. In a miniature racing vehicle, a chassis; driving and steering wheels rotatably mounted on and supporting said chassis for movement of the vehicle along a track having a central guiding slot and a pair of contact rails each adjacent one side of said slot; an electric motor on said chassis; gearing connecting said motor to said driving wheels; a pair of stub axles rotatably mounting said steering wheels and pivotally mounted on said chassis; a link interconnecting said stub axles for conjoint movement of said steering wheels; a steering member pivoted to said chassis at a point spaced longitudinally from said link, and pivotally connected to said link intermediate the ends of the latter; a plow on said member engageable in the track slot to pivot said member to follow the track and to steer said steering wheels; and current pickup means engageable with the contact rail and electrically connected to said motor; the pivotal connection between said chassis and said steering member comprising a cylindrical tubular post and a pin engaged within said post; said current pickup means including a pair of contact segments on the outer surface of said post and each extending through less than 180 degrees; brush means engaged with said contact segments; a pair of contact shoes on said steering member engageable with said contact rails; and means electrically connecting said motor and said contact shoes to said contact segments and brush means for electrically connecting said contact shoes to said motor through said contact segments and brush means.

3,307,293
METHOD OF CONDITIONING SOIL

James R. Truax, 3717 Vera Cruz Ave. N.,
Minneapolis, Minn. 55422

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,857

4 Claims. (Cl. 47—9)

2. The method of treating soil for preventing erosion thereof and for conserving moisture therein, said method comprising

admixing an aqueous sodium alignate solution with an emulsifying agent to form an oil-in-water sodium alginate emulsion, said sodium alginate comprising at least .4 percent by weight of said sodium alginate emulsion,

reacting said oil-in-water sodium alginate emulsion with an aqueous solution of calcium chloride to form an oil-in-water calcium alginate emulsion and applying the oil-in-water calcium alginate emulsion to the surface of the soil to be treated,

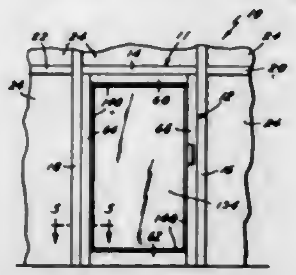
allowing said calcium alginate emulsion to harden and thereby form a continuous resilient film on the surface of the soil and in which the soil particles are bonded together.

3,307,294
ENTRANCE CONSTRUCTION

Norman Bienenfeld, Cranston, Byron H. Abedon, Providence, Richard E. Primeau, East Providence, and Arthur I. Blackman, Cranston, R.I., assignors, by mesne assignments, to The Alumiline Corporation, Pawtucket, R.I., a corporation of New York

Filed Mar. 23, 1964, Ser. No. 353,767

9 Claims. (Cl. 49—381)



1. In a door construction, a frame defining a door opening, a door assembly pivotally mounted on said frame in said opening and including an upper horizontal sash member, a lower horizontal sash member and spaced vertical sash members secured to said upper and lower sash members, all of said sash members being formed of a relatively thin gauge metallic material in a hollow construction, the thin gauge material being rolled to the hollow construction and the edges thereof being joined on an inner surface in an interconnecting lock seam, and a plurality of metallic corner clips located at the corners of said door assembly and interiorly of said horizontal and vertical sash members for securing said horizontal sash members to said vertical sash members, each of said corner clips including leg portions that are secured to adjacent surfaces of said horizontal and vertical sash members, each of said leg portions having a generally arcuate configuration for accommodating the lock seam formed on the sash members to which each corner clip is secured, said frame including an upper horizontal frame member, a lower horizontal frame member and opposed vertical frame members that are secured to said upper and lower frame members to define the door opening, each of said frame members being formed of a relatively thin gauge metallic material and being rolled to define a hollow construction, the inner edges of each of said frame members being interlocked to form a lock seam, and a plurality of clip members located at the corners of said frame and being secured interiorly of said horizontal frame members, bolts extending through said clip members for securing said vertical frame members to said horizontal frame members, each of said clip members including spaced horizontal flanges, one of which is cut out for accommodating the lock seam formed on the horizontal frame member to which each clip member is secured.

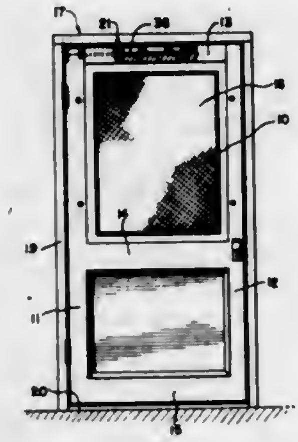
3,307,295
ANTI-SAG MEANS FOR DOORS AND THE LIKE

Carl G. Rolin, Rte. 1, Box 94, Spring Grove, Ill. 60081

Filed July 31, 1964, Ser. No. 386,687

5 Claims. (Cl. 49—396)

1. Anti-sag means for a door capable of swinging horizontally about a vertical axis, said door having a generally rectangular frame including a pair of horizontally spaced, substantially vertical frame members, one of said vertical frame members being closely adjacent to the pivotal axis of the door, said frame further including a transverse frame member extending between and having each of its ends connected to an upper end portion of a respective vertical frame member whereby the uppermost edge surfaces of said vertical frame members and said transverse frame member lie substantially in a common plane, comprising, a transversely extending, flat, elongated bar-like lever, said lever being arranged on edge and being disposed substantially completely in a transversely extending, relatively narrow groove formed in the uppermost edge surfaces of said transverse frame member and said vertical frame member closely adjacent the pivotal axis of the door, said lever having a hook-like portion on one end thereof adjacent thereto; securing means for rigidly anchoring one end of said lever to said vertical frame member adjacent the pivotal axis of the door including an anchor plate rigidly secured to an upper portion of said one vertical frame member closely adjacent the pivotal axis of the door, said anchor plate having a slot formed therethrough, said slot lying in a plane common to said groove, said hook-like portion extending through and engaging a surface of said anchor plate defining the upper end of said slot; and adjustable means carried by said transverse frame member for relative movement along a generally vertically extending axis, said adjustable means being disposed within a recess extending from the uppermost edge surface of said transverse frame member and intersecting said groove, said adjustable means being operably engageable with the end of said lever opposite said hook-like portion to apply a force thereto in a generally vertically downward direction, said downwardly directed force being counteracted by a vertically upwardly directed force tending to elevate said vertical frame member remotely spaced from the pivotal axis of the door, said adjustable means being movable along said generally vertically extending axis relatively to said transverse frame member to vary the magnitude of force applied to the end of said lever opposite said hook-like portion and the counteracting force.



3,307,296
ABRADING MACHINES

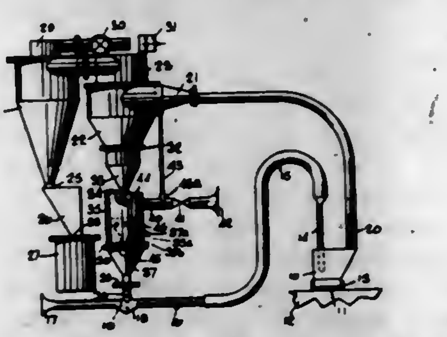
Stewart Ives Ashworth, Crimond, Outhill, near Studley, England, assignor to Abrasive Developments Limited, Solihull, England, a British company

Filed Feb. 26, 1964, Ser. No. 347,589

Claims priority, application Great Britain, Feb. 27, 1963, 7,808/63; Nov. 9, 1963, 44,305/63

5 Claims. (Cl. 51—8)

1. An abrading machine comprising directing means for directing air and abrasive against a workpiece, an input pipe for conveying air and abrasive to the directing means, a suction pipe for conveying a mixture of air, reusable abrasive, shattered abrasive and detritus from adjacent the workpiece, a separator to which the suction pipe delivers said mixture and which separates reusable abrasive from the remainder of the mixture, an upper hopper connected to the separator to be fed with reusable abrasive therefrom, means placing the upper hopper in communication with the suction pipe, a lower hopper to deliver abrasive by gravity into the input pipe, means continuously maintaining the interior of the lower hopper at substantially the same pressure as that in the input pipe, a middle hopper interposed between the upper and lower hoppers and communicating with them both, first valve means for selectively placing the middle hopper at one of the pressures of the suction pipe and the input pipe, cycling means for operating the first valve means so that the pressure in the middle hopper is changed continually, and abrasive controlling second and third valve means between the upper and middle hoppers and the middle and lower hoppers respectively, each of said second and third valve means comprising a valve member freely movable between open and closed positions in response to the net resultant force exerted on the member by differences in the pressures in the hoppers between which the valve member is interposed and the downward force exerted on the member by any abrasive in the hopper above the valve member, the second valve means opening and the third valve means closing when the middle hopper is at suction pipe pressure, and the second valve means closing and the third valve means opening when the middle hopper is at input pipe pressure.

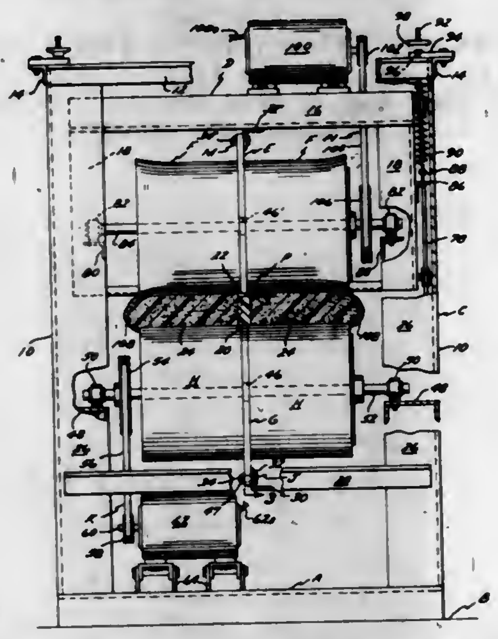


3,307,297
SURFBOARD FORMING APPARATUS AND METHOD OF USING SAME

Mark E. Lawson, Cocoa Beach, Fla.
(85 Mahiloa Place, Kailua, Oahu, Hawaii 96734)

Filed Sept. 21, 1964, Ser. No. 397,964

9 Claims. (Cl. 51—80)

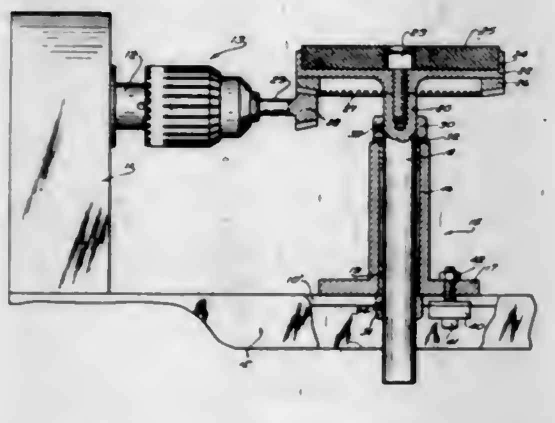


1. An apparatus for forming two elongate blocks of a buoyant material, the adjacent longitudinal sides of which are bonded to an elongate rigid member to permit at least the upper surfaces of said blocks to curve transversely as

well as longitudinally in conformity with the longitudinal profile of said member to define the core for a surfboard, comprising:

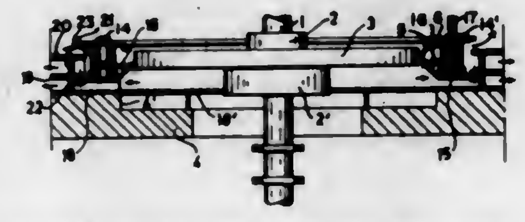
(a) a frame including two vertical, laterally spaced uprights;
(b) a lower vertical template guide intermediately disposed between said uprights which supports said rigid member by slidably engaging a lower longitudinal surface thereof;
(c) two lower rotatable, coaxially aligned, lower cutting members disposed on opposite sides of said lower template guide;
(d) first means for adjustably supporting said lower guide from said frame to dispose an upper edge of said lower guide flush with upper extremities of said lower cutting members;
(e) second means for concurrently driving said lower cutting members as said rigid member is moved longitudinally over said lower guide, with said blocks being subjected to said lower cutting members to permit the lower surfaces of said blocks to be shaped to the longitudinal profile of the lower edge of said rigid member;
(f) an inverted yoke disposed between said uprights;
(g) third means for guiding said yoke vertically relative to said frame;
(h) an upper vertical template guide disposed within said yoke and in vertical alignment with said lower template guide;
(i) fourth means for adjustably supporting said upper template guide from said yoke to permit the lower edge of said upper template guide to slidably engage the upper surface of said rigid member;
(j) two upper rotatable, coaxially aligned cutting members positioned on opposite sides of said upper template, said upper cutting members being oppositely curved to shape the upper surfaces of said blocks to a desired transverse curved profile as said blocks and elongate member are moved between said upper and lower cutting members; and
(k) fifth means supported from said yoke for concurrently driving said upper cutting members, with said upper cutting members also longitudinally shaping the upper surfaces of said blocks to the profile of the upper surface of said rigid member as said rigid member and blocks are moved longitudinally between said upper and lower cutting members.

3,307,298
HONING ATTACHMENT FOR LATHES
Richard G. Norris, P.O. Box 14, Cumberland, R.I. 02838
Filed Aug. 5, 1964, Ser. No. 387,625
3 Claims. (Cl. 51—259)



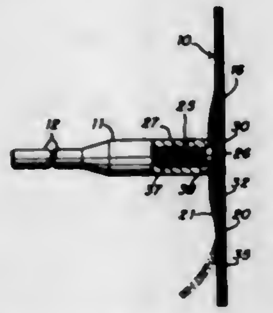
1. A honing attachment for a machine tool having a generally horizontal bed and a horizontal rotating shaft, comprising a base to engage the machine tool bed, means to clamp the base to the bed, said base being provided with an upstanding tubular member, a vertical shaft journaled in said tubular member, a table secured to the upper end of said shaft, abrasive material carried by the upper side of said table, power engaging means secured to the under side of said table and engaged by a driving means adapted to be attached to said rotating shaft of the machine tool.

3,307,299
DEVICE FOR REGAINING DIAMOND GRINDINGS (BOART) IN DIAMOND GRINDING
Louis de Beer, % N. V. Ahex, Erasmusweg 1077, The Hague, Netherlands
Filed June 29, 1964, Ser. No. 379,050
10 Claims. (Cl. 51—270)



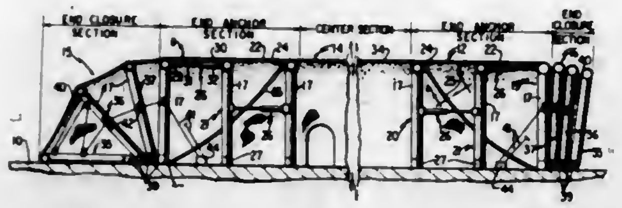
1. Device for regaining diamond grindings (boart) in diamond grinding on a grinding mill, comprising a horizontal rotatory grinding disc and a device for catching boart, the latter comprising a fixed flat ring, the inner circular edge thereof fitting substantially against the circumference of the said grinding disc and separates the air flowing outwardly from the upper and lower face of the said grinding disc from each other and a boart catching filter collar concentrically to said separating ring and above the upper surface thereof, wherein the air, flowing outwardly from the upper surface of the said disc, together with the diamond particles suspended therein enters rectilinearly, air outlet openings being provided at the outer side of the said filter collar.

3,307,300
ABRASIVE DISK UNIT
Albert Field, 1706 Salem Ave., Dayton, Ohio 45406
Filed Oct. 1, 1964, Ser. No. 400,760
8 Claims. (Cl. 51—389)



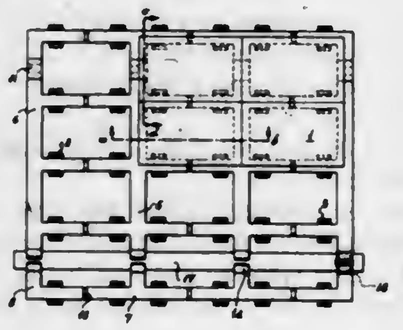
1. An abrasive disk unit adapted to be secured to a mandrel having an internally threaded bore therein, comprising a semi-rigid disk having a polygonal aperture of a preset configuration in the center thereof, a screw having a head portion and a threaded portion adapted to be received in the threaded bore, said head portion having an enlarged flat head which is larger in size than said aperture, a polygonal boss on said screw adjacent said flat head on the same side thereof as said threaded portion, said polygonal boss having said preset configuration so that said threaded portion can be inserted through said aperture to secure said screw to said semi-rigid disk against relative angular movement therebetween and with said head flat adjacent one side of said semi-rigid disk, a disk of relatively resilient material having one side secured to said semi-rigid disk, and an abrasive coated cloth disk secured to said resilient disk for cooperation therewith to remove particles of a work piece which may collect on said abrasive disk.

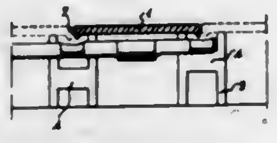
3,307,301
INFLATABLE BUILDING
Theodore Jacobsohn, Spring Valley, Bertram Julien, New York, Hans Meyer, White Plains, and Kurt Meyer, Riverdale, N.Y., assignors to Air-Tech Industries, Inc., New Rochelle, N.Y., a corporation of New York
Filed Apr. 20, 1965, Ser. No. 449,545
5 Claims. (Cl. 52—2)



1. In an inflated building formed of a framework of arched inflated hoses adapted to withstand high internal pressure and a sheet of material extending over said framework to form the outer skin of the building, the combination of first and second end sections each including a plurality of spaced hoses and a covering of material extending between said hoses and secured thereto; a central section including a covering of material extending between said end sections and attached to said end sections; tensioning cable means connected between the innermost and an outer hose of each of said end sections and tensioned to exert a force on said innermost hoses for longitudinally tensioning said covering material of said central section, said cable means being sewn into said covering material of each end section and extending in a catenary shaped path from adjacent one end of said outer hose thereof to adjacent the center of said innermost hose thereof and back to the other end of said outer hose; and bracing means between said hoses in each of said end sections for tensioning said covering material of said end sections, whereby said building is free standing.

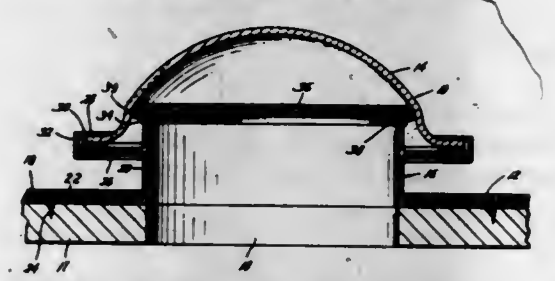
3,307,302
SYSTEM OF CONSTRUCTION OF TERRACES WITH DRAINAGE MEANS
Jesus Alberto Cagigal Gutierrez, 34 Zurbano St., Madrid, Spain
Filed July 31, 1963, Ser. No. 298,868
Claims priority, application Spain, Aug. 2, 1962, 279,748; Feb. 21, 1963, 285,333
9 Claims. (Cl. 52—11)





1. A terrace construction comprising, in combination, a plurality of individual H-shape, vertically elongated, substantially identical blocks resting loosely in longitudinally spaced relation on base means such as substantially parallel support beams; each block being an integral member including a pair of substantially parallel equal length legs interconnected by a substantially horizontal cross bar disposed nearer to one end of the block than to the other end, and spaced substantially from both ends; said blocks being positioned to define, in plan, a series of substantially congruent rectangles; a plurality of substantially congruent rectangular tiles each having a substantially flat upper surface and downwardly and inwardly sloping peripheral edges forming peripheral lips around the lower surface of the tile, each tile resting loosely on the upper ends of four of said blocks and having rectangular dimensions such as to extend substantially ~~to the~~ vertical plane midway between the legs of the supporting tile; adjacent tiles being in substantial abutment with each other at the lateral edges of their upper surfaces; and a rectangularly reticulated gutter network loosely resting on cross bars of said blocks and including respective branches each extending beneath the abutting edges of adjacent tiles; said gutter network having a drainage slope provided by orienting said blocks so that the blocks at the upper end of said slope have their cross bars nearer the upper ends of their legs, and the blocks at the lower ends of said slope have their cross bars nearer the lower ends of their legs.

3,307,303
FIREPROOF SKYLIGHT ASSEMBLY
Dan E. Bloxsom, 1210 N. Rice Ave., Houston, Tex. 77036
Filed Jan. 13, 1964, Ser. No. 337,201
2 Claims. (Cl. 52—80)



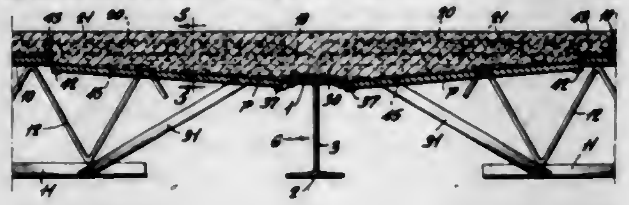
1. In a skylight construction for a roof having a skylight opening,

a skylight frame member having an outwardly extending base flange adapted to be secured to and to seat on the roof about the skylight opening,
an upstanding wall extending from the base flange and enclosing the skylight opening,
a flange member extending downwardly and outwardly from an upper portion of the upstanding wall member,
a flange extending outwardly from the lower outer end of the flange member, said flange being intermediate the ends of the wall member and above the surface of the roof when the skylight is received about the skylight opening,
a skylight dome extending over the wall and enclosing the skylight opening, the periphery of the skylight dome being disposed against and seating on the flange,
means securing the periphery of the skylight dome to the flange,
said frame member, said means and the skylight dome sealing the skylight opening, and
a skylight sheet-like fire resistant member disposed on the upper end of the upstanding wall and extending across the skylight opening, the sides of the dome adjacent the fire resistant member engaging the periphery thereof and securing it in place.

3,307,304
COMPOSITE STRUCTURAL SYSTEMS
Edward S. Klausner, 101 Park Ave., New York, N.Y. 10017
Filed June 2, 1964, Ser. No. 372,069
12 Claims. (Cl. 52—99)

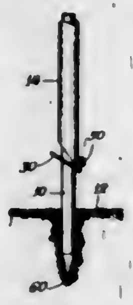
1. In an installation for erecting composite concrete and steel construction comprising a pair of spaced parallel structural steel girders and a plurality of transverse

parallel structural joists supported therebetween at predetermined distances therealong, each of said joists having a top channel chord, a bottom chord and an open web extending therebetween, a supporting block for each end of said joists welded to the top of the girders to form a shear connector thereat, a separate insertable high chair reinforcement provided with spaced integral downwardly extending forked legs resiliently engaging the internal walls of the channel of each top chord, clips resting on the upper flanges of said joists, said clips having laterally projecting frangible supporting lugs and extending into the spaces between said joists for temporarily supporting horizontally disposed sheet molding forms between said joists, a sloping sheet-molding form adapted to bridge the space between the top of each girder and the end of the horizontal molding form adjacent thereto near the level of the upper flanges of the joists, supporting clips for the ends of said sloping form resting on the top of each girder and said end of said last-mentioned horizontal molding form, a reinforcing mesh supported by the parallel high chair reinforcements above said molding forms, and a mass of hardenable concrete material above said molding forms embedding therein said high chair reinforcements, forked legs and reinforcing mesh.



3,307,305
ADJUSTABLE PLANT SUPPORT

Jerome T. Atkinson, Jr., Wilmette, Ill., assignor to Infograph Incorporated, Northfield, Ill., a corporation of Illinois
Filed June 13, 1963, Ser. No. 287,601
4 Claims. (Cl. 52—111)

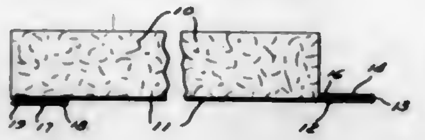


1. A adjustable plant support comprising a pointed stake adapted to be driven into the ground adjacent the plant to be supported, a telescoping tube fitted over said stake, a lower edge of said tube extending below the top of said stake, a collar fitted over said stake, an opening in said collar larger than the exterior dimensions of said stake to be readily movable therealong, and means on said collar for holding the bottom edge of said tube eccentrically of said stake whereby said tube lower edge depresses said collar eccentrically to frictionally grip said stake and hold the tube above the collar means.

3,307,306
INSULATION BLANKET STRUCTURE

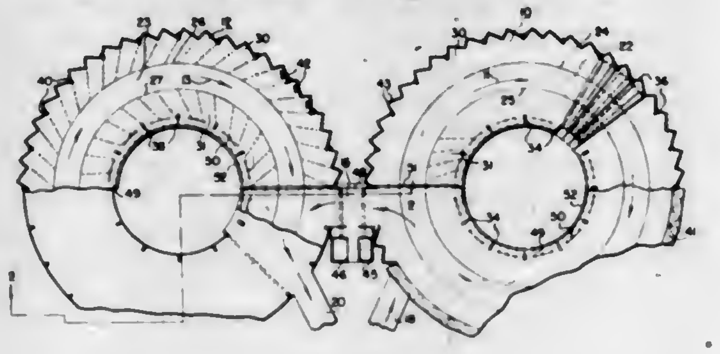
Robert E. Oliver, Cleveland, Ohio, assignor to Adsure, Inc., Cleveland, Ohio, a corporation of Ohio
Original application July 28, 1961, Ser. No. 127,640, now Patent No. 3,121,649, dated Feb. 18, 1964. Divided and this application Jan. 15, 1964, Ser. No. 337,785
6 Claims. (Cl. 52—173)

1. A flexible insulating assembly comprising an elongated body of flexible and compressible insulation, a flexible vapor barrier sheet having first and second oppositely facing surfaces, said first surface being secured to one side of said body, said sheet projecting beyond one longitudinal edge of said body forming a lip and terminating substantially flush with the opposite longitudinal edge, a pressure sensitive adhesive on said second surface of said sheet extending along the length of said sheet substantially adjacent to said opposite longitudinal edge, and a removable separation ribbon covering and protecting said adhesive, said first surface of said sheet in an area along said lip being formed to adhere to such adhesive on said opposite longitudinal edge of an adjacent identical insulation assembly.



3,307,307
HELICAL BUILDING

Richard F. Wittenmyer and Harry Hodson, Cleveland, Ohio, assignors to The Austin Company, a corporation of Ohio
Filed Mar. 2, 1964, Ser. No. 348,506
8 Claims. (Cl. 52—175)

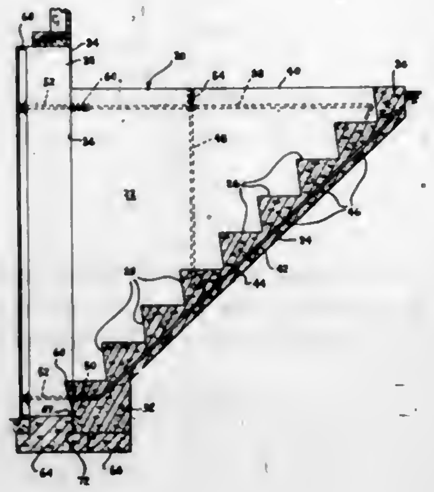


1. A vehicle parking building comprising a pair of substantially circularly helical, all-ramp structures positioned with their axes substantially vertical,
a helical, single lane driveway radially positioned intermediate each structure,
a plurality of vehicle stalls on each side of each driveway,
a plurality of columns arranged in an exterior circle and in an interior circle,
a plurality of exterior edge beams connecting adjacent exterior columns,
a plurality of interior edge beams connecting adjacent interior columns,
a plurality of wedge-shaped floor beam sections positioned with their long dimension bridging the interior and exterior edge beams and forming said driveway,
said columns and edge beams providing substantially entirely the support for said floor beam sections,
means cooperating with said edge beams to post-tension portions of said floor beam sections,
and crossover means connecting at least the upper ends of said structures.

3,307,308
PRECAST SUB-GRADE REINFORCED CONCRETE STAIRWAY

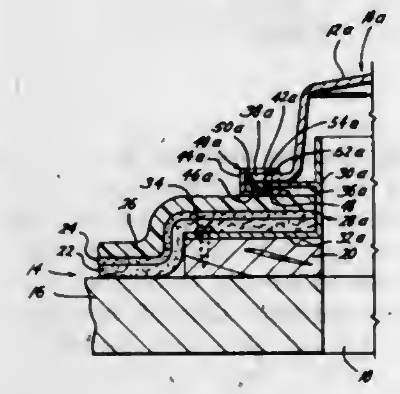
William C. Lyons, 186 Damascus Road, Branford, Conn. 06405
Filed June 9, 1964, Ser. No. 373,802
2 Claims. (Cl. 52—184)

1. A precast reinforced concrete stairway of unitary construction for attachment to a below-grade entrance in a foundation wall of a building, comprising a pair of inverted generally right triangular side panel sections, and a web section intermediate and integrally connecting said side panels along the hypotenuse edges thereof, said web section being formed on its interior face with stair treads and risers; fastening means embedded in said side panels which extend to and terminate adjacent the vertical edge faces of the respective side panels for fastening said stairway to the foundation wall to support said stairway in cantilever relation thereto, and reinforcing rod means embedded in said side panels along and adjacent the hypotenuse and horizontal edges thereof, respectively, which rod means form an extension of said fastening means embedded therein adjacent the vertical edge faces of the respective side panels.



3,307,309
SNAP LOCK CONSTRUCTION FOR LOCKING DOMES IN SKYLIGHT FRAMES

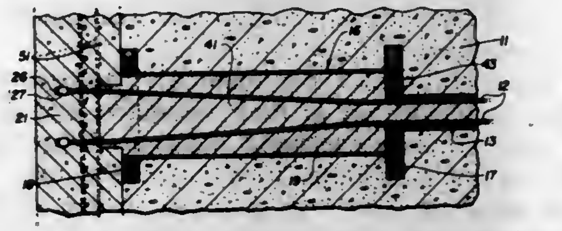
Dan E. Bloxsom, 1210 N. Rice Ave., Houston, Tex. 77036
Filed July 1, 1964, Ser. No. 379,565
3 Claims. (Cl. 52—200)



1. In a skylight construction,
a frame for securing the skylight construction about a skylight opening,
a peripheral seat carried by the frame,
a skylight dome, the marginal ends of which are seated on and supported by the seat,
retaining means securing the marginal ends to the seat, and
coacting locking means locking the retaining means to the frame,
said coacting locking means including interengaging locking elements snapped into locking engagement,
said coacting locking means being the sole means of securing the retaining means and thereby the skylight dome to the frame.

3,307,310
APPARATUS AND METHOD FOR ANCHORING POST-TENSIONING TENDONS IN PRESTRESSED STRUCTURES

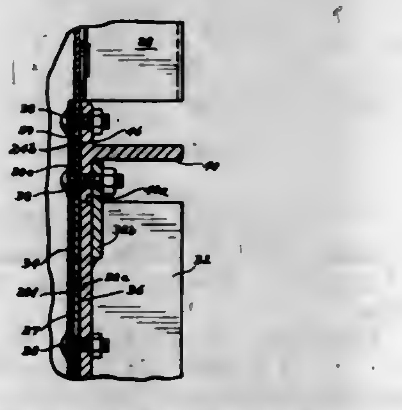
Jacques P. Kourkene, 3559 Jackson St., San Francisco, Calif. 94118
Filed Jan. 27, 1965, Ser. No. 428,505
10 Claims. (Cl. 52—230)



1. In a prestressed structure, said structure having a plurality of tendons under post tensioning tension passing therethrough, socket means disposed in said structure to form a recess at one location therein, the tendons extending through said socket means, a force transmitting plug for coupling the tendons to the structure, said force transmitting plug comprising grout formed and set about portions of said tendons extending through said socket means so that a portion of said plug is in force coupling relation to said structure, said grout plug having a dimension along the tendons sufficient to form a permanent bond thereto, said plug serving to transmit tensioning forces from the tendons to the structure in such fashion that portions of the tendons closer to the structure are more securely bonded without any slippage in force coupling relation to the grout plug than are portions of the tendons farther away from the structure, said socket means serving to radially confine said grout plug so that when said plug is compressed by said tendons, the bond between the tendons and the plug is increased due to radial expansion of the tendons and the plug against the radially confining wall of said socket means, said tendons including untensioned portions extending beyond the grout plug and away from the structure, and means securing said untensioned portions extending beyond the plug so that upon failure of the bond between said plug and tendons, the tendons are still retained by said last named means.

3,307,311
SILO CONSTRUCTION

John T. McCarthy, Thomas E. Curran and Zina H. Allison, Green Isle, Minn., assignors to T-Bar Steel Silo Co., Inc., Green Isle, Minn., a corporation of Minnesota
Filed Sept. 11, 1963, Ser. No. 308,218
2 Claims. (Cl. 52—245)



1. A silo structure having in combination,
an annular course comprising arcuate plate members,
said plate members having abutting end portions,
vertically disposed T bar members having base flange portions overlying said abutting edge portions of said plate members,
a strip plate member underlying said abutting edge portions,

means securing said flange portions and said underlying strip plate members through said abutting edge portions,

a second annular course in abutting relationship with said first mentioned annular course,

T bar members having base flange portions overlying the adjacent edge portions of said annular courses,

means securing said flange portions of said last mentioned T bar members to said last mentioned adjacent edge portions,

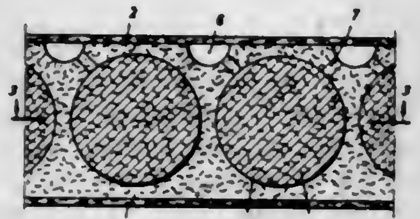
said first mentioned T bar members having outwardly offset step portions at their respective end portions,

said step portions overlying adjacent flange portions of said last mentioned T bar members, and

means securing said step portions to the underlying flange portions of said second mentioned T bar members and to said underlying strip plate members.

3,307,312
SELF-SUPPORTING LIGHT CONSTRUCTIONAL ELEMENTS FOR CEILINGS, ROOFS AND WALLS

Otto Kreibaum, Lauenstein, Hannover, Germany
Filed Oct. 26, 1964, Ser. No. 406,510
Claims priority, application Germany, Oct. 31, 1963, K 51,243
7 Claims. (Cl. 52—303)



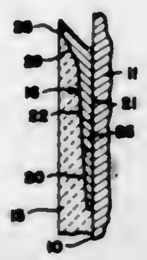
1. A structural and insulating building board comprising a core of compressed chips adhered together by an adhesive and having opposing inner and outer sides and opposing end edges, imperforate finish panels fixedly superimposed on said sides, said outer side and its finish panel being adapted to face the outer atmosphere, said core being formed with longitudinally extending laterally spaced bores centrally between the sides, thermal insulating substances filling said bores and being of a thickness of more than one half the thickness of the core, said outer side of the core being formed with longitudinal surface ducts of smaller cross-section than the bores, said ducts being closed off by the superimposed finish panel on the outer side and opening to the atmosphere through the end edges of the core and said ducts being disposed parallel with the bores and offset in relation thereto whereby the board is vented to the outer atmosphere to discharge water vapor.

3,307,313
PLASTER EDGE STRIPS

Roy E. Tatum, Detroit, Mich., assignor to Blakely Products Company, Warren, Mich., a corporation of Michigan
Filed July 13, 1964, Ser. No. 382,138
1 Claim. (Cl. 52—367)

An extruded aluminum edge strip for edging the border of a relatively thick coating of plaster-like material applied upon a wall surface, comprising a long, uniform solid cross-section, thin, narrow, strip portion having a flat, wall surface contacting, inner face and an opposite, outer, flat face arranged in a plane converging towards said inner face so that the strip portion is tapered in cross-section with one wide edge and an opposite narrow edge;

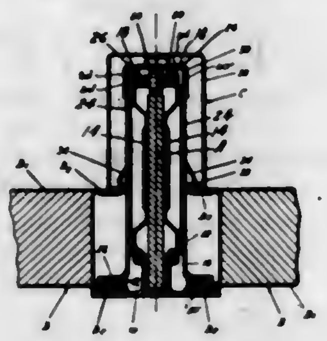
a continuous, narrow, flange portion integrally joined with said strip portion at said wide edge, said flange having an outer face intersecting said strip portion outer face at an obtuse angle and an inner face intersecting the wide edge of said strip, said strip portion inner face and said flange inner face forming an obtuse angle, said outer and inner faces of said flange converging from said wide edge to an outer edge spaced from the plane of the strip portion inner face extended and parallel to said strip portion wide edge;



wherein said strip portion may be applied to a wall surface and thereafter covered by said plaster-like material, with the flange thereby edging said material and gaging the thickness of the coating.

3,307,314
ARRANGEMENT FOR REMOVABLY SECURING PANELS IN A WALL CONSTRUCTION

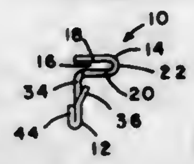
Giovanni Varlonga, Via Bernardino Verro 90, Milan, Italy
Filed May 6, 1963, Ser. No. 278,129
Claims priority, application Italy, May 8, 1962, 23,234/62
12 Claims. (Cl. 52—461)



1. In a wall construction formed by a plurality of spaced substantially rectangular bars and panels fitted between said bars, in combination, a first abutment member for each bar abutting with a central portion thereof against one edge portion of the respective bar and extending with lateral portions thereof beyond opposite sides of said bar; a second abutment member for each bar and extending spaced from and transverse to the other edge portion of said bars; a pair of tie means for each bar and respectively extending on opposite sides thereof and each connected at opposite ends thereof to the first and second abutment member; first adjustable pressure means connected to said second abutment member and engaging said other edge portion of the respective bar for moving said second abutment member away from said first abutment member to stress said tie means and hold thereby said first abutment member tightly against said one edge portion of the respective bar; substantially U-shaped holding means extending about said second abutment member and said tie means and having a pair of free end portions arranged respectively opposite and spaced from said lateral portions of said first abutment member; and second adjustable pressure means operatively connected to said second abutment member and said holding means for pressing said free-ends of the latter toward said lateral portions of said first abutment member so that panels located between said bars and having each an edge portion between said free ends of said holding means and said lateral portions of said first abutment member may be securely clamped between the same and thus be securely fastened to said bars.

3,307,315
STRUCTURAL CONNECTOR CLIP

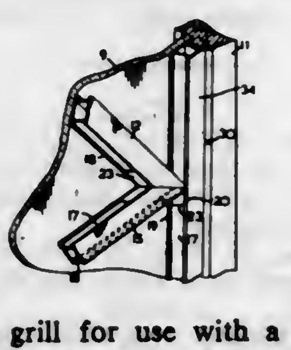
Joseph W. Schneller, Williamsville, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed Nov. 13, 1963, Ser. No. 323,531
10 Claims. (Cl. 52—490)



1. A formed sheet metal clip for affixedly holding the bottom flange of a metal channel for roof boards to the top flange of an adjacent perpendicularly disposed metal framing member, said clip comprising essentially a single piece of relatively inflexible formed sheet metal having an upper body portion and a lower body portion, said upper body portion being an elongate, horizontally disposed, open, reverse-bend channel, forming therein a narrow deep slot, said lower body portion being a generally vertically disposed section having an extent substantially equal and below said upper body portion, said lower body portion being adjoined to said upper body portion along a central segment and being disjoined from said upper body portion at each of the two ends of said clip, a slot of progressively decreasing width extending inwardly from each clip end between said upper body portion and said lower body portion, whereby said upper body slot may engage a metal channel bottom flange, and one of said progressively decreasing width slots may engage a perpendicularly disposed metal framing member top flange.

3,307,316
REMOVABLE PLASTIC WINDOW GRILLS

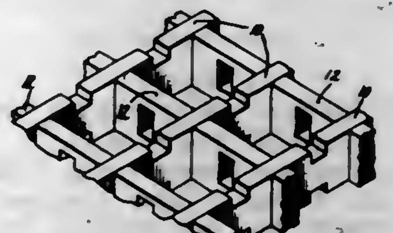
William Walter Gray, 617 Enfield Road, Burlington, Ontario, Canada
Filed Jan. 27, 1964, Ser. No. 340,334
Claims priority, application Canada, Oct. 25, 1963, 887,556, Patent 712,378
4 Claims. (Cl. 52—507)



1. A window grill for use with a window having a frame and a single pane secured therein, said grill being adapted to give the appearance of a multi-paned window, said grill comprising interconnected bars, each said bar having a pair of flanges extending from mutually opposed side walls, a slidable element, said element comprising a body, a keyway in said body receiving said flanges, an upwardly extending manually engageable projection on said body, and a groove in a major surface of said body adjacent said side wall receiving and retaining a pin, said pin engaging said window frame to secure said grill to said window frame.

3,307,317
FLOOR MAT

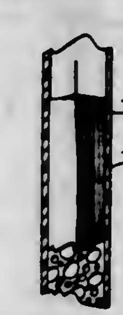
Neil W. Lynn, Fort Wayne, Ind., assignor to Life Management, Incorporated, Fort Wayne, Ind., a corporation of Indiana
Filed June 24, 1965, Ser. No. 466,724
10 Claims. (Cl. 52—667)



10. A mat comprising a plurality of first and second elongated rubber strips which are rectangular in cross-section and which have opposite sides and edges, respectively, said first strips being spaced apart and parallel with all of the sides thereof also being parallel, said second strips being spaced apart and parallel with all of the sides thereof also being parallel, each said strip having a plurality of pairs of notches and apertures longitudinally spaced apart, said apertures being disposed between said pairs of notches, respectively, said apertures being through the strip sides and extending in the direction of strip thickness, said apertures being substantially rectangular in shape with the opposite longer sides thereof extending substantially at right angles to the length dimension of the strip, the notches of each pair being in transverse alignment and extending inwardly toward each other from the opposite strip edges, respectively, said transverse alignment being in a direction at right angles to strip length, the notches of each pair terminating short of each other to define a web portion therebetween, said first and second strips being interlocked together, said web portions of said first strips fitting into said apertures of said second strips, said notches of said first strips straddling and frictionally gripping the sides, respectively, of said second strips, the longer sides of said apertures of said second strips straddling and frictionally gripping the sides, respectively, of said first strips, the shorter sides of said apertures frictionally gripping the bottoms of said notches, respectively, of said first strips, the sides of said first and second strips lying in planes which intersect each other in straight lines which are normal to said strip edges, said web portions of said second strips fitting into said apertures of said first strips, said notches of said second strips straddling and frictionally gripping the sides, respectively, of said first strips, and the longer sides of said apertures of said first strips straddling and frictionally gripping the sides, respectively, of said second strips.

3,307,318
FOAM PLASTIC FILLER METHOD

William C. Bauman, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 27, 1964, Ser. No. 347,910
4 Claims. (Cl. 52—743)



1. A method for filling a space in a wall structure formed of spaced walls with synthetic plastic foam com-

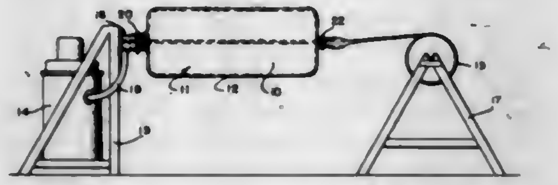
prising the steps of placing a sealed vapor impermeable plastic bag containing synthetic plastic foam in a compressed state by reason of atmospheric pressure on said bag into said wall structure, said bag being substantially larger than said foam and subsequently puncturing said bag with a sharp object to permit re-expansion of said foam, of its own volition, whereby said wall structure is filled with foam.

3,307,319
METHOD OF VACUUM PACKAGING AIR FILTER MATERIALS

Gordon L. Christensen, Garden Grove, Calif., and Henry P. Blank, San Antonio, Tex., assignors to Standard Electric Company, Inc., San Antonio, Tex., a corporation of Texas

Filed Aug. 12, 1963, Ser. No. 301,455

8 Claims. (Cl. 53—22)



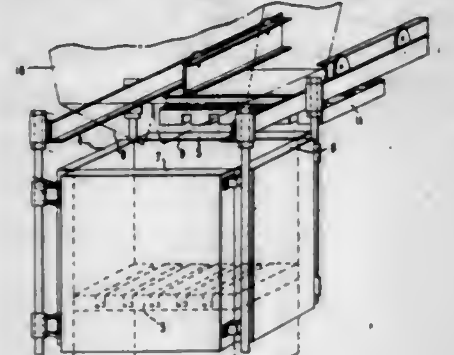
5. A method of vacuum packaging rolls of compressible material comprising the steps of placing a roll of wound compressible material on an elongated apertured evacuating mandrel operatively connected to a vacuum means, feeding a length of relatively thin expansible and contractable tubing material from a source of supply around said compressible material and said mandrel, severing said length of tubing material, sealing the ends of said tubing material about said compressible material to form an airtight container, evacuating air from said airtight container uniformly throughout its length through the evacuating mandrel to diminish the diameter of the compressible material and the tubing, placing a smaller tubing of relatively rigid inexpansible material over said reduced diameter tubing and compressible material to control the size of the diminished diameter of said compressible material, stopping the vacuum, removing the compressible material in said container and said tubing of relatively rigid inexpansible material from said mandrel, and allowing the compressible material and container to expand to fill the confines of the relatively rigid inexpansible container.

3,307,320
PROCESS OF PACKAGING

Andrew J. Harriss, Jr., and Robert G. Larsen, Kinston, N.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 2, 1965, Ser. No. 436,581

1 Claim. (Cl. 53—24)



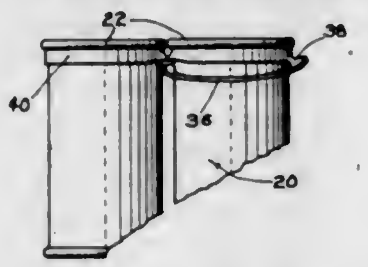
In the packaging of staple fibers in a container by compressing the fibers in a baler between top and bottom platens provided with conventional slots for strapping the bale, using a two-piece container having a lower tray that telescopes within a separate upper portion, the method which comprises positioning the lower tray of the container on the bottom platen of the baler, positioning the upper portion of the container adjacent to the top platen, charging the fibers to be packaged between the platens, compressing the fibers into the upper portion of the container by raising the bottom platen until the lower tray is within the upper portion of the container to form a bale, clamping the bale to retain the fibers compressed within the container by inserting clamping fingers of a bale carrier in the slots of the platens, lowering the bottom platen, transporting the clamped bale in the bale carrier to a different location, and then strapping the bale to complete the package.

3,307,321
ARTICLE CARRIER AND METHOD OF APPLYING IT TO A PLURALITY OF CONTAINERS

Robert W. Beart, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed July 30, 1964, Ser. No. 386,178

10 Claims. (Cl. 53—35)



9. The method of assembling a carrier made of stretchable material to a plurality of containers or the like, said carrier having at least one pair of oppositely arranged constrictive apertures therein and being frangibly hinged along an outer marginal portion thereof to an elongated endless band means having a transverse dimension approximately one-half of the transverse measurement of said carrier and an inner peripheral dimension greater than the outer peripheral dimension of at least one container, comprising the steps of folding said endless band means underneath said carrier, positioning said endless band means and carrier in close proximity to said containers, inserting said containers within said apertures with at least one container positioned within said endless band means, the material adjacent each aperture adapted to stretch for gripping and resiliently engaging the containers, and thereafter separating the endless band means from the carrier to enable it to be positioned in encircling relationship thereto for transporting said containers.

3,307,322
APPARATUS FOR CAPSULING BOTTLES

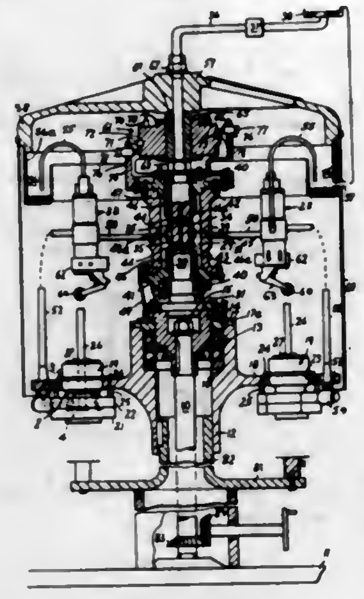
Oscar John Jones, Kempston, Bedford, England, assignor to Fords (Finsbury) Limited, Kempston, Bedford, England, a British company

Filed Aug. 20, 1963, Ser. No. 303,289

Claims priority, application Great Britain, Aug. 21, 1962, 32,104/62

8 Claims. (Cl. 53—67)

2. A capsuling machine comprising a plurality of capsuling heads, each of which comprises a liquid-containing chamber having a hollow cavity which is adapted to receive the upper end of a bottle neck, the walls of the cavity being flexible and being deformable by liquid pressure to compress a capsule on to the bottle neck, a pump for supplying pressurised liquid to the capsuling head, a plurality of valves associated respectively with the capsuling heads and controlling the supply of pressurised liquid from the pump to the liquid-containing chambers of the heads, a pump reservoir from which the pump draws liquid, conduit means permanently connecting the outlet of the pump to all the valves, a plurality of members associated respectively with the valves and each responsive to the insertion of a bottle neck into the cavity of the associated capsuling head for controlling the opening of the valve and closing of an outlet from the chamber of the bead leading to the pump reservoir, whereby to pressurise the chamber, and means independent of said members and operable to close each valve and open the outlet from the associated chamber after the capsule has been compressed on to the bottle neck.

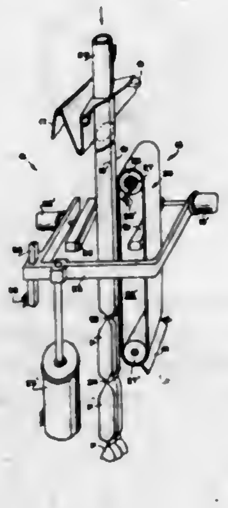


3,307,323
ANTI-CLOGGING PACKAGING MACHINE

Alfred Fener, 422 Beach 146th St., Neponsit, N.Y. 11959

Filed Feb. 23, 1965, Ser. No. 434,578

1 Claim. (Cl. 53—180)



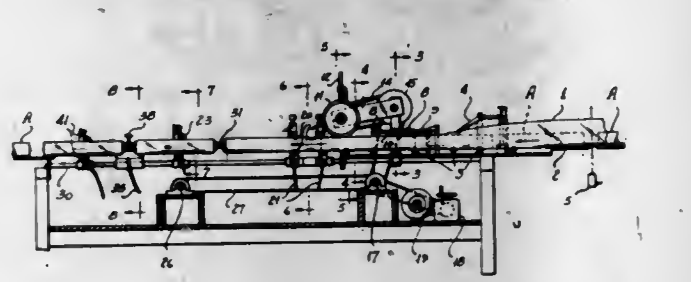
In a packaging machine including a carriage on a frame, an electric heat sealing device of the thermal impulse type having a sealing bar opposite and parallel to a pressure bar; said bars being relatively movable towards and away from each other, said device being mounted on said carriage, means to guide continuous thermoplastic film material across and between said bars in a path, means to reciprocate said carriage between a first limit position adjacent said film guide means, and a second limit position spaced from said film guide means and parallel to said path and means to move said bars towards each other to clamp said film material when said carriage is at its first limit position and to move said bars apart to release said film material when said carriage is at its second limit position, the improvement comprising a pair of spaced rollers mounted on the frame, the axes of said rollers being parallel to said bars; a thin flat adhesion resistant belt having a width at least equal to the length of the sealing bar trained over said rollers, one flight of said belt being between said sealing bar and said path at all positions of said carriage, and means allowing the belt to move only so that the movement of said flight is in said direction, the belt being of material uneffecting the operation of the sealing device to seal plies of thermoplastic material which may be interposed between said bars and having the nature to resist adhesion; said rollers being mounted on said frame by a ratchet device for movement only in one direction, whereby said bars will seal said film material and clamp said flight for movement with the carriage from said first to said second positions, and said flight will be at rest during return movement of said carriage.

3,307,324
WRAPPING MACHINE

William A. Roehm, Rockville Centre, N.Y., assignor to Millen Industries, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 20, 1962, Ser. No. 224,982

16 Claims. (Cl. 53—181)



1. A wrapping machine for cylindrical articles and the like comprising: means for advancing a wrapper web of thermoplastic material along a predetermined path in substantially U-shaped condition with articles to be wrapped positioned in axially spaced relation on said web, means for folding the free edges of the web with respect to one another and for simultaneously drawing the web tightly about said articles, means further along said path to heat-seal the longitudinal edges of the web in overlapped relation to one another, means for rotating one circumferentially wrapped article with respect to the following articles to twist the wrapper in the space between that article and the next, means for thereafter heat-sealing and disrupting the twist to cause simultaneous fusion and rupture thereof to separate said articles, and means for thereafter discharging the resulting wrapped article from the machine.

3,307,325
CARTON FORMING AND FILLING MACHINE

Howard R. Garrett and Clarence G. Austin, Jr., Woodstock, Ill., assignors to The Pre-O-Form Corporation, Warsaw, Ind., a corporation of Indiana

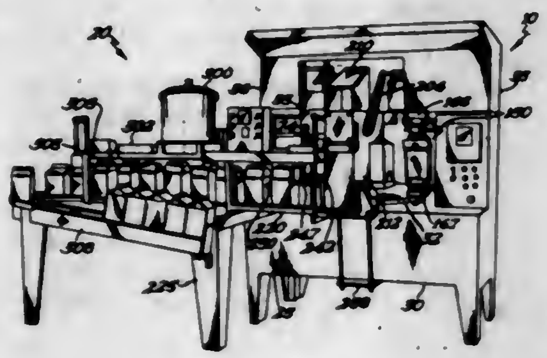
Filed Oct. 21, 1964, Ser. No. 405,530

12 Claims. (Cl. 53—186)

2. A machine for forming and filling a tubular carton comprising:

(a) a frame structure;
(b) a turntable pivotally mounted on said structure and including motive means adapted to rotate said turntable relative to said frame structure about an axis of rotation in an arcuate stepped movement;
(c) a plurality of spaced mandrels mounted on said turntable with their length substantially parallel to the axis of rotation of the turntable;

(d) a plurality of work space stations positioned on said frame structure around and adjacent turntables with the mandrels thereon;
(e) a carton blank, dispensing and loading means positioned at the first of said stations and operative to erect the flap carton blank and advance the erected carton blank onto a mandrel on the turntable;
(f) carton blank break means included in said first station and operative to pre-bend bottom flaps of said carton blank at said first station;
(g) heating means positioned at a second of said stations and operative to heat the pre-bent bottom flaps of the carton blank;
(h) pressure sealing means positioned at the third of said stations and operative to seal the pre-bent and heated bottom flaps of the carton to seal the bottom of the carton positioned inverted on the mandrels;
(i) top flap pre-break means included in said third station and operative to fold top flaps of said carton blank positioned at the bottom of the mandrel;
(j) carton removal and inverting means positioned at the fourth of said stations and operative to remove the pre-formed and pre-bent carton blank from the mandrel;



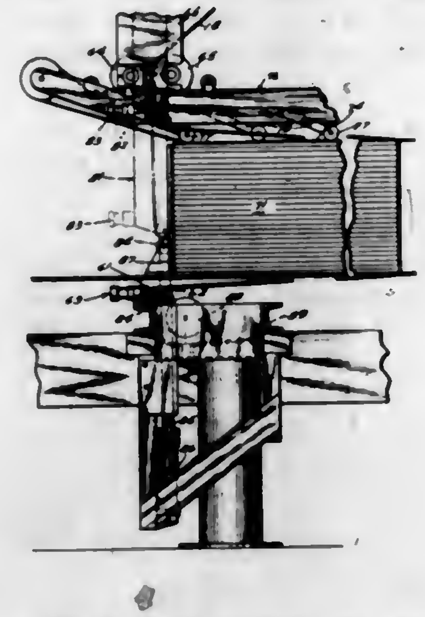
(k) control circuit means including timing means for operating each of the forming means at the respective stations substantially simultaneously after which the motive means steps the turntable;
(l) additional support means including conveying means connected to said frame structure and adapted to receive the turned over cartons from said carton removal and inverting means;
(m) filling means mounted on said additional support means and above said conveying means;
(n) heating and sealing means disposed adjacent said filling means and said conveying means and mounted on said additional support structure;
(o) motive means for driving said conveying means;
(p) and control means including timing means operating said motive means, said filling means and said sealing means to fill and seal said cartons in a timed sequence and in sequence within the stepped operation of said turntable.

3,307,326

CORRUGATED BOARD BUNDLER

Charles H. Krebs, Chicago, Ill., assignor, by mesne assignments, to Sunds Verkstader Aktiebolag, Sundsbruk, Sweden, a Swedish company
Filed Apr. 21, 1964, Ser. No. 361,431
10 Claims. (Cl. 53—198)

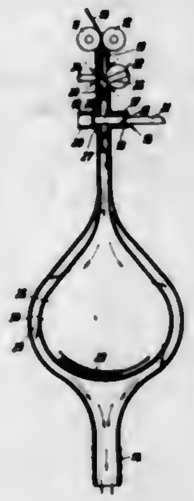
6. In a bundling machine, a sealing and cutting mechanism comprising releasable gripper means operable to hold an end of a tape, a carriage movable vertically relative to said gripper means, knife means carried by said carriage and arranged to slit said tape transversely, an adhesive applicator roller vertically movable relative to said gripper means and positioned to apply adhesive to the tape end being held by said gripper means, and roller means on said carriage for pressing the severed tape against the adhesive tape end.



3,307,327

METHOD OF AND DEVICE FOR WRAPPING ARTICLES

Kurt Liedtke, Verden, Aller, Germany, assignor to Focke & Pfuhl, Bremen, Germany, a firm
Filed Sept. 20, 1963, Ser. No. 310,358
Claims priority, application Germany, June 14, 1963, F 39,994
7 Claims. (Cl. 53—230)



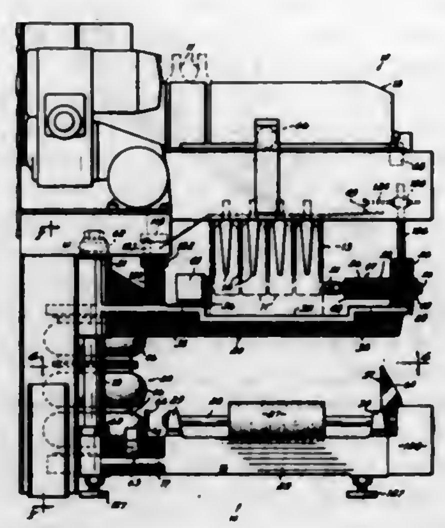
1. A device for wrapping articles comprising a substantially closed guide channel for feeding and guiding a wrapping foil by means of an air stream and a feed passage for the articles to be wrapped, said feed passage extending transversely of the feed direction of said wrapping foil, said feed passage having an inlet and an outlet portion, said outlet portion being provided with folding edges for wrapping the wrapping foil snugly around the article to be wrapped, said guide channel being wider than said feed passage in the region of said feed passage.

3,307,328

AIR CUSHIONED ELEVATOR FOR CASE PACKERS

Edward F. Rowekamp, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed Apr. 2, 1965, Ser. No. 445,138
10 Claims. (Cl. 53—247)

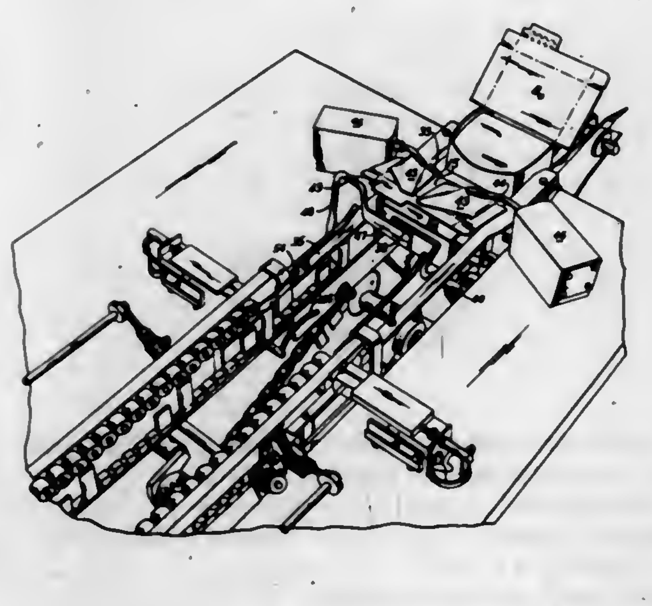
10. In a case packing apparatus having a base, a bottle grid mounted above said base, means for supplying bottles to said grid, and an elevator mounted on said base for vertical movement, the improvement comprising resilient walled means defining an expansible and retractible chamber interposed between said base and said elevator, an supply connected to said chamber, and means for controlling the supply of air to said chamber to raise and lower said elevator, said controlling means including means for exhausting air from said expansible chamber to retract said elevator at least as soon as the bottles strike the case.



3,307,329

CLOSING MACHINE FOR HINGE COVER FOLDING BOXES

Frank M. Lefief, Palo Alto, Calif., assignor, by mesne assignments, to Kliklok Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 8, 1964, Ser. No. 416,801
11 Claims. (Cl. 53—376)

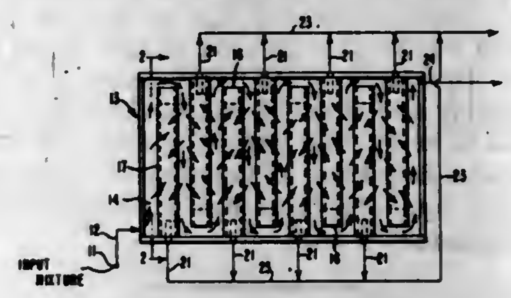


5. A device for folding the hinge cover of a folding box into box closing position, the device comprising, in combination, means forming a box track; transport means for advancing a box along said track in a direction in which the box cover hinge line is transverse to the center line of the track, with the hinge cover trailing; a folding arm; means alongside said track for pivotally supporting said arm for movement into and out of the space above the track to engage the trailing cover and fold it over the box body; and operating means for moving said arm in timed relationship to said transport means.

3,307,330

DIFFUSION PROCESS AND APPARATUS

Edmund Luke Niedzielski, Graylyn Crest, Wilmington, and Robert Ervin Putnam, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 30, 1965, Ser. No. 452,259
4 Claims. (Cl. 55—16)

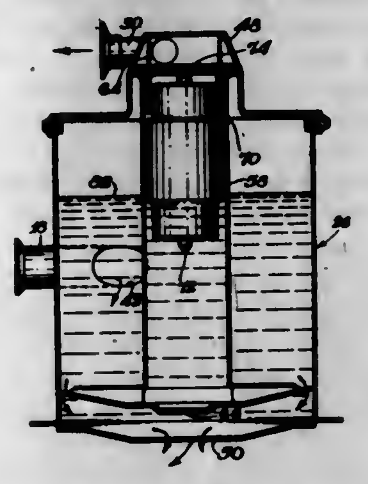


1. An improved differential permeation process for separating gases which comprises in combination the following steps; bringing an initial gas mixture containing one gas selected from the group consisting of helium, hydrogen, oxygen, nitrogen, carbon dioxide, nitrous oxide, and argon; and at least one other gas of larger molecule size, into contact with one surface of a permeable membrane structure at a given pressure, causing a portion of said mixture to permeate through said membrane structure, collecting at another surface of said membrane structure at a lower pressure a permeated mixture corresponding generally to said initial gas mixture, and removing the permeated mixture from said another surface, while maintaining said membrane structure as a non-porous three-dimensional mass of a polymeric composition comprising repeating units of perfluoro-(2-methylene-4-methyl-1,3-dioxolane) and from 0% to about 90% by weight free-radical, polymerizable, unsaturated, halogenated, hydrocarbon repeating units, through which said one gas permeates at a significantly greater rate than the other components of said initial mixture, with said composition said hydrocarbon repeating units being tetrafluoroethylene units.

3,307,331

LIQUID FLOW CONTROL METHOD AND APPARATUS

Robert D. Lambert, Fort Wayne, Ind., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed Apr. 23, 1964, Ser. No. 362,091
17 Claims. (Cl. 55—55)



1. A method of controlling flow of liquid from a liquid-gas separator having a vacuum pump connected to the upper portion of said separator for withdrawing gas through a vacuum line and a liquid pump connected to the bottom of said separator for discharging liquid through a discharge line, comprising the steps of drawing liquid into said separator with said vacuum pump,

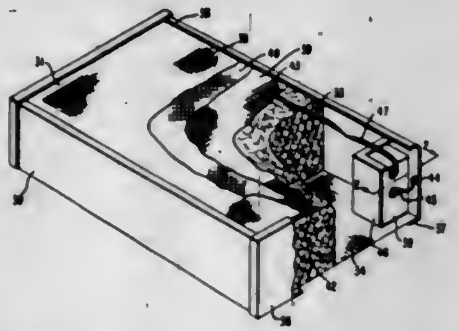
opening a relatively small area of the liquid discharge line and pumping liquid from said separator at a minimal flow rate when said liquid level in said separator is above a predetermined minimum flow level, causing said vacuum pump to open a relatively large area of said liquid discharge line when said liquid level in said separator is at a relatively high predetermined operating level, pumping liquid from said separator at a maximum flow rate when said liquid is at least as high as said operating level, closing said relatively large area of said liquid discharge line when said liquid level drops below said operating level, pumping said liquid at said minimal flow rate when said liquid is below said operating level but more than said minimum flow level, and closing said relatively small area of said liquid discharge line when said liquid drops to said minimum flow level.

3,307,332
ELECTROSTATIC GAS FILTER

Harold Paget Grace, Havertown, Pa., and Frederick Flake White, Jr., Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 11, 1964, Ser. No. 417,742

24 Claims. (Cl. 55—103)



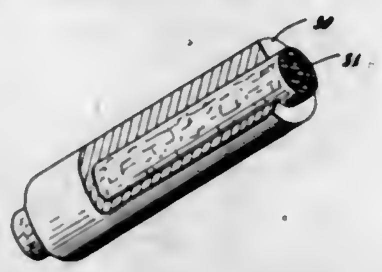
1. An improved gas filter arrangement for removing small particles suspended in a gaseous stream, said arrangement comprising in combination a gas-pervious loosely packed mass of filamentary elements, said mass comprising a first group of filamentary elements, at least the surface portions of which are formed of a given composition, said filamentary elements of said first group each having a high net negative electrostatic charge density, said mass further comprising a second group of filamentary elements, at least the surface portions of which are formed of a composition triboelectrically different from said given composition, said filamentary elements of said second group each having a predominant high net positive electrostatic charge density, said filamentary elements of said groups being thoroughly intimately mixed, intertangled and interengaged at a number of points throughout said mass, said compositions each having very high electrical surface and volume resistivities sufficient to prevent significant dissipation of the charges on the filamentary elements, said filamentary elements of said mass having a paired net charge density which is significantly greater than the net charge density of said elements, said filamentary elements of said mass having sufficient resistance to bending to maintain spaces between said points of interengagement and between said elements open against the forces acting between said elements and caused by the electrostatic charges, said filamentary elements so arranged within said mass with respect to the magnitude of the charges of said elements that substantially all of the open spaces in the mass are subjected to electrical field effects existing between spaced charged portions of adjacent filamentary elements, said arrangement further comprising means in operative association and cooperation with said mass of filamentary elements for preventing gas ions in a gaseous stream being filtered from reaching said elements and reducing the charges thereof.

3,307,333
CHROMATOGRAPHIC COLUMNS

Stanley D. Norem, Bayside, N.Y., and Richard D. Condon, Ridgefield, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Oct. 31, 1963, Ser. No. 320,464

9 Claims. (Cl. 55—197)



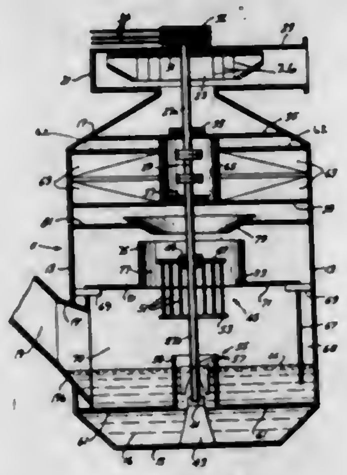
1. A chromatographic column for the separation of components of a mixture comprising:
a hollow member;
a randomly intertwined structure of fibers positioned within said hollow member, said fibers coated with a substance with which the different components of said mixture have different attractions,
means including a carrier fluid for flowing a sample into said column, and
means to detect the separated components eluting from said column.

3,307,334
GAS WASHERS HAVING IMPROVED GAS FLOW CHARACTERISTICS

Robert M. Jamison and Nicholas J. Panzica, Detroit, Orlan M. Arnold, Grosse Pointe Park, and Emil Umbricht, Northville, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.

Filed June 10, 1964, Ser. No. 374,073

10 Claims. (Cl. 55—229)



1. In a gas washer of the character described and having a generally vertical housing with a gas inlet adjacent the bottom and a gas outlet adjacent the top thereof, means for flowing a gas to be washed upwardly through said housing, a reservoir for containing a liquid washing medium and disposed generally in the lower portion of said housing, pump means for raising said liquid washing medium from said reservoir to a spray zone in said housing generally above said gas inlet, rotating impeller means acting on said washing medium raised from said reservoir for producing a generally transverse and rotating spray pattern of rapidly moving droplets of said washing medium in said spray zone for washing said gas and entrainment of said droplets therewith as said gas flows upwardly through said washer, and means for separating said entrained washing medium droplets from said gas flow above said spray zone, the combination which comprises a generally horizontal transverse partition, extending across

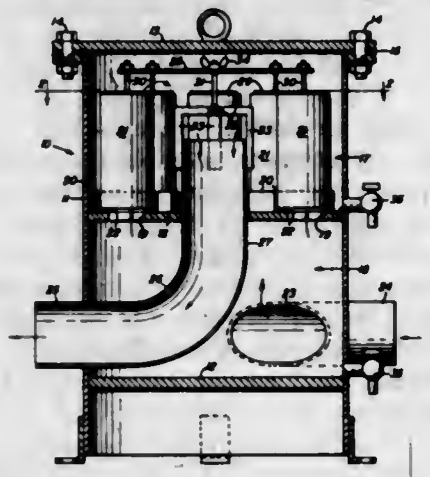
said housing in the vertical vicinity of said spray zone and having a central opening therein surrounding and spaced from said rotating impeller means, said partition being above said gas inlet and sealed with respect thereto so that all gas to be washed entering said inlet and flowing through said housing must flow through said central opening in said partition and thus centrally through said spray zone and said partition being generally below said means for separating said entrained droplets of washing medium from said gas flow whereby said separated droplets fall onto said partition in areas thereof other than said central opening, drainage means at the periphery of said partition and said washer forming a passage for returning said separated entrained droplets of washing medium to said reservoir below said partition at the periphery thereof and by a passage other than through said central opening, said peripheral means for returning said droplets being in sealed separation from any path of upward flow of said gases to be washed.

3,307,335
GAS FILTER

Frank A. Shomaker, 308 Green Gorge Road, Signal Mountain, Tenn. 37377

Filed Mar. 24, 1965, Ser. No. 442,288

9 Claims. (Cl. 55—267)



1. A gas filter comprising a cylindrical container having a removable cover, said container being subdivided into upper and lower chambers by a horizontal wall having a plurality of circumferentially spaced openings therein, each of said openings being surrounded by an upstanding annular retaining ring, a plurality of cylindrical porous filter blocks each being seated within a respective retainer ring to place only the lower surface of each block in communication with the interior of the lower chamber, a tangential inlet for said lower chamber, an outlet conduit having a vertical inlet portion extending upwardly in communication with the interior of the upper chamber through the center of said horizontal wall, and passing downwardly through the lower chamber in heat-exchanging relationship with entering gas, a clamping plate, means for supporting the plate in downwardly clamping engagement with the upper ends of the filter blocks.

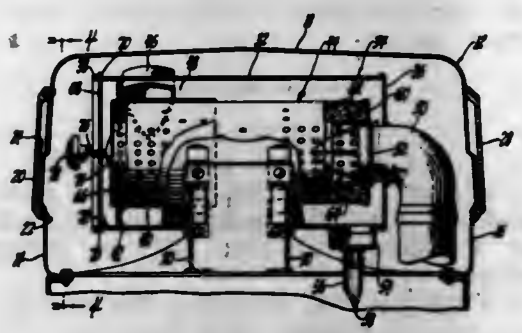
3,307,336
AIR FILTER INSTALLATION

Arthur F. Dewsberry, Dearborn, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland

Filed June 7, 1963, Ser. No. 286,363

4 Claims. (Cl. 55—337)

1. In combination, a tractor vehicle comprising a longitudinally extending body means having a longitudinal axis including a pair of longitudinally extending side panel members laterally spaced from each other and interconnected by a longitudinally extending hood panel member, a filter cartridge housing having a longitudinal axis extending between first and second ends thereof longitudinally spaced from each other, said filter cartridge housing longitudinal axis crossing said body means longitudinal axis, means mounting said filter cartridge housing within said body means beneath said hood panel member with the longitudinal axis of said filter cartridge housing extending substantially horizontally laterally between said side panel members, said filter cartridge housing extending a major portion of the distance between said side panel members with said first and second ends of said filter cartridge housing being disposed opposite and spaced apart from said respective side panel members, a filter cartridge disposed within said housing, said first end of said filter cartridge housing including an opening therein opposite one of said side panel members to removably receive said filter cartridge therein, said one of said side panel members having an opening therein opposite said opening in said filter cartridge housing for removably inserting said filter cartridge therethrough and through said opening in said filter cartridge housing and into the latter, retaining means associated with said first end of said filter cartridge housing removably retaining said inserted filter cartridge therewithin, and door means mounted on said body means for movement between positions respectively opening and closing said opening in said one of said side panel members.

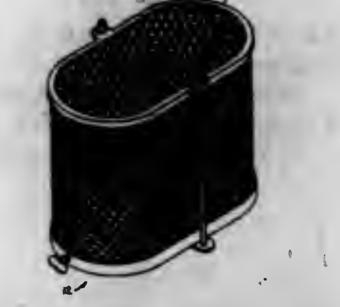


3,307,337
SPARK ARRESTOR

John A. Freitas, Jr., 36412 Hafner Court, and David M. Freitas, 36810 Locust St., both of Newark, Calif. 94560

Filed Apr. 21, 1965, Ser. No. 449,772

2 Claims. (Cl. 55—500)



1. A spark arrestor comprising a lower horizontal frame member formed of a substantially continuous length of strap-like material, said lower frame member having its width vertically disposed and adapted to encompass a flue element, means including a screw threaded actuator mounted on said lower frame member for releasably clamping said lower frame member to said flue element, screen supporting elements extending inwardly from the inner wall of said lower frame member, a tubular screen constituted by a sheet of screening folded over on itself in overlapping engagement having the lower edge thereof telescopically received within said lower frame member and supported on said elements, said screen being substantially continuous and extending upwardly from the upper edge of said lower frame member with the inner

wall of the screen defining an unobstructed chamber coextensive with said lower frame member, said lower frame member constituting means for determining the amount of overlap of and the peripheral shape of the lower edge portion of said tubular screen, a horizontally disposed substantially planar cover screen overlying and closing the upper end of said tubular screen, means securing said cover screen to, determining the amount of overlap of and determining the peripheral shape of the upper edge portion of said tubular screen including an annular strap telescopically receiving the upper edge of said tubular screen within said strap and having inwardly projecting flange means engaging the upper edge of said tubular screen for maintaining said cover screen in position over said tubular screen.

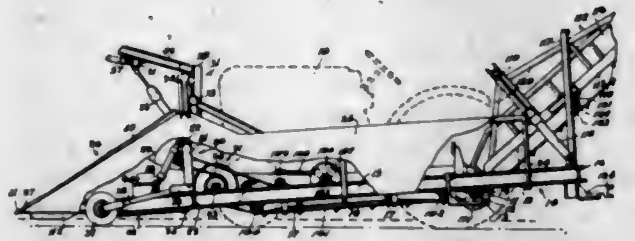
3,307,338

SUGAR-CANE HARVESTERS

Joseph Michael Mizzi, Braemeadows, near Ingham, Queensland, Australia, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Dec. 31, 1963, Ser. No. 334,727

8 Claims. (Cl. 56—16)



1. A cane harvester including a power-driven mobile unit; a ground cutter forward of and aligned with said mobile unit substantially at ground level to cut stalks of cane; a chopping cutter forward of and aligned with said mobile unit but rearward of said ground cutter to chop said stalks into pieces; means for feeding cut stalks to said chopping cutter; a longitudinal conveyor aligned with and extending beneath said mobile unit and discharging to the rear of it; and means for passing said pieces from said chopping cutter to the forward end of said conveyor.

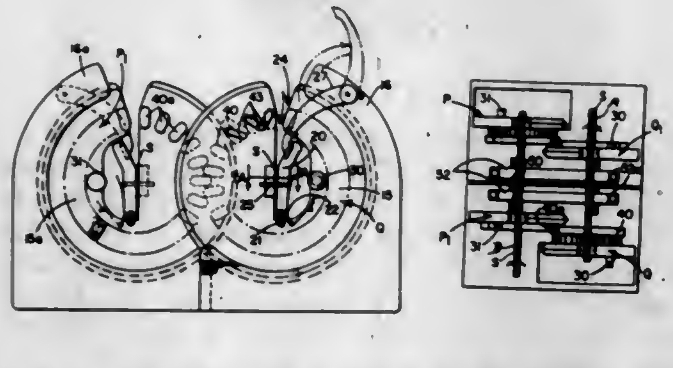
3,307,339

APPARATUS FOR JOINING THREADS

Clarence H. Porter, 295 North St., Hingham, Mass. 02043

Filed June 27, 1966, Ser. No. 560,613

4 Claims. (Cl. 57—22)



1. In apparatus for use in joining textile threads, means for untwisting end parts of two threads, means for plucking fibers from the untwisted end parts so as to cause said end parts to diminish in fiber content toward the end thereof, means for bringing together the thus treated end parts where they respectively diminish in fiber content, and means for twisting said end parts together.

3,307,340

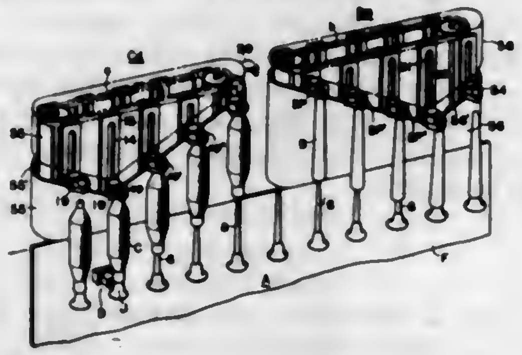
APPARATUS FOR CONTINUOUSLY EFFECTING AUTOMATIC BOBBIN EXCHANGE ON SPINNING MACHINE

Masahiko Nishii and Yoshikazu Suzuki, Kariya, Japan, assignors to To Yo Da Automatic Loom Works, Ltd., Kariya, Japan and Kanegafuchi Boseki Kabushiki Kaisha, Osaka, Japan

Filed Mar. 30, 1964, Ser. No. 355,676

Claims priority, application Japan, Apr. 1, 1963, 38/16,667; Apr. 5, 1963, 38/18,314, 38/18,316, 38/18,317

6 Claims. (Cl. 57—53)



1. In a spinning machine, an automatic apparatus for continuously dismounting cops and mounting empty bobbins, comprising a carriage movable in parallel relationship with respect to the machine frame of the spinning machine, a cop dismounting unit disposed on said carriage including an endless conveyor belt provided with a plurality of cop grippers, a bobbin mounting unit disposed on said carriage including an endless conveyor belt provided with a plurality of bobbin grippers, means for effecting circulating movement of said endless belts of both said units in a common direction, means for successively lifting the cop grippers on the operating run of said endless conveyor belt of said first unit as said operating run proceeds, and means for successively lowering the bobbin grippers on the operating run of said endless conveyor belt of said second unit, the arrangement being such that the moving speed of said endless conveyor belts of said both units is equal to the moving speed of said carriage to thereby maintain the cops and bobbins substantially stationary so far as relative movement of the cops and bobbins is concerned while the cops and bobbins are successively dismounted from and mounted on the associated spindles respectively.

3,307,341

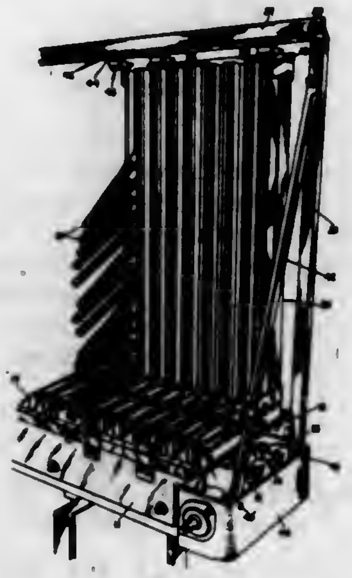
BOBBIN MAGAZINE

John H. Nydam, North Uxbridge, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine

Filed Mar. 30, 1964, Ser. No. 355,879

2 Claims. (Cl. 57—53)

1. A bobbin magazine adapted to retain a plurality of aligned filling bobbins therein having a base portion and a top portion, means interconnecting said base and top portions defining a plurality of juxtaposed and vertically extending bobbin butt retaining and guiding channels, said channels having a first restraining portion formed to extend into close proximity with that portion of the bobbin immediately adjacent to the butt to prevent axial movement of the bobbins, a second restraining portion associated with said first restraining portion and formed to extend into close proximity to that portion of the bobbin adjacent that surface adapted to be restrained by said first restraining portion, thereby causing the bobbins to remain in substantial vertical alignment and unsupported and completely exposed outwardly of said magazine for a greater portion of their length, said base portion being provided with integrally formed aligned and outwardly directed support members disposed at each side thereof, said base including a plurality of aligned slots extending along the length thereof, said slots being open into and equal in number to said channels, selectively and horizontally slidable bobbin control means forming a part of said base portion having individual laterally extending pin members extending through each said slots and into each said channels, said pins being movable simultaneously in a lateral direction by said control means from a first position for supporting the bobbins in said channels to a second position to permit their discharge therefrom.



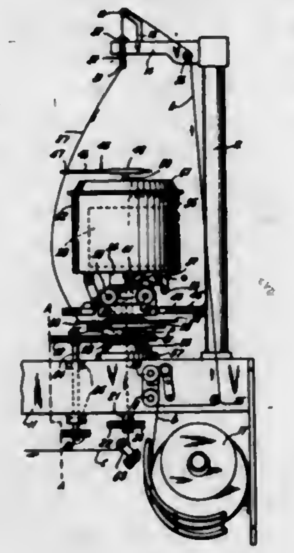
3,307,342

APPARATUS FOR AND METHOD OF PLYING STRANDS

Alfred W. Vibber, 630 5th Ave., New York, N.Y. 10020

Filed Sept. 29, 1964, Ser. No. 400,065

30 Claims. (Cl. 57—58.3)



1. A twisting spindle, comprising a rotatable shaft for rotating a loop of a strand, a first means for feeding the strand into the loop, a second means for feeding the strand out of the loop, one of said first and second feeding means feeding the strand at a constant speed and the other of said feeding means feeding the strand at a variable speed, said variable speed feeding means comprising a rotatable capstan engaging the strand, an annular member rotatably supported on the axis of the rotating loop and adapted to be brushed against by an intermediate portion of the rotating loop, and means connecting the annular member and the capstan whereby torque imposed upon the annular member by the loop is transmitted to the capstan.

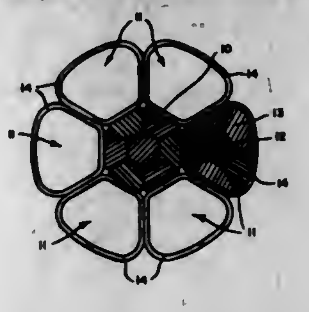
3,307,343

CORROSION RESISTANT WIRE ROPE

William J. Gilmore, Manitou Beach., Mich., and Vincent C. J. Peterson, Huntingdon Valley, Pa., assignors to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York

Filed May 27, 1965, Ser. No. 459,292

8 Claims. (Cl. 57—148)



1. In a wire rope wherein a multiplicity of metal tensile wires are helically stranded together into a plurality of strands which in turn are helically stranded together into a rope structure, said rope being improved in that

(a) at least one metal protective wire is wrapped helically about at least one of said strands, the metal of said protective wire being cathodic with respect to the metal of said tensile wires, and

(b) all of said strands are compressed radially together with respect to the rope axis to compact the rope and increase the intimacy of contact of the wires thereof.

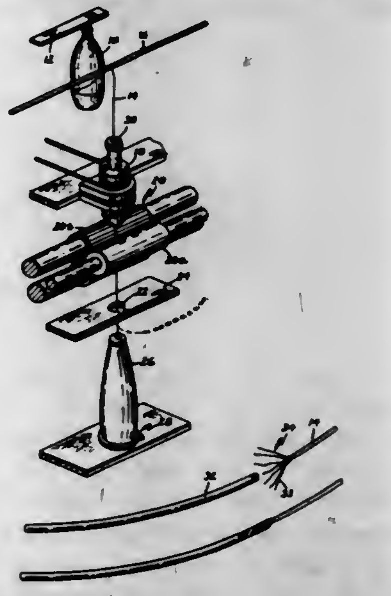
3,307,344

THREADING APPARATUS

Ralph R. Southard, Jr., 807 Pleasant St., Rochdale, Mass. 01930

Filed Mar. 17, 1965, Ser. No. 440,413

4 Claims. (Cl. 57—51.5)

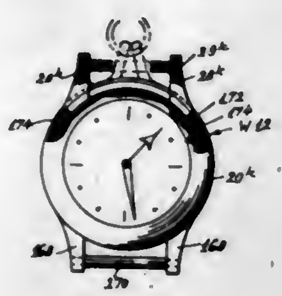


1. For use in operating a textile machine wherein roving is fed downwardly from an upper package along a path extending through a twister head to emerge between drawing rolls, thereafter to be wound by a spinning ring and traveller arrangement on a revolving bobbin, means for facilitating the initial guidance of a roving end along said path comprising a surfaced elongated flexible guide member, the maximum outer cross-sectional dimension of said guide member being slightly less than the inner diameter of a roving passageway extending centrally through said twister head, one end of said guide member temporarily connected to said roving end in order to form a relatively firm flexible extension thereof, whereby once connected to said roving, the other end of said guide member may be manually inserted into said passageway and thrust downwardly through said twister head to emerge between said drawing rolls, said roving being

pulled with said guide member along said path and subsequently disengaged therefrom for connection to said spinning ring and traveller arrangement.

3,307,345
COMBINATION WATCH FRAME FOR WRIST AND PENDANT WEAR

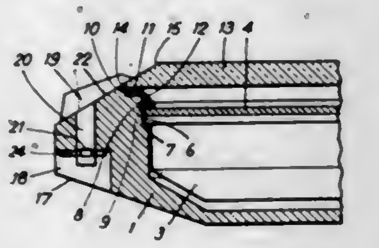
William Cohen, 2165 Ryer Ave., New York, N.Y. 10038
Filed Feb. 15, 1965, Ser. No. 432,484
8 Claims. (Cl. 58—88)



1. A watch case having a frame, a pair of individually movable eyes movably mounted on the frame on at least one side thereof, said eyes having holes disposed in registration with each other for receiving ends of a pintle when the eyes are spaced most widely apart, said holes being adapted to receive a looped end of a pendent strap when the eyes are juxtaposed to each other.

3,307,346
WATCHCASE WITH CRYSTAL RETAINING MEANS

Hans Ulrich Klingenberg, St. Niklaus, near Merzligen, Switzerland
Filed Apr. 22, 1965, Ser. No. 449,953
Claims priority, application Switzerland, Apr. 28, 1964, 5,526/64
3 Claims. (Cl. 58—91)

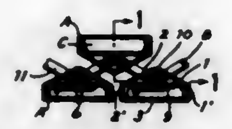


1. A watchcase comprising, in combination, a caseband provided with an annular shoulder, a glass lying within said annular shoulder, a claw member having a body portion and a free end portion projecting above both said annular shoulder; and the glass thus preventing the latter from falling out of said shoulder, said caseband being provided with an opening wholly radially outwardly of said glass parallel to the axis thereof, the body portion of said claw member comprising a part extending within said opening of said caseband, and a removable latch member for securing said part of said body portion of said claw member in said opening of said caseband.

3,307,347
EXPANSIBLE BAND

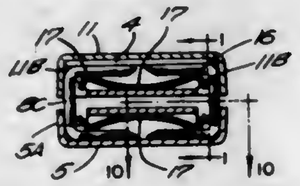
James Thomas Christoff, Toronto, Ontario, Canada, assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed July 27, 1964, Ser. No. 385,442
Claims priority, application Canada, Feb. 8, 1964, 895,194
7 Claims. (Cl. 59—79)

1. An expansible linkage comprising two rows of links, the links of the first row being arranged in opposite and staggered relation to those of the second row, the links of at least the first row being of generally triangular cross-section, a leaf spring within at least each link of the first row, connecting bows whose limbs extend into the links, thus connecting each link of the first row with two adjacent links of the other row, the limbs of the connecting bows in at least the first row being moved together and towards the summits of the links in the first row by the springs, whereby when the linkage is expanded the limbs of the connecting bows in at least the first row slide on the diverging link walls towards the transverse walls of the generally triangular links and compress the springs and when the expanding force is relieved the springs move said limbs back to their initial positions.



3,307,348
EXPANSIBLE LINKAGE FOR USE IN MAKING A WATCH BAND OR SIMILAR ARTICLE OF JEWELRY

Wallace F. Vanover, Warwick, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed June 30, 1964, Ser. No. 379,191
12 Claims. (Cl. 59—79)



1. An expansible linkage including in combination, two rows of overlapping staggered links, each link extending in a direction generally transverse to the length of the linkage,

means interconnecting the links of each row with the links of the other row to provide displacement of the links relative to each other lengthwise of the linkage when the linkage is stretched longitudinally from a contracted to an expanded position, said interconnecting means including an interconnecting member having a leg located within at least one of said links and extending in a direction generally transverse to the length of the linkage and means spaced from said leg for rotatably connecting the interconnecting member to an adjacent link in the other row of links, and

resilient means associated with said one link for resisting said displacement of said links,

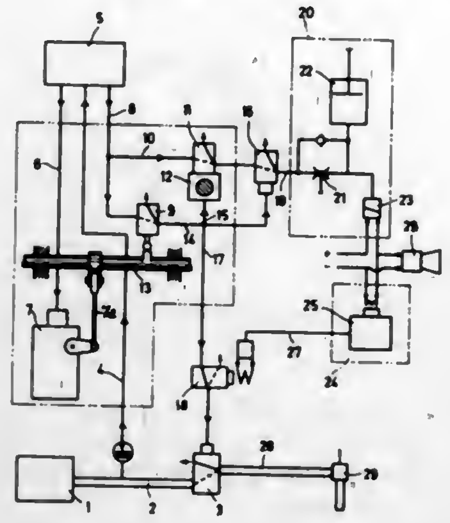
said resilient means comprising a plurality of flat springs, one of said springs engaging an intermediate portion of one of said link walls and extending toward said leg, another of said springs engaging an intermediate portion of said leg to urge said leg away from said one link wall,

said springs being of generally arcuate shape, free from elongate means for clamping them together and the ends of said springs being free from engagement with said interconnecting member,

said leg, said one link wall and said springs, being constructed and arranged whereby during movement of said one link and said adjacent link from their contracted toward their expanded positions said springs are deflected without engagement between their ends and said interconnecting member, and thereafter upon release of the force causing said expansion, said springs act upon said leg to urge said one link and said adjacent link from said expanded position toward a contracted position.

3,307,349
COMPRESSED AIR STARTING MEANS FOR INTERNAL COMBUSTION ENGINE

Eric Georg Fridolf Brelén, Goteborg, Sweden, assignor to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden
Filed Sept. 12, 1966, Ser. No. 578,804
Claims priority, application Sweden, Oct. 8, 1965, 13,062/65
3 Claims. (Cl. 60—16)



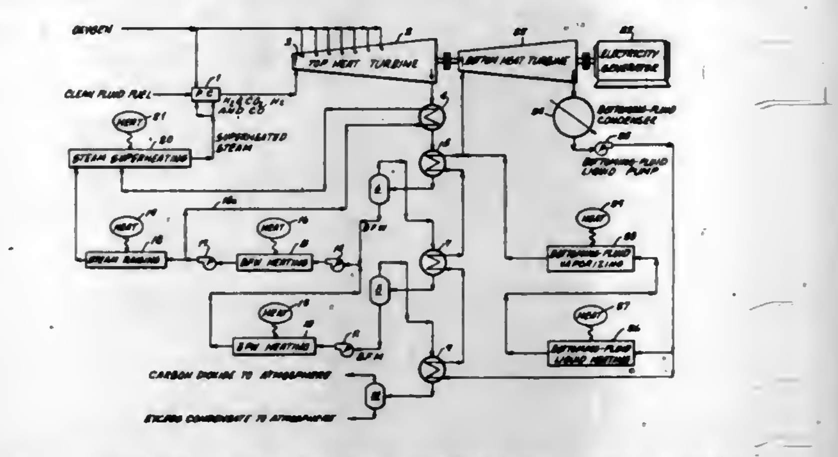
1. Compressed air starting means for an internal combustion engine equipped with starting air valves at the engine cylinders, said starting means comprising in combination;

a source of supply for the compressed air and a main conduit from said source to said starting air valves;
a main starting air valve in said conduit;
a manoeuvring apparatus having manually operable means to control pressure medium impulses to various operating members, including said main starting air valve, at the engine;
an alarm device;
a first connection line between the manoeuvring apparatus and the alarm device;
a blocking valve and a first closure member in said first connection line;
a rotation sensitive device governing said blocking valve and said first closure member;
a communication line between the manoeuvring apparatus and the main starting air valve;
a second closure member in said second communicating line;
a member determining the fuel supply to the engine;
a 3-way valve controlled by said member and operative to open a passage for a pressure medium impulse to said rotation sensitive device as well as to the main starting valve when the fuel is cut off and to close said passage when fuel is supplied and a delay system connected to said first closure member and designed to actuate the alarm a certain period of time after an impulse has passed the blocking valve of the rotation sensitive member and to operate said second closure member to cut off the operating impulse to the main starting valve.

3,307,350
TOP HEAT POWER CYCLE

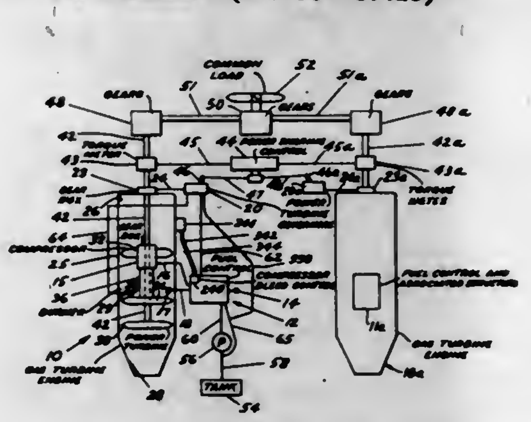
Arthur M. Squires, 245 W. 104th St., New York, N.Y. 10025
Filed July 2, 1964, Ser. No. 380,005
20 Claims. (Cl. 60—39.05)

18. A cycle of the Rankine type which comprises the following steps: employing as cycle fluid a fluid having a critical temperature between 200° F. and 500° F., receiving heat in said fluid primarily from the condensation of steam out of a mixture consisting of steam and non-condensible gases comprising primarily carbon dioxide, said mixture being generated by combining steam with products of combustion of a fuel with substantially pure oxygen, and rejecting heat from said fluid to atmospheric cooling water, said mixture having a pressure within a few p.s.i. of atmospheric.



3,307,351
PLURALITY OF GAS TURBINE ENGINES TORQUE RESPONSIVE TO SHARE EQUALLY IN DRIVING A COMMON LOAD

Dean F. Wheeler, Detroit, Ralph P. McCabe, Warren, Warren H. Cowles, Birmingham, and William C. Larson, Utica, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed July 17, 1964, Ser. No. 384,047
10 Claims. (Cl. 60—39.15)



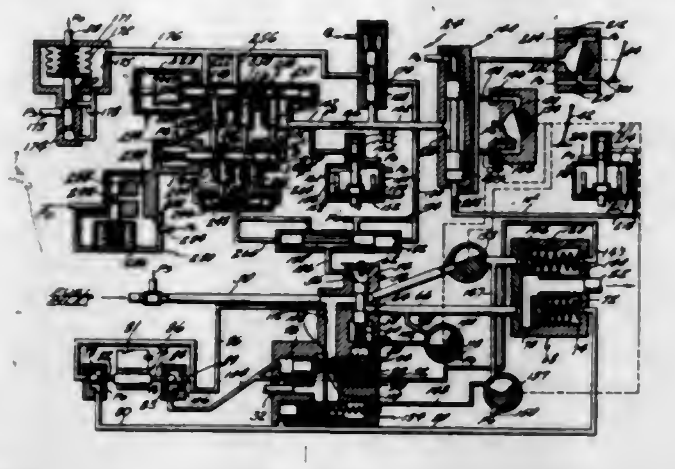
1. The combination of a plurality of gas turbine engines each having a free turbine-driven shaft connected to drive a common load device, a burner chamber, a source of pressurized fuel, a fuel conduit between said source of fuel and said burner chamber, a fuel metering valve in said conduit and fuel control means responsive to selected engine operating conditions and connected to said valve for controlling the fuel flow to said burner chamber as a function of said selected operating conditions, said combination including additionally means for comparing directly and independently of any other operating condition only the torque outputs of each of said engines and, if said torque outputs are not equal, for automatically increasing the torque output of the lower torque engine.

3,307,352
FUEL CONTROL

Charles F. Stearns, East Longmeadow, Mass., Louis A. Urban, Granby, Conn., and Robert C. Baker, Bedford, Mass., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 15, 1964, Ser. No. 337,837
13 Claims. (Cl. 60—39.28)

1. The method of controlling a turbine type of power plant of the type having a burner and a compressor driven by a turbine comprising the steps of pressurizing fuel, metering the pressurized fuel to the burner as a single

line function of $W_f\theta^x/P$ relative to $N/\sqrt{\theta}$ so as to limit the turbine inlet temperature in a predetermined manner,

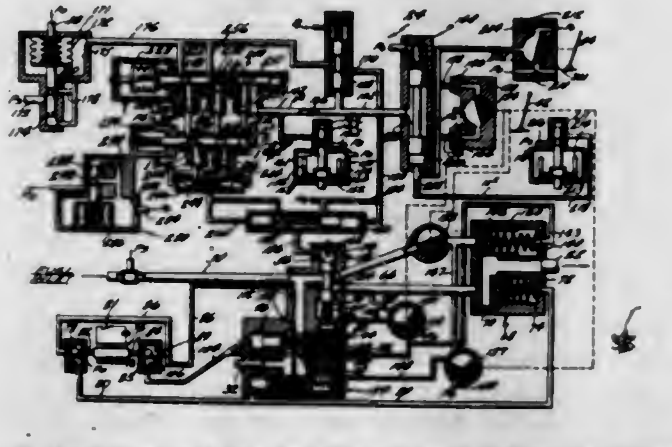


where

W_f=weight of fuel flow per unit of time,
P=pressure of power plant working medium downstream of the compressor,
θ=compressor inlet temperature,
x=thermodynamic values of the power plant working medium,
N=rotational speed of the compressor.

3,307,353
FUEL CONTROL

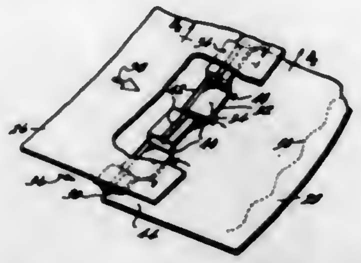
Charles F. Stearns, East Longmeadow, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 15, 1964, Ser. No. 337,904
5 Claims. (Cl. 60—39.28)



4. A fuel control for a turbine type of power plant having a compressor, a burner and a turbine receiving the discharge gases of the burner for driving the compressor, means for establishing the acceleration schedule for the engine so as to prevent surge and overtemperature of the engine independently of each other, said means including a first valve responsive to compressor discharge pressure for establishing a first hydraulic signal, a second valve having first and second metering means located in parallel to each other but serially connected to said first valve for modifying said first hydraulic signal and producing a second and third hydraulic signal, said second valve being responsive to compressor inlet temperature, a third valve responsive to corrected compressor speed having a first metering means serially connected to said first metering means of said second valve and a second metering means serially connected to said second metering means of said second valve each modifying said second and third hydraulic signals for producing a fourth and fifth hydraulic signal, said first and second metering means of said third valve being parallelly disposed relative to each other, and a selector valve connected to the first and second metering means of said third valve for selecting either the fourth or fifth hydraulic signal.

3,307,354
COOLING STRUCTURE FOR OVERLAPPED PANELS

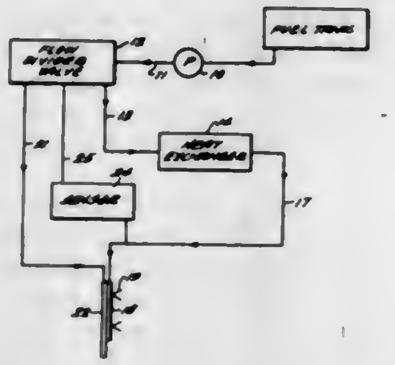
Robert W. Macaulay, Cincinnati, Edward Ekstedt, Montgomery, and Thomas C. Campbell, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed Oct. 1, 1965, Ser. No. 492,153
8 Claims. (Cl. 60—39.66)



1. A cooling structure employing panels formed of overlapping rings with hot and cold fluids on opposite sides thereof,
means in said overlap spacing said rings from one another to form a fluid passage therebetween,
said means comprising a corrugated strip alternately secured to said rings,
metering means extending from said strip to reduce the cross sectional area of said fluid passage,
one of said rings extending downstream of said strip to form a plenum with the other ring whereby fluid flow through said passage is metered and diffused to provide substantially uniform temperature distribution on said rings.

3,307,355
AUGMENTATION SYSTEM FOR REACTION ENGINE USING LIQUID FUEL FOR COOLING

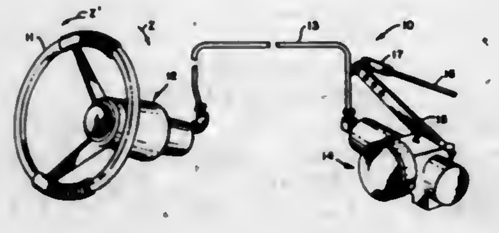
Donald W. Bahr, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 31, 1961, Ser. No. 148,935
6 Claims. (Cl. 60—39.71)



1. In an augmentation system for a reaction engine utilizing a supply of liquid fuel for cooling and including a vapor fuel injector and a liquid fuel injector,
(a) a flow dividing means having an inlet means and first and second outlet means, said inlet means being connected to the liquid fuel supply to receive liquid fuel therefrom, said flow dividing means proportionately dividing the liquid fuel into first and second selected quantities,
  (1) said first selected quantity of liquid fuel being supplied at said first outlet means and being at least a predetermined minimum amount and
  (2) said second selected quantity of liquid fuel being supplied at said second outlet means,
(b) a vapor fuel system including first means for supplying completely vaporized fuel to said vapor fuel injector and
(c) a liquid fuel system including second means for supplying completely liquid fuel to said liquid fuel injector,
(d) said first means including,
  (1) heat exchange means having a variable rate of vaporization of at least a predetermined minimum amount, said heat exchange means having an upstream connection and a downstream connection, said upstream connection being connected to said first outlet means of said flow dividing means to receive said first selected quantity of liquid fuel within said heat exchange means for complete vaporization thereof, said vapor fuel injector being connected to said downstream connection of said heat exchange means to receive the completely vaporized fuel therefrom for establishing a pilot flame at V-gutters in a combustion zone, and
  (2) sensing means in the connection between said heat exchange means and said vapor fuel injector, said sensing means being connected to said flow dividing means for adjustment of the proportional division effected thereby such that said first selected quantity of liquid fuel is supplied at a rate in accordance with said variable rate,
(e) said second means connecting said liquid fuel injector to said second outlet means of said flow dividing means to receive said second selected quantity of liquid fuel therefrom, said liquid fuel injector being disposed closely adjacent said vapor fuel injector such that said second selected quantity of liquid fuel is injected by said liquid fuel injector substantially directly into said combustion zone.

3,307,356
HYDRAULIC MOTION TRANSMITTING SYSTEM

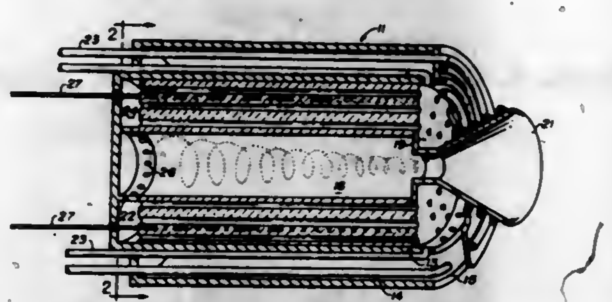
Robert R. Harrison, 713 La Grange Road, Elyria, Ohio 44035
Filed Jan. 13, 1965, Ser. No. 425,316
7 Claims. (Cl. 60—54.5)



1. In a remote motion transmitting system, a master component comprising a rotatable drive shaft, a master cylinder means, a master piston disposed in said cylinder means, and means effecting longitudinal movement of said master piston in response to rotative movement of said drive shaft; a slave component comprising a rotatable output shaft, a slave cylinder means, a slave piston disposed in said slave cylinder means, and means effecting rotative movement of said output shaft in response to longitudinal movement of said slave piston; and a connecting line containing hydraulic fluid connected to both said cylinder means ahead of said pistons, whereby movement of said master piston effects a responsive motion of said slave piston through the medium of said hydraulic fluid, a pair of tensioned spring means connected to said drive shaft and said output shaft, respectively, and rotatively urging said shafts whereby said pistons exert pressure on said hydraulic fluid in said line.

3,307,357
VORTEX ROCKET REACTOR

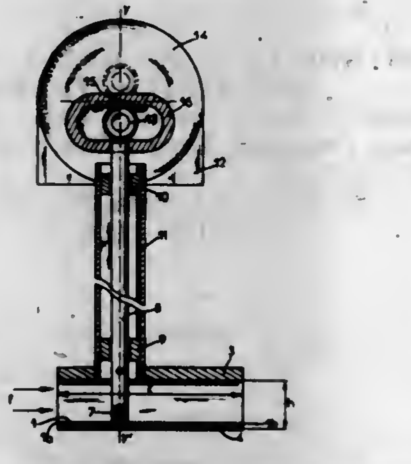
Stirling A. Colgate, Livermore, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 18, 1964, Ser. No. 345,814
14 Claims. (Cl. 60—203)



1. In a method for energizing a rocket propellant within a cylindrical chamber defined by the interior surfaces of an atomic fission reactor core, the steps comprising:
(a) preheating a propellant to the temperature prevailing within said chamber by passing said propellant through said fission reactor core,
(b) injecting said propellant into said cylindrical chamber, the direction of injection being transverse to the axis of said chamber and tangential to the periphery thereof, to form a thin annulus of propellant rotating therein in proximity to said periphery,
(c) isothermally heating said propellant by radiation heat transfer from the interior surfaces of said fission reactor, while continuously injecting propellant into the chamber at a rate sufficient to keep the total angular momentum of the propellant therein constant, and
(d) passing said propellant out of said cavity through a nozzle which converts the rotational kinetic energy of said propellant into axial kinetic energy.

3,307,358
DEVICE FOR PROPELLING OR PUMPING A FLUID AND APPLICATION THEREOF TO THE PROPULSION OF SHIPS

Olivier Geoffroy de la Roche Kerandraon, Paris, France, assignor of one-half to Claude Christian Henry de Saulses de Freycinet, Paris, France
Filed Mar. 5, 1965, Ser. No. 437,359
Claims priority, application France, Mar. 9, 1964, 966,712
12 Claims. (Cl. 60—221)



1. A fluid propeller apparatus comprising a propelling blade pivotally mounted around a reciprocally and rectilinearly driven axle rigidly secured to a reciprocating and rectilinearly driven rod member parallel to the direction in which it is driven and normal to said axle, said propelling blade consisting of two parts extending on either side of said axle and being dissymetrically designed about said axle, and a prismatic housing containing said

propelling blade and having generating lines normal to said rod member and to said axle, said housing comprising two opposite side walls normal to said rod member, and an inlet port and an outlet port located on either side of the transverse plane swept by said axle.

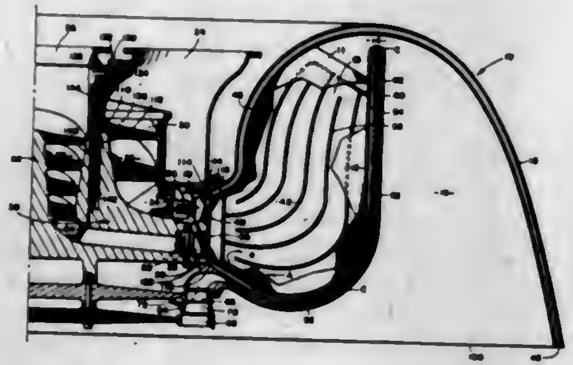
3,307,359

TURBOPUMP ASSEMBLY

Thomas E. Cowell, Woodland Hills, Calif., assignor to North American Aviation, Inc.

Filed June 26, 1963, Ser. No. 290,721

2 Claims. (Cl. 60—258)



1. In a rocket engine having a combustion chamber and nozzle, that improvement which comprises;
- a centrally located first rotatable propellant pump,
- a second rotatable pump, said second pump being concentric to said first pump and integral therewith,
- a rotatable impulse turbine formed integral with said pumps,
- injector means rotatable with said pumps and turbine adapted to receive propellant from said pumps and to inject said propellants into said combustion chamber,
- stationary means including a portion forming a combustion chamber wall to receive a portion of one of said propellants and to heat said propellant so as to form a gas and to direct said propellant to said turbine, whereby said turbine will rotate and drive said pumps so as to pump said propellants through said injector means into said combustion chamber,
- and valve means between said pumps and said injector means,
- said valve means being normally closed to prevent propellant flow, but adapted to open under a predetermined pressure of propellant from said pumps.

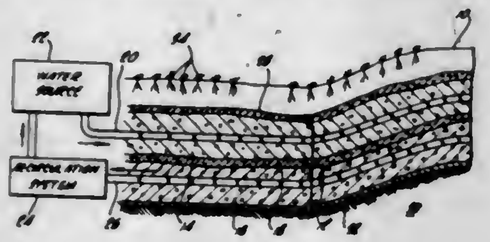
3,307,360

METHOD OF SUBSURFACE IRRIGATION AND SYSTEM THEREFOR

Florent H. Bailly, Arcadia, Calif., assignor to Variperm Company, Long Beach, Calif., a corporation of California

Filed May 11, 1964, Ser. No. 366,469

2 Claims. (Cl. 61—11)



1. A subsurface irrigation system for a plot of soil comprising:
- strata of variable permeabiliy layers disposed below the surface of the soil,
- the strata including a first layer of low permeability concrete,
- the strata including two layers defining an uppermost layer and a lowermost layer of high permeability concrete sandwiching the low permeability concrete, the said two layers having a permeability higher than the said first layer,
- a source of water directed toward the uppermost layer of concrete,
- a water collecting device engaged with the lowermost layer of concrete, and
- a means for recirculating water operatively engaged to the water source and the water collecting device.

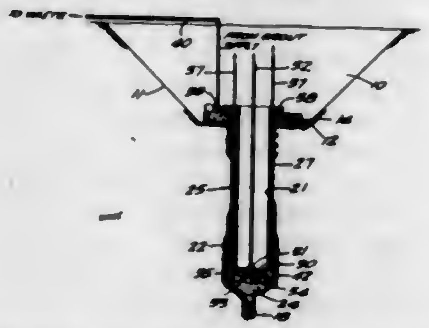
3,307,361

METHOD OF CONSTRUCTING AN UNDERGROUND STRUCTURE

Willis D. Waterman, Salina, Kans., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware

Original application Oct. 21, 1964, Ser. No. 405,432. Divided and this application Sept. 1, 1965, Ser. No. 495,372

9 Claims. (Cl. 61—41)



1. The method of constructing an underground structure of the type described, comprising the steps of: forming an upright shaft in the earth, maintaining liquid in said shaft, floating a double-wall member axially of the shaft, the lower end of the inner wall being closed to permit floating of the member downward in the liquid until the lower portion of the member is positioned near the bottom of the shaft, and introducing cementitious material to fill the space between the lower end of the member and the shaft, and to fill the space between the inner wall and the outer wall.

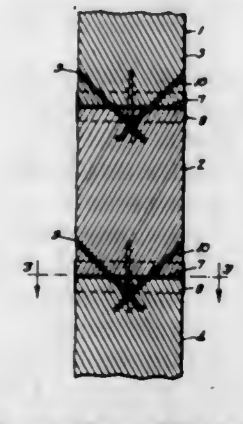
3,307,362

POSTING PILING

DuVal Cravens, Buffalo, N.Y., and Robert F. McGuire, Shawnee Mission, Kans., assignors to Osmose Wood Preserving Co. of America, Inc., Buffalo, N.Y.

Filed Dec. 12, 1963, Ser. No. 330,113

3 Claims. (Cl. 61—54)



1. The method of repairing piling and the like having a deteriorated section which comprises removing the deteriorated section, preparing a replacement section slightly shorter than the removed deteriorated section, treating the exposed end surfaces of the piling and of the replacement section with preservative, applying spacing members to the exposed ends of the replacement section, applying an epoxy resin to the exposed ends of the piling and of the replacement section, positioning the replacement section in the piling in place of the removed deteriorated section, the replacement section being of sufficient length that with the spacing members and the resin it contacts the exposed ends of the piling, forming a first set of pin-receiving holes extending obliquely through the piling on the upper side of the replacement section across the joint therebetween and into the replacement section, forming a second set of pin-receiving holes extending obliquely through the replacement section across the joint and into the piling below the replacement section, and inserting pins in said holes, said holes being spaced apart around the posted piling.

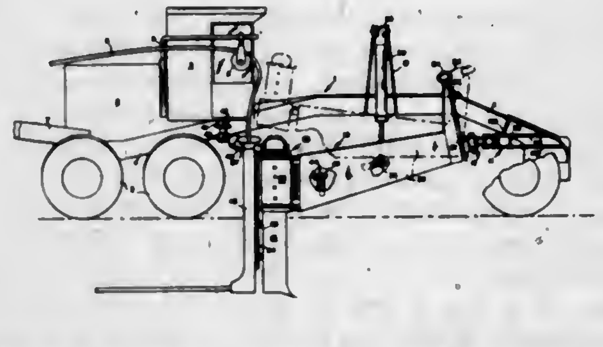
3,307,363

CABLE LAYING MACHINE

Frank R. Kinnan, Camas Valley, Oreg. 97416

Filed June 28, 1965, Ser. No. 467,490

7 Claims. (Cl. 61—72.6)



1. Apparatus for laying continuous lineal material in combination with a vehicle including an elongated chassis having a forward end and a rearward end, said apparatus comprising;
- an elongated member carried by said chassis laterally offset from the longitudinal axis thereof and substantially within the length of said chassis,
- said member trailing rearwardly relative to the forward end of said chassis,
- pivot means disposed rearwardly adjacent the forward end of said chassis and pivotally mounting the forward end of said member thereto allowing lateral and downward swinging movement of said member,
- a cable plow hingedly attached to the opposite end of said member, and
- hydraulic cylinders coupled with said member and with said vehicle for imparting swinging movement to said member whereby said cable plow may be selectively positioned relative to and offset from the longitudinal axis of said chassis.

3,307,364

PELTIER EFFECT AIR CONDITIONING OF AUTOMOTIVE VEHICLES

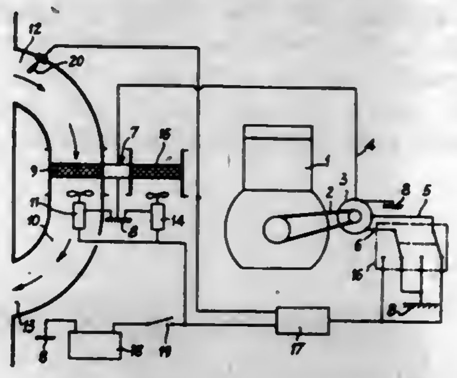
Gaetan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France

Filed Aug. 23, 1965, Ser. No. 481,476

Claims priority, application France, Sept. 8, 1964, 987,431, Patent 1,414,889

4 Claims. (Cl. 62—3)

1. An air-conditioning system for the passenger compartment of automotive vehicles comprising a Peltier effect thermoelectric battery having two radiators, duct means having an inlet and an outlet in said compartment for circulating air therein, one of said radiators being interposed substantially to the middle of said duct means, the other said radiator being mounted externally of both said duct and said compartment, an electric current generator means connected to said thermoelectric battery and driven from the vehicle engine, said generator being separate from the vehicle electrical system generator, a temperature responsive probe disposed within said duct adjacent the inlet thereof, regulator means responsive to said probe to regulate said generator according to the temperature sensed.



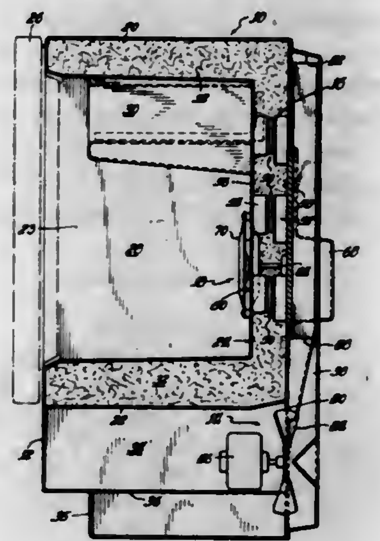
3,307,365

REFRIGERATOR HAVING AIR CIRCULATION GUIDE MEANS

Russell S. Townsend, Fort Smith, Ark., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Sept. 20, 1965, Ser. No. 488,703

14 Claims. (Cl. 62—3)



1. A refrigeration unit comprising:
- a cooling chamber defined by surrounding wall structure;
- a cold wall defined by a portion of said wall structure;
- heat absorption means associated with said cold wall;
- fan means mounted adjacent said cold wall for circulating air in said cooling chamber;
- means, associated with said fan means, for controlling the discharge air flow from said fan means,
- said controlling means comprising a circular deflector plate mounted adjacent said fan means, said deflector plate being formed with a peripheral portion extending beyond the tips of the blades of said fan means and disposed at an acute angle with respect to said cold wall to define, with said cold wall, a constricting outlet for the air discharged by said fan means.

3,307,366

TEMPERATURE AND ATMOSPHERE CONTROL APPARATUS AND METHOD THEREFOR

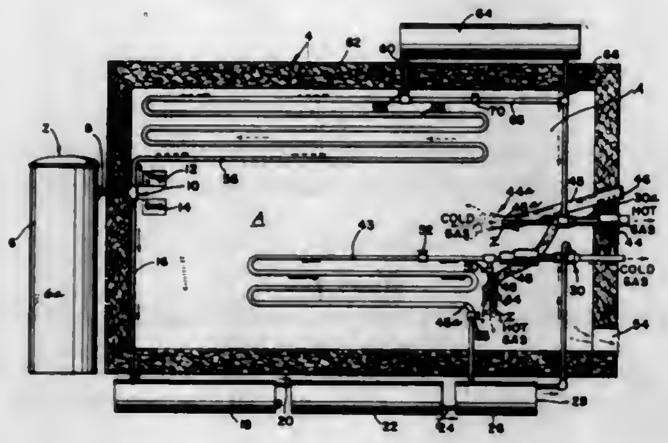
Clifford E. P. Smith, Schererville, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed July 26, 1965, Ser. No. 474,665

29 Claims. (Cl. 62—5)

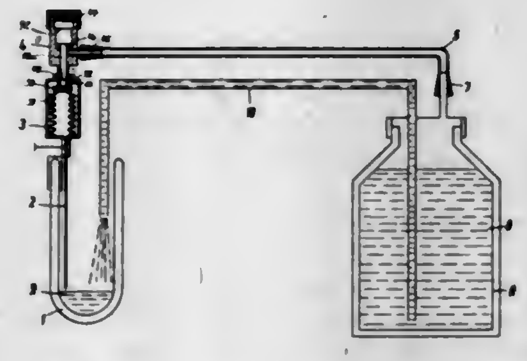
1. An apparatus for regulating the temperature and atmosphere within an enclosure comprising a cryogenic medium, a vaporizer and heat exchanger means for con-

verting the cryogenic medium from a liquid to a gas at an increased temperature, a vortex tube for receiving the heated vapors and having warm and cold vapor discharge openings, the cold discharge opening leading to the atmosphere and the warm discharge opening leading to the interior of the container, a refrigerating means, a second vortex tube adapted to exit warm vapors and to introduce cold vapors into the container and connected with the refrigerating means, thermostatic means selectively connecting the cryogenic medium with the vaporizer and heat exchanger means and the refrigerating means when the temperature in the container is above or below a predetermined value and venting means adapted to introduce ambient surrounding air to the container for mixing with the vaporized cryogenic medium within the container.



3,307,367
CONTROL DEVICE

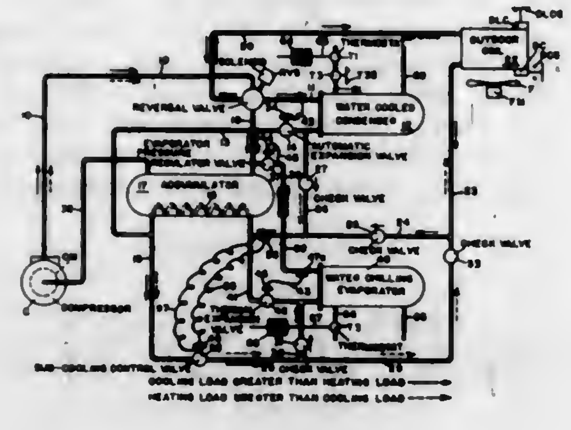
Gustav Klipping and Hans Dietrich, Berlin-Zehlendorf, Germany, assignors to Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.V., Gottingen, Germany
Filed Sept. 23, 1965, Ser. No. 489,692
Claims priority, application Germany, Oct. 28, 1964, M 62,916
6 Claims. (Cl. 62—49)



1. In a refilling system for low boiling liquids wherein the interior of a supply vessel supplying the liquid is closed by a control valve in an exhaust gas line, the regulation of the control valve being dependent upon the level of the liquid in a working vessel, the blocking of the gas line by the closing of the control valve causing an excess pressure to build up through the evaporation of the liquid within the supply vessel, whereby the excess pressure causes the liquid to be conducted into the working vessel, the improvement comprising: a finely adjustable throttle means connected in front of the control valve for controlling the rate of pressure change in the supply vessel when the control valve is open.

3,307,368
HEAT PUMPS

James R. Harnish, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 3, 1966, Ser. No. 518,075
20 Claims. (Cl. 62—160)


OUTDOOR COIL
REVERSAL VALVE
WATER COOLED CONDENSER
AUTOMATIC EXPANSION VALVE
ACCUMULATOR
CHECK VALVE
CHECK VALVE
CHECK VALVE
WATER CHILLING EVAPORATOR
COMPRESSOR
THERMOSTAT
CHECK VALVE
COOLING LOAD GREATER THAN HEATING LOAD
HEATING LOAD GREATER THAN COOLING LOAD

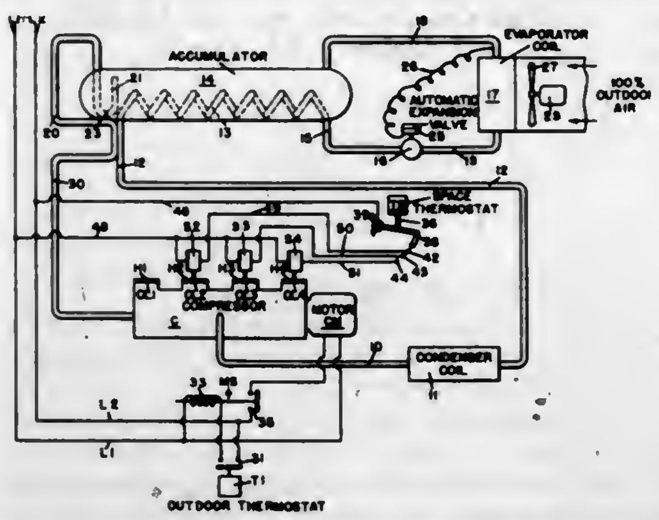
1. A heat pump comprising a refrigerant compressor; a fluid heating condenser; a fluid cooling evaporator; an outdoor heat exchanger; accumulator means; a heat exchange coil arranged to heat liquid within said accumulator means; a main expansion valve; a thermal expansion valve; a suction gas line connecting said accumulator means to the suction side of said compressor; means when the cooling load on said evaporator is greater than the heating load on said condenser, for causing refrigerant to flow in a first circuit in which discharge gas from said compressor is directed into said exchanger, in which condensed refrigerant from said exchanger is directed through said coil and then through said main expansion valve into said evaporator, and in which gas and unevaporated refrigerant is directed from said evaporator into said accumulator means; means when additional heating is required while said cooling load is greater than said heating load, and when said heating load is greater than said cooling load, for causing said refrigerant to flow in a second circuit in which discharge gas from said compressor is directed into said condenser, in which condensed refrigerant from said condenser is directed into said coil, in which refrigerant from said coil is directed through said main expansion valve into said exchanger and into said evaporator, in which refrigerant from said condenser is directed through said thermal expansion valve into said evaporator when the refrigerant directed through said main expansion valve into said evaporator is insufficient to prevent the latter from becoming starved, in which gas and unevaporated refrigerant is directed from said exchanger and from said evaporator into said accumulator means; means responsive to superheat in the gas leaving said evaporator for adjusting said thermal expansion valve; and means for adjusting said main expansion valve to meter all of the refrigerant which is condensed less that metered by said thermal expansion valve.

3,307,369
REFRIGERATION SYSTEM WITH COMPRESSOR LOADING MEANS

James R. Harnish, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 29, 1965, Ser. No. 467,999
7 Claims. (Cl. 62—209)

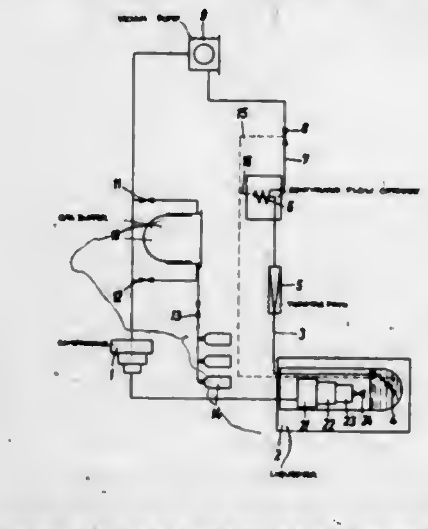
1. A cooling system comprising a refrigerant compressor, a condenser, a heat exchange coil, and automatic expansion valve, an evaporator and an accumulator connected in the order named in a refrigeration circuit, said coil being arranged to heat liquid within said accumulator, said compressor having first and second

cylinders, and having means including a solenoid for loading and unloading said second cylinder, an electric circuit for energizing said solenoid, means for cooling a fluid with said evaporator, a thermostat responsive to the temperature of said fluid, said thermostat having a switch in said circuit, an electric motor for driving said compressor, a control switch independent of said thermostat, and an electric circuit including said control switch for energizing said motor.



3,307,370
COOLING DEVICE FOR HELIUM

Gustav Klipping, Berlin-Zehlendorf, Germany, assignor to Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.V., Gottingen, Germany
Filed Aug. 6, 1965, Ser. No. 477,915
Claims priority, application Germany, Aug. 6, 1964, M 62,017
8 Claims. (Cl. 62—210)



1. A cryogenic gas refrigerator system using a refrigerant, comprising, in combination:

a compressor;

liquifier means connected to said compressor for liquefying a refrigerant;

a continuous flow cryostat connected to said liquefier means for producing controllable low temperatures by evaporation of the liquid refrigerant;

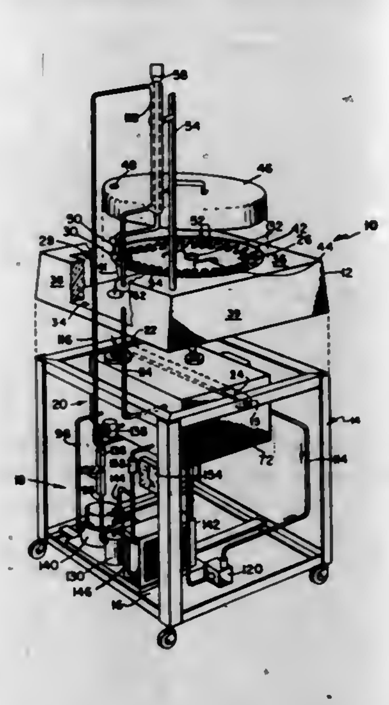
first thermostatically controlled valve means for regulating the flow of the liquefied refrigerant between said liquefier means and said continuous flow cryostat in response to the temperature at a point within said cryostat;

a vacuum pump connected between said continuous flow cryostat and said compressor for pumping the gas from said cryostat to said compressor; and

second thermostatically controlled valve means for regulating the flow of the gas between said continuous flow cryostat and said vacuum pump in response to the temperature at a point within said cryostat.

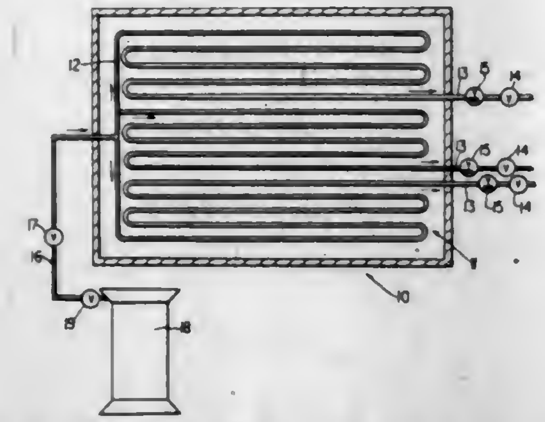
3,307,371
REFRIGERATED FRACTION COLLECTOR APPARATUS

Nicholas Andros, 7736 W. Lake St., Morton Grove, Ill. 60053
Filed Feb. 2, 1966, Ser. No. 524,542
10 Claims. (Cl. 62—234)



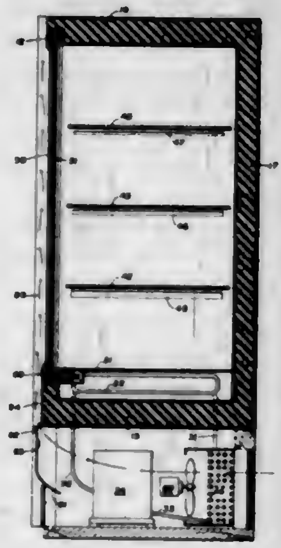
1. A refrigerated fraction collector apparatus comprising an enclosed, thermally insulated hollow housing, a turntable mounted within the said housing and adapted for step-wise rotation within said housing, said turntable having openings arranged therein for receiving sample collecting containers, removable cover means for said housing adapted sealingly to cover said housing and having a port therein for introduction of samples successively to the sample collecting containers as the turntable rotates, a support framework for said housing, a refrigerant compressor apparatus mounted on the framework, heat exchanger means mounted on said framework closely adjacent said housing, said housing including a floor portion having an air inlet port and an air outlet port formed therein, said heat exchanger means communicating to said respective ports, blower means to circulate air between the interior of the housing and through said heat exchanger means, conduit means communicating between the refrigerant compressor and the heat exchanger means, enclosure means for accommodating said heat exchanger means and said blower means and said enclosure means being encapsulated in a block of expanded foam type plastic insulating material, and said heat exchanger means comprising first and second heat exchangers arranged in said enclosure means with the blower means adjacent said second heat exchanger to permit the circulation of air along a path defined by the interior of the housing through the outlet port in the floor of the housing, across the first and second heat exchangers, to the blower means and through the inlet port of the housing to the interior of the housing, said first and second heat exchangers each having primary coils for the passage of refrigerant therethrough and tube link means connecting said respective primary coils with the conduit means, one of the heat exchangers having a secondary coil arranged therein in heat exchange relation to the primary coil thereof, a fluid circulating system communicating with said secondary coil for directing antifreeze type coolant therethrough, whereby moisture carried by the cooled air is condensed on the coils of the heat exchanger means so that chilled, dehumidified air is delivered by the blower means to the inlet port in the floor of the housing and into the interior of the housing.

3,307,372
SKATING RINK
Alphonse Kenison, Washington Spring Road,
Palisades, N.Y. 10964
Filed July 29, 1965, Ser. No. 475,658
1 Claim. (Cl. 62—235)



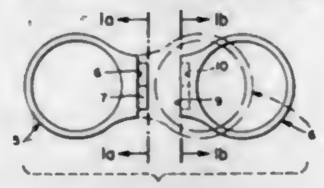
In an ice skating rink, the combination comprising an open top container of a desired size adapted to contain water; heat transfer means at the bottom of said container and adapted to be in contact with water in said container; said heat transfer means comprising a plurality of units which may be connected to a manifold at their inlet ends and to exhaust lines; said exhaust lines including control valves and relief valves; a replaceable tank of liquid gas connected to the inlet of said manifold; expansion valve means located upstream of said inlet of said manifold; and valve means connected to the discharge side of said replaceable tank.

3,307,373
TRANSPARENT REFRIGERATOR DOOR CONTROL
John S. Booth, 1400 S. Haskell, Dallas, Tex. 75223
Filed Oct. 22, 1965, Ser. No. 502,183
5 Claims. (Cl. 62—248)



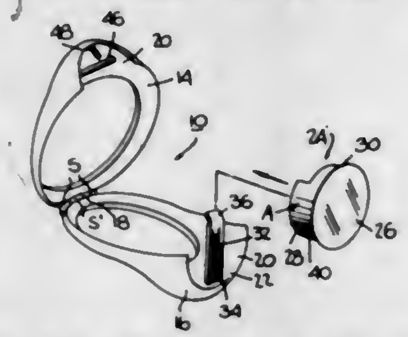
1. In a refrigerator having forced air circulation therein and a door having a plurality of spaced transparent panels, which door is provided with sealing structure which is air-tight upon closure thereof, the combination which comprises
(a) duct structure opening at one end within said refrigerator and at the other end in the space between said panels with said duct structure being severable upon opening of said door, and
(b) means for developing pressure lower than the ambient pressure in said interior from said air circulation and for applying said low pressure to said other end to cause any air movement through said duct structure when said door is closed to be toward said interior.

3,307,374
SET OF FINGER RINGS WITH INTERFITTING PORTIONS
Bernard A. Kirshbaum, 669 Paddock Road,
Havertown, Pa. 19083
Filed Oct. 16, 1963, Ser. No. 316,689
7 Claims. (Cl. 63—1)



1. A pair of finger rings comprising:
(a) a first ring having an outer surface portion containing projecting indicia means extending generally perpendicular thereto and
(b) a second ring having a corresponding outer surface portion containing intaglio indicia means, said projecting and intaglio indicia means being constructed to mate with one another upon engagement of said surface portions.

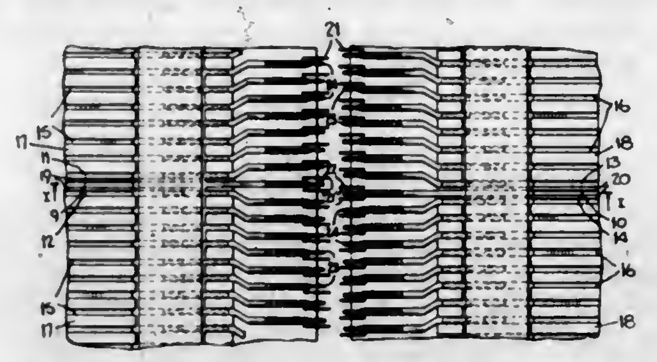
3,307,375
FINGER RING WITH INTERCHANGEABLE HEADS
Charles Estrin, 73—03 183rd St., Flushing, N.Y. 11363, and Arthur Slegel, 63—61 99th St., Forest Hills, N.Y. 11374
Filed May 14, 1964, Ser. No. 367,429
4 Claims. (Cl. 63—15)



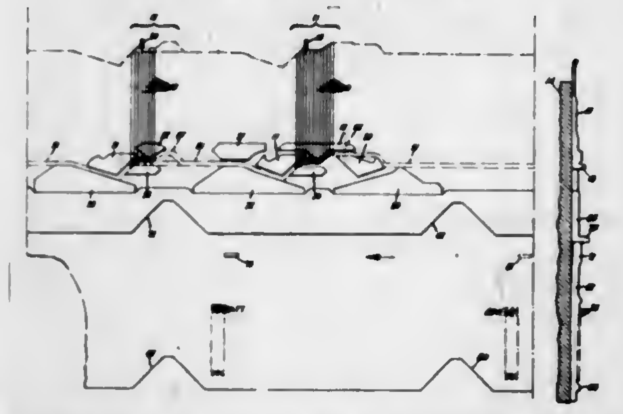
1. A finger ring with interchangeable heads, said ring including a circular band comprising two sections, hinge means mounting said sections for relative mutual movement about an axis perpendicular to the central axis of the finger opening of the band between remote and juxtaposed positions, said sections in juxtaposed position defining a seat having an outwardly opening mouth, a head, said head including a shank configured for reception in the mouth and to nest in and interfit with the seat, and latch means detachably holding the shank in its nested interfitted position in the seat and detachably retaining the sections in their juxtaposed position, said latch means including a resilient tongue secured at one end to one section, a catch carried by the other section and detachably engaging the free end of the tongue and a passageway in the shank shaped to match the cross-sectional shape of the tongue, said tongue extending through the passageway and resiliently engaging the shank.

3,307,376
KNITTING MACHINE
Fritz Seller, Corcelles, Neuchatel, Switzerland, assignor to Edouard Dubied et Cie (Societe Anonyme), Couvet, Neuchatel, Switzerland
Filed June 4, 1963, Ser. No. 285,323
Claims priority, application Germany, June 8, 1962, D 39,114
4 Claims. (Cl. 66—70)

1. In a stitch-transfer V-bed flat knitting machine having two opposed inclined needle beds: a straight transverse central groove in the center of each needle bed, the central groove of one bed being laterally offset from that of the other; a first transverse groove on each side of the central groove of each bed, parallel thereto and spaced therefrom by one-half the needle gauge; and a like number of a plurality of transverse grooves lying on either side of each central groove and beginning at one full needle gauge from a said first groove, said plurality of grooves extending parallel to the corresponding central groove and adjacent grooves of said plurality being separated by one full needle gauge, said central grooves, first grooves, and plurality of grooves all having a common width for receiving each a single knitting needle.

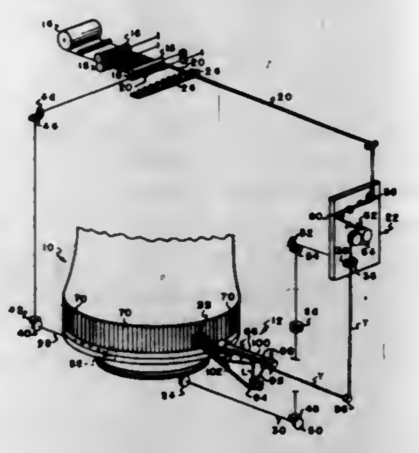


3,307,377
SINKER OPERATING MEANS AND METHOD FOR CIRCULAR KNITTING MACHINES
Walter H. Imboden, 2704 Avon Ave.,
Reading, Pa. 19608
Filed June 29, 1964, Ser. No. 378,627
12 Claims. (Cl. 66—108)



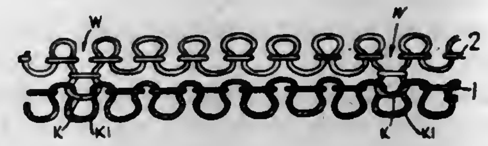
12. A method of knitting pairs of courses on a circular knitting machine having a rotatable cylinder, needles in said cylinder, means for operating said needles through stitch drawing movements, means for feeding yarn to said needles, a first group of sinkers associated with a first group of needles in said cylinder, and a second group of sinkers associated with a second group of needles in said cylinder, including the steps of
(a) feeding yarn to the needles of said first and second groups,
(b) operating said needles of said first and second groups and positioning said sinkers of said first and second groups in a first position and drawing stitches of one length in one of the courses of said pair of courses,
(c) feeding yarn to the needles of said first and second groups,
(d) operating the needles of said first group and positioning the sinkers of said first group in a second position and drawing stitches of said one length in a portion of the other course of said pair of courses, and
(e) operating the needles of said second group and positioning the sinkers of said second group in said second position and drawing stitches of a different length in another portion of said other course.

3,307,378
KNITTING APPARATUS
William P. Warthen, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Original application Jan. 14, 1964, Ser. No. 337,576. Divided and this application Nov. 8, 1965, Ser. No. 506,659
4 Claims. (Cl. 66—125)



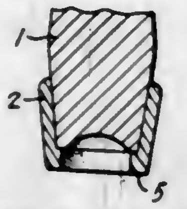
1. Apparatus for continuously knitting fabric from a roll of unslit fabric comprising: slitting means to slit a portion of a roll of unslit fabric into yarn strips, a knitting mahine having a circular united row of needles, loop forming means adjacent said needles to form loops in said needles, means supplying at least one of said yarn strips to said knitting machine at a substantially constant rate and means connected to said loop forming means to vary the position of said loop forming means relative to said circular row of needles in response to the rate of take-up of yarn by the knitting machine.

3,307,379
MEN'S HOSE OR HALF HOSE OR OTHER KNITWEAR ARTICLES
George Henry Woolley, Shepshed, and Harry Adams, Mount Sorrell, England, assignors to Whyte & Smith Limited
Filed Nov. 21, 1962, Ser. No. 239,256
Claims priority, application Great Britain, Mar. 30, 1962, 12,218/62
5 Claims. (Cl. 66—178)



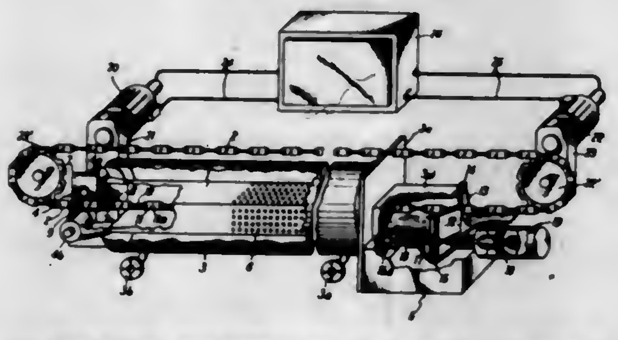
1. A stocking having a foot, leg, heel and toe portion, said foot and leg portion being formed from a circular knitted fabric comprising an inner tube of courses and wales of knitted loops substantially all composed of a yarn of a soft fiber and an outer tube of courses and wales disposed closely about said inner tube and substantially all composed of a yarn of hard wearing fiber, a plurality of means spaced about the circumference of said fabric interconnecting said inner tube and said outer tube, each of said means extending throughout the length of said fabric and containing a portion of the single loops of yarn of one of said tubes looped through a portion of the single loops of yarn of the other of said tubes, each of said interconnecting means forming a plurality of enclosed cells from the loops of said inner and outer tubes, said cells extending throughout the length of said fabric in a continuous ornamental pattern, said tubes being otherwise free of each other between said cells.

3,307,380
CANDLE
Francois R. A. Mailloux, 690 Champlain,
St. Jean, Quebec, Canada
Filed Sept. 15, 1965, Ser. No. 487,357
13 Claims. (Cl. 67—22)



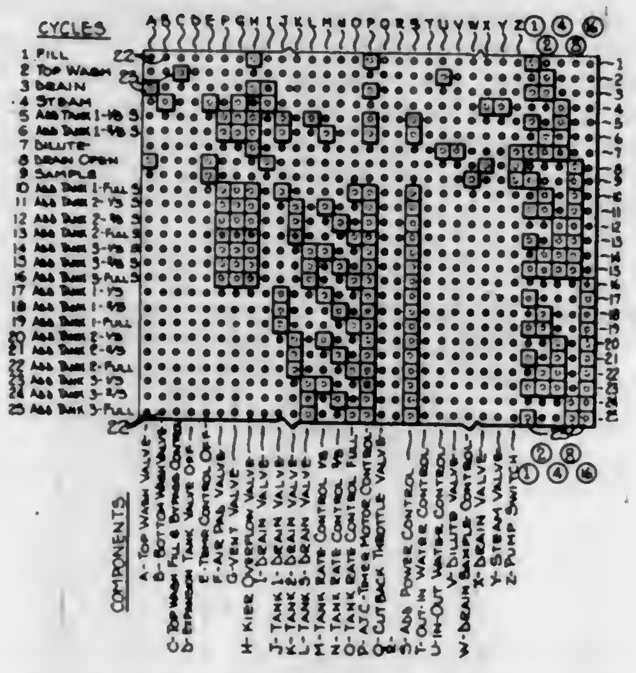
1. A candle having an upper elongate body portion of wax, a base portion comprising a core of said wax and adhered to said base portion, a body of adherent material extending longitudinally beyond said core, said adherent material being tacky at a temperature below the softening temperature of said candle wax and being adapted to seat the candle to a horizontal seating surface, said base portion having a transversely extending substantially planar shoulder of annular configuration, wherein said base portion is shaped with an end surface including said annular shoulder, and centrally of said shoulder, a cavity, at least a surface portion of said shoulder being composed of said adherent material.

3,307,381
APPARATUS FOR STEAMING TEXTILE MATERIALS
Lucien Devylerre, 134 rue du Faubourg de Douai,
Lille, France
Filed July 1, 1964, Ser. No. 379,674
Claims priority, application France, Sept. 14, 1963,
947,552
8 Claims. (Cl. 68—5)



1. A steaming arrangement for textile material comprising, in combination:
- (a) a container having an inlet portion and an outlet portion;
- (b) means for admitting steam to said container;
- (c) a continuous chain member, a portion of said chain member extending in said container from said inlet portion to said outlet portion;
- (d) first drive means for continuously moving said chain member in said container in a direction from said inlet portion to said outlet portion at a predetermined speed;
- (e) sealing means in said inlet portion, said sealing means comprising
  - (1) a partition member fixedly secured to said container and formed with two openings therethrough transverse of the direction of movement of said chain member, said openings being spaced from each other transversely of said direction of movement, and with a bore extending in said direction of movement intermediate said openings, said chain member being received in said bore for passage therethrough, and
  - (2) two roller members arranged for rotation about respective substantially parallel spaced axes, each roller member having two axially terminal portions and a central axial portion of smaller cross section than the cross sections of the corresponding terminal portions, said central portions being respectively received in said openings for rotation about said axes; and
- (f) second drive means for rotating said roller members at a circumferential speed of the terminal portions thereof which is substantially greater than said predetermined speed.

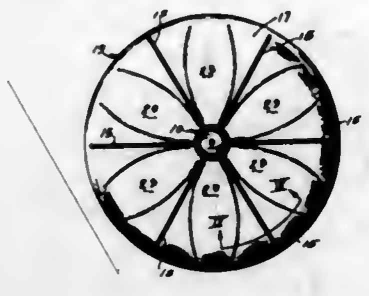
3,307,382
DIGITALLY CONTROLLED RANDOM ACCESS MEANS
George Gordon Hacker and John G. Luker, Stanley, N.C., assignors to Gaston County Dyeing Machine Company, Stanley, N.C., a corporation of North Carolina
Filed Sept. 21, 1964, Ser. No. 397,891
12 Claims. (Cl. 68—12)



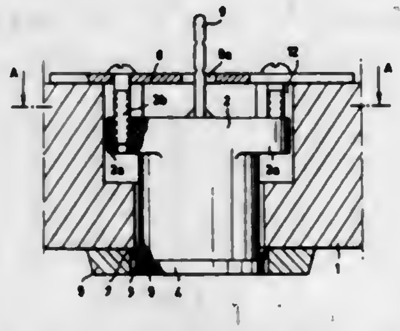
1. The combination of a movable programmer having physical indicia thereon arranged in a predetermined manner, a first group of switches associated with said programmer and operated by said physical indicia on said programmer to actuate a plurality of cycles in any desired operation, and random access means for controlling and moving said programmer to control the sequence and desired repeats of cycles actuated by said physical indicia on said programmer independently of the sequence of arrangement of said physical indicia on said programmer; said random access means comprises movable means having physical indicia thereon, a second group of switches associated with said movable means and operated by said physical indicia on said movable means, motor means actuated by said second group of switches to move said programmer, and a third group of switches associated with said programmer and cooperating with said second group of switches and operated by said physical indicia on said programmer to stop said motor means and said programmer at the desired location to allow said first group of switches to be operated by said physical indicia on said programmer to actuate the desired cycle in the operation.

3,307,383
AGITATOR WITH CONTROLLED VANE FLEXURE
Clifton A. Cobb, St. Joseph, and Raymond W. Spiegel, Ann Arbor, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Oct. 1, 1965, Ser. No. 491,956
9 Claims. (Cl. 68—134)

1. An agitator for use in a vertical axis washing machine comprising: an upright center post, a plurality of flexible vanes connected to said center post and having radially extending free ends, and a skirt coextensively underlying and spaced closely subjacent said flexible vanes.

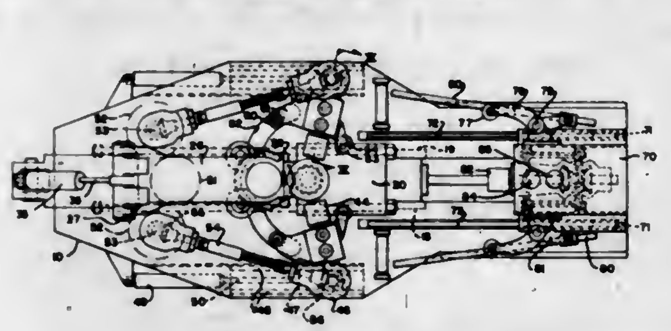


3,307,384
DOOR CYLINDER LOCKS AND METHODS OF ASSEMBLY THEREOF
Into Villian Sinervo, Koskelantie 29A, Helsinki, Finland
Filed Apr. 13, 1965, Ser. No. 447,679
Claims priority, application Finland, Jan. 9, 1963, 36/63
9 Claims. (Cl. 70—370)



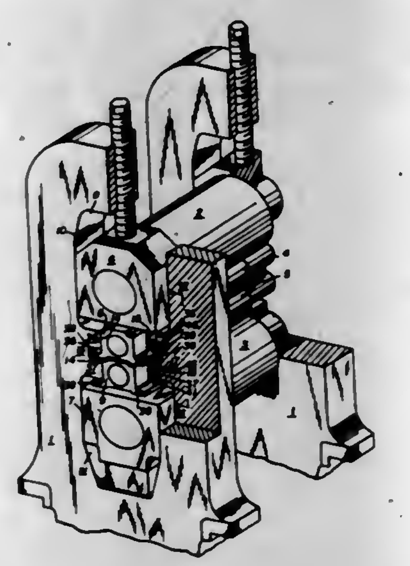
1. A cylinder lock adapted for being mounted in an aperture in a door, said lock comprising a cylinder housing having opposite ends, said housing being adapted for accommodation in said aperture with a portion at one of said ends projecting beyond the door, means to receive a fastener at the other of the ends of the housing for connecting the housing to the door, a protecting ring encircling the portion of the housing which projects beyond the door, and retaining ring means between the latter said portion of the housing and the protecting ring to cause the same to be secured in engagement in which relative axial movement in one direction only between the housing and the protecting ring is resisted while relative movement in the opposite direction is permitted.

3,307,385
RING ROLLERS
Milo Shutt, Alliance, Ohio, assignor to The Alliance Machine Co., a corporation of Ohio
Filed Aug. 13, 1964, Ser. No. 389,418
7 Claims. (Cl. 72—87)



1. A ring roller comprising a main generally horizontal frame having ways extending lengthwise thereof, a work roll journalled in said frame for rotation on a vertical axis, a horizontally movable mandrel carriage on the ways, said carriage having mandrel journalling members extending around the work roll to carry a mandrel on an axis parallel to the work roll and adjustable with respect thereto, a mandrel in said carriage, at least one of said mandrel journalling members including an arm pivoted at one end to said carriage and extending above the work roll and transverse to its axis, means for moving said arm from a generally horizontal to a generally vertical position to expose the work roll, means on said arm for releasing the mandrel from said arm prior to moving said arm on its pivot and movable backing roll means on the main frame movable from a position engaging the upper work roll journal to hold it against movement transverse to its axis to a position exposing the entire work roll whereby when said arm and backing roll means are moved to expose the work roll said roll may be freely lifted vertically from the frame.

3,307,386
FOUR-HIGH ROLLING MILL
Frederick William Alan Ward, Pittsburgh, Pa., and James Douglas, Hamilton, Ontario, Canada, assignors to The Steel Company of Canada, Ltd., Hamilton, Ontario, Canada
Filed July 15, 1963, Ser. No. 295,100
12 Claims. (Cl. 72—241)

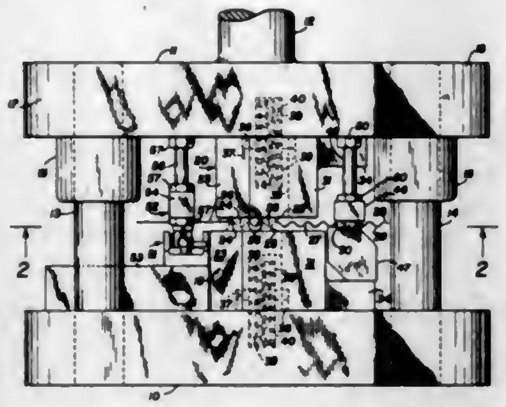


1. A four high rolling mill comprising: a housing having upper and lower generally rectangularly shaped windows and a slot extending therebetween, said slot being defined by the mutually facing surfaces of two inwardly extending flanges separating the windows; upper and lower back-up roll chocks disposed respectively in said upper and lower windows, and adapted to sliding engagement therewith; upper and lower work roll chocks disposed within said slot and adapted to have sliding engagement with said surfaces; and contour control apparatus for selectively applying pressure to at least said work roll chocks and said upper back-up roll chock.

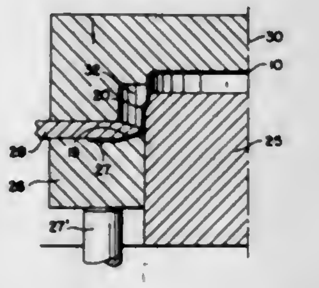
3,307,387
METHOD AND APPARATUS FOR PERFORATING AND CORRUGATING METALLIC RIBBON
Elbert M. Lacey, Jr., Silver Spring, Nev., and William F. Rethwish, National City, and Dale S. Harding, Chula Vista, Calif., assignors to Rohr Corporation, Chula Vista, Calif., a corporation of California
Filed Dec. 11, 1963, Ser. No. 329,744
15 Claims. (Cl. 72—324)

1. The method of perforating and corrugating metallic ribbon to form substantially V-shaped perforated corrugations therein having nodal portions at the crests and valleys which comprises the steps of piercing the rib-

bon, and concurrently corrugating eyeleting and coining the pierced ribbon so that the protuberances resulting from the piercing of the same fall into predetermined positions in the sidewalls of the corrugations, and the protuberances become eyelets in the coining of said sidewalls.



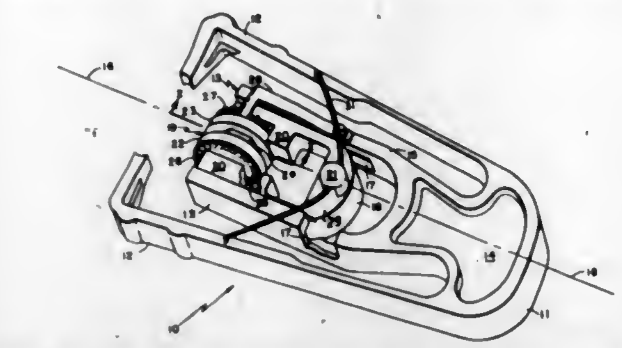
3,307,388
WHEEL MANUFACTURE
Dewey H. Brooks, Jr. and Orville W. Jacobs, Dayton, Ohio, assignors to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware
Original application Jan. 16, 1961, Ser. No. 82,748, now Patent No. 3,128,539, dated Apr. 14, 1964. Divided and this application May 23, 1963, Ser. No. 282,608
4 Claims. (Cl. 72—348)



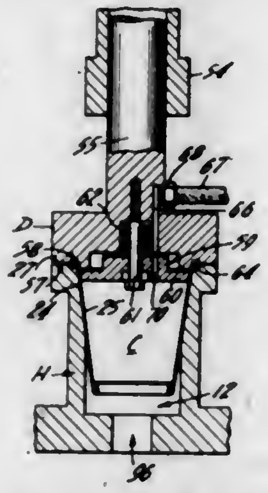
1. A set of cooperating forming dies for use in the manufacture of a sheet metal wheel having a disk portion and an integral substantially V-shaped peripheral groove comprising, a punch having a cylindrical body portion terminating in a circular curved end portion of reduced diameter with a tapered camming surface between the body portion and the end portion, the axial length of the camming surface being approximately the same as the distance from the camming surface to the end of the end portion and the peripheral part of the end portion being rounded, and an outer die extending around the punch and having an annular blank holding recess, radially operative blank holding die sections cooperating with the outer die, and an opposing die opposing the punch and having a shallow central recess shaped in accordance with the punch end and adapted for engagement with the central portion of the blank to be formed and engageable with the outer die to move therewith.

3,307,389
SURGICAL INSTRUMENT
Frank L. Rose, Reading, and Timothy A. Brennan, Andover, Mass., assignors, by mesne assignments, to Tracor Inc., Austin, Tex., a corporation of Texas
Filed May 28, 1964, Ser. No. 370,912
10 Claims. (Cl. 72—410)

1. In a clip dispenser having a disposable clip holder on the periphery of which are mounted surgical clips that are normally sequentially dispensed, a rotatable hub suitable for mateably retaining said clip holder, and comprising an equilateral polygon, whereby said clip holder may be readily mounted on said hub regardless of the position of said hub.

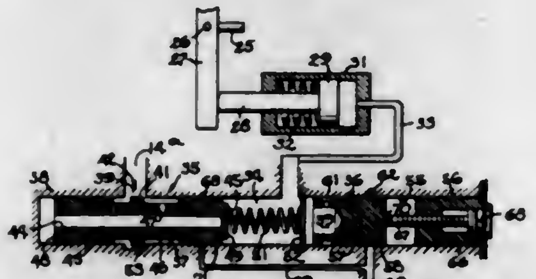


3,307,390
METHOD OF AND APPARATUS FOR TESTING CONTAINERS
Herbert Charles Behrens, Easton, Pa., and William Addison Sheninger, Alpha, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 12, 1963, Ser. No. 308,526
20 Claims. (Cl. 73—45.2)



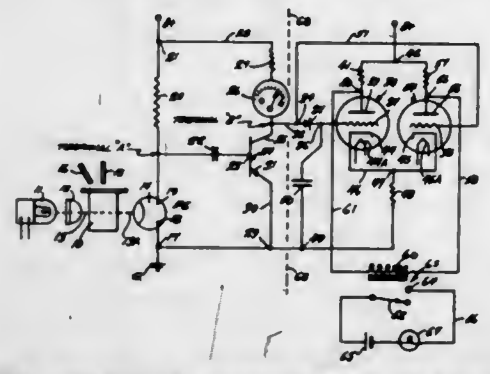
1. A method of detecting leaks in an open ended container while simultaneously forming a rolled bead on the open end thereof comprising the steps of: closing the open end of the container while simultaneously forming an outwardly rolled bead thereon, introducing a gas at a predetermined pressure and rate of flow into said container during said bead forming operation, and measuring the pressure increase in said container during said bead forming operation.

3,307,391
VISCOSITY MEASURING DEVICE
George E. Parker, Rockford, Ill., assignor to Woodward Governor Company, Rockford, Ill., a corporation of Illinois
Filed Jan. 25, 1965, Ser. No. 427,890
3 Claims. (Cl. 73—56)



1. A device for measuring the viscosity of a liquid having, in combination, a source of said liquid maintained under pressure and a cylinder closed at one end and communicating with said source at a valve opening, a chamber filled with said liquid and defined by the opposite end portion of said cylinder and the end of a hollow plunger slidable in the cylinder, a spring urging the plunger toward said closed cylinder end, a flow restricting orifice extending through said plunger end and to said chamber, means on said plunger cooperating with one edge of said opening to form a valve responsive to the opposing forces exerted on said plunger by the pressure therein and by said spring and controlling the admission of liquid from said source to the interior of said plunger so as to maintain a constant pressure drop across said orifice and a constant flow into said chamber, means defining an outlet orifice allowing liquid supplied through said first orifice to escape continuously from said chamber to a low pressure space at a rate inversely proportional to the viscosity of the liquid, means for sensing changes in the pressure in said chamber as an indication of viscosity of said liquid, and means along said plunger and cylinder between said valve and said chamber for trapping and diverting out of the cylinder to a low pressure space any of said liquid which leaks along the exterior of the plunger toward said chamber.

3,307,392
AUTOMATIC PROTHROMBIN TIMER APPARATUS AND METHOD
Charles A. Owen and James Isaacson, Rochester, Minn., assignors to Research Corporation, New York, N.Y., a corporation of New York
Filed May 4, 1964, Ser. No. 364,564
24 Claims. (Cl. 73—64.1)



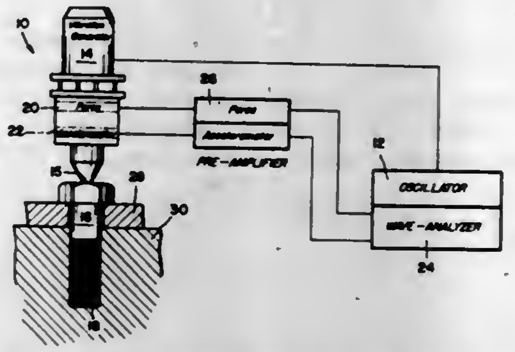
1. The method of measuring the prothrombin time of blood plasma which comprises mixing a sample of plasma with a clotting agent, passing light through the sample as it clots, generating a primary signal proportional to the transmitted light, obtaining a secondary signal from the primary signal, said secondary signal being the first derivative of the primary signal and measuring the time period for clotting of the plasma sample ending when said secondary signal begins to change after having reached a steady value.

ERRATUM
For Class 73—67.1 see:
Patent No. 3,308,476

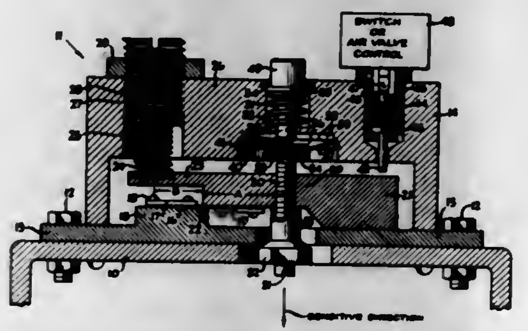
3,307,393
STRESS MEASURING DEVICE
Frederick M. Kessler, Bound Brook, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 23, 1963, Ser. No. 332,511
5 Claims. (Cl. 73—67.1)

2. A device for measuring the stress in a fastener, comprising:

a source of alternating electrical energy;
means connected to said source for transmitting mechanical vibrations in response to electrical energy from said source;
said vibration transmitting means being connected to one end of said fastener for transmitting mechanical vibrations longitudinally in said fastener from said one end thereof;
means connected to said vibration transmitting means for providing a signal proportional to the force of the mechanical vibrations transmitted in said fastener by said vibration transmitting means;
means connected to said one end of said fastener for providing a signal proportional to the vibratory acceleration of the response to the mechanical vibrations received at said one end of said fastener; and
means connected to said force and acceleration signal providing means for comparing the force and acceleration signals provided thereby.



3,307,394
ACCELERATION RESPONSIVE DEVICE
Robert A. Bilbrey, Kensington, Calif., assignor to Benjamin W. West, doing business as California Controls Company, Oakland, Calif.
Filed Oct. 16, 1963, Ser. No. 316,560
4 Claims. (Cl. 73—71)



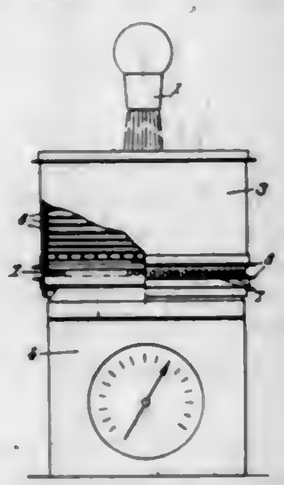
1. A device for automatically detecting or measuring a dynamic force generated by the operation of a piece of equipment and for controlling such operation, such device comprising

A. a base structure for connection to said machine so as to mechanically respond to a dynamic force generated by said machine,
B. an element for controlling the operation of said machine,
    (1) said element being normally inactive but being adapted to be activated so as to stop or modify said operation,
C. a rocker pivoted on said structure for movement between a first position of repose and a second position in which it engages and activates the control element,
D. first spring means urging said rocker toward said second position, and
E. a second spring means having a fully deflected and a less than fully deflected condition,
    (1) said second spring means being positioned relative to said rocker so as to be engaged by and preclude movement of said rocker from said first to said second position when said second spring means is in a less than fully deflected condition,

(2) said second spring means being oriented relative to said rocker so that when in the fully deflected condition it permits movement of said rocker into said second position,
(3) said second spring means being maintained in a region of operation in which it exhibits a decreasing resistance to deflection during deflection.

3,307,395
DEVICE FOR MEASURING THE THRUST OF A GASEOUS JET

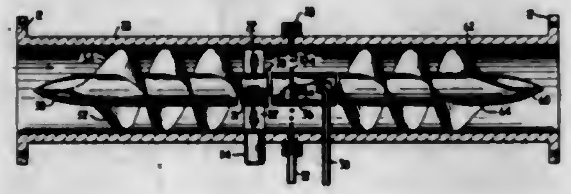
Marcel François Martin Bruyere, Bois-Colombes, France, assignor to Societe d'Exploitation des Materiels Hispano-Suiza, Bois-Colombes, France
Filed July 13, 1964, Ser. No. 382,287
Claims priority, application France, July 29, 1963, 943,036
4 Claims. (Cl. 73—141)



1. A device for measuring the thrust of a gaseous jet having a given direction which comprises, in combination, a container having an inlet for receiving said gaseous jet, means in said container fixed with respect thereto and adapted to be struck by said jet for imparting to said container practically the whole of the kinetic energy of the gaseous stream forming said jet admitted through said inlet, said container being provided with lateral outlets for the outflow of said gaseous stream in a direction transverse to that of said jet and means for measuring the energy given off by said jet to said container.

3,307,396
FLUID FLOW MEASURING DEVICE

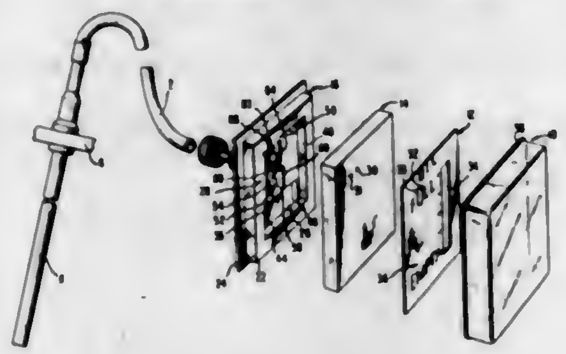
Joseph B. Griffo, Woodstock, N.Y., assignor to Rotron Manufacturing Company, Inc., Woodstock, N.Y., a corporation of New York
Filed Feb. 28, 1964, Ser. No. 348,166
5 Claims. (Cl. 73—231)



3. Apparatus for measuring the mass flow rate of fluid through a conduit comprising an elongated hub member, helical vane means secured to and disposed about the peripheral surface of said hub member, the outer edges of said vane means being secured to the inner surface of said conduit, whereby said hub member and vane means are fixed within said conduit substantially axially thereof, rotatable paddle means interposed at a first position along said hub member intermediate sections of said vane means mounted coaxially of said conduit section and responsive to the angular fluid flow to provide a measurement of the velocity of the flow of fluid through said conduit section and means interposed at a second position along said hub member intermediate sections of said vane means for measuring the difference in pressure between the axis and inner wall of said conduit, said pressure difference being related to the density of the fluid flowing in said conduit section, the helix angle of the section of said vane means upstream of said pressure difference measuring means increasing from substantially parallel to the axis of the conduit to a substantial angle with respect thereto and the helix angle of the section of said vane means downstream of said pressure difference measuring means decreasing from a substantial angle to the axis of the conduit to substantially parallel thereto.

3,307,397
LIQUID LEVEL INDICATORS

David A. Brown, 4305 Sulgrave Road, Richmond, Va. 23221, and Bernard S. Benson, Chateau de Chaban, St. Leon-sur-Vezere, Dordogne, France
Filed Mar. 15, 1965, Ser. No. 439,692
Claims priority, application France, Aug. 20, 1964, 985,780
6 Claims. (Cl. 73—302)

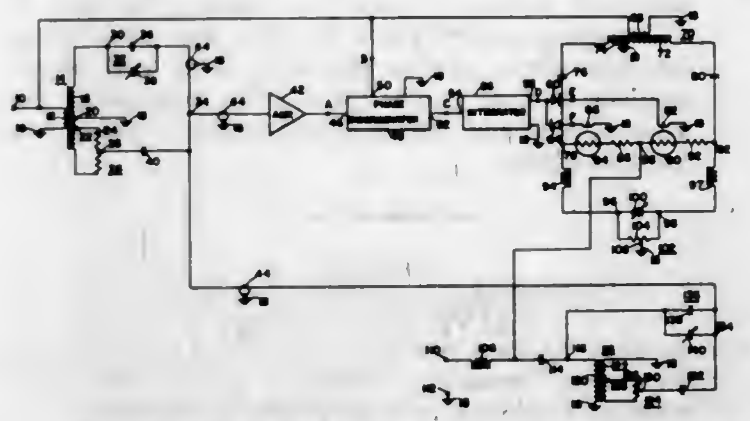


1. A liquid level indicator comprising a gauge including a calibrated U-shaped conduit, manometric liquid in said conduit, a source of gas under pressure, first conduit means connecting said source to one leg of said U-shaped conduit, said first conduit means including a vent venting the source to the atmosphere, said first conduit means including first and second valve means between said vent and said source and between said source and one leg, respectively, at least one of said valve means including a conduit having a U-shaped portion, manometric liquid in said U-shaped portion, and second conduit means connecting said one leg with a reservoir, one end of said second conduit means adapted to be immersed in the liquid in said reservoir, said source of gas under pressure comprises a pneumatic pump formed by a cover movably enclosing one face of said gauge, said cover being constructed of transparent material.

3,307,398
CONDITION RESPONSIVE BRIDGE BALANCING CIRCUIT

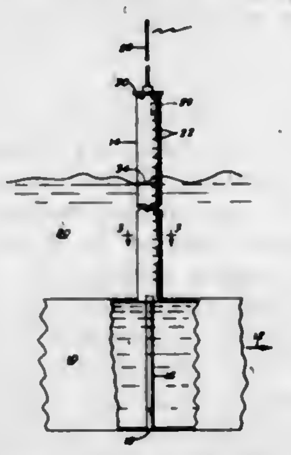
John J. Exon, Fridley, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 19, 1963, Ser. No. 331,791
9 Claims. (Cl. 73—304)

9. Rebalanceable condition sensing apparatus comprising, in combination:
- bridge circuit means including output means for supplying a first signal indicative of a condition;
- logic means connected to said output means of said bridge circuit means, said logic means including output means, and said logic means providing an output second signal which has a polarity dependent upon whether an input signal supplied to said logic means is of a first phase or of a phase opposite said first phase;
- integrating means connected to said output means of said logic means, said integrating means including output means, and said integrating means providing an output third signal indicative of said second signal as integrated over a period of time;
- transducer means operatively connected to said output means of said integrating means, said transducer means changing resistance as a function of said third output signal;
- ratio circuit means including output means and said transducer means, said ratio circuit means providing direct and alternating output signals indicative of the resistance of said transducer means;
- indicating means connected to said output means of said ratio circuit means, said indicating means providing an output representative of said direct signal; and
- feedback means connected between said output means of said ratio circuit means and said input means of said logic means for supplying said alternating signal thereto, said alternating signal opposing said first signal to minimize any resultant input signal to said logic means.



3,307,399
SURFACE-PIERCING MAST FOR MEASURING THE DEPTH OF A SUBMERGED VESSEL

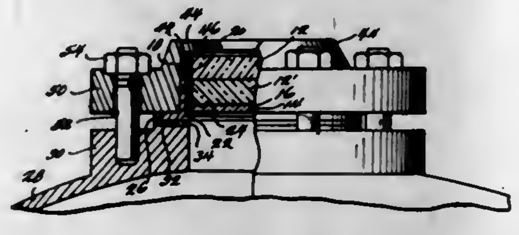
Robert M. Cashman, Hingham, Mass., assignor to The Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,162
1 Claim. (Cl. 73—311)



A device for determining the depth of a vessel submerged in water comprising a hollow, tear-shaped tube extending upwardly from said vessel and projecting a substantial distance above the medium's upper surface, a second tube extending from the lower end of said first tube and forming a restricting entry conduit communicating the interior of said tube to the water, a plurality of electrical sensing means mounted longitudinally of the interior of said tube to determine the location of the level of the water within said tube, each of said sensing means comprising a float projecting into said tear-shaped tube and movable in a vertical plane, whereby water in said tube activates progressively higher floats as it moves upwardly therein, radio-transmission means connected to said sensing means whereby the depth of said vessel below said upper surface is determined without being affected by temporary disturbances in said upper surface and can be transmitted in a steady signal.

3,307,400
SIGHT GLASS FOR REACTION VESSELS

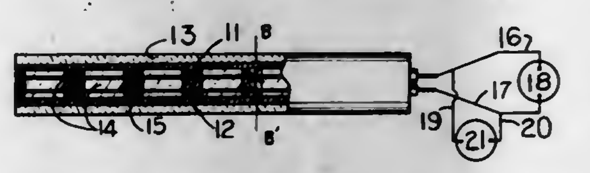
Gene Le Roy, 309 Mount View Drive, Charleston, W. Va. 25314
Filed Aug. 27, 1964, Ser. No. 392,387
17 Claims. (Cl. 73—331)



1. A sight glass for cooperation with an opening in a reaction vessel, said sight glass comprising a lens holding sleeve having an outwardly projecting continuous flange at one end thereof adapted to engage the wall of the vessel surrounding said opening, said sleeve also having at said one end an inwardly projecting lip, a lens received within said sleeve and substantially filling the same, the thermal coefficient of expansion of said lens being different from the thermal coefficient of expansion of said lens-holding sleeve, said lens being held in place with a fluid packing having a coefficient of expansion compatible with the differential in thermal coefficient of expansion between said lens and said sleeve, so that changes in temperature do not adversely affect the seal between said packing and said lens in said sleeve, a resilient gasket interposed between and sealing the space between the lens and the lip, and a mounting support receiving the lens holding sleeve and seated on the flange thereof to limit the pressure applied by the support to the gasket and the lens, said support also being adapted to secure the flange of the lens holding sleeve in fixed engagement with the wall of said vessel and in alignment with said opening.

3,307,401
ELEMENT FOR MEASUREMENT OF FURNACE WALL THICKNESS AND TEMPERATURE

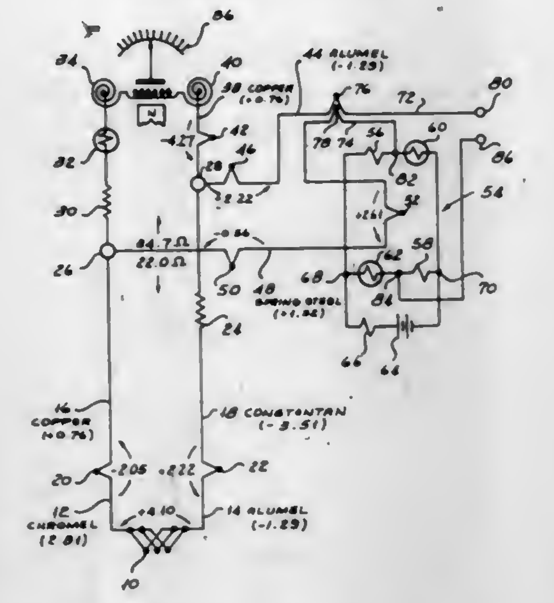
George S. Bachman, Edison Township, N.J. (Redfield Village 16B–3, Metuchen, N.J. 08840)
Filed May 24, 1965, Ser. No. 458,359
6 Claims. (Cl. 73—359)



1. An element capable of measuring temperature, wall thickness, or both temperature and wall thickness, and adapted for use in refractory walls, roofs, and bottoms, comprising
- a refractory sheath,
- spaced conductor elements of different materials running longitudinally through said sheath, and,
- spacing materials between said conductor elements, said spacing materials comprising alternate sections of insulating material and semiconductive material, said semiconductive material being in intimate electrical contact with said conductor elements.

3,307,402
COMPENSATED TAPPED THERMOCOUPLE SYSTEM

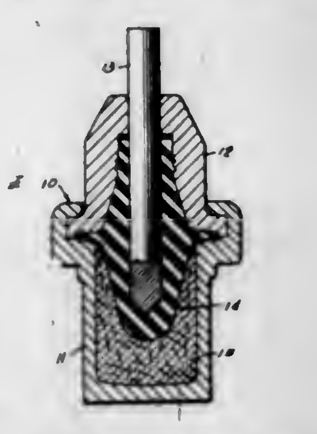
Donald V. Richardson, Stratford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 4, 1963, Ser. No. 327,898
2 Claims. (Cl. 73—361)



1. A thermocouple system including in combination, a hot junction generating a voltage representing a temperature to be measured, a cold junction generating a voltage, a meter having terminals connecting said meter in a circuit with said junctions, said meter comprising a movement for indicating said temperature and internal means for compensating for the effect of temperature on said cold junction, an output circuit also connected to said terminals, an external auxiliary thermocouple system in said ouptut circuit comprising first auxiliary thermocouple means for generating a voltage for bucking the effect due to temperature variations of said cold junction voltage at said terminals, second thermocouple means connected to said first thermocouple means and including means for compensating said second thermocouple means for changes in temperature for providing an output voltage in said output circuit representing said temperature to be measured without affecting said meter.

3,307,403
THERMAL POWER ELEMENT

Thomas B. Bernett, Arlington Heights, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Jan. 18, 1966, Ser. No. 521,254
7 Claims. (Cl. 73—368.3)



1. A temperature responsive force transmitting device comprising:

a housing having a base cup portion and a power member guide, said base cup portion containing a thermally expansible material and said power member guide having a guide opening formed therein;

a resilient boot deployed within said housing and forming a common sealing wall between said base cup and said power member guide;

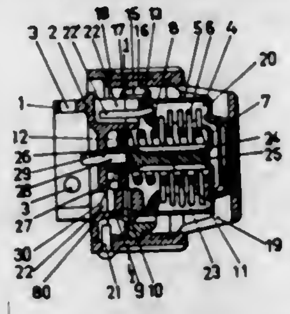
said boot having a neck portion extending within said power member guide;

a power member slidably received within said guide opening and disposed within said neck portion of said boot for being actuated by the expansion of said thermally expansible material; and

a brace ring mounted within said housing and urging said neck portion of said boot against the wall of said power member guide forming said guide opening, whereby a seal is provided about said power member at said guide opening for preventing the entry of fluid and foreign substances into said power member guide.

3,307,404
AUTOMATIC THERMOSTATIC VALVE REGULATOR

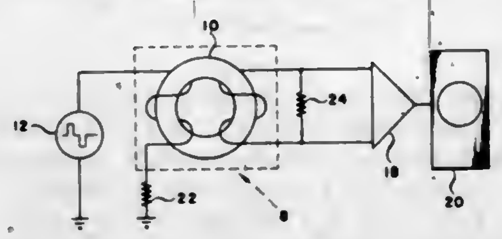
Helmar Trøst Nielsen, Nordborg, and Knud Aage Hansen, Sonderborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a corporation of Denmark
Filed July 6, 1964, Ser. No. 380,465
Claims priority, application Germany, Aug. 14, 1963, D 42,236
9 Claims. (Cl. 73—368.7)



1. In an automatic thermostatic valve regulator for automatically thermostatically controlling a valve having an actuatable operating element for opening and closing the valve, said regulator comprising, means for mounting said regulator on a valve to be thermostatically controlled, actuator means comprising temperature-responsive means including a temperature-responsive fluid for sensing an ambient temperature and responding to variations thereof for actuating said valve operating element in response to said variations of the ambient temperature being sensed, a spring in said actuator means operably connected to said valve operating element in operation for biasing said operating element in a given direction corresponding to an operating condition of said valve, means for setting the value of the force applied by said spring comprising means defining an abutment in said actuator on which said spring bears, means in said actuator means mounting said abutment movable in a direction axially of a longitudinal axis of said actuator means, said abutment comprising at least one radial arm extending outwardly of said actuator means and extending generally axially of said longitudinal axis in an axial direction away from said abutment and comprising an external thread, a cylindrical adjustment element on said regulator mounted circumferentially of said actuator, means for setting a temperature to be maintained by said regulator and comprising an internal thread on said cylindrical adjustment element complementary with said external thread for moving said abutment in a direction axially of said longitudinal axis, said cylindrical adjustment element having a transverse portion extending transversely of said actuator means, and said spring being disposed biasing said abutment in a direction axially of said longitudinal axis for biasing said cylindrical element in an axial direction for causing said portion of said cylindrical element to bear on said actuator means to hold said actuator means and said cylindrical element in axially-assembled relationship.

3,307,405
FERRIMAGNETIC PRESSURE TRANSDUCER

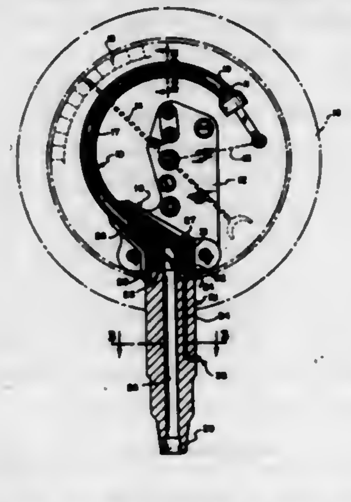
Frank F. Stucki, Palo Alto, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 27, 1964, Ser. No. 370,498
9 Claims. (Cl. 73—398)



1. A ferrimagnetic transducer for measuring hydrostatic or unidirectional pressures comprising a ferrite core having a Curie temperature of at least 750° C., which causes said core to be pressure-sensitive, pulse generating means electrically coupled to said core for energizing and de-energizing said core, and means magnetically coupled to said core for measuring an output signal therefrom which corresponds to the magnitude of pressure exerted on said core, said output signal being substantially proportional to the exerted pressure.

3,307,406
BOURDON PRESSURE GAGE

Robert P. Oliver, Milford, and Francis L. Fahy, Trumbull, Conn., assignors to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 21, 1965, Ser. No. 427,038
4 Claims. (Cl. 73—418)

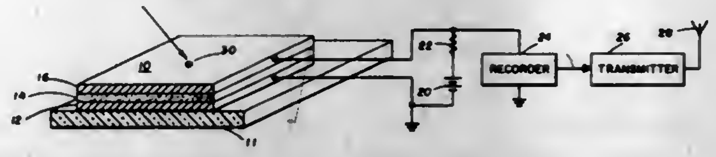


1. In a Bourdon pressure gage wherein an open-ended bleed tube extends from within a movable end portion of a Bourdon tube to and out of a fixed end portion thereof, the improvement which comprises

- (a) a first stem element to which the fixed end portion of the Bourdon tube is attached and sealed;
- (b) a second stem element to which the first stem element is attached and sealed remote from the Bourdon tube,
  - (i) at least one of said first and second stem elements defining primary bore means communicating with the interior of the Bourdon tube and adapted to communicate with the pressure to be sensed.
  - (ii) said bleed tube extending within the primary bore in the first stem element and projecting in supporting engagement through the wall thereof into communication with a secondary bore defined by the second stem element; and
- (c) valve means in said secondary bore permitting controlled fluid flow therethrough from the bleed tube to atmosphere.

3,307,407
MICRO-PARTICLE IMPACT SENSING APPARATUS

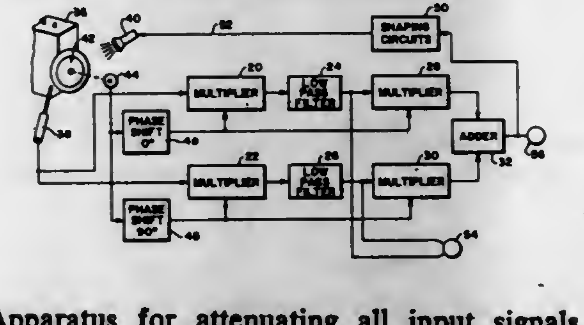
Otto E. Berg, Washington, D.C., and Wesley Merle Alexander, Silver Spring, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 30, 1964, Ser. No. 386,462
7 Claims. (Cl. 73—432)



1. Apparatus for detecting the relative kinetic energy levels of impinging micrometeorites, said apparatus consisting of a conductive surface, a thin film of normally non-conducting metallic oxide deposited on said conductive surface, a target area comprising a thin film of conductive material deposited on said metallic oxide film opposite to said conductive surface, said metallic oxide film characterized in that it momentarily provides increased conductivity in areas locally heated as a result of pressure waves generated by micrometeorites impinging on said target area, and circuit means for applying an electrical potential between said conductive surface and said target area and responsive to potential variations resulting from said momentarily increased conductivity, the relative amplitude of said potential variations being indicative of the relative kinetic energy of impinging micrometeorites.

3,307,408
SYNCHRONOUS FILTER APPARATUS IN WHICH PASS-BAND AUTOMATICALLY TRACKS SIGNAL, USEFUL FOR VIBRATION ANALYSIS

Glen H. Thomas and Robert S. Morrow, Columbus, Ohio, assignors to International Research and Development Corporation, Worthington, Ohio, a corporation of Ohio
Continuation of abandoned application Ser. No. 359,335, Apr. 13, 1964. This application Aug. 10, 1966, Ser. No. 571,646
7 Claims. (Cl. 73—462)

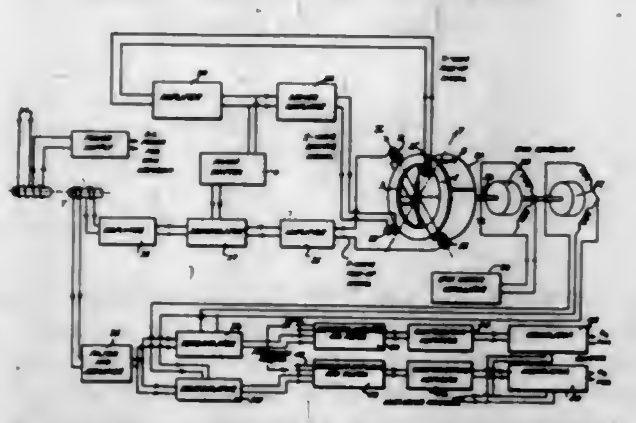


1. Apparatus for attenuating all input signals other than those of a predetermined frequency, comprising a plurality of oscillatory voltage sources all having the same frequency as said predetermined frequency and shifted in phase with respect to each other, means for synchronizing the frequency of an input signal applied to said apparatus with said oscillatory voltage sources, a plurality of signal channels equal in number to the number of oscillatory voltage sources, circuit means in each of said channels responsive to an associated one of said oscillatory voltage sources and an input signal for producing a direct current voltage in that channel, means for

multiplying said direct current voltage in each channel by its associated oscillatory voltage source, and means for adding the outputs of said multiplying means to derive an output signal of said predetermined frequency only when the input signal is of said predetermined frequency.

3,307,409
METHOD OF AND APPARATUS FOR MEASURING ANGULAR MOTION

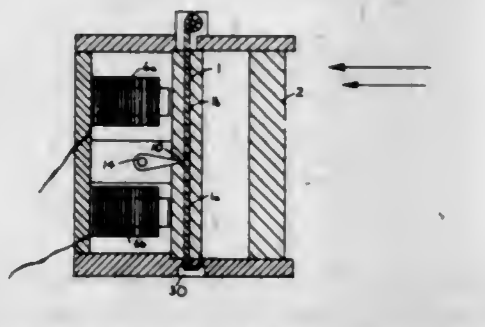
George C. Newton, Jr., 21 Aberdeen Road,
Wellesley, Mass. 02181
Filed Feb. 26, 1959, Ser. No. 795,671
24 Claims. (Cl. 73—505)



1. Transducer apparatus having, in combination, a ring-like medium adapted to support elastic waves, driving means for setting up elastic-wave displacements of elements of the medium having at least a component along a first direction, means for supporting the ring-like medium to permit rotation of the same about an axis extending along a second direction orthogonal to the first direction in order to produce Coriolis forces along a third direction orthogonal to the first and second directions resulting from the velocity of the element displacements along the first direction and the angular velocity about the said axis, thereby to generate in the said ring-like medium further elastic-wave displacements having at least a component along the third direction, and sensing means positioned with respect to the said ring-like medium to detect the further elastic-wave displacements therein.

3,307,410
ACCELEROMETER

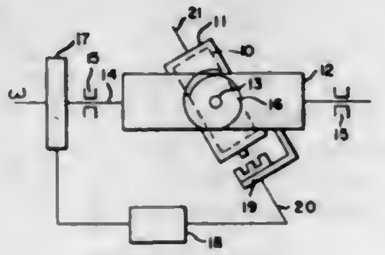
Hall Cary, Worthington, Ohio, assignor, by mesne assignments, to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 2, 1963, Ser. No. 248,965
8 Claims. (Cl. 73—517)



1. An accelerometer comprising a magnetic field, a two-section electrically conductive string, means for stretching said string through said magnetic field, means for each of said sections for passing a current through said string to excite said string to cause said string to vibrate at its resonant frequency and with a phase displacement of 180° of one section with respect to the other section, said sections each cutting the lines of flux of said magnetic field, means to feed the output signal generated by motion of one of said sections to drive the excitation means of the other of said sections and thereby providing a null balance electrical relationship; an acceleration sensing element including said stretching means imposing a disturbance on said string vibration in response to accelerating forces, said vibration causing the electrical signal from each of said sections to have a distorted waveform thereby distributing said null balance electrical relationship, and electrical, means connected to the output of each of said excitation means for comparing the output electrical signals of each of said sections for variations in vibration and thereby providing a signal proportional to the acceleration input to said sensing element.

3,307,411
ARRANGEMENT IN SPRING LOADED GYROSCOPES FOR INERTIA NAVIGATION

Carl-Erik Granqvist, Lidingo, Sweden, assignor to AGA Aktiebolag, a corporation of Sweden
Filed Nov. 1, 1962, Ser. No. 234,828
Claims priority, application Sweden, Dec. 12, 1961, 12,412/61
8 Claims. (Cl. 74—5)

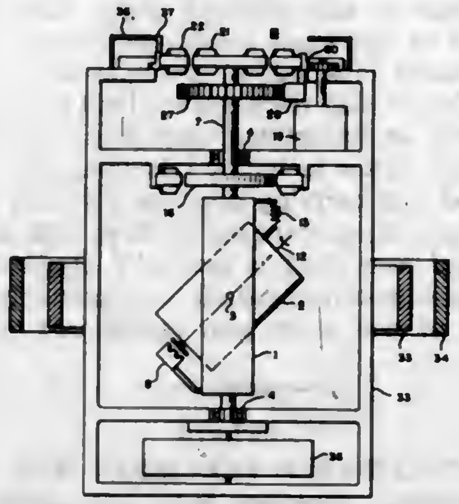


1. In a spring loaded gyroscope for inertia navigation having a first gimbal having a supporting axis and a second gimbal pivotally mounted on its supporting axis within said first gimbal, a rotor within said second gimbal whereby rotation of the rotor pivots said second gimbal within said first gimbal, means for sensing the displacement of said second gimbal with respect to said first gimbal, and a torque motor drivingly connected to pivot said first gimbal about its supporting axis in response to the displacement of said second gimbal; an arrangement for resiliently counteracting precession forces occurring on said second gimbal and comprising spring means acting upon said second gimbal to apply a torque thereto, said spring having the characteristic that the derivative of the force exerted by the spring with respect to the angle between the axis of rotation of the gyroscope rotor and the supporting axis of said first gimbal is substantially equal to the derivative of the precession moment from the spring with respect to the same angle.

3,307,412
NORTH-SEEKING GYRO SYSTEM

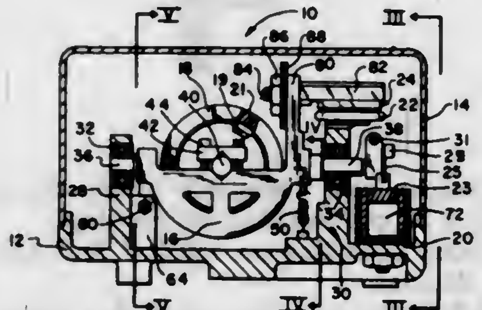
Carl-Erik Granqvist, Lidingo, Sweden, assignor to AGA Aktiebolag, a corporation of Sweden
Filed Feb. 25, 1963, Ser. No. 260,818
Claims priority, application Sweden, Mar. 2, 1962, 2,299/62
7 Claims. (Cl. 74—5.6)

1. A north-seeking gyro arrangement comprising a gimbal, a gyro housing being rotatably mounted in a gimbal, a gyro wheel rotatable in said housing, means for rotating said gimbal at substantially constant speed, a pickup device having one member connected with the gimbal and another member connected with the gyro housing, said pickup member generating a signal indicative of the position of the gyro housing relative to the gimbal, means for applying said signal to said gimbal rotating means for controlling the speed of rotation of the gimbal, means for generating a reference signal indicative of the momentary position of the gimbal with reference to a fixed direction, and means for comparing said first-named pickup signal with said second-named position indicating signal thereby to determine the north direction.



3,307,413
MAGNETICALLY SWITCHED GYRO

Albert de Boer, Grand Rapids, and Lloyd G. Miller, Rockford, Mich., assignors to Lear Siegler, Inc.
Filed Sept. 16, 1963, Ser. No. 308,940
16 Claims. (Cl. 74—5.6)

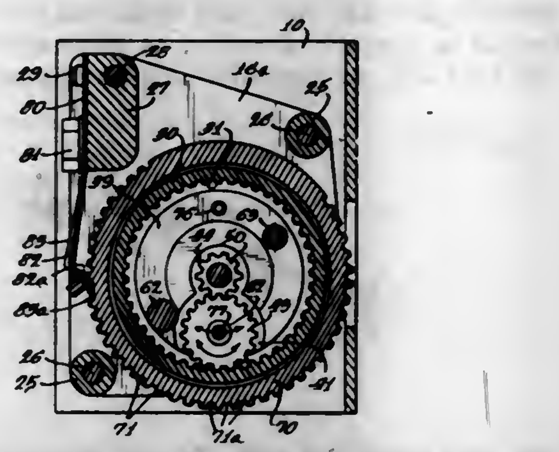


1. A switching, rate gyroscope comprising: a support base; a gimbal pivotally mounted on a precession axis on said base; a spin assembly mounted on a spinning axis on said gimbal; a reed switch comprising a pair of adjacent magnetic contact reeds; a switch actuating magnet adjacent said reeds; one of said reed switch and magnet being affixed to said base, and the other being affixed to said gimbal; said spin axis being transverse to said precession axis causing said gimbal to be precessed with a turn of said base, thereby causing a change of relationship between said reeds and magnet; said change causing actuation of said magnetic reeds to throw said switch.

3,307,414
UHF TUNER

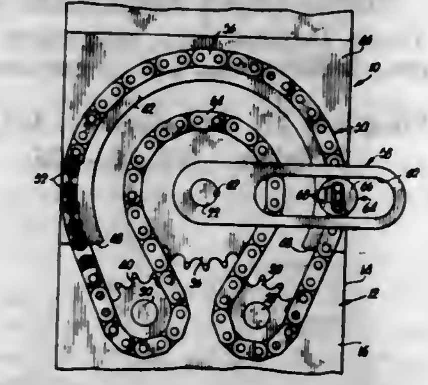
Joseph Naber, Marengo, Merrill J. Fox, Fox River Grove, Edward D. Chalmers, Crystal Lake, John Y. Ma, Algonquin, John G. Cummings, Cary, and Norman D. Cappelle, Arlington Heights, Ill., assignors to Oak Electro/Netics Corp., a corporation of Delaware
Filed Jan. 14, 1965, Ser. No. 425,565
21 Claims. (Cl. 74—10.41)

1. A UHF tuner for selecting channels in the UHF range comprising: a frame; a housing on said frame and containing electrical components for each of said channels; selectively operable channel selecting means carried by said frame; an indexing mechanism carried by said frame and including an index member rotatable in opposite directions on said frame and having a plurality of detent coacting means, each of said detent coacting means defining a pair of index stations, each of said index stations corresponding to one UHF channel; and detent members carried by said frame and alternately engageable with said detent coacting means to lock said channel selecting means at a desired channel, and means coupling said channel selecting means and said index member.



3,307,415
REVERSIBLE DRIVE UNIT

Richard H. Dobbs, Winfield, Kans., assignor to Harriette E. Dobbs, Winfield, Kans.
Filed Feb. 17, 1965, Ser. No. 433,415
20 Claims. (Cl. 74—37)



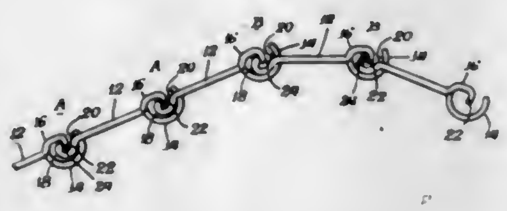
1. A reversible drive unit comprising:
a support;
a movable, endless, flexible drive member;
a pair of spaced, structures mounted on said support, each structure having means defining a portion of the path of movement of said drive member, the portion corresponding to one of said structures being in partially surrounding relationship to the portion corresponding to the other structure, said drive member being coupled to and extending between said structures for movement relative to said support;
means coupled with said drive member for moving the same relative to said support;
a shaft rotatably mounted on said support; and
means coupling said shaft with said drive member at a predetermined location on the latter, whereby the shaft rotates in one direction when said location moves along one of said portions of the path and rotates in the opposite direction when said location moves along the other of said portions of the path.

3,307,416
POWER-TRANSMISSION CHAIN

William E. Gritt, Indianapolis, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Oct. 22, 1964, Ser. No. 405,781
10 Claims. (Cl. 74—249)

6. A drive chain comprising a plurality of link members arranged end-to-end with interconnected end portions, each of said links being fabricated of flat sheet material

with two spaced side bars supporting at opposite ends thereof an arcuate hook and a spiral-like member including a first section and an arcuate second section struck from material between said side bars leaving an aperture between said side bars, said hook and first section being formed in opposite directions as direct extensions of said side bars and substantially lying on opposite sides of the link, said hook and said first and second sections being provided with free ends thereof, the links being interconnected by inner portions of said hooks and first sections of interconnected links pivotally bearing against one another near the free longitudinal ends thereof with said second sections passing through the apertures between said side bars of interconnected links and engaging outer portions of said hooks.



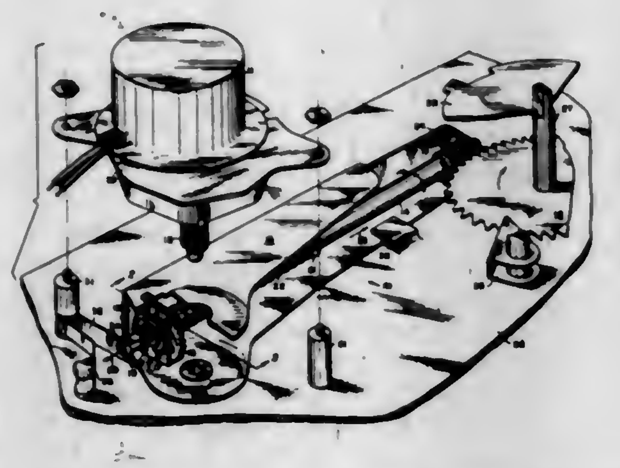
3,307,417

WORM GEAR ESCAPEMENT

Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed July 27, 1964, Ser. No. 385,402

7 Claims. (Cl. 74—426)



1. In a control timer, an escapement means for intermittently displacing an integrally connected ratchet wheel and cam carrying shaft comprising a mounting frame, drive means fixedly connected to said mounting frame providing a substantially constant rotary motion output, a worm gear escapement means connected to and driven by said drive means, said escapement including retaining means having one end thereof pivotally connected to said mounting frame and a free end, said retaining means including end facings supporting an axially displaceable and rotatable shaft, cam follower means fixedly connected to said shaft and rotatable therewith, cam means carried by one of said end facings including rise and fall contours, said follower means riding on said contours of said cam means as said shaft rotates, spring means carried by said shaft for storing energy as said shaft is axially displaced in a first direction due to said follower means rising along said rise contours of said cam means, and worm gear means carried by said shaft rotatably meshing with a ratchet wheel of an integrally connected ratchet wheel and cam carrying shaft so as to have no rotational effect on said ratchet wheel and said cam carrying shaft as said worm gear is rotationally displaced and axially displaced in said first direction, said energy stored in said spring means released as said follower means falls along said fall contours of said cams causing said worm gear to be axially displaced in a second direction so as to engage with and advance said ratchet wheel and said cam carrying shaft with an intermittent motion of determined increments, and means including said integrally connected ratchet wheel and carrying shaft for pivotally displacing said worm gear escapement out of mesh with said ratchet wheel as said cam shaft is manually displaced thereby allowing said cam carrying shaft to be rotatably displaced independent of said worm gear escapement to a desired position.

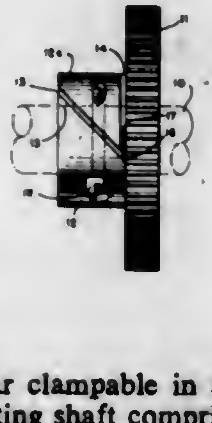
3,307,418

CLAMPABLE PRECISION HUB

Sanford I. Greene, Wantagh, N.Y., assignor to Fairchild Camera and Instrument Corporation, a corporation of Delaware

Filed Feb. 26, 1965, Ser. No. 435,665

7 Claims. (Cl. 74—434)



7. A precision gear clampable in any desired angular position on a supporting shaft comprising:
- a gear body including an integral hub and having a bore therein;
- a radial first slot extending through a substantial portion of said hub adjacent the gear thereof;
- a second slot extending through a substantial portion of said hub in a plane inclined inwardly toward and at an acute angle to said radial slot and intersecting it at only one side of said hub;
- and means for drawing together portions of said hub on opposite sides of said inclined slot in the vicinity of its intersection with said radial slot to clamp said gear on a supporting shaft.

3,307,419

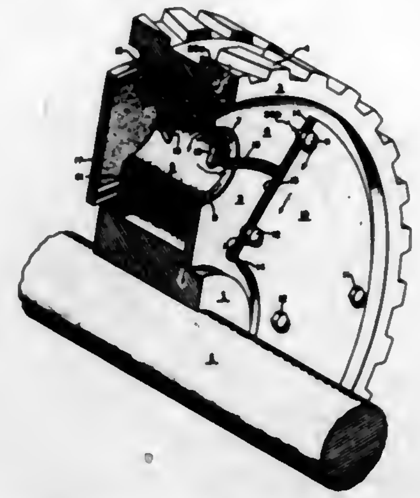
QUIET GEAR

Sherman P. Brickett, Hampton Falls, N.H., and Frank E. Weeks, Topsfield, Mass., assignors to General Electric Company, a corporation of New York

Filed Jan. 11, 1965, Ser. No. 424,707

5 Claims. (Cl. 74—443)

1. A quiet gear comprising:
- a rotatable gear hub,
- a toothed gear rim coaxial with and radially spaced from said hub,
- web means disposed between the rim and the hub, said web means including substantially aligned inner and outer radial plates connected to the hub and rim respectively and radially spaced from one another by an annular gap around the entire gear and also including means connecting the inner plate to the outer plate for transmission of torque at circumferentially spaced locations around the gear, said connecting means being arranged to bridge the gap between the inner and outer plates at a location outside of said gap in order to attenuate transmission of energy across the gap.



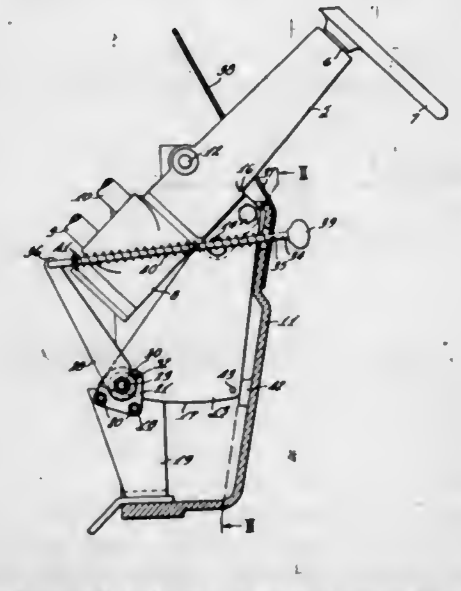
3,307,420

STEERING MECHANISM

Gerald C. Fisher, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Sept. 21, 1964, Ser. No. 397,789

1 Claim. (Cl. 74—493)



In a power steering gear for a motor vehicle, a steering column pivotally mounted on said vehicle for movement in a vertical plane, a steering member connected to said steering column for movement therewith, power steering control means operatively connected to said vehicle and to said steering member for actuation by the latter, friction brake means carried by said vehicle and positioned adjacent said steering column, the improvement comprising spring biasing means normally coacting with said brake means for urging said brake means into frictional holding engagement with said steering column, operating means connected to said spring biasing means and being actuable for releasing said spring biasing means for permitting pivoting of said steering column in a vertical plane to any desired adjusted position, said operating means being so constructed that upon release thereof said brake means instantly locks said steering column in the vertically adjusted position then occupied by said steering column, the portion of said steering column coacting with said brake means being a dependent quadrant portion with the lower surface thereof being on a radius from the point of pivotal connection between said column and said vehicle, and a stop member positioned on said quadrant for limiting the pivotal movement of said quadrant in one direction by contacting a housing of said brake means, said quadrant being limited in pivotal movement in the opposite direction by contact with said vehicle.

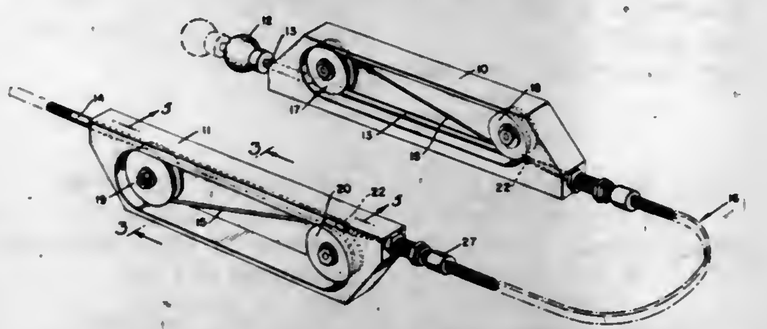
3,307,421

CONTROL CABLE ASSEMBLY

William J. Gilmore, Manitou Beach, Mich., assignor to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York

Filed May 4, 1964, Ser. No. 364,644

1 Claim. (Cl. 74—501)



In a push-pull cable assembly including flexible casing means and a flexible double-run core element extending therethrough having adjacent ends of its runs linked so that longitudinal movement of one run in one direction in the casing means is accompanied by longitudinal movement of the other run in the opposite direction in the casing means, said assembly being improved in that said casing means comprises
- (a) an open-turn helical coil of flat wire forming a first tubular element about one run of said core element,
- (b) another open-turn helical coil of flat wire forming a second tubular element about the other run of said core element, and
- (c) a multiplicity of wires stranded side-by-side about said first and second tubular elements and forming a single sheath within which said tubular elements are bound together in parallel side-by-side relation,
- (d) said sheath having a substantially flat cross sectional configuration and being flexible in a plane perpendicular to the longer dimension of its cross section without substantial displacement of its neutral bending and geometric axes.

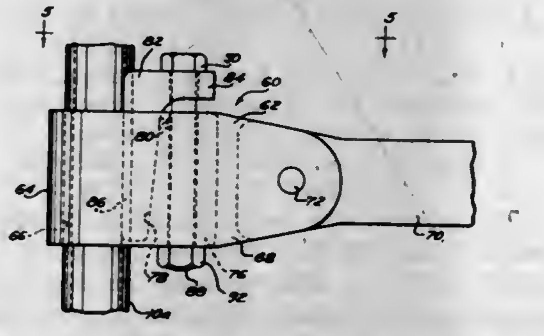
3,307,422

ADJUSTABLE LEVER MOUNT

Roland J. Olander, La Grange, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware

Filed Mar. 24, 1965, Ser. No. 442,433

4 Claims. (Cl. 74—548)

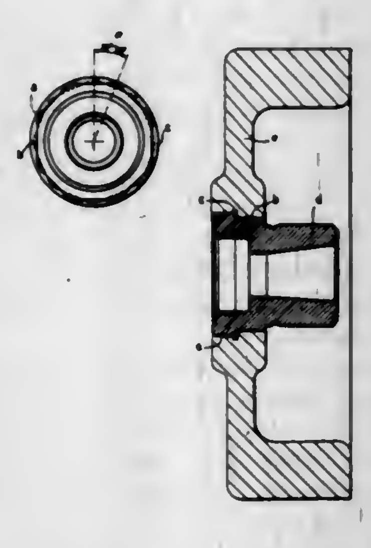


1. An arrangement for mounting a handle assembly on a rotary locking bar of a freight conveyance door latching arrangement in a manner such that said handle assembly may be adjustably positioned and repositioned both axially and radially on the locking bar, the improvement comprising a U-shaped lever mount partially encircling said bar and having a pair of side legs extending

away therefrom, said lever mount being adapted to be adjustably moved both axially along and radially about the axis of said bar, a serrated inner surface on the portion of said mount partially encircling said bar, a handle supported between said side legs of said mount adjacent the ends of said side legs, a first wedge block secured between said side legs intermediate said handle and said bar and having a first vertically inclined wedge face directed toward and spaced from said bar, and a second wedge block having a serrated vertical surface for engagement with said bar and a complementary vertically inclined wedge surface in engagement with said first wedge face whereby pressure applied to said second wedge block in a wedging direction forces said serrated surfaces of said mount and said second wedge block into tight gripping engagement with said bar.

3,307,423
FLY-WHEEL MAGNETO WITH HUB INCORPORATED THEREWITH DURING CASTING

Franco Dansi, Varese, Italy, assignor to Officine Dansi S.p.A., Varese, Italy, a company of Italy
Filed Mar. 10, 1965, Ser. No. 438,615
Claims priority, application Italy, Mar. 16, 1964, 5,659/64
6 Claims. (Cl. 74—572)



1. A rotary device, in particular an ignition fly-wheel magneto for internal combustion engines, comprising a metallic mass and a hub embedded in said mass by casting thereof, characterized in that the hub has its external surface shaped as two regular prisms equal and coaxial to each other angularly displaced by an angle substantially equal to the half of the angle over one side of the prism.

3,307,424
LAUNDRY MACHINE WITH SAFETY BALANCING MECHANISM

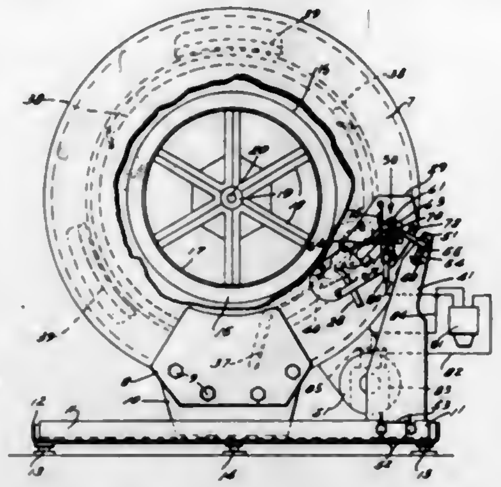
Vincent C. Mandarino and Robert A. Brenner, St. Joseph, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed May 6, 1964, Ser. No. 365,454
19 Claims. (Cl. 74—573)

1. Laundry apparatus including a rotary basket drum and means mounting the drum on a support providing for limited oscillating deflections of the drum relative to the support toward opposite sides of a center line transversely though the axis of rotation of the drum in response to acentric loads in the rotating drum,

means for counterbalancing the acentric loads mounted to oscillate with the drum,

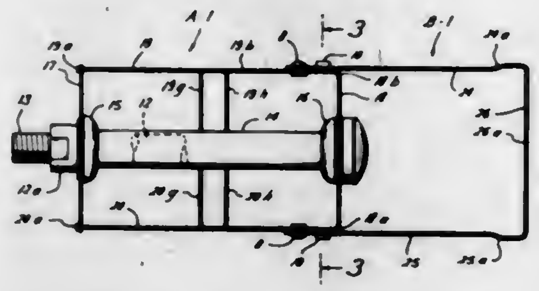
means for automatically controlling the balancing means, comprising a shaft mounted to oscillate about its own axis and also to oscillate with the acentric loading oscillations of the drum, and a rigid member mounted on a stationary portion of said support,

and projection and notch coupling means connecting the shaft and rigid member to effect oscillations of the shaft about its own axis during oscillation movements of the shaft with the drum.



3,307,425
EXTENDIBLE BICYCLE PEDAL

Richard W. Sykes and Jessie T. Sykes, Houma, La. (Both of 1244B Flatter Lane, Lake Charles, La. 70601)
Filed June 18, 1964, Ser. No. 376,003
6 Claims. (Cl. 74—594.7)

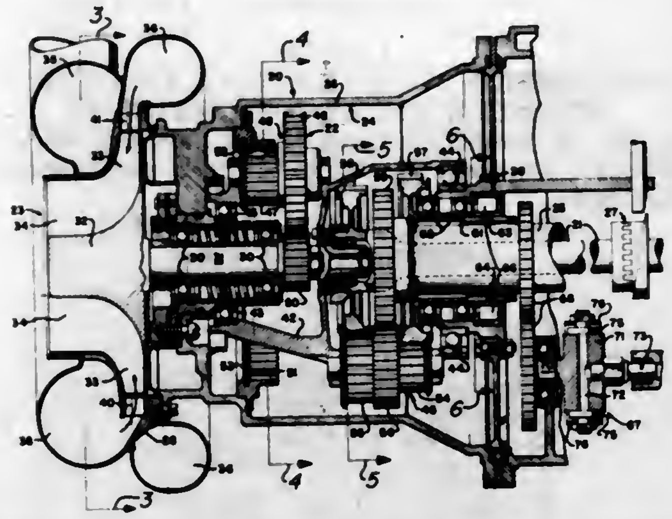


6. An extendible bicycle pedal comprising:
(a) a bicycle pedal;
(b) a foot support member;
(c) means pivotally attaching the foot support member to the bicycle pedal;
(d) means for limiting rotation of said support member to a position parallel to said bicycle pedal; and
(e) said pivotal attaching means being located relative said bicycle pedal to also position said support member in line with said bicycle pedal.

3,307,426
CONSTANT SPEED DRIVE STARTER

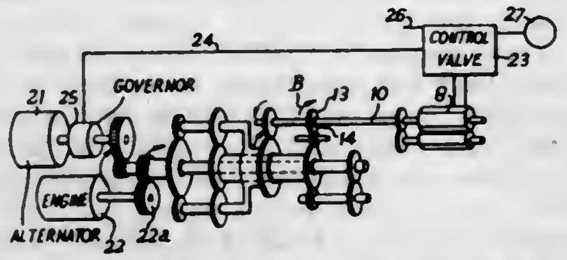
William D. Whitaker, Phoenix, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 11, 1960, Ser. No. 1,489
33 Claims. (Cl. 74—675)

1. A combination engine starter and accessory drive mechanism comprising: first and second members adapted to be operatively connected to an engine and an accessory thereof, respectively; a reversible variable speed motor; transmission gear means operatively connected between said motor and said first and second members, said transmission gear means having a first gear stationarily supported; a second gear held against rotation in one direction; gear means reacting on said first and second gears to impart engine starting rotation to said first member when said motor is operated in a predetermined direction; means responsive to variations in the rate of operation of one of said members for varying the rate of operation of said motor to regulate the speed of rotation imparted to said second member after the operation of the engine has been initiated; and means also responsive to variations in the rate of operation of one of said members for reversing the direction of operation of said motor and controlling the rate of operation thereof in the reverse direction.



3,307,427
CONSTANT SPEED DRIVES

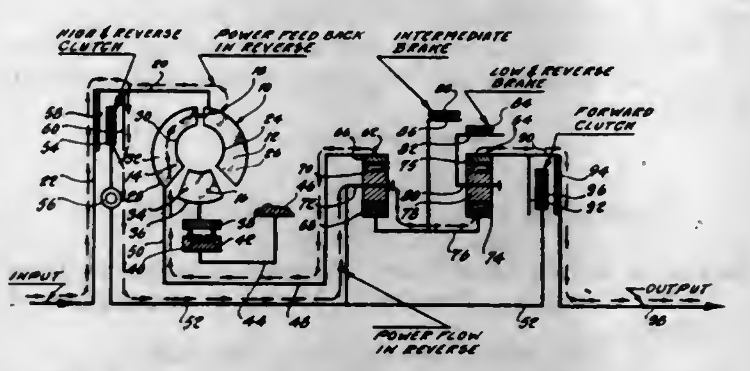
Stanley B. Turner, Camberley, England, assignor to Plessey Company Limited, Essex, England, a British company
Filed Aug. 26, 1964, Ser. No. 392,342
Claims priority, application Great Britain, Jan. 16, 1961, 1,773/61
4 Claims. (Cl. 74—675)



1. In a mechanical constant-speed drive for transmitting driving power from a variable-speed engine to an element to be driven at a constant speed, the combination comprising a variable-speed air motor of the positive-displacement type, a pressure-fluid supply connection, an atmospheric connection, a differential gear drive having three legs respectively drivingly connected to the engine, the air motor and the element, flow-control means responsive to the speed of said element and connected to the air motor, the pressure-fluid supply connection and the atmospheric connection, said speed-responsive flow-control means being operative to so control the flow of fluid from said connections through the motor as to cause the air motor to operate in one direction to supplement the engine-derived speed of the element when the engine speed is below a pre-determined value, and to so control the flow of air through the air motor as to cause the air motor to run in the opposite direction to reduce the speed at which the element is driven by the differential gear drive below the engine-derived speed when the engine speed is higher than the said pre-determined value, and a gear train by-passing part of the differential gear drive and drivingly interconnecting the air motor and that leg of the differential gear drive which is drivingly connected to the element, said gear train including an overrunning clutch which engages only when the speed supplied to the element through the gear train is greater than that supplied by the differential gear drive, the ratio of said gear train being such that, throughout a predetermined speed range of the engine including said predetermined speed, the speed supplied to the element by the differential gear drive is greater than the speed supplied by said gear train.

3,307,428
HYDROKINETIC POWER TRANSMISSION MECHANISM HAVING A REVERSIBLE FLOW CONVERTER

Norman T. General, Walled Lake, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,302
4 Claims. (Cl. 74—688)



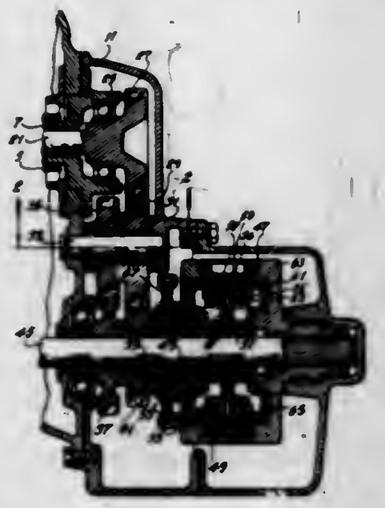
1. A hydrokinetic torque converter mechanism having a bladed impeller, a bladed turbine and a bladed stator disposed in toroidal fluid flow relationship in a common torus circuit, a driving member, said impeller being connected to said driving member, torque delivery gearing having plural torque delivery elements, a driven member, said turbine being connected to a first one of said gearing elements, brake means for anchoring a second one of said gearing elements to provide torque reaction, selectively engageable clutch means for connecting said impeller to a third one of said gearing elements, the toroidal fluid flow passing in one direction from the flow exit section of the impeller to the flow entrance section of the turbine when said clutch means is released and said first gearing element functions as a power input element for said gearing and said third gearing element functions as a power output element, the latter being connected to said driven member, the fluid flow passing in the opposite direction when said third gearing element functions as a power input element and said first gearing element functions as a power output element upon engagement of said clutch means, said stator including flow directing blades disposed between the flow exit region of said turbine and the flow entrance region of said impeller when the flow is in said one direction, overrunning brake means for anchoring said stator against forward rotation in a direction opposite to the direction of rotation of said turbine and impeller but permitting freewheeling motion thereof in the backward direction, the geometry of the blading of said stator being such that the moment of momentum of the fluid in said circuit is changed as the fluid passes through the stator blading in each direction of flow thereby providing hydrokinetic torque conversion regardless of the direction of torque delivery through said gearing elements, said turbine being overspeeded with respect to said impeller when said brake means is applied as the turbine and the impeller rotate in a common direction, the impeller being overspeeded with respect to said turbine in a common direction when said brake means is released, the toroidal fluid flow in said torus circuit being in said one direction when said impeller overspeeds said turbine and being in said opposite direction when said turbine overspeeds said impeller, the angle (γ_T) formed by the impeller flow exit section blading during fluid flow in said opposite direc-

tion being greater than 90° but less than 180° when the said angle (γ_r) is measured between two intersecting velocity vectors with the point of intersection being a point at said impeller exit section, one of said two vectors extending from said point of intersection in the tangential direction of rotation of said impeller and the other of said two vectors being tangent to said impeller flow exit section blading and extending from said point of intersection in said opposite direction of fluid flow, the angle (γ) formed by the impeller flow exit section blading during fluid flow in said one direction being less than 90° but greater than 0° when the said angle (γ) is measured between two intersecting velocity vectors with the point of intersection being a point at said impeller exit section during fluid flow in said one direction, one of said last-named two vectors extending in the tangential direction of rotation of said impeller and the other of said last-named two vectors being tangent to the blading of said impeller exit section during fluid flow in said one direction and extending in said one direction of fluid flow.

3,307,429
MOTOR VEHICLE TRANSMISSION-DRIVELINE UNITS

Arthur E. Lynes, Kenilworth, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed July 6, 1964, Ser. No. 380,544
Claims priority, application Great Britain, Aug. 9, 1963, 31,461/63
2 Claims. (Cl. 74—731)

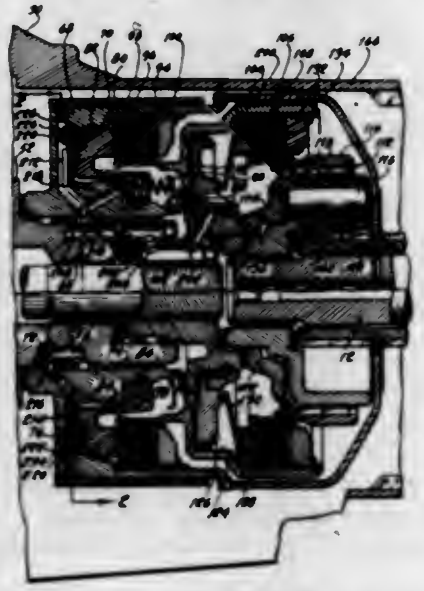


1. A power transmission driveline arrangement for an engine powered automotive vehicle for delivering power from an engine crankshaft to vehicle traction wheels, a differential gear mechanism situated directly below the vehicle engine and including housing portions that are common to said engine, a transmission housing releasably connected to said housing portions, a hydro-kinetic torque converter within said transmission housing including an impeller and a turbine situated in toroidal fluid flow relationship, a converter output shaft connected to said turbine, said impeller being connected directly to said crankshaft and adapted to rotate about an axis that is common to the axis of said crankshaft, a countershaft journaled in said transmission housing for rotation about an axis that is parallel to said crankshaft axis and which extends below said torque converter, one end of said countershaft being connected to power input portions of said differential mechanism, driven portions of said differential mechanism being adapted to be connected to said traction wheels and being adapted for rotation about an axis that is transverse to the axis of said crankshaft, gearing situated on one side of said torque converter remote from said engine, said gearing including a pair of driven gear elements rotatably journaled for rotation about the axis of said countershaft, a driving gear connected to the converter output shaft, a cluster gear assembly meshing with said driving gear and including separate portions meshing respectively with each of said driven gears, and selectively engageable clutch means for connecting each of said driven gears to the other end of said countershaft.

3,307,430
TRANSMISSION WITH CLUTCH HAVING DUAL PRESSURE ENGAGING CHAMBERS

Max A. L. Bauder, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Oct. 28, 1964, Ser. No. 407,039
6 Claims. (Cl. 74—763)



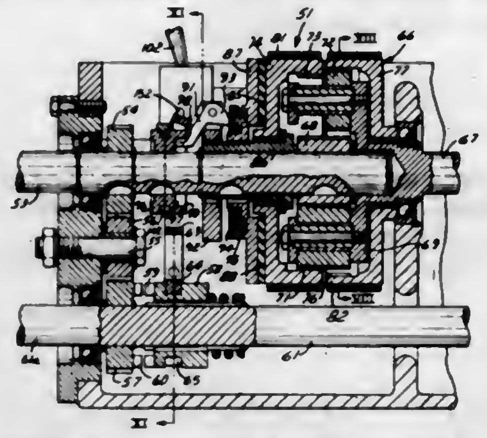
1. In a power transmission mechanism adapted to deliver driving torque from a driving member to a driven member, gearing establishing plural torque delivery paths between said driving and driven members, clutch and brake means for controlling the relative motion of elements of said gearing to establish plural torque delivery ratios, said clutch and brake means including a first torque delivery clutch that is engaged during operation in one speed ratio, said clutch and brake means including also a second clutch that is engaged simultaneously with said first clutch during operation in a second speed ratio, said first clutch comprising a brake drum drivably connected to one of said members, first friction elements carried by said drum, another clutch element connected to torque delivery portions of said mechanism, said other clutch element carrying other friction elements that are adapted to engage said first friction elements, a stepped diameter piston disposed in said cylinder and cooperating therewith to define a pair of semi-isolated pressure chambers, means for distributing pressure to one of said chambers to engage said one clutch with a first clutch engaging force, auxiliary passage means establishing communication between said chambers, valve means for opening and blocking said auxiliary passage means, and a signal pressure passage extending from fluid pressure sensitive portions of said other clutch to said valve means for distributing to the latter a pressure signal for actuating the same.

3,307,431
GARDEN TRACTOR

Max Hungerford, La Grange Township, Cass County, Mich., assignor, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey

Original application Sept. 1, 1961, Ser. No. 135,591, now Patent No. 3,266,590, dated Aug. 9, 1966. Divided and this application June 5, 1964, Ser. No. 379,066
4 Claims. (Cl. 74—769)

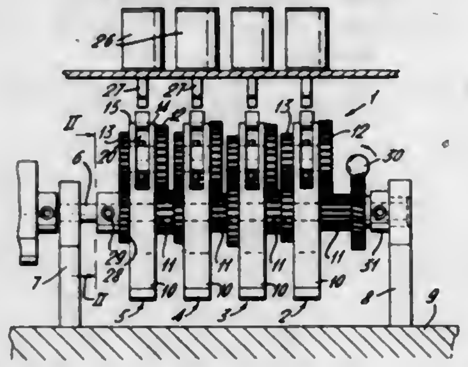
3. A transmission comprising: an input shaft; a sun gear drivingly connected to said input shaft; a first set of planet gears arranged circumferentially around said sun gear and meshing therewith; a first cup-shaped drum having an axially extending, peripheral wall portion surrounding said first set of planet gears and having an internal ring gear meshed therewith, said first drum also having a radially extending end wall; a second set of planet gears encircling said sun gear and out of engagement therewith, said second set of gears being meshed with said first set of gears; a second drum encircling said second set of planet gears and having an internal ring gear meshing therewith; friction means engageable with each drum for preventing rotation thereof; a clutch element mounted on said input shaft for rotation therewith and for axial movement with respect thereto, said clutch element having a friction face extending radially from said input shaft and directly opposed to said radially extending end wall of said first drum and adapted for frictional engagement therewith; means for moving said clutch plate axially along said input shaft toward and away from said first drum to move said friction face into and out of frictional engagement with said end wall of said first drum; a rotatable planet gear carrier supporting both sets of planet gears for rotation about the axis of said input shaft; and an output shaft connected to said planet carrier.



3,307,432
VARIABLE RATIO GEAR MECHANISMS

Kenneth Tasker, London, England, assignor to Multiratio Drives Limited, Feltham, England, a company of Great Britain

Filed May 25, 1964, Ser. No. 369,985
4 Claims. (Cl. 74—770)

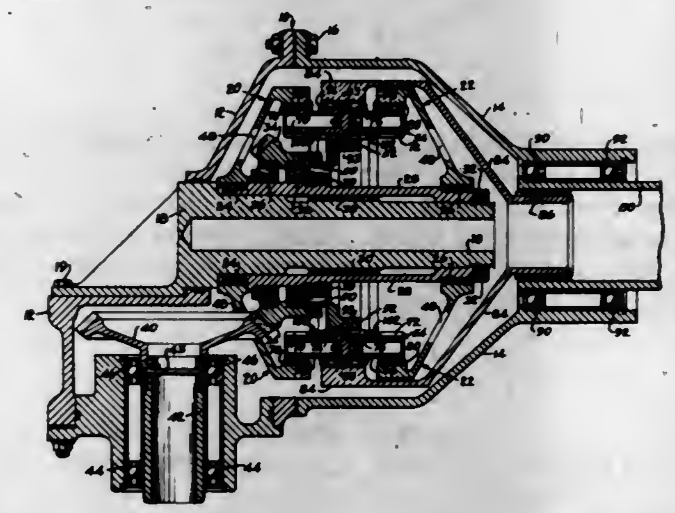


1. A variable ratio gear mechanism comprising a common shaft and a plurality of speed change units mounted in series thereon, each unit comprising a drive gear rotatable on said shaft, a disc-shaped gear mount also rotatable on said shaft and having a circumferential slot forming two opposing check portions, two stub shafts each rotatably mounted in a different one of said check portions in coaxial alignment one with the other, an end portion of one of said shafts being received within the opposing end portion of the other of said shafts, a pin passing through the end portions of said shafts and rotatable therewith in the slot between said check portions, two intermediate gears each secured to a different one of said stub shafts and coupling the drive gear of the unit with the drive gear of the next unit in the series, a member pivotally connected to said mount within said slot and engageable with said pin to prevent rotation of said intermediate gears, selector means engageable with said member to disengage it from said pin to release the intermediate gears for rotation and restrain rotation of the mount, an output gear mounted on the shaft and coupled to an intermediate gear of the last of said units in the series and means to supply drive to the drive gear of the first unit in the series.

3,307,433
COMPOUND PLANETARY SPEED REDUCER WITH ADJUSTABLE GEARING

Raymur B. Bennett, Wayne, and Tofa W. Khiralla, Caldwell Township, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware

Filed Dec. 2, 1963, Ser. No. 327,257
3 Claims. (Cl. 74—801)



1. An epicyclic gear train comprising a pair of fixed internally toothed ring gears spaced apart on a common axis, one of the said gears having helical teeth of one hand and the other gear having helical teeth of the opposite hand; a plurality of axially movable compound planetary members each of which includes one portion having helical gear teeth in mesh with the gear teeth of one of the fixed ring gears, and another portion having helical gear teeth in mesh with the gear teeth of the other fixed ring gear, each planetary member including a herringbone gear having helical gear teeth of one hand on one of the said portions and helical gear teeth of the opposite hand on the other of said portions, said planetary members each including means rendering the portions thereof relatively turnable during operation of the gear train; a third ring gear coaxial with the said fixed ring gears and having internal herringbone gear teeth in mesh with the teeth of the herringbone gear on each planetary member; means mounting said third ring gear for rotation and axial movement; a sun gear having herringbone gear teeth in mesh with the herringbone gear on each planetary member; and means mounting the sun gear for rotation and axial movement.

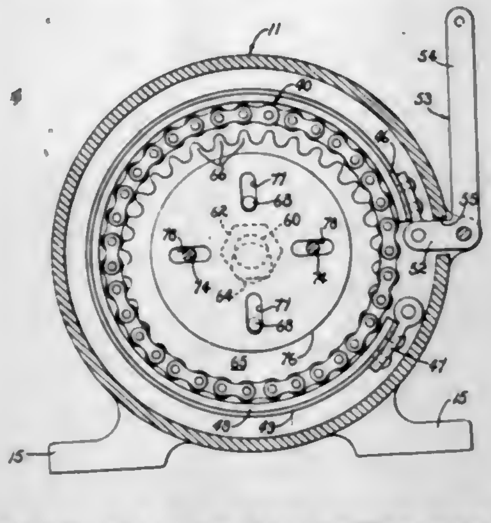
3,307,434
SPEED REDUCING MECHANISM

David G. Kope, 8674 S. Reed Ave.,
Reedley, Calif. 93654

Filed June 22, 1964, Ser. No. 377,001
4 Claims. (Cl. 74—804)

1. A speed reducing mechanism comprising a driving element adapted to be rotated about a predetermined axis and having an eccentric crank portion, a reaction element providing an elongated flexible sprocket chain having a plurality of substantially equally spaced cylindrical members defining tooth receiving interstices therebetween, a

support element mounting said reaction element in circumscribing concentric relation to said predetermined axis, brake means adapted releasably to hold said reaction element against rotation, a toothed driven element journaled on said crank portion of the driving element for rotation in eccentric orbiting relation about said predetermined axis and in meshing rolling engagement with said sprocket chain of the reaction element at a reduced speed from the speed of the driving element, an output member disposed in spaced coaxial relation to said driving element, and coupling means connecting said output member to said driven element.

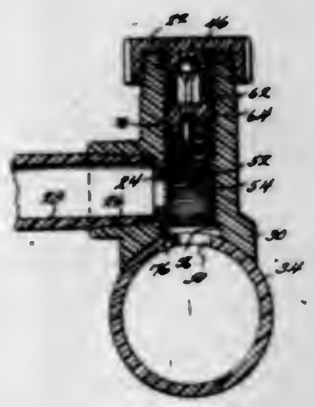


3,307,435
PLASTIC SERVICE T

Carl E. Floren, Decatur, Ill., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois

Continuation of abandoned application Ser. No. 289,610, June 21, 1963. This application May 2, 1966, Ser. No. 547,131

2 Claims. (Cl. 77—42)



1. A fitting attachable to a plastic main comprising: a plastic service T having a throughbore and a lateral outlet, one end of said T being shaped for engagement with and solvent welding to the plastic main; and the corresponding end of said throughbore being an inlet end for fluid from the plastic main; an interior thread in said throughbore; a plug having an exterior thread engaged with said throughbore thread; main-perforating means fixed to one end of said plug for projection out of the inlet end of said throughbore and for cutting a sharp edged perforation in the plastic main by screwing said plug theretoward;

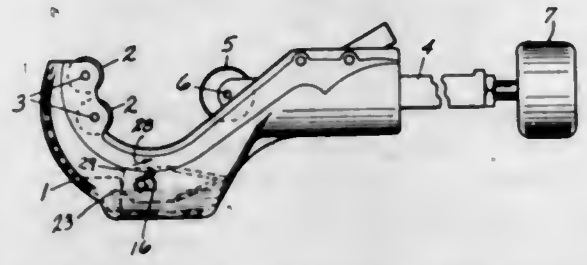
the improvement which comprises: a smooth surfaced counterbore in the inlet end of said throughbore; said counterbore being relatively short in length and said interior thread terminating at said counterbore; said counterbore providing an area of increased cross section at said throughbore inlet end; bevelled stop means on the plug interengageable with the sharp edges of the perforation cut in the plastic main for sealing the plastic main from said throughbore; restricted bore means integral with the other end of the T for restricting the throughbore and preventing removal of the plug from said throughbore at said T other end, said counterbore permitting insertion of the plug from the throughbore inlet end; an integral saddle-shaped enlargement on said one end of the T, said saddle-shaped enlargement having a bottom end surface shaped for snug engagement with and solvent welding to said plastic main; and strap-like clamping means detachably engageable with said saddle-shaped enlargement and with the plastic main for installing the T in operative position on the plastic main.

3,307,436
DEBURRING TOOL

Axel V. Jonasson and Bengt G. Bjalme, Erie, Pa., assignors to Reed Manufacturing Company, Erie, Pa., a corporation of Pennsylvania

Filed Sept. 18, 1964, Ser. No. 397,452

5 Claims. (Cl. 77—73)



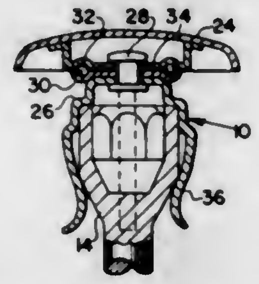
1. A deburring tool for pipe cutter having a C-shaped frame of channel section with a slot in the bottom and extending lengthwise of the channel, a pin extending across the sides of the channel, a rigid blade rotatable on the pin from a sheathed position between the sides of the channel to an operating position projecting through the slot in the bottom of the channel, a longitudinal slot in the blade slidable on the pin, and an abutment on the channel cooperating with the blade to block rotation of the blade when the blade in its extended positon is pushed inward relative to the bottom of the channel.

3,307,437
REMOVABLE SWIVEL HEAD FOR TOOL HANDLES

Harcourt Sontag, 4717 37th St. N., Arlington, Va. 22207

Filed Apr. 8, 1965, Ser. No. 446,490

1 Claim. (Cl. 81—177)



In the combination of a cross bar type tire lug wrench in which the cross bars define four projections, each projection terminating in a socket, at least one socket having an outside diameter larger than the outside diameter of at least one other socket and a removable swivel head mounted on one socket of said wrench, the improvement which comprises the following elements in combination with said swivel head,

a spring clamp mounting cap portion of said swivel head having shoulders fitting over the smaller and the larger socket of said wrench, said cap portion having at least three curved spring tongues extending from its edge and resiliently clamping around either socket,

a rotatably mounted knob on the outside of the cap portion,

a first ball bearing having opposed circular race grooves on the inner end of said knob and the outer end of said cap portion, respectively, to provide annular races, and

bearing balls in said races.

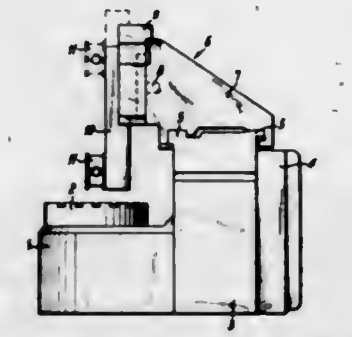
3,307,438
MACHINE TOOL

Friedrich Böttger, Rheydt, and Paul Cüppers, Solingen-Wald, Germany, assignors to Maschinenfabrik Froriep G.m.b.H., Rheydt, Germany, a corporation of Germany

Filed Feb. 17, 1965, Ser. No. 433,372

Claims priority, application Germany, Feb. 21, 1964, M 60,009

6 Claims. (Cl. 82—2)



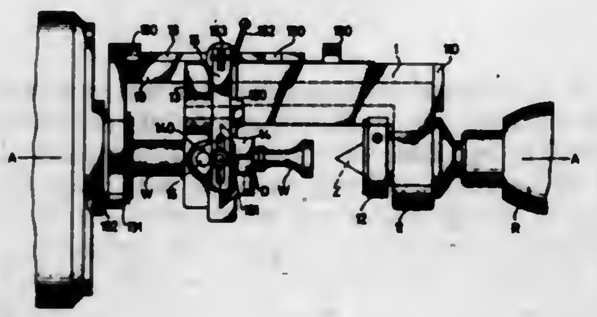
1. A machine tool comprising an underframe, a column connected to one side of said underframe and extending higher than said underframe, whereby said underframe and said column form an L-shaped structure, a face plate mounted upon said underframe, spaced horizontally disposed guides upon said column, whereby said guides are located to one side of and above said face plate, means carried by said guides and movable horizontally thereon relatively to said face plate, and a tool holder carried by said means for rotation about a horizontal axis, wherein said means comprise a saddle having guides extending horizontally and transversely to the first-mentioned guides, and a casing movable upon said transverse guides and carrying said holder.

3,307,439
COPYING ATTACHMENT FOR A MACHINE TOOL SUCH AS A LATHE, A DRILLING MACHINE OR THE LIKE

Alois Aregger, St. Niklausen, Lucerne, Switzerland, assignor to Nähma AG., Zug, Switzerland

Filed Aug. 10, 1965, Ser. No. 478,547

12 Claims. (Cl. 82—14)



1. A copying attachment for a machine tool equipped with a workpiece holder for carrying a workpiece, said copying attachment comprising, in combination, elongated support means adapted to be connected at one end thereof to said workpiece holder;

tool holder means for holding a cutting tool and being mounted in the region of the other end of said support means movable in a direction substantially normal to the axis of a workpiece carried by said workpiece holder;

a template guide guided on said support means along a path extending substantially parallel to said axis between an extended position and a retracted position in which one end of said template guide is closer to said other end of said support means than in said extended position;

a template having an elongated control face and being fixedly mounted on said template guide with said elongated control face extending in direction of said axis;

abutment ring means fixed to said one end of said template guide and having an axis coinciding with the axis of the workpiece, said abutment ring means adapted to partly surround the workpiece and to abut with an end face thereof against said workpiece holder;

a feeler pin having one end engaging said control face and being mounted on said support means movable in a direction normal to said axis;

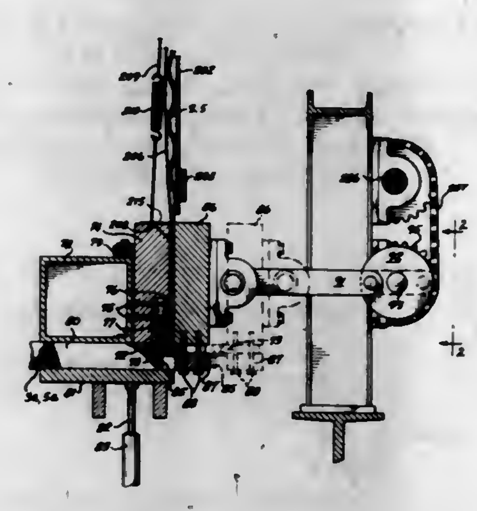
and connecting means connecting the other end of said feeler pin to said tool holder means for movement of the latter simultaneously with said feeler pin.

3,307,440
STRIP CUTTING AND PACKING MACHINE FOR MANUFACTURING CELLULAR CORE

Edwin R. Hoyt, Centralia, Wash., assignor, by mesne assignments, to Hexcel Products Inc., Berkeley, Calif., a corporation of California

Original application Apr. 15, 1963, Ser. No. 273,244, now Patent No. 3,257,253, dated June 21, 1966. Divided and this application Feb. 12, 1965, Ser. No. 449,346

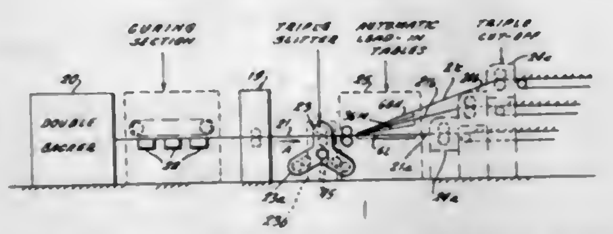
5 Claims. (Cl. 83—170)



2. A scissors action web shear comprising a pair of laterally spaced parallel rails, a transverse reciprocating blade mounted for sliding movement on said rails, a transverse mounting plate supported for slight movement perpendicular to the plane of said rails, and a stationary blade secured to said mounting plate in a position slightly inclined to and intersecting the plane of movement of the reciprocating blade, one end of said stationary blade being clear of and canted toward the reciprocating blade for initial contact therewith at a single point which moves along the blades as the reciprocating blade advances.

3,307,441
MACHINE FOR SLITTING AND TRANSVERSELY CUTTING CORRUGATED BOARD

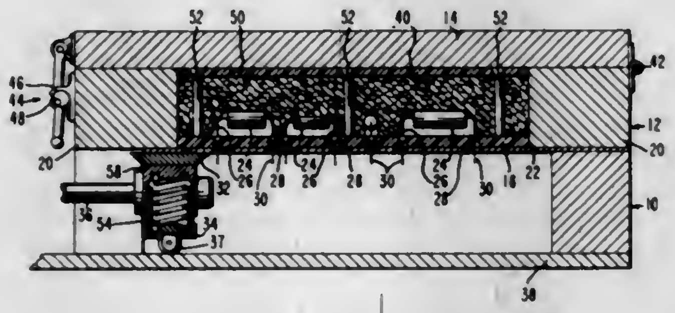
Lawrence J. Saunders, Elmont, Arnold Krolick, Farmingdale, and Joseph A. W. Burch, Bronx, N.Y., assignors to S & S Corrugated Paper Machinery Company, Inc., Brooklyn, N.Y., a corporation of New York
Filed June 14, 1965, Ser. No. 463,628
16 Claims. (Cl. 83—302)



8. Apparatus including first means providing a web moving longitudinally along a generally horizontal feed path; second means for slitting said web longitudinally into a plurality of parallel moving web sections; third means disposed along said feed path in position to receive said web sections and operate thereon, said third means including entrance conveyors positioned at different heights; fourth means for supporting and guiding said web sections into said entrance conveyors; said fourth means including a plurality of elements spaced across said feed path; power operating means for moving discrete ones of said elements from present to selected subsequent positions with respect to said feed path; switch means connected to said power operating means for controlling operation thereof; command means connected to said switch means for initiating operation of said power operating means; preselection means connected to said switch means for choosing a subsequent position for each of said elements without disturbing its present position until subsequent operation of said command means; said switch means actuating said power operating means responsive to actuation of said command means to simultaneously move said elements to their said subsequent positions chosen by said preselecting means.

3,307,442
ELECTRICAL COMPONENT LEAD-END SHEARING DEVICE

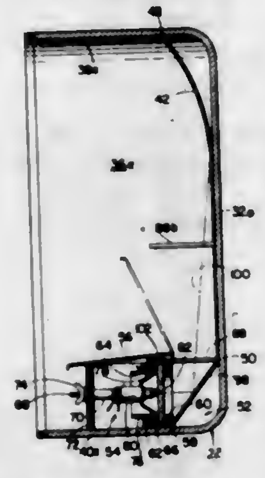
Alfred E. Imhoff, Oak Park, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 15, 1965, Ser. No. 472,154
5 Claims. (Cl. 83—580)



1. A device for shearing end portions of electrical conductors projecting from electronic components and from one side of a printed circuit board on which the components are mounted comprising a flexible shear plate, means holding said shear plate against movement edgewise, said shear plate having one side thereof for receiving the board in broadside relationship and having holes through which end portions of the conductors project beyond the opposite side of said shear plate, a shearing tool movable to traverse the other side of said shear plate to shear the projecting end portions of the conductors, a removable displaceable material positioned in overlying relationship to the said one side of said shearing plate with the board therebetween and displaceable to pack around and insulate the components against shock, and means to hold said material displaced toward said shearing plate.

3,307,443
APPARATUS FOR DISPLAYING COLORED LIGHT

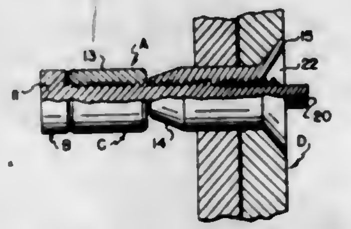
Orvil F. Shallenberger, 2512 Cle Elum Drive, Fort Wayne, Ind. 46809
Filed Dec. 3, 1964, Ser. No. 415,636
7 Claims. (Cl. 84—464)



1. Apparatus for displaying colored light comprising an extended area display screen having opposite side edges, a plurality of colored light sources arranged in a row extending between said side edges, said row of light sources being disposed on one side of said display screen and adjacent thereto, means associated with said screen including a first plurality of masking elements for directing divergent beams of light onto said screen at an acute angle of incidence for producing a display on said screen of a plurality of wedge-shaped colored light patterns, a second plurality of masking elements interposed in said beams of light respectively for masking out portions of said beams, said second masking elements being arranged in a row parallel to the row of light sources, said second masking elements being mounted with respect to said screen and said light sources.

3,307,444
BLIND FASTENER

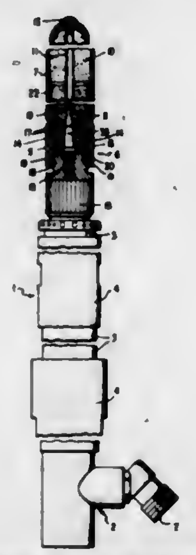
Glenn L. Money, Mentor, Ohio, assignor to The National Screw & Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed June 21, 1965, Ser. No. 465,265
7 Claims. (Cl. 85—74)



1. In a structural blind fastener for use in attaching together at least two members a side of one of which is inaccessible or blind and having aligned openings therein of substantially uniform diameter with the possible exception of the accessible end which may be counterbored, a relatively nonductible substantially homogeneous discrete internal or blind metal part comprising a cylindrical shank provided with a thread, said blind part including a head formed integral with the blind end of said shank the diameter of which head is approximately 150% of the effective diameter of said shank, a projection forming a driving connection on the nonblind end of said shank connected thereto by a section of less strength than the strength of the minimum effective cross-sectional area of said shank, a relatively ductile blind head part in the form of a continuous cylindrical sleeve having an internal thread at at least one end of not less than two convolutions and at no place an inside diameter substantially greater than the maximum thread diameter of said thread on said shank of said blind part and an outside diameter substantially equal to the diameter of said head of said blind part and being threaded onto said shank of said blind part with said one end adjacent to said head thereof, and an external or nonblind metal part threaded onto the threaded section of said shank of said blind part, said nonblind part comprising a cylindrical tubular-like body portion having an outside diameter substantially equal to the diameter of said head of said blind part, said body portion having a head formed integral therewith at the nonblind end thereof for engaging the accessible or nonblind side of said members and an axially extending frusto-conically shaped bearing surface on its other end inclined outwardly and towards the nonblind end of said internal part for expanding the end of said blind head part adjacent thereto beyond the yield strength of the material thereof but under the ultimate strength thereof to form a blind head engaging the inaccessible side of said members upon said frusto-conical surface being forced into said end of said blind head part upon rotation of said blind part relative to said nonblind part in driving said fastener whereby said members are secured together by being embraced between blind and nonblind heads engaging opposite sides thereof one of which heads is relatively hard but more ductile than the internal or blind part of the fastener.

3,307,445
BOREHOLE BLASTING DEVICE

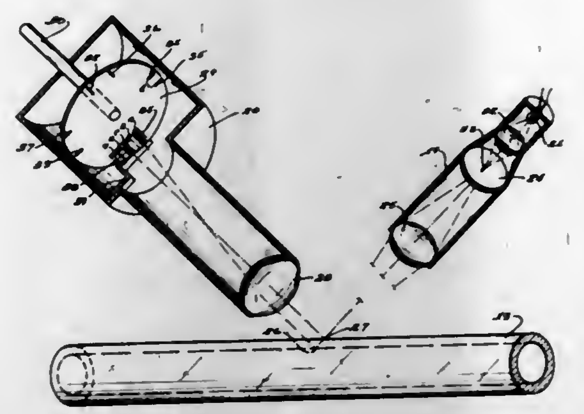
Hans Stadler, Nurnberg, Heinz Gawlick and Rudolf Stahlmann, Furth, Bavaria, and Hans Umbach, Stadeln uber Nurnberg, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Jan. 6, 1965, Ser. No. 423,784
Claims priority, application Germany, Jan. 11, 1964, D 43,329
20 Claims. (Cl. 86—20)



1. A blasting apparatus, comprising:
probe means operable to be inserted into a borehole and including means radially expandable against the side walls of the borehole for closing the rearward portion of the borehole to form a forward sealed chamber, said probe means being operable to inject a liquid under pressure into the forward sealed chamber of the borehole, a cartridge containing propellant charge means and ignition means, connection means operatively connecting said cartridge to the forward end of said probe means to constitute a head portion for said probe means.

3,307,446
GAUGING WALL THICKNESS OF GLASS TUBING

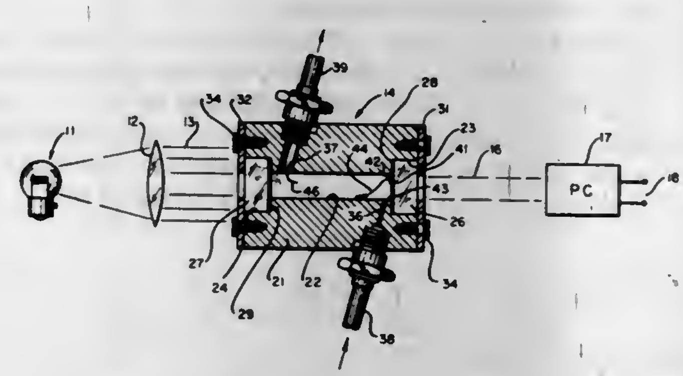
Hans R. Rottmann, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed July 11, 1962, Ser. No. 209,029
7 Claims. (Cl. 88—14)



1. The method of gauging the wall thickness of glass tubing during the continuous formation thereof comprising the steps of directing a narrow beam of light against the outside of said tubing in the plane of and at an oblique angle to the axis of said tubing, focusing the light reflected from the inner and outer surfaces of said tubing onto a rotating disc having a plurality of pairs of unequally spaced slits therein, rotating said disc, and indicating which pair of slits correspond to the relative displacement of said reflections as an index of the wall thickness of said tubing.

3,307,447
FLUID CELL WITH JET INLET DIRECTED TOWARD WINDOW

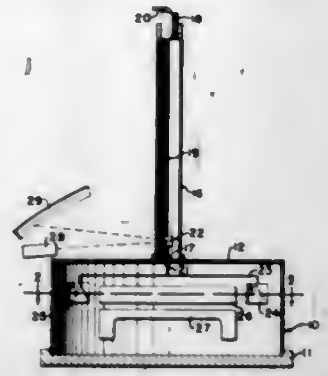
Joseph G. Carleton, Palo Alto, and Lee Gropper, Sunnyvale, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Nov. 4, 1963, Ser. No. 321,204
2 Claims. (Cl. 88—14)



1. A fluid cell for optical analyzing apparatus comprising:
- a body of material;
- an elongated channel formed in said body;
- windows disposed at each end of said channel to define therewith a fluid chamber;
- an inlet opening formed in said body and communicating with one end of said channel;
- an outlet opening formed in said body and communicating with the other end of said channel;
- said inlet opening being directed toward the adjacent window whereby fluid passing through the inlet opening impinges upon said window; and
- said inlet opening having a cross-sectional area which is substantially less than the cross-sectional area of the outlet opening and sufficiently small to form a jet stream to cause mixing of fluid in the adjacent portion of the chamber.

3,307,448
OUTPUT ENERGY INDICATING OPTICAL MASER

Morton Stimler, Hyattsville, and Rodney E. Grantham, Bethesda, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed May 15, 1963, Ser. No. 280,756
4 Claims. (Cl. 88—23)



1. In an output energy indicating optical maser instrument,

a ballistic torsion balance arm,

a pair of reflectors having their reflecting surfaces facing in a parallel relation with respect to each other and rigidly suspended from opposite ends of said balance arm respectively,

means for supporting said balance arm at the midpoint thereof whereby rotational movement imparted to said arm member produces rotation about the axis of symmetry of said balance arm,

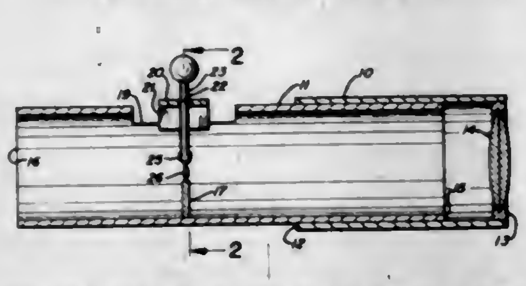
a rod-like maser element arranged in parallel relation with said balance arm between the reflectors whereby outgoing beams from each end of the maser element are respectively directed onto the reflectors when the balance arm is in an initial position of rest,

said reflectors being disposed at a 45° angle with respect to the beams emerging from the maser element such that the maser beams are reflected in opposite directions and at an angle of 90° with respect to the beams impinging the reflectors, thereby to impart a moment about the axis of symmetry of the balance arm relative to the energy of the beams.

a mirror having a beam of light focused thereon connected to said arm at the mid-point thereof and rotatable therewith, whereby the reflection of said beam of light from said mirror impinges upon an indicating scale indicating the degree of angular movement of said balance arm from the initial position of rest.

3,307,449
OPTICAL MEASURING DEVICE

Michael P. Steller, 3400 N. Broadway, Grove City, Ohio 43123
Filed June 28, 1965, Ser. No. 467,375
8 Claims. (Cl. 88—24)



1. An optical device for use with convex lens-containing means to provide for the simultaneous inspection and measurement of a small object in an enlarged projection thereof on a screen, said device comprising:

(1) a housing provided with a light-admitting opening and a light-exiting opening, said light-exiting opening positioned for optical cooperation with said lens;

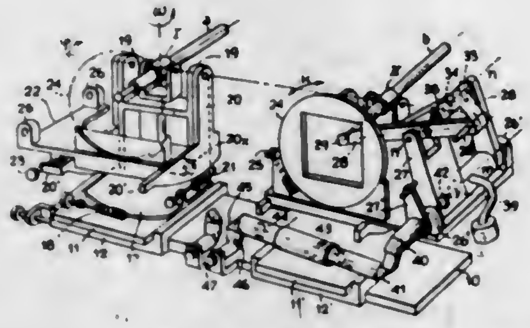
(2) a transparent ruler bearing measuring indicia positioned in the light path between said openings and adjustable to the focal point of said lens;

(3) means for moving said object to various positions in juxtaposition to said indicia in order to adjust its position relative to said indicia; and

wherein light passes said indicia, said juxtaposed object, and through said lens to effect the projection on said screen of relatively large superimposed images of said indicia and said object.

3,307,450
PHOTOGRAMMETRIC PLOTTING APPARATUS

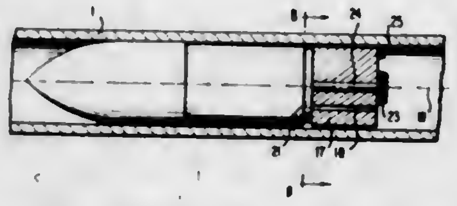
Ermenegildo Santoni, Via Leonardo Ximenes 25, Florence, Italy
Filed July 9, 1963, Ser. No. 293,757
Claims priority, application Italy, July 11, 1962, 14,040/62
6 Claims. (Cl. 33—1)



1. Photogrammetric apparatus of the class described, comprising: a pair of first supporting means each for mounting one of a stereoscopic pair of aerial photographs in substantially coplanar relationship; a pair of second supporting means each mounted for angular displacement about a fixed pivotal axis located outwardly beyond said photographs and extending normal to the plane thereof; a pair of third supporting means each carried by one of said second supporting means, each third supporting means being connected to one of said second supporting means for angular displacement about a pivotal axis spaced at a fixed distance from and parallel to said fixed axis; a pair of scanning members each carried by one of said third supporting means for movement in a plane spaced from and parallel to one of said photographs; a pair of horizontally spaced eyepieces for stereoscopic viewing; means defining two optical paths of equal constant lengths, each path extending between one of said scanning members and one of said eyepieces; index mark means including illumination means for producing a index mark for each photograph in a fixed position with respect to one of said scanning members, whereby both scanning members may be positioned for simultaneous observation of the same point of terrain on both photographs of said stereoscopic pair by reference to said index marks; a pair of guide rod members each pivoted intermediate its ends for angular displacement in all directions about a fixed point; a pair of universal joint means each connecting one end of one of said rod members to one of said scanning members for displacement therewith, each universal joint means including means for axial elongation of its associated guide rod member intermediate said fixed point and said one end; altitude determining means movable in three mutually perpendicular directions, two of said directions defining a plane parallel to the plane of said photographs, movement of said determining means in the third of said directions corresponding to variations in the altitudes of different ones of said same points of terrain when simultaneously observed by both of said scanning means; a pair of first positioning means each included in one of said first supporting means for displacing the photograph carried thereby in the first of said mutually perpendicular directions; a pair of second positioning means each included in one of said first supporting means for displacing the photograph carried thereby in the second of said mutually perpendicular directions; a pair of pantograph means each connected to the second and third supporting means of one of said pairs for displacement with one of said scanning members; two cam members carried by each of said pantograph means; two cam follower members each controlled in response to the position of one of said cam members, one of said follower members being connected to control one of said first positioning members and the other follower member being connected to control one of said second positioning members for imparting corrective displacements in said first and second directions separately to each of said photographs.

3,307,451
PRESSURE CONTROL DEVICE

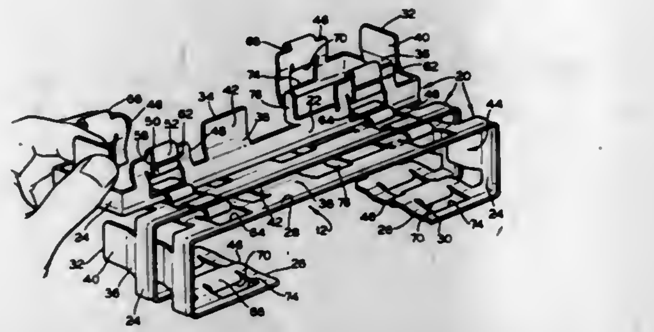
Ludwig Bucklisch, Rhondorf, and Ludger Volpert, Spich, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Oct. 1, 1964, Ser. No. 400,745
Claims priority, application Germany, Oct. 2, 1963, D 42,618
10 Claims. (Cl. 89—1.701)



1. A device for compensating variations of the firing temperature of propellant powder charges for projectiles to be fired from a recoilless rifle barrel having a projectile receiving axially extending bore partially defining a pressure chamber for the propellant powder charges, comprising: an inertia mass of substantially the same diameter as said bore to determine one axial wall of the pressure chamber; conduit means including at least one generally axially extending opening spaced radially inwardly from the outermost diameter of said inertia mass for extending through said inertia mass and connecting said pressure chamber for the propellant powder charge to the atmosphere for exhausting a predetermined fixed amount of the propellant powder charge gases from said pressure chamber to reduce the pressure within said pressure chamber a corresponding predetermined fixed amount; adjustment means operable to adjust the effective cross sectional area of said conduit means to selectively change the fixed amount of gases exhausted in a direct correspondence with the temperature of the propellant powder charge to maintain substantially equal propellant charge gas pressures for producing substantially equal projectile starting velocities regardless of the temperature of the propellant powder charge; said adjustment means having a relatively fine adjustment only between two limits; said adjustment means at one limit of adjustment producing a substantially zero cross sectional area of said conduit means to substantially prevent the exhausting of propellant gases from said pressure chamber operable to produce a standard gas pressure in said pressure chamber at the lowest firing temperature to be encountered; and said adjustment means at the other limit of adjustment producing the maximum cross sectional area of said conduit means to exhaust the maximum amount of propellant gases from said pressure chamber operable to produce the standard gas pressure in said pressure chamber at the highest firing temperature to be encountered.

3,307,452
ONE-PIECE CHUTING

Robert Meunier, Springfield, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed June 9, 1965, Ser. No. 462,765
6 Claims. (Cl. 89—33)



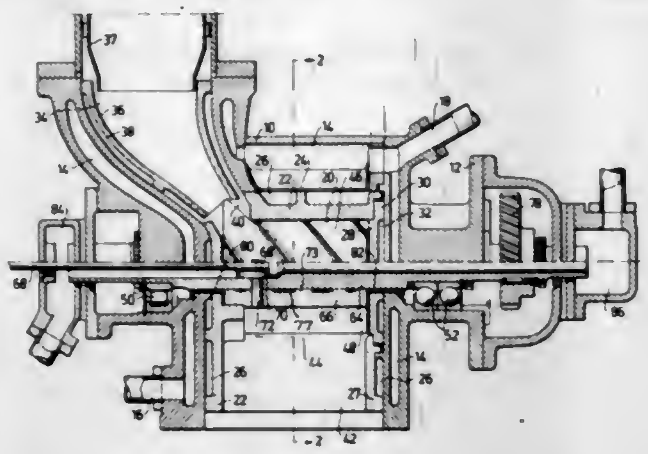
1. In combination with an ammunition belt composed of a plurality of connected links and cartridges carried thereby, a chuting unit formed in one piece from a single sheet of metal, said unit being essentially of rectangular configuration and including a base, a pair of sides extending at right angles from opposite ends of said base, a pair of top sections respectively extending towards each other in spaced relationship from said sides, a corrugation disposed to extend around said unit adjacent to one edge in a manner to provide a convex bearing surface around the inside of said unit, and integral connector means for releasably connecting said unit to another said unit to form a flexible chuting for slidingly guiding said ammunition belt between two stations, said connector means including a first pair of connectors rearwardly disposed in each of said top sections, a second pair of connectors rearwardly disposed in said base directly opposite said first pair of connectors, and four bars formed from sections of said corrugation for respective insertion into said first and second pair of connectors for releasably joining said unit to said another unit, said connectors and the respective ones of said bars cooperating to permit limited fanning and bending relationship between said unit and said another unit.

3,307,453
SCREW ROTOR MACHINES FOR EXPANDING A GASEOUS WORKING MEDIUM OF HIGH TEMPERATURE

Hans Robert Nilsson, Ektorp, and Lauritz Benedictus Schibbye, Saltsjo-Duvnas, Sweden, assignors to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Feb. 25, 1965, Ser. No. 435,160
Claims priority, application Sweden, Feb. 26, 1964, 2,320/64
13 Claims. (Cl. 91—84)

1. In screw rotor machine apparatus of the character described for expanding a high temperature gaseous medium and having a metallic casing with a working space therein consisting of two intersecting bores, an end wall at each end thereof, an inlet and an outlet, a male rotor rotatably mounted in one of said bores and a female rotor in the other said bore with said rotors meshing with each other, the combination which comprises ceramic material disposed on all the surfaces of said working space, said end walls and said rotors which are exposed to said high temperature working medium, with said ceramic material having a coefficient of thermal expansion of less than 3 x 10^{-6}, synchronizing gear means for interconnecting

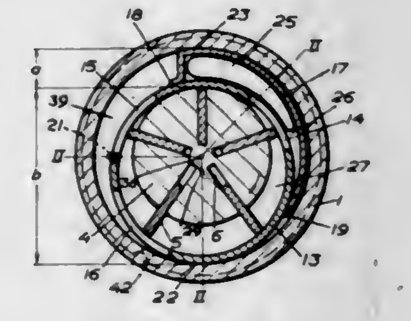
said male and said female rotors outside said working space, and cooling means in said metallic casing for cooling the metallic portions thereof which have disposed thereon said ceramic material.



3,307,454
ROTARY PISTON MACHINES AND CYLINDER HOUSINGS

Bo Gunnar Larsson, Ektorp, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden

Filed June 19, 1964, Ser. No. 376,387
12 Claims. (Cl. 91—121)



1. In sliding vane rotary piston machine apparatus of the character described having a cylinder casing with an end wall disposed at each end thereof and with a sliding vane rotor body rotatably mounted in said casing, the combination which comprises a preformed replaceable tubular body assembly for insertion and fitting in said cylinder casing and extending from one end wall thereof to the other end wall and forming both the working cylinder in which said rotor rotates and axially extending flow passages within said casing, said assembly including a tubular body forming said working cylinder, radially disposed inlet and outlet ports in said tubular body for providing pressure fluid entry and exit therein under the action of said rotor, and a separately preformed member of arcuate cross section affixed over a portion only of the external surface of said tubular body prior to the insertion of said assembly into said casing and adjacent said inlet and outlet ports in said tubular body, said separately preformed member extending from one end wall of said cylinder casing to the other for providing said axially extending flow passages between said ports and one end wall of said cylinder casing, and the maximum transverse dimension of said tubular body with said arcuate preformed member affixed thereon is such that no more than a longitudinally extending portion only of the entire external surface of said assembly directly contacts the inside of said cylinder casing for fitting engagement therewith at substantially diametrically opposed portions thereof for positioning and supporting said tubular body assembly therein.

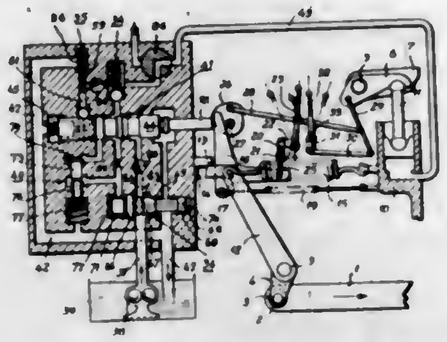
3,307,455
HYDRAULIC EQUIPMENT RAISING AND STRESS-CONTROL DEVICES FOR FARMING TRACTORS

Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works

Filed Mar. 2, 1964, Ser. No. 348,540

Claims priority, application France, Mar. 4, 1963, 926,788, Patent 1,363,918; Sept. 16, 1963, 947,625, Patent 1,376,690

14 Claims. (Cl. 91—367)



1. Hydraulic equipment-raising and tractive-effort control device for farming tractors of the carried equipment type, comprising a single-acting raising cylinder co-acting with at least one equipment lifting arm, an equipment coupling system to which said lifting arm is connected and comprising traction links, a source of hydraulic fluid under pressure, a hydraulic distributor device comprising a movable slide valve member for distributing the hydraulic fluid delivered from said source of fluid under pressure either, in a first position of said slide valve member, to said raising cylinder through an inlet valve, or, in a second position of said slide valve member toward which said valve member is urged by a spring, from said raising cylinder through an exhaust valve to a discharge duct connected to the reservoir feeding said source, or, furthermore, in an intermediate position of said slide valve member, directly to said discharge duct, it being understood that other intermediate positions and actions of said slide valve member are permitted, a preselector control comprising a handlever for preselecting the desired position of said lifting arm and a linkage system interconnecting said preselector handlever, said slide valve member and said lifting arm, an effort control system co-acting with said slide valve member and connected to said coupling system incorporating resilient means responsive to the tractive effort above a predetermined value of said effort, said effort control system comprising a first pivoting bearing member abuttingly engaged with said slide valve member and so designed and mounted that said coupling system is capable, through the medium of said bearing member, of exerting a certain force on said slide valve member in the direction of said first position thereof and of which the permissible movement in the direction of said last-named force is limited by an adjustable stop provided on an adjustment handlever, said linkage system comprising a second pivoting bearing member abuttingly engaged with said slide valve member and also adapted to act upon said slide valve member while the connections between said first pivoting bearing member and said coupling system, on the one hand, and between said second pivoting bearing member, said lifting arm and said preselector handlever, on the other hand, are so designed and arranged that a tractive effort exerted on said coupling system and of a value sufficient to overcome the force of said resilient means, the displacement of said preselector handlever in one direction as well as the lowering of said lifting arm be capable of causing the displacement of said slide valve member in the direction of said first position, and that a reduction in the tractive effort which causes the effort exerted by said resilient means to become preponderant as well as a displacement of said preselector handlever in the opposite direction, a displacement of said adjustment handlever in the direction to enable its adjustable stop to exert a pressure on the first pivoting bearing member and an upward movement of said lifting arm be capable of causing the displacement of said slide valve member in the direction of said second position.

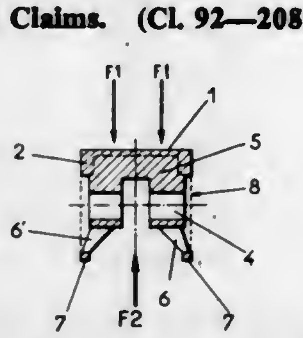
3,307,456
LIGHT WEIGHT PISTON FOR MOTORS AND THE LIKE

Charles Antoine Etienne, 46 Rue de la Bienfaisance, Paris, France

Filed Sept. 28, 1964, Ser. No. 399,686

Claims priority, application France, Oct. 28, 1963, 952,007, patent 1,394,022; Aug. 10, 1964, 984,669, patent 86,284

3 Claims. (Cl. 92—208)

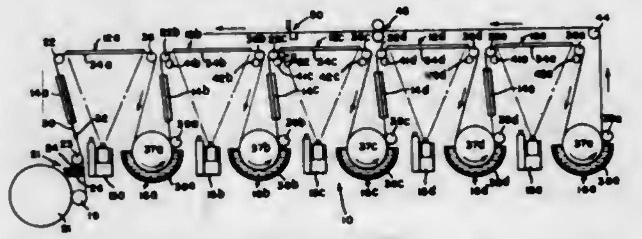


1. A light weight piston adapted to be mounted on a wrist pin and reciprocated within a cylinder, said piston comprising in combination a head end provided with a skirt which is peripherally grooved to receive piston rings, two substantially cylindrical aligned wrist pin bosses positioned to receive said wrist pin, supporting means within said piston comprising ta least one rib parallel to the axis of said bosses and connecting said bosses to said head end, and a plurality of stabilizing members extending from said wrist pin bosses away from the head end of said piston, said stabilizing members having bearing surfaces in the form of cylinder segments positioned to wipe equally spaced surfaces on the inside of said cylinder, the sum of the widths of said bearing surfaces taken circumferentially of said piston below said wrist pin bosses being less than half the circumference of said piston.

3,307,457
ELECTROPHOTOGRAPHIC APPARATUS

Francis Hunstiger, Parma Heights, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Filed June 4, 1964, Ser. No. 372,498
8 Claims. (Cl. 95—1.7)

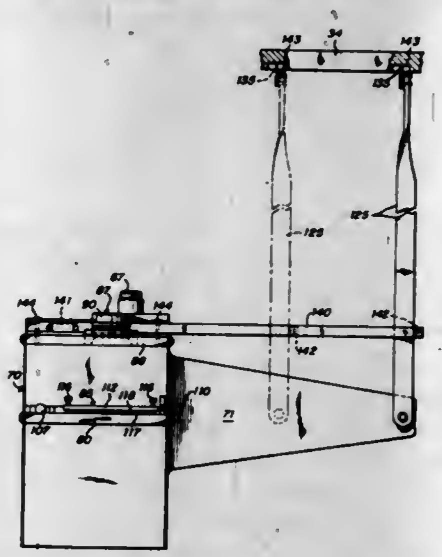


1. An electrophotographic apparatus for forming a plurality of images on a moving electrophotographic web travelling in a predetermined path comprising:
- a plurality of stations, each station including charger means, exposure means and developing means,
- said exposure means of each station including projection means and means defining a projected image plane spaced vertically above said projection means,
- means to advance the web through said stations,
- said projection means of each station being disposed with respect to the corresponding image plane to expose that portion of the web therein,
- said projection means of each station forming a diverging image carrying light beam directed generally vertically upwardly,
- first means to guide the web for travel into each station in a generally upwardly direction,
- second means to guide travel of the web from the image plane of a preceding station in a generally downwardly direction,
- said developing means being located along the path of web travel and positioned generally vertically below said first and second guide means,
- said first and second means and said developing means being so disposed as to provide a downwardly extending diverging loop in that portion of the web between successive image planes, and
- said charger means of each station being positioned to deposit charge on the web prior to exposure thereof.

3,307,458
ELECTROPHOTOGRAPHIC APPARATUS

Francis Hunstiger, Parma Heights, and Herbert E. Drake, Willowick, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a coporation of Delaware

Filed June 4, 1964, Ser. No. 372,503
14 Claims. (Cl. 95—1.7)



1. Apparatus for projecting an image on a movable electrophotographic web travelling in a predetermined path comprising:
- means defining a projected image plane,
- means to maintain the web relatively flat in said image plane,
- means spaced from said image plane for projecting onto the web a light image of predetermined fixed width relative to the web,
- said projection means including means to mount an original in spaced relation to said image plane,
- means to sense lateral deviation of the web from said predetermined path, and
- means cooperating with said sensing means to effect lateral movement of said projected image in the same direction and in an amount equal to said lateral deviation of the web whereby the projected image is maintained in lateral registry on the web.

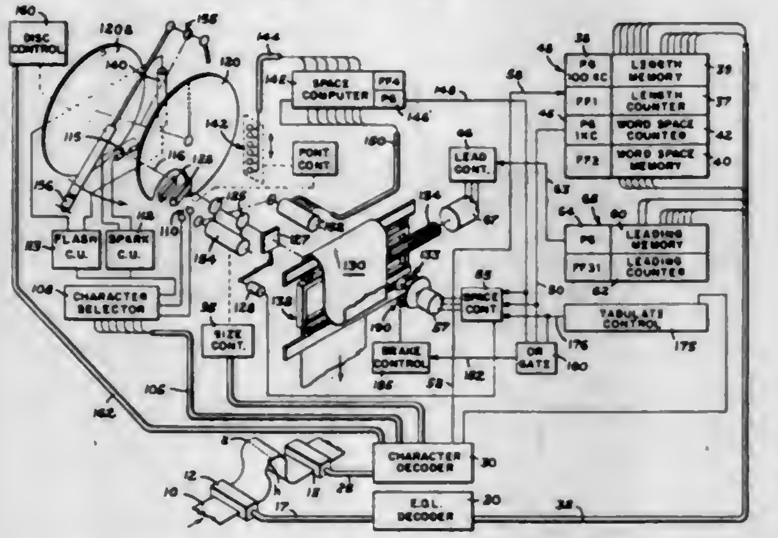
3,307,459
SPACER CONTROL FOR PHOTOTYPESETTING SYSTEM

Ralph A. Proud, Jr., Somerset, N.J., and Richard C. O'Brien, Huntington, N.Y., assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Filed May 7, 1965, Ser. No. 454,157
3 Claims. (Cl. 95—4.5)

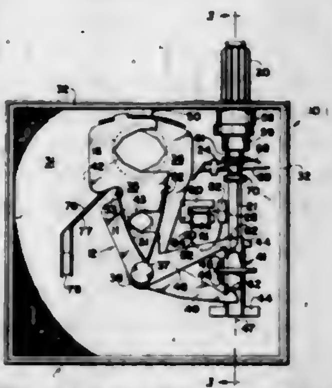
1. In a phototypesetting apparatus having means for projecting character images of different widths along a common path and a means for mounting photosensitive

record material in an image plane over said projecting means for recording the images to produce lines of composition, and including spacer means operative to cause spacing movement between said mounting means and said common path, said spacer means incorporating a stepping motor having an output member adapted for movement in a predetermined number of equal steps for causing spacing movement in digital fashion and for maintaining its position solely through the application of an electrical field within said stepping motor, means for generating digital spacing information representing spacing movements desired, and circuit means operative to direct said digital spacing information as control pulses to said stepping motor to cause operation thereof in a predetermined number of steps; the improvement comprising a deceleration control circuit responsive to said circuit means to generate a signal indicating the cessation of operation of said generating means, a selectively operable energy absorbing mechanism connected to said position control member for retarding movement thereof, and a circuit controlling the operation of said energy absorbing mechanism to render it operative at each cessation of operation of said generating means for absorbing energy imparted to said output member and thereby damping oscillations of said output member to improve the damping time characteristics of the spacer means.



3,307,460
SEMIAUTOMATIC CAMERA INSTRUMENTATION

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Nov. 3, 1965, Ser. No. 506,170
9 Claims. (Cl. 95—10)



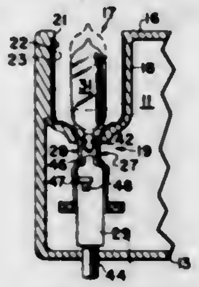
1. The combination with a camera having an exposure aperture for exposing a photosensitive surface to light passing through said aperture from a scene, comprising:

exposure control means including a manually adjustable instrumentality movable to a plurality of selectable settings for controlling the amount of light admitted through said aperture during exposure, each setting of said instrumentality determining a different one of a plurality of exposure factors, there being a correct exposure factor for each level of scene brightness; and

photometer means including vibration-inducing means for inducing in said instrumentality a vibration perceptible to the tactile sense when the correct exposure factor is selected.

3,307,461
FLASH APPARATUS

Dexter P. Cooper, Jr., Lexington, and Vaito K. Eloranta, Needham, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a coporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,388
8 Claims. (Cl. 95—11)



1. In combination with a camera having a flash synchronizing switch, flash bulb socket means designed to receive a flash bulb having an elongated base and provided with electrodes on opposite elongated surfaces of said base, comprising:

(a) a pair of electrical contacts individually connected to said flash switch, each of said contacts having a first portion that is flat and as wide as said elongated surfaces of said base are long, a second portion connected to one end of said first portion and curving out of the plane thereof, a third portion connected to the other end of said first portion and inclined relative to the plane thereof, and a fourth portion parallel to but noncoplanar with said first portion;

(b) means for securing said fourth portion to said camera housing so that the first portions of said contacts are substantially parallel and urged toward each other, and said second portions are oppositely directed to define the sides of a flared mouth adapted to be engaged by the base of said flash bulb when the latter is dropped into said mouth for operably orienting said base so that the electrodes engage said contacts; and

(c) a nonconductor inserted between said contacts for normally spacing the latter when the base of said bulb is not inserted between said first portions;

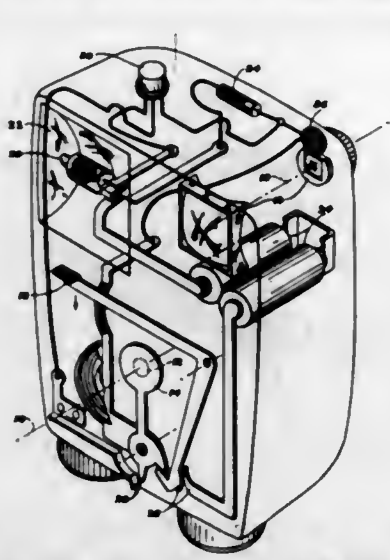
(d) each of said contacts also having a second portion curved out of the plane of said first portion to define, when said contacts are operatively mounted, the sides of a flared mouth adapted to be engaged by the base of a flash bulb when the latter is dropped into said mouth, such engagement serving to properly orient the base for insertion.

3,307,462
AUTOMATIC FLASH CONTROL DEVICE FOR PHOTOGRAPHIC CAMERAS

Miller R. Hutchison, Jr., and Samuel S. Merz, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 215,044, Aug. 6, 1962. This application Jan. 22, 1965, Ser. No. 427,290
Claims priority, application Great Britain, June 14, 1962, 22,844/62
14 Claims. (Cl. 95—11)

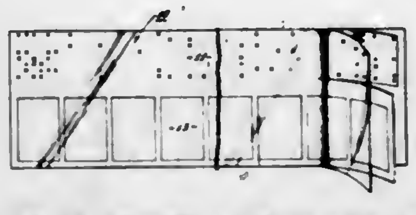
1. In a camera adapted to receive a flash lamp, the combination comprising: a series circuit including said lamp, a source of electrical potential, and gated switching

means having a gating input and a normally open condition and a closed condition assumed in response to at least a predetermined potential applied to said gating input; a photocell illuminatable by field light and arranged in circuit with said source for regulating the potential of said gating input for enabling said switching means to assume its closed condition only when said photocell receives illumination below a predetermined level, whereby in normal operation of the camera, said flash lamp is ignitable by said source only when field brightness is relatively low, the photocell comprising a photoresistive device, with: a voltage divider connected in parallel with said switching means and including a resistor in series with said photoresistive device, said gating input being electrically connected to the junction of said resistor and said photoresistive device.



3,307,463
CARD PROCESSING APPARATUS

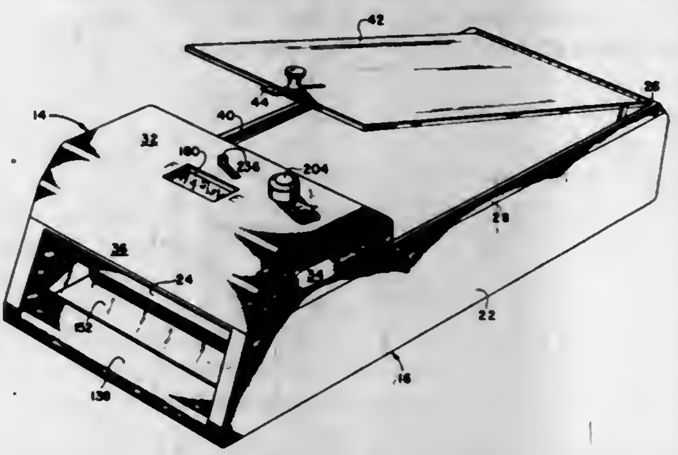
Robert M. Hayes, Sherman Oaks, and Alfred M. Nelson, Redondo Beach, Calif., assignors, by mesne assignments, to The Magnavox Company, Torrance, Calif., a corporation of Delaware
Original application Jan. 12, 1959, Ser. No. 786,214. Divided and this application Sept. 14, 1962, Ser. No. 224,285
3 Claims. (Cl. 95—73)



1. A method of providing information storage cards having photographic images formed thereon and further haivng data identifying such images recorded thereon, which method includes the steps of forming photographic images corresponding to different documents on a film strip, recording different digital data at a selected position on each of a plurality of master cards to identify the individual master cards with respect to the different document images on the film strip, causing different photographic images from the film strip to be exposed on different ones of the master cards in accordance with the digital data on such master cards so that the images on the film strip of a particular document are exposed on a master card bearing digital data identifying that document, providing a plurality of information storage index cards bearing digital data at a selected position on each such card corresponding to the document-identifying digital data on respective ones of the master cards, collating the master cards and the index cards with respect to the document-identifying digital data thereon into a stack with each master card being grouped with all the index cards bearing corresponding document-identifying digital data, introducing each master card and an index card bearing corresponding document-identifying data into a photographic reproduction system, and shining light through the photographic image on each of the master cards and onto the index card bearing corresponding document-identifying data to cause photographic images on each of the master cards to be exposed on each of the index cards bearing corresponding document-identifying digital data.

3,307,464
PHOTOGRAPHIC APPARATUS

Nicholas Gold, Arlington, Mass., and Arthur J. Sable, Saratoga, Calif., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 3, 1964, Ser. No. 372,146
19 Claims. (Cl. 95—75)



1. In photographic apparatus including a light source for photoexposing successive portions of an image-recording sheet during movement of said sheet relative to said source and means for superposing said successive exposed portions of said image-recording sheet with a second sheet during movement of said image-recording sheet, in combination:

a rotary member about which said image-recording sheet and at least portions of said second sheet are wrapped as a coil;

drive means for rotating said member to move said sheets through said apparatus relative to said light source prior to passage into said coil, said drive means rotating said member at a substantially constant speed so that the speed of movement of said image-recording sheet relative to said light source during exposure is directly proportional to the diameter of said coil;

sensing means for determining the diameter of said coil; and

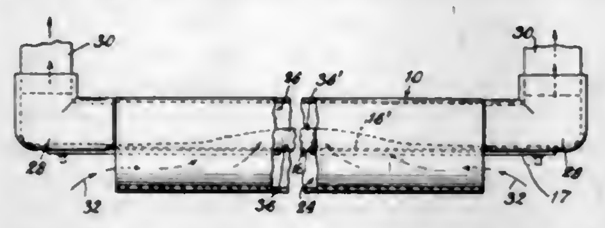
means for varying the quantity of light transmitted from said source to said image-recording sheet in accordance with the diameter of said coil to provide for substantially uniform exposure of said successive portions of said image-recording sheet.

3,307,465
LIGHT-PRINTING APPARATUS

William A. Adair, Houston, Tex., assignor to The Frederick Post Co., Chicago, Ill., a corporation of Illinois
Filed June 1, 1964, Ser. No. 371,682
5 Claims. (Cl. 95—77.5)

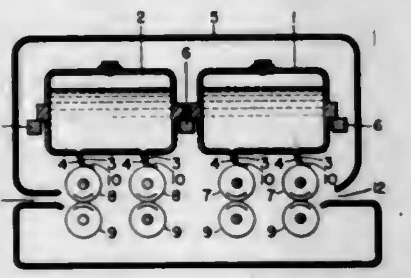
1. In combination, a hollow rotary light-printing cylinder, a fixedly positioned elongated heat-producing source of actinic light within said cylinder surrounded by air space, means operable to effect cooler end portions of the cylinder and progressively hotter portions away from

said ends, and a fixedly positioned light-obstructing means between said light source and the interior of the cylinder,



which means has more obstructing area at the intermediate portions of the cylinder and progressively less obstructing area toward said ends.

3,307,466
DEVICE FOR APPLYING A TREATING SOLUTION TO SENSITIZED PAPER
Susumu Fukuda, Kobe, Japan, assignor to Fuji Photo Film Company Limited, Kanagawa-ken, Japan
Filed May 15, 1964, Ser. No. 367,744
Claims priority, application Japan, May 27, 1963, 38/27,350
1 Claim. (Cl. 95—89)



A device for applying a treating liquid to a sensitized strip, said device comprising, in combination, a pair of rollers in contact with each other, and including an upper roller and a lower roller, the strip being drawn between said rollers upon rotation of the latter; a treating liqiud tank disposed, in spaced relation, above the upper roller and having a bottom wall formed with a slit extending substantially parallel to the axes of said rollers; and a pair of flexible plates each extending longitudinally of a respective edge of said slit and downwardly toward the surface of said upper roller; the trailing plate, considered with respect to the direction of rotation of said upper roller, terminating in spaced relation to the cylindrical surface of said upper roller, and the leading plate having a contact flap at its lower edge lying against the cylindrical surface of said upper roller and extending in the direction of rotation of said upper roller; said plates, when said rollers are stationary, being in surface contact to prevent flow of liquid from said slit to said upper roller; said leading plate, upon rotation of said rollers, being drawn by its contact flap away from said trailing plate to form a liquid flow passage which is proportional to the angular velocity of said upper roller.

3,307,467
PHOTOGRAPHIC APPARATUS
Nicholas Gold, Arlington, Mass., and Arthur J. Sable, Saratoga, Calif., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 3, 1964, Ser. No. 372,148
13 Claims. (Cl. 95—89)

1. In apparatus for treating photographic sheet materials with a liquid, a device for distributing said liquid between a pair of superposed sheets comprising, in combination:

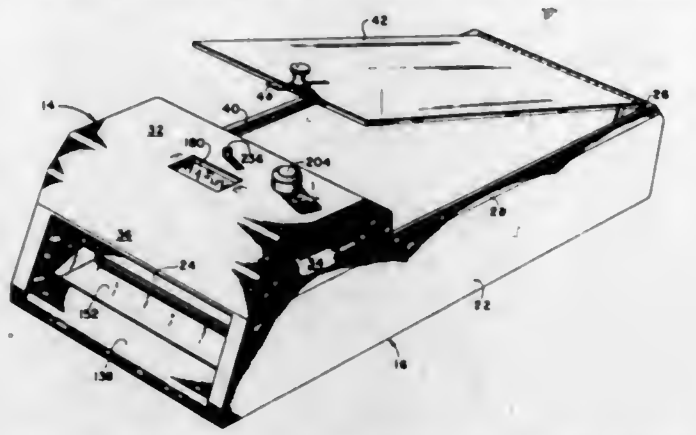
a first member having a sheet engagement surface including a section at least equal in length to the width of said sheets and lying in a substantially straight line;

a second member having a surface at least equal in length to said section of said first member and being movable toward and away from said first member;

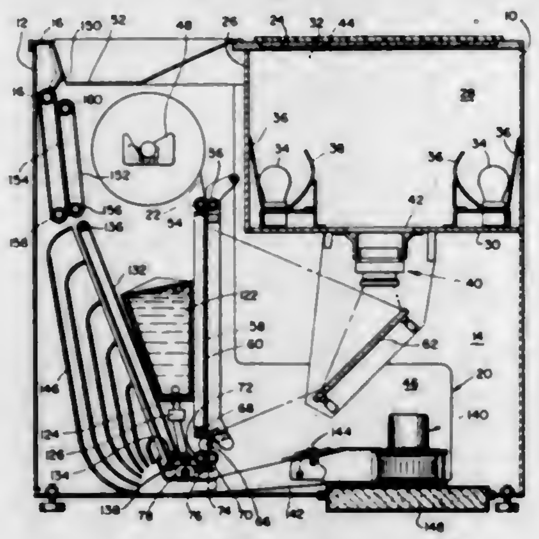
resilient means for urging said second member toward said first member;

said surfaces of said members defining a passage between said members converging to a narrow gap through which said sheets are moved in superposition substantially in a plane for distributing said liquid therebetween; and

means for preventing escape of said liquid from between said sheets at the margins thereof during distribution of said liquid by said members, the last-mentioned means comprising a pair of engagement members projecting through openings in said second member toward said first member into said convergent passage ahead of said gap and adjacent said edges of said sheets, said engagement members being fixed with respect to said first member for deforming the marginal portions of at least one of said sheets toward said first member.



3,307,468
PHOTOGRAPHIC PROCESSING APPARATUS
Robert M. Briber, Lexington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 3, 1964, Ser. No. 372,221
13 Claims. (Cl. 95—89)



1. The photographic apparatus in which successive areas of photosensitive sheet material are exposed and treated with a liquid, an applicator for applying said liquid to said areas of said sheet comprising, in combination:

a container having an opening at its top;

a closure for said opening movable between open and closed positions;

a first roll, including a magnetic material, engaged for rotation about its axis within said container;

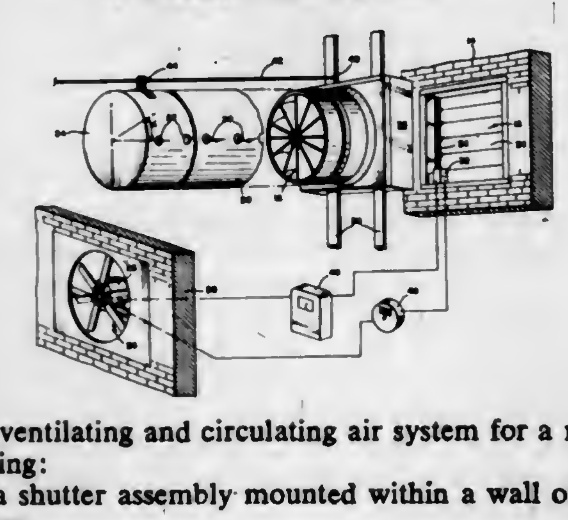
a quantity of said liquid within said container sufficient to cover said roll;

said roll being engaged within said container for movement vertically to a raised position in which a longitudinal portion of the periphery of said roll projects from said container through said opening;

a second roll mounted above said container for rotation about an axis in substantially the same plane as said axis of said first roll; and

magnetic means located outside of said container for acting magnetically upon said first roll to raise said first roll partially from said liquid into juxtaposition with said second roll and engagement with said sheet disposed between said rolls.

3,307,469
VENTILATING AND CIRCULATING AIR SYSTEM
Hoy R. Bohanon, Muskogee, Okla., assignor to Acme Engineering and Manufacturing Corporation, Muskogee, Okla., a corporation of Oklahoma
Filed Feb. 10, 1966, Ser. No. 526,562
10 Claims. (Cl. 98—33)



1. A ventilating and circulating air system for a room, comprising:

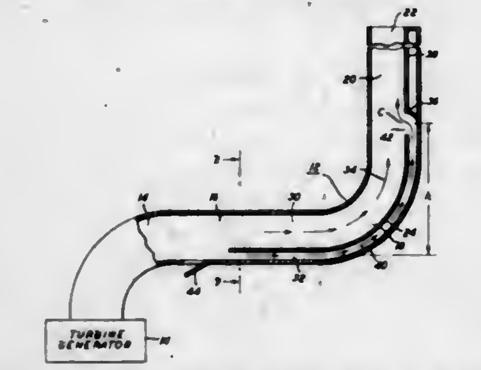
(A) a shutter assembly mounted within a wall of said room;

(B) a first fan having intake portion located a pre-determined space from said shutter assembly, said fan being directly exposed to the inside of said room through said space;

(C) a tube assembly connected to discharge of said first fan and including a plurality of continually spaced openings for distributing jets of air within said room; and

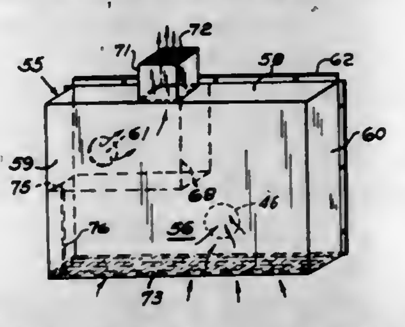
(D) a second fan mounted within a wall of said room.

3,307,470
EXHAUST CONDUIT
Robert W. Kenny, Morristown, and Paul J. Torpey, Parsippany, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 12, 1964, Ser. No. 403,283
11 Claims. (Cl. 98—58)



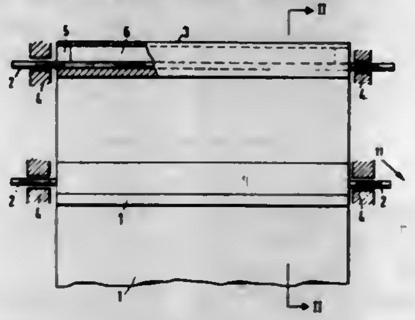
1. A conduit for exhaust gases from a source comprising, principal duct means having a horizontal section and a vertical outlet stack forming an elbow with said horizontal section, a shunt duct extending from the horizontal section and angularly intersecting the stack, and water drain means in the horizontal section.

3,307,471
HEATING APPARATUS ENCLOSURE
Michael T. Gacioch, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Aug. 25, 1964, Ser. No. 391,992
1 Claim. (Cl. 98—62)



A protective device adapted to overlay the combustion air aperture and flue gas aperture of a heating apparatus to prevent ingestion of foreign matter into the heating apparatus comprising an outside wall; a side wall projecting inwardly from the peripheral edges of said outside wall, said side wall being discontinuous to provide a combustion air opening, said side wall including a flanged inner edge adapted to tightly abut the heating apparatus; a partitioning wall projecting inwardly from said outside wall having opposite ends thereof tightly engaged between portions of said side wall, said partitioning wall separating said side wall into a first wall section including said combustion air opening and a second wall section; and an inside wall paralleling said outside wall disposed between said partitioning wall and said side wall second wall section to form in cooperation with said outside wall, said partitioning wall, and said side wall second wall section a separate flue gas compartment, said inside wall having an opening therethrough communicable with said flue gas aperture, said side wall second wall section having a flue opening therethrough to permit egress of flue gas from said compartment, said outside wall being generally rectangular with top, bottom, and opposed side edges; said side wall comprising first and second wall members projecting inwardly from the side edges of said outside wall with a third wall member projecting inwardly from said outside wall top edge between said first and second wall members; said partitioning wall comprising a fourth wall member between and parallel to said first and second wall members, one end of said fourth wall member abutting said third wall member, and a fifth wall member parallel to said third wall member and between said first wall member and the other end of said fourth wall member.

3,307,472
VENETIAN BLIND-TYPE SHUTTER
Ernst Müller, Schwenningen (Neckar), Germany
Filed Apr. 6, 1964, Ser. No. 357,593
Claims priority application Germany, Apr. 10, 1963, H 48,810
3 Claims. (Cl. 98—116)



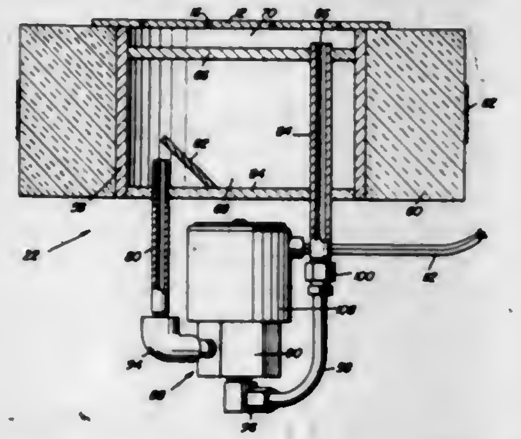
1. A ventilator shutter including fan means comprising slats of one-piece construction each of which is pivoted about an axis adjacent its top edge to define upper and lower portions, said slats adapted to hang in a substan-

tially vertical plane under gravity and adapted to be also swung out of the vertical under the influence of an air stream set in motion by the fan means, and wherein each pivotal axis divides the associated slat into two portions of which the upper portion presents a smaller surface area to the air stream than the lower portion, means for pivoting the slats, the upper portion of each slat having a higher specific gravity than the lower portion, inserts mounted in the slats between their top edges and their pivotal axis, the upper section of each of said slats being bent to form pockets, and wherein the said inserts consist of bars positioned in said pockets provided in the slats.

3,307,473
HEATER FOR FOOD PRODUCTS

Frank O. Clifford, Kokomo, and Chris W. Yoder, Goshen, Ind., assignors to Komo Corporation, Kokomo, Ind., a corporation of Indiana

Filed Oct. 10, 1960, Ser. No. 61,461
12 Claims. (Cl. 99—234)



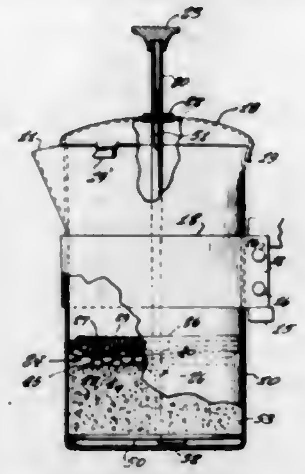
12. A steaming head assembly for warming food produces comprising a vertically disposed tubular casing member having open upper and lower ends, an apertured plate member extending across said upper end of said casing member, a first plate member extending across said casing member spaced from said apertured plate member and defining a dry steam chamber therewith, another plate member extending across said casing member spaced from said first plate member and defining a steam storage chamber therewith, a raw steam inlet conduit extending through said other plate member for introducing steam to said storage chamber from a source of steam supply, a steam outlet conduit extending through and above said other plate member and spaced from said raw steam inlet passage, a dry steam inlet conduit communicating with said dry steam chamber and extending therefrom to the side of said other plate member remote from said steam storage chamber and having at least a portion of the wall thereof in contact with the steam in said steam storage chamber and spaced from said raw steam inlet conduit for introducing dry steam into said dry steam chamber, and a control valve disposed on the side of said other plate member remote from said steam storage chamber and connecting said steam outlet conduit to said dry steam inlet conduit for selectively admitting steam from said steam storage chamber to said dry steam chamber.

3,307,474
COFFEE BREWING APPARATUS WITH MEANS FOR REMOVING USED COFFEE GROUNDS

Charles Kasher, New York, N.Y., assignor, by mesne assignments, to Boonton Molding Company, Inc., Boonton, N.J., a corporation of New Jersey

Filed Apr. 14, 1965, Ser. No. 448,126
5 Claims. (Cl. 99—287)

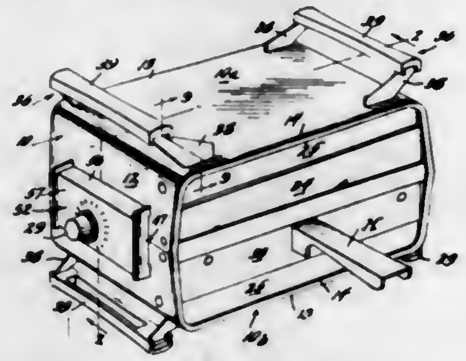
1. Coffee brewing apparatus comprising: a cylindrical vessel open at its top; a freely vertically displaceable disc member positionable within said vessel to extend across and substantially completely cover the bottom thereof; lifting rod means connected to said disc member and extending upwardly therefrom at least to the top of said vessel when said disc member is positioned at the bottom thereof; filter means vertically slidably engageable with the inner wall surface of said vessel, said filter means being freely longitudinally slidable with respect to said rod means and extending completely across the interior of said vessel for forcing downwardly all of the grounds of a mixture of coffee grounds and hot water within said vessel to provide clear brewed coffee above said filter means; and handle means vertically movable independently of said lifting rod means, said handle means being connected to said filter means for vertical displacement thereof, said handle means being positioned above the top of said vessel with said filter means in its lowermost position, said grounds being confined between said filter means and said disc when said filter means is in said lowermost position.



3,307,475
COOKING APPLIANCE

George B. Munsey, Little Rock, Ark., assignor to Munsey Products Inc., Little Rock, Ark., a corporation of Arkansas

Filed Sept. 3, 1965, Ser. No. 484,823
16 Claims. (Cl. 99—340)

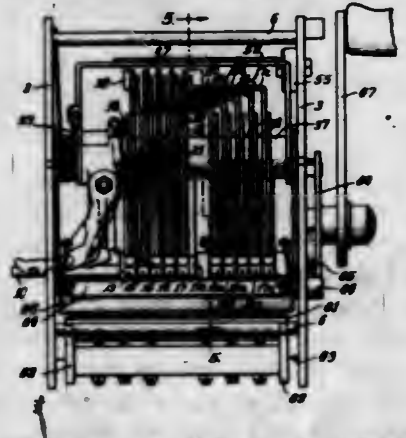


1. In a cooking unit, a housing comprising a pair of relatively-opposed housing sections having sheet metal wall portions interconnected in edge-to-edge relation to define a normally enclosed cooking compartment, said interconnected wall portions respectively being formed with complemental portions of a generally rectangular opening extending on opposite sides of the abutting edges of said housing sections, relatively-opposed pairs of connecting tongues having free ends projecting toward each other from the respective wall portions at opposite lateral ends of the opening with the adjoining edges of the tongues of each pair coincident with the said respective edges, said tongues of each pair respectively having remotely-presented inclined edges converging toward said free ends of the tongues, and connector clips respectively associated with said pairs of tongues, each clip comprising a base plate extending across said abutting edges at the bases of the respective pairs of tongues and having hooks extending around the end edges of said opening on opposite sides of each pair of tongues, said hooks and plates respectively clamping the said wall portions between them with adjoining edges thereof in registry, said hooks having bight portions extending around said end edges of the opening on opposite sides of the respective pairs of tongues and in wedging engagement with the relatively remote inclined edges of said tongues of each pair.

3,307,476
DUPLICATE PRINTING CHECKWRITER

Hubert Jagger, Lincolnwood, Ill., assignor to Theodore B. Hirschberg, Jr., Chicago, Ill.

Filed Jan. 21, 1965, Ser. No. 426,867
2 Claims. (Cl. 101—90)

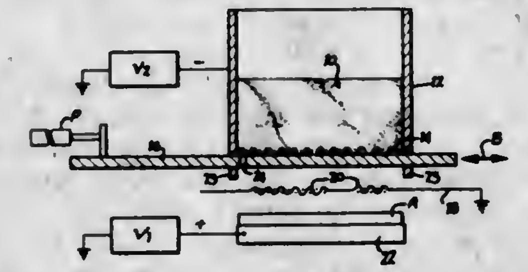


1. In a checkwriter, a frame, a transverse shaft mounted in said frame, means defining a printing line, a first series of printing type segments mounted on said shaft and individually adjustable thereabout, a second series of printing segments mounted on said shaft and individually adjustable thereabout, the segments of said second series being similar to those of said first series and the segments of both series having printing characters selectively positionable on the printing line by adjustment of said segments, brackets respectively fixed to the segments of the first series and to the corresponding segments of the second series, said brackets being spaced increasingly greater distances radially from said shaft and effective for adjusting the respective segments of the second series similarly to adjustment of the segments of the first series and incident thereto, platen means cooperating with the printing characters disposed on the printing line, and operating means for effecting a printing operation.

3,307,477
ELECTRICAL PRINTING USING STENCIL AND MOVING SLOT POWDER METERING MEANS

Richard B. Booher, Perrysburg, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Sept. 25, 1964, Ser. No. 399,138
10 Claims. (Cl. 101—114)

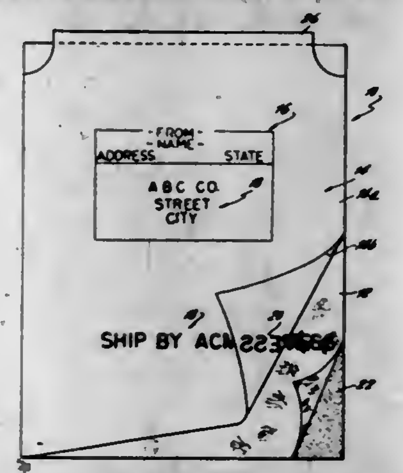


1. The method of applying a patterned layer of powder particles capable of being electrically charged to the surface of an article comprising the steps of supporting a supply of powder particles in spaced vertical registry above a stencil screen having pattern-defining apertures therethrough with the supply of particles disposed over an area completely overlying the pattern apertures in said screen, positioning an article in spaced vertical registry beneath the pattern apertures of said screen, applying electric potentials of opposite polarity to said article and the particles in said supply, releasing a stream of charged particles from a first region of said supply constituting a relatively small portion of the total area over which the supply is disposed, and continuously shifting the region of said supply from which the stream of particles is released to traverse said stream across the pattern-defining apertures of said screen.

3,307,478
IMPRINTING CARBON-MASTER SET

Joseph Keen, Bronx, N.Y., assignor to Repeat-O-Type Stencil Manufacturing Company, Inc., Wayne, N.J., a corporation of New York

Filed Oct. 11, 1965, Ser. No. 494,771
2 Claims. (Cl. 101—149.4)

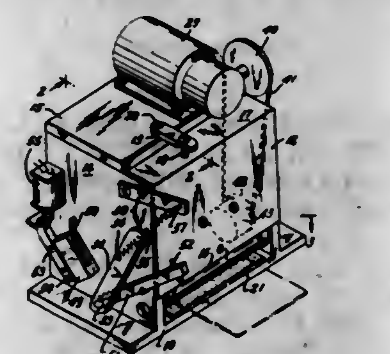


1. A method of preparing a master sheet for imprinting, said master sheet being included in an arrangement of sheet material; said arrangement including in addition to said master sheet a backing sheet having a coating of a transfer dye in facing relation to said master sheet and an interleaf mimeograph stencil tissue sheet of an absorbent character in an interposed position between said master sheet and said coated backing sheet, said method of preparing said master sheet for imprinting comprising the steps of printing on said master sheet with sufficient pressure and causing the transfer dye, in response to said pressure, to soak through said interleaf mimeograph stencil tissue sheet onto said master sheet.

3,307,479
IMPRINTING DEVICE MOVABLE BETWEEN INKING AND PRINTING POSITIONS

Edwin E. Messmer, Roslyn Heights, N.Y., assignor to Roto American Corporation, New York, N.Y., a corporation of New York

Filed May 13, 1964, Ser. No. 367,127
3 Claims. (Cl. 101—334)



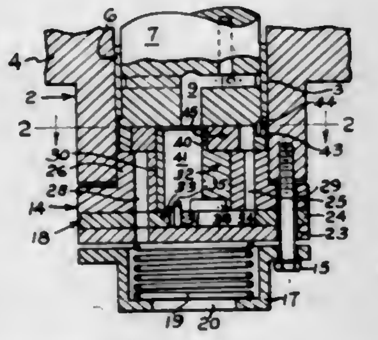
1. In an imprinter, a platen, an ink pad alongside the platen in a plane substantially transverse to that of the platen, a drive shaft parallel to and adjacent to the line

of intersection between said planes, an actuating arm secured to and extending radially from said shaft, a printing head pivoted to the end of said arm on an axis parallel to said shaft, means for rocking said shaft to swing the printing head between a printing position and an inking position, and means for rotating the printing head on its pivot as it swings so that it encounters both the platen and the pad in face-on relationship, said last-named means comprising a stem carried by and extending perpendicularly rearward from said printing head, and a guide slidably engaging the rear region of said stem, said guide being mounted for rotative movement on a fixed axis parallel to said drive shaft and equidistant from said platen and pad.

3,307,480
AUTOMATICALLY REVERSIBLE GEAR PUMP

Tadek M. Kropiwnicki, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Sept. 1, 1964, Ser. No. 393,610
9 Claims. (Cl. 103—3)



1. In an automatically reversible gear pump mechanism, the combination of a rotatable internally toothed first gear; axially movable supporting means; a gear carrier having an axis parallel to and spaced from the axis of said first gear supported on said supporting means; an externally toothed second gear rotatably positioned on said gear carrier in meshing engagement with said first gear, said first and second gears when rotated forming intake and exhaust spaces therebetween; means for rotating said first gear; suction port means in said supporting means opposite the intake space formed by said first and second gears; discharge port means in said supporting means opposite the discharge space formed by said first and second gears; said gear carrier being rotatable relative to said supporting means so that, upon rotation of said first gear rotating means in a reverse direction, tooth pressures developed between said first and second gears rotate said gear carrier in said reverse direction; and stop means on said supporting means engageable with said gear carrier to limit rotation of said gear carrier relative to said supporting means in said reverse direction to a predetermined arc whereby the intake and exhaust spaces formed between said first and second gears remain substantially opposite said suction and dicharge port means.

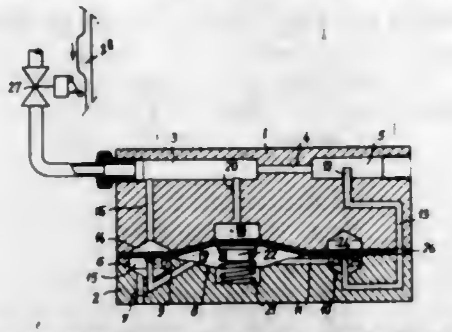
3,307,481
APPARATUS FOR GENERATING OIL SPRAY FOR WORKING ON METALS WITH CUTTING TOOLS

Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works

Filed Apr. 1, 1965, Ser. No. 444,701
Claims priority, application France, Apr. 3, 1964, 969,676, Patent 1,398,933
5 Claims. (Cl. 103—6)

1. An oil atomizing apparatus for spraying atomized oil and blowing compressed air onto cutting tools, comprising,

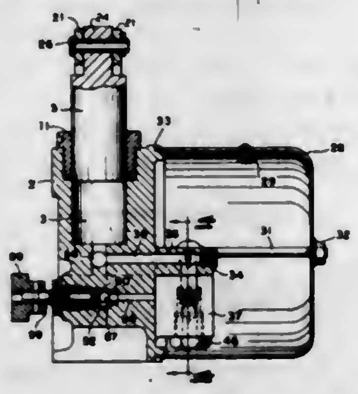
on the one hand, a compressed air supply conduit, which is adapted to be connected to an intermittent compressed air source and which communicates with an oil and air discharge conduit through a passageway of reduced section, and, on the other hand, a pneumatically-controlled valve with a pneumatic control chamber communicating with said supply conduit and obturated by a fluidtight partition which is adapted to be movable within said pneumatic control chamber and which is integral with an obturator permanently biased into the open position by elastic means and cooperating with a seat located in an oil-passing chamber which has a port, an oil inlet conduit adapted to be connected to an oil tank, the passage through said seat communicating with the working chamber of a pneumatically-controlled reciprocating pump within which a fluidtight movable partition separates said working chamber from a pneumatic control chamber communicating with said supply conduit, spring means continuously urging said movable partition towards said control chamber, and said working chamber communicating through delivery valve with a jet which has a port in said air and oil discharge conduit and the outlet of which is positioned in the path of the air stream issuing from said passageway of reduced section.



3,307,482
HIGH-LOW PRESSURE PUMP

John A. Lauck, Benton Harbor, Mich., assignor to Hydromotive, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Dec. 22, 1964, Ser. No. 420,258
5 Claims. (Cl. 103—37)

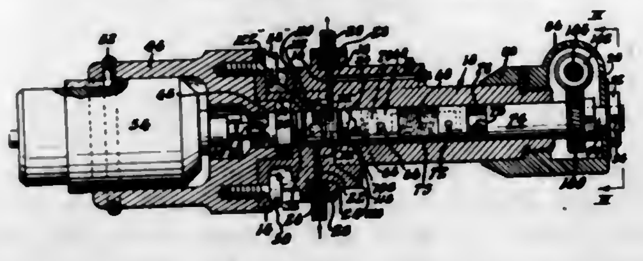


1. A high-low pressure pump comprising a pair of pump assemblies, the displacement of one of said pump assemblies being much larger than the displacement of the other, each of said pump assemblies including a pumping chamber and a piston slidably received therein, a fluid reservoir, first and second passageways communicating each of said chambers with said reservoir, check valves in said first and second passageways for permitting fluid to flow therethrough only in the direction of said pumping chambers, a high pressure outlet passage, third and fourth passageways communicating said chambers directly with said high pressure outlet passage, additional check valves in said third and fourth passageways for permitting fluid to flow from said pumping chambers only in the direction of said high pressure outlet passage, means operatively connected to said pistons for reciprocating the same, a fifth passageway interconnecting said chambers, and another check valve in said fifth passageway operative to permit a portion of the fluid pumped by said chamber for the larger displacement pump assembly on the first pumping stroke of its piston to enter said chamber for the smaller displacement pump assembly to prime the same, thus insuring satisfactory operation of said smaller displacement pump assembly after such first pumping stroke.

3,307,483
ROTARY METERING PUMP

Vitalis von Plato, Springfield, Pa., assignor to Ryvon International Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 17, 1964, Ser. No. 419,048
2 Claims. (Cl. 103—38)

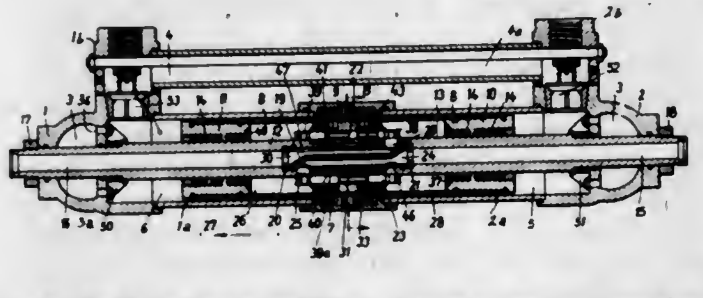


1. In a rotary pump for metering liquids, the combination comprising a hollow cylinder provided with inlet and outlet ports, an axially fixed rotatable piston in said cylinder having an oblique surface at one end, a reciprocable piston in said cylinder having an oblique surface at one end in full face engagement with the oblique surface of said rotatable piston, means yieldably maintaining said oblique surfaces in full face engagement, means for actuating said rotatable piston and progressively separating said oblique surfaces against the influence of said yieldable means to expand a pumping chamber defined by said separated oblique surfaces, means formed in said rotatable piston and arranged for placing said pumping chamber alternately in communication with said inlet and outlet ports including a channel extending into the rotatable piston from the oblique surface thereof and opening at two axially spaced locations on the same side of said piston respectively aligned with said ports, said inlet port being in communication with said pump chamber during the period of its expansion and said outlet port being in communication with said pump chamber during the period of its contraction, and means operable for varying the output of the pump while maintaining its rate of operation.

3,307,484
FLUID MOVING MACHINE

Paul Hammelmann, Zum Sundern 17, Oelde in Westphalia, Germany

Filed Feb. 24, 1965, Ser. No. 434,986
Claims priority, application Germany, Feb. 27, 1964, H 51,860; May 21, 1964, H 52,745
11 Claims. (Cl. 103—51)

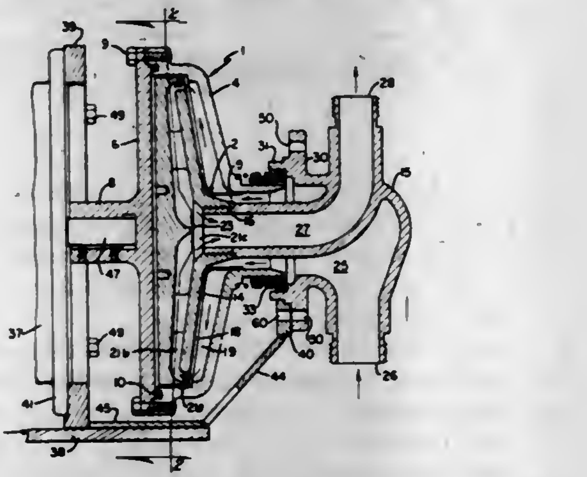


1. A fluid moving machine comprising, in combination, housing means formed with an inner cavity for a pumped fluid, and including a partition means dividing said cavity into two rooms, each room having first inlet and first outlet means; plunger means including a pair of pistons located on opposite sides of said partition means in said rooms, and a tubular member connecting said pistons having an axis and being guided in said partition means, said plunger means defining in each room a pump chamber communicating with said first inlet and outlet means, and said pistons and tubular member defining with said partition means a pair of motor chambers located on opposite sides of said partition means; second inlet and outlet means for a driving fluid; and valve means mounted in said partition means for connecting said second inlet and outlet means and with said motor chambers, said valve means being formed with first and second conduits and being located centered in said axis, said valve means having first and second positions for supplying said driving fluid through said first conduit to said first motor chamber while discharging the same from said second motor chamber through said second conduit, and for supplying said driving fluid to said second motor chamber through said second conduit while discharging the same from said first motor chamber through said first conduit, whereby said plunger means are reciprocated, said first and second valve conduits being arranged and constructed so that the fluid pressure therein holds said valve member centered in said axis, said valve means including control means operated by said reciprocating plunger means to move said valve means alternately to said first and second positions.

3,307,485
PUMP

Leland H. Logue, Denver, Colo., assignor to Denver Equipment Company, Denver, Colo., a corporation of Colorado

Filed Oct. 13, 1965, Ser. No. 495,406
7 Claims. (Cl. 103—101)

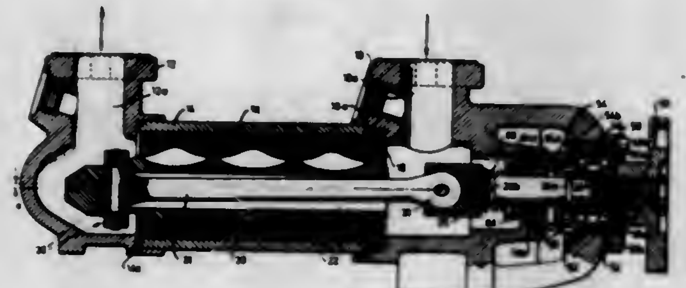


1. A pump comprising a hollow rotary member including a funnel-like casing shell having an upstream passage at one end concentric with its axis of rotation and a casing head closing the opposite end, said casing head having a coupling member for receiving the shaft of a drive motor and an impeller portion comprising a plurality of helical blades formed on its inner surface, a stationary member having an inclined surface facing the impeller portion of the casing shell and defining therewith a radially extending passage interiorly of the rotary member narrowing toward its discharge end for receiving flow from said upstream passage, said stationary member having first and second stationary disc-like portions interconnected in spaced arrangement to define a discharge passage inclusive of an intake portion for receiving the output of the said radially extending passage, an intermediate portion extending radially and widening toward its discharge end and a discharge portion concentric with said axis of rotation so the fluent material delivered into said upstream passage is directed through said radially extending passage under centrifugal influence of the impeller portion during rotation of the rotary member and is directed into the discharge passage of the stationary

member and out its discharge portion in a direction oppositely of its entry into the rotary member, said stationary member including manifold means having an inlet passage with an intake opening for passing flow into the upstream passage of the casing shell, and an outlet passage with an outlet opening for passing flow from said discharge passage, the inlet opening disposed in a plane different from the outlet opening, said manifold means including a flanged portion extending over the upstream end of the casing shell, a fluid pressure seal disposed between a surface of said casing shell and a surface of said flanged portion defining with said upstream passage an intake flow path into the interior of the rotary member, said seal comprising the sole external seal for the pump, and a base mount having upright portions supporting the manifold means and drive motor having a shaft coupled to said coupling member of the casing head for supporting said stationary, rotary and drive motor as an integral assembly.

3,307,486
UNIVERSAL JOINT AND SEALING MEANS FOR SCREW PUMPS

Gustav Rudolf Lindberg, Valla, Sweden, assignor to Aktiebolaget Flygts Pumpar, Solna, Sweden
Filed July 16, 1965, Ser. No. 478,013
Claims priority, application Sweden, Jan. 21, 1965, 817/65
10 Claims. (Cl. 103—117)

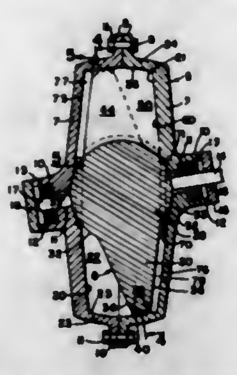


1. In a screw pump driven for operation by a rotational input to a drive shaft, the combination comprising:
- a body having an inlet port and an outlet port;
- sealing means provided around said drive shaft adjacent said inlet port;
- a stator having an internal helical thread fixed within said body between said inlet port and said outlet port;
- a rotor having an external helical thread, said rotor being mounted for rotation and concurrent eccentric movement within the stator in cooperation with said stator thread;
- an intermediate shaft connected at opposite ends to said drive shaft and said rotor;
- at least one of said connections comprising universal joint means consisting of a ball-and-socket joint and a cross pin extending diametrically through said ball and socket and secured to said rotor;
- whereby a high pressure output in said outlet port causes said rotor and said intermediate driven shaft to be urged axially toward said inlet port wherein said ball-and-socket joint will receive exclusively said axially directed forces and said cross pin will transmit torques acting on said rotor from said rotational input to said drive shaft.

3,307,487
ROTARY PUMP, COMPRESSOR AND THE LIKE

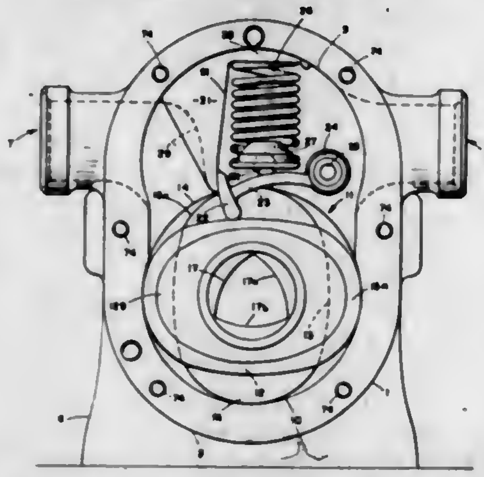
Paul Steadman, 10813 Woodhaven Drive, Fairfax, Va. 22030
Filed Oct. 3, 1966, Ser. No. 584,014
7 Claims. (Cl. 103—117)

1. In a rotary pump, compressor and the like, comprising a casing having a rotor chamber provided with radially outwardly converging chamber walls connected by a curved peripheral wall, said chamber being provided with bearing bosses on its casing walls aligned with respect to one another and extending at an acute angle to the central axis of said casing, a rotary shaft supported in said bearing bosses, a rotary disc mounted in said chamber and supported on a hub portion secured to said shaft having a spherically shaped opposed hub portion on each side of said disc for being received in correspondingly shaped recesses at the inner ends of said bearing bosses, a radial slot in said rotor disc having diverging inwardly directed walls for receiving a correspondingly shaped piston vane, said piston vane being solely supported and floatingly mounted in said slot, a yielding spring member for urging said piston vane in a radial direction, and intake and discharge ports in at least one wall of said casing.



3,307,488
POSITIVE DISPLACEMENT ROTARY PUMPS

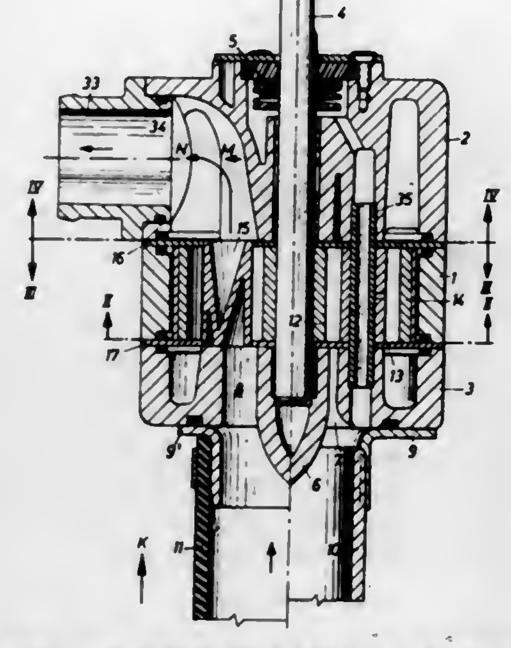
John N. Hinckley, 16052 Leffingwell Road, Whittier, Calif. 90603
Filed Oct. 23, 1965, Ser. No. 503,628
26 Claims. (Cl. 103—124)



1. In a rotary pump comprising a casing having a circular opening for a shaft and oppositely disposed inlet and outlet ports therethrough communicating with a chamber therein a portion of whose walls most distant from said ports are concentric with said opening, a combination including: a drive shaft concentric with said opening extending therethrough into said chamber and terminating therein; a bearing structure for said shaft disposed exteriorly of said chamber, the end of said shaft within said chamber being free from support; a removable impeller entirely closed at one end and having a recess in its other end that slidably receives the unsupported end of the drive shaft; means for keying said impeller to said shaft for rotation therewith; said impeller having spaced peripheral portions that sweep said concentric portion of said walls; and instrumentalities interposed between said ports for directing the inflow from said inlet port toward said concentric portion of the walls whereby said inflow may be moved along said portion of said walls toward said outlet port by said spaced peripheral portions.

3,307,489
GEAR MACHINE

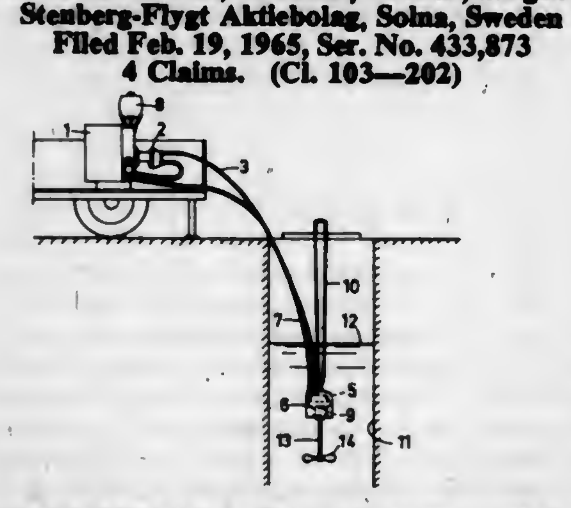
Otto Eckerle, Sion, Wallis, Switzerland (Am Bergwald 3, Karlsruhe, Germany), and Ernst Putschky, Rastatt, Baden, Germany; said Putschky assignor to said Eckerle
Filed Apr. 5, 1965, Ser. No. 445,531
Claims priority, application Germany, Apr. 8, 1964, E 26,788
12 Claims. (Cl. 103—126)



1. A gear machine, comprising: a housing; a drive shaft supported in the housing; a pinion gear mounted on said shaft within said housing; a plurality of planetary gears in mesh with the pinion gear in angularly spaced relation with each other; an internal ring gear surrounding and meshing with the planetary gears; spool pieces fitted in the spaces lying between the ring gear, the pinion gear and each pair of planetary gears and bounding pressure and suction chambers at the regions of gear meshing; two discs mounted in said housing in sealing sliding abutment on the sides of the pinion, planetary and ring gears, immovably relative to radial displacement from the axis of said shaft; said discs having formed openings for said spools; said spools protruding into said openings and resting fixedly therein; inlet conduit means for conducting fluid to the suction chambers; and outlet conduit means for conducting fluid from the pressure chambers.

3,307,490
DEVICE IN HYDRAULICALLY DRIVEN ENGINES

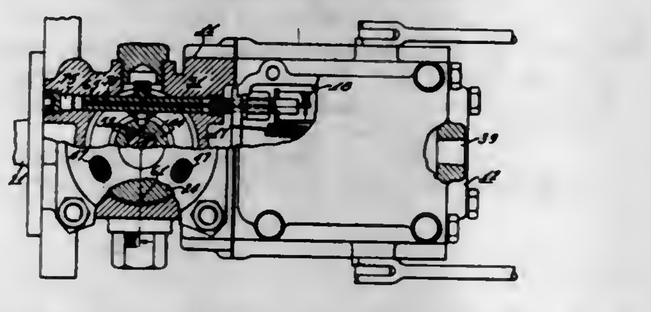
Sven Anders Norén, Bromma, Sweden, assignor to Stenberg-Flygt Aktiebolag, Solna, Sweden
Filed Feb. 19, 1965, Ser. No. 433,873
4 Claims. (Cl. 103—202)



1. An apparatus for hydraulic devices exposed to temperatures differing from that of the hydraulic fluid, comprising:
- a hydraulic device having an inlet port and an outlet port;
- a liquid-tight casing forming a chamber enclosing said hydraulic device including said outlet port on said device, said casing having a first opening permitting said inlet port on said device to extend outwardly therefrom and a second opening defining a casing outlet;
- whereby said hydraulic fluid passes through said hydraulic device and exits through said outlet port into said casing, said fluid circulates around the periphery of said device to bring said device to the same temperature as said fluid, said fluid exiting from said casing through said casing outlet.

3,307,491
FUEL PUMP VENTING

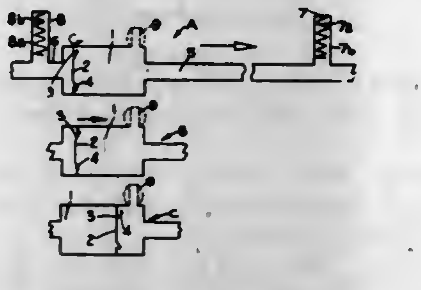
George D. Wolff, Hazel Crest, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed July 15, 1965, Ser. No. 472,194
12 Claims. (Cl. 103—203)



1. A fuel injection pump for delivering fuel to an injector by way of a delivery passage comprising
- a housing having wall means defining a supply chamber for maintaining fuel at above atmospheric and substantially below injection pressures, and
- a manually operable pump control rod for controlling fuel delivery of said injection pump shiftably disposed in said wall means and movable between a fuel shutoff position in which said supply chamber is vented to the exterior of said wall means independently of said delivery passage and a fuel delivery position in which said supply chamber is not vented to the exterior of said wall means.

3,307,492
PUMPS FOR LIQUIDS

Peter Richard Selwood, Compton, near Winchester, and Richard Lewis Creedon, Chandler's Ford, England, assignors to William R. Selwood Limited, Chandler's Ford, England, a British company
Filed Jan. 18, 1965, Ser. No. 426,004
24 Claims. (Cl. 103—223)



1. A pump for pumping liquid comprising:
- (a) a pumping chamber;
- (b) an actuator mounted in said chamber for movement forwardly and reversely relatively to said chamber and an actuator valve means associated with said chamber for producing flow of liquid into and out of said chamber;
- (c) driving means connected to said actuator for moving said actuator forwardly and reversely with respect to said chamber;

(d) a slug duct communicating with the said chamber and extending at least downstream thereof;

(e) depulser means communicating with said slug duct at a position downstream of said chamber; and

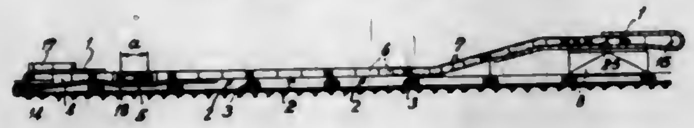
(f) a pressure absorbing and restoring means communicating with said chamber for reducing the peak value of stress which would otherwise be established in said driving means, said actuator, and said chamber;

(g) said slug duct having, over a substantial part of its length, a cross sectional area less than that of said chamber measured in each case transversely of the direction of liquid flow, and having a length sufficient to produce forward flow of a volume of liquid per unit time through said slug duct higher than that volume swept by the actuator in the same time in its forward movements.

3,307,493
CONVEYOR

Heinrich Keller, Salzgitter-Bad, Germany, and Karl-Werner Bretz, Les Epineys, Martigny-Bourg, Switzerland, assignors to Salzgitter Maschinen Aktiengesellschaft, Salzgitter-Bad, Germany

Filed May 18, 1965, Ser. No. 456,678
Claims priority, application Germany, May 22, 1964,
S 91,175
17 Claims. (Cl. 104—72)



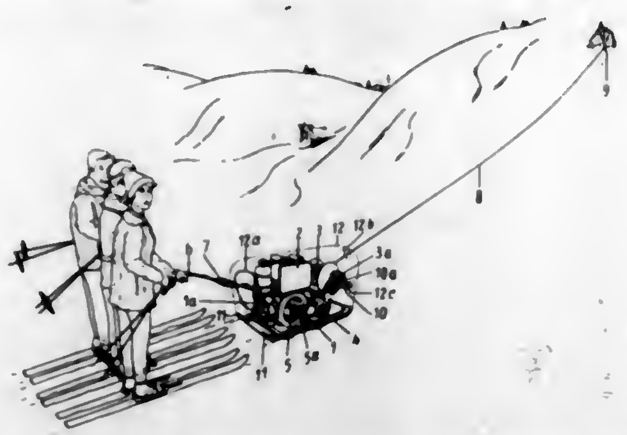
1. In a conveyor for delivering bulk material into freight cars or similar conveyances, a train of articulately coupled supporting frames; a carriage supportingly connected with each of said frames so that the frames can swivel with reference to their carriages; resilient buffers provided between the adjoining frames; guide means mounted on said frames and together defining an endless path having an upper and a lower run and two end turns; a plurality of flexible material transporting bands of finite length arranged to advance along said path; loader and unloader means provided at the opposite end turns of said path; and drive means for advancing the bands along said lower run, past said loader means, along said upper run and past said unloader means so that material accumulating on the bands during travel past said loader means can be discharged into consecutive conveyances during travel of bands past said unloader means, the combined length of said bands being less than the total length of said path.

3,307,494
DRAW IMPLEMENT, PARTICULARLY A SKI LIFT DEVICE, FOR TRANSPORTATION OF INDIVIDUALS

Erwin Samitz, Bad Fussing, Germany, assignor to Motorenfabrik Hatz G.m.b.H., Ruhstorf near Passau, Germany, a German company

Filed Nov. 10, 1964, Ser. No. 410,162
Claims priority, application Germany, Nov. 11, 1963,
M 58,877
3 Claims. (Cl. 104—173)

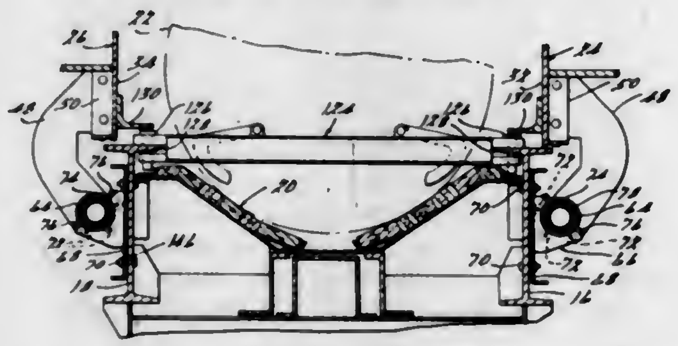
1. A ski-lift device comprising: a frame mounted on snow runners, said snow runners being curved at each of their ends so as to permit sliding movement of said runners on a snow surface in either forward or reverse direction; a cable drum rotatably mounted on said frame; a cable member having one of its ends connected to said cable drum so as to effect winding or unwinding of the cable as the drum rotates; motor means mounted on said frame; means releasably connecting said motor means to said cable drum to rotate said cable drum in one direction; handle means carried by said frame to provide a grasping surface for skiers to use in being transported uphill by the device; and control means permitting engagement or release of said connecting means so as to have said motor means rotate said cable drum or to permit said cable drum to rotate free of said motor means; whereby the free end of said cable can be anchored at an uphill point, and the device will pull skiers uphill as said motor means rotates said drum and winds said cable thereon, and the device will move downhill by unwinding said cable under force of gravity while said motor means is disconnected from said cable drum.



3,307,495
RAILWAY CAR

Harvey W. Chapman, Detroit, and Gilbert F. Oakley, Livonia, Mich., assignors to Evans Products Company, Plymouth, Mich., a corporation of Michigan

Filed Feb. 9, 1965, Ser. No. 433,840
18 Claims. (Cl. 105—367)

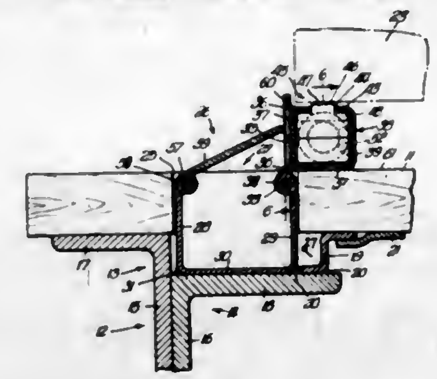


1. In a railway car adapted to carry coiled steel and the like and having means providing a bed for supporting the coiled steel or the like and a car body supporting said bed, said car body and said bed being supported upon trucks and being deflected in a vertical direction between said trucks in response to the carrying of a load thereupon, means for selectively covering and uncovering the coiled steel and the like and comprising cover halves adapted to extend longitudinally of said body and close over said bed, means connected to each of said cover halves adapted to be connected to said car body at the respective sides thereof to provide the sole vertical support for said cover halves and to support each cover half on said car body for pivotal movement relative to said body between a closed position in which said cover halves cover said bed and an open position in which coiled steel or the like may be loaded on or unloaded from said bed, at least one of said last named means being spaced longitudinally from said trucks in a position wherein said bed and said car body undergo substantial vertical deflection under the experience of loading thereupon, said one last named means providing for such vertical deflection of said bed and said car body without accompanying vertical deflection of the point of pivotal support for said cover half provided for thereby.

3,307,496
RAILWAY CAR CONSTRUCTION

Theodore J. Sweger, Naperville, Ill., assignor to Illinois Railway Equipment Company, Chicago, Ill., a corporation of Illinois

Filed Apr. 12, 1965, Ser. No. 447,122
4 Claims. (Cl. 105—366)

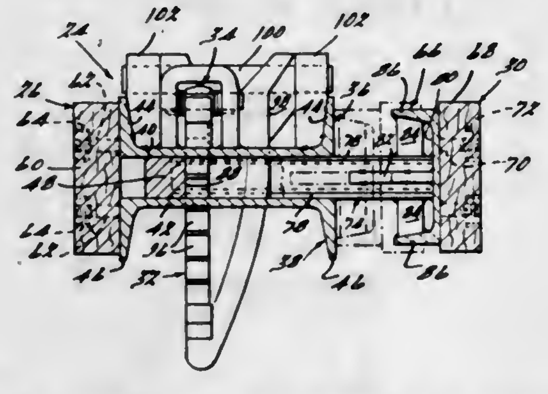


2. In a railway car for transporting packaged lading such as lumber and the like subject to endwise displacement in one direction or the other due to acceleration or deceleration of the car, in combination, a side sill extending along said car, an elongated housing secured against endwise movement to and extending lengthwise of said side sill, a carrier mounted for movement endwise of and normally occupying a central position with respect to said housing and projecting thereabove to receive flatwise the packaged lading, spring means reacting between each end of said elongated housing and the respective side of said carrier for applying biasing forces to said carrier tending to restore it and the packaged lading thereon to said central position on cessation of the acceleration or deceleration causing such displacement, and antifriction roller means interposed between said elongated housing and said carrier.

3,307,497
FREIGHT BRACING APPARATUS

Harvey W. Chapman, Detroit, and Herbert E. Rolfe, Jr., Garden City, Mich., assignors to Evans Products Company, Plymouth, Mich., a corporation of Delaware

Filed Oct. 23, 1964, Ser. No. 405,937
5 Claims. (Cl. 105—369)

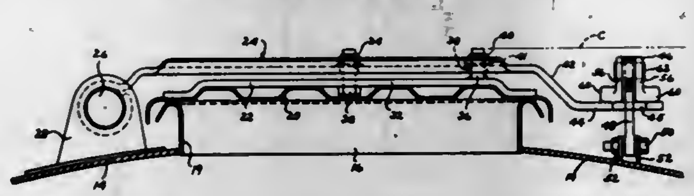


1. An elongated crossbar adapted to be mounted in a railroad car or the like between spaced parallel supports provided therein and engage freight carried in said car, said crossbar comprising an elongated bar body, means at each end of said bar body for selectively connecting said crossbar to said supports in a plurality of positions spaced therealong, said bar body including a first elongated body section carrying said means at each end and which is held by said means against movement relative to said supports when said means is connected thereto, said first body section being comprised of two oppositely facing elongated channels, means affixing the webs of said channels together at spaced longitudinal positions to define an elongated slot therebetween and a freight engaging member affixed to adjacent flanges of said channels at one side thereof for engaging freight, a second elongated body section disposed in side by side parallel relation to said first body section and having a freight engaging member, means mounting said second body section on said first body section for movement transversely thereof from a fully retracted position to a fully extended position for selectively varying the effective thickness of said bar and the distance between said freight engaging members, said last named means comprising an elongated portion of said second body section slidably supported in said slot between the webs of said channels, biasing means supported for movement by one of said sections and engaging the other of said sections, said biasing means being automatically movable from a withdrawn position to a fully advanced position for urging said second body section from said fully retracted position toward said fully extended position, said biasing means providing a substantially continuous force for urging said second body section toward said fully extended position, and locking means for precluding movement of said biasing means toward its withdrawn position for precluding return movement of said second body section toward its fully retracted position.

3,307,498
HATCH COVER SECURING MEANS FOR RAILWAY CARS

Eric S. Stevens, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Apr. 18, 1966, Ser. No. 543,103
2 Claims. (Cl. 105—377)



1. A hatch cover structure for a railway hopper car comprising, a hatch cover adapted to be positioned over a hatch opening on the car and movable between open and closed positions relative to the opening, a resilient generally flat hold-down strap over the hatch cover having one end mounted on the car for pivotal movement adjacent one side of the hatch cover and an opposite free end adjacent the opposite side of the hatch cover having an open slot therein, means connecting the hatch cover to said strap for pivotal movement therewith, a swing bolt mounted beneath the projecting end of the strap for pivotal movement about a generally horizontal axis, a generally horizontally extending pin secured to said swing bolt adjacent an end thereof, and an elongate cam lever having a pair of integral bifurcated arms on an end thereof pivotally mounted on said pin and adapted to engage the upper surface of the strap upon movement of the swing bolt within the slot, said bifurcated arms being of a total width less than the width of said slot and adapted to be received within said slot when the cam lever is in an operable position, a cam lug projecting laterally outwardly from each arm and adapted to engage the upper flat surface of the strap adjacent the side of the slot upon pivotal movement of the lever between locked and unlocked positions with the bifurcated arms being received within said slot, said lugs when the lever is pivoted about said pin to an unlocked position being moved along the flat upper surface of the strap to a plane with the pivotal axis of the lever which lies at an angle greater than forty-five degrees with respect to the longitudinal axis of the swing bolt whereby a relatively large leverage may be obtained upon contact of the lugs with the strap as the lever pivots to an unlocked position, said lever being pivoted to a locked position about said pin in which its longitudinal axis extends generally in a hori-

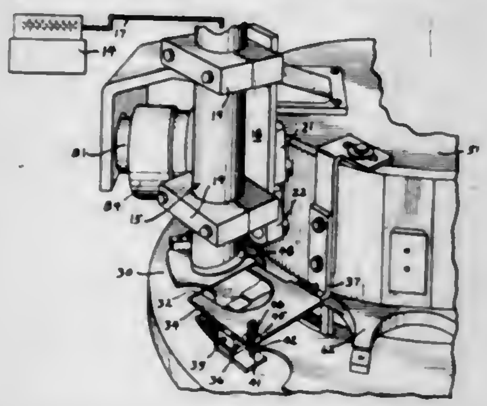
zontal direction and the cam lugs engage and move along the upper flat surface of the strap to a position beyond a dead center position with respect to the pivots on the swing bolt whereby said handle is urged downwardly by the resilient strap acting against the cam lugs, an upward movement of the lever from its locked position returning the cam lugs in a sliding movement along the upper surface of the strap past their dead center position with the lever being urged to unlocked position about its pivotal axis by the resilient strap acting against said cam lugs, said strap being released upon swinging of the swing bolt out of the slot thereby to permit opening of the hatch cover.

3,307,499
DISPENSING APPARATUS

Roger C. Bergstrom, Rockford, Ill., assignor to Anderson Bros. Mfg. Co., Rockford, Ill., a corporation of Illinois

Filed Nov. 5, 1963, Ser. No. 321,475

12 Claims. (Cl. 107—4)



1. An apparatus for dispensing discrete charges of material comprising, a material guide having a discharge opening, means for feeding material through the material guide to feed a strip of material from the discharge opening, means for moving said material guide in a generally upright orbital path while maintaining the discharge opening facing generally downwardly to feed the strip of material downwardly, and a cutter positioned to intersect the path of movement of the discharge end of the material guide as the material guide moves through the lower portion of said orbital path to sever a charge of material from the strip.

3,307,500
ROLL-ADJUSTING ATTACHMENT ON DOUGH-ROLLING MACHINE

Gustave A. Seewer, Helminwilstrasse 42, Burgdorf, Switzerland, and Karl Schrauf, Gisingen, near Feldkirch, Vorarlberg, Austria; said Schrauf assignor to said Seewer

Filed Jan. 17, 1964, Ser. No. 338,353

Claims priority, application Switzerland, Jan. 22, 1963, 741/63

10 Claims. (Cl. 107—12)

1. In a dough rolling machine including a pair of cooperating pressure rollers for rolling the dough, the improvement for adjusting one of said rollers relative to the other, comprising:

electrical drive means for positively rotating at least one of said rollers;

electric switch means connected with said electrical drive means for energizing and de-energizing thereof;

control means selectively movable into and out of engagement with said electric switch means for operation thereof;

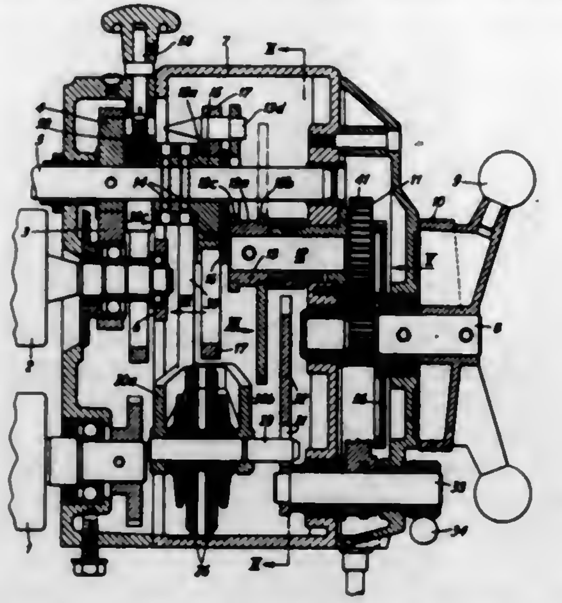
means mounting said one roller for adjustment relative to the other of said rollers;

mechanical adjustment means operative to move said one roller relative to said other roller to thereby vary the gap therebetween;

said mechanical adjustment means including incremental movement mechanism which, when activated, incrementally moves said one roller toward said other roller to decrease the gap therebetween;

said control means being controllably coupled with said incremental movement mechanism whereby said mechanism is actuated responsively to movement of said control means;

movement of said control means thereby serving to operate said electric switch means to thereby energize said electrical drive means and hence to rotate a roller to feed dough through said gap between said rollers;



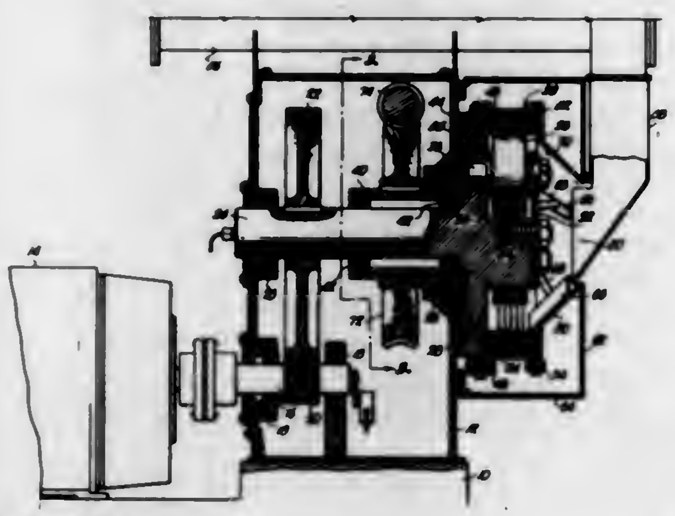
said movement of said control means simultaneously effecting a responsive actuation of said incremental movement mechanism to move said one roller toward said other roller, thereby decreasing the size of said gap by an incremental amount.

3,307,501
PELLET MILL

Clyde W. Wenger, Sabetha, Kans., assignor to Wenger Manufacturing, Inc., Sabetha, Kans., a corporation of Kansas

Filed July 13, 1965, Ser. No. 471,587

6 Claims. (Cl. 107—14)



1. In a pellet mill:

a rotatable shaft;

power means coupled with said shaft for driving the latter;

a sleeve telescoped over said shaft and rotatable with respect thereto;

an extrusion head having a perforated, annular die carried by said sleeve and rotatable therewith, and a roller assembly within said die and coupled with said shaft for rotation thereby;

means operably associated with said head for directing material to be pelleted into said die, whereby the die is driven by the roller assembly by friction of said material between the assembly and the die; and

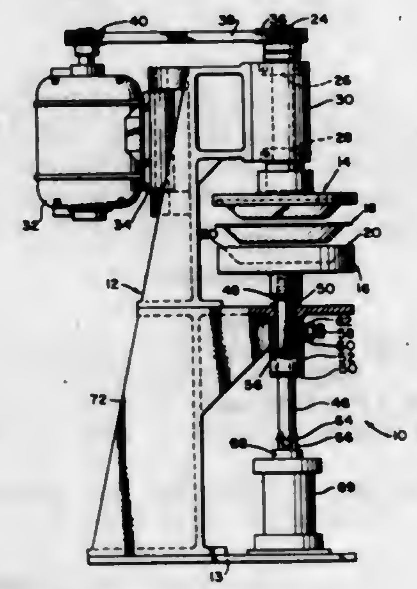
means coupled with said sleeve for controlling the speed of rotation thereof and hence the speed of the die, whereby a desired difference in the speeds of rotation of the die and the roller assembly may be maintained during the pelleting operation.

3,307,502
PIE SHELL FORMING UNIT

Paul D. Armour, Yamhill, Oreg., assignor to Bradley's Frozen Foods, Inc., Yamhill, Oreg., a corporation of Oregon

Filed Mar. 16, 1964, Ser. No. 352,266

8 Claims. (Cl. 107—15)



1. In a pie shell forming unit,

a lower die having an upwardly facing recess for receiving a pie pan and a first annular land for supporting the rim of the pie pan,

an upper die having a boss portion adapted to fit spacedly into the lower die concentrically therewith,

the boss portion having a spiral spreading groove extending outwardly from the central portion of the bottom thereof, a lower annular groove at the bottom peripheral portion thereof and a plurality of lifting grooves extending upwardly and partially around the peripheral portion of the boss portion from the annular groove,

the lifting groove being deep at its lower end and shallow at its upper end,

the upper die having a downwardly facing, bead-forming annular groove surrounding the boss portion, an annular notch outside of the bead-forming annular groove and a second annular land outside of the annular notch and opposing the first annular land,

means for moving the lower die and a pie pan fitting into the recess upwardly over the boss portion to a position in which a rim of the pie pan abuts the bottom of the annular notch and the pie pan is spaced from the bottom and periphery of the boss portion,

means for holding the pie pan against rotation relative to the lower die,

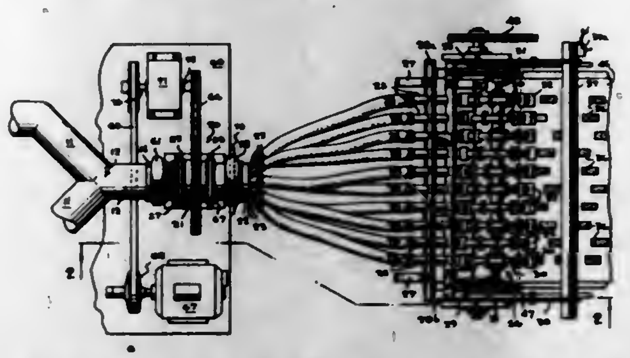
and means for rotating the upper die relative to the pie pan and the lower die in a direction in which the spiral spreading groove engages and spreads crust material in the bottom of the pan radially outwardly to the space between the peripheries of the boss portion and pie pan and to and through the lower annular groove into the lifting grooves and the lifting grooves raise the crust material into the bead-forming groove.

3,307,503
METHOD AND APPARATUS FOR EXTRUDING CANDY BARS

Augustus Elmer, Jr., New Orleans, La., and Raymond S. Edmunds, Jr., San Antonio, Tex., assignors to International Foods, Inc., New Orleans, La., a corporation of Louisiana

Filed July 30, 1964, Ser. No. 386,344

11 Claims. (Cl. 107—69)



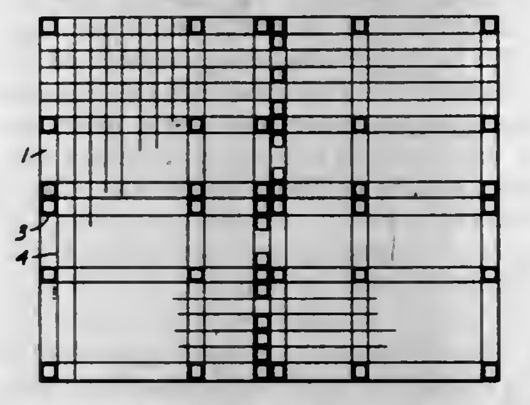
1. In an apparatus for effecting substantially void-free extrusions of plastic substances through multiple orifices, the combination of a conduit, a pump means for supplying a pressurized flow of the plastic substance through the conduit, an extruding assembly connected to the conduit adapted to receive the flow of the plastic substance, the extruding assembly comprising a rotating member and a stationary member connected in tandem with one another, the stationary member having a plurality of extruding tubes extending in a diverging relation from its forward end, distributing tubes having one end connected to the extruding tubes, extruding nozzles affixed to the other end of the distributing tubes, a rotary cutting means operatively positioned in relation to the nozzles to cut the extruded substance into predetermined sizes, and conveying means underlying the nozzles to receive and carry away the cut extrusions.

3,307,504
PALLET

Harold S. Cloyd and Richard W. Welch, Erie, Pa., assignors to Nosco Plastics, Incorporated, Erie, Pa., a corporation of Pennsylvania

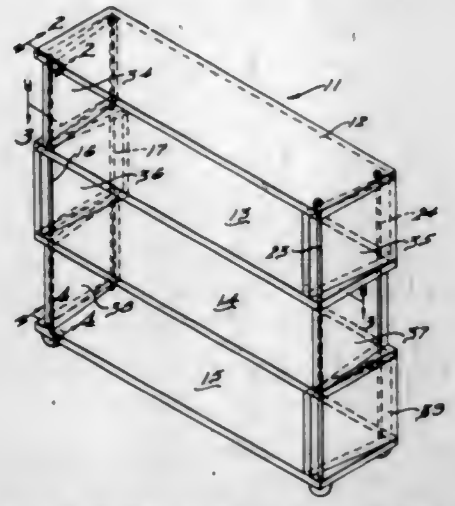
Filed Dec. 1, 1965, Ser. No. 510,790

10 Claims. (Cl. 108—58)



1. A plastic pallet having an upwardly presented load carrying surface integral with the upper edges of a lattice of a plurality of ribs individually presented edgewise to said surface and intersecting each other at a plurality of intersections, said ribs being united to each other at the intersections and forming openings between the intersections normal to said surface, peripheral support means for the lattice comprising a rectangular frame joined integrally with the periphery of the lattice and having spaced fork entry passageways for receiving the forks of a lift truck, the lower edges of ribs of said lattice being adapted to overlie the forks when received in said passageways and to transfer to the forks the load carried by said load carrying surface.

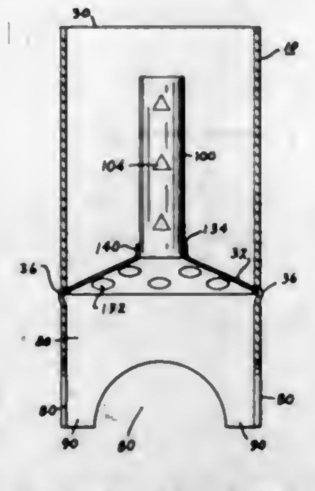
3,307,505
FURNITURE
Gene R. Windross, 2800 W. Grand Blvd.,
Detroit, Mich. 48208
Filed Apr. 12, 1965, Ser. No. 447,300
3 Claims. (Cl. 108—111)



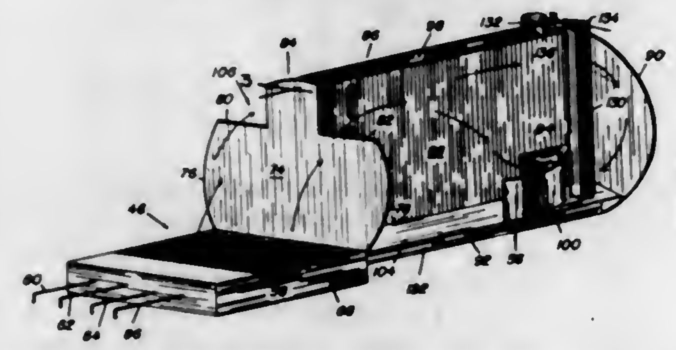
1. An article of furniture comprising first, second and third substantially parallel elongate members, a first pair of structural members interposed between said first and said second elongate members contiguous to the ends of one of said elongate members, a second pair of structural members interposed between said second and said third elongate members contiguous to the ends of one of said elongate members, the respective structural members having their ends in abutting engagement with the respective elongate members, a first pair of tensioning members extending between said elongate members at one end thereof for exerting a compressive force upon the respective structural members at said one end, and a second pair of tensioning members disposed at the other end of said elongate members for exerting a compressive force upon the respective structural members at said other end and forming substantially the sole structural connection between the respective structural members and said elongate members, each of said structural members having substantially parallel planar surfaces on its opposite sides, one of said planar surfaces of each of said structural members being in abutting relationship with one of the respective pair of tensioning members between the respective elongate members, the other planar surface of each of said structural members being in abutting relationship with the other tensioning member of the respective pair between the respective elongate members, each pair of tensioning members defining a plane, the planes defined by each pair of tensioning members being parallel and the abutting relationship between the structural members of each pair of structural members and the respective pair of tensioning members disposing the structural members of each pair in non-parallel relationship, each of the structural members of one pair of structural members being disposed in non-parallel relationship to the contiguous structural member of the other pair of structural members.

3,307,506
FIRE STARTING DEVICE
Jack E. Rose, 2931 Oak Manor Drive,
Elkhart, Ind. 46514
Filed Mar. 8, 1963, Ser. No. 263,944
5 Claims. (Cl. 110—1)

1. A fire starting device, comprising four rectangular walls forming a housing with an open top and a plurality of openings at the bottom of the side walls, a grate rigidly secured in said housing upwardly from the bottom thereof and flaring downwardly and outwardly from a circular cross section to a rectangular cross section in a smooth transition, said grate being disposed in said housing adjacent the upper edge of said side openings, a vertically positioned cylindrical tube with an open top and bottom secured at its bottom to the center of said grate, a plurality of vertically and circumferentially arranged holes through said tube, an inwardly and downwardly facing baffle over the inner side of each of said holes for directing upwardly flowing heated air in said tube through the respective holes and laterally from the external surface of said tube, and a handle rigidly secured to the side of said housing for inverting said device while hot.

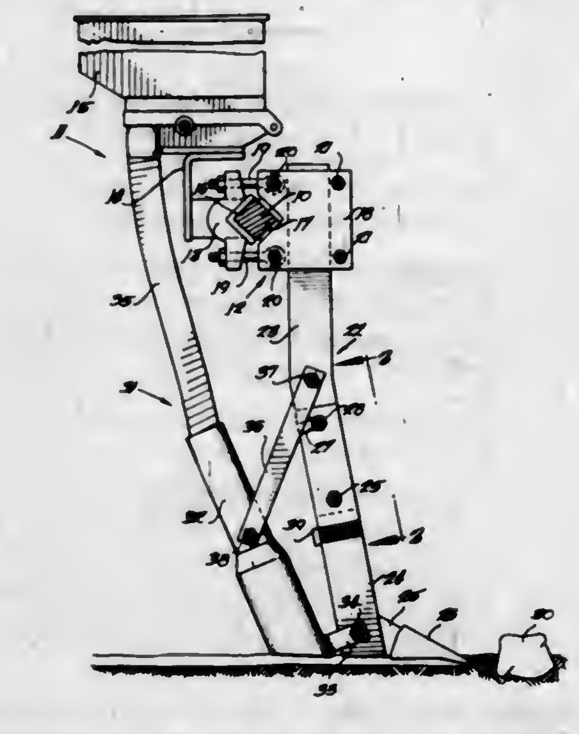


3,307,507
METHOD AND APPARATUS FOR INCINERATING REFUSE MATERIAL
John A. Boyd, 1310 Halloman Road, and Donald Everett Boyd, 318 University Drive, both of Fairfax, Va. 22030
Filed June 1, 1965, Ser. No. 460,389
22 Claims. (Cl. 110—8)



13. A mobile incinerator unit comprising:
- (a) first enclosure means defining therewithin a primary combustion chamber;
- (b) means communicating with said primary combustion chamber and being movable between an open position which permits said primary combustion chamber to be charged with contents to be incinerated and a closed position which prevents such charging;
- (c) second enclosure means juxtaposed to said first enclosure means and defining therewithin a secondary combustion chamber;
- (d) means for directing the exhaust gas stream from said primary combustion chamber into said secondary combustion chamber for effecting a secondary burning of said exhaust gas stream;
- (e) liquid reservoir means communicating with said secondary combustion chamber for receiving the exhaust gas stream therefrom and for permitting such exhaust gas stream to pass therethrough;
- (f) exhaust means coupled to said liquid reservoir means whereby exhaust gases exiting from said reservoir means can discharge from the unit;
- (g) said first enclosure means including passageway means at least partially surrounding said primary combustion chamber and communicating with the atmosphere to admit ambient air to said primary combustion chamber;
- (h) said means for directing said exhaust gas stream including wall means juxtaposed to said second enclosure means and having interrupted portions therein to cause said primary combustion chamber exhaust gases to divide into a pair of streams which flow along opposite sides of said second enclosure means;
- (i) said wall means including baffle means at said interrupted portions for admixing at least a portion of said ambient air with said primary combustion chamber exhaust gases.

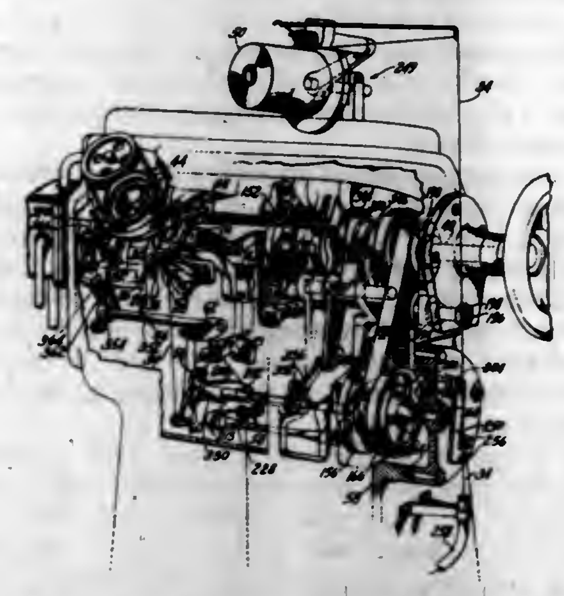
3,307,508
EARTH WORKING IMPLEMENT
Carl D. Russell, Naperville, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed May 21, 1965, Ser. No. 457,652
7 Claims. (Cl. 111—86)



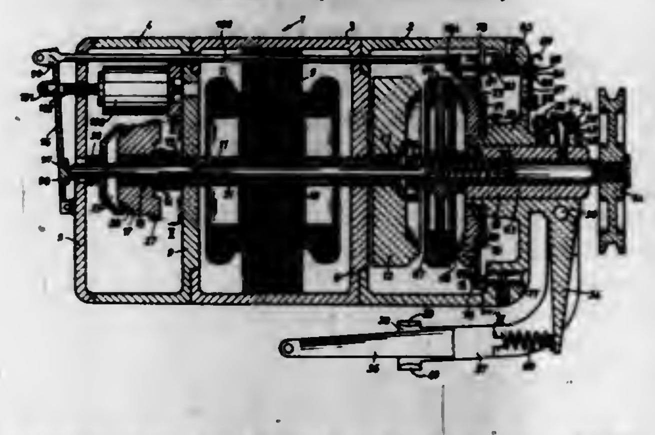
1. In planters and the like including a supporting frame having a material dispensing hopper mounted thereon, a generally vertical tool standard carrying a furrow opener at its lower end and having a pivotal connection to the supporting frame accommodating swinging of the standard rearwardly and upwardly to a generally horizontal tripped position, a generally vertical conduit connected at its upper end of the hopper and operatively connected at its lower end of the furrow opener for tripping therewith, and a link pivotally connected at one end to the supporting frame and at its other end to said vertical conduit, said link being disposed in the tripped position of the furrow opener in generally parallel relation to said standard.

3,307,509
OUTSOLE SEWING MACHINES
Joseph R. Ioannilli and Mieth Maeser, Beverly, and Kenneth H. Rauschke, Byfield, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Dec. 31, 1964, Ser. No. 422,853
14 Claims. (Cl. 112—57)

1. A shoe outsole sewing machine having a work piercing awl, a needle for penetrating and withdrawing from the work carrying a loop of needle thread and a loop taker for carrying the loop about a supply of locking thread to form lock stitches, comprising a thread measuring device between the work and a supply of needle thread, an upper thread lock along the path of the needle thread between the thread measuring device and the work, a lower thread lock between the thread measuring device and the supply of needle thread, cam means for actuating each thread lock and independent connections between each lock and its related cam means.



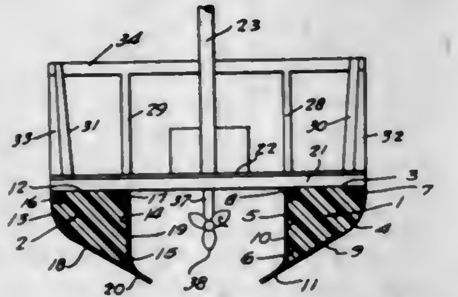
3,307,510
MOTOR DRIVE AND NEEDLE POSITIONING MECHANISM FOR SEWING MACHINES
Kristen Hedegaard, Gentofte, Denmark, and Albert Maier and Heinz Vogel, Kaiserslautern, Pfalz, Germany, assignors to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany, a corporation of Germany
Filed Aug. 13, 1964, Ser. No. 389,497
Claims priority, application Germany, Aug. 16, 1963, P 32,410
11 Claims. (Cl. 112—219)



1. Motor drive and needle positioning mechanism for a sewing machine comprising in combination:
- (1) a drive shaft and a driven shaft of said machine,
- (2) a driving motor,
- (3) main transmission means between said motor and said driven shaft including main coupling means having a main driving member connected to said motor and a main driven member operable into and out of engagement with said driving member,
- (4) an operating member for said main coupling means operable from a rest position in a first direction, to start and stop said machine for the carrying out of a sewing operation, and being operable in a second opposite direction beyond said rest position,
- (5) auxiliary transmission means operably connected between said motor and said driven shaft including auxiliary coupling means having an auxiliary driving member and an auxiliary driven member operable into and out of engagement with said auxiliary driving member,
- (6) reduction gearing means connecting said motor with said auxiliary driving member, to rotate the latter at a reduced speed compared with the speed of

said main driving member,
(7) an electrical actuating device for said auxiliary driven member,
(8) an electrical control circuit including a current source, said actuating device, a normally closed control switch, a two-position change-over switch having a first and a second change-over contact, and a contact device,
(9) said contact device including a rotary contact having an insulating segment and driven by said shaft, and a pair of stationary contacts cooperating with said rotary contact and connected each to one of said change-over contacts, whereby to interrupt said circuit by said insulating segment and to stop said machine at predetermined first and second needle positions determined by the positions of said stationary contacts, and
(10) actuating means to actuate said control and change-over switches operated by said operating member, to open said control switch and to close said first change-over contact during operation of said operating member in said first direction, to close both said control switch and said first change-over contact in the rest position of said operating member, and to close both said control switch and said second change-over contact upon operation of said member in said second direction, whereby to re-start and stop said machine by said auxiliary transmission means at said first predetermined needle position upon return of said operating member to its rest position at the end of a sewing operation, and to re-start and stop said machine at said second predetermined needle position upon operation of said operating member in said second direction beyond said rest position, respectively.

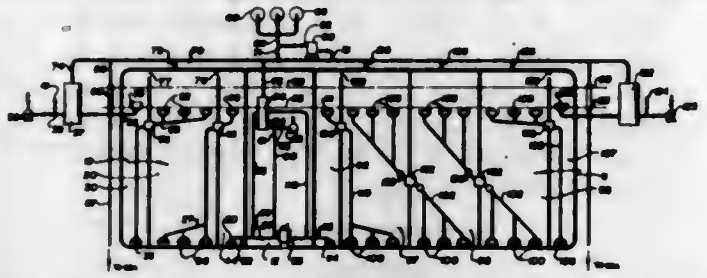
3,307,511
CATAMARANS
Merlin S. Chapman, R.D. 4, Elm Grove, Wheeling, W. Va. 26003
Filed Oct. 18, 1965, Ser. No. 497,344
6 Claims. (Cl. 114—61)



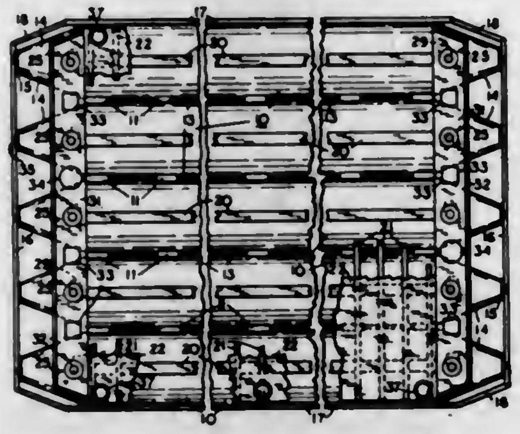
1. A catamaran comprising a pair of hulls positioned spaced apart, but extending longitudinally in a similar direction, means connecting and retaining said hulls in their relative positions, means for propelling said hulls through the water and connected thereto, each of said hulls being longitudinally elongated and having a relative narrow width with a top side and inner side joined by a curving outer side, a plate mounted on each hull curving outer side and extending beyond its hull inner side and said hull positioned with their inner sides facing one another.

3,307,512
METHOD OF LOADING AND UNLOADING STORAGE TANKS IN VESSELS
William F. Fell, 1763 Nelson St., Vancouver, British Columbia, Canada
Filed Mar. 29, 1965, Ser. No. 443,514
29 Claims. (Cl. 114—74)

1. Apparatus for storing liquids that float on water in vessels floating in water, comprising a tank in a vessel, means for maintaining said tank in communication with the water in which the vessel is floating, means for directing storage liquid into and out of the tank, said water being forced out and flowing back into the tank as said liquid is respectively directed into and out of the tank, and means for maintaining a gas pressure on liquid in the tank sufficient to keep the liquid at a level with a space above said liquid and to keep the vessel at a desired draft during movement of liquid into and out of said tank, said storage liquid directing means being positioned to draw liquid from the tank just below said liquid level.



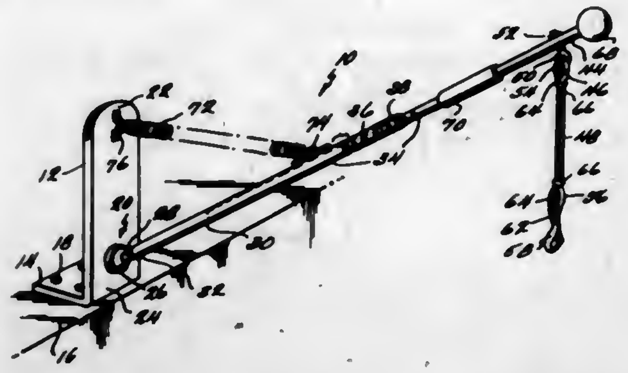
3,307,513
MULTIPLE COMPARTMENT SCOW
Joseph H. Engleman, P.O. Box 555, Seattle, Wash. 98111
Filed Oct. 20, 1965, Ser. No. 498,533
6 Claims. (Cl. 114—74)



1. A scow comprising a plurality of side by side parallel tubular water tight cargo cylinders positioned with their axes in a common plane and with their adjacent peripheral portions slightly spaced apart; a plurality of relatively short longitudinally extending sections of I-beam interposed between the slightly spaced apart adjacent peripheral portions of each two adjacent cylinders, said I-beam sections being disposed in a plane common to all of said cargo cylinders and being longitudinally spaced apart providing narrow water circulation passageways between adjacent cargo cylinders and said I-beam sections having the tips of their end flanges securely welded to the walls of the cargo cylinders above and below the common plane of the axes of all of said cylinders thereby securing all of said cylinders together and forming a buoyant hull; and transverse connector means rigid with and extending across the top portions of the assembled cylinders.

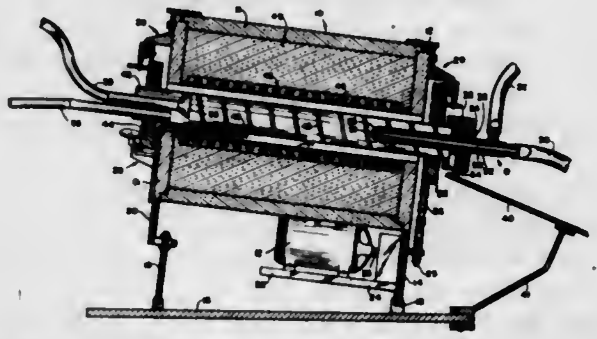
3,307,514
BOAT MOORING DEVICE
Melvin R. Young, P.O. Box 13089, Port Evergreen Station, Fort Lauderdale, Fla. 33316
Filed Oct. 1, 1965, Ser. No. 492,213
11 Claims. (Cl. 114—230)

1. A mooring device adapted to moor a boat to a dock or the like comprising:
an upstanding plate member having a base adapted to be secured to the dock;
a ball joint means secured to the upstanding member intermediate its two ends, the ball joint means having a stud means extending therefrom in a direction away from the upstanding member;
a boom having one end seated on the stud means of the ball joint means and extending outwardly from the upstanding member;



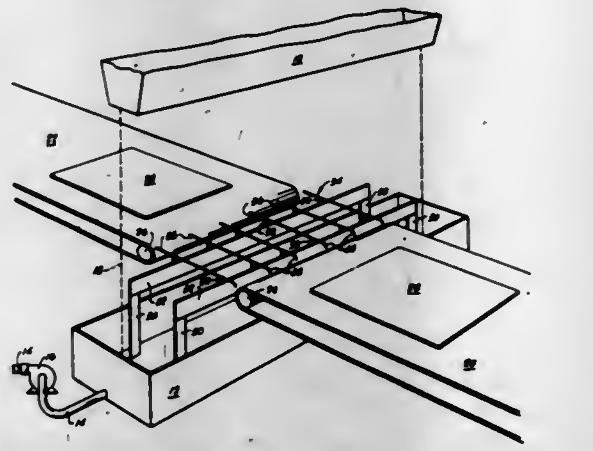
tethering means secured adjacent the free end of the boom and adapted to be attached to the boat; and
tension spring means secured at one end to the upper end portion of the upstanding plate member and secured at the other end to the boom intermediate its two ends for supporting the boom.

3,307,515
VAPOR DEPOSITION APPARATUS INCLUDING TUMBLER
Robert Wiener, Highland Park, Carroll John Mellar, Chicago, John G. Kirschner, Niles, and Roland H. McClelland, Deerfield, Ill., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Aug. 15, 1963, Ser. No. 302,339
3 Claims. (Cl. 118—5)



1. In an apparatus for vapor-phase deposition of a resistive film on a plurality of electrical resistor substrates, an inclined hollow cylindrical kiln having a resistance heating coil traversing the inside diameter thereof, a rotatable reaction chamber concentrically disposed adjacent the inside diameter of said resistance heating coil, said reaction chamber comprising a metal tube having a helix of wire fixedly disposed along its inside diameter, spray means substantially penetrating one end of said reaction chamber for introducing and atomizing a deposition solution within said chamber said spray means comprising a nozzle having a first tubular passage for introducing said deposition solution and a second tubular passage concentric with and surrounding at least the penetrating portion of said first passage, means for passing atomizing air through said second passage to thereby control heating of said deposition solution prior to discharge and atomization thereof, substrate entrance means adapted to introduce said substrates into said reaction chamber, said reaction chamber being adapted to advance and tumble said substrates at a predetermined rate during deposition, discharge means allowing exit of the coated substrates from said reaction chamber, exhaust control means adapted to remove from said reaction chamber the gaseous products resulting from the vapor-phase reaction, the reaction chamber ends being substantially blocked from external atmospheric contamination, and the coefficient of thermal expansion of said reaction chamber being sufficiently different from that of the deposition material so as to cause dislodgement of accumulated coating deposits when said apparatus is allowed to cool.

3,307,516
CURTAIN COATING MACHINES
Soon Y. Wong and Travis L. Gordy, Ponca City, Okla., and Irwin Politziner, Brigham City, Utah, assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,447
4 Claims. (Cl. 118—324)



1. In a curtain coating machine of the type used to apply a thin uniform coating to flat stock, the combination which comprises:
(a) a coating head for developing a gravitating curtain of the coating composition;
(b) a trough positioned below the coating head for receiving the coating composition;
(c) a pair of conveyors positioned on opposite sides of the gravitating curtain for moving the flat stock through the gravitating curtain in a plane extending through the curtain between the coating head and the trough; and
(d) a grate positioned in the trough and providing a perforate supporting surface in coplanar alignment with the plane of movement of the flat stock through the gravitating curtain for supporting the stock as it moves through said gravitating curtain, said grate comprising:
  (1) a substructure resting in said trough, said substructure comprising:
    (a) a pair of vertically extended rigid legs at each end of said trough; and
    (b) horizontal connecting members interconnected with the legs of said pairs and maintaining the spacing of said legs from each other; and
  (2) a plurality of stock-supporting elements secured to said horizontal connecting members and projecting upwardly therefrom, said stock-supporting elements each terminating at its upper extremity in the plane occupied by the lower surface of said stock as it moves through said curtain.

3,307,517
DRY COATER FOR CONFECTIONS AND THE LIKE, AND VALVE MECHANISM USED THEREIN
Ben E. Rasmusson, 915 1st Ave. S., Kent, Wash. 98031, and Lewis W. Busch, Jr., Seattle, Wash.; said Busch assignor to said Rasmusson
Filed Jan. 28, 1965, Ser. No. 428,691
15 Claims. (Cl. 118—421)

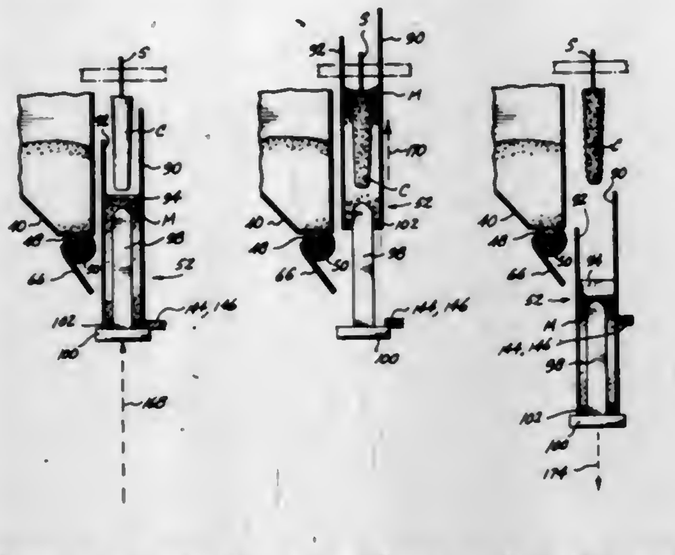
1. In a dry coater for applying dry, particulate material to a body by momentary downward immersion of

the body into a bed of the material; container means for the material, including:

(a) upright side and end walls joined by a bottom portion;

(b) plug means passing vertically through said bottom portion and standing upwardly therefrom within the space between said side and end walls;

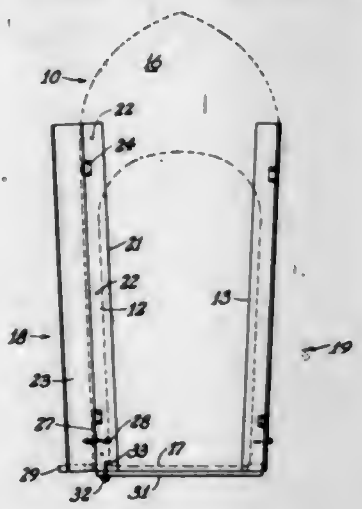
(c) support means for said plug means, mounting the same to be movable with respect to said side and end walls; and



(d) coupling means acting between said walls and such plug means and normally maintaining said plug means in an uppermost position within the space between said walls while permitting relative downward movement of said plug means within said space on the occasion of immersion of such body into such bed of material.

3,307,518
SPRAY PAINT SHIELD FOR A BOAT

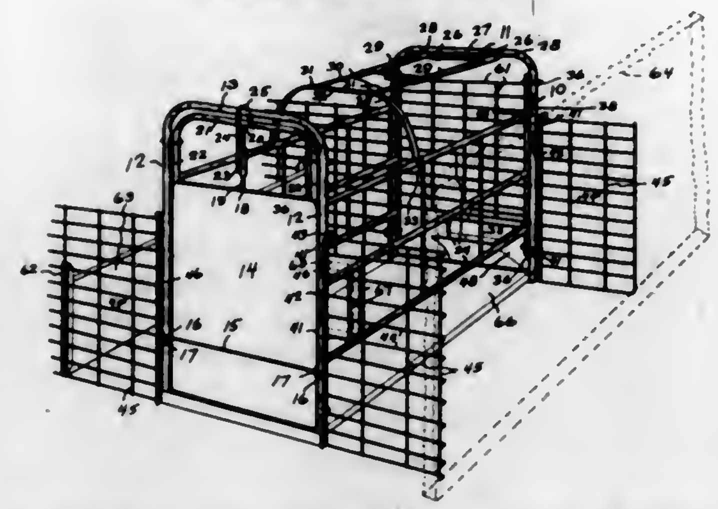
Robert A. Norton, Oconto, Wis.
(719 12th Ave., Green Bay, Wis. 54304)
Filed June 15, 1964, Ser. No. 375,138
13 Claims. (Cl. 118—505)



1. The combination of a boat having a hull, and a gunwale, with a support secured to said boat at said gunwale, a foldable fan type spray paint shield means disposed laterally of said gunwale having a first side main radial member thereof pivotally connected to said support for pivotal movement from a normal lowered position adjacent said hull to a raised position spaced upwardly from said lowered position, and a second side main radial member of said foldable fan shield means being connected to said boat hull, said foldable fan shield means being operative to be unfolded as said first main radial member thereof is moved to its raised position and substantially folded as said first main radial member is moved to said normal lowered position, and means for securing said first side main radial member in said raised position.

3,307,519
FARROWING CRATE

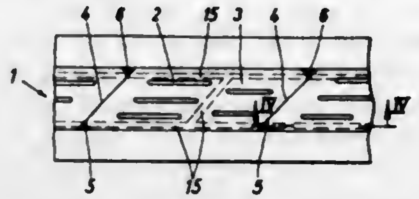
Harold J. Rink and Merlyn P. Smith, both of Pender, Nebr. 68047
Filed Oct. 1, 1965, Ser. No. 492,076
1 Claim. (Cl. 119—20)



A farrowing crate comprising a vertically positioned framework end member, a gate member attached thereto, a further vertically positioned framework end member spaced from said framework end member, vertically positioned support rods including side bars attached thereto for providing side members, means for adjustably positioning said vertically positioned support rods, said adjusting means including horizontally positioned flanges attached to said vertically positioned end members, said flanges having a pair of spaced openings adapted to selectively receive said vertically positioned support rods, said support rods having a plurality of vertically spaced openings for receiving cotter keys to support said support rods on said flanges, a plurality of vertically positioned cage-like flat members adapted to be attached to said end framework members including vertically positioned further rods engaged with said cage-like members and said end members, an upper enclosing member pivotally attached to said further framework end member, and including longitudinally positioned tubes, still further rods received within said tubes, a transverse strap attached to said still further rods, said strap being substantially of inverted U shape, the lower terminals of said strap being secured to the upper side bars of said side members, said still further rods being forced into said tubes to reduce the length of said upper enclosing member when pivoted toward said further framework end member, said spaced openings providing means for widening said crate, a vertically positioned rod attached to said gate member, a sleeve slidably receiving said vertically positioned rod, a hook member attached to said sleeve adapted to receive an upper portion of said framework end member, a transverse locking rod attached to said gate member, ears attached to the sides of said framework end member for receiving the ends of said locking rod, said further framework end member having a lower open portion, a feed and water trough receivable in said open portion, further ears attached to said feed and water trough, still further ears attached to said further framework end member, securing rods passing through said further ears and said still further ears, a plate member having openings for receiving said still further ears when said plate member is used to replace said feed and water trough, said cage-like flat members including off-set inner portions engaging said further rods and including vertically positioned end bars at the terminations thereof.

3,307,520
COVER PLATE FOR LIQUID MANURE CHANNELS IN COW STALLS

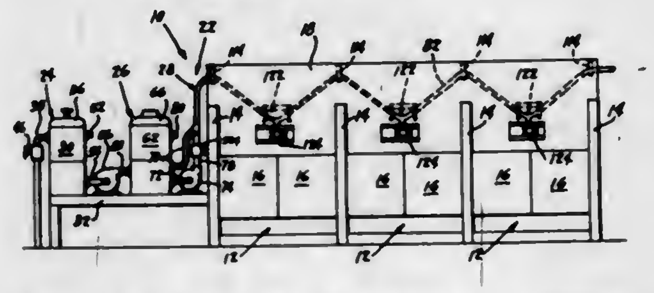
Franz Schmid, Vilshofen, Lower Bavaria, Germany (℅ Patentanwalt Adolf Berglein, Widenmayerstrasse 49, Munich, Germany)
Filed Nov. 17, 1964, Ser. No. 411,938
8 Claims. (Cl. 119—28)



1. Cover plates for excrement channels adapted to be set at least in one row one after another having thrust edges between successive adjacent cover plates, said thrust edges between adjacent cover plates being oblique to the lateral edges of the cover plates in such a manner that mechanical excrement removal tools occasionally moved horizontally over said row of cover plates are not obstructed or damaged.

3,307,521
SUCKLING APPARATUS FOR FEEDING YOUNG ANIMALS

Antonio Tavera, Rte. 1, Box 1386, Point Pleasant Road, and Stephen J. Lawrence, Rte. 1, Box 1401, both of Elk Grove, Calif. 95624
Filed Aug. 2, 1965, Ser. No. 476,482
14 Claims. (Cl. 119—71)



3. A liquid feeding device for animals comprising

a substantially vertical wall having at least one opening therein,

a liquid feed conduit on one side of said wall and closely adjacent thereto arranged in a longitudinally extending serpentine configuration having at least one nadir between zeniths,

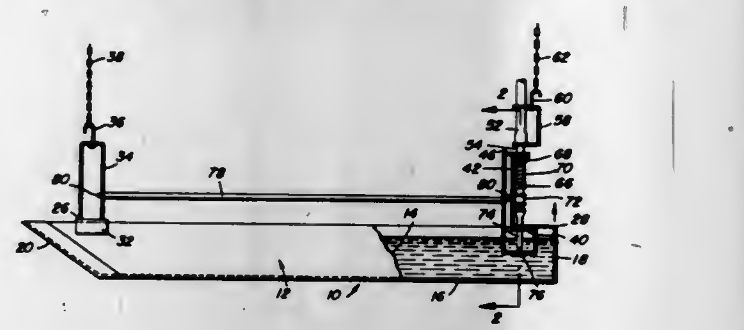
conduit means communicating with said conduit extending through said opening providing teat means of a pliable resilient material having an aperture on the end of said conduit means on a side of said wall opposite said one side and

means on said wall at said opening for selectively blocking said aperture, said blocking means including means for bending and pinching said teat means until said teat is closed to prevent the loss of liquid feed.

3,307,522
DEVICE FOR SUPPORTING FOUNT RECEPTACLES AND FOR CONTROLLING THE SUPPLY OF LIQUID TO SUCH RECEPTACLES

Hilario Far, East Brookfield, Mass. 01506
Filed Jan. 10, 1966, Ser. No. 519,567
3 Claims. (Cl. 119—81)

1. A device for supporting a fount receptacle and for automatically controlling the supply of liquid to such receptacle having in combination, a vertical liquid supply pipe, a liquid supply tube having its discharge end removably secured to the top end of said pipe and providing a shoulder thereabout, said fount receptacle being an elongated trough having upwardly, outwardly flaring side walls, a pair of spaced brackets each having a pair of inwardly, downwardly converging end flanges complementary to the outward flare of said trough side walls, said brackets and flanges being removably slidable over said trough to supporting positions adjacent opposite ends thereof, a chain engaging member secured to one of said brackets for attachment to a depending chain and a second chain engaging member engaging said shoulder for attachment to a second depending chain thereby providing height adjustment while maintaining a proper level, a vertical supporting arm having an intermediate horizontal finger extending in bracket supporting position under the second of said brackets, a lower finger spaced below said intermediate finger, and a bifurcated finger spaced above said intermediate finger, said supply pipe extending down through said bifurcated finger and terminating in a threaded lower end, an expansion coil spring about said extending supply pipe below said bifurcated finger, a nut on said threaded pipe end adjustably biasing said spring up against said bifurcated finger, a liquid discharge spout coupled to said threaded pipe end extending through aligned apertures in said second bracket and said intermediate finger to adjacent said lower finger, a valve stem extending downwardly beyond the spout end from a valve in said spout biased downwardly to closed position, said nut being adjusted to bias said spring to lift said trough and said lower finger into valve stem abutting valve open position until a predetermined weight of liquid accumulates in said trough and overcomes such bias to lower said trough and said lower finger to valve stem disengaging position valve closed position.

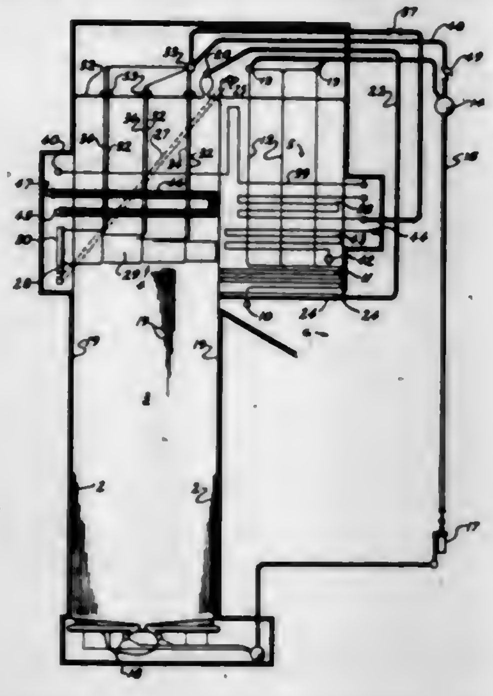


3,307,523
STEAM GENERATOR ORGANIZATION

David Palchik, Bloomfield, and Ronald B. Knust, Simsbury, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Sept. 16, 1965, Ser. No. 487,850
5 Claims. (Cl. 122—406)

1. A vapor generator of the once-through type having a furnace; means for burning fuel within said furnace; means for conveying combustion gases from said furnace; a through-flow circuit comprising a first portion including tubular surface lining the walls of said furnace; a second portion including a plurality of platens located at the outlet of said furnace and being positioned parallel to each other, a third portion including steam heating surface located in said gas conveying means; said first, second, and third portions arranged to convey fluid serially therethrough; low pressure steam heating surfaces located in said gas conveying means; each of said platens comprising a plurality of horizontal intermeshed tubes and located intermediate said furnace and said low pressure steam heating surface so as to effectively shield said low steam heating surface from a large portion of the radiant heat emanating from said furnace; means for passing a substantially greater quantity of fluid through said first and second portions than through said third portion; said low pressure steam heating surface including a plurality of assemblies, each comprised of a plurality of tubes intermeshed with each other and in the same plane as cor-

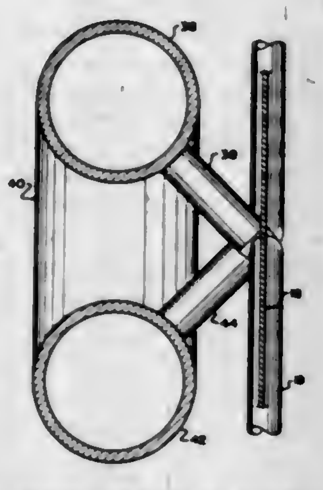
responding panels, and located at a higher elevation; a plurality of support tubes for the platens and assemblies comprising pairs of tubes passing parallel to the platens adjacent the lower edge therefor, said tubes dividing and passing upwardly with one tube on each side of the corresponding platen and assembly; means for supporting



the weight of the platen and assemblies from adjacent support tubes; said first portion also including vertical tubular surface lining the walls of said gas conveying means and extending upwardly from the furnace to a support elevation above the elevation of the assemblies; and means for supporting said support tubes at the support elevation.

3,307,524
FLUID HEATER SUPPORT

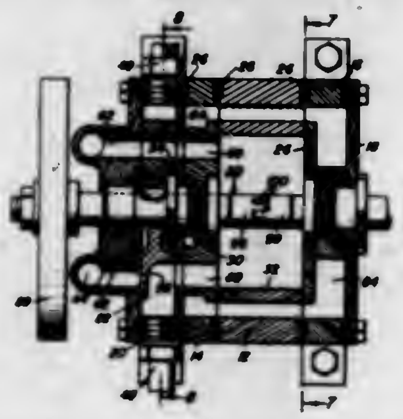
Alwin W. Ambrose, Hazardville, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Sept. 16, 1965, Ser. No. 487,853
8 Claims. (Cl. 122—510)



1. In a fluid heater having a furnace, generally vertical tubes including a lower section and an upper section lining the walls of said furnace, a mixing header system receiving fluid from said lower section and discharging the mixed fluid to the upper section, with said lower section being supported from said upper section, an improved junction arrangement comprising: a first return bend fluidly joining upper ends of pairs of adjacent tubes of said lower section with said return bends being in the plane of the furnace wall tubes; a tube comprising a single outlet from said first return bend angularly displaced from the plane of the furnace wall tubes and extending outwardly from said furnace to said mixing header system; second return bends in the plane of the furnace wall tubes fluidly joining the lower ends of pairs of adjacent tubes of said upper section; corresponding tubes of the upper and lower sections being in line, and the joined pairs of adjacent tubes being selected so that the return bends are staggered with the lower return bend crown nesting between adjacent upper return bends; a tube comprising a single inlet to said second return bend angularly displaced from the plane of the furnace wall tubing and extending outwardly from said furnace to said mixing header system; gas tight sealing means intermediate the first and second return bends, with said sealing means being in the plane of the furnace wall tubes and having a portion extending through a generally triangular area between the nesting return bends; and said tubes comprising single inlets and single outlets connected to their corresponding return bends at the crown of the bend, said tubes having a portion extending on the furnace side of the sealing means in the generally triangular area.

3,307,525
ROTARY PISTON EXPANSIBLE CHAMBER MACHINE

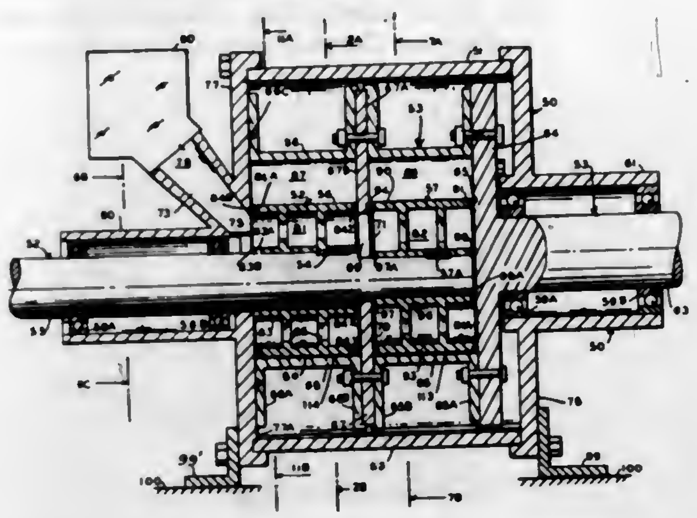
James B. McClure, Mercury, Nev., assignor to McClure Corporation of America, a corporation of Nevada
Filed May 5, 1964, Ser. No. 365,042
9 Claims. (Cl. 123—8)



1. An expansible chamber device of the positive displacement rotary piston type comprising a stator and rotor, said stator having therein a generally polygonal-shaped compartment bounded by a pair of side walls and an undulating peripheral wall, a drive shaft journaled in said stator and disposed centrally of said compartment, said rotor being disposed in said compartment and mounted eccentrically and rotatably upon said drive shaft, said rotor having a central hub with a plurality of radially extending blades comprising pistons, sealing means carried by said blades and having a sliding and sealing engagement with said peripheral and side walls, said blades, side walls and peripheral wall defining successive working chambers which expand and contract successively upon movement of said pistons about said compartment, and fluid inlet and outlet means communicating with said chamber, said sealing means comprising, a cylindrical sealing element in a semi-cylindrical, axially extending channel at the outer ends of each blade, each sealing element comprising sealing strips on opposite ends, a pair of aligned, spaced cylindrical sections having interdigitated, axially extending fingers on adjacent ends, a cylindrical guide member disposed within said cylindrical sections overlapping the interdigitated fingers, a pair of springs disposed on opposite sides of and abutting the guide member to yieldingly urge the sections apart for axially and resiliently extending the sealing strips into sealing engagement with said side walls, each of said strips having a cap portion embracing the outer end of a cylindrical section and engaging one of said springs.

3,307,526
INTERNAL COMBUSTION ENGINES

John L. Betzen, Deaf Smith County, Tex.
(Rte. 1, Hereford, Tex. 79045)
Filed June 17, 1966, Ser. No. 558,475
5 Claims. (Cl. 123—8)



1. An internal combustion engine comprising a first rotatable sub-assembly and a second rotatable sub-assembly,

said first rotatable sub-assembly comprising an end wall plate one side of which has a flat surface, and a first hollow cylinder attached thereto with the axis of said first hollow cylinder normal to the plane of said flat plate, a support with an axis coaxial with the axis of said first hollow cylinder connected to and supporting said end plate, means rotatably supporting said support,

said second rotatable sub-assembly comprising a shaft and a second hollow cylinder attached thereto and co-axial therewith, said second hollow cylinder having a lesser outer diameter than the inner diameter of the first hollow cylinder and located therein, said second hollow cylinder having its longitudinal axis parallel to but displaced from the axis of the first hollow cylinder, the outer radius of said second hollow cylinder plus the displacement of its axis from the axis of the first hollow cylinder being the inner radius of said first hollow cylinder and a gas-tight line of contact is formed and maintained between the adjacent surfaces of said two cylinders,

a second flat end wall plate extending parallel to said first plate at the other end of said first hollow cylinder and forming a gas-tight connection therewith, and

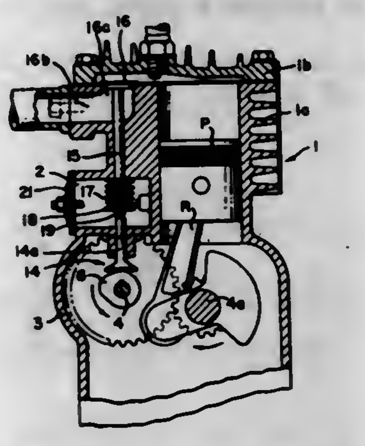
a closure plate extending in a plane normal to said flat surfaces from the said outer surface of the inner cylinder to the inner surface of said outer cylinder for the length of said first and second cylindrical surfaces, said closure plate forming a gas-tight contact with the first and second flat end wall plates as well as with the inner and outer cylinders thereby forming two chambers between the outer cylinder and the inner cylinder,

one such chamber being bounded by the outside surface of the inner cylinder, the inside surface of the outer cylinder, the two flat end walls, one side of the closure plate and the line of contact between the inner and outer cylinders, there being also an exhaust orifice in one of said chambers and an opening for injecting components of a combustible mixture into the other chamber and means for such injecting operatively connected to such opening and

wherein the space between the inner cylinder and the outer cylinder is divided by an imperforate partition between those cylinders and extending in a plane normal to the axes of those cylinders and one said closure plate extends from the inner cylinder to the outer cylinder on one side of said partition in one of said chambers and another closure plate extends from the inner cylinder to the outer cylinder in the other of said chambers on the other side of said partition.

3,307,527
COMPRESSION RELEASE FOR INTERNAL COMBUSTION ENGINES

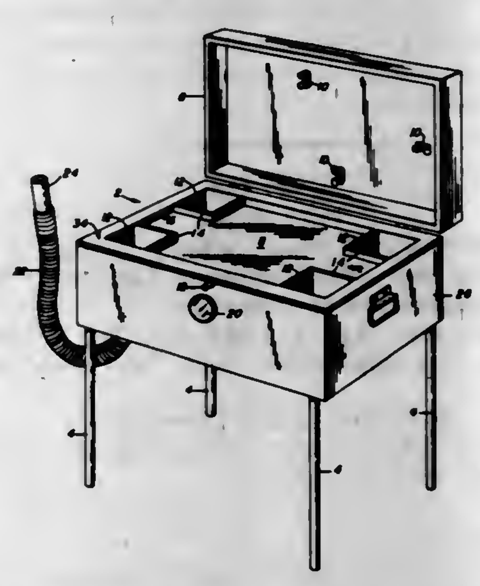
David E. Weglage and Albert A. Weglage, Dayton, Ohio, assignors of one-third to Walter Becker
Filed Aug. 16, 1965, Ser. No. 480,086
20 Claims. (Cl. 123—182)



15. As a new article of manufacture, a compression release control lever for use in connection with a reciprocable piston equipped four stroke cycle internal combustion engine having a crankcase and a chamber communicating with said crankcase and also having means for venting said chamber, which has a first arm and a second arm and a bore for receiving pivot means, said first arm having a portion operable to act upon the reciprocable valve means of an engine of the above mentioned type so as to prevent said valve means from closing its valve port, and said second arm being operable by a gaseous flow from said crankcase to said chamber at engine idling speed and above to move said first arm into an inactive position.

3,307,528
COMBUSTION ENGINE HEATED STOVE

Charles A. Cook, 923 Main St., Little Rock, Ark. 72202
Filed Apr. 16, 1965, Ser. No. 448,626
7 Claims. (Cl. 126—19.5)



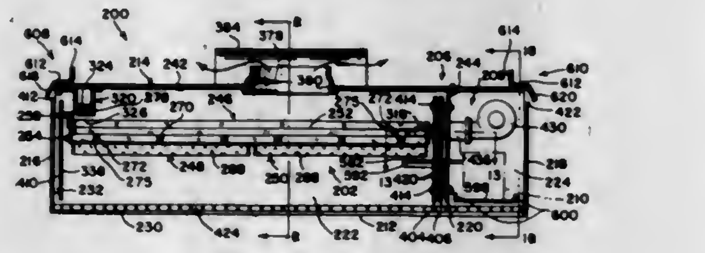
1. A cooking stove heated by the exhaust of an internal combustion engine, comprising: walls of heat resistant material defining an enclosed chamber, an uppermost one of

said walls having a flat generally horizontal cooking surface, a depending pocket in said cooking surface projecting a major distance into said chamber, said pocket being capable of holding a liquid for stabilizing the heat of said stove, an inlet conduit having means at one end for engaging an exhaust outlet of an internal combustion engine and having its opposite end communicating with a given point in said chamber, said pocket being located adjacent said inlet conduit at said given point to receive and store heat from incoming exhaust gases, said chamber having an outlet opening spaced from said given point.

3,307,529
RADIANT HEATER ARRANGEMENT

John J. Fannon, Jr., Grosse Pointe Park, Mich., and Marc Resek, Shaker Heights, Ohio, assignors, by mesne assignments, to Fostoria-Fannon, Inc., a corporation of Ohio

Filed Oct. 23, 1964, Ser. No. 405,944
28 Claims. (Cl. 126—92)



1. A fluid fuel-fired heater, comprising:
a. an elongated casing and a transverse partition dividing said casing into first and second compartments;
b. infrared generator means in said first compartment extending substantially the length thereof;
c. combustible mixture supply means in said second compartment for supplying a controlled combustible mixture of fuel and air to said infrared generator means;
d. said generator means including:
  (1) elongated fuel-air mixture distribution means for distributing the combustible mixture supplied to said infrared generator means by said combustible mixture supply means to a plurality of combustion zones adjacent said distribution means and extending substantially the length of said infrared generator means; and
  (2) radiant means on the side of said combustion zones opposite said distribution means adapted to be heated to incandescence by combustion of said mixture;
e. said first compartment having an open side extending the length of said infrared generator means on the same side thereof as said radiant means through which infrared radiation emitted from said radiant means can pass.

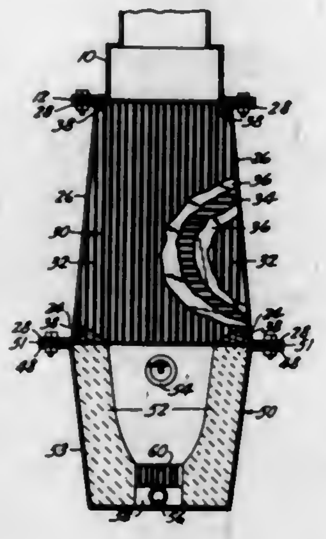
3,307,530
HEATERS

Thomas Noel Stack, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Original application Apr. 6, 1964, Ser. No. 357,591. Divided and this application Sept. 14, 1966, Ser. No. 579,235

3 Claims. (Cl. 126—116)

1. A hot air space heater comprising in combination
(I) a combustion chamber,
(II) means providing a combustible mixture to said combustion chamber,
(III) ignition means within said combustion chamber and, connected to said combustion chamber,
(IV) at least one cross-flow ceramic heat-exchanger unit consisting essentially of
(A) a metallic frame, having four open faces and closed ends,
(B) not more than two cross-flow ceramic heat-exchangers having
  (1) two parallel faces and a multiplicity of passageways therebetween open to receive and educt combustion products from said combustion chamber and further having

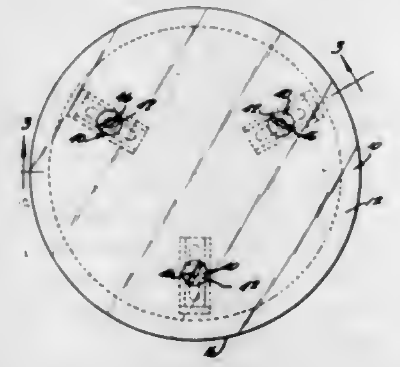


  (2) at least one and not more than two inclined faces frictionally engaging said frame at the edges and adapted to receive cool air and deliver heated air,
(C) means urging said heat-exchangers into continuous frictional engagement with said frame,
(D) means for educting combustion products from said combustion chamber through said heat-exchanger.

3,307,531
BURNER HEAT DISTRIBUTOR

Clyde H. Thompson, 1127 E. 5th St., Casper, Wyo. 82601

Filed June 11, 1965, Ser. No. 463,107
3 Claims. (Cl. 126—215)

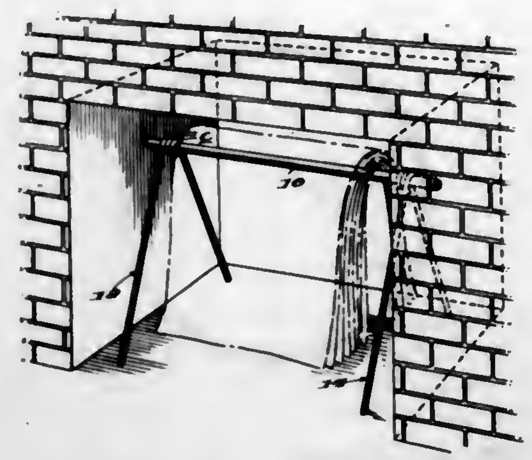


1. A device of the character described, comprising a circular flat plate having a peripheral edge, feet secured to the underside of the plate inwardly of said peripheral edge and reaching downwardly below the plate, said plate being imperforate, said feet comprising relatively long horizontal arms bearing against the undersurface of the plate and relatively short downwardly extending legs on the arms, said arms being formed with longitudinal slots, screws engaged in the plate and extending downwardly through the slots, and nuts on the lower ends of the screws engaged beneath said arms.

3,307,532
FIREPLACE APPLIANCES

George G. Hume, Washington, D.C., assignor to Tunlaw Corporation, Washington, D.C., a corporation of the District of Columbia

Filed June 3, 1965, Ser. No. 461,036
1 Claim. (Cl. 126—298)



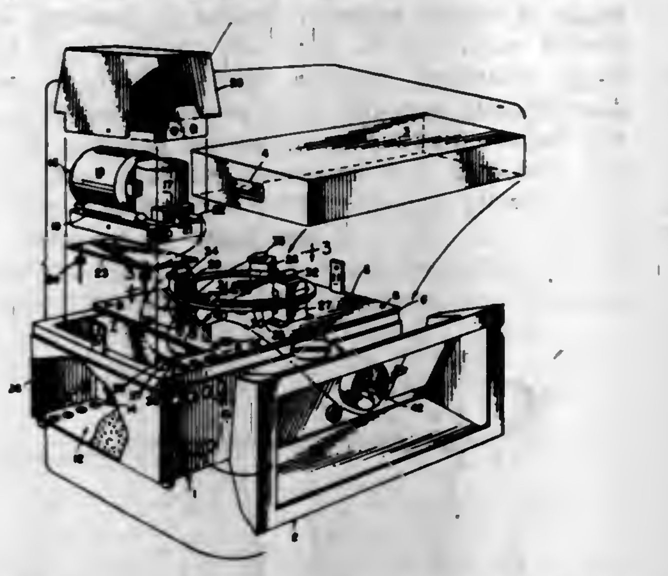
A grate for burning newspapers in a domestic fireplace in manner as to extract useful heat therefrom comprising: a cross bar and a pair of leg structures removably coupled to the end portions of said cross bar and supporting the latter in elevated position, said leg structures each having the shape of an inverted V and including a sleeve-form coupling means in the apical portion thereof for the reception of an end portion of the cross bar, each said leg structure being fashioned complete from a length of metal rod and said coupling means in the apical portion thereof comprising a plurality of adjacently disposed convolutions formed in said rod and providing a sleeve-like formation of diameter slightly greater than that of said rod and of appreciable axial length, said cross bar and leg structures adapted when assembled to one another within a fireplace to provide therein a raised cross-bar type of support for a collection of newspapers suspended in folded-over relation from said cross bar.

3,307,533
APPARATUS FOR GENERATING AND CONTROLLING PRESSURE

Paul A. Meredith, Oak Park, and Myron L. Anthony, La Grange, Ill., assignors, by direct and mesne assignments, of sixty percent to said Meredith, seven and one-half percent to said Anthony, seven and one-half percent to George S. Hoban, Arlington Heights, Ill., twelve and one-half percent to George W. Butler and twelve and and one-half percent to Gladys A. Butler, both of River Forest, Ill.

Filed Nov. 26, 1963, Ser. No. 325,907
10 Claims. (Cl. 128—24)

1. An apparatus for generating pressure pulses suitable for application to a body comprising
(a) a gas plenum,
(b) a source to supply gas under pressure to said plenum,
(c) means for controlling said pressure in said plenum,
(d) a valve having an inlet connected to said plenum and an outlet adapted to be connected to an inflatable bladder to supply a relatively short pressure pulse to said bladder, said valve comprising a ported member having an opening therethrough movable in alignment with said inlet and said outlet,
(e) means to promptly return said outlet to atmospheric pressure following said pressure pulse, comprising a groove in the surface of said ported member which does not extend through said ported member and is movable in alignment with said outlet, and
(f) means for moving said ported member so that the

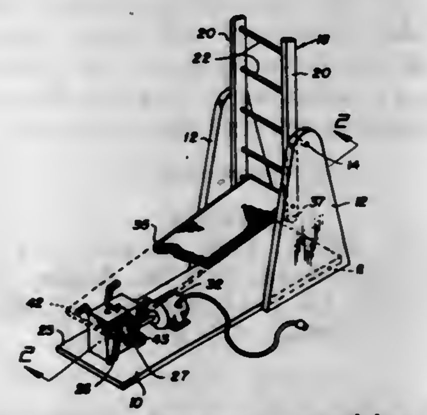


opening therein is aligned with said inlet and said outlet and thereafter the groove therein is aligned with said outlet.

3,307,534
EXERCISING MACHINE

Thomas T. Gibbs, 1539 Edgeware Road, Victoria, British Columbia, Canada

Filed Aug. 5, 1963, Ser. No. 299,900
4 Claims. (Cl. 128—25)



1. An exercising apparatus comprising an elongated hand supporting member, supporting base means, means on the base for pivotally supporting the hand supporting member in a substantially vertical position for oscillatory movement about a horizontal axis substantially intermediately of the ends of said supporting member, a crank member rotatably mounted on the supporting base means in horizontally spaced relationship to the hand supporting member for rotation about a horizontal axis parallel to said axis of said hand supporting member, and a substantially horizontally disposed elongated platform member coupled at one of its ends to the lower end of the hand supporting member for oscillation therewith and at its other end to the crank member, whereby oscillatory movement of said hand supporting member and the said one end of the platform member connected thereto will result in rotational movement of the crank member and the other end of the platform member connected thereto.

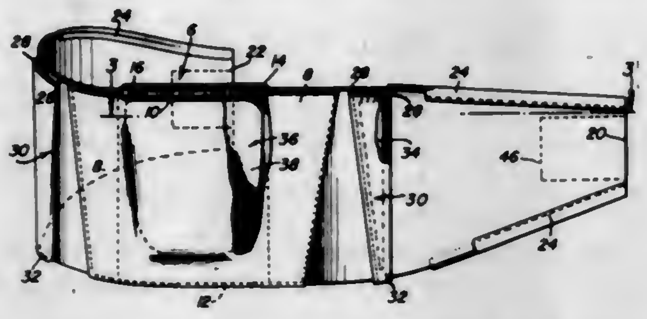
3,307,535
ORTHOPEDIC APPLIANCE

David H. Locke, Claremont, N.C., assignor to Mor-Loc Manufacturing Co., Claremont, N.C., a corporation of North Carolina

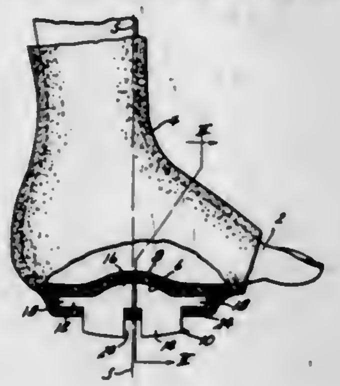
Filed Oct. 28, 1963, Ser. No. 319,447
4 Claims. (Cl. 128—78)

1. An orthopedic appliance functionally designed and correctly adapted to efficiaciously improve posture of a wearer and to, at the same time, afford vitally needed

localized support for the sacral area, particularly the small-of-the-back, a single length waist-encircling belt made of elastic material limited to one-way lengthwise stretch requirements, said belt characterized by a relatively restricted median small-of-the-back portion, a diametrically opposite front portion adapted to embrace and impose distributive supportive pressure on the wearer's abdomen for maximum support, and intervening diametrically opposite above-the-hips side portions, said median and side portions being of uniform relatively broad width, said front portion having overlapping free end portions gradually and progressively decreased in width toward terminal portions thereof, the contacting surfaces of the overlapped ends having quick-separable pressure-responsive pull-released connecting and fastener means which is releasable by merely catching hold of the available accessible free terminal end and yanking it open, the central part of said median portion being provided with a compressibly resilient pad of a size and shape to span and exert localized pain alleviating pressure on the sacroiliac joint, said pad being removably held in a pocketing pouch, being generally wedge-shaped in size, and having a substantially rigid backing with a foam rubber pad superimposed and fixed thereon.



3,307,536
WALKING HEEL FOR PLASTER CASTS
Howard W. Blosser, 2418 Wall St., Joplin, Mo. 64801
Filed July 15, 1964, Ser. No. 382,827
3 Claims. (Cl. 128—83.5)



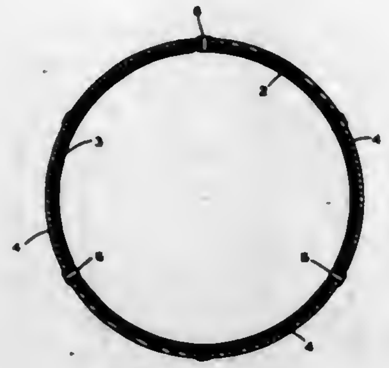
1. A walking heel for plaster casts comprising a one-piece integral member formed of resilient material and including:

(a) a generally planar and rectangular platform adapted to be positioned and secured against the sole of plaster cast encasing a patient's foot, beneath the concave instep contour of said cast, and with its major axis extending parallel to the longitudinal midline of the foot,

(b) a ground-engaging cleat depending from said platform, and

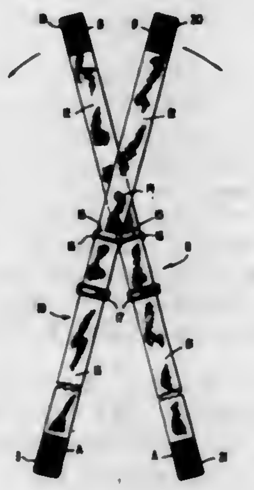
(c) an upwardly convex protuberance on the upper surface of said platform and shaped to engage snugly in the instep contour of the sole of said cast, whereby said cleat is positioned longitudinally of the wearer's foot in positive relation to the transverse vertical plane of this weight-support line of the wearer's leg.

3,307,537
ORTHOPEDIC CAST
Gladys B. Simon, 431 NE. 175th St., North Miami Beach, Fla. 33162, and Monroe Reese, 875 NW. 170 Terrace, North Miami, Fla. 33169
Filed Mar. 24, 1964, Ser. No. 354,362
4 Claims. (Cl. 128—90)



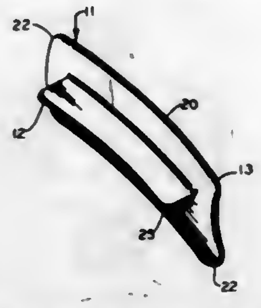
1. A laminated orthopedic cast comprising an inner lamina of soft fabric woven and adapted for diverse stretching, a central barrier lamina of diverse stretchable material of substantially uniform thickness impervious to liquid resin with the inner surface thereof self-bonded to the outer surface of said inner lamina, an outer lamina of fiberglass fabric wove and adapted to stretching in diverse directions, said outer lamina permeated with air dried polyester resin for bonding the inner surface of the said outer lamina to the outer surface of said inner lamina and rigidizing said cast when the latter is conformed to a predetermined body member.

3,307,538
ADJUSTABLE ORTHOPEDIC SLING
Edwin H. Groll, 4724 NW. 6th St., Plantation, Fla. 33314
Filed Nov. 14, 1963, Ser. No. 323,731
5 Claims. (Cl. 128—94)



1. An adjustable orthopedic sling for supporting injured body members comprising first and second flexible strap members pivotally joined adjacent the centers thereof, each of said strap members containing a means for independently adjusting the length thereof and a further means associated with the ends of each of the strap members for cross-connecting by removable adhesive contact the one end of said first strap member to the opposite end of said second strap member and said one end of said second strap member to the opposite end of said first strap member.

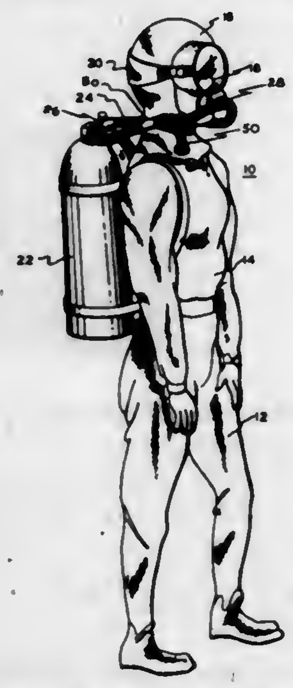
3,307,539
CHEEK AND TOOTH PROTECTOR
Gerald A. Petersen, Sunnyvale, Calif. (℅ Petersen Engineering Co., Inc., 460 Kifer Road, Santa Clara, Calif. 95050)
Filed Sept. 21, 1964, Ser. No. 397,757
3 Claims. (Cl. 128—136)



1. A cheek and tooth protector comprising a thin elongated holding portion of resilient material shaped to fit between the wearer's teeth and inner cheek, to prevent physical contact between said teeth and said cheek;

and a tooth intercepting portion, formed to project from said holding portion at substantially a right angle, said intercepting portion being substantially rectangular in shape and formed of thin and resilient material, said intercepting portion shaped to fit between the wearer's teeth to prevent physical contact between said teeth, said intercepting portion being held in place in the wearer's mouth by said holding portion.

3,307,540
PROTECTIVE SUIT
Edwin A. Link, Binghamton, N.Y., assignor, by mesne assignments, to Ocean Systems, Inc., New York, N.Y., a corporation of New York
Filed Mar. 10, 1964, Ser. No. 350,836
9 Claims. (Cl. 128—142.3)



1. A protective suit for allowing the wearer thereof to operate in water wherein the surrounding water pressure is above atmospheric comprising,

(a) a first smooth flexible layer, an outer surface of which is in contact with the wearer;

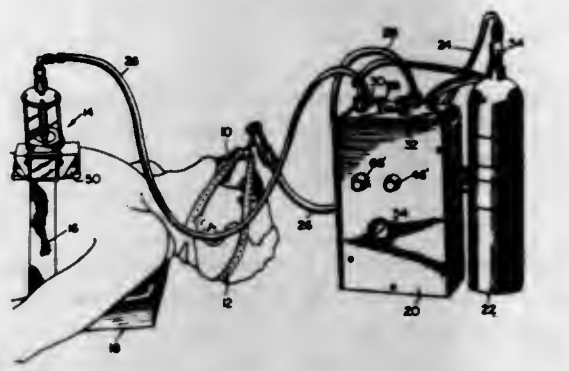
(b) a second smooth flexible water impermeable layer completely surrounding and spaced apart from said first smooth flexible layer, an outer surface of which is in contact with the water;

(c) the space between said first and second layers being substantially occupied by a soft rubber-like pliant material including a plurality of interconnected channels therethrough arranged to form a closed gas circuit between said first and second smooth flexible layers;

(d) means for supplying gas to all of said interconnected channels, and

(e) means for maintaining said gas within said interconnected channels at a pressure substantially equal to said surrounding water pressure.

3,307,541
HEART AND LUNG RESUSCITATOR
Carl E. Hewson, Marshfield, Mass.
(90 Myrtle St., North Quincy, Mass. 02169)
Filed May 1, 1963, Ser. No. 277,169
14 Claims. (Cl. 128—145.8)



14. A heart-lung resuscitator comprising

means including a duct and fitting adapted to be connected to an oxygen source for introducing oxygen into the lungs of a patient,

volume controlling means secured to the first named means for controlling the volume of oxygen directed to the patient's lungs,

pneumatically actuated means for applying a compressive load to the chest of a patient,

a shoulder lift adapted to support the shoulders of a patient with the patient's head back to open the airways,

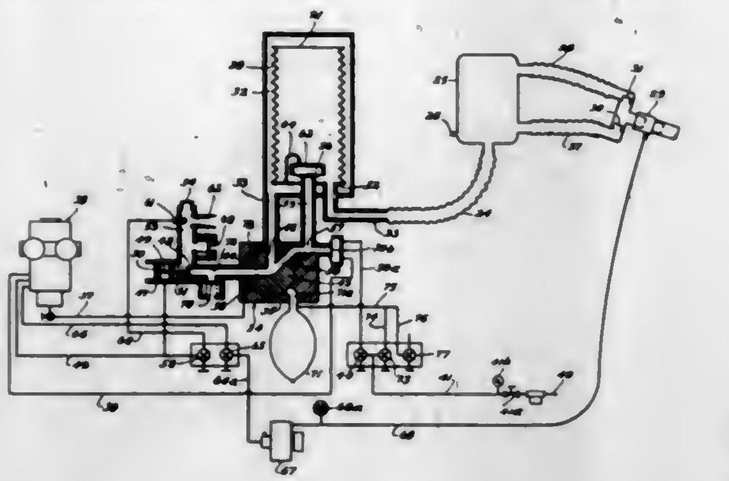
strap means secured to the shoulder lift and the pneumatically actuated means for orienting said means in a fixed position with respect to the chest of a patient disposed on the lift,

and means connected to the oxygen source and driven by the oxygen and operatively connected to the first named means and to the pneumatically actuated means and intermittently activating the first named means and the pneumatically actuated means with actuation of said first named means occurring during every fifth deactivation of the pneumatically actuated means.

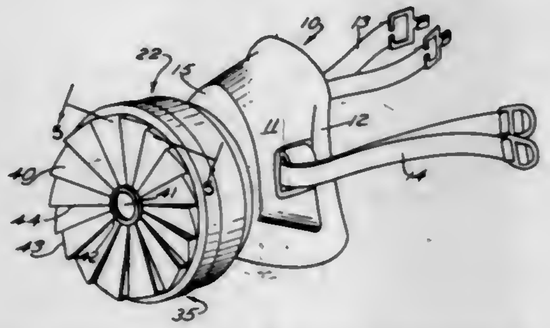
3,307,542
LUNG VENTILATING EQUIPMENT
Christian B. Andreasen, New Hope, Pa., assignor to Air-Shields, Inc., Hatboro, Pa., a corporation of Delaware
Continuation of application Ser. No. 256,277, Feb. 5, 1963. This application June 4, 1965, Ser. No. 470,263
10 Claims. (Cl. 128—145.8)

1. Lung ventilating equipment comprising a system adapted to be associated with a patient's lungs for handling the patient's inspiratory and expiratory gases and including a bellows for receiving such gases, means providing for collapse of the bellows to cause gass to be delivered to the patient including a chamber surrounding the bellows, a manually operable collapsible bag for controllably delivering gas under pressure to said chamber, mechanism automatically operated by a timing device for controllably delivering gas under pressure from a source thereof to said chamber and including a valved passage for controllably connecting said chamber to atmosphere, a valved gas overflow for discharging excess gases from said system into said passage for ultimate discharge to

atmosphere when the passage valve is open, and valve means for alternatively connecting said bag and said mechanism with said chamber, the valve means including valve parts and portage providing for connecting said valved passage to said chamber when the automatically operated mechanism is connected to said chamber and further providing for blocking said valved passage from said chamber and for communication of said gas overflow with atmosphere when the bag is connected to said chamber.



3,307,543
COVER FOR A RESPIRATOR FILTER HOLDER
Leslie Silverman, Dover, Mass., assignor to Welsh Manufacturing Company, a corporation of Rhode Island
Filed Oct. 26, 1964, Ser. No. 406,290
4 Claims. (Cl. 128—146.4)

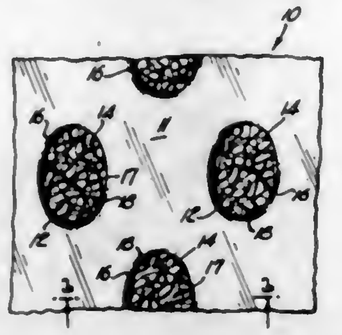


1. In a respirator, a filter holder comprising a body, a filter within the body, a wall attached to the body, said wall being provided with a plurality of louvers radiating from a common center and arranged in an echelon relation circularly about said center and a circular rib intermediate the ends of said louvers carried by said wall and of a dimension extending beyond the inner edges of the louvers and spacing the filter from said wall.

3,307,544
SURGICAL PRESSURE-SENSITIVE ADHESIVE SHEET WITH N-TERT-BUTYLACRYLAMIDE COPOLYMER ADHESIVE
Robert J. Gander, Whitehouse, N.J., and Harold P. Brown, Akron, Ohio, assignors to Johnson & Johnson, a corporation of New Jersey and The B. F. Goodrich Company, a corporation of Ohio
No Drawing. Filed Sept. 10, 1963, Ser. No. 307,814
7 Claims. (Cl. 128—156)

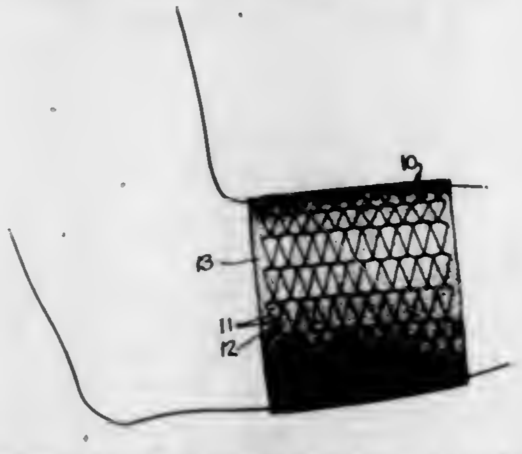
1. A surgical pressure-sensitive, adhesive-coated sheet comprising a flexible backing member having a pressure-sensitive adhesive consisting essentially of a copolymer of about 65 to 85 parts by weight of an alkyl acrylate having an alkyl group of at least six carbon atoms and 35 to 15 parts by weight N-tert.-butylacrylamide, said copolymer having a Williams plasticity of about 1.3 to 3.0 mm.

3,307,545
NON-ADHERENT DRESSING
Philip Surowitz, Middlesex, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Sept. 2, 1964, Ser. No. 393,951
4 Claims. (Cl. 128—156)



1. An absorbent non-adherent dressing comprising an absorbent fibrous substrate having a large number of individual fibers and containing on at least one surface thereof and bonded thereto a nontacky thermoplastic organic film containing a series of openings, exposing individual fibers of said absorbent fibrous substrate, a substantial number of the exposed fibers of said substrate lying beneath the area of said openings being individually coated with the organic film substance and the portions of said absorbent substrate lying beneath the areas of the film openings each containing a recess.

3,307,546
TUBULAR BANDAGE MEANS
Vittoria Cherio and Giuseppe Mignone, both of Valle San Matteo, Cisterna d'Asti, Asti, Italy
Filed Mar. 1, 1966, Ser. No. 530,976
3 Claims. (Cl. 128—157)



1. A tubular bandage means for binding medical dressings and the like comprising: a netted tubular fabric comprising a first set of axially spaced inelastic yarns extending in an axial direction on said tubular fabric, and a second set of elastic yarns arranged in a zig-zag configuration looped around successive yarns of the first set of yarns in open triangular loops defining triangular spaces alternately inverted relative to each other and the triangular loops having their apices aligned in a circumferential direction and on the tubular fabric and each apex substantially bisecting a base of a triangular loop formed by a next successive yarn of the second set of yarns.

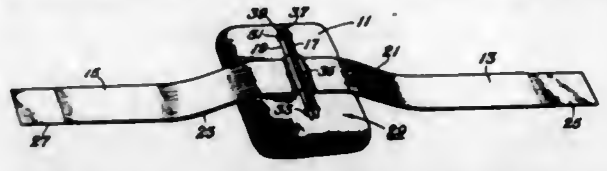
3,307,547
SURGICAL DRESSING CLAMPS
Alex Jones, P.O. Drawer A, Keller, Tex. 76248, and Frances B. Allen, 521 Club Oak Drive, Fort Worth, Tex. 76114
Filed Feb. 1, 1965, Ser. No. 429,542
5 Claims. (Cl. 128—171)

1. In a surgical dressing clamp of the type having a pair of adhesive straps which have transversely disposed elongated cross members in the mutually confronting ends thereof, said clamp comprising:

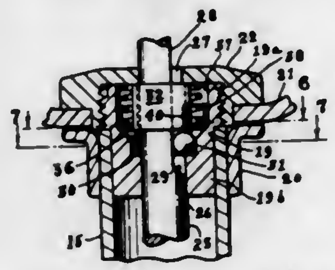
(a) a first ring encompassing and joining one pair of the end portions of said cross members;

(b) a second ring encompassing and joining the other pair of the end portions of said cross members; and

(c) an elastic strip connecting said rings and urging said rings toward each other when the respective end portions of said cross members are encompassed by said rings.



3,307,548
MULTIPLE CAPACITY SYRINGE
Henry J. Kachergis, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Jan. 10, 1964, Ser. No. 336,910
5 Claims. (Cl. 128—218)



1. A multiple capacity injection syringe adapted to be used with ampules of different lengths comprising

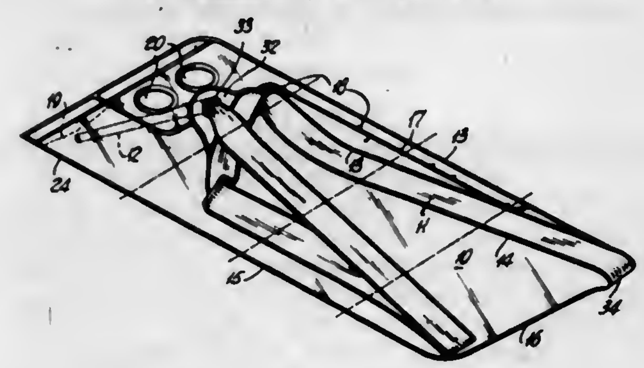
(a) a barrel of sufficient length to receive a long ampule and having means at its inner end to retain an ampule in the barrel;

(b) a head mounted at the outer end of the barrel;

(c) a plunger rod slidably mounted in the barrel head having means at its inner end for attachment to the ampule piston by a relative twisting movement in one direction; and

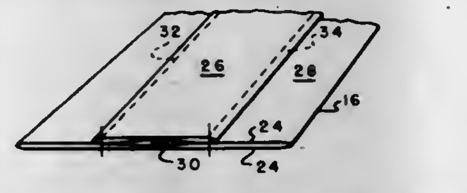
(d) means in said head automatically operable in response to such twisting movement when said plunger rod is being engaged with the piston of a shorter ampule to obstruct outward movement of said plunger rod beyond a predetermined position to insure against pulling of the piston away from such shorter ampule.

3,307,549
DISPOSABLE ENEMA BAG
Eli A. Zackheim, Princeton, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed July 8, 1964, Ser. No. 381,156
6 Claims. (Cl. 128—227)



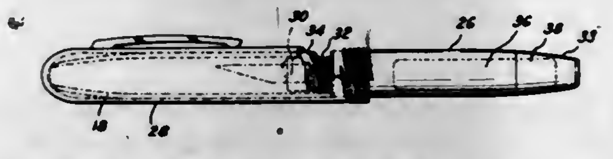
1. A disposable, collapsible bag suitable for administering liquids for hygienic irrigational purposes, comprising a bag of flexible, water impervious sheet material closed along lateral and bottom edges thereof to form a reservoir for fluid having substantial width and length, and an integral narrow elongated fluid discharge tube communicating at one end with said reservoir at the bottom thereof for the discharge of fluid from the reservoir through said tube, the sheet material constituting the reservoir section and the discharge tube section being normally disposed, in the absence of fluid therein, in face to face contact, facilitating ready foldability of the reservoir and of the tube upon each other, means constituting a filling opening in the reservoir at the end thereof opposite its connection with the discharge tube, a nozzle at the end of the discharge tube opposite its connection with the reservoir, reinforcing sheet material secured to the reservoir near the top thereof, a retaining hole extending through the reservoir sheet material and the reinforcing sheet material adapted to accommodate passage of the nozzle therethrough, and means on the discharge tube adapted to cooperate with said retaining hole and the nozzle to hold the tube in position when it is folded against the reservoir and the nozzle passed through said retaining hole.

3,307,550
DIAPER
Arthur W. Niemer and Richard V. Putnam, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Jan. 7, 1964, Ser. No. 336,174
1 Claim. (Cl. 128—284)



A stretch diaper comprising a tubular knit material being two rib knit fabrics interlinked so that the wales of one knit fabric lie between the wales of the other rib knit fabric on both the face and back of said diaper, a portion of said tubular knit material being folded under another portion of said tubular knit material to form a four-ply section centrally of said diaper and means connecting said folded portion of said tubular knit material to another portion of said tubular knit material to provide a diaper with a reinforced central portion.

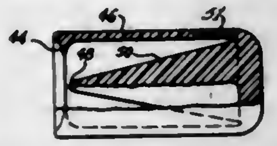
3,307,551
EMERGENCY TRACHEOTOMY KIT
Woodrow W. Violet, Jr., Glendale, Calif., assignor to Theodore D. Mooklar, Los Angeles, Calif.
Filed Aug. 3, 1964, Ser. No. 386,880
4 Claims. (Cl. 128—305)



1. A first-aid instrument, comprising:
a handle;
a scalpel-form substantially straight blade extending axially from said handle;
a through air duct in straight tubular form dimensioned on the outside diameter and configured in a tapered form at one end thereof to insert into an incision cut into the trachea of a human, and at the other end having an inside diameter and configuration removably engaging the end of said handle;
said air duct being greater in length than said blade to fully sheathe said blade therein; whereby

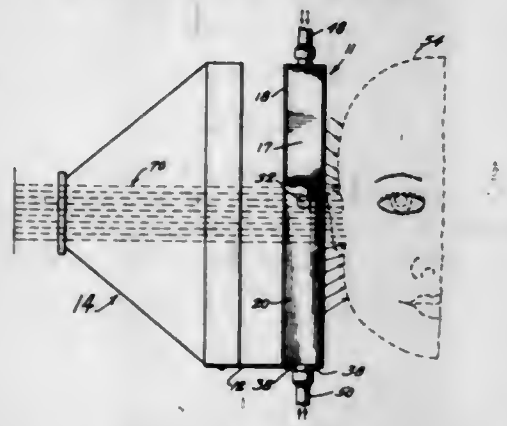
said air duct engaged upon the end of said handle over said scalpel serves to protect the scalpel in a covering means for cleanliness, said air duct thereby being available as an emergency airway for an incised trachea.

3,307,552
CATHETER PLUG AND SHIELD DEVICE
Lillian T. Strawn, 1521 W. Laburnum Ave.,
Richmond, Va. 23227
Filed Mar. 25, 1963, Ser. No. 267,459
2 Claims. (Cl. 128—348)



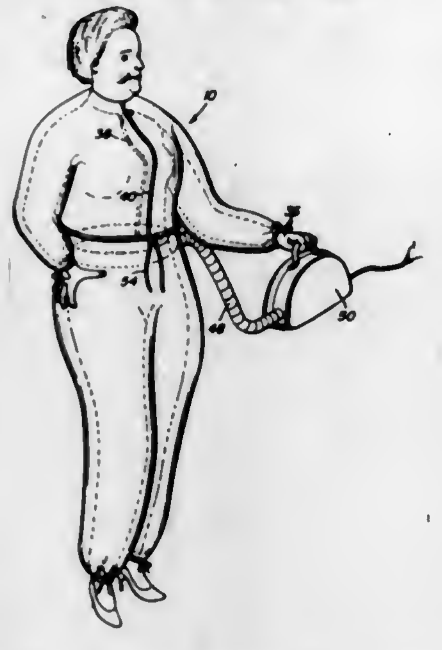
1. A device for stoppering and protecting the end portion of a tubular means having a longitudinal bore forming an opening therein, said device comprising,
  a deformable plug means of generally circular base and of right conical shape, receivable in said opening for stoppering said tubular means,
  and a deformable single open ended peripheral shield of generally circular cross-section and of right cylindrical shape, coaxially surrounding the plug and contacting only the base of the plug, the shield thus being receivable over said end portion of a tubular means,
  the apex of the plug being adjacent the open end of the shield and terminating slightly within the open end of the shield,
  the shield at its open end, and exterior of the apex, being provided interiorly with an annular flexible lip tapering radially inwardly and terminating at its distal portion in a thin edge thus helping to protect the apex of the cone against contamination.

3,307,553
APPARATUS FOR COOLING IRRADIATED SKIN AREAS
Edwin J. Liebner, 809 S. Marshfield, Chicago, Ill. 60612
Filed Jan. 30, 1963, Ser. No. 255,057
8 Claims. (Cl. 128—400)



1. In apparatus for treatment of a human patient with a source irradiation machine located externally of the patient, the improvement comprising: a cooling assembly for cooling the skin area undergoing irradiation, said assembly including a rectangular frame of channel members having a pair of opposed side members joined to a top member and to a bottom member, said frame defining and surrounding an opening, each of said frame members being formed with an internal fluid flow channel in communication with the fluid flow channels of the adjacent members, a longitudinal slot formed in each of the facing inner surfaces of the side members and in each of the facing inner surfaces of the top and bottom members, each of said slots communicating the corresponding fluid flow channel with said opening, at least one inlet communicating said channels with a source of coolant fluid, means for directing flow of fluid from said slots through said opening and for distributing said fluid directly against the skin area of the patient, and means for supplying a coolant fluid to said channels.

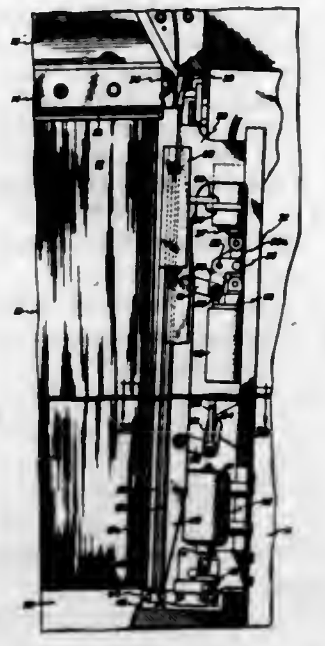
3,307,554
HEATED GARMENT
Jack D. Thornton and Eula V. Thornton, both of
1013 Alpine St., Midland, Tex. 79701
Filed Oct. 14, 1963, Ser. No. 315,767
1 Claim. (Cl. 128—402)



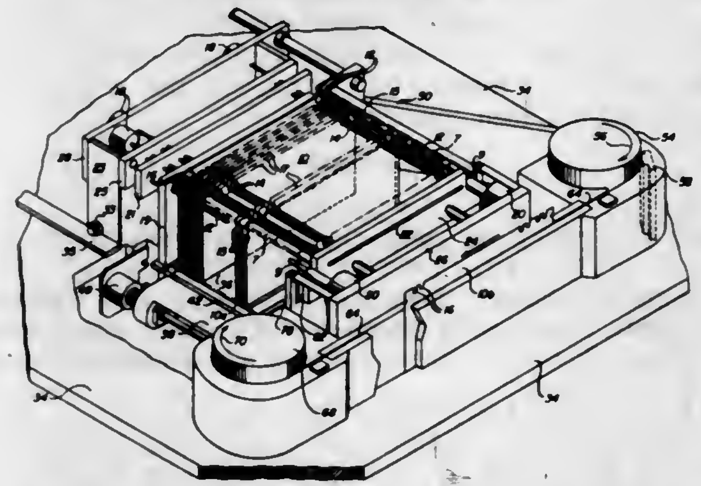
A weight reduction aid comprising a garment for enveloping the wearer with heated air, said garment comprising inner and outer suits of substantially air-impervious material defining a single internal chamber for the reception and retention of heated air introduced thereinto, means for introducing heated air into said chamber, said suits including coextensive body, leg, and arm portions whereby substantially the entire body of a wearer, except for the head, feet, and hands, is enclosed by the internally defined chamber, said suits including openings to allow the projection of the head, feet, and hands of a wearer from the garment, said suits being sealed to each other about said openings, said inner suit separating the body of the wearer from the air chamber whereby perspiration can be effected without a corresponding drying effect produced by the moving heated air, and means engaged with the outer suit, peripherally thereabout and to one side of the means for introducing heated air, for selectively clamping the outer suit against the inner suit and segregating a portion of the chamber out of communication with the means for introducing heated air whereby heated air will only envelop that area of a wearer's body covered by the portion of the chamber retained in communication with the means for introducing heated air.

3,307,555
RELEASE CONTROL MEANS FOR A RANDOM-ACCESS STORAGE SYSTEM
Louis W. Thies, Jr., Palos Verdes Estates, Richard G. Fisher, Torrance, William W. De Vore, Palos Verdes Estates, and Joerg E. Schnoor, Rolling Hills, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Apr. 16, 1964, Ser. No. 360,196
15 Claims. (Cl. 129—16.1)

1. In a random-access storage system, a plurality of individual data-storage elements retained in an assembled group each having unique coding means thereon, selecting and releasing means cooperating with the coding means on said elements to permit any selected one of said elements to be released for movement with respect to the other elements in said group regardless of the position of the selected element in the group, and position-sensitive release control means operative independently of said selecting and releasing means for exerting further control on the release of an element from said group after selection and release by said selecting and releasing means when the selected element is in a predetermined position in said group different from other positions in said group.

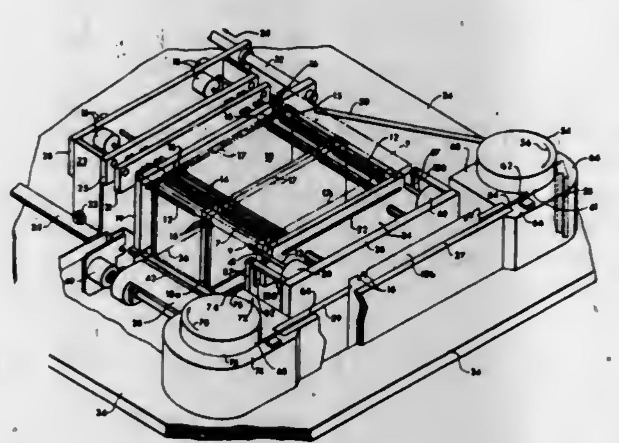


3,307,556
UNIT RECORD PROCESSING APPARATUS
Theodore H. Bonn, Lexington, Raymond Brooke, Newton Highlands, and Herbert A. Goldman, Winthrop, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 11, 1965, Ser. No. 478,886
13 Claims. (Cl. 129—16.1)



1. Apparatus for checking a plurality of normally suspended record cards each having $n+m$ notch pairs successively positioned along the upper card edge where n and m are integers each greater than 0, said $n+m$ notch pairs being individually representative of a first or a second binary digit and being jointly representative of an n-digit address code unique to said card and an m-digit check code uniquely associated with each address code, comprising selection rod pairs each normally assuming a first rotational state and each being adapted to engage correspondingly positioned notch pairs of all of said cards, at least two of said notch pairs in each suspended card normally being engaged in card-retaining relationship by separate rod pairs, actuating means associated with each of said selection rod pairs and adapted to rotate the latter to a second rotational state, means for sequentially generating parallel, n-digit selection signals representative of the address codes of each of said plurality of cards, means responsive to each of said selection signals for deriving a check code signal, means for modifying said check code signal, and means for energizing said selection rod actuating means with each of said sequentially generated selection signals and with the associated modified check code signal, said last recited energization of said actuating means successively causing each of said plurality of cards to be retained by the action of a single rod pair.

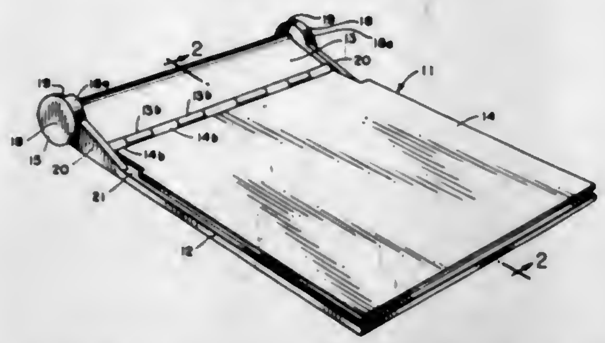
3,307,557
DATA PROCESSING APPARATUS
Michael S. Shebanow, Medfield, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 11, 1965, Ser. No. 478,887
20 Claims. (Cl. 129—16.1)



1. In combination, a stack of record cards having substantially identical dimensions and supported with the upper edge of each card disposed in a substantially horizontal position, each of said upper edges including successive pairs of notches aligned in rows along the depth of said stack, each notch pair containing a notch of a first and of a second kind sequenced in accordance with a first or a second binary digit represented by said notch pair, the side edges of respective cards each including a slot located near said upper edge, corresponding ones of said slots being aligned in rows along the depth of said stack, a plurality of paired selection rods each extending transverse to said upper edges through a row of notches and being adapted to assume first and second rotational positions substantially 45° apart, each of said selection rods having a cross-section adapted to engage only notches of said second kind in card-retaining relationship and only when said rod is in said second rotational position, a pair of substantially identical, rotatable holding rods parallel to said selecting rods, said holding rods being normally positioned to engage said rows of slots in supporting relationship such that said selection rods are out of contact with the notches through which they extend, first positioning means for normally maintaining each pair of selection rods in a first state, the individual rods of each pair in said first state assuming first and second rotational positions respectively adapted to release notch pairs representative of said first binary digit, said first positioning means being responsive to a coded selection signal for rotating addressed selection rod pairs to a second state, the individual rods of each pair in said second state assuming second and first positions respectively adapted to release notch pairs representative of said second binary digit, and second positioning means for rotating said holding rods out of engagement with said slots to release a single card addressed by said selection signal.

3,307,558
HOSPITAL CHART HOLDER

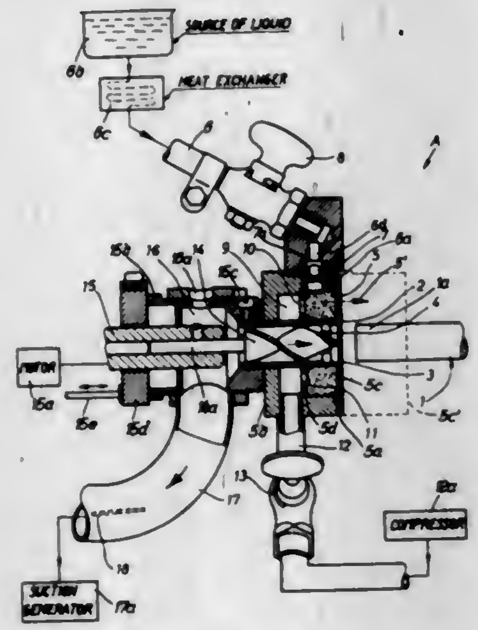
Thomas A. Benjamin, Northbrook, Ill., assignor to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Filed Mar. 19, 1965, Ser. No. 441,156
8 Claims. (Cl. 129—37)



1. A clipboard comprising a planar base, an elongated clamping bar having one longitudinal edge portion thereof hingedly connected to one end of said base and having a second longitudinal edge portion normally overlying said base along a line parallel and adjacent to said one end, spring means urging said second edge portion of said clamping bar towards said base for engaging and clamping papers positioned thereon, a substantially rigid cover overlying said base and being hingedly connected to said clamping bar along said second edge portion thereof, a pair of latching members rigidly fixed to said base and disposed adjacent opposite ends of said clamping bar, and a pair of lugs provided by said cover along opposite side edges thereof, said latching members being provided with recesses adapted to receive said lugs and restrain said cover and clamping member against closure under the force of said spring means when said cover has been pivoted backwardly over said clamping bar and said clamping bar has been pivoted to space the second edge portion thereof with respect to said base.

3,307,559
METHOD AND APPARATUS FOR TREATING CIGAR FILLERS

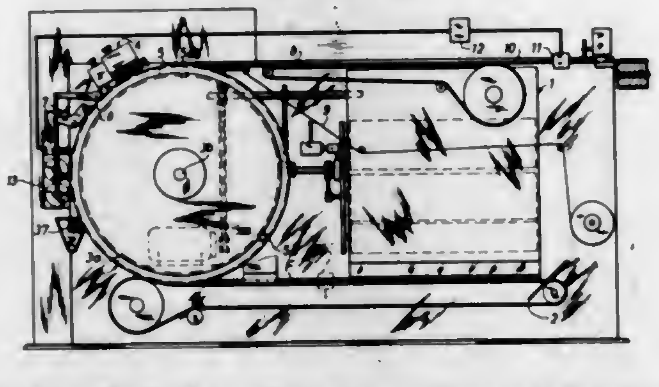
Walter Pallach, Hamburg-Bergedorf, Germany, assignor to Hauni-Werke Korber & Co. KG., Hamburg-Bergedorf, Germany
Filed Oct. 20, 1964, Ser. No. 405,046
Claims priority, application Germany, Nov. 7, 1963, H 50,769
21 Claims. (Cl. 131—20)



1. A method of moistening the tips of cigar fillers, comprising the steps of drilling bores into the tips; confining the thus drilled tips; and directing against the thus confined tips a pressurized liquid while preventing contact between such liquid and the remainder of the respective fillers.

3,307,560
METHOD OF AND MACHINE FOR PRODUCING A CONTINUOUS TOBACCO ROD

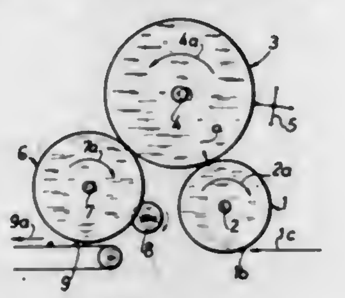
Hans-Ulrich Meissner, Reinbeker Weg 64, Wentorf, near Hamburg, Germany, and Willy Richter, Schulenbrooksweg 53, Hamburg-Bergedorf, Germany
Filed Nov. 30, 1961, Ser. No. 155,938
Claims priority, application Germany, Dec. 1, 1960, H 41,093
15 Claims. (Cl. 131—21)



1. A method of producing a continuous tobacco rod, comprising the steps of forming a continuous tobacco filler which contains tobacco in excess of that required in the tobacco rod; subjecting the filler to a mechanical compacting action to transform the same into a filler of constant density; subjecting the thus compacted filler of constant density to an equalizing action by trimming excess tobacco therefrom so as to obtain a tobacco rod; measuring the quantity of tobacco per unit length of the tobacco rod; and adjusting the compacting and equalizing actions in accordance with the measured result to obtain a tobacco rod containing a predetermined quantity of tobacco per unit length thereof, said adjusting step including reducing the compacting action and removing more tobacco when the quantity of tobacco in the tobacco rod exceeds said predetermined quantity, and increasing the compacting action and removing less tobacco when the quantity of tobacco in the tobacco rod is less than said predetermined quantity.

3,307,561
APPARATUS FOR ASSEMBLING COMPONENTS OF TOBACCO-CONTAINING PRODUCTS

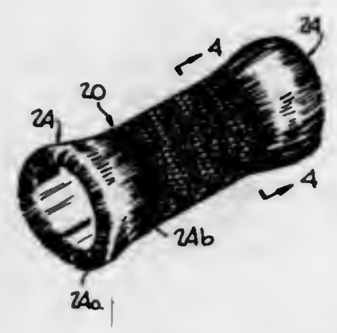
Bernhard Schubert, Hamburg-Lohbrugge, and Guenter Wahle, Hamburg-Wellingsbuttel, Germany, assignors to Hauni-Werke Koerber & Co. K.G., Hamburg-Bergedorf, Germany
Filed Mar. 29, 1963, Ser. No. 269,027
Claims priority, application Germany, Dec. 27, 1960, H 41,326; July 29, 1961, H 43,281; Aug. 12, 1961, H 43,395; Sept. 28, 1961, H 43,738
3 Claims. (Cl. 131—94)



1. In an apparatus for the manufacture of tobacco-containing products of the type comprising at least two end-to-end arranged components and an adhesive wrapper which is convoluted about the meeting ends of and connects the components to each other, in combination, a rotary wrapping drum having a mantle; a plurality of spaced trays mounted on said mantle and having elongated outwardly opening groove means parallel with the axis of rotation of said drum; means for consecutively transferring wrappers and groups of end-to-end arranged components into said groove means so that a portion of each wrapper adheres to and that at least one edge portion of each wrapper extends from the respective group whereby the extent of contact between a group and the corresponding wrapper exceeds mere linear contact; a plurality of wrapping members radially movably mounted in said drum, one pair for each of said trays, the wrapping members of said pairs disposed at the opposite sides of the respective trays and having wrapper-engaging inner faces; a pair of stop means provided on each of said trays, one for each wrapping member; means for biasing said wrapping members, into abutment with the respective stop means; and means for radially reciprocating said pairs of wrapping members with respect to said drum and with respect to each other so as to roll the groups along the inner faces of the respective wrapping members and to convolute the edge portion of each wrapper about the respective group while the groups rotate in their groove means solely in response to reciprocation of the wrapping members, said reciprocating means comprising cam-operated link and lever means for each of said wrapping members.

3,307,562
CONCEALABLE HAIR ROLLERS

Edward W. Corbett, 5653 Post Road, Bronx, N.Y. 10471, and Amedeo T. Costanza, 731 Bartholdi St., Bronx, N.Y. 10467
Filed May 11, 1964, Ser. No. 366,346
4 Claims. (Cl. 132—39)

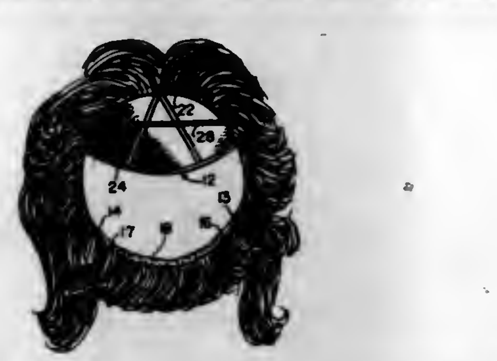


1. A hair roller comprising a cylindrical tube having open opposite ends, spaced wefts of simulated hair attached to the tube covering and concealing each of said opposite ends, each weft having multiple strands of simulated hair extending from a binding strip, the latter being wound about said tube and fastened thereto at a predetermined distance inwardly of its respective tube end, the multiple strands of each weft extending over its said end and being folded and tucked into its respective open end.

3,307,563
PARTIAL WIG WITH GENERALLY ELLIPTICAL FOUNDATION FRAME

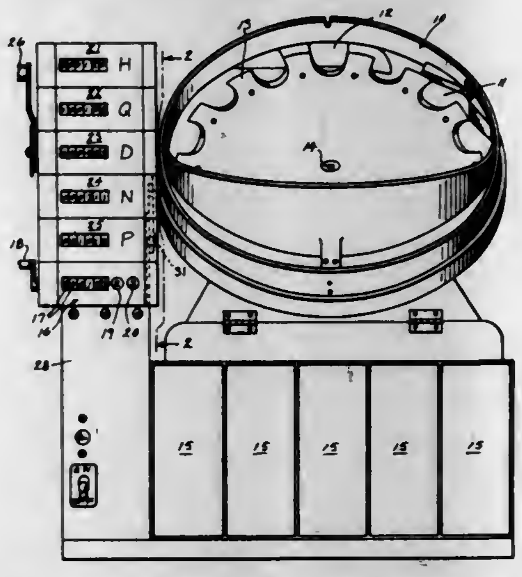
Ruth Regina, 7437 Collins Ave., Miami Beach, Fla. 33141
Filed Apr. 24, 1964, Ser. No. 362,232
10 Claims. (Cl. 132—53)

1. A partial wig comprising a foundation of flexible sheet material generally elliptical in outline and having front and rear boundary edges approaching one another at the ends of the major axis of the ellipse, to form side bands as extension of said major axis, a relatively narrow back band having its ends attached respectively to the ends of said side bands and forming continuations thereof, and hair secured to and distributed over the area of the outer surface of said foundation, said major axis and side bands having a cumulative length substantially equal to the distance between temple portions, measured over the top of a wearer's head.



3,307,564
ADJUSTABLE POSITION COUNTER ASSEMBLY

Arnold R. Buchholz, Watertown, Wis., assignor to Brandt Automatic Cashier Company, Watertown, Wis., a corporation of Wisconsin
Original application July 16, 1962, Ser. No. 210,074, now Patent No. 3,214,096. Divided and this application July 16, 1965, Ser. No. 472,444
1 Claim. (Cl. 133—8)



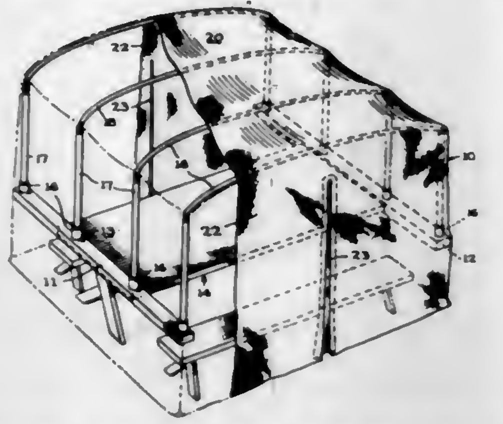
In a coin sorter including a housing, the combination comprising: a mounting plate hingably connected at one end to an edge of said housing; a plurality of coin counters mounted on a front surface of said plate and each including visual count indicia; a bar having an arcuate slot extending from a rear surface of said plate in a plane normal thereto; a headed shaft projecting from said housing and extending through said arcuate slot; and a spring tension washer on said shaft and biased between the head of said shaft and said bar to urge said bar against said housing and thereby to retain said plate in selected inclined positions relative to the vertical for adjustment of said indicia to the line of sight of an operator.

3,307,565
INSECT PROOF CANOPY FOR PICNIC TABLES

Vincent J. Luccarelli, 916 Potomac Ave., Alexandria, Va. 22307
Filed Mar. 30, 1965, Ser. No. 443,863
2 Claims. (Cl. 135—5)

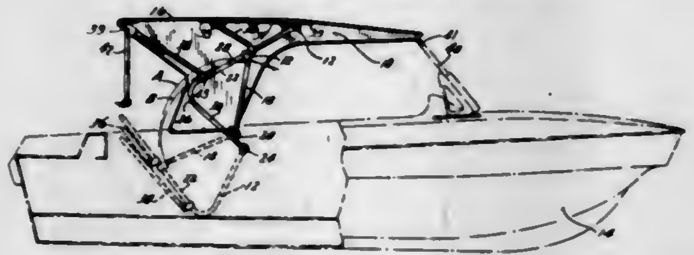
1. An insect proof cover for a picnic table comprising a pair of elongated channel members having sides and bottoms with their open sides facing one another and adapted to embrace the opposite edges of a table, spaced clamping means on one side of each of said channels and adapted to engage the lower face of a table edge, spaced socket members on the opposite side of said chan-

nels, posts removably mounted in said spaced socket members, arcuate ribs removably mounted on posts at one side and extending across the table to the posts at the other side, a flexible fabric net attached to said ribs and adapted when said ribs are removed to be collapsed into a small package.



3,307,566
FOLDING SOFT TOP

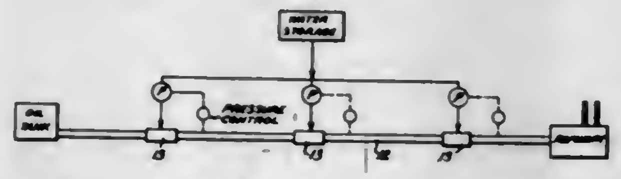
Gordon B. Hale, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,590
20 Claims. (Cl. 135—6)



1. The combination of a boat hull and a convertible top including a frame movable between erected and retracted positions relative to said boat hull, said frame having a first rigid member, a second member having means affording limited flexibility of said second member and a pivot connecting said second member to said first member, means pivotally mounting said first member to said boat hull, and means pivotally mounting said second member to said boat hull at a point on said hull spaced from said means mounting said first member to said boat hull and such that the distance from said pivot to said means mounting said second member to said boat hull is at a maximum at a position between said erected and retracted positions, and whereby said flexibility affords movement between said erected and retracted positions.

3,307,567
METHOD AND APPARATUS RELATING TO PIPELINE TRANSPORT OF FLUIDS

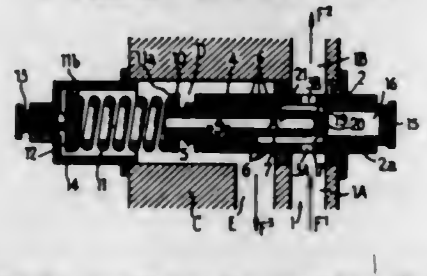
William B. Gogarty, Littleton, Colo., Claude P. Coppel, Woburn, Mass., and George W. Ditrick, Littleton, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Filed Apr. 23, 1964, Ser. No. 362,096
12 Claims. (Cl. 137—13)



1. In a method for lubricating a petroleum product flowing in a petroleum product pipeline wherein water lubricant is injected in the said pipeline through microscopic channels in an injector to form a substantially continuous microscopic film of water lubricant between the inner wall area of the pipeline and the petroleum product which is flowing within the pipeline under pressure, the improvement comprising simultaneously injecting water lubricant into the pipeline through a plurality of circumferential microporous injectors spaced at substantial intervals and maintaining the fluid pressure drop from the outside wall of the injector to the inside wall of the injector greater than the pressure drop from the top of the pipeline to the bottom of the pipeline and maintaining a pressure on the water lubricant sufficient to introduce water lubricant into said pipeline in amounts sufficient to maintain only a microscopic lubricant film from one injector to the next injector without substantial buildup in lubricant film thickness along substantial distances of pipeline.

3,307,568
HYDRAULIC PRESSURE REGULATOR

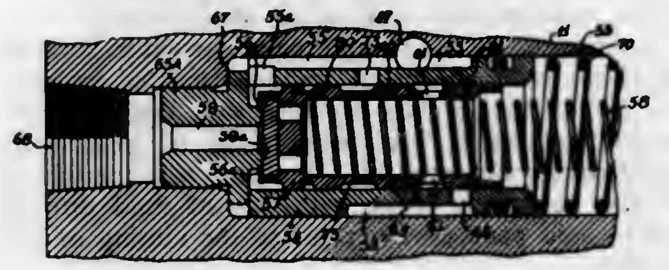
Berthold Gartner, Rueil-Malmaison, France, assignor to Bronzavia, Courbevoie, France, a French body corporate
Filed Mar. 27, 1964, Ser. No. 355,290
Claims priority, application France, Apr. 3, 1963, 930,256
9 Claims. (Cl. 137—115)



1. A hydraulic regulator for insertion between a hydraulic generator and a receiving system connected to the delivery side of the generator so as to maintain the delivery pressure of the generator constant, said regulator comprising means defining a body, a fixed sleeve mounted in the body and having an inner chamber, transverse ports formed in the sleeve, a conduit communicating with one of the ports and adapted to be connected to the delivery side of the generator, a second conduit communicating with the other of said ports and adapted to be connected to the receiving system, whereby the fluid in said conduits flows constantly through the sleeve by way of the ports, a slide valve axially slidable in the sleeve, escape orifices provided in the sleeve, an escape conduit at atmospheric pressure in communication with the inner chamber by way of the orifices, a masking portion provided on the slide valve and co-operating with the orifices so as to close to a varying extent the fluid passage section of the orifices in accordance with the fluid pressure prevailing in the inner chamber, a modulated pressure chamber in the body, a variable-section nozzle putting the modulated pressure chamber in communication with the inner chamber, the variable-section nozzle comprising an end portion of the slide valve and a seating fixed in the body, the end portion of the slide valve having a cross-sectional size which varies axially of the slide valve, a spring disposed in the body and bearing against and biasing the slide valve to move axially in the sleeve, the pressure of the fluid in the modulated pressure chamber acting on said end portion of the valve in the same direction as the pressure of the fluid in the inner chamber which acts on another portion of the valve so that the actions of said pressures are added together, said spring biasing the valve in a direction opposed to said actions, the regulator further comprising a calibrated fixed-section orifice formed in said end portion of the slide valve, and means defining a passageway putting the side of the fixed-section orifice remote from the modulated pressure chamber in communication with the escape conduit whereby the modulated pressure chamber is in permanent communication with the escape conduit.

3,307,569
RELIEF AND BY-PASS VALVE FOR FUEL BURNERS

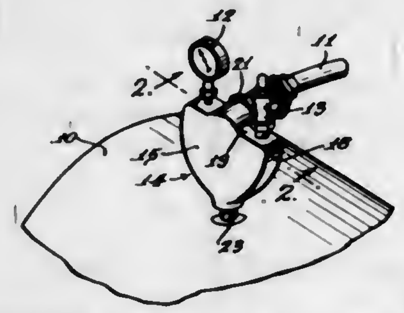
Robert W. Erikson, Rockford, Ill., assignor to Sunstrand Corporation, a corporation of Illinois
Filed Jan. 6, 1964, Ser. No. 335,825
4 Claims. (Cl. 137—116)



1. In a valve apparatus for controlling the flow of fluid fuel from a fuel pump to a fuel burner, a valve housing having means providing a valve bore, a valve member slidable in the valve bore, a burner port adjacent one end of the valve bore for delivering pressurized fluid, a return port adjacent the other end of the bore for delivering relieved fluid at low pressure, a valving surface on said valve member adjacent one end thereof movable relative to said burner port for controlling the flow of fluid therethrough, a valve inlet manifold in the housing adapted to receive fluid under pressure from a pump, a passage in the housing connecting said inlet manifold with said one end of the bore for supplying fluid to said burner port upon valve opening movement of the valve member, a relief passage leading from the inlet manifold to the valve bore, a first external recess on the valve member continuously communicating with said return port adapted upon predetermined valve opening movement to connect the relief passage and the return port, a second external recess on the valve member intermediate said valving surface and said first external recess, passage means in the housing constantly communicating the inlet manifold and said second external recess to minimize leakage of fluid along the valve member between the burner valving surface and the second external recess, restricted passage means in said valve member between said first and second external recesses for continuously bleeding a portion of the fluid in the inlet manifold to the return port, and means for moving the valve member.

3,307,570
AIR BAFFLE MANIFOLD

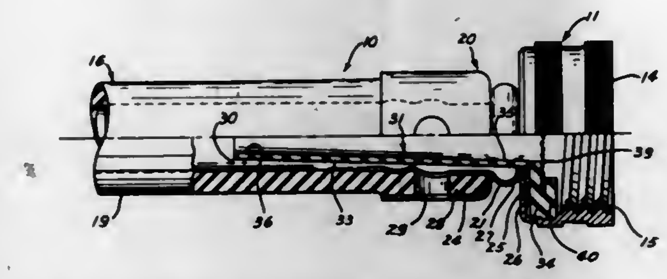
Robert B. West, Decatur, Ill., assignor to Tryco Manufacturing Company, Inc., a corporation of Illinois
Filed Apr. 21, 1964, Ser. No. 361,482
4 Claims. (Cl. 137—209)



1. In combination, a liquid fertilizer tank for corrosive liquid and a manifold therefor, said manifold having a casing with an interior chamber, a first fluid port opening to said chamber and connecting said casing to the tank, a second fluid port in said casing for supplying compressed air to said chamber and thereby to said tank, and a pair of fluid ports at the top of the casing above the first fluid port and opening to said chamber, a pressure gauge for the tank connected to one top port, a relief valve for the tank connected to the other top port, and a baffle in the chamber overlying said first fluid port for contact by liquid splashing up from the tank and for directing said liquid back into the tank.

3,307,571
VACUUM BREAKER

Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Apr. 13, 1964, Ser. No. 359,036
2 Claims. (Cl. 137—218)



1. In a vacuum breaker device for a fluid supply system, the combination comprising: a fluid conduit defined by at least one wall member and having an inlet end and an outlet end; connector means for attaching said conduit to said fluid supply system; an internal sleeve member positioned in said conduit and extending therefrom at said inlet end for rotatably receiving said connector means; an external sleeve member positioned on the outside of said wall member at said inlet end, said inlet end of said conduit being fixed between said internal and external sleeve members for attaching said connector to said conduit wall member; sealing means for preventing leakage from said fluid conduit when said connector is attached to said fluid supply system; vent means extending through said external sleeve, said wall member, and said internal sleeve to vent said conduit to the atmosphere; a valve member within said conduit including an annular ingress portion disposed within said connector means and a resilient tubular portion connected to said annular ingress portion and with said annular ingress portion defining an ingress opening at one end thereof, said tubular portion comprising an expandable and collapsible thin wall juxtaposed to said vent means and defining a relatively smaller egress opening at the other end of said tubular portion disposed between said vent means and said conduit outlet and uniformly tapered between said ingress and egress openings whereby positive fluid pressure in said ingress opening causes expansion of said tubular portion to close said vent means and normal negative pressure in said ingress opening causes collapsing of said tubular portion to open said vent means and seal said egress opening.

3,307,572
APPARATUS FOR SEALING THE SLUICE SPACES FOR GASIFICATION RESIDUES

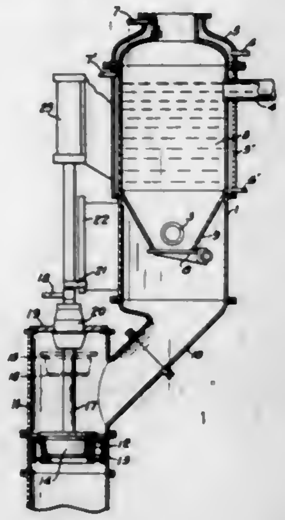
Arnold Klapp and Hans Heitkamp, Essen, Germany, assignors, by mesne assignments, to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed Sept. 5, 1963, Ser. No. 306,803
4 Claims. (Cl. 137—240)

1. A valve chamber for receiving chilled residue from a collecting space comprising:
- (a) a wall and end closures defining said valve chamber adapted to communicate with said collecting space;
- (b) a valve seat mounted in one end closure that is made of a resiliently deformable material;
- (c) a hollow frusto-conical valve element disposed in said valve chamber and movable into and out of engagement with said valve seat, said frusto-conical

valve having a plurality of apertures therein in spaced apart first and second regions adjacent the respective smaller and larger ends of said valve;

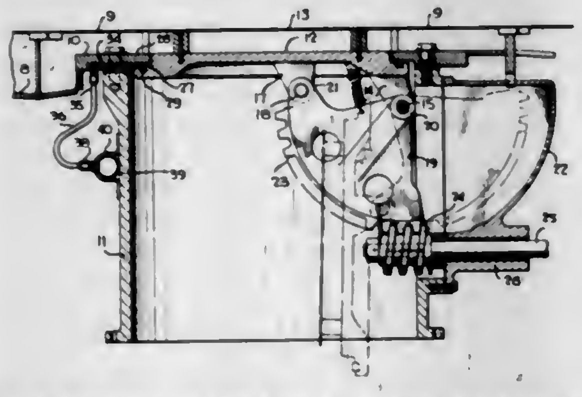
(d) means to supply a liquid to said hollow valve at a pressure greater than the pressure within said valve chamber; and

(e) means mounted to said other end closure to reciprocate said valve relative to said valve seat whereby said liquid flowing in jet form from said apertures in the first region of said valve impinges upon said valve seat and cleans it as said valve enters said valve seat, and said liquid flowing in jet form from said apertures in said second region impinges upon said valve seat a second time as said valve completes seating.



3,307,573
FLUSHING MEANS FOR A GRAIN DISCHARGE VALVE

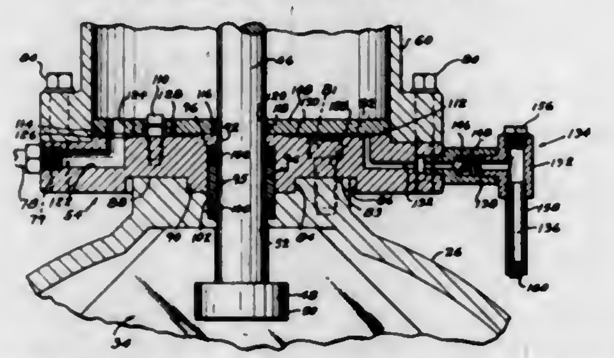
Joshua Epstein, Oreland, Pa., assignor to Acme Process Equipment Company
Filed Nov. 8, 1963, Ser. No. 322,459
2 Claims. (Cl. 137—240)



1. In a steeping tub having a bottom, an annular valve seat attached to said bottom, a hinged valve cover attached to said bottom and movable between a closed position in which said valve cover engages said valve seat and an open position in which said valve cover is disengaged from said valve seat, said valve seat having an overhanging peripheral flange and said valve cover having a peripheral ledge positioned to engage said peripheral flange in the closed position of said valve cover, and means for moving said valve cover between the open and closed positions thereof, the improvement comprising a plurality of passageways formed in said annular valve seat, said passageways being directed between said peripheral flange and said peripheral ledge, an annular manifold attached to said bottom, a plurality of conduits each connected between a corresponding one of said passageways and said annular manifold, a source of fluid under pressure coupled to said manifold, flushing valve means coupled between said fluid source and said manifold, a solenoid valve actuator connected to said flushing valve means for opening and closing said flushing valve means, cam means coupled to said hinged valve cover and movable therewith, switch means engageable by said cam means to be actuated thereby when said valve cover approaches its closed position and to be de-actuated thereby when said valve cover reaches its closed position, and said switch means being electrically coupled to said solenoid valve actuator to open said flushing valve means in response to the actuation of said switch means and to close said flushing valve means in response to the de-actuation of said switch means, thereby automatically flushing said peripheral flange and peripheral ledge with jets of fluid directed thereto by said passageways prior to the closing of said valve cover.

3,307,574
DRAIN STRUCTURE FOR VENTING LEAKED FLUID FROM VALVE STEM PACKING

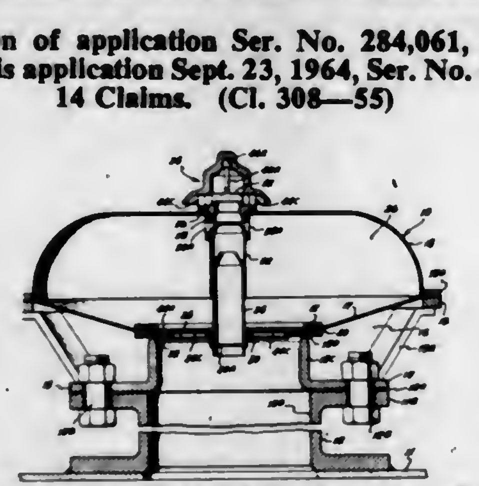
Clifford E. Anderson, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Feb. 7, 1964, Ser. No. 343,402
8 Claims. (Cl. 137—312)



1. A valve for use in a corrosive environment, said valve comprising a valve body formed with a valve chamber therein, a valve member positioned for reciprocal movement within the valve chamber, a stem extending through said body for opening and closing said valve member, a stem operator having a base portion thereof fixed to said valve body, sealing means for normally preventing the flow of fluid between said valve body and said stem operator, drain means including a check valve for transporting fluid from said sealing means to the exterior of said valve upon failure of said sealing means, means for sealing said check valve from contact with said corrosive environment prior to failure of said sealing means.

3,307,575
PILOT OPERATED VACUUM AND PRESSURE RELIEF VALVE

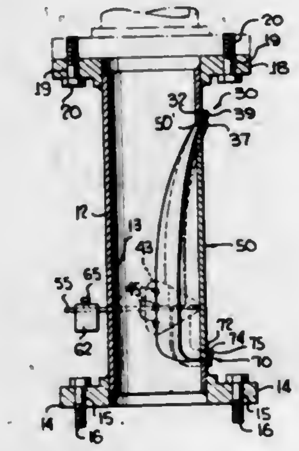
Horace Dickinson, South Gate, Clarence E. Stallard, Lakewood, and Robert P. Hanke, Whittier, Calif., assignors to Varec, Inc., Compton, Calif., a corporation of California
Continuation of application Ser. No. 284,061, May 29, 1963. This application Sept. 23, 1964, Ser. No. 400,632
14 Claims. (Cl. 308—55)



11. In a pressure activated valve structure of the character described, a diaphragm, a valve seat, valve means on said diaphragm and cooperating with said valve seat, means including one side of said diaphragm and defining a first chamber, means including the other side of said diaphragm and one side of said valve means and defining a second chamber, means including the other side of said valve means and said seat and defining a third chamber, said first chamber being vented to the atmosphere, a passageway through said valve member communicating said third chamber with said second chamber, said valve means carrying a pressure responsive valve which is normally closed and which is automatically opened when the pressure in said second chamber exceeds the pressure in said third chamber to intercommunicate said second and third chambers.

3,307,576
AUTOMATIC DUMP VALVE

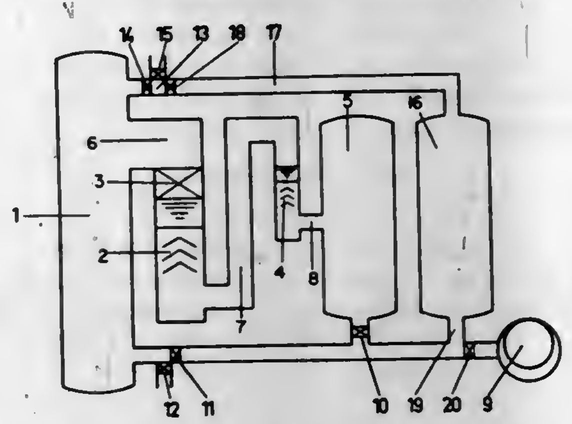
William A. Himes and Alfred E. Graham, Newport News, Va., assignors to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia
Filed Apr. 10, 1964, Ser. No. 358,894
8 Claims. (Cl. 137—527.8)



1. Automatic dump valve apparatus for use in the pressure pumping line of underwater mining operations at great depths and wherein the normal operating pressure within said apparatus is greater than the ambient pressure, comprising an elongated body means having a passageway formed longitudinally therethrough, said body means having an opening formed therein providing communication between said passageway and the exterior of said body means, valve means pivotally supported by said body means and shaped substantially complementary to said opening in said body means so as to substantially close said opening when in closed position and having a slight clearance with respect to said opening, said valve means pivoting to an open position automatically under certain conditions of pressure on opposite sides thereof so as to cause material moving in one direction through the passageway in said body means to pass outwardly of said body means, and sealing means for providing a seal between said body means and said valve means and for preventing leakage through the clearance between said body means and said valve means, said sealing means being mounted outwardly of said body means and said valve means and providing a fluid-tight seal therebetween when said valve means is in its closed position, said sealing means including a first sealing portion fixedly secured to the outer portion of said body means, said sealing means also including a second sealing portion fixedly secured to the outer portion of said valve means, the sealing portions cooperating to provide an effective fluid-tight seal completely around said valve means when in its closed position.

3,307,577
VACUUM APPARATUS

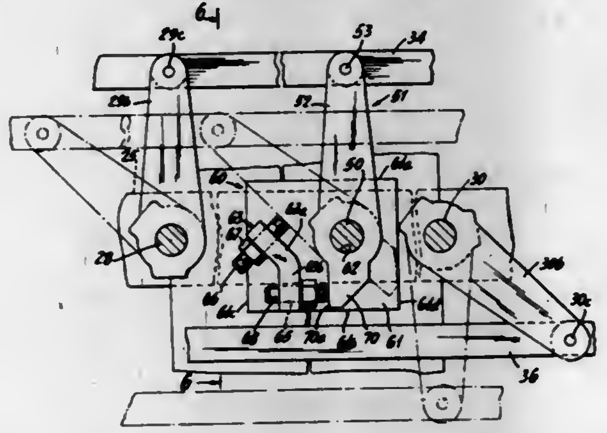
Rudolf Dörwald and Helmut Reisinger, both of Triesen, Liechtenstein, assignors, by mesne assignments, to Bendix Balzers Vacuum, Inc., Rochester, N.Y., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,400
Claims priority, application Austria, May 21, 1963, A 4,084/63
1 Claim. (Cl. 137—567)



Vacuum apparatus having a receiver to which a diffusion pump and forevacuum pump means are operatively connected, a lock chamber connected to said receiver and adapted for the introduction into and removal of objects from said receiver, a first vacuum reservoir adapted to be evacuated by said forevacuum pump means operatively connected to said diffusion pump whereby said diffusion pump may exhaust into said first vacuum reservoir while said forevacuum pump means is temporarily shut off, and a second vacuum reservoir operatively connected to said forevacuum pump means and adapted to be connected directly to said lock chamber, whereby said lock chamber may be evacuated into said second vacuum reservoir.

3,307,578
VARIABLE TEMPERATURE FRESH AIR OR OTHER GAS SUPPLY UNITS

Andrew Chaloka, Clark, N.J., assignor to L. J. Wing Mfg. Co., Division of Aero-Flow Dynamics, Inc., Linden, N.J., a corporation of New York
Filed Mar. 31, 1964, Ser. No. 356,315
5 Claims. (Cl. 137—601)

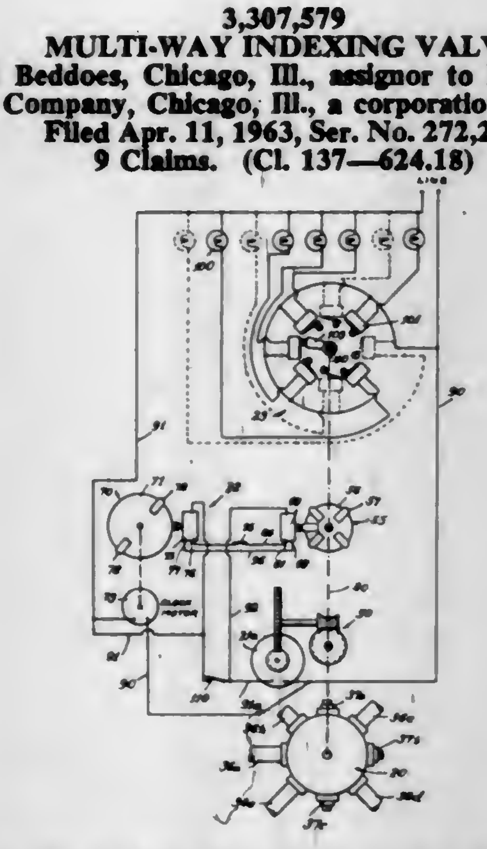


3. In a gas supply unit, in combination, a casing having passages therethrough, each passage having an inlet and an outlet, a plurality of dampers in the casing to control passage of gas through said passages from the inlets to the outlets thereof, means to pivotally and non-slidably mount said dampers on parallel axes in a common plane, parallel crank arms fixed to rotate with said dampers about said parallel axes, a connector bar, means to pivotally and non-slidably connect said crank arms to said bar about parallel axes in a common plane, a bracket comprising a plate fixed to said casing, a drive shaft parallel to said axes, and journalled in a bearing

opening formed in said plate, a control arm parallel to said crank arms, mounted for rotation with said drive shaft, means to pivotally connect said control arm to said connector bar, said plate being provided with an integral lug having a pair of connected wing portions forming an obtuse angle therebetween, divergent set-screws screwed to said wing portions, and forming an acute angle therebetween, and said control arm being provided with an integral extension adapted to contact one of said set-screws upon rotating said control arm in one direction, and said control arm being adapted to contact the other set-screw upon rotating said control arm in an opposite direction, said bearing opening for said drive shaft being located within said acute angle.

3,307,579
MULTI-WAY INDEXING VALVE

Hubert Beddoes, Chicago, Ill., assignor to Pacific Flush Tank Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 11, 1963, Ser. No. 272,248
9 Claims. (Cl. 137—624.18)

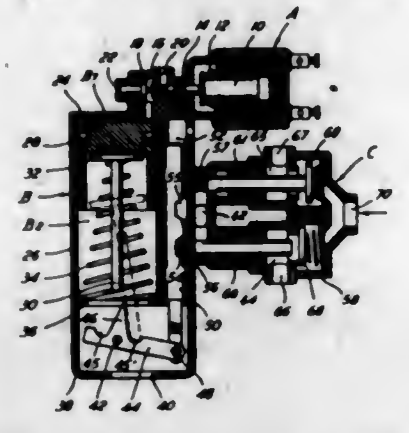


4. For use in a fluid distributing system the combination of a valve casing having an inlet and a plurality of circumferentially spaced outlets and a valve element rotatable in said casing and having a port of greater circumferential length than said outlets, means for automatically indexing said valve element to sequentially connect said port to each outlet comprising first means for moving said valve element through a relatively small angle whereby said port remains in registry with a first one of said outlets during such movement and a second means for moving said valve element thereafter through a greater angle than said first movement whereby said port is moved out of registry with said first outlet and into registry with the next succeeding outlet, said first and second means being constructed so that each outlet remains connected to said port for a predetermined time.

3,307,580
DEVICE FOR COMMUTATIVELY CREATING SHUT-OFF MEMBERS FOR FLUIDS IN GENERAL PARTICULARLY FOR RECIPROCATING MOTORS

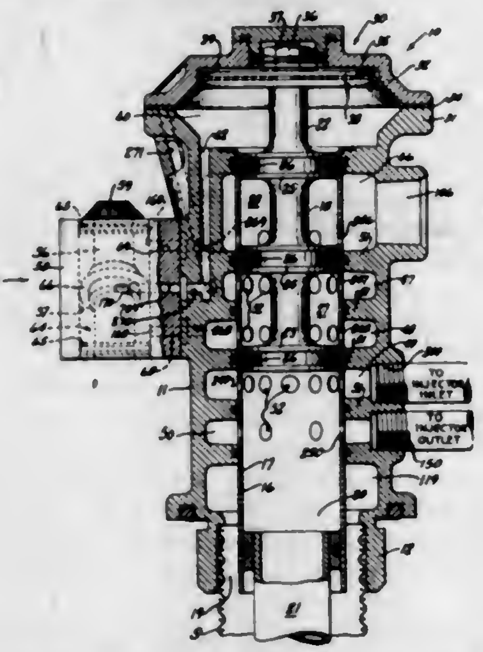
Giuseppe Alfieri and Roberto Moriondo, Milan, Italy, assignors to Fabbrica Italiana Magneti Marelli S.p.A., Milan, Italy, a corporation of Italy
Filed Sept. 18, 1964, Ser. No. 397,409
Claims priority, application Italy, Sept. 16, 1963, 18,921/63
4 Claims. (Cl. 137—624.18)

1. A device for commutatively controlling flow of fluids comprising a pivoted rocker member having a deflector thereon, a cylinder, a piston within said cylinder, a rod connecting with said piston, said rod being adapted to contact said deflector when said piston is actuated and be deflected alternately to one or another end of said rocker member to move said rocker member about said pivot alternately in one or another direction, means for injecting fluid into said cylinder for actuating said piston, a slide member pivotally connected to one end of said rocker member and adapted to slide along a path to one position when said rocker member is moved in one direction and to another position when said rocker member is moved in another direction, a valve having a passage therein through which fluids may pass, and means responsive to the position of said slide for closing said passage when said slide is in said one position and opening said passage when said slide is in said other position.



3,307,581
CONTROL VALVE FOR WATER SOFTENERS

John Rudelick, Milwaukee, Wis., assignor to Bruner Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed May 28, 1964, Ser. No. 370,823
1 Claim. (Cl. 137—625.29)

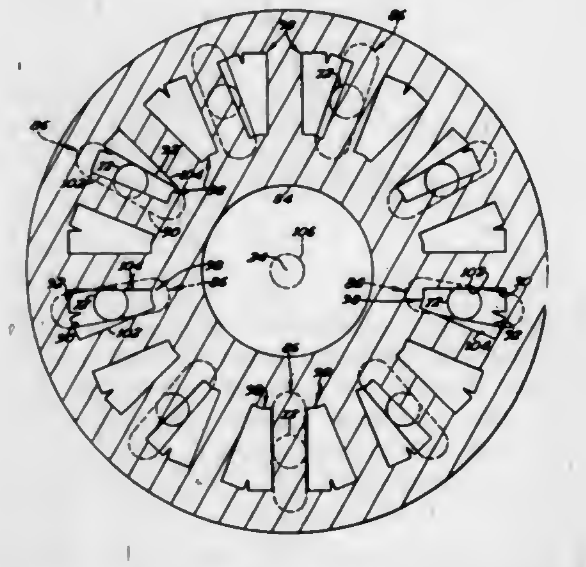


A control valve for governing service and regenerating flow of fluids in a water softening system, comprising:
- (A) an elongated valve body having a bore extending lengthwise therein;
- (B) a drain passage in the body communicating with the bore at a location near one end of the body and opening to a drain port at its exterior;
- (C) other passages in the body respectively opening to ports at the exterior thereof and communicating with the bore at locations spaced farther from said one end of the body, said other passages providing
  - (1) a source water inlet passage having a portion adjacent to the drain passage,
  - (2) a service passage,

  - (3) first and second tank passages,
  - (4) and a brine inlet passage;
- (D) a valve element slidable in the bore between service and regenerating positions to control communication between said passages and thus effect service and regenerating operation of a water softening system governed by the valve;
- (E) means on said one end of the body defining a hydraulic motor comprising
  - (1) a housing which is coaxial with the bore,
  - (2) and a fluid pressure responsive actuator operatively connected with the valve element and dividing the housing into a pair of pressure chambers, said actuator being movable in opposite axial directions to effect shifting of the valve element between its service and regenerating positions, in response to pressurization of each chamber, in turn, at times when the other chamber is vented;
- (F) means in the body defining a pair of passageways, one for each chamber and communicating therewith, said passageways extending lengthwise of the body past a portion of the drain passage;
- (G) and a pilot valve on the exterior of the valve body, in spaced relation to said one end thereof and to said motor, said pilot valve having
  - (1) an inlet port opposite a portion of the source water inlet passage and communicating therewith,
  - (2) an outlet port opposite a portion of the drain passage and communicating therewith,
  - (3) a pair of service ports, one for each of said chamber connected passageways and communicating therewith,
  - (4) and a valve member movable from service to regenerating positions to in turn communicate each of its service ports with its inlet port and to communicate the other of its service ports with its outlet port.

3,307,582
PORTING ARRANGEMENT FOR FLUID PRESSURE DEVICE

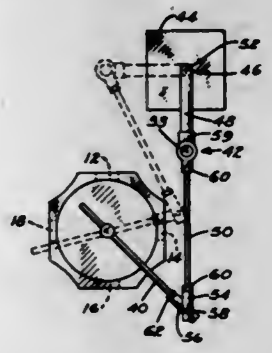
Hugh L. McDermott, Minneapolis, Minn., assignor to Char-Lynn Company, Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 4, 1965, Ser. No. 422,925
5 Claims. (Cl. 137—625.11)



1. A valve comprising first and second members which are relatively rotatable about an axis and have first and second surfaces which slidably engage each other in a plane, an imaginary construction circle in said plane having the center thereof coincident with said axis, a first set of circumferentially arranged ports in said first surface having sides which are parallel to each other and tangential to opposite sides of said circle, and a second set of circumferentially arranged ports in said second surface spaced the same radial distance from said axis as said first set of ports, said second set of ports having adjacent sides of adjacent ports which are parallel to each other and tangential to opposite sides of said circle.

3,307,583
VALVE ACTUATING MEANS

Russell W. Harter, Springfield, Va., assignor to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia
Filed May 1, 1964, Ser. No. 364,139
11 Claims. (Cl. 137—625.43)



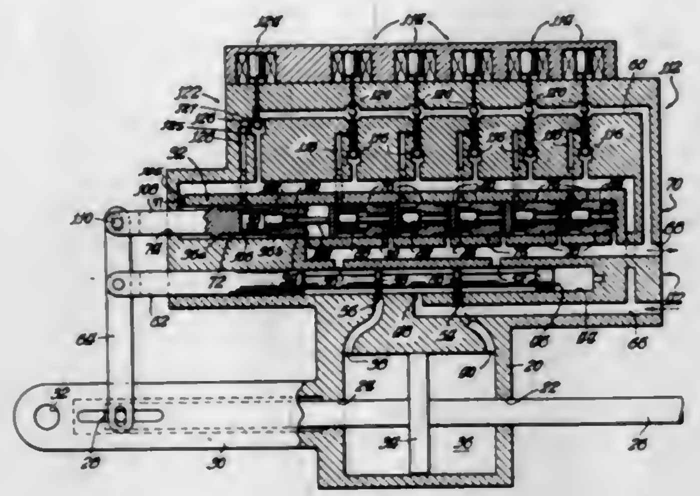
1. In combination,
- (a) a multi-port rotary valve having at least three ports and a valve member mounted on a shaft for rotation within said valve, one end of said shaft having a recess extending transversely thereacross,
- (b) rotatable motor means,
- (c) crank means drivingly connected to said motor means,
- (d) a connecting rod having one end thereof pivotally attached to one end of said crank means, and
- (e) a valve operating lever having one end thereof pivotally attached to the other end of said connecting rod, said lever being received within said recess in said shaft to permit relative transverse motion between said lever and said shaft but to prevent relative rotational motion therebetween thus effecting a rotary driving relationship between said lever and said shaft, said lever being received within said recess at a point on said lever displaced from said one end of said lever, said other end of said connecting rod, said one end of said crank and the center of rotation of said crank being co-linear
  - (1) when said lever and said valve members are in a first predetermined position, and
  - (2) when said lever and said valve members are in a second predetermined position, said second position being angularly displaced from said first position.

3,307,584
CONTROL SYSTEM

Clyde F. Czernek, Sepulveda, Calif., assignor to Weston Hydraulics, Limited, Van Nuys, Calif., a corporation of California
Original application Aug. 5, 1963, Ser. No. 299,969, now Patent No. 3,229,588, dated Jan. 18, 1966. Divided and this application Oct. 22, 1965, Ser. No. 525,780
6 Claims. (Cl. 137—625.64)

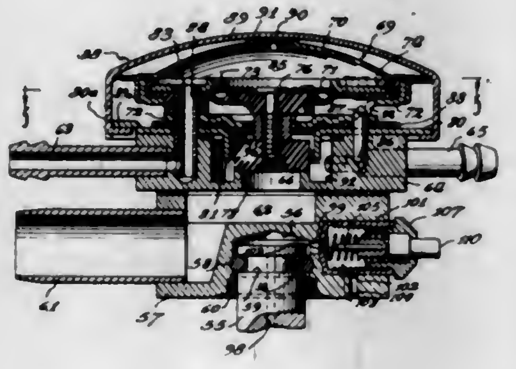
1. A servo valve suitable for operating an actuator comprising a housing having a bore formed therein, a plurality of cylinders arranged in end-to-end relationship slidably positioned within said bore forming a series of cylinders, a piston reciprocally mounted within each said

cylinder, a piston rod associated with each piston extending from said cylinder, an inlet passage within said housing adapted to receive fluid under pressure, means connecting said inlet passage to said first bore to provide a bias against said series, means connecting said inlet passage to said first bore to provide for admission of fluid within each said cylinder to cause reciprocation of said piston with respect to said cylinder, a flow control valve suitable to direct fluid to and away from said actuator, means connecting said inlet passage with said flow control valve, means driven by said series of cylinders to actuate said flow control valve, and an outlet passage interconnected with said flow control valve and said first bore.



3,307,585
PULSATOR FOR MILKER

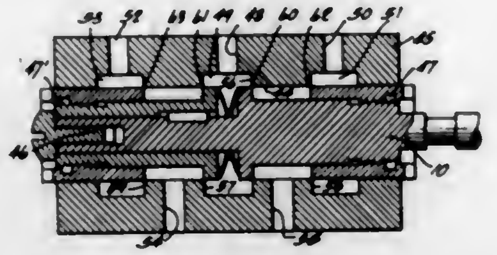
Lorell John Schilling and Orville Oanes, both of Galesville, Wis., assignors to Schilling Electric Co., a corporation of Wisconsin
Original application Aug. 6, 1962, Ser. No. 214,994, now Patent No. 3,236,208, dated Feb. 22, 1966. Divided and this application May 24, 1965, Ser. No. 458,001
5 Claims. (Cl. 137—625.66)



1. A vacuum operated milker pulsator, comprising: a body having a vacuum inlet, a passage therethrough and an outlet; a valve seat in said passage; a valve control diaphragm assembly on said body, said assembly having a top plate and a diaphragm sealed therewith defining a control space; a valve member connected with said diaphragm and movable therewith toward and away from said valve seat; an inlet to said control space for connection with a source of alternate vacuum and air to move said diaphragm with respect to said top plate and said valve with respect to said valve seat; and a cover removably securing said valve control diaphragm assembly to said body.

3,307,586
SERVO VALVE

Robert Norman Meyer, Anaheim, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Apr. 1, 1964, Ser. No. 356,452
3 Claims. (Cl. 137—625.69)



1. A valve assembly for controlling the flow of a hydraulic fluid comprising:

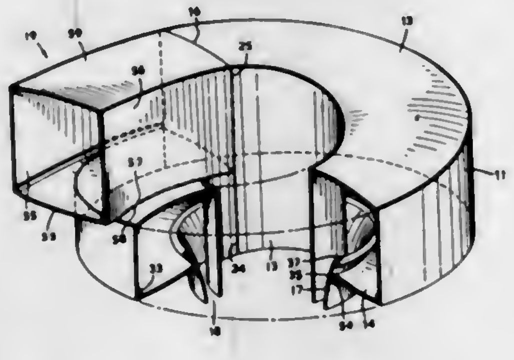
a valve body having a longitudinal bore therethrough, a fluid conducting annual chamber contained within said bore of said valve body;

a valve spool slidably contained within said bore, said valve spool having a plurality of longitudinally spaced lands thereon, said valve spool being formed of first and second members, said second member being longitudinally slidably mounted on a portion of said first member, each of said first and second members having one of said lands thereon, said lands coacting to form a single unit capable of preventing fluid flow to and from said annular chamber;

a longitudinal adjustment means, said adjustment means being operable between said first and second members, whereby the longitudinal dimension of said coacting lands are to be adjustably spaced to be equal to the longitudinal dimension of the annular chamber.

3,307,587
SCROLL INTAKE FOR ROTARY POWER CONVERSION MACHINES

John Anthony Rylatt, Acton, Ontario, Canada, assignor to Hawker Siddeley Canada, Ltd., Malton, Ontario, Canada, a corporation of Canada
Filed July 28, 1964, Ser. No. 385,641
9 Claims. (Cl. 138—39)



2. A scroll duct capable of fabrication from sheet metal elements in the form of surfaces of revolution for rotary power conversion machines comprising, cylindrical concentric outer and inner walls, an annular bottom wall oriented transversely to the common axis of the outer and inner walls and extending from the outer wall inwardly towards but terminating short of the inner wall thus leaving an annular passage between the bottom wall and the inner wall, a helicoidal top wall bridging between the outer and inner walls and coiling upwardly through substantially 360° from a lower extremity spaced above the bottom wall to an upper extremity, there being thus a four-sided opening into the scroll duct defined between the outer, inner and top walls.

3,307,588
METHOD FOR SEALING PIPE AND METHOD FOR PREPARING COMPOSITION USEFUL THEREIN

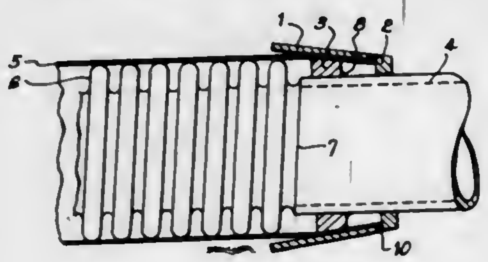
Peter J. Hylak, Chicago, Ill., assignor to Institute of Gas Technology, a corporation of Illinois
No Drawing. Filed Oct. 28, 1963, Ser. No. 319,580
9 Claims. (Cl. 138—97)

1. A process for sealing substantially uncleaned pipe comprising the step of excavating the space around a leaking portion of said pipe, placing a form around said leaking portion of pipe, and filling said form to cover said leaking portion with a concrete-making, Portland cement composition containing about .0005–.05 part by weight of a surface active agent per part of cement, said surface active agent being selected from the group consisting of nonyl phenol polyglycol ethers containing 4½–10½ mols of ethylene oxide, alkyl aryl sulfonates, and sodium alkyl aryl sulfonates the alkyl of said sulfonates having 8 to 15 carbons and the aryl being a benzene ring, said composition, when cured, being substantially impermeable to a gaseous medium, being capable of adhering to the substantially uncleaned surface of said pipe, and having a shrinkage of less than about 0.1% by volume.

9. A process for preparing a concrete-making cement composition useful for sealing leaking portions of substantially uncleaned pipe, said process comprising the steps of mixing together about 1.0 part by weight of Portland cement, about 2.6 parts by weight of concrete sand, about 2.0 parts by weight of coarse aggregate, about .025 part by weight of iron powder, adding a solution containing about .6 part by weight of water and about .02 part by weight of calcium chloride, and then gently folding into the mixture about .002 part by weight of a surface active agent of nonyl phenol polyglycol ethers containing 9–10 mols of ethylene oxide, said surface active agent being capable of wetting the interface between said concrete-making composition and the surface of said pipe, whereby, when cured, said composition is substantially impermeable to a gaseous medium, is capable of adhering to the substantially uncleaned surface of said pipe, and has a shrinkage of less than about 0.1% by volume.

3,307,589
ATTACHMENT OF BRAID-COVERED CONVOLUTED TUBING TO SOLID END SLEEVES

Kenneth John William Sheffield, Witney, England, assignor to DK Manufacturing Company, Batavia, Ill., a corporation of Illinois
Filed Apr. 20, 1964, Ser. No. 360,873
Claims priority, application Great Britain, May 2, 1963, 17,436/63
10 Claims. (Cl. 138—109)



1. In a flexible metal conduit,

the combination comprising a flexible convoluted metal tube,

a tubular metal braid received around said tube,

a tubular generally cylindrical end section connected to one end of said tube,

an externally tapered annular member rigid with said end section and projecting outwardly beyond the outside thereof,

an internally tapered ferrule received around said externally tapered annular member,

said braid extending between said member and said tapered ferrule and being clamped therebetween by the wedging action therebetween,

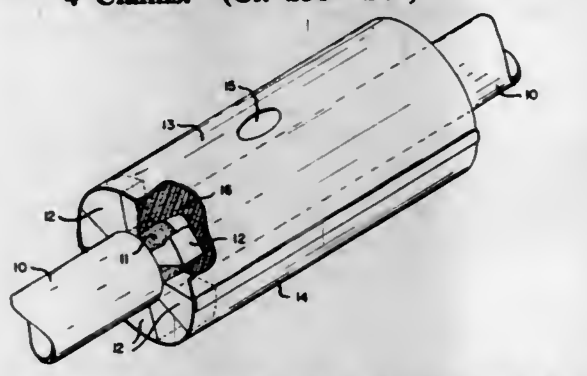
a ring adjacent the end of said ferrule remote from said convoluted tube,

the end of said braid extending outwardly between the end of said ferrule and said ring,

and a weld uniting the end of said braid to said ferrule and said ring to transmit the tension in said braid to said ferrule so that said tension will increase the wedge clamping action between said ferrule and said tapered member.

3,307,590
PIPE INSULATION

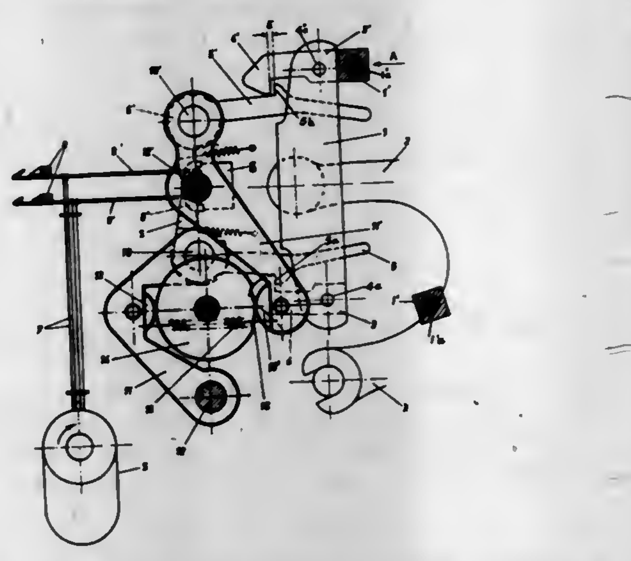
Charles R. Carlson, P.O. Box 61, Jamestown, N.Y. 14701
Filed Oct. 15, 1963, Ser. No. 316,362
4 Claims. (Cl. 138—149)



2. A pipe insulation in the form of an integral unit comprising a thin shell of aluminum spaced from the pipe to be protected, spaced insulating spacers of preformed urethane foam between the pipe and shell holding the outer shell in position about the pipe to be protected and foamed urethane foamed between the pipe and shell filling the shell and self adhering to the shell and to the insulating spacers to form a continuous unitary mass.

3,307,591
DOUBLE-LIFT DOBBIES

Heinrich Hugo Stäubli, Horgen-Zurich, Switzerland, assignor to Gebr. Stäubli & Co., Horgen-Zurich, Switzerland, a company of Switzerland
Filed May 11, 1965, Ser. No. 454,924
Claims priority, application Switzerland, May 15, 1964, 6,387/64
7 Claims. (Cl. 139—71)

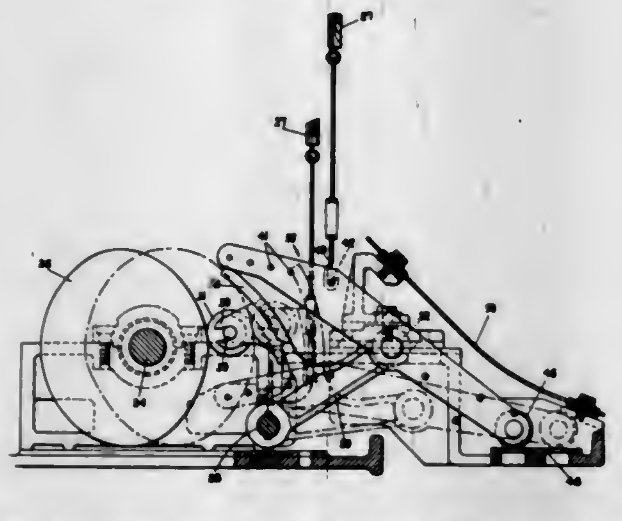


1. For use in a loom having pattern means comprising instructions corresponding to instructions to control a top shed position and a bottom shed position, a double-lift dobby comprising a jack lever operable to a first and

second operative position corresponding to positions for effecting control of a top shed position and a bottom shed position, a baulk for said jack lever for actuating said jack lever to said two operative positions and having two opposite end portions each operable to two operative positions, paired arresting hooks pivotally mounted for selectively arresting and holding a respective end portion of said baulk in one of said positions and for freeing said end portions to allow said baulk to move to said second operative position, catch means on said baulk engageable by said arresting hooks for arresting said baulk, and actuation means pivotally actuating said arresting hooks to positions for engaging said catch means of a respective baulk and for causing said arresting hooks to free said catch means as determined by said pattern means, the improvement which comprises means cooperative with said actuation means to impart to said arresting hooks an additional movement from positions in which said actuation means positions said arresting hooks to remove clearance between said catch means and said arresting hooks thereby to carry out a substantially jolt-free engagement between said hooks and said catch means.

3,307,592
LOOM SHEDDING MECHANISM

Joseph R. Evans, Milford, and John H. Blackburn, Uxbridge, Mass., assignors to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Aug. 16, 1965, Ser. No. 479,812
14 Claims. (Cl. 139—79)

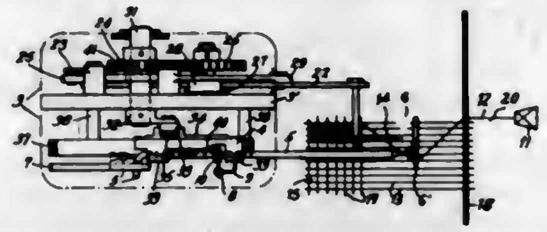


10. A treadle for a loom having a bifurcated first end and a second end being adapted for generally horizontal movement, a pivotal point on said treadle intermediate said ends, two series of connecting means opposingly disposed on said bifurcated end for actuating a loom harness frame, an angular lever having a first arm attached to said treadle at said pivotal point, a cam follower fixed to a second arm of said lever, said cam follower and said second arm being adapted to oscillate through said bifurcated end, said lever being pivotally supported at its apex.

3,307,593
LOOM HAVING MEANS FOR THE FORMATION OF SELVEDGES

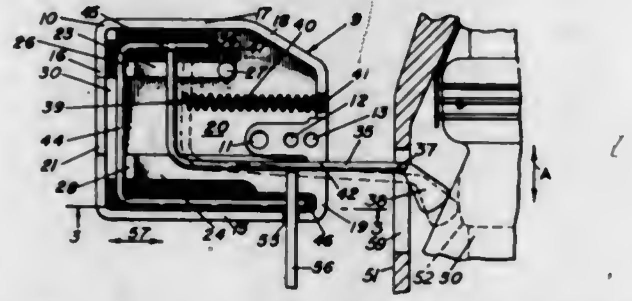
Erich Neumann, Velbert, Rhineland, Germany, assignor to Raymond Dewas, Amiens (Somme), France
Filed June 25, 1963, Ser. No. 290,554
Claims priority, application Germany, June 26, 1962, E 20,392
5 Claims. (Cl. 139—122)

1. In a loom wherein sheds are formed in a warp to receive weft threads and auxiliary thread loops, a selvedge forming device comprising a curved eyelet needle carrying said auxiliary thread, a shaft carrying said needle and means actuating said shaft for moving said needle parallel to the warp and pivoting it transversely thereto to cause said needle to penetrate into the shed by this helical movement and to present said auxiliary thread thereto, said means comprising a ramp forming a cam which is adjustable in the axial direction of the needle-carrying shaft.



3,307,594
FILLER FEELER

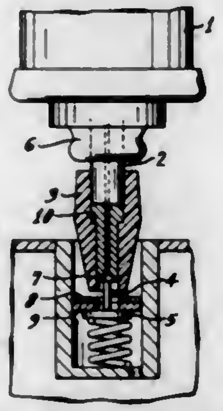
Robert L. Moore, Canton, Ga. 30114
Filed June 3, 1965, Ser. No. 461,020
7 Claims. (Cl. 139—281)



2. A filling detector comprising an L-shaped feeler rod having a first leg adapted to extend toward the bobbin of a loom and a second leg disposed substantially perpendicular to said first leg, a fulcrum, biasing means for biasing said L-shaped feeler rod toward said bobbin until said second leg engages said fulcrum whereby said L-shaped feeler rod is capable of pivotal movement about said fulcrum and movement parallel to its said first leg, a transmitter rod juxtaposed said first leg of said L-shaped feeler rod and adapted to be moved by pivotal motion of said feeler rod, and means engaging said second leg of said L-shaped feeler rod for moving said transmitter rod away from said feeler rod when said feeler rod is moved parallel to its said first leg.

3,307,595
FILLING ATTACHMENT FOR FLUID CONTAINERS AND METHOD FOR THE USE THEREOF

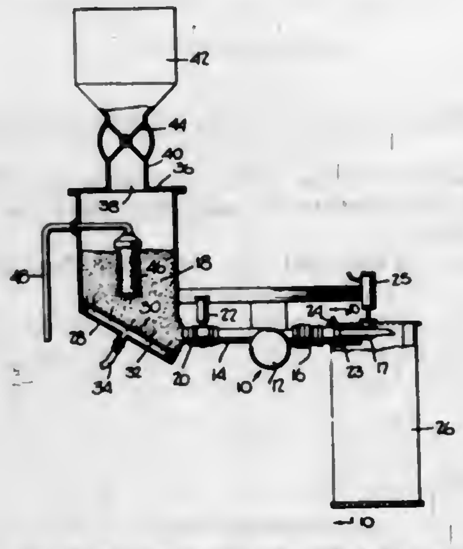
Friedel Berning, Oberhausen, Rhineland, and Wilhelm Zorembsky, Eisenbach, Taunus, Germany, assignors to Zundmetall-Verkaufs G.m.b.H., Eisenbach, Taunus, Germany, a limited-liability corporation of Germany
Filed July 26, 1963, Ser. No. 297,776
Claims priority, application Germany, Aug. 4, 1962, Z 9,575
12 Claims. (Cl. 141—4)



10. A method of equalizing the pressures in two fluid containers which comprises opening a recessed valve in one container by contacting it with a valve stem on a second container, forcing the two containers together to open a valve on the second container, and simultaneously forming a tight seal about the recessed valve by axial compression of a resilient sleeve on the valve stem.

3,307,596
BAG FILLING APPARATUS AND METHOD

Ivar H. Stockel, New City, and Calvin R. Taylor, Nanuet, N.Y., assignors to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed June 1, 1964, Ser. No. 371,448
16 Claims. (Cl. 141—10)



1. A method of packaging particles of dry divided solid material, comprising: introducing a dense phase stream of said particles carried in a gas from a pressurized bin feeder into a packing spout having an inlet portion, and an outlet portion, passing said particles carried in said gas into an arcuate passage extending between said inlet and said outlet, said passage having a first portion of turbulence where the gas and material intermingle and a second portion wherein the particles are subjected to compression and separation from the gas along a free surface line extending substantially along a medial longitudinal axis of the passage, and withdrawing said separated gas from said packing spout, while passing said particles to a packaging container in a compact phase.

3,307,597
FIRST STAGE PRESSURE REGULATORS MOUNTED WITHIN AIR CYLINDER PLUG

Earl M. Shugarman, Costa Mesa, Calif., assignor to W. J. Voit Rubber Corp., a corporation of California
Filed Sept. 16, 1964, Ser. No. 396,968
7 Claims. (Cl. 141—18)

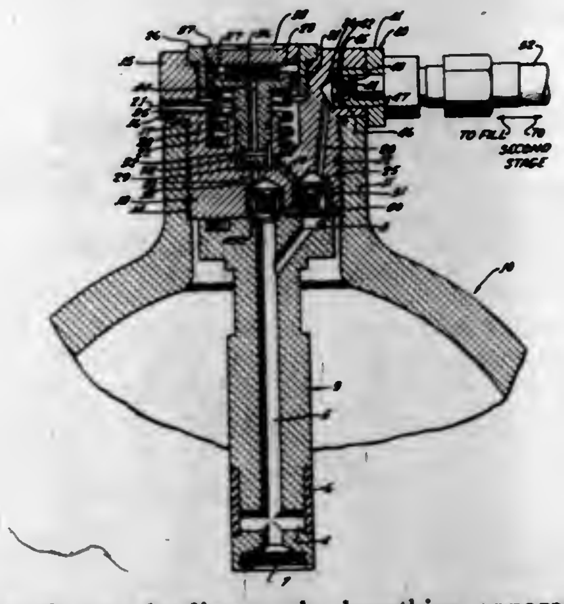
1. In an underwater breathing apparatus including an air cylinder having an aperture at one end for supplying air to said apparatus, the combination comprising:

a plug mounted in the aperture of said cylinder and having a plurality of ducts located therein and an aperture extending through a side portion thereof,

a pressure regulator mounted within the plug and controlling the flow of air from the cylinder, said regulator being exposed through the plug aperture to an ambient medium to regulate the pressure of the air in accordance with the pressure of the medium,

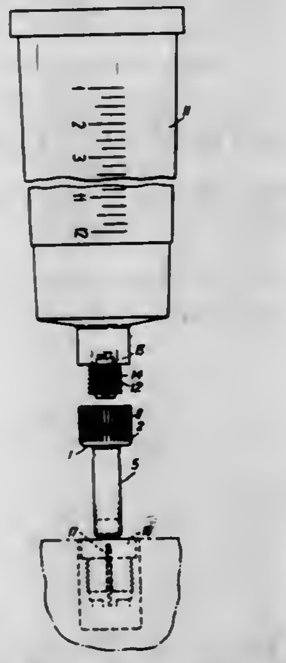
a first check valve mounted within a first duct leading from the cylinder to the regulator said duct permitting a flow of air from the cylinder to the regulator and said regulator permitting a controlled flow of air to a second duct, and

a second check valve being positioned at the outlet of the second duct within the plug and being normally closed to a flow of air to a third duct which leads into the cylinder due to the cylinder pressure on said valve, said valve normally permitting the air to flow to a fourth duct leading to the breathing apparatus, and permitting the air to flow into said cylinder through the third duct during a filling operation when the first check valve becomes closed to a reverse flow of air.



3,307,598
REFILLING OF GAS BURNING CIGARETTE LIGHTERS

Hans Lowenthal, Kensington, London, England, assignor to Colibri Lighters Limited, London, England, a British company
Filed Aug. 12, 1964, Ser. No. 389,137
Claims priority, application Great Britain, Aug. 29, 1963, 34,231/63
5 Claims. (Cl. 141—311)

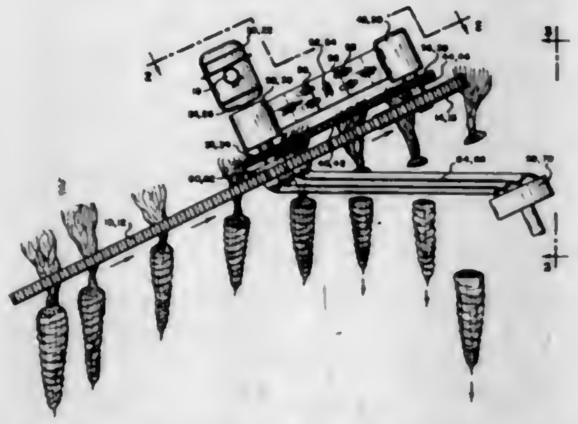


1. An adaptor for fitting to a gas refill cartridge of the type provided with a screw-threaded neck together with a resiliently biassed valve member and adapted to fill a first type of lighter equipped with means for exerting pressure against said valve member, so as to open said cartridge and permit it to fill a lighter of a second type equipped with a piercing member for piercing a resilient self-sealing closure member, said adaptor comprising an internally screw-threaded socket for matingly receiving said neck, a tubular stem extending from

said socket and formed with a central bore communicating with the interior of said socket, a pin in said socket positioned to exert pressure against said valve member when said socket is screwed onto said neck, and a self sealing closure member closing the bore in said stem and positioned to be pierced by the piercing pin of a lighter of said second type.

3,307,599
VEGETABLE TOPPING MACHINE

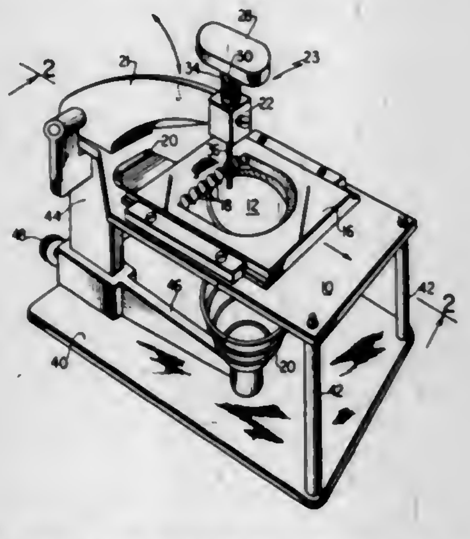
John N. Vacca and Donald A. Bratsch, Modesto, Calif., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 352,895
6 Claims. (Cl. 146—85)



1. A root crop topping mechanism adapted to cut the crown and leafy portions from the balance of the root after it has been plowed and elevated from ground level comprising a pair of oppositely driven sets of elongate cutting bars mounted at opposite ends in bearing heads adapted to rotate said cutting bars with an Urschel-like movement, opposite cutting bars of the respective sets being rotatable in phase with one another through nonintersecting orbits, and driven conveyer means adapted to engage the leafy portion of the elevated root crop and move it in a straight line direction in a vertical plane between the cutting bar sets along a locus at an acute angle to the longitudinal axes of said bars and substantially perpendicularly to the axes of rotation of said cutting bars.

3,307,600
METHOD AND APPARATUS FOR DECAPPING EGGS

Ferdinand T. Fuge, Winsted, Conn., assignor to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,593
6 Claims. (Cl. 146—221)



1. Egg decapping apparatus comprising:

(a) a substantially closed ring which is slightly smaller than the girth of an average egg;

(b) means for holding said ring in a fixed position in which the entire circumference of said ring is free to contact the shell of an egg through which a portion of the egg may extend;

(c) a blade member slidably supported upon said ring on one side of the ring opening;

(d) means for moving said blade member toward the ring opening and thereacross to sever the top of an egg projecting therethrough;

(e) a punch disposed above the ring opening on the same side thereof as the blade;

(f) a resilient support for an egg disposed below said ring opening;

(g) means to raise said support to resiliently press an egg within the ring;

(h) means to advance said punch toward the ring opening and then to retract the punch therefrom.

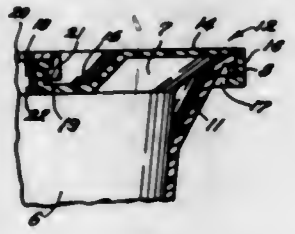
3,307,601
CHEMICAL PEELING OF EDIBLE PLANT PRODUCTS

Otto T. Aepli, Southgate, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed July 21, 1965, Ser. No. 473,835
10 Claims. (Cl. 146—234)

1. A process for removing the outer layers of tissue from an edible plant product comprising contacting said products with an aqueous alkaline caustic solution containing at least about 0.02 weight percent, based on total solution, of a fatty acid of the formula $C_nH_{2n}O_2$ where n is from about 5 to 10.

3,307,602
THIN WALLED CONTAINER AND CLOSURE THEREFOR

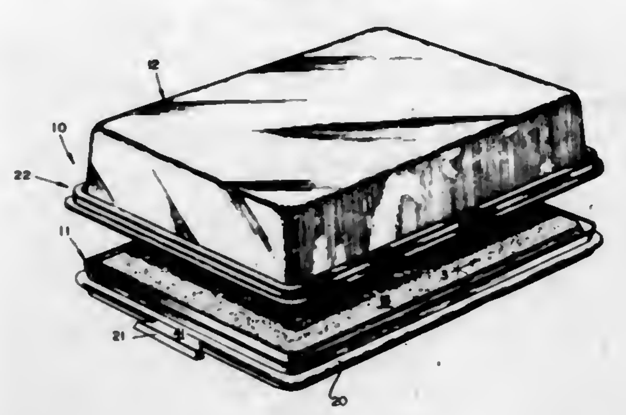
Samuel B. Boster, 7233 Bookcrest Drive, Cincinnati, Ohio 45222
Filed May 13, 1964, Ser. No. 367,034
1 Claim. (Cl. 150—.5)



In combination a container and lid assembly comprising a thin walled, bowl shaped container made of flexible plastic material, a circular skirt depending from the upper marginal edge of the container, a two-part container lid having a thin walled, annular first part made of flexible plastic material, a downturned circular flange formed on the outer edge of the first part and normally adapted to closely embrace the skirt on the container, a snap-on connection between the lower edges of the skirt and the rim, an upstanding circular neck formed on the central portion of the first part and having an outwardly facing, continuous groove formed in its exterior surface, a disc shaped second part having a downturned marginal flange normally adapted to embrace the neck, said flange having a continuous bead around the inner lower edge normally having a snap-on engagement with the groove in the neck, said first part having an annular dished portion surrounding the neck, the position second part being flush with the plane of the first part, and the container having an annular rib on the bottom thereof provided with an inside diameter concentric with and slightly larger than that of the outside diameter of the second part.

3,307,603
CONTAINER

James B. Swett, Barrington, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,550
6 Claims. (Cl. 150—.5)



1. A container comprising a base and closure therefor wherein one of said above components is formed of a relatively stiff and rigid plastic material and the other is formed of a relatively deformable and resilient plastic material,

said base having an upwardly directed generally U-shaped peripheral rim comprising spaced inner and outer side walls,

said outer side wall upwardly terminating in a free edge and being outwardly directed so that said base rim presents an entrance opening of upwardly increasing width,

said closure having a peripheral rim in substantial fluid-tight sealing engagement with said base rim,

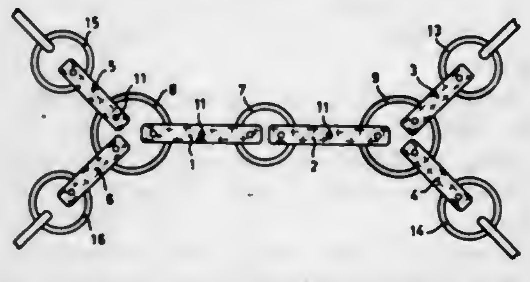
said closure rim having a first upwardly directed U-shaped section comprising spaced inner and outer side walls and a connecting wall,

a second downwardly directed U-shaped section outwardly of said first section comprising spaced inner and outer side walls and a connecting wall,

and said first closure section being integrally connected to said second closure section by means of a common wall consisting respectively of said first section outer wall and said second section inner wall.

3,307,604
ANTISKID CHAIN

Marcel Develey, Crissier, Switzerland
Filed June 1, 1965, Ser. No. 460,122
Claims priority, application Switzerland, Mar. 26, 1965, 4,256/65
2 Claims. (Cl. 152—229)



1. An antiskid chain link comprising a plurality of metallic plates linked to one another by a linking ring, each plate carrying at least two ground-engaging studs, projecting beyond said plate each of said plates having an opening between said studs along an axis substantially perpendicular to the longitudinal axis of the corresponding plate, said linking ring passing through said opening, the projecting section of each stud being substantially equal to one third of the total height thereof, and means for securing the outermost of said rings to a vehicle wheel.

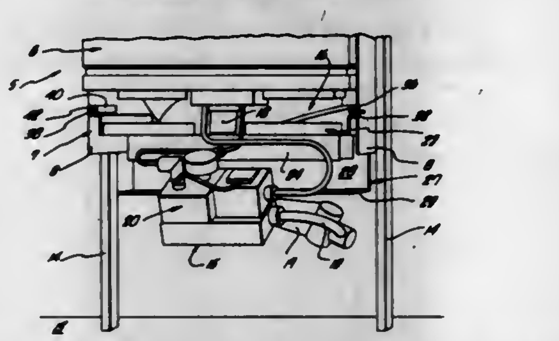
3,307,605
TIRES FOR MOTOR VEHICLES COMPRISING A BUTADIENE-STYRENE COPOLYMER HAVING A HIGH BOUND STYRENE CONTENT

Douglas Bulgin, Erdington, Birmingham, George Douglas Hubbard, Castle Bromwich, Birmingham, and Evelyn William Madge, Sutton Coldfield, England, assignors to Dunlop Rubber Company Limited, London, England, a British company
Filed June 29, 1965, Ser. No. 467,843
Claims priority, application Great Britain, Aug. 13, 1959, 27,683/59; Feb. 14, 1962, 5,649/62
8 Claims. (Cl. 152—330)

1. A vehicle tire comprising a tire body and a road-contacting tread in which at least the material of the tread comprises a vulcanized butadiene-styrene copolymer rubber composition wherein the elastomeric portion is a copolymer of butadiene and styrene having a bound styrene content of 35–50 percent and correspondingly a bound butadiene content of 65–50 percent by weight, and a hydrocarbon extender oil is also present.

3,307,606
BURNER MOUNTING IN AIR HEATERS

Hugh M. Blumenshine, Whittier, Calif., assignor to Holly Division, Lear Siegler, Inc., South Gate, Calif., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,445
3 Claims. (Cl. 158—7)



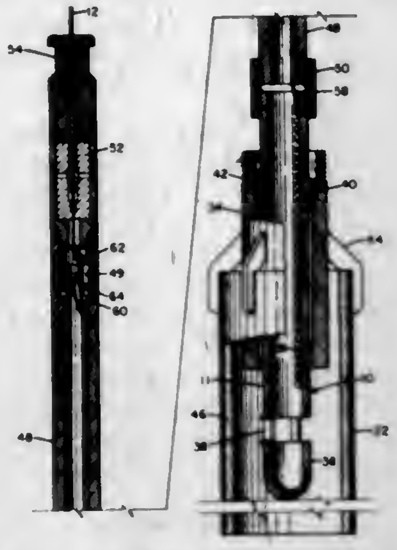
1. In an air heater including a vertical heat exchanger having an open lower end and a burner assembly mounted adjacent the lower end of the heat exchanger, the heat exchanger having a downward extension mounting the burner assembly, the improvement comprising means for releasably mounting the burner assembly in position relative to the lower end of the heat exchanger including projection means extended rearwardly of the burner assembly, the extension defining means for receiving the projection means, the burner assembly defining an aperture at each end thereof, a pair of lugs configured to register with said apertures, resilient means mounting each lug to the extension and positioning the lugs for registry with the respective apertures when burner assembly is in position adjacent the lower end of the heat exchanger with the projection means engaged with the receiving means, the lugs normally being registered in the apertures to support the burner assembly in the extension but being movable out of registry with the apertures against the bias of the resilient means so that the burner assembly is removable from the heat exchanger.

3,307,607
APPARATUS FOR HEATING OR IGNITING WELL FORMATIONS

Karol L. Hujsak, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Original application Apr. 8, 1963, Ser. No. 271,262, now Patent No. 3,223,165, dated Dec. 14, 1965. Divided and this application Apr. 28, 1965, Ser. No. 458,511
4 Claims. (Cl. 158—28)

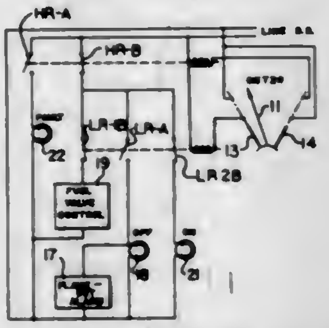
1. A burner apparatus comprising an elongated housing open at both ends, a first hollow open ended member extending part way into one end of said housing, spaced

members about said one end holding said first hollow member in alignment with the longitudinal axis of said housing and in substantially concentric relationship with said housing, a second hollow open ended member detachably mounted in and surrounded by said first member, and an open container in said housing affixed to the end of said second hollow member.



3,307,608
FLAME-MONITORING SYSTEM

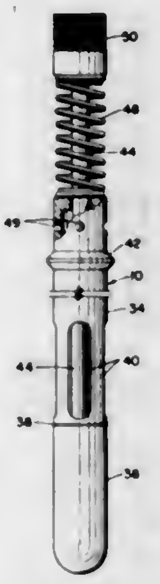
Frederick Cowan, 32 Woodvale Drive,
Syosset, N.Y. 11791
Filed Oct. 5, 1965, Ser. No. 493,181
3 Claims. (Cl. 158—28)



1. In combination, a flame producing burner, a monitoring system for the flame of said burner and comprising
a flame sensing device and a meter connected in series across an electrical circuit,
the sensing device operatively associated with the monitored flame to relate flame intensity to an electrical resistance,
the meter having an indicator which is arranged to move in response to the resistance of the sensing device,
a fuel valve operatively connected to the burner,
closure means normally tending to close the fuel valve,
the meter including a first normally closed low-resistance switch operatively connected to the fuel valve and arranged to open on the movement of the indicator below a predetermined low-resistance level so that the fuel valve is allowed to close thereby shutting the burner down,
a flame-out alarm,
the meter including a first normally open low-resistance switch operatively connected to the flame-out alarm and arranged to close on the movement of the indicator below the low-resistance level to energize the flame-out alarm,
a flame-on lamp and a flame-out lamp,
said first normally open low-resistance switch operatively connected to the flame-out lamp and arranged to close on the movement of the indicator below the low-resistance level to light the flame-out lamp,
the meter including a normally open high-resistance switch operatively connected to a fault lamp and arranged to close on the movement of the indicator above a predetermined high-resistance level.

3,307,609
BOTTOM-HOLE IGNITER TUBE

Karol L. Hujsak, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Mar. 23, 1966, Ser. No. 536,731
8 Claims. (Cl. 158—28)



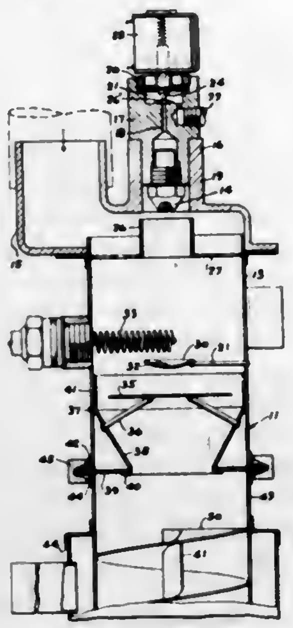
1. In an igniter tube the combination comprising an elongated hollow tubular member closed at one end thereof,
ports in said member intermediate the ends thereof adapted to permit the flow of fluids into and out of said member, and
valve means within said member between said ports and said closed end thereby defining a fluid-tight chamber in said member adapted to hold a pyrophoric material, said valve means when in the open position permitting direct fluid communication between said ports and said chamber.

3,307,610
HEATER APPARATUS

James J. Sunday, deceased, late of 32739 White Oaks Trail, Birmingham, Mich. 48010, by Natalie Payne, administratrix, Birmingham, Mich.
Filed June 9, 1966, Ser. No. 556,528
6 Claims. (Cl. 158—28)

1. In a burner apparatus, the combination comprising a casing,
a jacket surrounding portion of said casing and having an inlet and an outlet,
nozzle means mounted at one end of said casing remote from said jacket for directing fuel axially of the casing,
means for supplying fuel under pressure to said nozzle,
a glow plug extending transversely in the path of said fuel,
said casing having a combustion air inlet at said one end thereof,
a substantially imperforate baffle in the path of said fuel beyond said glow plug,
said imperforate baffle having its periphery spaced from the inner wall of said casing,
the cross sectional area of said spacing being greater than the cross sectional area of said inlet at said one end of said casing,

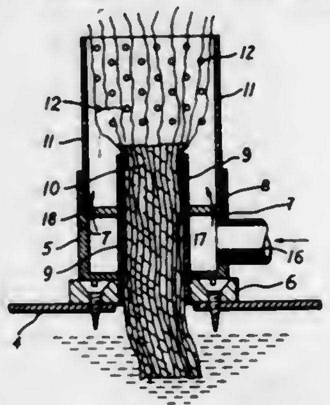
a sinuous baffle positioned within said casing in the area of said jacket and extending along said casing to the other end thereof,



suction blower means connected to the other end of said casing,
and means for controlling said glow plug and suction blower means.

3,307,611
BURNERS

James R. Brown, 3611 N. Main St., Soquel, Calif. 95073; June D. Brown, executrix of the last will of said James R. Brown, deceased
Filed Dec. 7, 1964, Ser. No. 416,382
3 Claims. (Cl. 158—88)

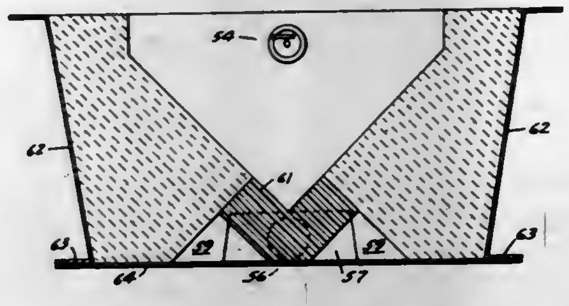


1. In a wick type burner, a fuel tank, a housing supported by the fuel tank, a wick tube extending through the housing, a wick disposed within the tube filling the entire cross-sectional area of the tube, said wick tube extending in the tank at one end and to a burning area at the upper end of the tube, means for delivering a primary flow of air to the housing, a disk at the upper end of the housing forming a cover therefor, said disk having perforations around the outer edge to uniformly direct the air to the burning area, and a chimney supported by the housing, said chimney having perforations therein to admit a secondary flow of air to the burning area.

3,307,612
CONVERGENT-STREAM GRID-TYPE GAS BURNER

Thomas Noel Stack, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 6, 1964, Ser. No. 357,591
7 Claims. (Cl. 158—99)

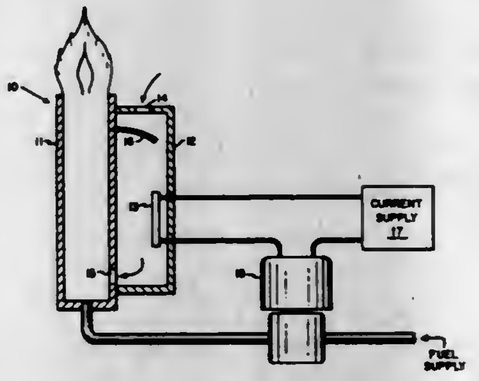
1. A burner assembly for the combustion of a gaseous combustible mixture comprising, in combination,
(A) a casing generally enclosing a chamber and having an inlet for gaseous combustible mixture;
(B) an elongated refractory convergent-stream burner grid, between said inlet and said chamber, having two diverging longitudinal legs giving a generally V-shaped cross-section and consisting essentially of corrugated sheets having the axes of corrugation of consecutive sheets respectively transverse of different legs of said grid; and



(C) means positioning said convergent-stream burner grid in said casing between said inlet and said chamber so that the gaseous combustible mixture has access to areas of said grid greater than the respective opposing inner areas of said legs, said means sealing around said grid so that the combustible mixture passes through said grid and converges into said chamber.

3,307,613
CONTROL APPARATUS

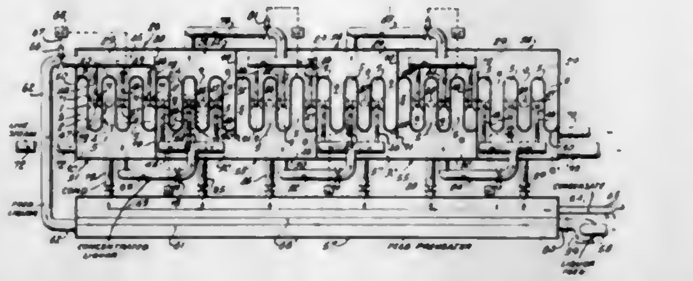
Edward F. Rexer, Minnetonka Village, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 484,881
7 Claims. (Cl. 158—123)



1. In combination:
burner means;
control means;
sensing means, constructed and arranged to be responsive to a predetermined level of carbon monoxide and to a predetermined temperature;
means supporting said sensing means in the atmosphere surrounding said burner means and out of contact with any normal burner flame but in heat exchange relationship with said burner means, and
means connecting said sensing means in controlling relation to said control means, said sensing means responding to the temperature of said burner means and to the carbon monoxide content of the atmosphere surrounding said burner means to actuate said control means when the carbon monoxide content of the atmosphere reaches said predetermined level or when said burner means no longer heats said sensing means to said predetermined temperature.

3,307,614
FALLING FILM TYPE EVAPORATORS AND METHOD

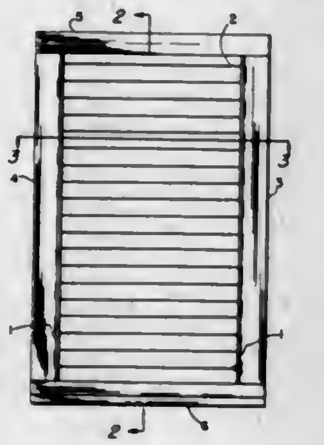
Axel E. Rosenblad, % Rosenblad Corp., P.O. Box 585, Princeton, N.J. 08540
Filed Oct. 18, 1965, Ser. No. 496,833
5 Claims. (Cl. 159—13)



1. A falling film type evaporator, comprising a heat exchange wall member, said wall member comprising a plurality of substantially similar opposed sheet sections of light gauge heat transmissive material positioned in spaced substantially vertical side by side relationship to form an elongated row, means for joining one of the substantially vertical end edges of each of said sections to the opposed edge of the next adjacent section to form a pleated structure providing a plurality of substantially similar interspaces between said sections, said interspaces alternately opening to one vertical side and then the other of said structure, vapor bodies positioned along the opposite sides of said structure throughout said row, said vapor bodies comprising vapor chambers each formed with an opening in the wall thereof, the first vapor body, on one side of said row, communicating through the opening in the wall thereof with one set of said interspaces, and the second vapor body, on the other side of the row, communicating through the opening in the wall thereof with the alternately opening set of said interspaces, means in first, alternate ones of said interspaces along said pleated structure communicating with the first vapor body for distributing liquor to be vaporized in the form of a falling film on the heating surfaces provided by the sheet sections of said pleated structure, said distributing means distributing said liquor adjacent the top of said heating surfaces, and means to prevent the entrapment of non-condensable gases in said first and second interspaces comprising small passages through the sheet sections adjacent the closed vertical edges of the interspaces.

3,307,615
SUN CONTROL DEVICE

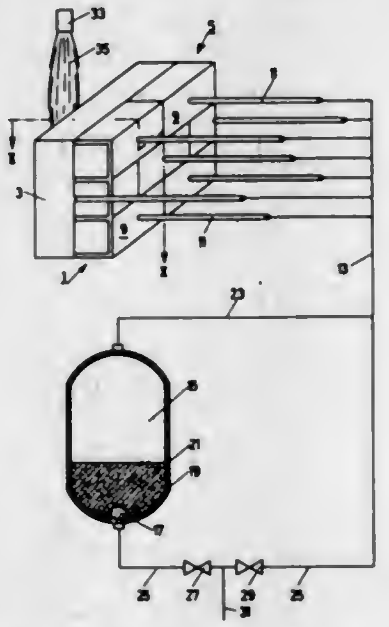
William A. Briggs, 408 W. Grace St., Richmond, Va., 23220
Filed July 29, 1964, Ser. No. 385,997
6 Claims. (Cl. 160—181)



1. A shade device comprising, in combination: a building opening having a surrounding frame portion, said frame portion being of a generally rectangular configuration and comprising a pair of substantially parallel vertical members; a pair of elongated generally rectangular supporting elements of substantially uniform thickness, each of said supporting elements housing two elongated edges, one of said supporting elements being fixedly mounted on one of said parallel members with one of the elongated edges thereof being aligned therewith and the other elongated edge being an external edge, and the other of said supporting elements being fixedly mounted on the other of said parallel members with one of the elongated edges thereof being aligned therewith and the other elongated edge being an external edge, each of said supporting elements having a series of similarly spaced aligned slots, said slots oriented substantially perpendicular to said external edge of said supporting element; and a continuous length of flat, resilient tape, said tape laced in serpentine fashion to provide a straight length of tape extending from each slot in one of said supporting elements to the similar slot in the other of said supporting elements, said tape fastened in a manner to prevent shifting of said tape with respect to said supporting elements, whereby said tape forms a series of spaced resilient louver portions extending across said opening.

3,307,616
METHOD OF PROTECTING A HEAT-RESISTANT ELEMENT FROM HOT MEDIA

Johannes Giger, Baden, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Nov. 27, 1964, Ser. No. 414,279
Claims priority, application Switzerland, Nov. 28, 1963, 14,581/63
9 Claims. (Cl. 165—1)

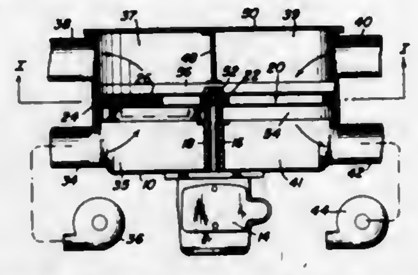


1. A method of protecting the surface of a gas-permeable heat-resistant element that is to be exposed to high temperature which comprises flowing a suspension of a finely divided solid in a cooling gas through said element to said surface.

3,307,617
METHOD IN THE MANUFACTURE OF AN EXCHANGER PACKING AND EXCHANGER PACKING MANUFACTURED ACCORDING TO SAID METHOD

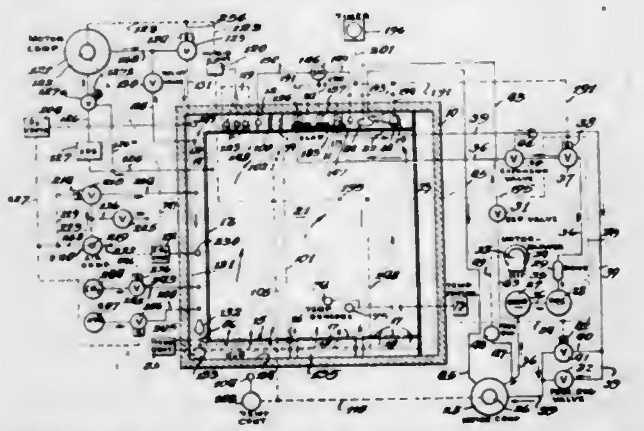
Carl Georg Munters, 3 Danderydsvagen, Stocksund, Sweden
Filed Jan. 28, 1963, Ser. No. 254,131
Claims priority, application Sweden Jan. 30, 1962, 999/62
1 Claim. (Cl. 165—10)

The method of increasing the moisture adsorptive capacity and structural strength of an annular heat and moisture exchange rotor body having cellular air spaces extending from end to end formed of layers of corrugated sheets of asbestos comprising wetting the assembled laminated corrugated sheet body with an aqueous solution of water glass to effect homogeneous concentrated impregnation of the assembled sheets and fibers thereof with the water glass, and then reacting said water glass in situ in the impregnated body with acid to convert the same to solid silica gel bonding the same structurally firm, washing out the acid and drying said body at a temperature above about 200° C. and below about 700° C. to convert said body to structurally rigid highly moisture adsorptive form.



3,307,618
TEMPERATURE CONTROLLED STORAGE UNIT

Richard G. Hagenauer, Stevensville, Marvin A. Fuller, Benton Harbor, and Alexander L. Reiter, St. Joseph, Mich., and Jack I. Anderson, Cupertino, Calif., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,205
10 Claims. (Cl. 165—27)

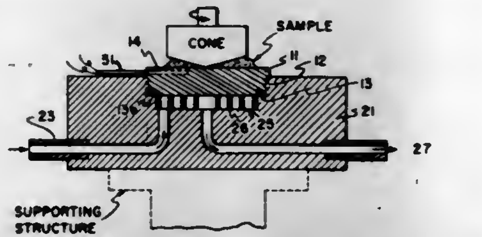


1. Apparatus for storing for a storage period perishable animal and plant materials, comprising: means forming a container having a storage space for said materials and a storage atmosphere; refrigerating means having a cooling evaporator in cooling relationship with said storage space for cooling said atmosphere and a refrigerant compressor; means for directing refrigerant through a conduit from said compressor to said evaporator and back to said compressor during a cooling period for said space; means for directing refrigerant from said compressor through a second conduit back to said compressor during non-cooling periods; and means for cooling but not materially condensing the gaseous refrigerant in said second conduit prior to the return of the cooled gaseous refrigerant to the compressor, said cooling means comprising a portion of said second conduit in cooling relationship with said storage space for cooling by said atmosphere, said portion being spaced from said evaporator.

3,307,619
TEMPERATURE CONTROL SYSTEM FOR VISCOSIMETER

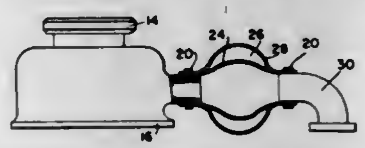
Dae Sik Kim, Jersey City, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 4, 1964, Ser. No. 416,092
4 Claims. (Cl. 165—39)

1. In combination with a viscosimeter having a rotatable cone in fluid contact with a sample liquid under test supported upon a fixed metallic plate, the improvement comprising, means for maintaining said plate at a substantially uniform temperature independent of the speed of rotation of said cone and independent of changes in the surrounding ambient temperature, said temperature maintenance means comprising a block of relatively low-heat conductive material having a cavity therein, said cavity including a mouth portion for receiving and mounting said plate and a bottom portion forming a void adjacent the back side of said plate, means for circulating a heat controlling fluid through the void bottom portion of said cavity, and means responsive to the temperature of said plate for controlling the flow of heat controlling fluid through said void bottom portion.



3,307,620
ENGINE COOLING SYSTEM WITH VACUUM RELIEF DEVICE THEREIN

Allie B. Holmes, P.O. Box 7565—4824 Ayers, Corpus Christi, Tex. 78415
Filed Nov. 24, 1965, Ser. No. 509,503
2 Claims. (Cl. 165—51)



1. In an engine cooling system wherein a coolant is circulated from engine to radiator, a vacuum relief device, comprising:

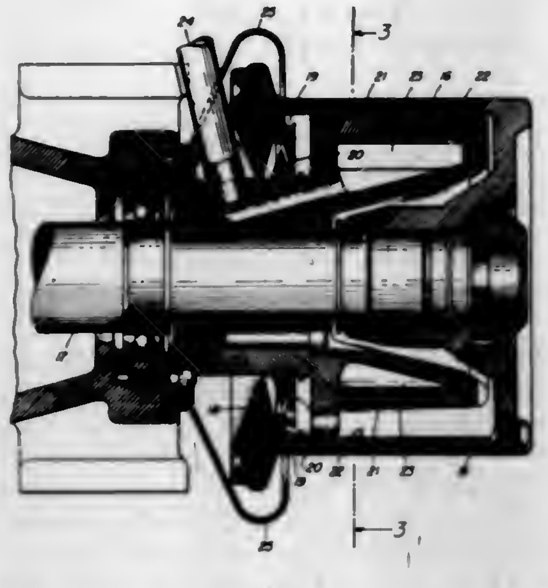
- (A) attachment assemblies permitting said device to be installed between the engine and radiator, said attachment assemblies being of predetermined cross-sectional area;
- (B) a flexible coolant conductor interposed between said attachment assemblies for circulating coolant through said system, including:
  - (i) a deformable sac interposed between and secured to said attachment assemblies, said sac having a cross-sectional area which in part is greater than that of said attachment assemblies permitting inward contraction from its normal position upon the creation of a vacuum within said system as the coolant varies in temperature, and
  - (ii) an outer lining separate from and generally surrounding said deformable sac, said outer lining containing the expansion of said deformable sac as the vacuum state within said system changes to a pressure state.

3,307,621
HEAT TRANSFER APPARATUS

John K. Whisnant and Roger A. Dysart, Shelby, N.C., assignors to Fiber Industries, Inc., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,808
10 Claims. (Cl. 165—89)

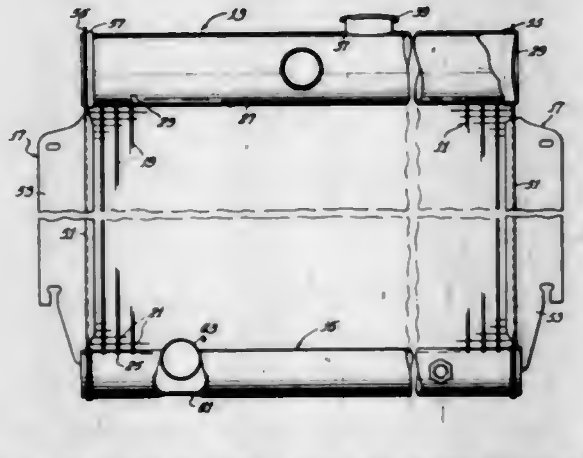
1. A unit of uniformly heated rolls comprising a plurality of roll units wherein each of said roll units comprises a hollow rotatable roll, a stationary heat radiating core, said core projected within the hollow portion of said hollow rotatable roll substantially conforming to the shape of said hollow portion, means for heating said

core and non-vapor heat conducting fluid-like material self contained within said hollow rotatable roll uniformly distributed and intimately contacting the inner wall of said hollow rotatable roll and outer portion of said stationary core projected within said hollow rotatable roll by centrifugal force while the roll is turning.



3,307,622
ROUND TANK HEAT EXCHANGER

Edward P. Oddy, Detroit, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 30, 1964, Ser. No. 422,184
3 Claims. (Cl. 165—151)

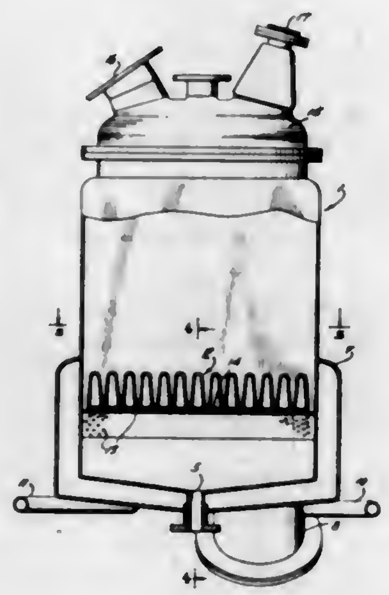


2. An automotive type heat exchanger comprising: a core including a plurality of coolant tubes; flow distribution headers disposed at opposite ends of said core in fluid communication with said tubes, at least one of said headers including a pair of elongated deep drawn longitudinally seamless hollow body tanks having an integrally formed closed end and an open end including an outwardly directed flange, said tanks being disposed with said flanges in abutting relation and secured together in liquid tight relation to form said header and defining a chamber in fluid communication with each of said coolant tubes.

3,307,623
DEVICE FOR RAPID MELTING OF SOLID MATERIALS

Alfred O. K. Machold, Bad Blankenburg, Werner A. W. Nehring, Teichel, and Hellmut A. Ramm, Rudolstadt, Germany, assignors to VEB Chemiefaserwerk Schwarza "Wilhelm Pieck," Rudolstadt, Germany
Filed Aug. 18, 1965, Ser. No. 480,672
8 Claims. (Cl. 165—169)

1. A device for melting solid materials within a short period, and for practically immediate discharging of the molten mass to other processing devices, said melting device comprising a generally square-shaped vessel having four walls, inwardly inclined bottom portions meeting at their bottom ends in a line and extending from two of said walls which are in facing position with respect to one another, said line sloping from both ends toward the center of the bottom and forming a discharge opening for the molten mass at its lowermost point, a discharge tube for said mass attached to said opening, grid means arranged within said vessel near the bottom portion thereof for supporting and heating said solid materials to melting temperature and including grid elements which are spaced slightly from each other and define between themselves narrow spaces through which substantially only molten material can flow by gravity to reach said discharge tube, a heating jacket arranged along the bottom portion and connected to the outside of the vessel, said jacket extending upwardly to approximately the height of the grid means, said jacket and said grid means forming together a continuous passage for a heating liquid for circulation therethrough, means for heating and admitting and withdrawing, respectively, said heating liquid and circulating pipes arranged between said admitting means and said jacket for maintaining said liquid in circulation.

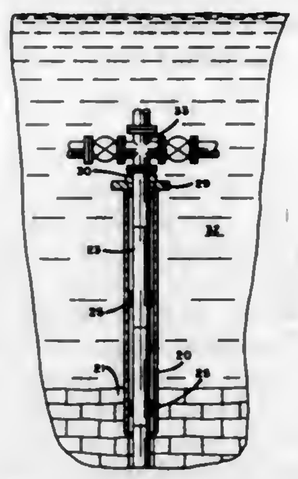


3,307,624
LOAD-SUPPORTING STRUCTURE, PARTICULARLY FOR MARINE WELLS

Arthur Lubinski, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed May 22, 1963, Ser. No. 282,462
14 Claims. (Cl. 166—.5)

1. A stable load-supporting marine structure comprising an elongated vertical hollow compression member having its bottom end fixed solidly in the earth below the marine bottom and its upper portion extending for a substantial distance through the water to a point in the vicinity of the water surface, the strength and stability of said hollow member being sufficient to support substantially only its own weight and any external loads or forces imposed on it, and a tension member for carrying additional weight extending below said bottom end of said hollow member, the combined loads carried by said hollow and said tension members substantially exceeding that which said hollow member alone may support as an external load without buckling, said tension member being attached to the center of the upper end of said hollow member and having a small clearance within said hollow member at at least one point intermediate its ends, so that

the tendency of said hollow member to bend due to said additional weight brings said members into contact at least at said one point to substantially prevent increased bending of said hollow member by said additional weight.



3,307,625
PREVENTING CORROSION WHILE DRILLING

Grover L. Johnson, Dallas, and John Kelly, Jr., Arlington, Tex., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Apr. 27, 1964, Ser. No. 363,000
8 Claims. (Cl. 166—1)

1. A process for preventing corrosion in the drilling of a well with ferrous drilling apparatus wherein there is circulated through the well a water-containing drilling fluid, comprising the steps of:

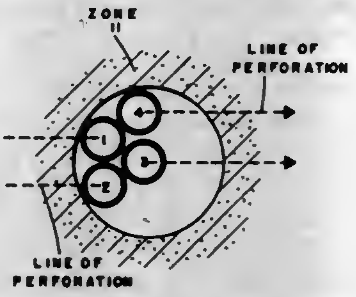
(a) circulating the drilling fluid through the well while the ferrous drilling apparatus is applied to deepen the well,
(b) adding an alkali metal hydroxide to the drilling fluid circulated into the well at a time when hydrogen sulfide from a subsurface source begins to infuse such fluid in the well and in an amount sufficient to provide a pH of at least about 7 in the drilling fluid circulated out of the well,
(c) discontinuing the addition into the drilling fluid of said alkali metal hydroxide when the drilling fluid circulated from the well has a pH of about 9, and
(d) distributing a water soluble alkali metal sulfide into the drilling fluid in the well just prior to termination of fluid circulation through the well while hydrogen sulfide yet infuses the drilling fluid, said alkali metal sulfide being introduced in an amount sufficient to maintain the pH of the drilling fluid within the well at a value greater than about 9 until fluid circulation is re-established and then repeating the foregoing steps.

3,307,626
COMPLETION OF WELLS

Walter J. Bielstein, Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed June 15, 1964, Ser. No. 375,105
5 Claims. (Cl. 166—4)

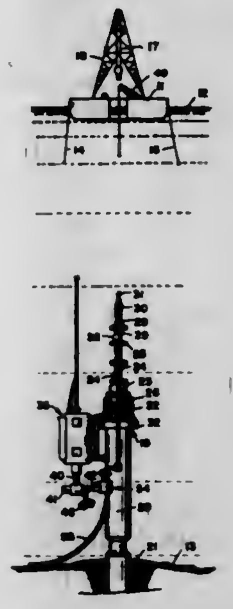
1. In a well installation wherein a plurality of pipe strings coextend side by side from the earth's surface through a borehole and are bonded to the sides of the borehole by a cementitious sheath, the method of opening fluid communication between productive earth formations penetrated by at least two pipe strings, comprising:

detecting the low side of the borehole;
perforating a selected one of the first and second pipe strings run into the well on the low side thereof with respect to the inclination of the borehole at the level of a first earth formation; and
at the level of another productive earth formation penetrated by at least three pipe strings, perforating a pipe string run into the well bore after the second pipe string on the high side thereof with respect to the inclination of the borehole at said level of said another productive earth formation.



3,307,627
METHOD AND APPARATUS FOR CONNECTING A PIPE LINE TO AN UNDERWATER WELL

Howard L. Shatto, Jr., Palos Verdes, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 20, 1963, Ser. No. 289,241
17 Claims. (Cl. 166—.6)



1. Apparatus for engaging underwater two spaced-apart elements and bringing them into alignment, said apparatus comprising:

(a) underwater-operable manipulator means movable through a body of water to a position adjacent said spaced-apart elements;
(b) first and second movable arm means axially spaced along a substantially common axis and extending outwardly of and carried by said manipulator means;
(c) element-engaging means carried by each of said movable manipulator arm means for separately engaging one of said spaced-apart elements;
(d) prime-mover means carried by said manipulator means and operatively connected to said arm means for actuating and moving at least one of said arm means with relation to the other along said axis when both element-engaging means are in engagement with said spaced-apart elements; and,
(e) guide means extending between said arm means whereby said arm means move toward and away from each other along a predetermined path.

3,307,628
PROCESS FOR SECONDARY RECOVERY OF PETROLEUM USING STABILIZED MICRO-EMULSIONS

Edwin A. Sena, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Apr. 6, 1966, Ser. No. 540,509
7 Claims. (Cl. 166—9)

1. The process comprising mixing to form a water-in-oil microemulsion showing substantially no Tyndall effect and substantially stable to ions in a particular oil-bearing formation (a) amounts of water, (b) hydrocarbon, (c) at least one surfactant which is relatively soluble in oil and relatively insoluble in water and (d) at least one additional surfactant which is relatively soluble in water and relatively insoluble in oil, the surfactants being added in amounts sufficient to form the afore-characterized microemulsion and the said water content being in excess of that amount required to cause a substantial increase in viscosity on addition of the water to an anhydrous oil-surfactant mixture and a peaking or leveling of the viscosity resulting from adding water to the anhydrous system; injecting the said microemulsion into an oil-bearing formation, having at least one each of an injection means and oil-production means drilled therein, through said at least one injection means; thereafter injecting a displacing fluid into said formation through said at least one injection means and finally recovering oil through said at least one production means.

3,307,629
SELECTIVE PLUGGING OF PERMEABLE EARTH FORMATIONS

Lorld G. Sharp, Irving, Tex., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed June 17, 1963, Ser. No. 288,460
12 Claims. (Cl. 166—32)

1. In a well in the earth wherein said well penetrates at least a portion of a formation containing water and at least a portion of a formation containing hydrocarbons, the procedure for selectively plugging said portion of said formation containing water comprising placing in said well adjacent said portion at least of said formation containing water and said portion at least of said formation containing hydrocarbon a viscous hydrocarbon having a viscosity greater than the viscosity of said hydrocarbon contained in said formation and at least 30 centipoises, imposing a pressure upon said hydrocarbon wherein said viscous hydrocarbon preferentially enters said portion of said formation containing hydrocarbons, thereafter placing in said well adjacent said portion at least of said formation containing hydrocarbons and adjacent to said portion at least of said formation containing water an aqueous solution of a plugging agent which under the conditions prevailing in an earth formation will set to seal the formation to the flow of a fluid, imposing a pressure upon said aqueous solution whereby said aqueous solution preferentially enters said portion of said formation containing water, and maintaining said pressure upon said aqueous solution until said plugging agent sets.

3,307,630
ACIDIZING OIL FORMATIONS

Richard E. Dilgren and Frank M. Newman, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 12, 1964, Ser. No. 374,829
8 Claims. (Cl. 166—38)

1. A method of treating a subterranean formation penetrated by a well bore to increase the permeability of said formation, said method comprising

emulsifying a mixture of an organic halide and water with an emulsifying agent to form an emulsion stable under conditions existing at said subterranean formation, in which emulsion the organic halide is mixed with a stoichiometric excess of water and is substantially completely hydrolyzed,

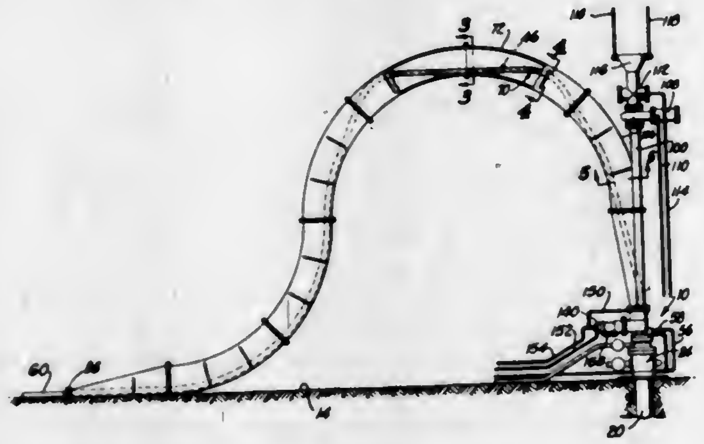
pumping said emulsified mixture of organic halide and water down said well as the organic halide starts to hydrolyze,

injecting said emulsified mixture of organic halide and water into said subterranean formation in a radially extensive zone around the well at a rate such that the major portion of the reaction product hydrogen halide formed by said hydrolyzing organic halide is formed within said formation and a greater portion of the hydrogen halide is formed in the vicinity of the well with a lesser portion of said hydrogen halide being formed at radially extensive distances from said well, and

maintaining said injected mixture in said formation for a time sufficient for the reaction product hydrogen halide to react with and dissolve a portion of said formation to increase the permeability thereof.

3,307,631
APPARATUS FOR RUNNING EQUIPMENT INTO AND OUT OF OFFSHORE WELL COMPLETIONS

Clarence J. Coberly, San Marino, Clarence J. Coberly, Jr., Los Angeles, and Russell G. Ralph, San Marino, Calif., assignors to Kobe, Inc., Huntington Park, Calif., a corporation of California
Filed Apr. 30, 1963, Ser. No. 276,820
8 Claims. (Cl. 166—75)



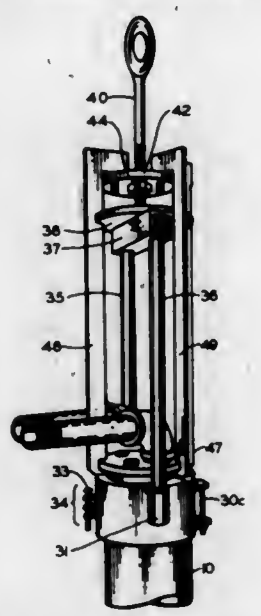
1. In an apparatus for running rigid elongated equipment into and out of a well from a control station spaced horizontaly from the well, the combination of:

(a) an equipment tubing set in said well;
(b) a conductor tubing extending between said well and said control station;
(c) a flexible tubing interconnecting said conductor and equipment tubings;
(d) said equipment being slidable through said tubings between said control station and an operating position in said well;
(e) said flexible tubing flexing to accommodate said equipment as it passes therethrough;
(f) means for introducing fluid into said conductor tubing behind said equipment to circulate it through said tubings from said control station to said operating position in said well;
(g) means for introducing fluid into said equipment tubing behind said equipment to circulate it through said tubings from said operating position in said well to said control station;
(h) a housing enclosing said flexible tubing;
(i) said housing having a configuration permitting flexing of said flexible tubing in said housing as said equipment passes through said flexible tubing; and

(j) means for maintaining the pressure in said housing at a value approaching the pressure applied behind said equipment in circulating it through said flexible tubing so as to minimize the pressure differential between the interior and the exterior of said flexible tubing.

3,307,632
WELL-SEAL EXTRACTOR

Carlyle J. Martin, Pierce Creek Road, Binghamton, N.Y. 13903
Filed Apr. 27, 1964, Ser. No. 362,584
11 Claims. (Cl. 166—85)



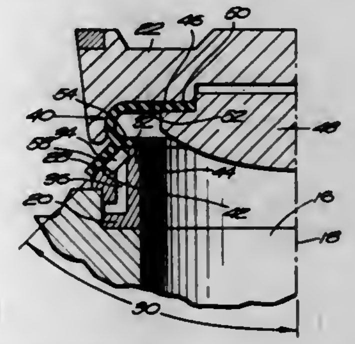
2. Apparatus for extracting a well seal from a well casing, comprising, in combination: a first member having a threaded portion; a second member having a bearing surface portion; a jack screw engaging said threaded portion and adapted to bear against said bearing surface portion, whereby advancement of said jack screw operates to move said members away from each other; a plurality of arms attached to said first member and extending past said second member, each of said arms having an inwardly-extending hook portion adapted to engage a flanged portion of a well seal; and adjustable support means extending from said second member to bear against said well casing, said support means being adjustable to different radial distances from said jack screw to accommodate different sizes of well casing.

3,307,633
RESILIENT, ONE-PIECE SEALING MEMBER FOR ACCOMMODATING UNEQUAL FLUID PRESSURES ON OPPOSING SURFACES

John Newall, Salford, England, assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Nov. 25, 1964, Ser. No. 413,828
Claims priority, application Great Britain, Nov. 25, 1963, 46,375/63
3 Claims. (Cl. 169—22)

1. For a fire fighting system a fluid controlling valve having:

(I) a passage therethrough with an axis,
(II) a seating member which:
(A) extends around said passage,
(B) has an annular groove which extends around said axis
(C) has a first seating surface between an inner side of said groove and said axis,
(D) has a second seating surface beyond an outer side of said groove
(III) a clack which is movable between an open position remote from said seating member and a closed position adjacent said seating member,
(IV) a one-piece sealing member which:
(A) is formed of resilient material,
(B) has a first portion which:
(1) is adjacent said clack,
(2) has a surface sealingly engaging said clack,
(C) has a second portion which:
(1) is integral with said first sealing member portion,
(2) extends from said first sealing member portion away from said axis,
(3) turns back toward said axis,
(D) has a third portion which:
(1) is integral with said second sealing member portion,
(2) extends from said second sealing member portion toward said axis,
(3) has a surface sealingly engaging said first seating surface of said seating member when said clack is in its said closed position,



(E) has a fourth portion which:
(1) is integral with said second sealing member portion,
(2) extends from said second sealing member portion away from said axis,
(3) has a surface sealingly engaging said second seating surface of said seating member when said clack is in its said closed position,
(4) has an opposite surface which is spaced from said clack when said clack is in its said closed position,

whereby when the clack is in its said closed position the pressure of the controlled fluid on one side of said clack holds the third sealing member portion against the first seating surface and the pressure of the controlled fluid on the other side of said clack holds the fourth sealing member portion against the second seating surface.

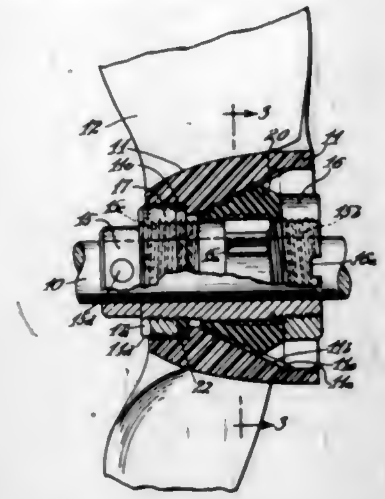
3,307,634
HUB CONSTRUCTION FOR BOAT PROPELLERS

Otto L. Bihlmire, 115 W. Pendle St., South Bend, Ind. 46637
Filed Jan. 17, 1966, Ser. No. 521,125
5 Claims. (Cl. 170—160.54)

1. A marine propeller drive shaft clutch comprising in combination with the propeller hub:

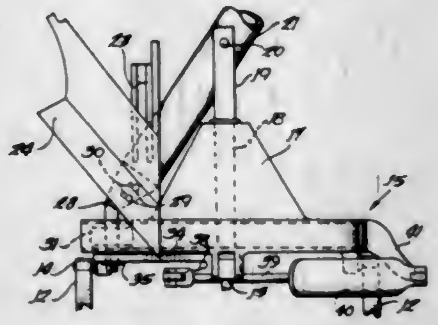
(a) the hub having an axial opening therethrough the normally forward end portion of which is tapered inwardly;
(b) a sleeve within and longitudinally of the axial opening;
(c) an elastomeric bushing on an intermediate portion of the sleeve within said tapered end portion of the axial opening in juxtaposed and bearing engagement with the adjacent hub walls;
(d) a nut threadedly engaged with the normally forward end portion of the sleeve, received within said opening for adjustable bearing engagement with and on the adjacent end of said bushing, and,

(e) a second nut threadedly engaged on the opposite end portion of said sleeve, received within said opening for adjustable bearing engagement with and on the remaining and adjacent end of the hub.



3,307,635
REVERSING MECHANISM FOR TWO WAY PLOW

Gerald G. Ward, Naperville, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 30, 1964, Ser. No. 363,872
6 Claims. (Cl. 172—225)

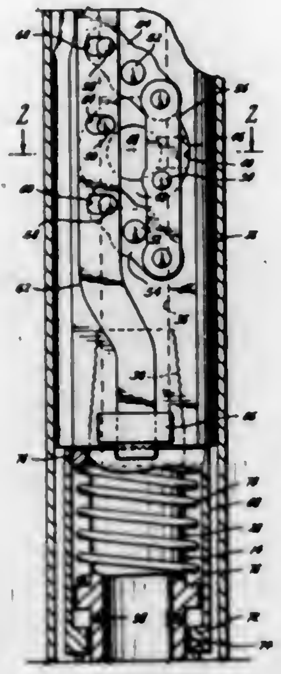


1. In a two way plow, a supporting frame including a transversely extending forward section and a longitudinally extending axially rotatable central section, an elongated carrier having right and left-hand plow units thereon disposed diagonally of the direction of travel and at an angle to said central section and rotatable therewith to alternately dispose said plow units in operating position, and pivot means for mounting said carrier on said rotatable central section for angling relative thereto on an axis disposed in a plane perpendicular to the axis of said central section, said carrier having portions extending forwardly and rearwardly of the axis of said pivot means, power operated means mounted on said transverse forward section, means operatively connecting said power operated means to said central section for rotating the latter about its axis including means operatively connected to the forwardly extending portion of said carrier to swing the latter about said axis of said pivot means simultaneously with the rotation of said central section.

3,307,636
JARRING TOOL

Joseph V. Le Blanc, 102 N. Delmont E., Conroe, Tex. 77301
Filed June 29, 1964, Ser. No. 378,598
9 Claims. (Cl. 173—13)

2. A hydraulic jar comprising
a tubular housing,
means on the lower end of said housing adapted to be attached to a pipe string therebelow,
a downwardly facing inwardly extending annual anvil adjacent the upper end of said housing,
a tubular mandrel telescopically received within said housing and forming an annular space therebetween,
an upwardly facing annular hammer on said mandrel,
means sealingly engaging the upper end of said housing about said mandrel,
a piston on the lower end of said mandrel sealingly engaging the interior of said housing,
a valve in said mandrel adapted to be operated between a first position allowing flow through said mandrel and a second position cutting off flow through the mandrel and providing communication between the interior of the mandrel above the valve and said annular space,
and valve operator means carried by said mandrel adapted to operate said valve to said second position upon relative longitudinal movement of said mandrel and said housing to engage said hammer with said anvil, and to operate said valve to said first position upon opposite relative longitudinal movement of said mandrel and said housing to a preselected point.

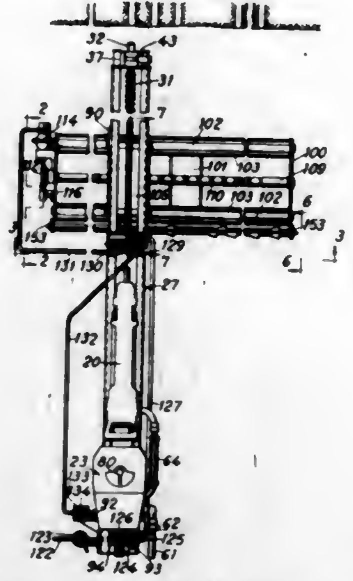


3,307,637
AUTOMATED ROCK DRILL POSITIONING SUPPORT

Emil Ingemar Jonsson, Lycksele, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed June 23, 1964, Ser. No. 377,289
19 Claims. (Cl. 173—44)

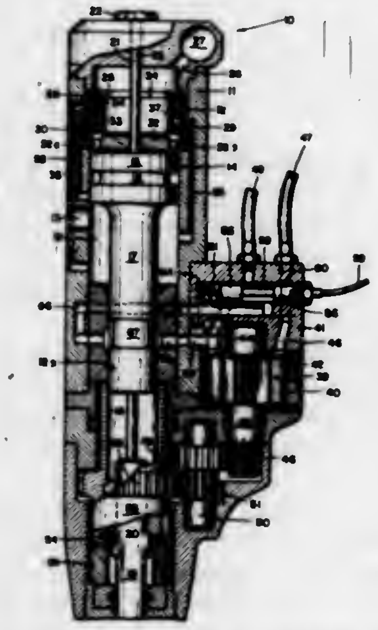
1. An automated rock drill positioning support for positioning a rock drill to a plurality of predetermined successive drilling locations for drilling a row of spaced holes comprising a frame, a feed shell on said frame, a rock drill slidably carried on said shell, said shell having feeding means thereon for feeding and retracting said rock drill therealong, guiding means on said frame, said shell being movably mounted on said guiding means for successive movements in a direction transverse to said shell from location to location corresponding to said plurality of drilling locations, a motor in operative engagement with said shell and mounted on said frame for moving said shell in said direction, means on said shell responsive to said feeding means in any of said drilling locations retracting said rock drill to a certain position on said shell for opening the supply of power to said motor whereby said shell is moved by said motor from one location towards the next in said plurality of successive locations, means on said shell for cutting off the supply of

power to said motor, and a shifting mechanism having cooperating parts carried by said shell and said frame and being responsive to said shell reaching said next location to cause actuation of said cut-off means whereby the supply of power to said motor is cut off.



3,307,638
ROCK DRILL DRIVE

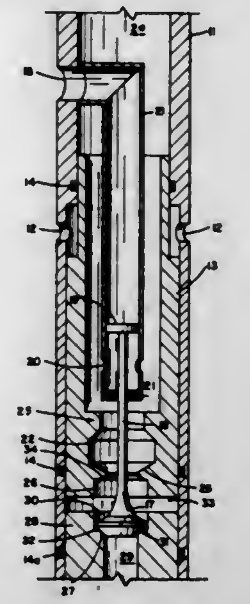
Ewald H. Kurt, Phillipsburg, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 4, 1964, Ser. No. 415,916
15 Claims. (Cl. 173—105)



1. In a rock drill including a housing having a bore, piston means disposed within said bore for longitudinal movement therein, and means for controlling said longitudinal movement of said piston means:
(a) drill steel means associated with said piston means such as to be urged longitudinally thereby during said longitudinal movement of said piston means;
(b) fluid-operated motor means;
(c) fluid passage means operatively connecting said motor means with a source of motive fluid;
(d) said fluid passage means including a first fluid passage having a portion thereof formed in said piston means and communicating fluid through said first fluid passage during only a portion of said longitudinal movement of said piston means; and
(e) means operatively connecting said motor means with said drill steel means such that actuation of said motor means by said motive fluid effects rotary movement of said drill steel means.

3,307,639
VALVE SYSTEM FOR PERCUSSION DRILL MOTOR

Lawrence B. Wilder and Kenneth A. Blenkarn, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 413,023
2 Claims. (Cl. 173—136)



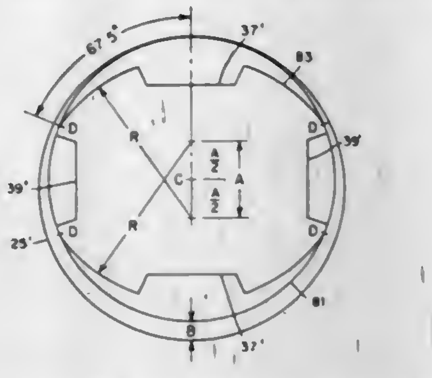
1. In a percussion drill motor including a housing, an axially hollow hammer slideably disposed within and closely fitting said housing, an axially hollow anvil slideably disposed within and closely fitting said housing adjacent one end of said hammer, said hammer being reciprocated by valve action on a stream of pressure fluid flowing in the axial hollow portions of said hammer and said anvil, the improvement comprising:
(1) an axially symmetric poppet valve coaxially and slideably mounted within said housing adjacent said anvil with an axially short section of maximum diameter and a lower beveled face extending inwardly from said section of maximum diameter,
(2) a recessed valve seat in the hollow portion of said anvil adjacent said hammer, said valve seat being beveled to correspond to said lower beveled face of said valve and axially aligned therewith, said seat being located below the top of said anvil by a substantial axial distance such that when said valve touches said seat said short section is below the top of said anvil, the recess above said seat being substantially a right circular cylinder the diameter of which is of only slightly greater diameter than the maximum diameter of said valve, and
(3) a recessed valve seat in the hollow portion of said hammer adjacent said anvil, said valve seat being beveled to correspond to the upper surface of said valve and axially aligned therewith, said seat being located above the bottom of said hammer by a substantial axial distance, the recess below said seat in said hammer being substantially a right circular cylinder the diameter of which is of only slightly greater diameter than the maximum diameter of said valve.

3,307,640
PERCUSSIVE UNIT FOR EARTH DRILLING

James M. Cleary, Dallas, Tex., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 28, 1966, Ser. No. 568,436
36 Claims. (Cl. 173—137)

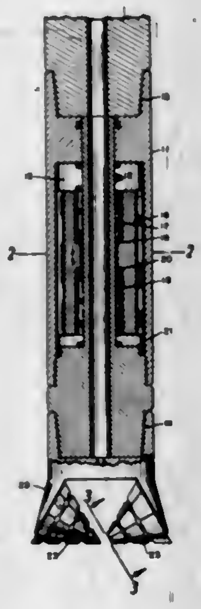
1. In a power fluid-operated percussive unit of a rotary percussive drilling system having a hammer and a drilling means and wherein the percussive unit and the drilling means are rotated and the drilling means is impacted against the earth by axial cyclic reciprocation of the hammer, and the power fluid is passed through a tubular,

rotatable valve having two high pressure power fluid inlet ports located in said valve in a position to alternately pass power fluid to passages communicating with the opposite ends of said hammer as said valve is rotated, and two power fluid exhaust ports located in said valve in a position to alternately pass power fluid from said passages communicating with said opposite ends of said hammer to a power fluid exhaust passage as said valve is rotated, the improvement comprising said two high pressure power fluid inlet ports being located on opposite sides of said valve and approximately 180 degrees on center so that said high pressure power fluid inlet ports are spaced substantially symmetrically around the surface of said valve, said two power fluid exhaust ports being located on opposite sides of said valve, said two power fluid exhaust ports being approximately 180 degrees on center from each other and approximately 90 degrees on center from said high pressure power fluid inlet ports and the exterior surface of said valve between said high pressure power fluid inlet ports and said power fluid exhaust ports having a generally elliptical configuration with said high pressure power fluid inlet ports centering on the minor axis of said generally elliptical surface and said power fluid exhaust ports centering on the major axis of said generally elliptical surface.



3,307,641
SELF-EXCITED HAMMER DRILL

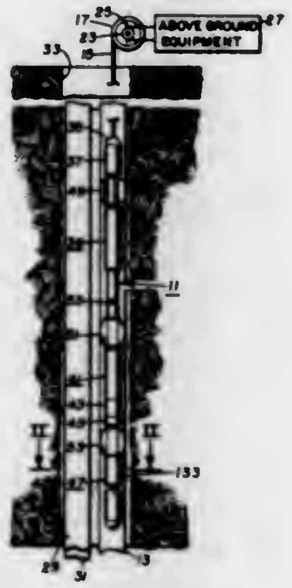
John H. Wiggins, Jr., Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Sept. 23, 1963, Ser. No. 310,707
9 Claims. (Cl. 175—56)



1. A percussive force generator adapted for rigid connection in a rotary drill string, comprising two substantially coaxial tubular walls forming a closed annular chamber, anvil means at the lower end of said chamber, spring means within said chamber, and hammer means suspended by said spring means within said chamber in a position to strike said anvil means, said chamber being free of any obstruction to a resonant action of said spring and hammer.

3,307,642
BORE HOLE TOOL ORIENTING APPARATUS AND SYSTEMS

William D. Smith, Fort Worth, Tex., assignor to Go, Inc., Fort Worth, Tex.
Continuation of application Ser. No. 265,469, Mar. 15, 1963. This application June 1, 1965, Ser. No. 466,498
3 Claims. (Cl. 175—4.51)



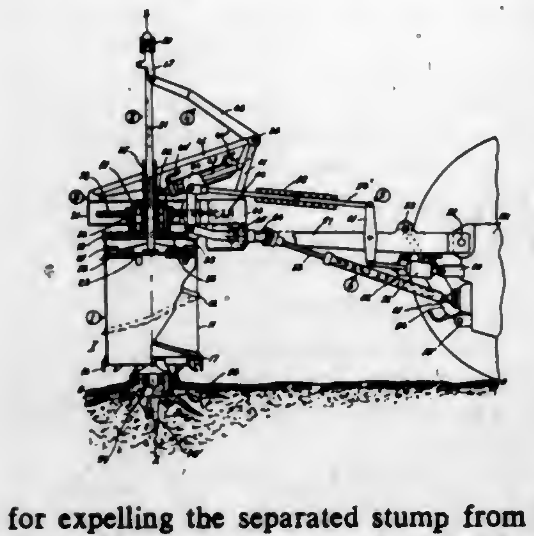
3. Apparatus for orienting a tool in a bore hole comprising:

(a) a down-hole assembly including a first section and a second section;
(b) above-ground equipment, and a down-hole signal source;
(c) means for disposing said down-hole assembly within the bore hole at a desired depth;
(d) means included in said down-hole assembly for preventing rotation of said first section relative to the bore hole and for rotating said second section relative to said first section;
(e) detector means included in said second section and responsive to said down-hole signal source, for generating signals indicative of an azimuthal pattern;
(f) a tool to be oriented included in said second section;
(g) means included in said down-hole assembly for generating orientation signals which are positively related to azimuthal positions of said detector;
(h) said orientation signal generating means including means to interpose in a sequential train of said orientation signals a periodically recurring identifiable anomaly;
(i) means for transmitting signals derived from said detector, and said orientation signals to said above-ground equipment;
(j) and means included in said above-ground equipment for recording said signals.

3,307,643
APPARATUS FOR THE REMOVAL OF TREE STUMPS

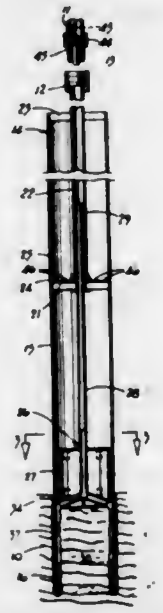
Romolo Ferri, Via Frassine 6, Villa Poma, Italy
Filed June 24, 1963, Ser. No. 289,831
Claims priority, application Italy, Apr. 10, 1963, 8,059/63
5 Claims. (Cl. 175—161)

1. An apparatus for the removal of tree stumps, comprising, in combination, rotary means having circumferentially disposed cutters for cutting off the roots of a stump of a felled tree and for separating said stump from adjacent ground, means connected with the first-mentioned means for rotating the first-mentioned means, means connected with the first-mentioned means for swinging the first-mentioned means relatively to the stump being cut, means connected with the first-mentioned means for expelling the separated stump from the space enclosed by said cutters, means connected with the fourth-mentioned means and the second-mentioned means for actuating the fourth-mentioned means, and means connected with the first and fourth-mentioned means for swinging the first and fourth-mentioned means in vertical planes relatively to the ground.



3,307,644
BOREHOLE DRILLING

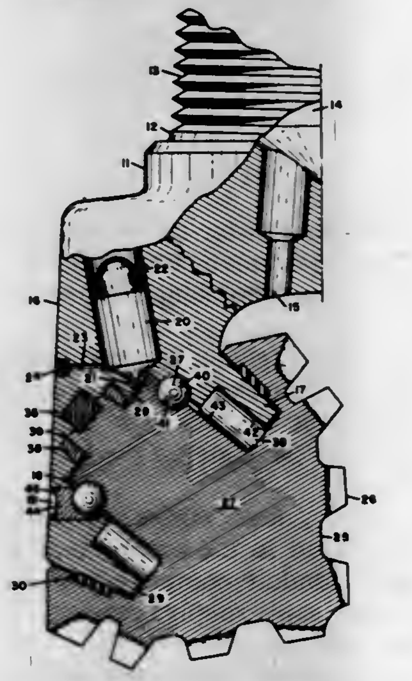
Henry Rowland Hill, The Warren House, Prees Heath, Whitchurch, England
Filed Dec. 6, 1963, Ser. No. 328,587
Claims priority, application Great Britain, Dec. 6, 1962, 46,034/62
7 Claims. (Cl. 175—245)



7. A core drill bit for core borehole drilling comprising a lowermost drill pipe having attachment means at its upper end for attachment to the end of an upper drill pipe, a hollow cylindrical drill bit having a cylindrical wall of substantially larger diameter than said lowermost drill pipe and within which cylindrical wall said lowermost drill pipe is disposed co-axially therewith and said lowermost drill pipe being secured at its lower end to a horizontal platform disposed across the bore of the drill bit and secured thereto intermediate the upper and lower ends thereof whereby the drill bit can be rotated by the lowermost drill pipe and the upper end of the cylindrical wall defining an opening whereby a bucket formation is provided by said cylindrical wall and platform, said cylindrical wall being provided at its lower end with a cutting part and the bore wall of the hollow cylindrical drill bit adjacent the lower end thereof having an upwardly divergent face to wedge recovery material against a core, web means between the upper end of the cylindrical wall and the upper lowermost drill pipe to support the lowermost drill pipe, a window opening in the cylindrical wall of the drill bit adjacent the lower end of the bucket formation, a hole in the cylindrical wall level with the platform, a hollow directing member disposed in the bore of the hollow cylindrical drill bit and including a slidable pipe disposed co-axially within the cylindrical wall of the drill bit and having telescopic engagement at its upper end with the bore of the lowermost drill pipe and there being a small clearance between said upper end and the bore of the lowermost drill pipe, and said member also including an enlargement at the lower end of the slidable pipe and said enlargement affording a closed almost buoyant chamber of which the external diameter is only slightly smaller than the bore diameter of the cylindrical bore and said chamber having bearing means bearing against the cylindrical bore to prevent transverse movement of said chamber relative to the cylindrical wall whilst permitting relative rotational and axial movement of the cylindrical wall and chamber, a conical structure at the lower end of the enlargement, said hollow directing member having a passage extending from the upper end of the slidable pipe where it communicates with the bore of the lowermost drill pipe to the lower end of the conical structure where said passage communicates with the interior of the hollow cylindrical drill bit at a junction of said lower end and a cylindrical wall of the chamber and adjacent the bore of the cylindrical wall of the drill bit and said passage having a cross-sectional area substantially less than that of the bore of the hollow cylindrical drill bit, and a base plate on the chamber to rest against an upper end face on the core when formed in the bore of the drill bit.

3,307,645
REVERSE BEARING BIT

Alexander B. Hildebrandt, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 405,146
7 Claims. (Cl. 175—372)



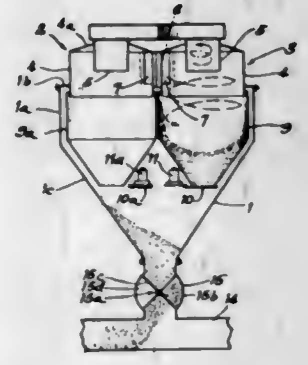
1. A rotary drill bit which comprises:

(a) a body member provided with means near the upper end thereof for connecting said member to the lower end of a drill string and with an internal pas-

sageway extending from an inlet in the upper end of said member to an outlet in the lower surface of said member;
(b) a leg depending from said body member, said leg including a cantilever pin extending inwardly and downwardly beneath said body member and said pin containing an axial recess extending inwardly in said pin from an opening in the free end thereof;
(c) a conical cutting element provided with an axle extending from the base thereof and an annular recess surrounding said axle, said axle extending into said axial recess in said pin;
(d) a thrust bearing positioned within said axial recess between the end of said recess and the end of said axle;
(e) a sleeve bearing positioned within said axial recess between the wall of said recess and said axle, said sleeve bearing seating against a shoulder in said axial recess near the end thereof;
(f) a plurality of balls positioned within said axial recess between an inner race on the surface of said axle and an outer race on the wall of said axial recess at an intermediate point therein, said balls and races limiting axial movement of said cutting element with respect to the leg of said bit; and
(g) a plurality of roller bearings positioned within said axial recess between an inner race on the surface of said axle and an outer race on the wall of said axial recess at a point near the outer end of said axial recess.

3,307,646
APPARATUS FOR WEIGHING MATERIALS IN THE COURSE OF PNEUMATIC HANDLING

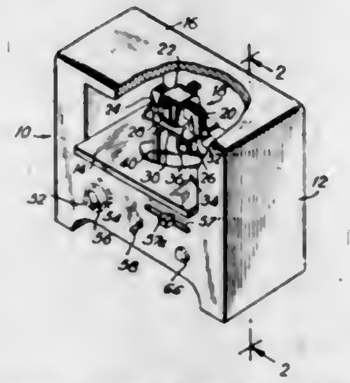
Stanislas H. Hage, Nivelles, Belgium, assignor to DK Manufacturing Company, Batavia, Ill., a corporation of Illinois
Filed May 13, 1965, Ser. No. 455,520
Claims priority, application Belgium, May 26, 1964, 520,765, Patent 648,408
5 Claims. (Cl. 177—98)



1. In an installation for the weighing of materials during the course of pneumatic handling thereof,
the combination comprising a plurality of cyclone separators,
a plurality of weighing hoppers disposed beneath the corresponding cyclone separators,
a supply conduit connected to said cyclone separators for supplying the material thereto,
an air pump,
each of said cyclone separators having an axial flue pipe connected to the suction side of said air pump,
said supply conduit comprising a diverted valve for conducting said supply conduit to each of said cyclone separators in turn,
each of said weighing hoppers comprising a shut off valve at the lower end thereof for retaining the material therein so that it may be weighed,
a weighing device connected to each of said weighing hoppers,
an outer casing mounted around said weighing hoppers and enclosing said weighing hoppers and said cyclone separators for receiving the weighed material from said weighing hoppers,
a delivery conduit connected to the pressure side of said air pump,
means connected between the lower end of said outer casing and said delivery conduit for feeding the material from said casing into said delivery conduit,
said weighing hoppers and the interior of said outer casing and said cyclone separators being maintained at a subatmospheric pressure by the suction developed by said air pump,
said weighing hoppers being adapted to be filled in turn and emptied in turn so that one hopper is being filled while another is being emptied.

3,307,647
ELECTROMAGNETIC PRECISION APPARATUS FOR ASCERTAINING THE UNKNOWN WEIGHT OF AN OBJECT

Bertram J. Cohon, Hackensack, N.J.
(781 River St., Paterson, N.J. 07524)
Filed Oct. 20, 1965, Ser. No. 498,932
9 Claims. (Cl. 177—201)



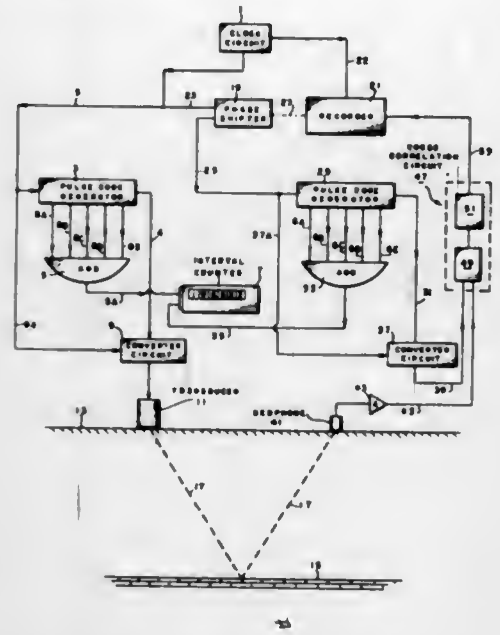
1. An electromagnetic weighing apparatus for the precision weighing of objects, said apparatus including an electromagnet, regulatable circuit means variably energizing the electromagnet and adjustably controlling the strength of the field thereof between high and low levels, means indicating the relative level of the strength of the field, an armature associated with said electromagnet, a pan adapted to support an object whose weight is to be determined, said pan being secured to the armature, the armature having an initial static position at a high level of field strength held against a pole of the electromagnet, said pole constituting a stop, and abruptly dropping under the influence of gravity to a position displaced from said pole when the level of field strength is reduced to a point between said high and low levels, the weight of the object being a function of the field strength at said point.

3,307,648
INTERVAL COUNTING BINARY CODE SEISMIC PROSPECTING SYSTEM

Horace T. Masterson, Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Nov. 2, 1964, Ser. No. 408,176
3 Claims. (Cl. 181—.5)

3. Apparatus for seismic prospecting, comprising:
a first electrical code generator for producing an electrical signal having a characteristic variable in accordance with a pseudo-random code, responsive to an actuating signal;
an electro-seismic wave transducer at a transmitting location coupled to said code generator for injecting a seismic signal into the earth which is variable in accordance with variations in the output signal of said code generator;

a second electrical code generator for producing an output signal identical to the output signal produced by said first code generator, responsive to an actuating signal coupled thereto;
seismic wave detecting means at a remote location from said transmitting location for producing an electrical output signal variable in accordance with variations in seismic waves detected thereby;
cross-correlating means electrically coupled to said second code generator and to said seismic wave detecting means for producing an output signal indicative of the correlation between the output signals of said second code generator and said seismic wave detecting means;

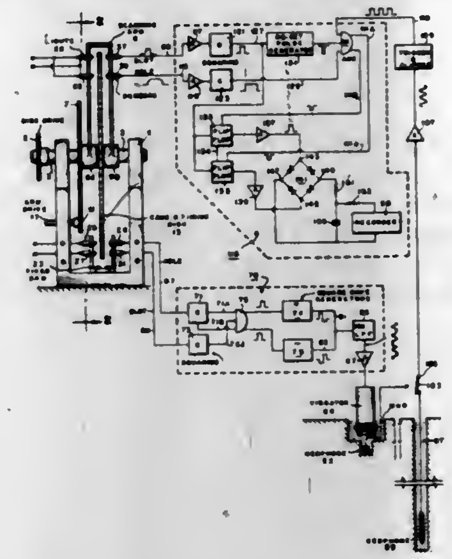


a communications link between said transmitting and remote locations;
means coupled to one of said code generators through said communications link and directly to the other of said code generators for supplying actuating signals to said first and second code generators with an adjustable time interval between the instant at which an actuating signal is supplied to said first code generator and the instant at which an actuating signal is supplied to said second code generator; and
means connected to said code generators for measuring said time interval.

3,307,649
SEISMIC SYSTEM USING A SLOTTED DISC SOURCE PRODUCING A BINARY CODE

John D. Ball, deceased, late of Harris County, Tex., by Verna D. Ball, executrix, Harris County, Tex.; Frank J. Feagin and Melvin C. Terry, Harris County, Tex., assignors to Esso Production Research Company, a corporation of Delaware
Filed July 21, 1965, Ser. No. 474,215
9 Claims. (Cl. 181—.5)

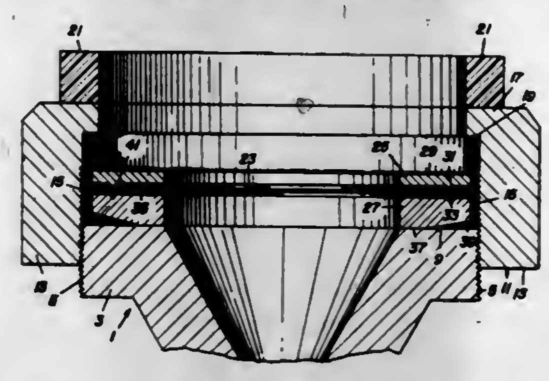
2. Apparatus for measuring the travel time of seismic waves between the earth's surface and a geophone spaced therefrom, comprising:
pulse generating means for producing first and second timing pulse trains of equally time-spaced electrical pulses, first and second coded pulse trains of time-spaced pulses having a pseudo-random time distribution, each pulse in said first coded pulse train being concomitant with a pulse in said first timing pulse train and each pulse in said second coded pulse train being concomitant with a pulse in said second timing pulse train, said pulse generating means further including means for adjustably delaying one of said coded pulse trains relative to the other of said coded pulse trains;
first circuit means connected to said pulse generating means for producing a sinusoidal output signal having one phase responsive to concomitant pulses of said first coded pulse train and first timing pulse train, and having the opposite phase responsive to a pulse from said first timing pulse train unaccompanied by a pulse from said first coded pulse train;
transducer means connected to said first circuit means for producing seismic waves responsive to the output signal thereof;
electrical terminal means for connection to said geophone;



second circuit means connected to said terminal means for producing pulses responsive to predetermined signal conditions of the electrical signals applied to said terminal means;
third circuit means connected to said pulse generating means and to said second circuit means for producing an output pulse of one polarity in an output circuit therein upon concomitant reception thereby of pulses of said second coded pulse train and said second timing pulse train, and an output pulse of the opposite polarity upon concomitant reception thereby of a pulse from said second timing pulse train and a pulse from said second circuit means; and;
means connected to said third circuit means for integrating said output pulses of said third circuit means and for recording the integrated pulses.

3,307,650
DIAPHRAGM MOUNTING FOR STETHOSCOPE

William L. Howell, Washington, D.C., assignor to Taylor Instrument Companies, Rochester, N.Y., a corporation of New York
Original application Feb. 5, 1963, Ser. No. 257,361, now Patent No. 3,157,246, dated Nov. 17, 1964. Divided and this application Apr. 15, 1964, Ser. No. 360,803
1 Claim. (Cl. 181—24)



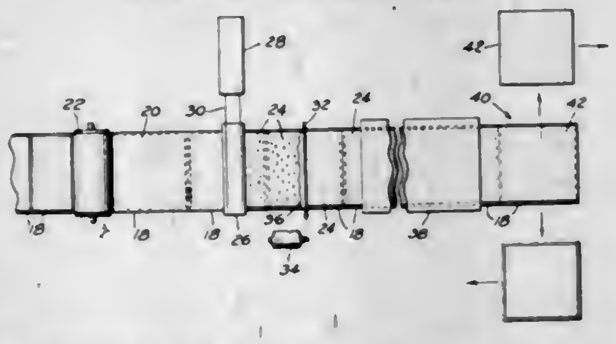
A head assembly for a stethoscope including a bowl, a diaphragm adapted to be stretched thereacross, and means clampedly engaging said diaphragm and mounting it in operative position, said means including a pair of rings rockably supported on said bowl and at least one of said rings being a cam ring and said diaphragm being positioned between said rings, and a clamping ring adjustably mounted on said bowl and including a radially inwardly extending flange adapted to engage one of said rings and exert pressures thereon to lock the diaphragm therebetween, said cam ring having a cam surface thereon operable to rock said cam ring and the other ring radially outwardly for stretching the diaphragm, and said flange engaging said one of said rings radially outwardly with respect to the transverse center thereof to cause said rocking of the rings.

3,307,651
ACOUSTICAL TILE

John S. Podgurski, Gypsum, Ohio, assignor to United States Gypsum Company, Chicago, Ill., a corporation of Delaware

Original application Feb. 10, 1961, Ser. No. 88,340, now Patent No. 3,246,063, dated Apr. 12, 1966. Divided and this application Feb. 25, 1966, Ser. No. 530,116

4 Claims. (Cl. 181—33)



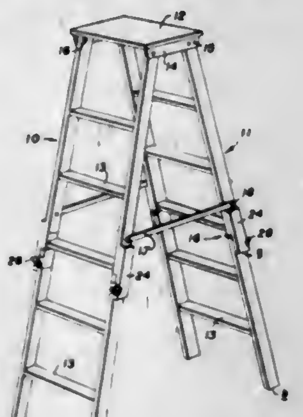
1. An acoustical tile comprising a relatively thin, flat body of acoustical composition including fibrous material and an amylaceous binder, said body being porous and normally having intrinsic gas passageways therethrough, and a layer of sheet material impervious to passage of water vapor, said layer being coextensive with the back surface of said tile and firmly bonded thereto throughout substantially the entire area of said layer by said binder.

3,307,652
FOLDING STEP LADDER

John C. Green, 2404 Handley Drive, Fort Worth, Tex. 76112

Filed July 16, 1965, Ser. No. 472,450

3 Claims. (Cl. 182—22)



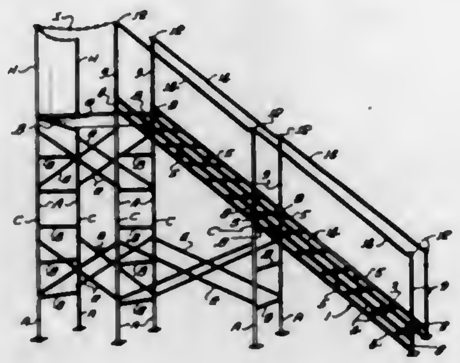
1. A step ladder having front and rear pairs of legs and means hingedly connecting said legs in spaced relation at the upper ends thereof, steps between at least one pair of said legs, said legs being divided into upper and lower portions intermediate their ends, hinges connecting said upper and lower portions of said legs, the pivots of said hinges being located at the inner surfaces of said legs, the spaced relation at the upper end of said legs being of a distance sufficient to accommodate said lower portions in side by side relation when folded adjacent said upper portions, latch means located opposite said hinges detachably securing said upper and lower portions, and blocks on the sides of said upper portions of said legs, said blocks extending below said upper portions to protect said hinges when said legs are folded.

3,307,653
DEMOUNTABLE STAIRWAY UNIT

Herman O. Gnehm, 4153 Matthews Drive, Palm Springs, Calif. 92262

Filed Feb. 7, 1966, Ser. No. 525,767

4 Claims. (Cl. 182—106)



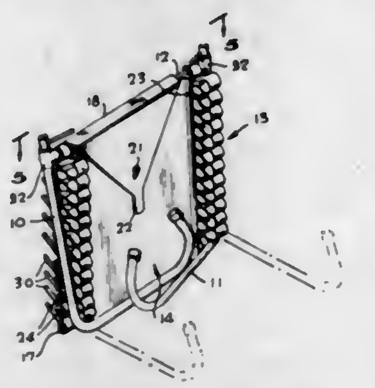
1. A stairway unit for demountable installation on a demountable scaffolding structure of the type built up of vertically disposed, tubular modular components and horizontal connecting components for adjacent ones of the vertical, tubular, modular components; said stairway unit comprising a pair of spaced parallel stringer elements to which the opposite ends of a plurality of tread elements are secured and said stringer elements additionally including means capable of being interposed between for demountable engagement with selected adjacent ones of the vertical, tubular components of the scaffolding structure in such relation thereto that the top surfaces of the treads are disposed in substantially horizontal planes.

3,307,654
EMERGENCY FIRE ESCAPE APPARATUS

Jack C. Green, Los Angeles County, Calif. (3870 Carpenter Ave., Studio City, Calif. 91604), and Fred N. Morrison, Los Angeles County, Calif. (1000 W. Orange Grove, Burbank, Calif. 91502)

Filed Aug. 2, 1965, Ser. No. 476,325

5 Claims. (Cl. 182—198)



1. A foldable ladder apparatus comprising:
a top support rung;
a plurality of step rungs;
a pair of webbing strips having one end of each of said strips rotatably attached about said top support rung in fixed spaced relationship with respect to each other;
each of said pair of strips having woven slots arranged along the length of each of said strips adapted to receive and retain the opposite ends of each of said step rungs whereby said step rungs are spaced apart in fixed spaced relationship when the ladder is unfolded;
a case for releasably enclosing said plurality of step rungs in a predetermined order of release which embraces said step rungs and said top support rung between said pair of strips whereby said pair of strips form consecutive loops in line along the opposite edges of said case; and
means carried on said case for selectively opening said case to release said step rungs which under the effects of gravity causes said step rungs to unfold in accordance with said predetermined order.

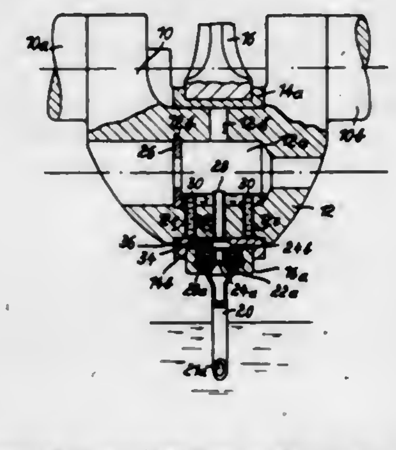
3,307,655
MEANS FOR LUBRICATING A CRANK PIN OF A CRANK SHAFT

Ernst Hatz, Ruhstorf, near Passau, Germany, assignor to Motorenfabrik Hatz, GmbH., Ruhstorf, near Passau, Germany

Filed Nov. 17, 1964, Ser. No. 411,836

Claims priority, application Germany, Mar. 26, 1964, M 60,462

7 Claims. (Cl. 184—6)



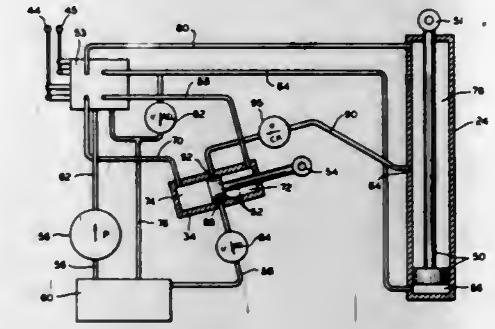
1. In an internal combustion engine, in combination, an oil sump; a rotary crank shaft having a crank pin eccentrically disposed with respect to its rotational axis, said shaft being arranged to rotate above said sump; and the crank pin having formed therein an axial bore constituting an oil reservoir and, communicating with said bore, a radial air venting duct, a radial oil supply channel adapted also to communicate with the interior of the scoop and at least one oil lubricating duct leading radially from the axial bore to the running surface of the crank pin; a connecting rod having a big end mounted upon and embracing said crank pin; a hollow scoop which is mounted on said big end and is arranged to dip into lubricating oil in the sump in the vicinity of the lower portion of the circle of movement of the big end, said scoop having at least one opening thereinto facing in the direction of movement of the big end and constituting an inlet for oil for use in lubricating the crank pin; and means within said scoop adapted, whenever the latter is lifted out of oil in the sump, to prevent at least some of the oil scooped up through the inlet from running out of the inlet again; the construction and arrangement being such that at least during the initial phase of each insertion of the scoop into the oil sump the hollow interior of the scoop moves into communication with the air venting duct whereas at least in the zone of the top dead centre of the connecting rod the said hollow interior of the scoop is brought into communication with the oil supply channel by which oil is fed into the axial bore in the crank pin by centrifugal force and from thence through the one or more oil lubricating ducts to the running surface of the crank pin, the inner end of said air venting duct extending radially inwardly of the axial bore surface so as to terminate inwardly of the normal level of the oil therein.

3,307,656
HYDRAULIC SYSTEM FOR LIFT TRUCKS AND THE LIKE

Jerome R. Susag, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan

Filed Oct. 22, 1965, Ser. No. 501,337

7 Claims. (Cl. 187—9)



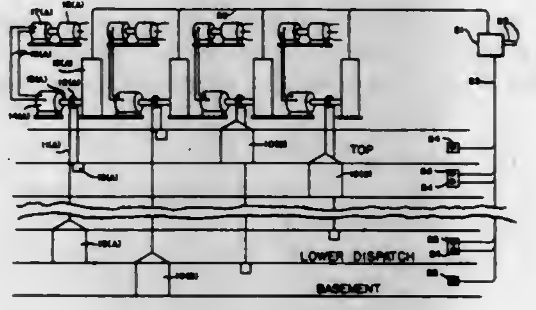
1. In a lift truck having an upright load lifting means adjacent one end thereof, hydraulic lift cylinder and piston means for elevating loads on the lifting means, hydraulic tilt cylinder and piston means for tilting the lifting means out of a vertical position and operator control means for directing pressure fluid to the lift and tilt cylinder means to elevate and tilt the lifting means, a conduit means interconnecting the lift and tilt cylinder means and communicating with lift cylinder means at a predetermined elevation and with the tilt cylinder means at a predetermined location longitudinal thereof, and relief valve means adapted to vent the lift cylinder means through said conduit means to a lower pressure under predetermined conditions of tilt of the load lifting means, elevation of the lift cylinder means and load carried by the load lifting means.

3,307,657
ELEVATOR CONTROL INCLUDING MEANS TO PROVIDE BASEMENT SERVICE

Raymond A. Burgy, Maumee, and Warren V. Weaver, Toledo, Ohio, assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio

Filed Apr. 3, 1961, Ser. No. 100,065

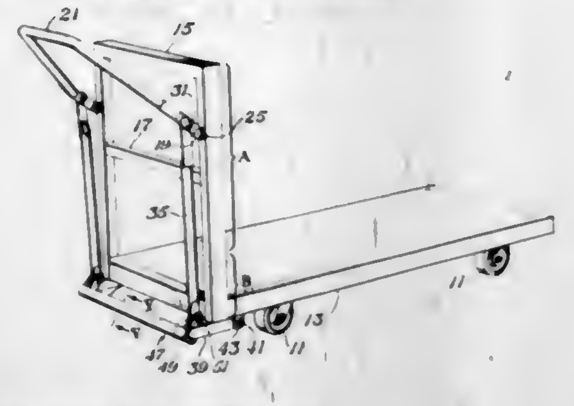
2 Claims. (Cl. 187—29)



1. An elevator system comprising a plurality of cars serving a plurality of landings including a lower dispatching landing and a basement landing below said lower dispatching landing, means to stop descending cars at said dispatching landing automatically, means to condition a car for loading for up travel at said dispatching landing, means for setting a car to basement service, means for sensing the setting of any basement serving car to basement service, and means responsive to the presence of a conditioned car at said dispatching landing, and concurrently therewith, the absence of a car set to provide basement service for preventing the stopping of a descending car at said dispatching landing by said stopping means.

3,307,658
BRAKE APPARATUS FOR CARTS

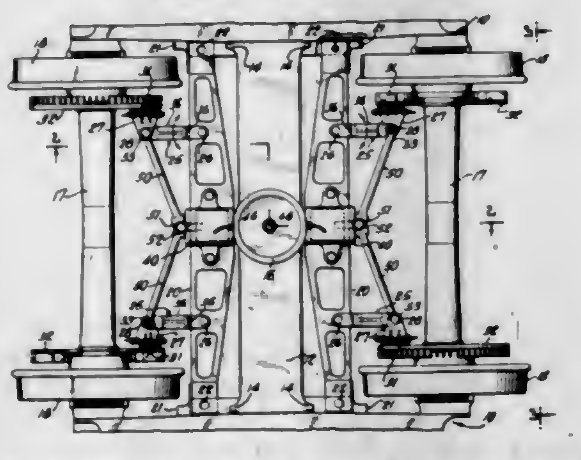
Norman R. Stevenson, Dallas, Tex., assignor to M-H Equipment Co., Inc., Duncanville, Tex.
Filed Apr. 15, 1965, Ser. No. 448,323
2 Claims. (Cl. 188—5)



1. Cart apparatus comprising:
(a) a wheel supported load carrying body;
(b) a frame secured at one end of said body and extending upwardly therefrom;
(c) a generally U-shaped handle having its end portions spaced a distance that is a substantial portion of the width of said body, with said end portions being pivotally secured to said frame at the upper region thereof for rotation about a horizontal axis;
(d) a pair of connecting rods disposed in parallel juxtaposed spaced relation and each having one end pivotally secured to said handle on the outer side thereof adjacent a respective end portion thereof and inwardly of the pivot axis of said handle, and with said connecting rods depending substantially vertically from said handle;
(e) a pair of brake guide levers disposed in parallel juxtaposed spaced relation and each having one end thereof pivotally secured to said cart adjacent a lower region of said frame for rotation about a horizontal axis, and the other end portion thereof pivotally secured to the lower end of a respective said connecting rod; and
(f) an elongated horizontally extending brake shoe assembly fixed at its end portions to the outer end portions of said brake guide levers and having a floor engaging surface extending substantially the entire length of said assembly.

3,307,659
RAILWAY CAR BRAKE MECHANISM

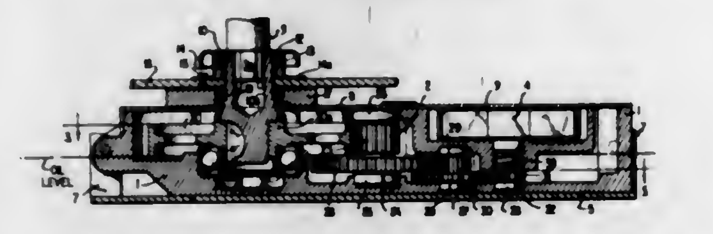
Edward G. Goods, Snyder, N.Y., assignor to Buffalo Brake Beam Company, a corporation of New York
Filed Dec. 11, 1964, Ser. No. 417,658
16 Claims. (Cl. 188—59)



1. In a railway car truck, the combination comprising side frames for the truck, a pair of coaxial car wheels supported on said side frames respectively, a pair of brake discs rigid with said wheels respectively for rotation therewith, a toggle joint mechanism extending between said wheels and comprising two rods articulated at adjoining ends out of alignment to form a toggle joint therebetween, and means for confining the movements of the other ends of the rods in directions to bring said rods towards and away from alignment, and comprising a brake support arm in the form of a lever for each rod, means for pivotally supporting one end of said brake support arm at a substantially fixed point with respect to said side frames, and means for pivotally connecting the other end of said brake support arm to the corresponding rod near said other end of the later rod, brake heads for said brake discs respectively, means supporting said brake heads for movements towards and away from said brake discs respectively, means for applying braking pressure to said toggle joint in a direction tending to bring said rods towards alignment, and transmission means between said other ends of said rods and said brake heads for moving said brake heads towards said brake discs respectively into braking positions as said rods move towards alignment and for moving said brake heads away from said brake discs respectively, as said rods move away from alignment.

3,307,660
REVOLVING DOOR SPEED CONTROL DEVICE

Amuel E. Sheckells, Evansville, Ind., assignor to International Steel Company, Evansville, Ind., a corporation of Indiana
Filed July 15, 1964, Ser. No. 382,791
6 Claims. (Cl. 188—185)

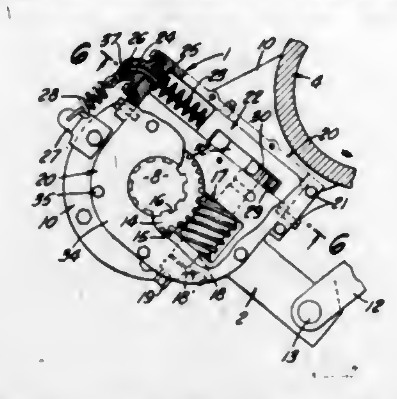


1. A revolving door speed control device of the character described, comprising a housing, a main gear rotatably mounted within said housing, said main gear adapted for connection to a revolving door shaft, a centrifugal brake assembly including braking surface means positioned within the housing, gear train means rotatably mounted within the housing, said gear train means being operatively connected between the main gear and the centrifugal brake assembly, whereby upon rotation of the revolving door, lubricating fluid bath means within said housing, and lubricating fluid pump means operatively connected to the lubricating fluid bath means and said centrifugal brake assembly and operative upon rotation of said centrifugal brake assembly for directing a volume of lubricating fluid onto said braking surface means in said brake assembly upon actuation thereof.

3,307,661
AUTOMATIC BRAKE ADJUSTOR

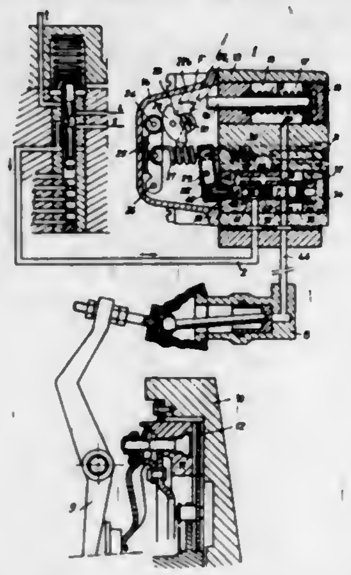
James L. Bostwick, 1501 Bluff Drive, Santa Barbara, Calif. 93105
Filed Mar. 29, 1965, Ser. No. 443,415
12 Claims. (Cl. 188—196)

1. A brake adjusting device, comprising: a housing; means for mounting said housing for movement with the brake operating arm of a slack adjusting unit wherein said arm is moved in opposite directions for applying and releasing the brakes and is provided with brake adjusting means including a shaft rotatable for actuating said adjusting means; a plunger mounted in said housing so that said housing and plunger are relatively movable; spring means in said housing biasing said plunger to occupy a predetermined position; a flexible anchoring element connected to said plunger; means for anchoring said flexible element at a point spaced from said plunger; said flexible element holding said plunger against movement relative to said housing and releasing said plunger for movement relative to said housing into said predetermined position by said spring means in response to predetermined opposite movements of said arm in applying and releasing the brakes; and operating means in said housing operatively connected to said shaft and said plunger for effecting rotation of said shaft and operation of said brake adjusting means upon said relative movement of said plunger into said predetermined position by said spring means.



3,307,662
HYDRAULICALLY OPERATED CLUTCH AND MOTOR CONTROLS FOR VEHICLES

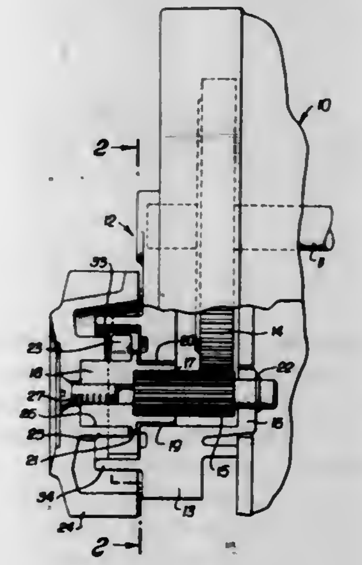
Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a corporation of France
Filed Feb. 24, 1965, Ser. No. 434,988
Claims priority, application France, Feb. 28, 1964, 965,617, Patent 1,395,039
5 Claims. (Cl. 192—.076)



1. A hydraulic clutch control device for an automobile vehicle comprising a fluid pressure power cylinder for operating the clutch, an operating and speed-selecting control slide-valve controlling a source of fluid-pressure, a corrector located between said power cylinder and said control slide-valve comprising a regulating slide-valve, members controlled by the spindle of the accelerator butterfly-valve controlling said regulating slide-valve to adapt the speed of re-clutching to the speed of the vehicle, a pivoted lever controlled by said members, a spring cooperating with said lever whose tension is a function of the position of said butterfly-valve spindle, said regulating slide-valve having a bore, a set of two spaced valves in said bore, one of said valves moving without clearance in said more and the other valve with a predetermined clearance to produce a leakage, said set subjected on one side to the fluid-pressure existing in said power cylinder and on the other side to the action of said lever, a connecting conduit connected by said control slide-valve to a source of high pressure or to a source of low pressure; a chamber located adjacent one of said set of valves, a conduit connecting said power cylinder with said chamber, an internal connection between said chamber and the space in said bore between said set of valves; said internal connection being closed by said valves after a first movement of the clutch and the final clutching movement being controlled by the leakage of fluid about said valve with a predetermined leakage.

3,307,663
ANTI-CREEP DEVICE FOR VARIABLE RATIO TRANSMISSIONS OR THE LIKE

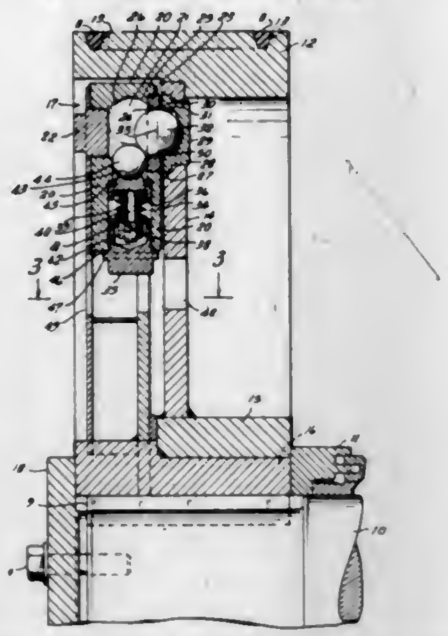
Frederick O. Luenberger, Los Angeles, Calif., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Feb. 8, 1965, Ser. No. 431,038
1 Claim. (Cl. 192—8)



In apparatus for maintaining angular adjustment of rotary mechanisms: a case having a frontal aperture; a bearing in the case aligned with but spaced inwardly of said frontal aperture; a pinion having an inner end supported by said bearing; an actuator secured to the outer end of said pinion and having an external annular bearing surface; a bearing sleeve accommodated at said frontal aperture and supporting said actuator and thereby said pinion by engagement with the said annular bearing surface; said actuator having a part projecting outwardly of said case; said actuator having a radially extending abutment for transmission of angular movement to said pinion; a knob journalled on the outer end of said actuator and having an integral inner hub portion fitting over the actuator, said hub portion having a notch defining opposed wall surfaces between which said radially extending abutment is received with clearance; said case having annular wall means providing a cylindrical surface circumscribing said hub portion and said radially extending abutment; a brake band made of spring stock material fitted in the recess and having a normal curvature slightly less than that of said circumscribing cylindrical recess; said brake band having inwardly bent ends respectively interposed between said wall surfaces and said radially extending abutment on opposite sides of said radially extending abutment; said knob being supported for rotation only by said actuator whereby said knob may be removed without disturbing the support of said pinion and said actuator; angular movement of said knob in either direction causing release of said band from said cylindrical surface and movement of said radial projection and said pinion; movement of said pinion in either direction without application of a driving torque from said knob causing movement of said band into locking engagement with said cylindrical surface.

3,307,664
OVERLOAD RELEASE CLUTCH WITH LOCK OUT MEANS

Harold S. Halsall, Newbold, Chesterfield, England, assignor to Kennedy Van Saun Mfg. & Eng. Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,118
Claims priority, application Great Britain, Mar. 2, 1964, 8,740/64
6 Claims. (Cl. 192—56)

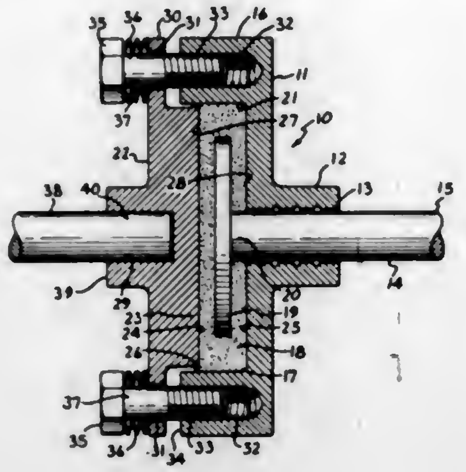


1. In a mechanical transmission, including two relatively rotatable coaxially mounted members, an overload release mechanism interconnecting said members located at a distance away from the axis of their rotation and comprising adjacent opposed registering and facing first and second sockets provided respectively in said coaxial members, a driver means located partially in each of said sockets coupling said members together and transmitting a drive from one of said coaxial members to the other during normal operation of the transmission, said first socket being adapted to receive only a portion of said driver means so that a reaction force is created between said first socket and the driver means tending to move the driver means therefrom into the second socket, and a yieldable detent member engaging the driver means and opposing said reaction force, said detent member being located in a position to oppose movement of said driver means from said first socket into said second socket and being yieldable upon the occurrence of a predetermined increased value of said force thereby permitting the driver means to move out of said first socket, wherein the improvement comprises a construction in which said first socket, which is adapted to receive only a portion of said driver means, is provided with a mouth shaped in such a manner that the reaction force between it and the driver means tends to move the driver means from said first socket into the second socket, wherein the second socket includes a cavity located opposite the detent member and offset with respect to the mouth of said second socket into which the driver means is moved and therein retained by the detent member when the driver means is moved from the first socket into the second socket and said coaxial members are uncoupled, and wherein said detent member is located radially inwardly of said driver means.

3,307,665
POWDER COUPLING HAVING PRESSURE ADJUSTABLE MEANS

Johan E. A. Graae, 315 N. Myrtle Drive, Elmhurst, Ill. 60126
Filed Apr. 22, 1965, Ser. No. 450,070
7 Claims. (Cl. 192—58)

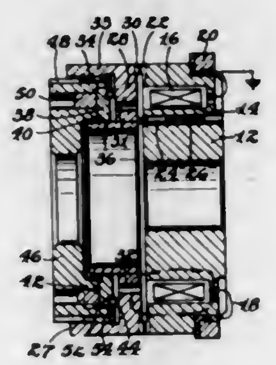
1. A powder coupling and the like comprising relatively rotatable co-axial driving and driven elements;
one of said elements including a casing having therein a hollow;
the other of said elements including a rotor disposed within the hollow in said casing;



a powder-like mass entirely filling the hollow about said rotor, said rotor is self adjustable in said powder-like mass to equalize pressure thereof about said rotor, and
pressure means for releasably compressing the powder-like mass.

3,307,666
ELECTROMAGNETIC TOOTH CLUTCH

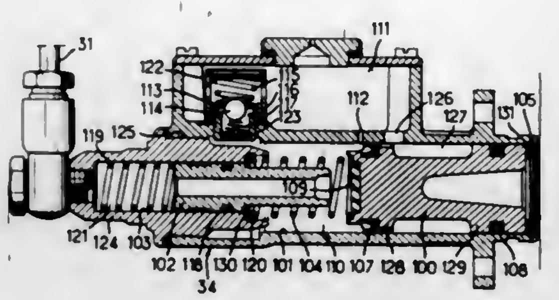
Donald L. Miller and Charles A. Mendenhall, Horseheads, N.Y., assignors to The Bendix Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,334
12 Claims. (Cl. 192—84)



1. An electromagnetic tooth clutch for selectively coupling rotary members in response to an applied electrical signal comprising:
first and second rotational annular members adapted to be fixed axially relative to one another;
a primary armature member interconnected to said second annular member for rotation therewith, said primary armature having limited axial movement relative to said second annular member;
first and second rings of aligned mutually engageable clutch teeth connected to said first annular member and said primary armature respectively;
electromagnetic coil means selectively energized by an applied electrical signal to move said primary armature axially and engage said first and second rings of clutch teeth;
a secondary armature member axially movable relative to said primary armature member, said secondary armature movable to a locking position on energization of said electromagnetic coil means; and
locking means actuated by said secondary armature in its locking position to lock said primary armature in a clutch engaged position.

3,307,667
DECLUTCHING DEVICE FOR OBVIATING WEAR ADJUSTMENT

Jean Maurice, Paris, France, assignor to Societe Anonyme Francaise du Ferodo, a corporation of France
Filed July 24, 1964, Ser. No. 384,866
Claims priority, application France, July 30, 1963, 943,131; July 10, 1964, 981,380
18 Claims. (Cl. 192—91)

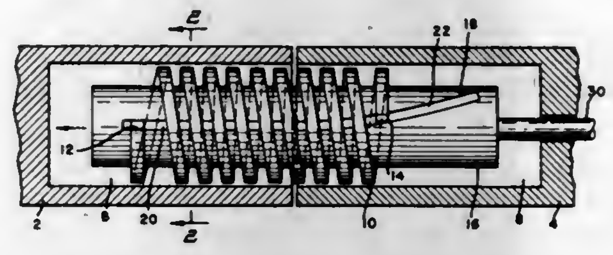


1. In a clutch having a declutching mechanism operable by a declutching stop coupled through coupling means with a declutching pedal movable along a path, said stop being sufficiently large before clutch wear so as not to said pedal is at rest, said clearance being variable with the clutch wear, said stop being adapted to approach and thereafter operate said mechanism when said pedal is actuated for declutching purposes; the improvement comprising a control device for avoiding any adjustment of the said clearance during the clutch life, said clearance being sufficiently large before clutch wear so as not to be nullified after complete wear, said device comprising a limiting means in said coupling means for limiting force transmitted from said pedal through said coupling means to said stop, said force limiting means being calibrated to a value higher than that necessary for bringing said stop into contact with said mechanism and less than that necessary for operating said mechanism, and overriding means for transmitting from said pedal through said coupling means to said stop force capable of operating said mechanism, said overriding means being responsive to a predetermined position of the pedal between the ends of said pedal path and cooperating with said limiting means so as to leave said limiting means operative as long as said pedal has not reached said predetermined position and to render inoperative said limiting means when said pedal reaches said predetermined position, whereby the said mechanism is operated as soon as said pedal has passed beyond the said predetermined position regardless of the amount of clutch wear.

3,307,668
SPRING CLUTCH

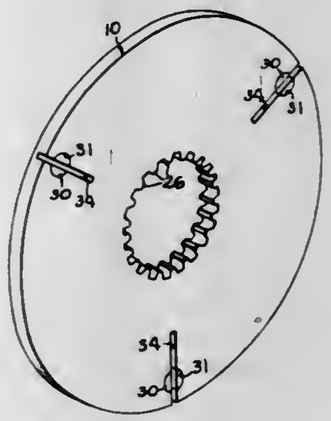
Edward R. Conlon, Bristol, Conn., assignor to Associated Spring Corporation, Bristol, Conn., a corporation of Delaware
Original application Sept. 4, 1964, Ser. No. 394,403. Divided and this application Aug. 5, 1966, Ser. No. 570,451
4 Claims. (Cl. 192—96)

1. A clutch for connecting and disconnecting two aligned relatively rotatable hollow ended shafts, comprising a helical coil spring extending between the shafts and having its end parts within the hollow ends of the shafts, an actuator positioned within the spring and being movable axially of the spring and shafts, said actuator having means engaging the ends of the spring and operable on axial movement of the actuator to produce relative circumferential movement of the spring ends thereby to change the radial dimension of at least part of the spring.



3,307,669
FRICTION COUPLING ELEMENT WITH VIBRATION LIMITER

Hubert E. Klinkenberg, Beloit, Wis., assignor to Warner Electric Brake & Clutch Company, Beloit, Wis., a corporation of Delaware
Filed Dec. 16, 1964, Ser. No. 418,692
4 Claims. (Cl. 192—107)



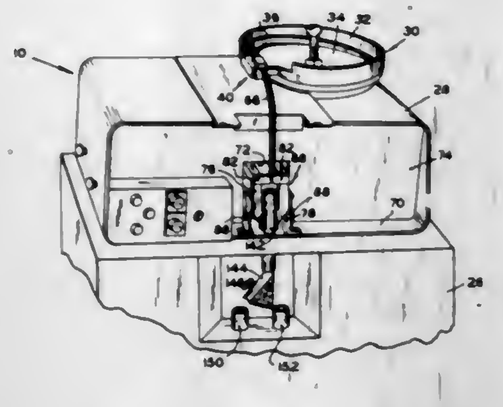
1. A friction coupling having two rings mounted for relative rotation about a common axis and adapted for axial gripping engagement to develop a driving torque, one of said rings comprising a relatively thin and flat solid disk of iron, holes extending through and angularly spaced around said disk and each defined by a continuous peripheral wall, and solid ductile metal plugs in said holes; said plugs being radially expanded within said holes and exerting a continuous radial force against said walls to maintain portions of the metal of the disk around the full circumference of said holes under radially compressive stress sufficient to impart to the disk as a whole a natural frequency of vibration which is beyond the range of objectionable audibility during gripping engagement of said rings.

3,307,670
APPARATUS FOR HANDLING MAGNETIC CORES HAVING AN ASYMMETRICALLY LOCATED CENTER OF GRAVITY

Eugene A. Vosika, New Brighton, and Gunther Schaaf, Minneapolis, Minn., assignors to Ramsey Engineering Company, St. Paul, Minn., a corporation of Minnesota
Filed Aug. 18, 1965, Ser. No. 480,620
8 Claims. (Cl. 193—43)

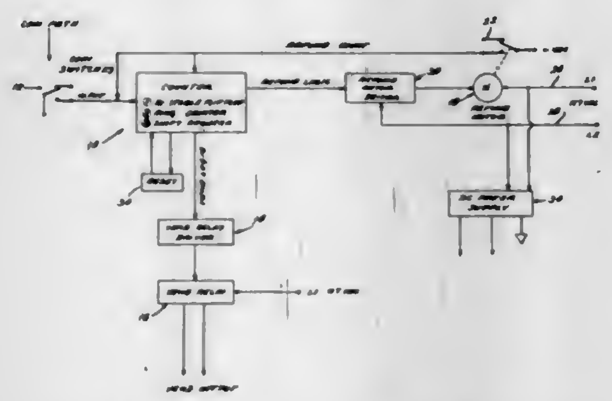
1. Apparatus for handling generally flat elongated magnetic cores having opposite faces of the same size and an asymmetrically located center of gravity along their longitudinal axes resulting in one end portion of each core being heavier and wider than its opposite end portion, each core having a hole in its heavier end portion, the

apparatus comprising means for advancing such cores in a substantially end-to-end relationship, so that their said longitudinal axes are in successive alignment, means providing a surface over which said cores travel in their said end-to-end relationship having an opening therein of a size to allow said cores to drop therethrough, and means partially closing said opening so that those cores oriented in one direction pass across said opening and those cores oriented in an opposite direction fall through said opening, said last-mentioned means projecting in the direction said aligned axes from one side of said opening toward the other side thereof and terminating in a spaced relation with said other side so that the space therebetween is greater than the distance from the heavier end to the center of gravity of said cores and less than the distance from the opposite end to said center of gravity.



3,307,671
COIN CONTROLLED MEANS

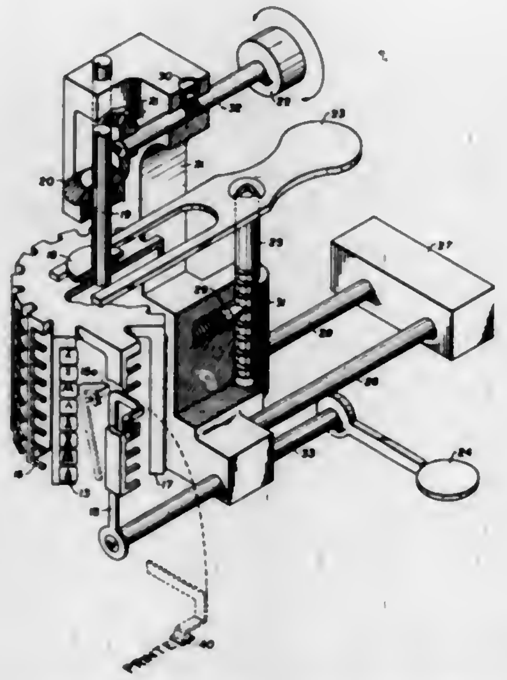
John R. Shirley, Affton, Mo., assignor to H.R. Electronics Company, High Ridge, Mo., a corporation of Missouri
Filed Apr. 12, 1965, Ser. No. 447,353
16 Claims. (Cl. 194—10)



1. A control circuit for vending machines and the like comprising counting means including a plurality of serially connected bi-stable counting circuit stages arranged in an order to be energized sequentially in response to the receipt of impulses produced when coins of selected denominations are deposited in the vending machine for accumulating the value of the coinage deposited, each of said circuit stages having two distinct operating states and each of said stages producing an output whenever it is in a selected one of its two operating states, said stages being connected so that the output from one stage produces a change in the state of the next succeeding stage, said counting means including means for producing output impulses whenever the accumulative deposit equals or exceeds a predetermined price of a vend, first means including motor and motor control means under control of said output impulses for controlling refunding of amounts deposited in excess of the vend price, second means under control of the output impulses for producing a vend operation, and means for resetting the counting means to a predetermined condition after each vend operation.

3,307,672
HOVERING PRINTER HAVING MAGNETICALLY HELD TYPE ELEMENTS

Sam H. Young, 3341 Heywood, Fort Worth, Tex. 76109
Filed Feb. 11, 1964, Ser. No. 344,106
6 Claims. (Cl. 197—2)



1. In a printing mechanism, the combination which comprises:

(a) a type bit holder in the form of a turret for supporting type bits in a circular array of angularly spaced bars, said holder having a plurality of bars extending parallel to the axis of said array, with a plurality of tines extending circumferentially from each of said bars to form vertical arrays of bit nests,

(b) a plurality of type bits, one latched in each of said nests,

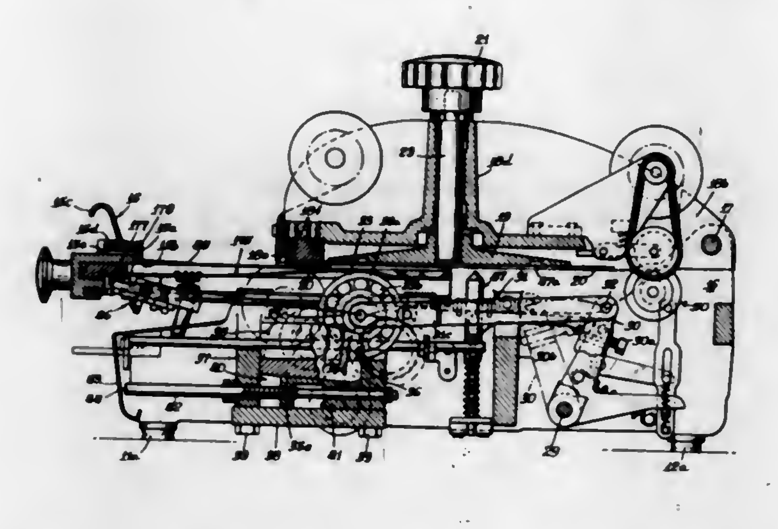
(c) means for rotating and for translating said turret on the axis of said array for selectively moving any one of said bits into registration with a loading station, and

(d) a striker bar which, in its traverse from a rest position to an impact station, passes through said loading station to unlatch and carry the bit at said loading station to a printing station.

3,307,673
ROLLING CONTACT THROUGH STATIONARY MEMBER TO PROVIDE PRESSURE FOR CUTTING STENCIL

Richard W. Jackson, Arlington Heights, Ill., assignor to Weber Marking Systems, Inc., a corporation of Illinois
Continuation of application Ser. No. 400,258, Sept. 29, 1964. This application Apr. 8, 1966, Ser. No. 541,393
2 Claims. (Cl. 197—6.4)

1. In a stencil cutting machine comprising, a generally horizontally disposed stencil receiving table, said table having an aperture, means positioning selected type letters above said table over said aperture, a roller, means moving and guiding said roller upwardly and longitudinally of said aperture to cause the roller to exert substantial pressures upwardly through said aperture, a stencil carried on said table over said aperture, a relatively stationary shield disposed intermediate said roller and said stencil, and said roller and said relatively stationary shield positioned to exert successive line contacts upwardly and through said aperture and on said stencil against selected type letters to be cut in said stencil, whereby the roller provides the pressure for cutting the stencil against the selected type and the relatively stationary shield shields the roller from direct relative rolling movement against the stencil thereby preventing the stencil from being crimped or torn by the roller, said relatively stationary shield comprising an elongated spring metal strip member, said elongated spring metal strip member attached to the underside of the generally horizontally disposed stencil receiving table at substantially the rear edge thereof and disposed longitudinally from its attachment to the table forwardly and centrally of the table aperture thereof, said elongated spring metal strip member having a forwardly opening elongated notch in the forward end thereof defining spaced-apart arms, and a vertically disposed guide pin engaging the underside of the generally horizontally disposed table at the forward edge thereof, and said spaced-apart arms flanking the sides of the vertically disposed guide pin for free sliding movement of the flanking arms past the guide pin.



3,307,674
EMBOSSING TOOLS WITH INTERCHANGEABLE EMBOSSING MEANS AND PAWL NORMALLY DISENGAGED FROM RATCHET

Armand Massen, San Rafael, and Herbert D. Pace, Jr., Sunland, Calif., assignors to Dymo Industries, Inc., Emeryville, Calif., a corporation of California
Filed Aug. 31, 1965, Ser. No. 484,040
9 Claims. (Cl. 197—6.7)

1. A tool for embossing strip material wherein a strip of embossable material is advanced through the body of the tool from a strip supply toward an embossing station in the body in response to the operation of actuating means movable between a first position and a second position for actuating embossing means at said embossing station, said tool including means for providing readily interchangeable embossing means mounted in the body for pivotal movement about an axis to allow the location of selected embossing means at said embossing station and facilitating the interchange of said embossing means by providing for the selective retraction of the strip material from the embossing station toward the supply, said means comprising:

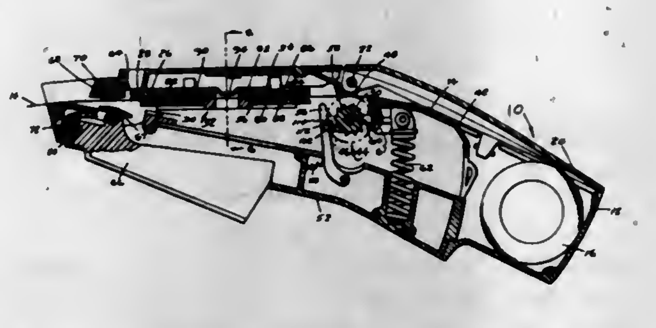
means for gripping the strip, said gripping means being selectively movable in a first direction for advancing said strip toward the embossing station and in a second direction for retracting said strip from the embossing station;

advancing means responsive to the operation of said actuating means for moving said gripping means in said first direction;

means for engaging said advancing means from said gripping means during movement of said actuating means from said second position toward said first position;

means for disengaging said advancing means from said gripping means upon the arrival of said actuating means at said first position in response to the arrival of the actuating means at the first position;

means for selectively moving said gripping means in said second direction to retract the strip from the embossing station when said advancing means is disengaged;



a slot in said body communicating with the embossing station and the exterior of said body; and

first resilient detent means fixed in said body adjacent said embossing station and displaced from the embossing station a distance equal to the displacement of said axis from the embossing station;

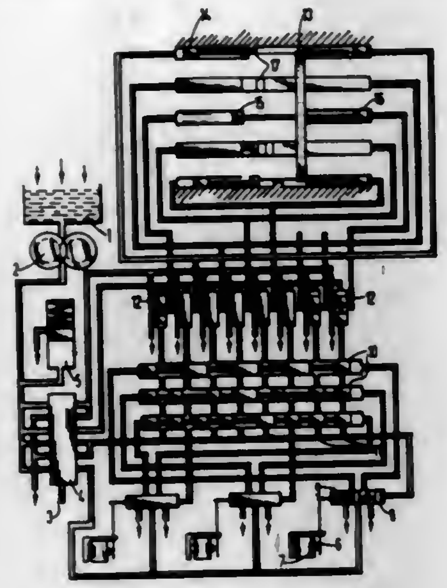
said embossing means being receivable within said slot and having second detent means for cooperatively engaging said first detent means, said second detent means being located at said axis so as to accurately position selected embossing means at the embossing station.

3,307,675
FLUID OPERATED APPARATUS FOR PRINTING BINARY-CODED INFORMATION

Werner Taubert, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a German corporation
Filed Apr. 21, 1965, Ser. No. 449,800
Claims priority, application Germany, Apr. 21, 1964, S 90,661
20 Claims. (Cl. 197—15)

1. Apparatus for the printing of received binary-coded information symbols, in which the energy required for the decoding and the printing of a symbol is transmitted by means of a fluid media under pressure, comprising a type carrier on which the symbols to be printed are arranged in predetermined relation in at least one of two coordinate directions, slide means operatively connected to said type carrier for moving the latter to effect a symbol selection thereon, means operatively connecting said type carrier and said slide means for transmitting movement therebetween, a plurality of pairs of pistons, such pairs being equal in number to the number of symbols arranged on said type carrier in such a coordinate direction, a plurality of stops, each cooperable with one of said pairs, the respective pistons of which are movable in opposite directions toward the cooperable stop, and arranged to transmit movement to said slide in a direction toward such stop, the latter being operative to restrict such movement of cooperable pistons, means operatively connecting the respective pairs of pistons to a

fluid media under pressure, and decoding elements cooperable with said last-mentioned means for selectively



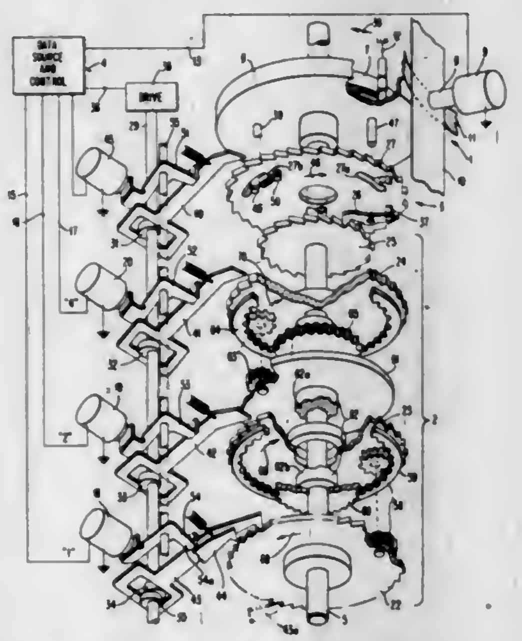
controlling the flow of such fluid media to the respective pairs of pistons.

3,307,676
PRINTING APPARATUS WITH TYPE WHEEL DISCONNECTED FROM SELECTION MEANS DURING RETURN TO HOME POSITION

John E. Hickerson, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 30, 1965, Ser. No. 517,564

8 Claims. (Cl. 197—18)



1. Cyclically operable printing apparatus, comprising:

a printing member, said printing member having a plurality of embossed characters thereon, and mounted for selective movement from a home position relative to a printing station in order to position one of said characters for printing;

actuatable selector means progressively movable in a preferred direction, said selector means including planetary gear members, each of said gear members having teeth formed in its periphery, the pitch of the teeth formation corresponding to increments of movement of each of said gear members;

means normally interconnecting said selector means to said printing member in order to move said printing member as said selector means is moved;

coded control means for selectively actuating said selector means to thereby move said printing member in order to position a particular character on said printing member for printing, said coded control means having a rotatable shaft, pawl means mounted for movement on said shaft and for selective engagement with said gear members, and electromagnetic means associated with each of said pawl means for selectively engaging the same in response to coded impulses;

printing means operable during each printing cycle following selection of a character to print the selected character on a document;

normally ineffective means for restoring said printing member to said home position;

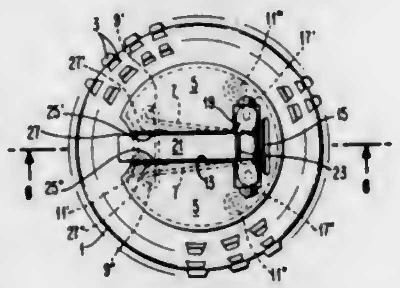
and means operable following printing in each cycle to disconnect said printing member from said selector means in order to thereby render said restoring means effective.

3,307,677
ARM POSITIONED TYPE HEAD

Edgar H. Frank, Edwin L. Libby, and Thomas N. Watkins, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 6, 1965, Ser. No. 493,399

10 Claims. (Cl. 197—52)



1. A single element print head comprising, in combination:

a truncated spherical shell,

characters formed on the spherical portion of said shell,

a handle member,

a cap mounted on one end of said shell, said cap holding said handle member for limited movement,

an element having thin arms adapted to move between open and closed positions,

movable means pivotable about an axis and having at least one face surface inclined at an acute angle to said axis, said movable means being linked to said handle for movement with said handle and being linked through said face surface to said element having arms for controlling said open and closed positions of said element having arms.

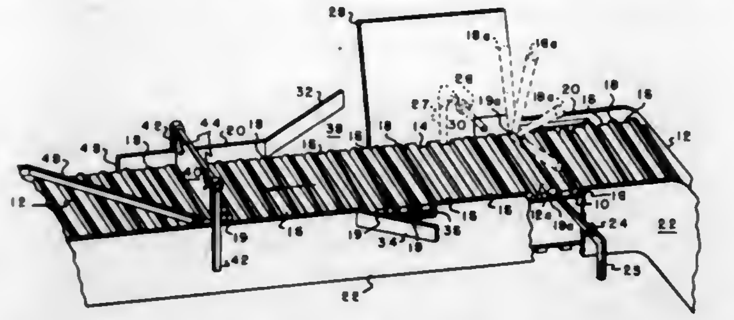
3,307,678
BOBBIN HANDLING APPARATUS

John K. McCollough, Grady H. Sanders, and Charles A. Wethington, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

Filed May 4, 1964, Ser. No. 364,585

20 Claims. (Cl. 198—33)

1. A material handling apparatus for objects having one open end larger in diameter than the opposite end thereof, said apparatus comprising a conveyor having transversely extending object-receiving recesses formed on its conveying surface, and object reversing means operably associated with said conveyor to reverse and retain improperly aligned objects in said recesses, said object reversing means including air nozzle means and a deflector means, said deflector means being mounted adjacent said conveyor to prevent objects from being thrown off



said conveyor as said objects are being reversed by said air nozzle means.

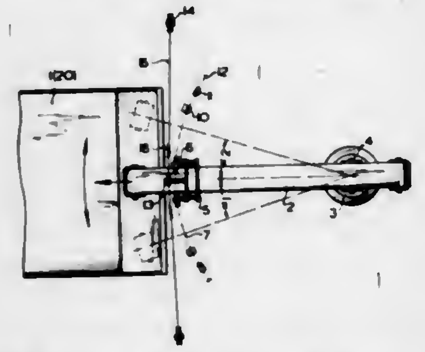
3,307,679
FEED DEVICE FOR TRAVELLING GRATES

Hans-Werner Ziegler, Knapsack, near Cologne, Leo Berg, Alstadten, near Cologne, and Werner Kowalski, Knapsack, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed June 25, 1965, Ser. No. 467,075

Claims priority, application Germany, June 27, 1964, K 53,336

5 Claims. (Cl. 198—112)



1. A feeding device for a travelling grate which enables the profile of a bed of material supplied upon said grate to be controlled, said feeding device comprising a conveyor, said conveyor being mounted upon a pivot having a vertical axis disposed adjacent the charging end of said conveyor, the discharge end of said conveyor being oscillatable above said travelling grate, limit means cooperating with said conveyor for adjusting the oscillation of said discharge end of said conveyor across the entire width of said travelling grate, an arcuate guide rail disposed adjacent the discharge end of said conveyor, bracket means connected to support said conveyor, said bracket means including roller means engaging said arcuate guide rail for carrying said discharge end of said conveyor in an arcuate path, drive means attached to said discharge end of said conveyor for oscillating it back and forth upon said arcuate guide rail, said drive means includes a motor, motion transmitting means connecting said motor to said discharge end of said conveyor, said limit means including limit switches being connected to said motion transmitting means, and time delay relays being connected to said limit switches to permit the dwelling time of the discharge end of said conveyor at its extremes of travel to be adjusted whereby the profile of said bed of material at said sides is adjusted relative to said profile at said center of said travelling grate.

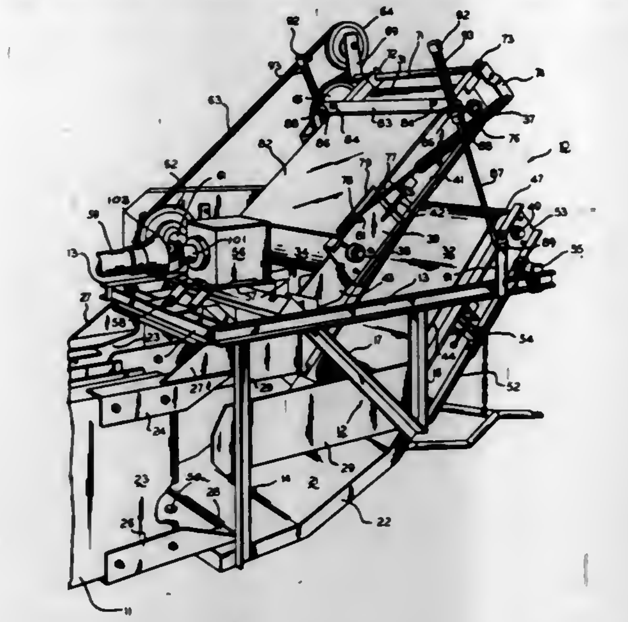
3,307,680
BALE THROWING MECHANISM

Lloyd A. Luedtke, P.O. Box 123, Allenton, Wis. 53002

Filed Feb. 10, 1964, Ser. No. 343,698

7 Claims. (Cl. 198—128)

1. A bale throwing mechanism comprising a frame, a pair of endless belt conveyers supported by said frame in opposing relation to each other and for movement of the discharge ends thereof relative to each other, each



of said conveyors including at the discharge end thereof drive means, and means on said frame connected to said drive means for powering said conveyors.

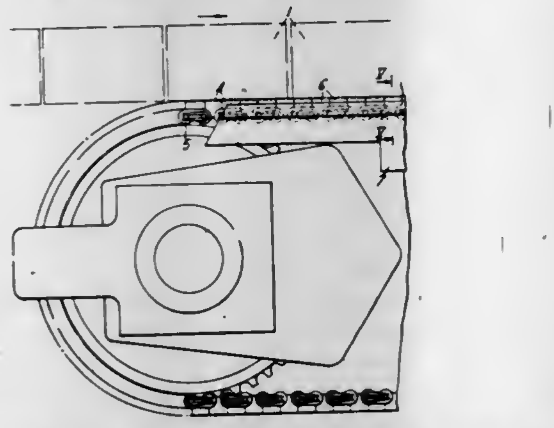
3,307,681
APPARATUS FOR PRESSING TRAVELLING CAN BODY SIDE SEAMS

Arthur Leslie Stuchbery, Enfield, Middlesex, England, assignor to The Metal Box Company Limited, London, England, a British company

Filed Nov. 30, 1964, Ser. No. 414,590

Claims priority, application Great Britain, Dec. 23, 1963, 50,779/63

9 Claims. (Cl. 198—131)



1. Apparatus for conveying longitudinally away from side seam-forming devices can bodies the side seams of which are formed by interlocked laps and tabs, comprising conveyor means operable to move can bodies longitudinally in succession with the side seams in end-to-end alignment, and yieldable seam-controlling elements supported for engagement with the side seams of the can bodies throughout a major portion of the length thereof at least intermediate the seam ends and movable in the direction of movement of and at the linear speed of the bodies, said elements being shaped and dimensioned for being operable to apply a substantially even pressure to the side seams.

3,307,682
CONVEYOR BELT ADJUSTING MECHANISM

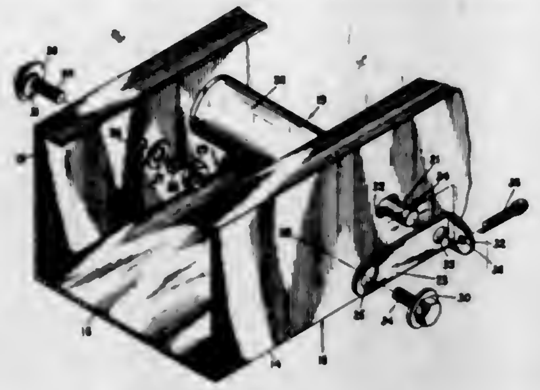
Guthrie B. Stone, Honeoye, N.Y., assignor to Stone Conveyor Company, Inc., Honeoye, N.Y.

Filed Sept. 13, 1965, Ser. No. 486,740

3 Claims. (Cl. 198—202)

1. In a belt conveyor adapted to move articles therealong having a supporting bed with a plurality of support-

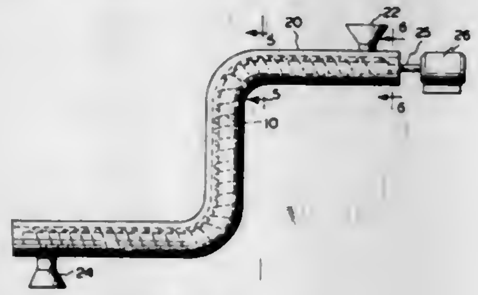
ing rollers journaled in said bed and across which a conveyor belt is adapted to travel, the improvement comprising freely rotatable rollers mounted at predetermined points within said bed, shaft members for supporting said rollers, shaft locking means to prevent rotation of said



shaft members with said rollers, and a further means for longitudinal adjustment of said rollers relative to said bed which includes adjustment clips eccentrically attached to each side of said bed and being selectively movable relative to the latter to move said shaft members within aligned slots provided in said bed.

3,307,683
CONVEYOR

Jack Pleasants, Somerville, N.J., assignor to Nova Products, Inc., Springfield, N.J., a corporation of New Jersey
Filed Aug. 7, 1964, Ser. No. 388,156
4 Claims. (Cl. 198—213)

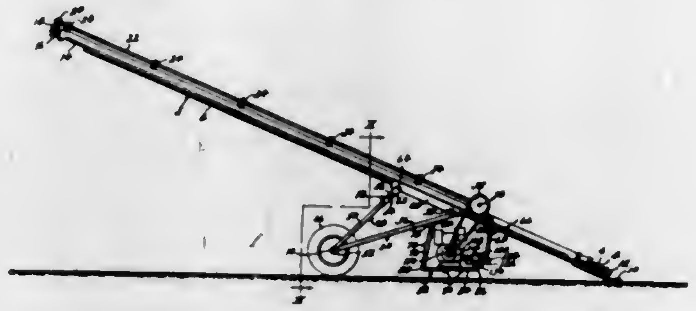


1. A conveyor comprising:
an enclosed casing;
a spiral shaped conveying element disposed in the casing, said conveying element being a flattened coil spring wherein adjacent coils are angularly offset the spring as a whole being formed in the shape of a spiral;
and means to impart rotary motion to said conveying element to advance material through the casing.

3,307,684
ENGINE MOUNT FOR ELEVATOR CONVEYORS

Merwin W. Gilmore and Kenneth H. Ehret, both of Clay Center, Kans., assignors to Gilmore-Tatge Manufacturing Co., Inc., Clay Center, Kans., a corporation of Kansas
Filed Apr. 15, 1966, Ser. No. 542,820
7 Claims. (Cl. 198—233)

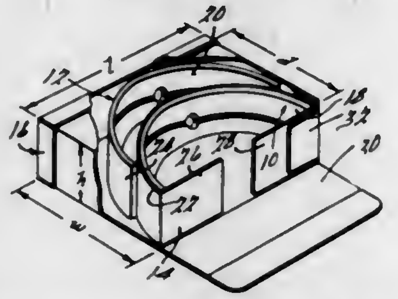
1. In combination with an elevator conveyor comprising an elongated, inclined conveyor adapted to be supported at its lower end on the ground, a ground-engaging supporting leg pivotally connected to said conveyor intermediate the ends of the latter on a horizontal axis transverse to said conveyor and being downwardly divergent from the lower portion of said conveyor, means for adjusting the angularity of said leg relative to said conveyor whereby to adjust the inclination of said conveyor to the ground, means for driving said conveyor including a horizontal drive shaft carried by said conveyor transversely thereto, said drive shaft being disposed lower on said conveyor, longitudinally of said conveyor, than the connection of said leg to said conveyor, and a pulley mounted on said drive shaft, a driving assembly comprising:
(a) a first pair of links pivoted on said conveyor adjacent said drive shaft on an axis parallel to said drive shaft, and depending from said pivotal connection,
(b) a second pair of links pivoted at its upper end to said supporting leg in downwardly spaced relation from the pivotal connection of said leg to said conveyor, on a horizontal transverse axis,
(c) a generally horizontal platform having its opposite ends pivoted respectively to the lower ends of said first and second links, on axes parallel to the pivotal axes of said links,



(d) a prime mover mounted on said platform and including a drive shaft parallel to the drive shaft of said conveyor,
(e) a pulley mounted on said prime mover drive shaft,
(f) a flexible drive belt operably interconnecting said pulleys, and
(g) operating means for pivoting said links relative to said conveyor and supporting leg, whereby to move said platform selectively either in one direction to increase the distance between said pulleys to tension said belt, or in the opposite direction whereby to decrease the distance between said pulleys to introduce slack in said belt.

3,307,685
BEARING PACKAGE WITH INSERT

Robert G. White, Coldwater, Mich., assignor to Federal-Mogul Corporation, a corporation of Michigan
Filed June 3, 1964, Ser. No. 372,325
7 Claims. (Cl. 206—46)

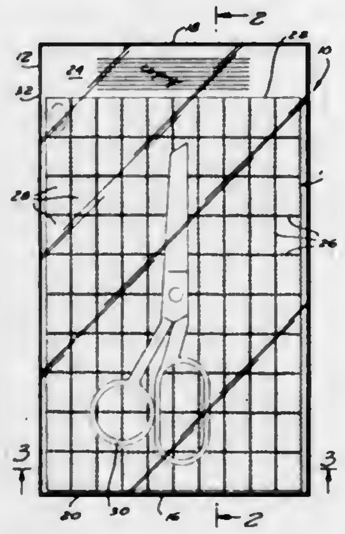


1. A package assembly for a pair of semicylindrical shell bearing halves comprising: an enclosable carton, the bearing halves being snugly located within the carton with one of the bearing halves being nested within the other with the radially outer surface of the forward one of the bearing halves being located proximate to and in confrontation with the radially inner surface of the rearward one of the bearing halves, thin separating means wrapped partially around one bearing half only, said separating means being in strip form located between the bearing halves for permitting nesting of the bearing halves one within the other while maintaining the bearing halves separate from each other regardless of relative movement of the bearing halves within the confines of said carton, whereby the other bearing half need be protected only by said separating means and the carton wall, said separating means including means for locking said separating

means to one of the bearing halves whereby relative movement between said separating means and that one of the bearing halves is substantially minimized.

3,307,686
PACKAGING AND MERCHANDISING DEVICE

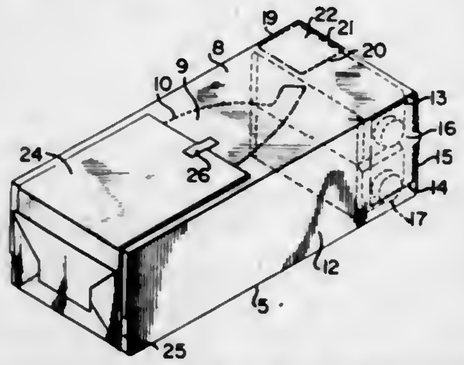
Nicholas M. Brecher, 2 Manor Lane,
Lawrence, N.Y. 11559
Filed Mar. 16, 1966, Ser. No. 534,794
10 Claims. (Cl. 206—47)



1. A packaging and merchandising device for displaying and offering for sale merchandise comprising:
a backing member made of rigid material and defining the support for said device;
a sheet of thin and flexible material in overlying relation with and covering a substantial portion of one surface of said backing member;
said sheet having a plurality of lines of perforations whereby said sheet is easily divided into a plurality of subdivisions each defining a trading stamp which is redeemable for a predetermined value;
an item of merchandise in overlying relation with said sheet;
and a tight envelope made of transparent wrapping material and enveloping said backing member, sheet, and item of merchandise in substantially fixed relative position within said device.

3,307,687
TISSUE DISPENSING CONTAINER

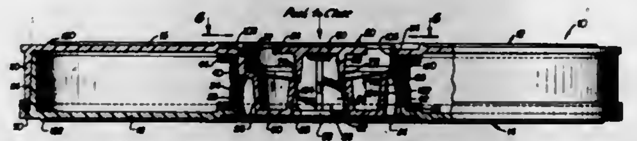
William Steinman, 2507 Vine St.,
Chattanooga, Tenn. 37404
Filed Mar. 17, 1966, Ser. No. 535,240
2 Claims. (Cl. 206—47)



1. A dispensing container with paper tissues therein, said container comprising a rectangular box having top, bottom, side and end walls, said top wall having an opening for dispensing the tissues and a foldable paper bag having one wall secured at its lower end to an end wall of said box, said bag when collapsed being folded over the top wall of said box in covering relation to said opening, means removably securing the upper end of said bag to the top of said box, said box being of greater length than the tissues so as to provide a compartment in the end of the box opposite the end wall to which said bag is secured, a bottle disposed in said compartment, a removable flap formed in the side wall of the box at the end having the compartment, said flap providing an opening for inserting and removing said bottle from said compartment, said top wall of said box being further provided with a removable flap above said compartment for forming an opening to permit the insertion of said bottle in the compartment in an upright position.

3,307,688
REEL STORAGE CONTAINER

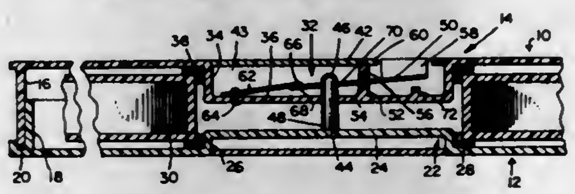
Joseph C. Widmont, Jr., Los Angeles, Calif., assignor to Bruce Industries, Inc., Gardena, Calif., a corporation of California
Filed June 25, 1965, Ser. No. 467,034
13 Claims. (Cl. 206—52)



1. In a container to store a reel of magnetic tape, said container having a cover member and base member which form a flat drum-like enclosure, each member having a centrally disposed locating ring to position the reel within the container,
a locking mechanism for locking the cover member to the base member, comprising,
a plurality of latching fingers on the cover member for engagement with a locking shoulder on the base member, and
means including a snap ring constructed of a polypropylene material operatively connected to said latching fingers for causing engagement of said latching fingers with said locking shoulder to lock the cover member on the base member and to cause disengagement of said latching fingers from said locking shoulder to unlock said cover member and to permit removal of said cover member from said base member.

3,307,689
CASE FOR A REEL

George F. Lyman, South Hadley, Mass., assignor to Data Packaging Corp., Cambridge, Mass., a corporation of Massachusetts
Filed Sept. 1, 1965, Ser. No. 484,314
6 Claims. (Cl. 206—52)



1. A case for a tape reel comprising
a bottom tray and a cover,
a stud extending upwardly from the center of the bottom tray,
a cylindrical well in the central portion of the cover having a lower wall and surrounding cylindrical wall,
a pair of spaced parallel walls extending transversely across the well and defining a handle grip,
a central aperture provided in the bottom wall of the well between the walls and through which the stud extends when the cover and bottom tray are closed,
a plate pivotally mounted in the handle grip and having a portion which is inclined to the axis of the aperture when the plate is in its biased position,

a circular hole in said portion of the plate just exceeding the diameter of the stud and concentric with the stud and aperture when the cover and bottom tray are closed and the plate is moved from its biased position so that said portion is perpendicular to the stud and aperture axis,

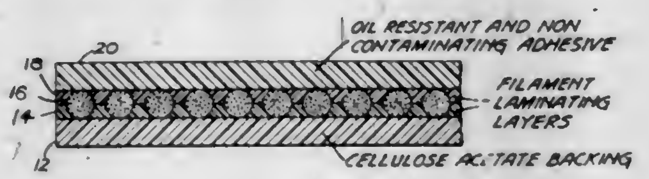
a spring secured to the cover and engaging the plate and imposing the bias thereon,

a grip cover plate secured to the edges of the parallel walls and having an opening therein displaced from the axis of the stud and aperture when the case is closed,

and an actuating button secured to the plate and exposed through the opening in the grip cover plate which may be depressed for pivoting the plate from its biased position to a position wherein said portion is perpendicular to the stud to align the hole in the plate with the stud, the margin of the hole binding on the stud when the plate is in the biased position.

3,307,690
OIL RESISTANT NON-CONTAMINATING ADHESIVE TAPES

Herbert M. Bond Stillwater Township, Washington County, and Jun Tomita, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Dec. 4, 1962, Ser. No. 242,158
9 Claims. (Cl. 206—59)


OIL RESISTANT AND NON CONTAMINATING ADHESIVE
20
18
16
14
12
FILAMENT LAMINATING LAYERS
CELLULOSE ACETATE BACKING

1. An oil resistant, non-contaminating contact adherent adhesive tape wound in roll form and having a back surface only lightly adherent to and readily separable from the tape adhesive upon rapid unwind of the tape from roll form, said tape comprising a backing having a thermosetting adhesive thereon having prior to thermosetting a shear strength value of at least about 2 minutes and an adhesion value of at least about 20 ozs. per inch, said adhesive consisting essentially of (1) 50 to 100 parts by weight of a normally thermoplastic base polymer selected from the group consisting of copolymers of alkyl acrylates with one another and with acrylic acid, and alkyl acrylate-vinyl acetate copolymers, (2) from 2 to about 50 parts of an organic polymeric cross-linker for cross linking with (1), and (3) from about 0.5 to about 10 parts of a heat-activated cross-linking catalyst for cross-linking (1) with (2) upon heat activation to thermoset said adhesive.

3,307,691
PACKAGING DEVICE FOR FLAT GLASS

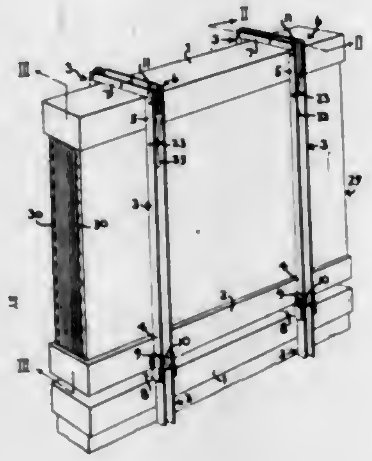
Alberto Vallebona, Milan, Italy, assignor to Pennitalia, S.p.A., Fuorni, Salerno, Italy, a corporation of Italy
Filed Dec. 17, 1964, Ser. No. 418,970
Claims priority, application Italy, Jan. 20, 1964, 1,379/64, Patent 23,262
4 Claims. (Cl. 206—62)

1. A container for packaging sheet material such as thin glass sheets, comprising:

(I) A first rectangular box, comprising:
  (a) a pair of elongated side panels forming side walls;
  (b) a pair of end panels connected to each end of said elongated panels;
  (c) an elongated top panel connected to one side of each elongated side panel to form said box;
  (d) a centering strip fastened in juxtapositioned relationship to the glass side of one side wall panel;
  (e) a resilient pad fastened in juxtapositioned relationship to the glass side of said top panel:

(II) A second rectangular box, comprising:
  (a) a pair of elongated side panels forming side walls;
  (b) a pair of end panels connected along opposite edges of each panel to the side panels, and forming end panels of said box;
  (c) an elongated bottom panel connected to both said side and end panels forming a bottom panel for said box;
  (d) a lug fastened to the glass-bearing side of said bottom panel:

(III) Two pairs of uprights, each upright having a channel shape in cross section:



(IV) A pair of top cross members, comprising a pair of panels in spaced relationship, each cross member being attached at one end thereof to an upright near an end of said upright, each of said cross members having a pair of members joined by a pin and holding said member in spaced relationship:

(V) Said first and second rectangular boxes enclosing head portions of sheet material:

(VI) A pair of cross members fastened to the bottom panel of said second box:

(VII) A pair of said uprights being connected at one end to each of said bottom cross members:

(VIII) A second pair of said uprights being pivotally connected to one end of said top cross member:

(IX) Fastening means attached to an end of the other of said pair of uprights for engaging the unattached end of each cross member, whereby when the fastening means is attached to the cross members the packaged sheet material is firmly clamped between the said first and second boxes in an assembled package.

3,307,692
CAN CARRIER

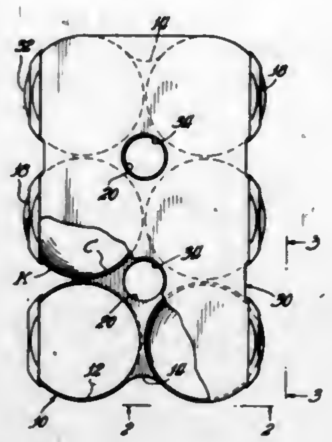
Francis A. Chidsey, Jr., Devon, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed May 14, 1965, Ser. No. 455,837
5 Claims. (Cl. 206—65)

1. A carrier for a group of cans having chimes on their upper ends, the combination comprising:

(a) a plastic member having a central section and a plurality of integrally formed ring sections extending outwardly therefrom and each defining an opening for receiving the upper end of a can below the chime of said can;

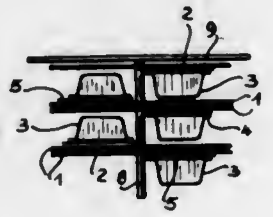
(b) a paperboard member including a panel positioned over the group for engaging and covering the upper ends of the cans;

(c) means for confining a portion of the paperboard member between the cans and the plastic member to maintain the panel in place over the upper ends of the cans.



3,307,693
TRANSPARENT SMALL COMMODITY PACK FOR MOUNTING ON A SUPPORTING FRAME FOR DISPLAY PURPOSES

Ernst Bittner, Klettenbergstrasse 15, Frankfurt am Main, Germany
Filed Dec. 18, 1964, Ser. No. 419,341
Claims priority, application Germany, Dec. 24, 1963, Sch 34,380
2 Claims. (Cl. 206—78)



1. A commodity pack for suspension on a supporting arm for display purposes, including

a carton having an opening therein offset from the center thereof,

a transparent cover secured to said carton over said opening,

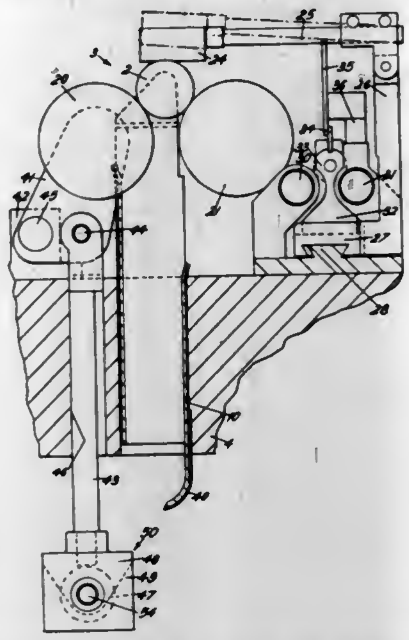
a transparent bowl secured to said carton over said opening to contain a commodity visible from either side of said carton, and

a suspension lug on said carton so arranged that a pair of packs facing in opposite directions may be hung on a supporting arm with the bowls thereof disposed side by side.

3,307,694
DETECTION OF TACTILE SURFACE IRREGULARITIES ON BOBBINS

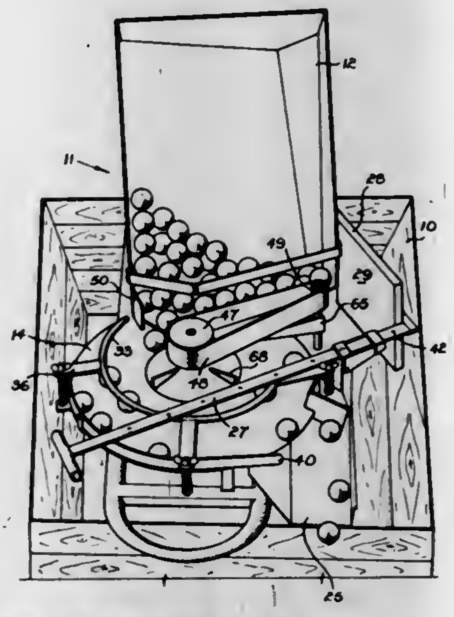
Alan Selwood, Llanyravon, Cwmbran, and William R. Baker, Caerleon, England, assignors to British Nylon Spinners Limited, Pontypool, England
Filed Feb. 23, 1965, Ser. No. 434,481
Claims priority, application Great Britain, Mar. 11, 1964, 10,190/64
16 Claims. (Cl. 209—88)

1. Apparatus for the tactile inspection of the surface of a bobbin comprising at least one unit, each unit having at least one detecting head, and each head comprising an electrical device and a sensing element, and scanning means to cause relative movement between the detecting head and the bobbin to be inspected such that the whole of the surface of the bobbin is contacted by the head, the sensing element of the head having a surface formed of a textile fabric which contacts the bobbin surface, and the electrical device being arranged to produce an electrical impulse upon the detection of a tactile irregularity on the surface of the bobbin by the sensing element.



3,307,695
FIELD FRUIT GRADER

Wilhelm Carl Wurst, Walkerie, South Australia, Australia
Filed Feb. 4, 1965, Ser. No. 430,373
Claims priority, application Australia, Feb. 19, 1964, 41,122/64
6 Claims. (Cl. 209—105)



1. A fruit grader comprising:

a base,

a spindle journalled in bearings on the base,

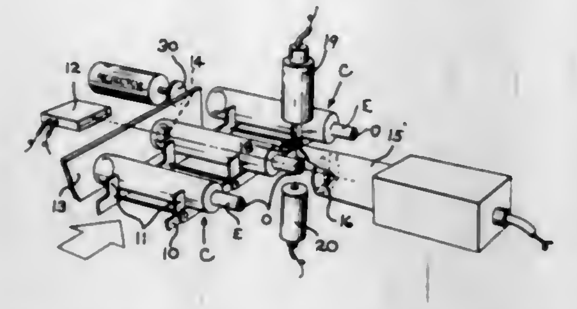
a circular plate on the spindle, the circular plate having its walls sloping downwardly to its periphery,

a curved grading guide fixed relative to the base but disposed above and spaced from the circular plate, the grading guide extending part-way around the circular plate, the space between the grading guide and the circular plate constituting a fruit grading space,

a charging chute pivotally carried by the base and arranged to discharge fruit on to the circular plate, and

cam means carried by the spindle and coupled to the charging chute, the cam means being arranged to rock the charging chute about a horizontal axis upon rotation of the spindle, whereby fruit in being discharged on to the circular plate while rotating is carried around by the circular plate and is graded by the grading space.

3,307,696
INSPECTING HYPODERMIC SYRINGE CARTRIDGES AND THE LIKE
James R. Sager, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed May 10, 1965, Ser. No. 454,534
5 Claims. (Cl. 209—111.5)



1. The method of inspecting hypodermic syringe cartridge and the like to determine the presence of axial openings in the restricted ends thereof comprising the steps of moving a series of cartridges continuously in a predetermined path past an inspection station with their axes generally parallel to one another and extending transversely of said path, continuously directing a first beam of radiant energy to which the cartridges are opaque in a direction parallel to the axes of said cartridges at the inspection station from adjacent said other ends of said cartridges remote from said restricted ends whereby said beam normally passes through the opening in the restricted end of each cartridge, causing an obstruction in the opening in the restricted end of each cartridge to obstruct a portion of said beam as the cartridge moves past the inspection station, creating a first signal when said beam is obstructed, continuously directing a second beam transversely of the path of said syringe cartridges in position to be intersected by said cartridges, creating a second signal when a cartridge interrupts said second beam at the inspection station, and creating a reject signal when the first signal occurs during the second signal.

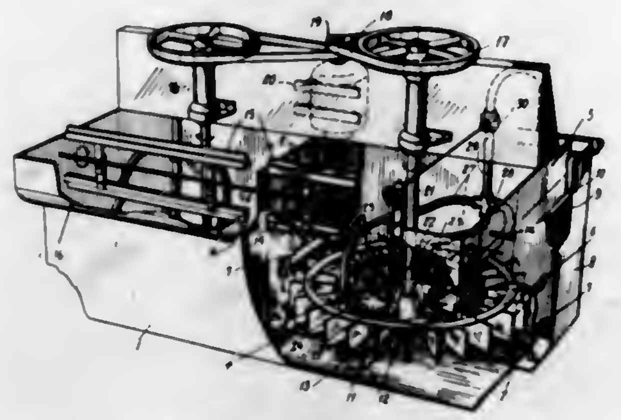
3,307,697
APPARATUS FOR FROTH FLOTATION
Per A. H. H:son Fahlström and Olav Öyasäter, Boliden, Sweden, assignors to Bolidens Gruvaktiebolag, Stockholm, Sweden, a joint-stock company limited of Sweden
Filed July 10, 1963, Ser. No. 294,062
Claims priority, application Sweden, Aug. 3, 1962, 8,549/62
4 Claims. (Cl. 209—169)

1. In a froth flotation apparatus having a tank, inlets for the pulp intended for flotation, outlets for the tailing, an overflow for the froth, and a means for circulation and aeration of the pulp in the tank, the improvement wherein said means comprises:

a disc type agitator in said tank rotating about a vertical axis, said agitator moving the pulp which is adjacent thereto in a uniform, substantially horizontal, radial stream outwardly from the center of the agitator and beyond the peripheral edge thereof;

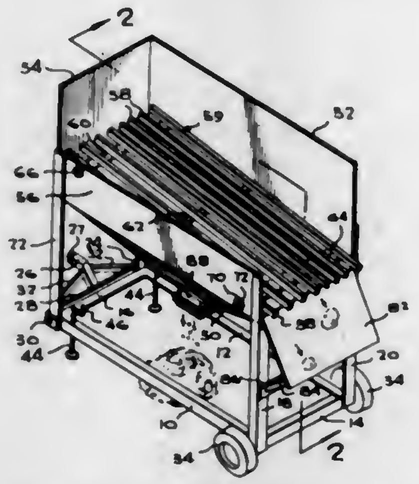
a plurality of baffles fixed relative to said tank, said baffles being uniformly distributed around and spaced from said agitator, and positioned at substantially the same level as the agitator so as to intercept the substantially horizontal, radial stream of pulp therefrom;

a ring-shaped air feeding element substantially coaxial with said agitator and said baffles, said element in a radial direction being positioned between said baffles and the periphery of said agitator, but in an axial direction being offset from said agitator, said ring-shaped element further having air feeding openings spaced entirely therearound which are directed toward a plane coincident with the plane of said agitator so as to direct a uniform curtain of air substantially perpendicular to the flow path of the radial stream of pulp from said agitator;



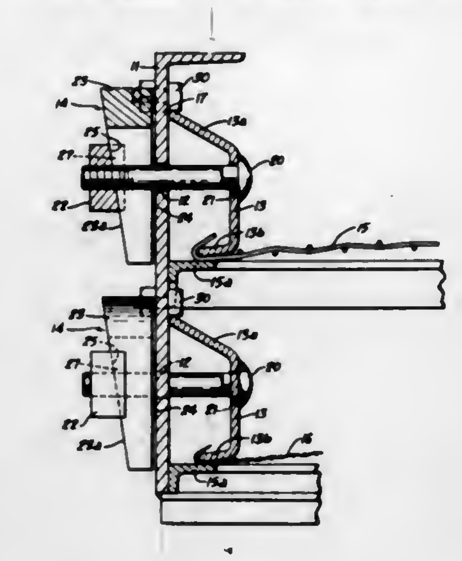
said intersecting air and pulp flow paths and the action of the fixed blades achieving an intimate and highly efficient mixture of air and pulp within the tank.

3,307,698
PORTABLE OSCILLATING ROCK SEPARATOR
Alfred C. Haffner, Basin, Wyo.
(416 3rd Ave. S., Greybull, Wyo. 82426)
Filed May 15, 1964, Ser. No. 367,670
5 Claims. (Cl. 209—258)



1. A portable separator comprising a wheeled frame having upstanding corner posts, an inverted pyramidical hopper disposed between and supported on the posts, side walls on the frame located along opposite sides of and rising above the hopper, a fixed shaft spaced above the hopper at one end of the frame, said fixed shaft extending between and being fixed to said side walls, a rotary shaft extending between and journalled on said side walls, said rotary shaft being located at the other end of the frame and depressed below the level of the fixed shaft, said rotary shaft having fixed eccentric means thereon, means on an end of the rotary shaft for rotating the same, a sloping grid covering the hopper and extending between said side walls, said grid having a transverse journal tube fixed to its underside adjacent to its elevated end, said tube being journalled on said fixed shaft, said grid having a fixed cross plate on its underside adjacent to the depressed end of the grid, said eccentric means being engaged with the underside of said cross plate to produce a rocking action of the grid on said journal tube.

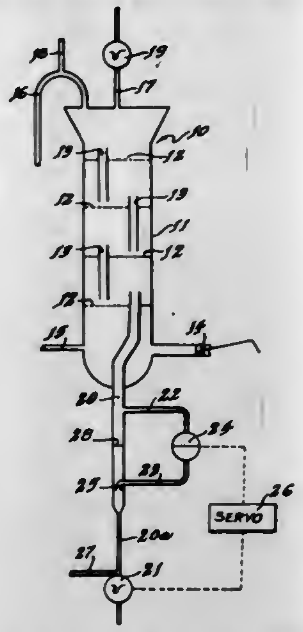
3,307,699
SCREEN TENSIONING DEVICE
William S. Shira, Brookfield, Wis., assignor to Barber-Greene Company, a corporation of Illinois
Filed Apr. 17, 1964, Ser. No. 360,541
9 Claims. (Cl. 209—403)



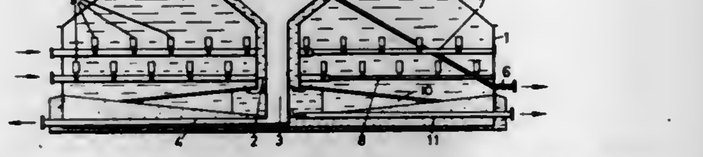
1. A device for securing a screen support to the framework of a screening apparatus and for applying tension to the screen supported thereby, said device comprising, an elongated member having a shank extending through aligned apertures in the screen support and the adjacent framework, a head on one end of said shank seated against the screen support, a flange-forming member having a rectilinear bearing surface extending transversely thereacross, means on said shank remote from said head for removably receiving said flange-forming member with the bearing surface thereof facing the framework and angularly disposed relative thereto, and a bifurcated wedge having the legs thereof tapered to provide rectilinear bearing surfaces, said legs being freely insertable between said flange-forming member and the adjacent framework with the tapered legs of said wedge straddling the shank and the rectilinear bearing surfaces of said legs seated against the rectilinear bearing surface of said flange-forming member to draw said shank outwardly and thereby apply tension to the screen through the screen support.

3,307,700
APPARATUS FOR CONTROLLING THE FLOW OF SOLIDS
Noel H. de Nevers, Salt Lake City, Utah, assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 28, 1966, Ser. No. 546,488
4 Claims. (Cl. 210—112)

1. In a system having a vertical column, vertically spaced horizontal plates therein for piling solids thereon downcomers in the plates for receiving an overflow of said solids and conducting said overflow solids downwardly, and a storage leg extending through the lowest plate and through the bottom of the column, means for introducing a liquid in the column at its lower end, means for pulsing said liquid upwardly through the plates and the solids piled up thereon, and means for removing the liquid from the column at its upper end, the improvement comprising in combination with the storage leg, a pair of pressure taps connected to the storage leg at points vertically spaced from one another, a differential pressure cell connected to the taps, a valve connected to the lower end of the storage leg, a servo interconnecting the pressure cell and the valve for enabling the pressure cell to open the valve in response to a predetermined pressure difference in the pressure taps due to piling up of solids in the storage leg to a predetermined level, and means for fluidizing the solids in the storage leg to enable the pressure taps to sense the amount of solids in said storage leg.



3,307,701
APPARATUS FOR PURIFICATION OF UNCLARIFIED WASTE WATER
Milos Krofta, 58 Jokun Ave., Lenox, Mass. 01240
Filed Nov. 4, 1963, Ser. No. 321,123
7 Claims. (Cl. 210—195)

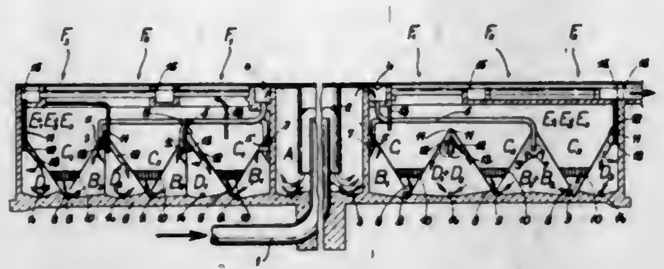


1. Apparatus for the purification of unclarified waste water, comprising a housing having an inner wall, a pipe system in said housing for dispersing the waste water in said housing, said pipe system being provided with a plurality of dispersing nozzles, means connected to said pipe system for enriching the waste water with compressed air, a rising pipe having an outer wall for clear water in said housing, a fall pipe for said clear water disposed axially inwardly of said rising pipe, for receiving overflow clear water from said rising pipe, a pair of water outlet pipes, one of said pipes connected to said rising pipe, the other connected to said fall pipe, a thick-pulp collecting trough formed by the outer wall of the upper portion of said rising pipe and disposed between said rising pipe outer wall and the inner wall of said housing, and a pulp discharge pipe communicating with said trough.

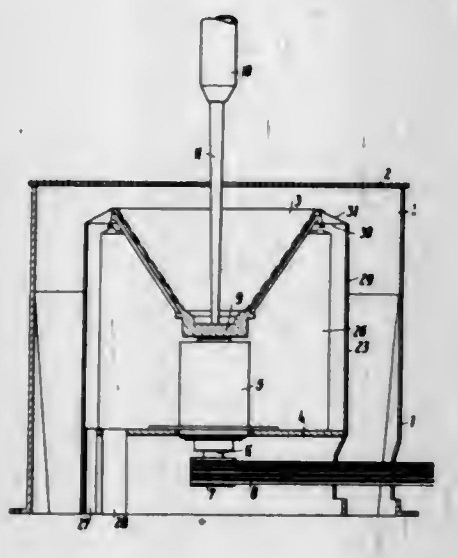
3,307,702
SLUDGE BLANKET CLARIFIER FOR WATER TREATMENT
Svatopluk Mackrle, Brno, Vladimir Mackrle, Prague, Oldrich Dracka, Brno, and Luboml Paseka, Brno, Czechoslovakia, assignors to Ceskoslovenska akademie ved, Prague, Czechoslovakia
Filed Aug. 26, 1964, Ser. No. 392,097
Claims priority, application Czechoslovakia, Aug. 28, 1963, 4,793/63; Mar. 3, 1964, 1,210/64
10 Claims. (Cl. 210—200)

3. A water treatment apparatus, comprising, in combination, a housing containing a plurality of similar clarifying units each including a downwardly diverging first

compartment constituting a coagulation zone, an upwardly diverging second compartment constituting a filtration zone, and a downwardly diverging third compartment constituting a sedimentation zone, said housing defining upwardly of said units a clear-water collection zone; feed means for feeding a mixture of raw water and a coagulation agent downwardly into each first compartment for inducing coagulation therein; and means for enabling flow of the coagulated mixture from each first compartment into the bottom of the respective second compartment and upwardly therein whereby a floating layer of sludge gradually increasing in thickness forms at the top of each second compartment while liquid rises through said layer and enters said clear-water collection zone, said third compartment being arranged to receive sludge overflowing at the tops of the respective second compartments.

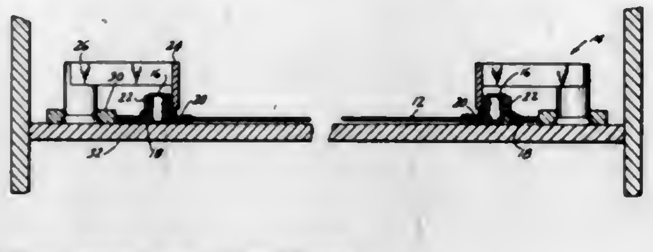


3,307,703
CENTRIFUGES
Günter Trojan, Bochum-Harpen, Germany, assignor to Hein, Lehmann & Co. Aktiengesellschaft, Dusseldorf, Germany
Filed Feb. 10, 1966, Ser. No. 526,477
Claims priority, application Germany, Mar. 27, 1965, H 55,600
7 Claims. (Cl. 210—369)



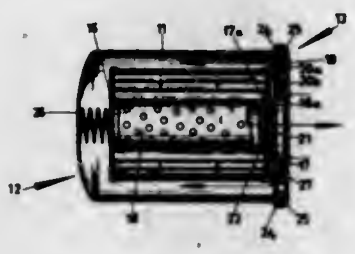
1. A centrifuge for continuously separating mixtures of solids and liquids comprising a perforated centrifuging and screening drum which rotates about a vertical axis, two annular chambers disposed concentrically around the drum and separated from one another by an annular partition extending to the top edge of the drum, one of the annular chambers receiving the liquid which passes out through the drum perforations and the other annular chamber receiving the solids which issue over the top edge of the drum, an inner continuous casing extending around the perforated screening surfaces of the drum and widening conically towards the top edge of the drum, the open top of the inner casing extending to near an outer continuous casing ring fixed to the top edge of the drum and widening conically downwards, a damming ring provided on the inside of the outer continuous casing ring and extending around the open top of the inner continuous casing, the damming ring damming up liquid to form a hydraulic seal between the inner casing and the outer casing ring.

3,307,704
FILTER APPARATUS
Sark Pashaian, Monroe, and James M. Stewart, Dearborn, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.
Filed May 1, 1964, Ser. No. 364,201
1 Claim. (Cl. 210—400)



Filter apparatus comprising:
a frame;
a continuous filter sheet having a reinforcing edge band on each lateral edge, grommets set at spaced points along each said edge band, grommet pins mounted in said grommets and projecting from said edge bands, and rollers mounted on said grommet pins;
means for passing said sheet along a predetermined path;
and a guide assembly for said filter sheet having studs set at spaced points along said predetermined path on said frame adjacent opposite edges of said filter sheet and disposed transverse to the movement of said filter sheet, guide rails movable along said studs to engage said rollers, the terminal portions of said guide rails slanted inwardly toward the center of said filter sheet forming means to intercept said guide rollers and drive them outwardly to said predetermined path, and coil springs around said studs urging said guide rails outward, whereby said rollers, grommet pins and lateral edges of said filter sheet are urged outward to said predetermined path.

3,307,705
DISPOSABLE OIL FILTER FOR AUTOMOBILE ENGINES
Josef Halmenschlager, Montreal, Quebec, Canada (340 Lebeau Blvd., St. Laurent, Quebec, Canada)
Filed Sept. 23, 1963, Ser. No. 310,624
3 Claims. (Cl. 210—443)

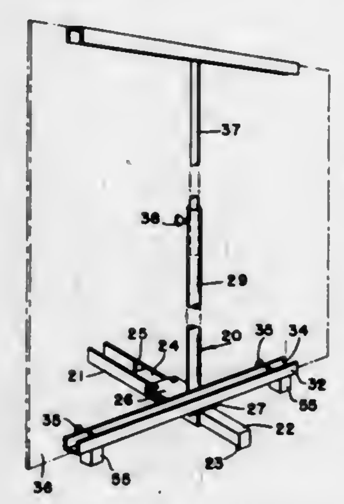


2. In a screw type filter comprising a cylindrical housing and a flat circular end cap closing one end of said housing and having an inner surface facing inwardly of said housing and an outer surface, said end cap having a central inwardly threaded flanged orifice and a plurality of spaced apart ports located around said central orifice, said end cap having at its outer surface an annular trough surrounding said central orifice and said ports, an O ring located within said trough, said end cap having at the peripheral edge thereof a flange extending outwardly therefrom, said cylindrical housing having, at the peripheral edge of its open end, a lip protruding radially inwardly of said housing, having an arcuate cross-section and surrounding said flange and having a lip extension disposed adjacent a zone of said outer surface of said end cap spaced radially inwardly from said flange to define a trough-like space between said flange and lip extension in which an annular portion of said outer surface is exposed, a sealant in said space in sealing contact with said annular portion of the outer surface of said end cap and the inner surface of said lip extension, and wherein said flange has an outer peripheral surface protruding radially outwardly from the inside cylindrical surface of said housing, and said lip forms an axially inclined inner surface against which seats said outer peripheral surface of said end cap flange.

3,307,706
MILK FILTERS
Philip S. Taylor, Walpole, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
No Drawing. Filed Dec. 13, 1963, Ser. No. 330,239
2 Claims. (Cl. 210—504)

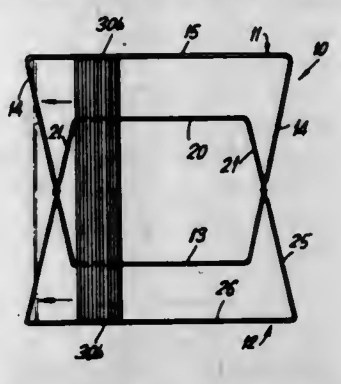
1. An impregnated and bonded non-woven filter sheet material of intimately intermingled textile-length fibers consisting essentially of between 65% and 95% of, viscose rayon fibers of denier not greater than about 1.5, and having a volumetric swelling index in water of greater than 10%, and between 35% to 5% of crimped synthetic fibers, said fibers having a wet stiffness of at least 8 grams per denier at elongations of between 1% and 10%, a volumetric swelling index in water of less than 3%, and in which the product of wet stiffness times fiber denier is not less than about 40, said filter sheet being of substantially uniform composition throughout its depth and being bonded substantially throughout its depth.

3,307,707
DISPLAY PANEL RACK
Julian L. Wright, 4205 Princeton Ave., Greensboro, N.C. 27407
Filed Mar. 15, 1965, Ser. No. 439,658
11 Claims. (Cl. 211—13)



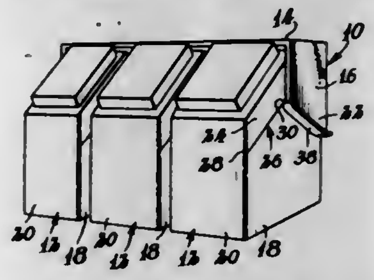
1. A display rack for panels comprising; a base, a rod slidably positioned in said base to extend said base for stabilization, a panel-supporting lower rail secured to and extending across said base, a vertical column having telescoping nestable members mounted on said base with means for releasably clamping the telescoping members to a desired extension, and a panel-supporting upper rail secured to one of said telescoping nestable members, each of said panel-supporting rails having means for releasably supporting a panel.

3,307,708
DISPLAY RACKS FOR PHONOGRAPH RECORDS IN ENVELOPES OR JACKETS, OR SIMILAR ARTICLES
Richard S. Halstead, Bellmore, N.Y., assignor to Ken Wire & Metal Products, Inc., Brooklyn, N.Y., a corporation of New York
Filed Nov. 4, 1965, Ser. No. 506,344
9 Claims. (Cl. 211—40)



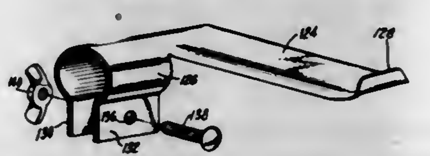
1. A rack comprising only a pair of interpivoted frames, each having a bottom portion and a top portion, and a pair of outwardly and upwardly inclined side portions, the inclined portions of one frame crossing the inclined portions of the other frame, and means pivoting said crossing portions.

3,307,709
RACK AND CONTAINER SET
Harold D. Hulterstrum, Baraboo, Wis., assignor to Flambeau Plastics Corporation, a corporation of Wisconsin
Filed Feb. 15, 1965, Ser. No. 432,766
3 Claims. (Cl. 211—71)



1. A combination of a support rack adapted to be mounted on a surface and containers having side walls and being removably received by said support rack, said combination comprising outwardly projecting arms on said support rack for receiving said containers therebetween, portions of said side walls defining downwardly facing edges, said edges each having a central portion and end portions, said central portion being higher than said end portions, and said arms having outer ends constructed and arranged to engage said downwardly facing edges between said central portion and one of said end portions so that said arms support said containers in an upright position regardless of the relative position between the rack and containers.

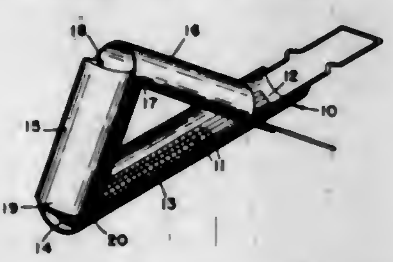
3,307,710
BRACKET
Anna L. Negri, 69 Spring St., Torrington, Conn. 06790
Filed Mar. 31, 1965, Ser. No. 444,172
2 Claims. (Cl. 211—86)



1. A bracket for drip drying wet clothes usable with a bath unit having a bottom with a drain and a support fixture above the bottom of the bath unit, the bracket

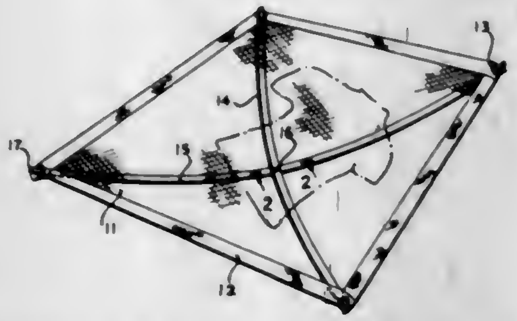
comprising a unitary body formed of a single piece of sheet material having a sleeve of generally C-shaped cross section split lengthwise by a bottom slot with depending flanges on opposite sides of the slot, the sleeve being radially flexible to facilitate its installation on a fixture and removal therefrom, and a cantilever arm horizontally extending outwardly from the sleeve in a plane generally parallel to the longitudinal axis thereof, the arm having a fixed end contiguous and coextensive with an upper end portion of the sleeve, the fixed end of the arm being adapted to overlie a fixture and provide bearing support for the bracket, the arm having an opposite free end with an upwardly bent flange, and a fastener engageable with the depending flanges of the sleeve for detachably clamping the sleeve to a fixture in fixed overhanging relation to a bottom of a bath unit for suspending wet clothes to drip into the same.

3,307,711
PIPETTE CONTAINER
William J. Berry, 1021 Green St., Durham, N.C. 27701
Filed Apr. 9, 1965, Ser. No. 447,040
7 Claims. (Cl. 211—132)



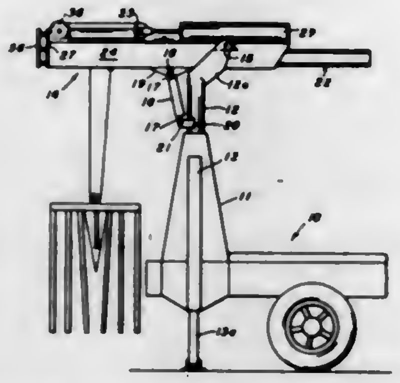
1. A convertible pipette washing, sterilizing, drying container and storage tray comprising a first semi-cylindrical shell having openings therein, a pipette supporting cap at one end of said shell and a U-shaped handle at the other end of said shell, a second semi-cylindrical shell pivotally connected to said first shell to form a cylindrical chamber in the closed position and having a pair of pivotally connected sections, the first section of said second semi-cylindrical shell being pivotally connected at one end to the cap end of said first shell and the second section being pivotally connected to the free end of said second section and having a U-shaped handle extending from the free end thereof, and means for releasably retaining said second section handle in an inclined position to support the first shell in an inclined position with the shell sections being pivoted at an angle to each other in the container open position.

3,307,712
GARMENT DRYER
Milton Kurz, 461 Barnard Ave., Cedarhurst, N.Y. 11516
Filed July 6, 1965, Ser. No. 469,591
5 Claims. (Cl. 211—177)



1. A garment dryer comprising a rectangular sheet of perforated material and a pair of resilient flexible strips, each of greater length than the associated diagonal of said sheet, and complementary means at the ends of each of said strips and the corners of each of said sheet for releasable engagement of said strip ends with said corners whereby said strips will be bowed and the sheet will be maintained under tension.

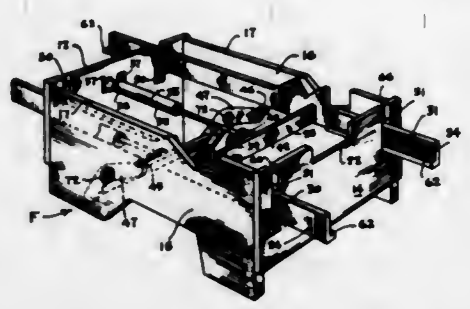
3,307,713
TELESCOPING BOOM FOR MATERIAL HANDLING MECHANISM
Cecil W. Bopp, Waterloo, Iowa, assignor to The Greater Iowa Corporation, Des Moines, Iowa, a corporation of Iowa
Filed Feb. 13, 1964, Ser. No. 344,762
4 Claims. (Cl. 212—55)



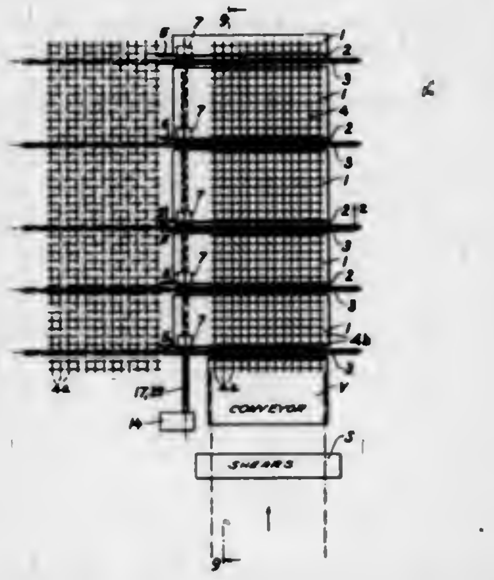
1. In a material handling device, in combination,
a vertically disposed mast;
a boom mounted on said mast and comprised of a hollow outer section connected to the mast and a plurality of telescoping inner sections disposed within the said outer section for reciprocal advancement through the forward end of the outer section and retraction within said outer section;
means on each said sections providing support for the section telescopingly received therein;
means mounted on said outer boom section and connected with said telescoping sections for selectively advancing said telescoping sections relative to one end of said outer section;
a sheave block containing a plurality of sheaves mounted upon the outer section adjacent the forward end thereof;
a second sheave block containing a plurality of sheaves disposed in rearward spaced relation to said first named sheave block and connected to a power means for advancing and retracting said second named sheave block relative to the first named sheave block;
a sheave mounted adjacent alternate forward and rear ends of successive telescoping boom sections within said outer section, with one such telescoping section having a sheave mounted adjacent each end thereof;
a cable reeved over the sheaves of the telescoping members to the sheave block attached to said power means, thence to said sheave block mounted upon said outer section with one end of the cable from said sheave blocks being anchored to said outer section and the opposite end of the cable depending over a sheave on the outer end of the innermost telescoping section and terminating in a load lifting hook.

3,307,714
MATERIAL HANDLING APPARATUS
Robert B. Maciejczak, 2628 E. 93rd St., Chicago, Ill. 60642
Filed Feb. 23, 1965, Ser. No. 434,538
10 Claims. (Cl. 214—1)

7. In a material handling apparatus for turning an article such as a slab, billet or like workpiece, spaced supporting means having supporting surfaces for supporting said workpiece on a first side thereof; a carriage means for engaging the underside of said workpiece and for lifting said workpiece from said supporting surface; means for moving said carriage transversely of said supporting means; and notch means formed in each of said supporting surfaces, said notch means including a vertical side, and a first inclined surface leading to said vertical side, a reversely inclined surface leading to said first inclined surface.

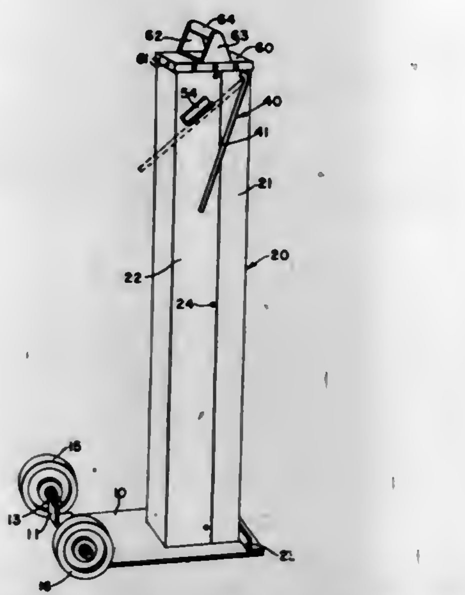


3,307,715
TURNING AND SHIFTING MACHINE FOR GRATE MATS
Hans Gött and Josef Ritter, Graz, Styria, Austria, assignors to EVG Entwicklungs- u. Verwertungsgesellschaft m.b.H., Styria, Austria, a firm
Filed Aug. 21, 1964, Ser. No. 391,163
Claims priority, application Austria, Sept. 2, 1963, A 7,067/63
7 Claims. (Cl. 214—6)



1. A machine for stacking and turning alternate grate mats so as to provide a compact stack, comprising in combination elongated table means positioned in a receiving station for receiving grate mats, a group of transfer mechanisms disposed adjacent said table means and each including a support comprising a turnable head and an arm, shifting means operable for shifting said arm relative to said head between said receiving station and a discharge station disposed at one side of said receiving station, said head guiding said arm during shifting, turning means operable for turning said arm with said head for about 180° from said receiving station to said discharge station, said shifting and said turning means, respectively, moving said arms in unison in a predetermined succession including moving said arms from said receiving station to said discharge station alternatively by shifting and turning them, respectively, thereby transferring a mat from the receiving to the discharge station, and subsequently shifting said arms from said discharge station to said receiving station, and abutment means operable to engage the mat when the arms are returned by shifting to the receiving station, whereby the mat will be restrained from moving with the arms and will drop onto the stack.

3,307,716
MAGNETIC STACKING DEVICE
Charles W. Ross, 1100 Blackhawk Road, Moline, Ill. 61265
Filed Feb. 23, 1965, Ser. No. 434,499
11 Claims. (Cl. 214—6)

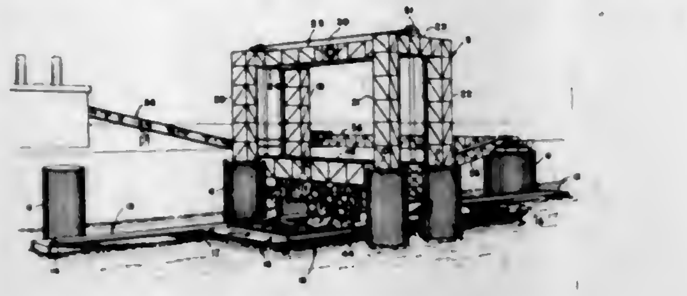


9. A stacking device comprising: an upright rigid housing structure having a front upright nonmagnetic wall, a rear upright wall, and interconnecting transversely spaced fore and aft upright walls extending between and interconnecting the front and rear walls and defining therewith an upright casing, the housing structure further including a laterally disposed base structure rigid with the lower end of the casing; transport wheels on the base structure rearward of the rear wall; an upright pole plate structure within the casing and including a pair of transversely spaced upright pole plates parallel to and adjacent the front wall; permanent magnet means between the pole plates; means hinging the pole plate structure on a transverse horizontal pivot on the housing structure adjacent the front wall and the base structure whereby the pole plate structure may swing fore and aft between positions adjacent the front and rear walls; a lever structure pivoted on the housing structure above the lower pivot and operatively connected to the pole plate structure to adjust the pole plate structure fore and aft on the hinge means, the lever means having a control element external the housing structure; a magnetically attracted element at the upper end of the housing structure adjacent the upper end of the front wall structure adapted to magnetically hold the pole plate structure in its forward position adjacent the front wall; and manual gripping means external of and rigid with the housing structure for swinging the housing structure for support on the transport wheels.

3,307,717
BUCKET WHEEL BULK MATERIAL HANDLING APPARATUS
Carl Ludwig, Cleveland, Ohio, assignor to McDowell-Wellman Engineering Company, a corporation of Ohio
Continuation of application Ser. No. 359,340, Apr. 13, 1964. This application Mar. 28, 1966, Ser. No. 538,102
12 Claims. (Cl. 214—14)

1. In a system for transferring bulk material from one predetermined location to another including:
(a) tower means defining an unloading station;
(b) bridge means spanning said unloading station and supported by said tower means;
(c) a driven rotary bucket wheel unloader adapted to engage and transport bulk material;
(d) means for receiving and conveying bulk material from the unloader to said other predetermined location; and

(e) a carriage movably supported on said bridge means for transverse movement therealong and coacting therewith to support said rotary bucket wheel unloader on said carriage for rotation on an axis which lies in a plane passing through the bridge and having the same predetermined relationship to the longitudinal axis of the bridge in all positions of operation of said rotary bucket wheel, and in spaced independent relation from said bridge means, the longitudinal axis of said bridge lying wholly outside the path described by the buckets during rotation thereof, for operative intersection with and transport of the bulk material.

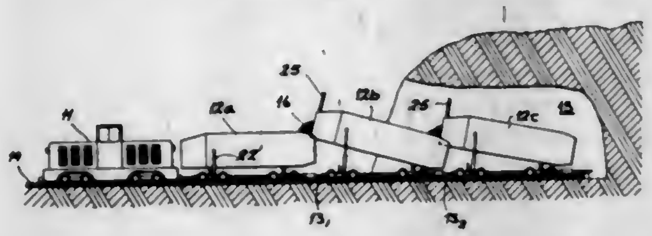


3,307,718
MULTICAR BULK TRANSPORTER AND METHOD

John Olov Hilding Sjöström, Ornskoldsvik, Sweden, assignor to Aktiebolaget Hagglund & Soner Ornskoldsvik, Sweden, a corporation of Sweden

Filed Feb. 8, 1965, Ser. No. 430,872

11 Claims. (Cl. 214—38)



1. A train for the transportation of bulk goods, comprising a plurality of aligned cars each with support means and an elongated upwardly open body pivotably mounted on said frame for swinging about a horizontal axis, said body having a substantially closed first end and an at least partly open second end; adjustable coupling means between said cars interconnecting the respective support means thereof with variable spacing of their adjoining ends; conveyor means extending longitudinally along the floor of said body; drive means for operating said conveyor means for transportation of a load from said first end to said second end; and mechanism operable to tilt said body about said axis to an extent sufficient to lift said second end above the level of the proximal end of an immediately adjoining car whereby said load can be transferred to said adjoining car by said conveyor means upon an adjustment of said coupling means to reduce the spacing between said body and the body of said adjoining car sufficiently to have said second end overlie said proximal end.

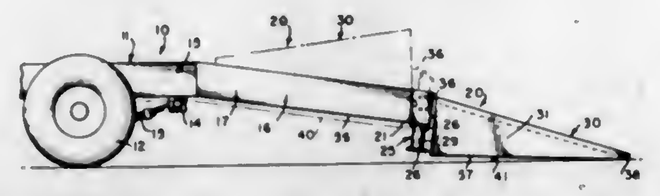
3,307,719
FLOATING RAMP

Raymond D. Martin, Jr., Centreville, Md., assignor to Tag-A-Long Trailers, Inc., Centreville, Md.

Filed Apr. 23, 1965, Ser. No. 450,331

2 Claims. (Cl. 214—85)

1. A trailer embodying a frame, wheels and springs, said frame including a rearwardly disposed inclined section having a channel member at the rear thereof, a pair of spaced parallel vertically disposed channel pieces secured to the rear of said channel member, a pair of vertically disposed spaced parallel collars secured to the inner surfaces of said channel pieces, a support member having an inverted U-shape including a pair of spaced parallel vertically disposed legs vertically adjustable in said collars, flanges on the lower ends of said legs providing stops, the upper inner portions of said collars being cut away, said support member further including a horizontally disposed cross element connecting said legs together, a horizontally disposed sleeve swivelly mounted on said cross element, said sleeve being shorter than said cross elements, a pair of ramps arranged adjacent the rear of the trailer, and said ramps being operatively connected to the trailer by a single floating pivotal connection that includes said support member and said sleeve, each of said ramps having a wedge shape pair of extensions fixedly securing each ramp to a corresponding sleeve.

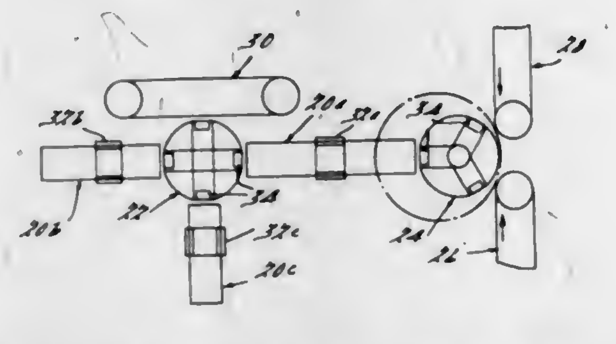


3,307,720
CONVEYING APPARATUS INCORPORATING ROTARY TRANSFER MECHANISM

John V. Davis, Grosse Pointe Farms, Louis J. Minbiole, Jr., Detroit, and Eugene H. Zinke, Roseville, Mich., assignors to The Udylite Corporation, a corporation of Delaware

Filed June 10, 1964, Ser. No. 374,125

4 Claims. (Cl. 214—89)



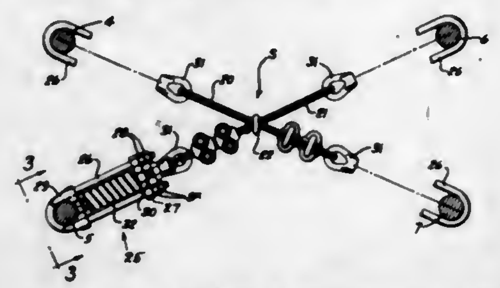
1. A conveying apparatus comprising an aligned first section and an aligned second section disposed with one of each of the ends thereof in proximate relationship and interconnected at said ends by a rotary transfer mechanism, said transfer mechanism including a plurality of work rack supporting means thereon, and drive means for intermittently rotating said supporting means into successive end alignment with the adjacent said ends of said first and said second sections, each said section including rail means extending longitudinally along a series of treating stations, a carriage movably mounted on said rail means, lift means on said carriage for engaging and vertically moving the work racks above the treating stations and said work rack supporting means on said transfer mechanism when disposed in end alignment therewith, means for intermittently moving each said carriage along said rail means, and control means for coordinating the movement of each said carriage and said lift means thereon, and the rotary movement of said transfer mechanism for successively aligning said rack supporting means on said transfer mechanism with said ends of said first and said second section for receiving work racks from and for transferring work racks to said lift means on each said carriage.

3,307,721
SPRING LOADED WHIP ARRESTER FOR BOOM SUSPENSION CABLES

Karl Schneider, Greenfield, Wis., assignor to Harnischfeger Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Sept. 17, 1965, Ser. No. 488,025

3 Claims. (Cl. 214—135)



1. A power shovel having a support portion, a boom pivoted at its lower end to said portion and extending upwardly at an incline therefrom, suspension cables extending between said support portion and said boom for preventing downward movement of said boom beyond a predetermined position, a dipper handle shiftably mounted on said boom for movement relative thereto, a cross cable connected between said suspension cables and having means for being yieldingly clamped thereto, and spring loaded clamping means for yieldingly clamping said cross cable to said suspension cables, said clamping means including a U-clamp and a base which cooperates therewith and is resiliently urged thereagainst for holding said suspension cable therebetween.

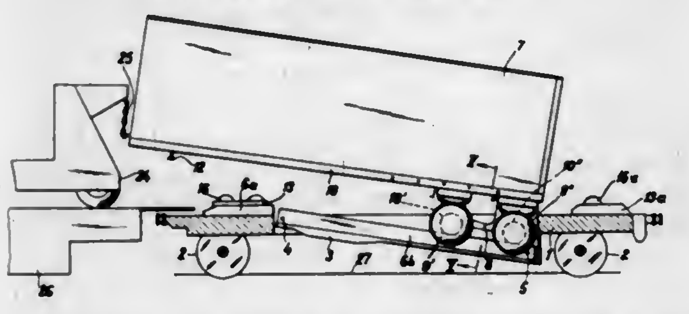
3,307,722
SEMITRAILER AND METHOD OF LOADING SAME ONTO FLATCAR

François Godbille, Paris, France, assignor to Sté Fruehauf International, Ltd., Vaduz, Liechtenstein

Filed Jan. 13, 1965, Ser. No. 425,291

Claims priority, application France, Jan. 14, 1964, 3,102

6 Claims. (Cl. 214—152)



1. A method of loading a semitrailer, having a rear-wheel bogie displaceably mounted on the underside of an elongated body, onto a flatcar including a generally horizontal wheeled frame and a downwardly and rearwardly sloping platform in said frame having a forward end substantially level with said frame, comprising the steps of driving said semitrailer rearwardly onto said flatcar with said bogie rolling on said platform until the wheels of said bogie abut a stop at the rear end of said platform, lowering the front of said body onto said frame forwardly of said platform by a relative swinging of said body and said bogie, displacing said body horizontally rearwardly with reference to said frame and said bogie, and locking said body against further horizontal shifting relative to said flatcar.

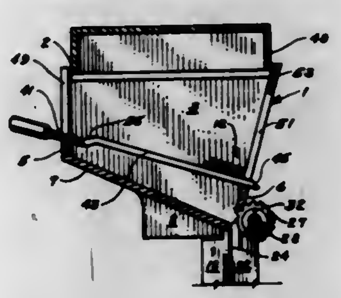
5. A semitrailer adapted to be loaded onto a flatcar with sloping platform, comprising an elongated body, a rear-wheel bogie with a forward wheel axle and a rearward wheel axle having wheels disposed below the underside of said body, mounting means securing said bogie to said body with freedom of relative horizontal displacement, said mounting means including a hinged suspension for a part of said bogie bearing said rearward wheel axle whereby the latter may be swung about a fixed horizontal axis in the proximity of said forward wheel axle, and locking means for imobilizing said bogie on said body.

3,307,723
BULK HANDLING

Philip F. Walker, Wauwatosa, and Carl M. Batcha and Helmut F. Wiesser, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Jan. 18, 1965, Ser. No. 433,828

7 Claims. (Cl. 214—302)



1. Apparatus for transferring cylindrical bodies from a bulk arrangement to an in-line arrangement comprising,

(a) hopper means for said bodies in said bulk arrangement,
(b) said hopper means having an open top,
(c) said hopper means including an inclined bottom wall means with a lower end,
(d) an exit located at said lower end,
(e) said hopper including slot means in opposing walls,
(f) guide means extending from said exit in which said bodies are carried away from said hopper means in said in-line arrangement,
(g) agitator means adjacent to one side of said guide means located as to contact only those said bodies in said bulk arrangement and adjacent said guide means and thereby prevent formation of an arch therebetween,
(h) container means for bringing said bodies in bulk to said hopper means at said open top and having removable retainer means for an open side therein,
(i) said removable retainer means including prong means which are guided by said slot means to lower said bodies into said hopper means.

3,307,724
ATTACHMENT FOR INDUSTRIAL DUMP TRUCKS

Paul E. Miller, Fort Wayne, Ind., assignor to International Harvester Company, a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 503,480

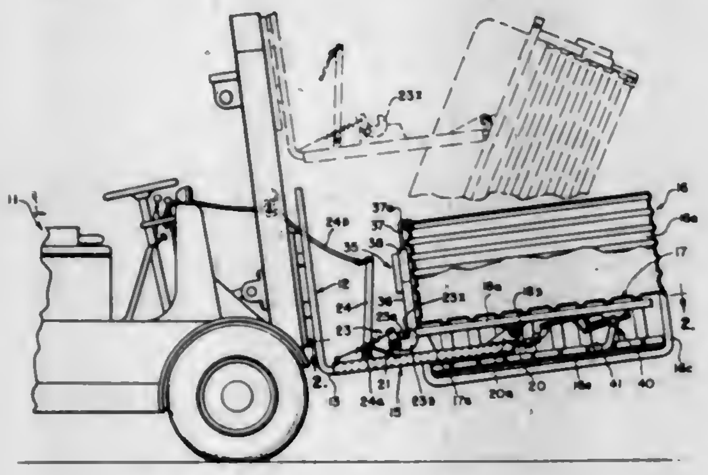
8 Claims. (Cl. 214—313)

1. A dump attachment for an industrial truck equipped with a fork lift mechanism and a hydraulic power system operable under manual control, said lift mechanism comprising a plurality of laterally spaced forks extending generally horizontally, forwardly of said truck and generally parallel to the longitudinal axis of the truck, said dump attachment comprising

(a) a base comprising a plurality of generally tubular arms arranged in corresponding spaced relation for receiving said forks in snugly fitting relation whereby to support said base on said forks, and a generally horizontal transverse member interconnecting said arms adjacent their rearmost extremities,
(b) a work load container supporting frame mounted on said base for tilting movement about a horizontal axis generally perpendicular to the longitudinal axis of the truck and in parallel spaced relation with said transverse member,

(c) a latch assembly comprising means on said base and means on said frame in cooperative relation with one another for releasably maintaining said frame in untilted relation with said base under operator control,

(d) first and second clamp assemblies mounted on said frame and operable to engage complementary means on a work load container supported thereon releasably to secure said container in operative position thereon, said first clamp assembly comprising a first clamp member operable between first and second positions releasably to engage first complementary means on said container in clamping relation, said second clamp assembly comprising a plurality of second clamp members arranged in spaced relation with said first clamp member and with one another and operable between inoperative and operative positions releasably to engage second complementary means on said container in clamping relation,



(e) first hydraulic power means on said frame in operative communication with said hydraulic power system and operatively connected with said clamp assemblies, whereby to operate said clamp members to and from said positions,

(f) a tilting assembly comprising means on said base and means on said frame arranged in cooperative relation with one another and operable to tilt said frame in relation to said base,

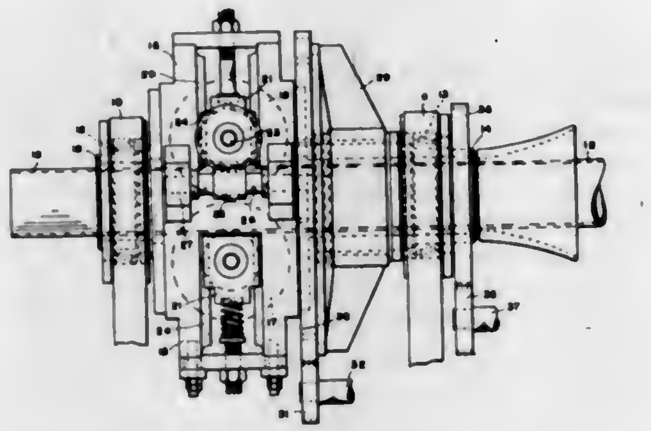
(g) second hydraulic power means on said base in operative communication with said hydraulic power system and operatively connected with said tilting assembly for tilting said frame, in relation to said base whereby to dump the contents of said container, the parts being so conformed and arranged to operate that upon said truck and said lift mechanism having been operated to move said attachment and container with work load in operative position thereon to selected position for dumping and said latch assembly having been operated to release said frame, said second hydraulic power means may be operated to tilt said frame in relation to said base whereby to dump said work load.

3,307,725
COMBINED ADVANCING AND ROTATING FEEDING HEAD FOR ELONGATED STOCK

Samuel Fecto, Hubbard, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio

Filed Dec. 29, 1964, Ser. No. 421,969
2 Claims. (Cl. 214—338)

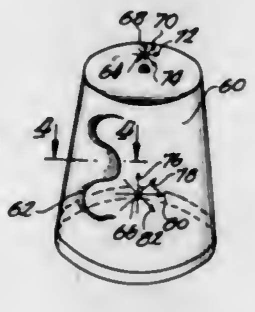
1. Apparatus for longitudinally advancing an elongated workpiece along a spiral path comprising in combination a frame, means mounting said frame for rotation about the longitudinal axis of advancement of the workpiece, means for rotating said frame about said axis, a pair of workpiece-engaging rolls journaled on said frame for rotation about spaced axes transverse of said first mentioned axis, said means journaling said rolls including means to yieldingly bias said rolls toward each other whereby a workpiece may be clamped therebetween, means to drive one of said rolls comprising a shaft journaled on said frame and extending parallel to but outwardly of said first mentioned axis, a pinion gear keyed on said shaft, a ring gear mounted for rotation about said first mentioned axis and having gear teeth meshing with said pinion gear, means for rotating said ring gear, a pair of separate and independent drive shafts for rotating said frame and for driving said ring gear, respectively, the arrangement being such that by varying the absolute and relative speeds of said drive shafts the longitudinal rate of advancement of the workpiece may be varied as well as the rotation of the workpiece relative to its longitudinal movement, said ring gear being formed with gear teeth on both its inner and outer peripheries, the inner gear teeth meshing with said pinion gear, and said apparatus further including a second pinion gear on one of said separate shafts meshing with the external teeth of the ring gear.



3,307,726
MULTI-LAYERED THERMOPLASTIC ARTICLE

Kenneth J. Cleereman, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Oct. 24, 1963, Ser. No. 318,745
5 Claims. (Cl. 215—1)

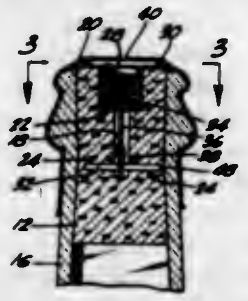


1. A thermoplastic article having rotational symmetry and a multi-layered structure, each layer of such structure having a molecular orientation different than the orientation in an adjacent layer thereto, whereby multi-directional strength is imparted to said article comprising an injection molded plastic with a birefringence pattern through its thickness at 90° from flow, substantially similar to that shown in the patterns effected with rotation in FIG. 5 of the drawing herein.

3,307,727
REMOVABLE CORK

Miguel A. Garay, 2978 W. San Marino Ave., Los Angeles, Calif. 90006

Filed Aug. 13, 1965, Ser. No. 479,400
1 Claim. (Cl. 215—55)



A removable cork for a bottle comprising, in combination:

a generally cylindrical cork member having a first cylindrical opening formed in its upper end, concentric to the longitudinal axis of said member and extending to a predetermined depth, the upper portion of said first opening being of substantially greater diameter than the lower portion and providing an annular shelf, said cork member also having a second cylindrical opening extending transversely therethrough at said predetermined depth and communicating with said first opening;

a metal ring concentrically disposed on the upper end of said cork member above said upper portion of said first opening;

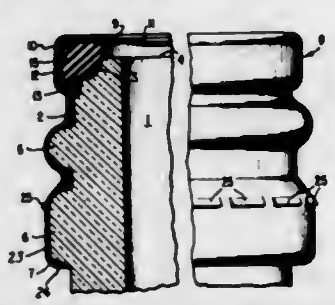
a flexible wire having its upper end secured to a point on said ring, extending then horizontally to said first opening, being then coiled into a coil which occupies said upper portion of said first opening and rests on said shelf, extending then downwardly through said lower portion and having its lower end formed in a loop aligned with said second opening;

and a pin inserted into said second opening and through said loop for retaining said wire, the length of said pin being less than the width of said cork member at said second opening location.

3,307,728
CONTAINER AND TWO-PIECE CLOSURE THEREFOR

William F. Elser, Toledo, Ohio, assignor to Owens-Illinois Inc., a corporation of Ohio

Filed May 28, 1965, Ser. No. 459,665
9 Claims. (Cl. 215—97)

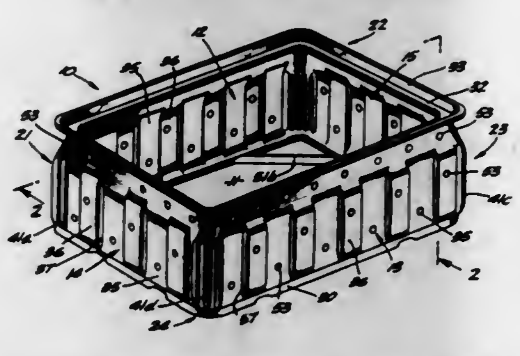


1. A hermetically sealed package comprising, in combination, a container having a neck portion of circular cross section with a screw thread formed on the external surface thereof, a sealing surface adjacent the open end of said neck, a lid including a generally disc-shaped end panel having a depending annular skirt integrally formed around its periphery, said skirt terminating in an inwardly turned bead, a sealing gasket in said lid adjacent said skirt in position to engage and form a hermetic seal with said sealing surface, and a retaining and lifting ring having an annular body portion roll formed onto said external screw threads and terminating at one end in an inwardly directed flange overlying a portion of said end panel adjacent the outer periphery thereof, and an inwardly directed annular bead formed around said body portion and extending beneath said bead on said skirt in position to engage said bead on said skirt to lift said lid from said container upon unscrewing said ring from said neck.

3,307,729
CONTAINER HAVING GEAR-LIKE CORNERS

Jacob L. Schwartz, Covina, Calif., assignor, by mesne assignments, to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Jan. 15, 1964, Ser. No. 337,954
4 Claims. (Cl. 220—1)

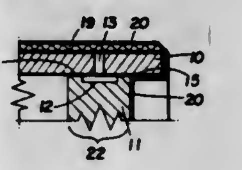


1. A container having a bottom wall, side walls, and end walls, each juncture of one of said side walls with one of said end walls forming a projecting portion which has a curved configuration in a plane parallel to the plane of said bottom wall corresponding approximately to 90° of the arc of a circle, and which has alternately formed ridges and valleys in the outward surface thereof which extend perpendicular to the plane of said bottom wall, said ridges being uniformly spaced; each said projecting corner portion thus providing substantially one-quarter of the circumference of a gear wheel, and being adapted to be drivingly engaged by a rotating gear wheel, or the like, for rotatably moving said container in the plane of said bottom wall; the ridges forming the gear teeth on one pair of diagonally opposite corners being displaced half a tooth's space relative to the associated side and end walls from the position of the ridges forming gear teeth on the other pair of diagonally opposite corners.

3,307,730
ALUMINUM PRESSURE VESSEL

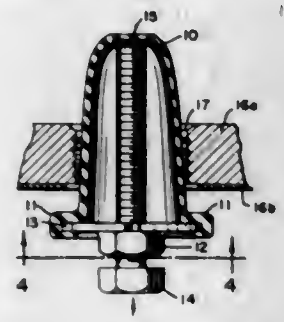
John Leslie Davidson, Oak Ridge, Tenn., assignor to Duralast Containers Limited

Filed Jan. 29, 1965, Ser. No. 428,991
Claims priority, application Canada, Feb. 17, 1964, 895,799
1 Claim. (Cl. 220—3)



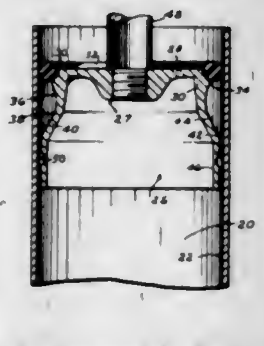
A light weight pressure vessel comprising: an inner vessel envelope formed of relatively thin aluminum tubing having aluminum end walls rigidly fastened thereto; glass fibre reinforcing strips extending lengthwise of said container about said inner envelope and the end walls thereof; two layers of circumferentially tensioned cord windings of glass fibres, each of said windings being in the form of groups of fibres arranged in triangular section, said windings being adapted to interlay one with the other, a coating of impregnated heat curable plastic resin extending throughout and between said fibres and defining an exterior surface for said windings and end walls the lengthwise reinforcing being continued within the inner surface of the end portions of said tubing, and said end walls being of a diameter and thickness adapted for a press fit within the ends of said tube to impinge said glass fibre in the reinforcing in the inner surfaces thereof over a predetermined area; and a heat curable resin bonding the peripheral surfaces of the said end walls and the glass fibre reinforcing impinged thereby on the inner surfaces of said end portions of the tubing.

3,307,731
PLUGGING DEVICE
Harry Seltzer, 239 Clear Meadow Drive,
East Meadow, N.Y. 11554
Filed Mar. 24, 1965, Ser. No. 442,376
9 Claims. (Cl. 220—24.5)



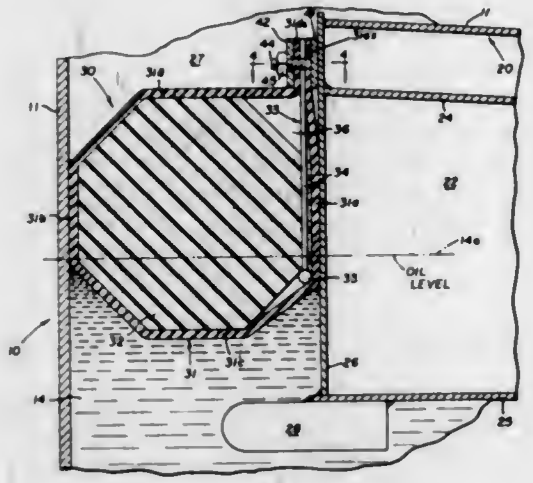
1. A plugging device comprising:
(a) an expansible stopper;
(b) a washer-like member disposed substantially perpendicular to the longitudinal axis of said stopper and secured to said stopper at the open end of said stopper;
(c) a nut secured to said washer-like member and adapted to receive a bolt along the longitudinal axis of said stopper for expanding said stopper longitudinally;
(d) and a bearing member disposed along the longitudinal axis of said stopper and against which said bolt bears as said bolt is turned into said nut and said stopper is expanded longitudinally.

3,307,732
REMOVABLE PLUG FOR A PASSAGE
Joseph M. Roberts, Sr., and Carlton M. Mellan, San Diego, Calif., assignors, by mesne assignments, to de Best Mfg. Co., Inc., Gardena, Calif., a corporation of California
Filed June 14, 1965, Ser. No. 463,825
10 Claims. (Cl. 220—24.5)



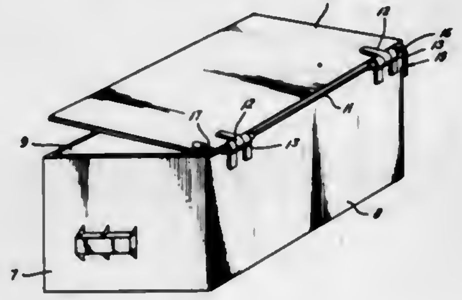
1. A removable plug assembly for closing the open end of a pipe for the purpose of testing the pipe by introducing pressurized fluid into the pipe, comprising:
a plug of generally circular cross section having a leading end and a trailing end;
a resiliently deformable and stretchable ring of a given unrestrained inside diameter to embrace the plug to form a seal between the plug and the inner circumferential surface of the pipe; and
means on the trailing end of the plug to serve as a handle for manipulating the plug,
said plug being formed near its trailing end with an outer circumferential seat for said ring,
said plug having a circumferential holding recess between said seat and the leading end of the plug,
said plug having a circumferential ridge separating the seat from the holding recess, said ridge being of greater outside diameter than the least diameters of both the recess and the seat, said ridge being of greater outside diameter than the said given unrestrained inside diameter of the ring,
the region of maximum diameter of the plug being towards the leading end of the plug from the holding recess,
the surface of the holding recess being flared towards said region of maximum diameter,
whereby with the sealing ring embracing said seat, the plug may be inserted into the open end of the pipe and then retracted to cause the ring to be rolled between the plug and the pipe from said seat across said ridge into the holding recess and the fluid under pressure may be introduced into the pipe to cause further retraction of the plug with consequent wedging of the sealing ring between the inside surface of the pipe and the flared surface of the holding recess.

3,307,733
SEALING MECHANISMS FOR STORAGE TANKS
Walter L. De Bock, Riverdale, Ill., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 12, 1965, Ser. No. 432,303
2 Claims. (Cl. 220—26)



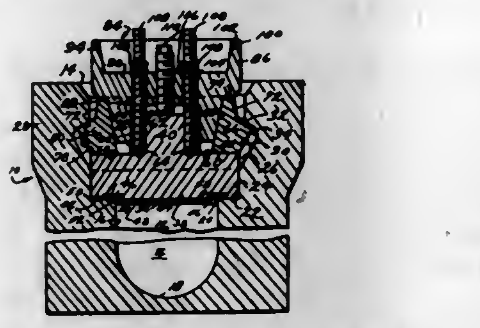
1. In a tank for storing liquids, such as petroleum products, including an upstanding substantially cylindrical side wall, and a floating roof arranged in said tank and including upstanding substantially cylindrical wall structure spaced radially inwardly from said tank side wall and defining a substantially annular space therebetween; sealing mechanism for said annular space comprising a substantially annular tubular casing arranged in said annular space and located principally above the level of the stored liquid, means for attaching said casing to the adjacent portion of said roof wall structure, so that said casing is movable with said roof wall structure and with respect to said tank side wall, said casing being formed of flexible non-metallic sheet-like material that is impervious to the constituents of petroleum products and to water and to air, said casing including an inner side wall lying along the outer surface of said roof wall structure and an outer side wall lying along the inner surface of said tank side wall and a bottom wall connecting the lower portions of said inner and outer side walls and a top wall extending between the upper portions of said inner and outer side walls, an annular body of self-supporting resilient material of cellular structure enclosed by said casing and substantially completely filling the same, whereby said casing constitutes an outer wrapper for said body, said body having a lateral cross section that is substantially octagonal with a first pair of opposed faces respectively engaging said casing inner and outer side walls and with a second pair of opposed faces respectively engaging said casing bottom and top walls, whereby said body constitutes a resilient cushion urging said casing inner side wall into firm sealed relation with said roof wall structure and urging said casing outer wall into firm sealed relation with said tank side wall during both vertical movements and sidewise movements of said roof wall structure with respect to said tank side wall, the material of said casing outer side wall also being highly wear-resistant to prevent undue scuffing thereof in its sliding movements in direct contact and sealed engagement with said tank side wall, a plurality of stays carried by said roof wall structure in an annular array and positioned in circumferentially spaced-apart relation with respect to each other, said stays being secured to the upper portion of said roof wall structure above said casing and projecting downwardly along said roof wall structure and into said casing and between said casing inner side wall and said body so that the upper portion of said casing inner side wall underlies the upper portions of said stays and the inner portion of said casing top wall overlies the upper portions of said stays, said stays respectively terminating at the lower portions thereof in parts located between said casing and said body and adjacent to the junction between the lower portion of said casing inner side wall and the inner portion of said casing bottom wall, and means including said stays for positively preventing said casing from riding-up said tank side wall and out of said annular space incident to downward movement of said roof wall structure with respect to said tank side wall.

3,307,734
LID CONTROL FOR HEAVY CONTAINERS
Robert D. Campbell, Dallas, Tex., assignor, by mesne assignments, to Murray Company of Texas, Inc., a corporation of Delaware
Filed July 9, 1964, Ser. No. 381,364
2 Claims. (Cl. 220—35)



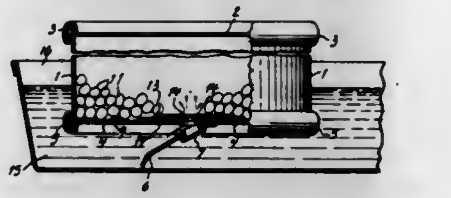
1. A container having a box-like body and a heavy lid, hinge means movably securing an edge of said lid to the container body along one edge thereof, a torsion bar extending along said edges and having offset ends, one of said ends being secured to said cover and the other extending along a wall of said body, said hinge means comprising hinge eyes projecting, respectively, from the juxtaposed edges of said body and cover and rotatably embracing said torsion bar which thereby serves as the hinge pin, and lost motion means securing said last-mentioned bar end to said wall for providing a range of opening and closing movements of said cover unimpeded by said bar while causing said bar to torsionally resist at least the terminal portions of the opening and closing movements of said cover.

3,307,735
PRESSURE VESSEL CLOSURE
Raymond E. Latham, Robert T. Brown, Oscar Dane III, and Charles A. Bollfrass, Houston, Tex., assignors to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed Nov. 27, 1964, Ser. No. 414,245



1. Apparatus for receiving pressurized fluids comprising a fluid confining element having wall means defining a chamber therein for receiving pressurized fluid, means defining a chamber mouth at one end of said chamber communicating said chamber with the exterior of said fluid confining element; means defining a closure seat in said chamber; a closure receivable in said chamber abutting said seat to block said chamber mouth; cooperative sealing means on said closure and in said chamber adapted to seal the closure with respect to the chamber; means defining a peripherally extending groove in said chamber wall axially toward said chamber and from said closure seat, said groove means including a wedging surface; wedge means received against an outer surface of said closure, said wedge being adapted to be moved between a first position wherein said wedge means bears against said groove wedging surface and forces said closure sealing means to achieve and maintain a sealed condition with respect to the chamber sealing means and a second position wherein the wedge means is removed from bearing against the groove wedging surface; and a cam device mountable on said closure adjacent said chamber mouth and having means defining a first camming surface thereon for moving said wedge means from said first position to said second position and a second camming surface thereon for moving said wedge means from said second position to said first position.

3,307,736
VACUUM SEALABLE CONTAINER FOR HYDRATABLE PRODUCTS
Milton Kaplow, Elmsford, N.Y., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed May 22, 1964, Ser. No. 369,371
15 Claims. (Cl. 220—54)

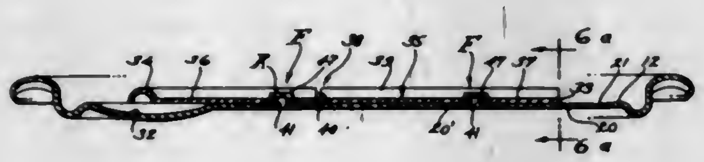


1. A container for use in packaging and hydrating a liquid combinable product comprising, an elongate tubular body portion of air and moisture-impervious packaging material, end closures of similar packaging material joined to said body portion to define therewith a vacuum sealed enclosure, one of said end closures being formed with means manually actuable to rupture the material of said one end closure at a discrete area thereof, and means disposed in sealing relation to said discrete area for maintaining a vacuum seal for said container after the said one end closure is ruptured by said manually actu-

able means, said vacuum maintaining means including a substance physically changeable to a nonsealing state when in contact with a product hydrating liquid to permit admittance of said liquid into said container when said one end closure, after being ruptured, is placed in fluid-tight communication with said liquid.

3,307,737
ATTACHMENT OF AN OPENER TO THE WALL OF A CAN

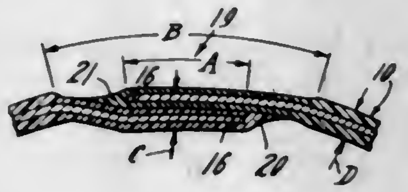
Leo M. Harvey, Los Angeles, and Ralph W. Hilton, Torrance, Calif., assignors to Harvey Aluminum (Incorporated), Los Angeles, Calif., a corporation of California
Original application Dec. 11, 1964, Ser. No. 417,567, now Patent No. 3,221,924, dated Dec. 7, 1965. Divided and this application June 30, 1965, Ser. No. 468,343
10 Claims. (Cl. 220—54)



1. A container and opener therefor comprising a can having an imperforated top, an unbroken hollow rivet projecting outwardly of said can and continuous with said can top, an opener superimposed upon the top of said can, said opener being provided with an aperture receiving said rivet, said rivet including a peripheral wall and a transverse head portion securing said opener to said can top, said can top having a portion immediately surrounding said rivet of reduced cross section, said peripheral wall being of the material solely out of said can top by which the thickness of said immediately surrounding portion is reduced, said rivet having an outside dimension through its center at said can top no greater than 0.15 inch.

3,307,738
LAMINATED COLLAPSIBLE TUBE

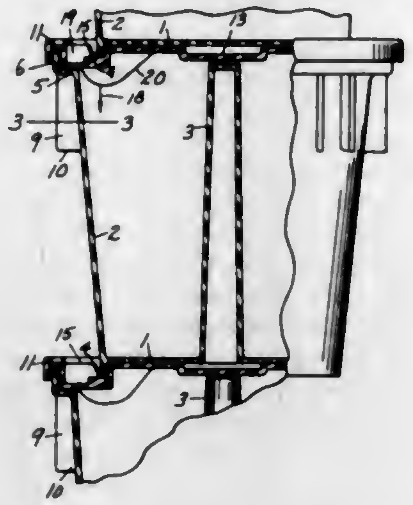
Christian Theodore Scheindel, Glen Gardner, N.J., assignor to American Can Company, a corporation of New Jersey
Filed May 22, 1964, Ser. No. 369,498
4 Claims. (Cl. 220—83)



1. A collapsible container comprising a tubular body of laminated construction including a barrier layer and an inner layer of thermoplastic material substantially coextensively bonded together, said layers being overlapped a predetermined distance at their opposite circumferential margins and joined together by heat and pressure providing inner and outer lap edges of a side seam extending the full length of said body, said lapped edges having a reduced thickness of approximately 75% of the combined thickness of said layers by reason of a portion of said thermoplastic layer on said lapped edges being compressed and squeezed out from said lapped edges on the application of heat and pressure, said squeezed out portion forming fillets to each side of said seam which are pressed against the corresponding body layer contiguous said seam and enclose edges of said barrier layer in said seam.

3,307,739
CONTAINER

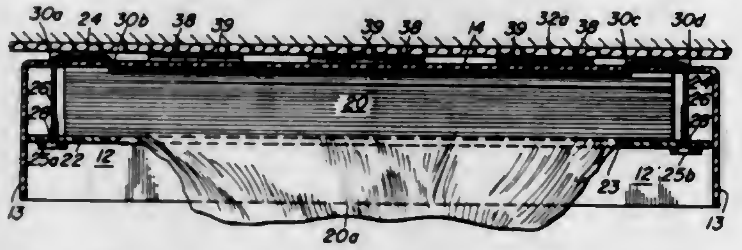
Harold S. Cloyd, Ralph M. Dudley, Robert T. Mangold, and Richard W. Welch, Erie, Pa., assignors to Nosco Plastics, Incorporated, Erie, Pa., a corporation of Pennsylvania
Filed Oct. 1, 1964, Ser. No. 400,686
6 Claims. (Cl. 220—97)



1. A container for stacked storage of frozen fruit and the like having a polygonal bottom wall and side walls flaring outward from the bottom to the top, the side walls having portions depending below the bottom wall at the junctions or corners of the side walls and serving as load transmitting surfaces and having a top rim having outwardly extending flanges serving as load receiving surfaces, ribs on the outside of the side walls and the underside of the flanges at the corners stiffening the top rim, a cover telescoped over the top rim, said cover having pads at the corners for receiving the depending portions of an upper container, said cover having portions intermediate the pads spaced below the depending portions of the upper container whereby the load of the upper container is concentrated at the corners of the underlying container.

3,307,740
SHEET DISPENSER HAVING MEANS TO VARY THE POSITION OF THE COVER UPON DEPLETION OF THE SHEETS THEREIN

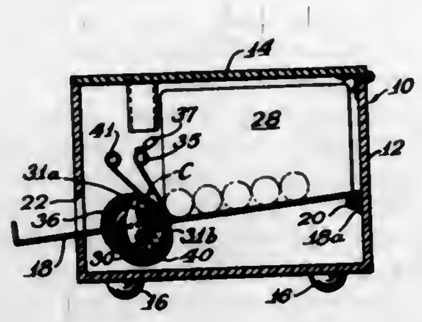
Charles H. Fant, 30 N. Lind St., Chicago, Ill. 60630
Filed Feb. 9, 1965, Ser. No. 431,302
5 Claims. (Cl. 221—45)



1. A sheet dispenser comprising: a receptacle for a stack of substantially flat sheets having side walls, a bottom wall and an open top; a cover dimensioned somewhat less than the cross-sectional area of said receptacle; and a resilient means associated with said cover to urge the same inwardly toward said bottom wall of said receptacle for maintaining the uppermost sheet in close proximity to said cover; a permanent magnet; attached to the receptacle a magnetic attracting plate; and a contacting means, said permanent magnet drawing said magnetic attracting plate into contact therewith, said contacting means attaching said plate to a non-magnetic surface, said plate and said contacting means cooperating to permit said attracting plate to be releasably secured to a non-magnetic surface.

3,307,741
APPARATUS FOR DISPENSING LIGHTED CIGARETTES

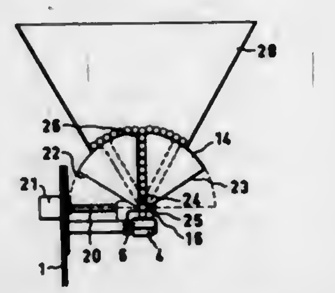
Boris N. Kovacevic, 4419 N. Christiana Ave., Chicago, Ill. 60625
Filed Sept. 13, 1965, Ser. No. 486,618
3 Claims. (Cl. 221—143)



1. A combination cigarette lighter and dispenser comprising a housing; a support rack in said housing for supporting a plurality of cigarettes; an ignition element disposed adjacent an end of said rack, with one side of said ignition element being substantially aligned with the adjacent side of said rack for lighting the end of a cigarette; means for energizing said ignition element; drive means for moving cigarettes successively past said ignition element for lighting same, said drive means including a shaft rotatably supported in said housing transversely of the support rack, with the axis of the shaft being substantially parallel to the axes of the cigarettes on the rack, finger means on the shaft for engaging with and moving a single cigarette past the ignition element and a bimetal operatively connected to said shaft and being disposed in heat transfer relationship to said ignition element, whereby when said ignition element is energized, said bimetal actuates said shaft to move a cigarette past the ignition element to light the cigarette.

3,307,742
DEVICE FOR FEEDING DOWN CIGAR BUNCHES ON A CONVEYING BELT

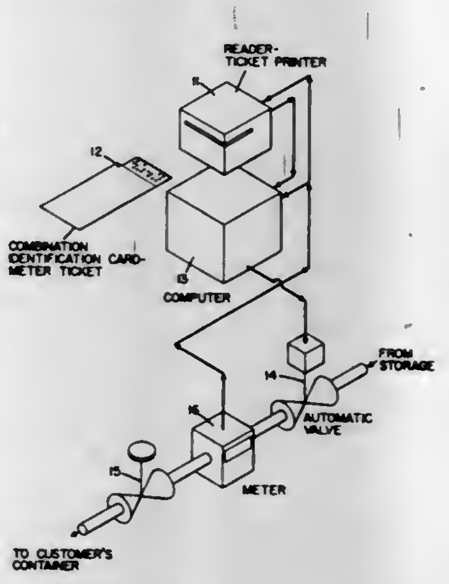
Lars-Axel Åström, Stockholm, Sweden, assignor to Arenco Aktiebolag, Stockholm, Sweden
Filed Aug. 27, 1965, Ser. No. 483,190
Claims priority, application Sweden, Sept. 30, 1964, 11,730/64
1 Claim. (Cl. 221—180)



A device for feeding rod-like articles, for example cigar bunches, comprising a magazine, a body which is journalled in bearings below said magazine and has a surface at least partly cylindrical positioned within said magazine and comprises a through way outlet duct extending radially through said body and debouching with one of its end openings in said magazine, driving means for turning said body to and fro with centre of motion in said bearings situated in alignment with the axis of the cylindrical surface of said body, the other end opening of said duct positioned at said axis and extending between a forward end and a backward end of said body, said forward end provided with a stopper, a conveyor having a transport surface at a predetermined distance below said stopper and moving in the direction from said backward end to said forward end.

3,307,743
SYSTEM AND METHOD FOR DISPENSING MATERIALS

David L. Wagner, Findlay, Ohio, and Hugh W. Collins, Arlington, Ill., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Filed Jan. 14, 1965, Ser. No. 425,462
5 Claims. (Cl. 222—1)



4. A method for the dispensing of material for sale with the quantities of said material being controlled so as not to exceed pre-set maximum allowable total values in any predetermined time interval, said method utilizing, in combination, a computer having a memory device for storing said pre-set maximum values, said computer having means for deducting from said pre-set maximum values individual amounts corresponding to individual deliveries of material to customers, thereby maintaining a continuous balance of remaining allowable values of materials which may be withdrawn by each individual customer identification card and meter ticket which is imprinted prior to presentation with customer identifying markings which are readable by identification reading means in the dispensing system, said combination card-ticket having space for entering readable indicia of the quantity of materials delivered; an identification reading device for reading said customer identifying markings from said combination customer identifying card-meter ticket and transmitting a signal indicative of said identification to said computer; a metering device for metering said material during delivery to said customer, said metering device having means for marking said combination identification card-meter ticket with post-delivery markings indicative of the amount of material delivered and for transmitting to said computer signals indicative of the amount of material delivered; dispensing control means controlling the dispensing of said materials and operably connected to said computer to open in response to a signal from said computer indicating that said customer continues to have a balance of allowable values remaining in the memory storage of said computer, said method comprising in combination; receiving said customer identification card-meter ticket in said identification reading device, reading the customer identification from said card-ticket in said identification reading device, transmitting a signal from said identification reading device which signal causes said computer to locate in its memory, any balance of remaining allowable materials which corre-

sponds to said customer identification, thereafter emitting a signal from said computer to open said dispensing control means only when a balance corresponding to said customer identification is found in said computer memory.

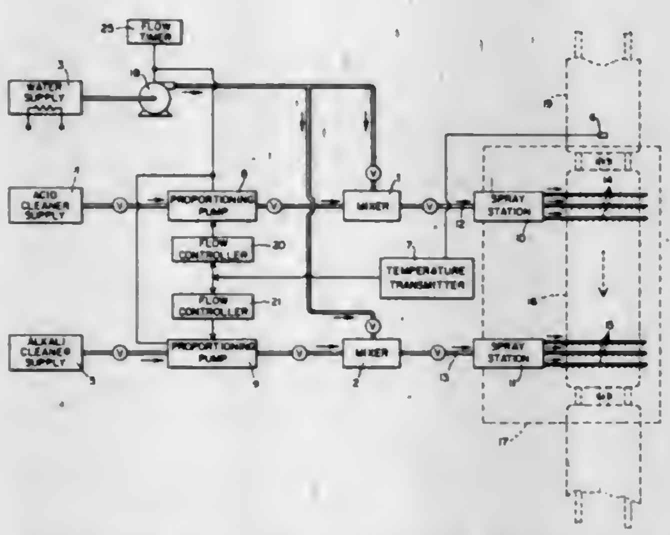
3,307,744

METHOD AND APPARATUS FOR AUTOMATIC CONTROL OF CLEANING SOLUTION CONCENTRATIONS IN VEHICLE WASHING SYSTEM

Robert M. Burford, Malvern, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 18, 1965, Ser. No. 496,824

17 Claims. (Cl. 222—1)



1. In a multi-stage, spray-type system for washing the exteriors of a plurality of vehicles as they pass in succession through a cleaning apparatus having a series of spray stations including at least one acid cleaner solution spray station and at least one following alkali cleaner solution spray station and wherein the temperature of the exterior surfaces of said vehicles entering said system at the beginning of the washing operation is substantially the same as the ambient temperature in the approach area to the entrance of said apparatus, said temperature being subject to substantial variation during a continuous 24-hour period, the method of continuously supplying the respective cleaner in each said solution to each said station at a predetermined dilution effective for achieving the desired cleaning of the surface at the respective station at said temperature and of continuously adjusting the supply of the cleaner in each solution reciprocally to the change of said ambient temperature to a new ambient temperature to provide adjusted solutions containing the cleaners at new predetermined dilutions effective for achieving the desired cleaning at the respective stations at said new temperature, which method comprises

- (a) automatically, continuously and individually mixing a stream of water with an amount of each respective cleaner in concentrated form sufficient to form a stream of diluted cleaner solution effective for cleaning the exterior of the vehicle at a measured starting vehicle surface temperature,
- (b) maintaining each said stream of said diluted cleaner solution at a substantially constant temperature and pressure,
- (c) continuously measuring the temperature of the surface of an incoming vehicle and thereby automatically determining the amount of each respective concentrated cleaning agent to mix with its re- of each said cleaning agent in each said diluted cleaner solution, and when said temperature changes from that of the preceding vehicle to a new temperature automatically changing the concentration of each said cleaning agent in each said diluted cleaner solution by (1) when the temperature rises, automatically decreasing by a predetermined amount the amount of concentrated cleaning agent being added and (2) when the temperature falls, automatically increasing by a predetermined amount the amount of concentrated cleaning agent being added, thereby maintaining each respective diluted cleaner solution at a desired effective concentration predetermined for the new temperature.

11. In a vehicle washing station comprising nozzle means for washing the exteriors of a series of individual vehicles as each vehicle passes through the station whereby at least one stream of an aqueous cleaning solution is applied continuously to the exterior surface of a vehicle in cleaning position at said station and wherein the initial temperature of the exterior surface of the vehicle on entering said washing station at the start of the cleaning action is substantially the same as that of the ambient outdoors temperature, said temperature being subject to substantial variation during a continuous 24-hour period, means for continuously maintaining the concentration of cleaning agent in said solution at a predetermined dilution effective for achieving cleaning of the surface at said temperature and for continuously reciprocally adjusting the concentration of said cleaning agent in said solution in keeping with change of the temperature of the exterior surface of an incoming vehicle from said initial temperature to a new temperature to provide a solution containing said cleaning agent at a predetermined concentration for achieving effective cleaning of the surface at said new temperature, which means comprises

- (a) mixer means for continuously mixing a major amount of water with a minor amount of concentrated cleaning agent sufficient to form a stream of diluted cleaner solution effective for cleaning the exterior of the vehicle at a predetermined vehicle surface temperature,
- (b) means for supplying water at a substantially constant temperature and pressure in a continuous stream from a supply source to said mixer,
- (c) means for supplying concentrated cleaning agent in a continuous stream from a supply source to said mixer,
- (d) temperature measuring means for continuously determining the temperature of the exterior surface of the vehicle,
- (e) temperature transmitter means associated with said temperature measuring means and continuously responsive to a signal from said temperature measuring means,
- (f) flow control means associated with said temperature transmitter means and continuously responsive reciprocally thereto for regulating the flow of said concentrated cleaning agent to said mixer means,
- (g) and means for delivering said diluted cleaner solution to said nozzle means, said temperature measuring means, temperature transmitter means and flow control means cooperating to continuously measure said temperature and thereby to automatically determine the amount of concentrated cleaning agent to mix with the water to form said diluted cleaner solution and when said temperature changes to a new temperature to automatically change the concentration of cleaning agent in the diluted cleaner solution by (1) when the temperature rises, automatically decreasing the amount of concentrated cleaning agent being added and (2) when the temperature falls, automatically increasing the amount of concentrated cleaning agent being added, thereby maintaining the diluted cleaner solution at a desired effective concentration predetermined for the new temperature.

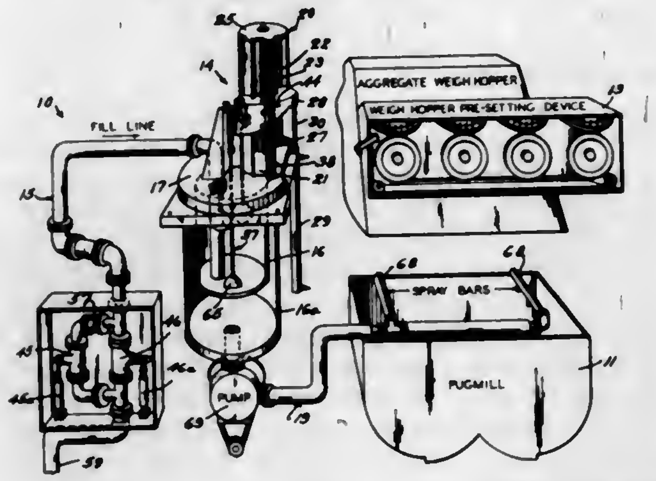
3,307,745

CONTROL MECHANISM FOR VOLUMETRIC MEASURING OF BITUMEN

Ralph L. Ohman, North Aurora, Ill., assignor to Barber-Greene Company, Aurora, Ill., a corporation of Illinois

Filed Jan. 28, 1965, Ser. No. 428,727

15 Claims. (Cl. 222—43)



1. An apparatus for volumetric measuring of fluid comprising
  a tank,
  a vertically extending drum, said drum and tank being rotatably movable relative to one another,
  upright members annularly arranged about the drum, adjustable stops mountable in variable selectable positions along said upright members for determining the volume of fluid to be supplied to said tank,
  a carriage for vertical movement at one side of the drum and cooperable with any one of said stops depending on the position of the drum with respect to the tank,
  means for locking the drum and the tank in fixed relation upon aligning said carriage with a selected one of said stops,
  a system for supplying fluid to said tank,
  valve means provided for said system for varying the rate of fluid flow to said tank and for shutting off said flow to said tank,
  control means mounted on said carriage including first and second controls,
  a float type level control in said tank in operative association with said first control for reducing the rate of fluid flow to said tank and cooperable with said second control for shutting off the fluid being supplied to the tank upon engagement of the level control,
  guide means for maintaining the float type level in alignment with said first and second controls, and means for moving the carriage into operative engagement with any one of the stops provided on the rotatable drum to vary the position of said control means for controlling the flow of fluid to the tank.

3,307,746

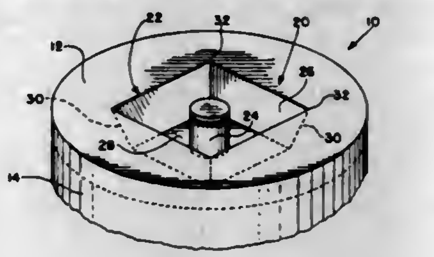
FRANGIBLE OPENING DEVICE FOR CONTAINERS

Bryant Edwards, Clarendon Hills, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed June 28, 1965, Ser. No. 467,620

1 Claim. (Cl. 222—143)

A one-piece seamless thermoplastic container member having an inverted frusto-pyramidal shaped wall structure formed in a planar end wall surface and including a bottom and side walls extending upwardly and outwardly therefrom and terminating in an open upper end in the vicinity of the plane of said end surface, and a hollow, closed top knob member joined to said bottom wall at a location generally equally spaced from the side walls of the frusto-pyramidal shaped wall structure and extending upwardly toward said end wall surface, said knob member having a height less than the depth of the side walls to permit stacking of similarly configured container members without accidental operation of said knob member, said knob member including means facilitating grasping thereof and being of a size to enable manual grasping such that when moved toward



said planar end wall surface, the surrounding wall structure is severed in the vicinity of the juncture of said side walls to expose a plurality of elongated openings for dispensing purposes, the arrangement of the aforementioned elements also causing severing of the planar end wall surface in the vicinity of the juncture of the side walls therewith to provide relatively large elongated dispensing openings facilitating egress of the container contents.

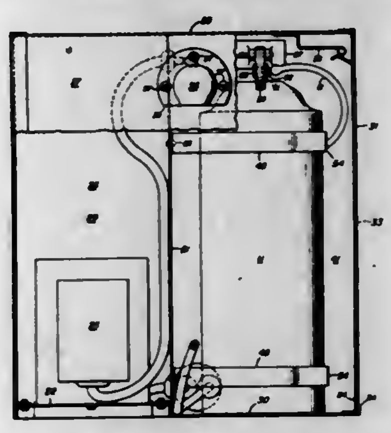
3,307,747

HEATED LATHER DISPENSER

Peter Pacitti, Collingswood, N.J., assignor to Salpac Company, Collingswood, N.J., a partnership

Filed Aug. 10, 1964, Ser. No. 388,401

1 Claim. (Cl. 222—146)

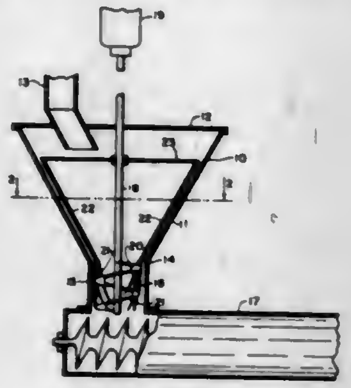


The combination with a cabinet of a tubular ceramic sleeve having a cylindrical passage therethrough, an electric heating coil within said sleeve, an electric switch for energizing said heating coil, an aerosol shave cream can having a depressible tube head with a discharge end, a flexible conduit connecting said discharge end with the passage in the sleeve and means for consecutively closing the electric switch and depressing the pressure tube head, said means comprising an elongated manually operated, pivoted lever having portions for engaging the switch and the pressure tube head in that order whereby to discharge heated lather through said passage in the sleeve, so that by holding the lever in switch closing position for about two seconds before causing the lather to flow, the discharged heated lather will be slightly warm, but by holding the lever partially down for as much as four seconds before completing its travel, the lather will be discharged quite hot, said cabinet having a front wall, a top, a left-hand side wall, a back wall, a permanent partition extending from the front wall to the back wall, parallel to said side wall, a removable bottom frictionally held between the front wall, the back wall, the partition, and said side wall; said cabinet also including a right-hand side wall; in which the tubular sleeve is mounted on the front wall, the switch is mounted on the inside of the front wall, the lever is pivoted at one end to the back wall, the aerosol can is mounted in spring clips secured to the partition, and the right-hand side wall is removably secured to the cabinet so that it may be lifted out to give access to the can, whereby to eliminate hinges and consequently to minimize the space required for the cabinet.

3,307,748
APPARATUS FOR FEEDING FLOWABLE SOLID MATERIALS TO A DELIVERY DEVICE

George Harvey Dunn, Jr., Odessa, Tex., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Jan. 21, 1966, Ser. No. 522,207
5 Claims. (Cl. 222—227)

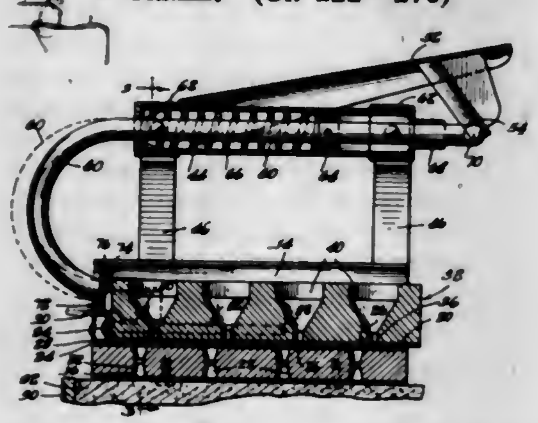


1. A machine for feeding flowable solids materials to a delivery device including a generally cone-shaped container terminating at its lower portion in an apex having a discharge port therein, a power driven rotatable spindle disposed vertically and centrally within said container and extending therethrough, spiral shaped material stirring means fixed to said spindle to rotate therewith inwardly of said container, and blade means fastened to said spiral shaped means and extending radially outwardly thereof in proximity to said container and positioned at pitch angles counter to the pitch angle of said spiral shaped means, whereby rotation of said spindle causes said blade means to remove materials agglomerating on said container wall and maintain a predetermined clearance between the latter and said spiral shaped means, and whereby materials removed from said container wall by said blade means are conveyed through said container in a direction opposite to the direction of feed of said spiral shaped means.

3,307,749
APPARATUS FOR SOWING SEEDS

Samuel J. Ursetta, 3200 S. Wells, Chicago, Ill. 60616

Filed Apr. 9, 1965, Ser. No. 446,813
5 Claims. (Cl. 222—276)

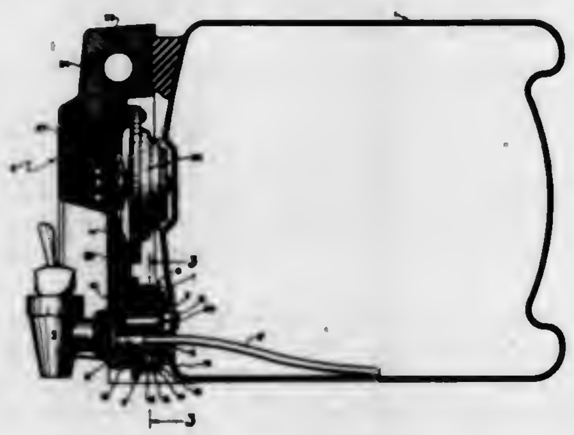


1. A portable, hand manipulated apparatus for sowing seeds in a preselected spaced pattern in a flat or the like, comprising a base plate having a plurality of spaced openings therethrough arranged in accordance with the preselected spaced pattern, an upper plate above and connected to said base plate having a plurality of open-ended, seed-receiving compartments, the lower open ends of said compartments being out of register with the openings through the base plate, an intermediate plate slidably mounted between said base plate and said upper plate and having a plurality of spaced openings therethrough which in one position of said intermediate plate are in register with the lower open ends of the compartments in the upper plate, and which in another position of said intermediate plate are in register with the openings through the base plate, and hand operable means connected to the base plate and upper plate and located above the upper plate for gripping by one hand of an operator and manually positioning the apparatus, said hand operable means including manually operated cam operable means connected to the intermediate plate, said cam operable means in response to a force applied to said hand operable means being adapted to move in a linear direction substantially along the horizontal plane of the upper plate and to cause the intermediate plate correspondingly to move thereby to bring the openings through the intermediate plate out of register with the lower open ends of the compartments in the upper plate and into register with the openings through the base plate whereby limited quantities of seeds from the compartments in the upper plate are transferred to the openings in the base plate and deposited in a preselected spaced pattern in soil contained in a flat or the like, said apparatus being easily raised and moved from one flat, or the like, to the next and actuated by the one hand of an operator gripping the hand operable means.

3,307,750
BEVERAGE DISPENSER

John E. Jeffries, Parma, Ohio, assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 18, 1965, Ser. No. 456,644
3 Claims. (Cl. 222—399)

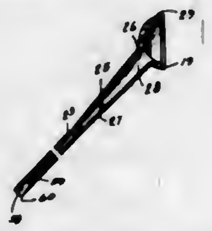


1. In a beverage dispenser consisting of a liquid container having an integral, upstanding neck with an outlet therein for said container, and a liquid dispensing head detachably secured to the said neck, said dispensing head comprising a tap and means for feeding gas under pressure into said container; the improvement comprising an insert extending from said head into said outlet and having a passage therethrough communicating with said tap and with the interior of said container, said insert also having a passage therethrough communicating with said pressure means and the interior of said container; sealing means encircling the side wall of the said insert and effecting a seal between the said insert and the inner wall of the said neck, and means carried by said head for detachably connecting the said head to the said neck, the said connecting means consisting of a ring fixedly attached to said dispensing head encircling the said neck and having spaced apertures therethrough, locking members reciprocable in the said apertures into and out of locking engagement with the said neck, and a cam ring rotatable around the first-mentioned ring, the said cam ring having spaced recesses therein which are registerable with the said apertures and having inwardly disposed cam surfaces intermediate the said recesses and engageable with the said locking members upon rotation of the cam ring to press the said locking members into locking engagement with the said neck.

3,307,751
ANTI-FOAMING FLOW RESTRICTOR

Elroy J. Kraft, Des Plaines, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois

Filed Jan. 19, 1966, Ser. No. 521,617
1 Claim. (Cl. 222—464)

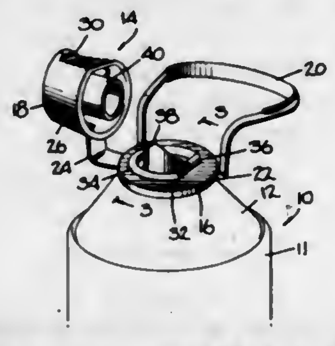


A liquid dispensing valve comprising:
- a valve body having an inlet and outlet and a connecting flow passage therebetween,
- valve means operable for controlling the flow of fluid to the outlet,
- an anti-foaming flow restrictor secured to said inlet and conducting fluid to said inlet from fluid source,
- said flow restrictor having a smooth flow passage including a diverging opened end,
- said diverging opened end having a wall thickness substantially tapered toward the end of the restrictor and forming a substantially thin edge thereat for preventing the swirling of fluid passing into the restrictor from the fluid source.

3,307,752
CAPTIVE PLASTIC CLOSURE FOR CONTAINER WITH INTEGRAL CONTAINER HANDLE

John J. Anderson, Kenosha, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.

Filed Mar. 15, 1965, Ser. No. 439,777
4 Claims. (Cl. 222—465)

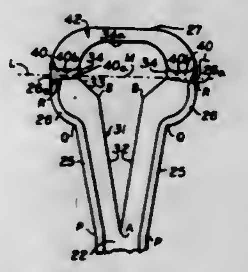


2. A cap arrangement comprising, a base made of a plastic material said base including means for securing it to a container opening, said base further being formed with a central opening leading into such container, a plastic spout integral with said base and rising upwardly from the edge of said central opening, said base being formed with a horizontal annular pressure bearing surface surrounding said spout and central opening, a locking rib protruding upwardly from said base along one edge of said pressure bearing surface, a hollow cup shaped plastic overcap having a generally tubular upstanding outer wall and a horizontal top wall, the lower peripheral edge of said outer wall being shaped to rest upon said pressure bearing surface and to frictionally engage said locking rib in a snap fit to secure said overcap on said base, and a pair of oppositely disposed handle members, said members being attached at their ends to the edge of said base at oppositely disposed points respectively, each of said handle members rising upwardly and flaring outwardly to provide finger access without interference with movement of said overcap.

3,307,753
AUXILIARY HANGER

Bernard B. Levine, New York, and Robert Phillips, Roslyn, N.Y., assignors to Bernard Plastics Molding Corp., Brooklyn, N.Y., a corporation of New York

Filed July 12, 1965, Ser. No. 470,972
1 Claim. (Cl. 223—95)



Auxiliary display hanger for skirts and the like for use in conjunction with a conventional hanger for jackets and the like having a hanger body and hook upstanding therefrom, said auxiliary display hanger comprising a bar having notches in one edge thereof adjacent its ends adapted to receive skirt straps and the like to support the skirt, and a leg connected to said bar at the center of said edge and perpendicular thereto, said leg having an elongated aperture formed therein adjacent its free end and sized to permit extension of said hook therethrough to bring said leg into abutment with the top of said body, said leg made of relatively stiff bendable plastic material, said leg having a reinforcing rib extending around its periphery and preventing bending of said leg, said rib interrupted on opposite sides of said aperture to permit bending of said leg on a line between said interruptions and extending across said leg, said leg being grooved at said interruptions so as to reduce the thickness and thereby increase the flexibility thereof to define a bendable tip of said leg between said bend line and said free end, said bendable tip being bent ninety degrees out of the plane of said leg, said elongated aperture extending above and below the bend line toward the leg free end extremity and notched bar, respectively, to provide an aperture opening to permit said bendable tip to rest upon the top of said body with said hook through said aperture and the rest of said leg alongside said body, said bendable tip being capable of being bent back in the plane of said leg to facilitate packing of a plurality of auxiliary display hangers, said leg being of a substantial length to extend a considerable distance below said body sufficiently so as to locate the skirt supported on said bar in position relative to the jacket supported by said body in substantial correspondence to the relative jacket and skirt positions when worn by a natural person.

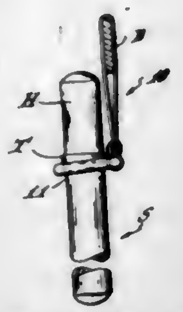
3,307,754
BELT-ATTACHED ARTICLE CARRIER

John E. Anketell, Fitzwilliam, N.H. 03447

Filed Oct. 19, 1965, Ser. No. 497,690
5 Claims. (Cl. 224—1)

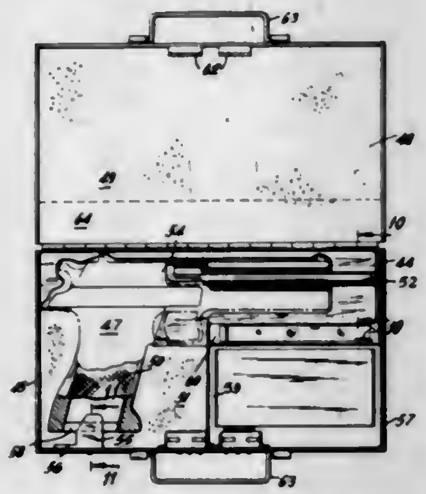
1. A night stick carrier comprising a rigid open ring of an internal diameter such as to receive the night stick with a free fit, a flexible loop designed to receive the wearer's belt so as to be suspended from the latter, and

means for connecting the ring to the loop, said connecting means being operative to support the ring so that its axis is substantially vertical and to retain the ring in said latter position for supporting a night stick when in use, and wherein said loop consists of a length of flexible material, doubled to dispose its end edges substantially in registry, said edges frictionally contacting the peripheral surface of the ring, and means permanently clamping the end portions of said length of ribbon-like material together and securing them to the ring.



3,307,755
FIREARM SAFETY BOX

**Morgan E. Lentz, 60 Addison Ave.,
Rutherford, N.J. 07070
Filed Oct. 22, 1965, Ser. No. 501,447
4 Claims. (Cl. 224—2)**

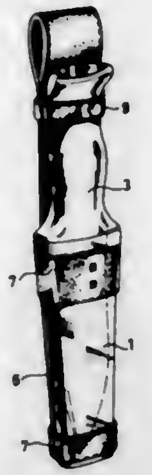


1. A firearm safety box comprising a box structure, a template, said template adapted to receive the upper part of a selected firearm, a safety rod, said safety rod rotatably attached to said template, said safety rod adapted to fit into the barrel of said selected firearm and said firearm having an opening adapted to receive a bullet clip, said safety rod adapted to extend into the chamber of said firearm, a safety finger adapted to fit into the bullet clip opening of said firearm, and said box being in closeable condition when said safety rod is engaged extending into the chamber of said firearm and said safety finger is interposed in said bullet clip opening.

3,307,756
RIGID SHEATHS FOR KNIVES

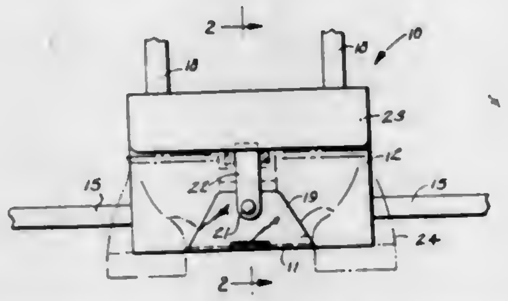
**Bengt Bruno Brunosson, Eskilstuna, and Nils Arne Erkers, Stockholm, Sweden, assignors to Aktiebolaget Bahco, Stockholm, Sweden, a corporation of Sweden
Filed Apr. 5, 1966, Ser. No. 540,349
Claims priority, application Sweden, Apr. 21, 1965, 5,190/65
8 Claims. (Cl. 224—2)**

1. The combination of a substantially rigid sheath adapted to receive a knife, said sheath having a honing-stone securely fastened to the back of said sheath and substantially covering said back, and a holder for removably receiving said sheath, said holder comprising a generally flat strip substantially corresponding to the width of said sheath, the length of said strip being at least substantially equal to the length of said sheath, and at least one loop connected to said strip for firm engagement around said sheath so that said honing-stone is firmly held against said strip whereby said sheath is retained in position by the frictional engagement between said honing stone and said strip.



3,307,757
BINOCULAR CARRIER

**Jimmy M. Gatos and John W. Watters, both of Rte. 1, Missoula, Mont. 59801
Filed Aug. 23, 1965, Ser. No. 481,508
3 Claims. (Cl. 224—5)**



1. A binocular carrier comprising an L-shaped plastic coated plate having a vertical and a horizontal leg, a leather back panel secured to the outside of the vertical leg, a flap secured at one end to the upper portion of the back panel, an elastic strap secured at the other end of the flap, said elastic strap having a fastener, a pair of shoulder straps and a waist strap secured to the vertical leg, an upwardly extending and upwardly tapered lip secured to the outer end of the horizontal leg, said lip and said horizontal leg being of lesser extent than the vertical leg in a direction along the waist strap, a snap fastener mounted within the lip having mating engagement with the fastener on the elastic strap whereby the binoculars are secured in straddling relationship on the horizontal leg and said flap covering the eye pieces of the binoculars.

3,307,758
CARRYING BAG AND BACK REST DEVICE

**Benjamin J. Platt, 1803 N. 5th St., West Oshtemo Township, Kalamazoo County, Mich. 49001
Filed Aug. 24, 1964, Ser. No. 391,643
9 Claims. (Cl. 224—9)**

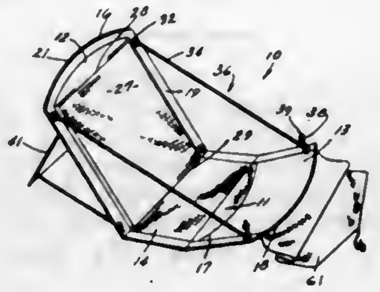
2. In a combined back rest and carrying bag construction, the combination comprising:

a flexible web;

a panel-like back member secured to said web;

a panel-like support member secured to said web, said back member and support member each having a bottom edge, said bottom edges being opposed to and spaced from each other;

an elongated flexible element connecting said back member and support member at points thereon spaced from said bottom edges for normally causing said back and support members to slope upwardly from said bottom edges, said elongated element being adjustable for varying the angle defined between said members;

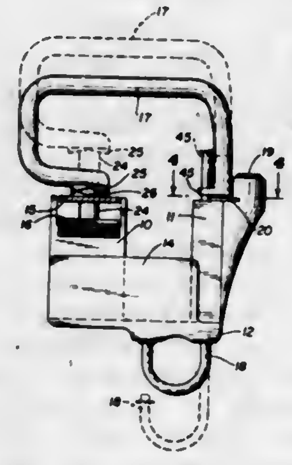


a bag sheet of width greater than said back member and having side edges affixed adjacent the side edges of said back member, the midportion of said bag sheet being alternatively capable of being folded against said back member or being separated therefrom to define therewith and with said web a chamber for receiving articles to be carried;

whereby said back and support members may be used to support the back and thighs respectively of a person seated on said web and alternatively may be used to house a load in said chamber for carrying.

3,307,759
SKI CARRIER AND LOCKING DEVICE

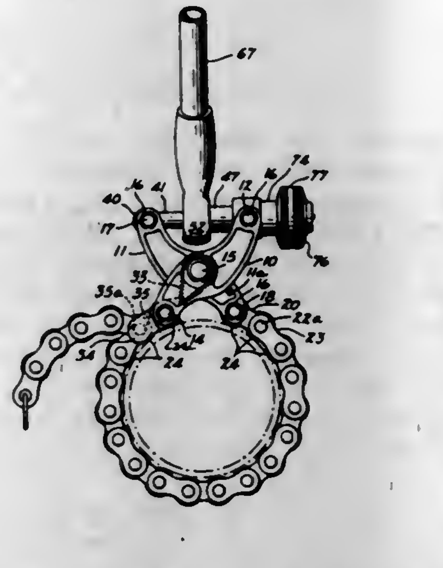
**Clifford M. Fulton, Estes Park, Colo., assignor to Kleineider-Fulton Co., Estes Park, Colo., a corporation of Colorado
Filed Mar. 8, 1965, Ser. No. 437,911
11 Claims. (Cl. 224—45)**



1. A hand carrier for skis comprising a rigid body having receiver means shaped to receive the central portions of a pair of skis, means movable into a position for clamping the skis securely in said receiver means to mount them firmly in said carrier, and a lock including a shackle having one side thereof slidably and pivotally mounted on said body, said shackle being movable by sliding and pivotal movement of said one side from a shackle open position to a shackle closed position for locking said carrier to an external object, said lock including a latching element movably mounted on said body for engagement with said shackle and having a locking member positioned to engage said clamping means when in its clamping position and when locked to prevent release of said clamping means while simultaneously locking said shackle in its closed position.

3,307,760
METHOD OF CUTTING PIPES

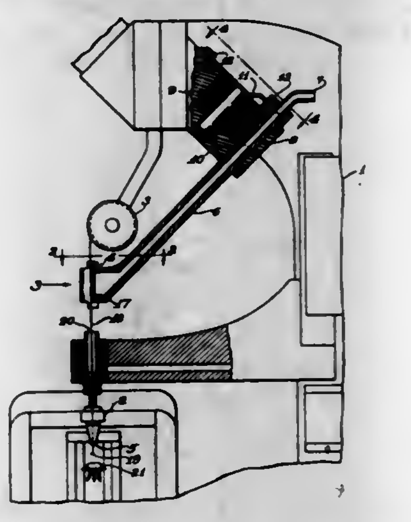
**Charles B. Small, Elyria, John W. Meese, Avon, and Heinrich H. Frank, Elyria, Ohio, assignors to The Ridge Tool Company, Elyria, Ohio, a corporation of Ohio
Original application Nov. 22, 1963, Ser. No. 325,692, now Patent No. 3,221,962, dated Dec. 7, 1965. Divided and this application Nov. 9, 1965, Ser. No. 529,894
3 Claims. (Cl. 225—1)**



1. The method of cutting pipe which comprises applying concentrated radial pressure around said pipe with a plurality of circumferentially spaced cutter means, and concomittantly applying force to urge rocking movement to at least one of said cutter means.

3,307,761
WIRE FEED DEVICE

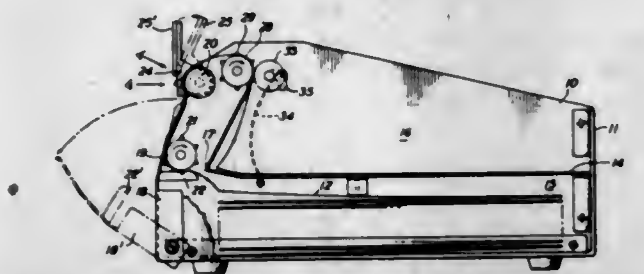
**Charles Fredrick Miller and Robert Edwin Genter, both of La Habra, Calif., assignors to Basic Products Corporation, Milwaukee, Wis.
Filed Jan. 26, 1965, Ser. No. 428,132
7 Claims. (Cl. 226—7)**



1. Device for transporting and feeding wire comprising a tube, means for axially vibrating said tube, a source of reduced pressure communicating with one end of said tube, means at the other end of said tube defining a groove adapted to hold wire, means including a porous plate between said groove and said source of reduced pressure for contacting said wire, said wire being held against said plate by flow of gas through said groove and plate to said source of reduced pressure.

3,307,762
SINGLE LINE PRINTOUT READER FOR COMPUTER SHEETS

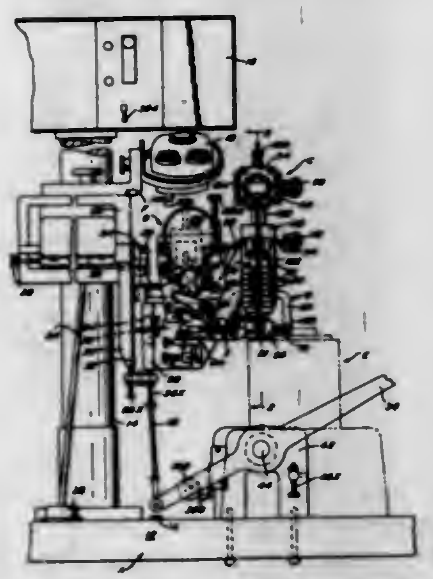
Richard L. Boughrum, Wanamassa, and Robert F. Wills, Freehold, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 12, 1964, Ser. No. 410,410
2 Claims. (Cl. 226—89)



1. Apparatus for selectively exhibiting data on computer printout sheets which comprises, in combination, means for progressively withdrawing a connected printout sheet from a first inventory of folded sheets, first guide means in the form of an elongated blade-like member equipped with a roughened surface positioned in close proximity to said withdrawing means for urging said sheet into a generally arcuate path away from said first inventory, means for progressively directing said sheet traversing said arcuate path towards a second inventory of folded sheets, second guide means for urging said sheet against said directing means, an acutely angled guide member between said arcuate path and the rest position of said second inventory of sheets for fanfolding said sheet as it enters said second inventory, means including an opaque mask with a transparent slot extending substantially the width of said member pivotally supported for movement about said arcuate path, support means fixed to said opaque mask adjacent to said transparent slot for supporting auxiliary data sheets, and means for synchronously actuating said withdrawing means and said directing means.

3,307,763
THERMOCOMPRESSION WIRE BONDING APPARATUS WITH SCISSORS CUT-OFF

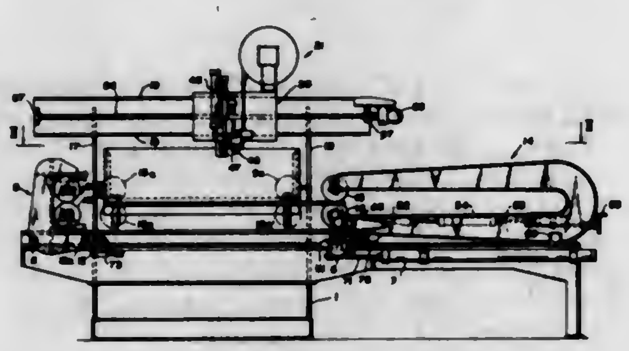
Pavels Rasimenoks, Thomas L. Angelucci, and Frederick W. Kulicke, Jr., Philadelphia, Pa., assignors to Kulicke and Soffa Manufacturing Company, Fort Washington, Pa., a corporation of Pennsylvania
Filed June 28, 1963, Ser. No. 291,457
9 Claims. (Cl. 228—3)



6. Lead bonding apparatus comprising a capillary, means to dispense wire through said capillary, scissors means having blades disposed transverse to the axis of said capillary, means to move said capillary relative to said scissors means, means to actuate the closure of the scissors when the tip of said capillary is disposed immediately adjacent to the blades thereof so as to snip the wire and form it as an L-shaped hook about the capillary tip, and means to preclude actuation of said scissors means when said capillary is disposed between the blades, said scissors means comprising a tweezers-like element having arms resiliently urged in spaced apart relationship, and thin flat blades at the ends of the arms which are adapted to intercept each other in adjacent planes.

3,307,764
APPARATUS FOR SHEARING, WELDING AND PLANISHING METAL STRIPS

Travillis B. Robinson, Pittsburgh, Pa., assignor to Voss Engineering Company, Pittsburgh, Pa.
Filed Dec. 19, 1963, Ser. No. 331,709
17 Claims. (Cl. 228—5)

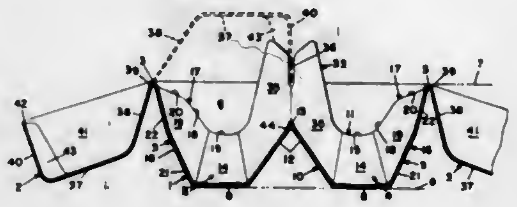


2. Apparatus for joining the ends of metal strips traveling longitudinally in a line after bringing to rest the trailing end portion of a leading strip and the leading end portion of a trailing strip at a combined shearing and welding station, comprising power operated means for moving said end portions together to the shearing position, two pairs of clamping means, each pair comprised of an upper and lower power operated platen for clamping said end portions in the shearing position, two pairs of shearing means, each pair comprised of an upper and lower rotary shear blade, the planes of each of said blade being parallel to the planes of the other of said blades, the upper blade of each pair being positioned above the plane of the strips and the lower blade of each pair below the plane of the strips, all of said blades being supported by a carriage movable transversely of said line for simultaneously shearing both strip ends in one pass of said blades, means including control means for moving said sheared ends together to a preselected welding position while still clamped, said preselected welding position being substantially coincident with said shearing position, means for moving a chill bar directly underneath said ends, and a welder mounted for movement transversely of the strip path independently of the transverse movement of the shearing means to weld said sheared ends while still clamped from said previous shearing operation, whereby the shearing and welding operations are sequentially performed without unclamping the strip ends from said platens so as to obtain a more accurate joint.

3,307,765
PLASTIC EGG CARTONS

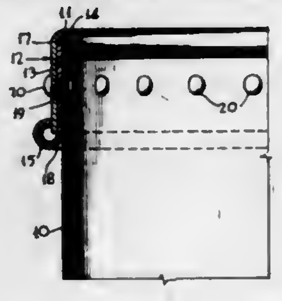
David C. Trimble, Yorklyn, Del., assignor, by mesne assignments, to Hercules Incorporated, New Castle County, Del., a corporation of Delaware
Filed Apr. 8, 1966, Ser. No. 541,188
3 Claims. (Cl. 229—2.5)

1. An egg carton formed of foamed plastic comprising a tray-like base member having a top plane and a bottom plane that is parallel to the top plane and spaced therefrom a distance substantially equal to the dimension from the point to the transverse plane of maximum diameter of the largest egg adapted to be received in the carton, said base member having side walls and end walls extending between the planes, longitudinal and transverse partitions dividing the base member into rows of egg-receiving pockets, and a bottom wall for each of said pockets disposed in the bottom plane, said partitions having side walls which together with the side walls and end walls of said base member are disposed at angles of not greater than approximately seventy-five degrees to the bottom plane, and a U-shaped cover member having a hinge connecting the same to the side wall of the base member along a line in the top plane for swinging between the closed position overlying the base member and an open position that is substantially one hundred and ninety-five degrees from the closed position, said cover member having a top wall that in the closed position is disposed in parallel relation to the top plane and spaced therefrom a distance that is substantially equal to the dimension from the end opposite the point to the transverse plane of maximum diameter of the largest egg adapted to be received in the carton, a normal side wall normal to said top wall and having a free edge that is disposed substantially in the top plane when the cover member is closed, and an inclined side wall along the edge of which the hinge is formed and which is disposed at an angle of substantially sixty degrees to the top plane, whereby said normal side wall and said inclined side wall of said cover member are both disposed substantially at angles of seventy-five degrees to the top plane when said cover member is in the open position.



3,307,766
REINFORCED CONTAINER RIM

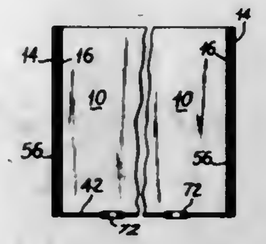
William D. Angstadt, Norristown, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 27, 1965, Ser. No. 516,486
4 Claims. (Cl. 229—4.5)



1. A reinforced container rim comprising a reinforcing band having separate pieces with overlapping medial strip body portions, one of said portions having a hollow-section element with a turned edge embracing and gripping the upper edge of the container and the other of said portions lying alongside the outer wall surface of said container and having a hollow-section element with a turned edge gripping the free edge of the body portion of the other piece.

3,307,767
BOOK CASE

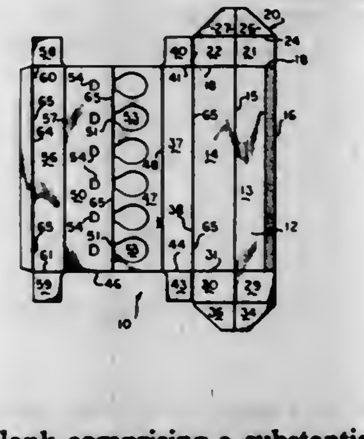
David H. Humphrey, San Juan, and Clayton T. M. von Jaeger, Fajardo, Puerto Rico (both % Pan American Design Incorporated, Ave. F. D. Roosevelt 174, Hato Rey, Puerto Rico 00919)
Filed Aug. 23, 1965, Ser. No. 481,864
5 Claims. (Cl. 229—27)



1. In a book case of the character disclosed, a shelf and back unit comprising a plurality of contiguous panels, namely, a first panel to form the upper back wall of the book case, second and third panels to form a folded double-thickness upper shelf thereof, a fourth panel to form the lower back wall thereof and fifth and sixth panels to form a folded double-thickness lower shelf thereof, said first panel having an outstanding flap along the upper edge of said upper back wall, and a wrap-around top and side unit comprising a plurality of contiguous panels, namely, first and second central panels to form a folded double-thickness top wall of the book case, two third panels and two fourth panels to form folded double-thickness side walls thereof, said flap being positioned between the rear marginal edges of said first and second central panels forming said folded double-thickness top wall, and means for connecting the ends of said first six panels to the side walls of said top and side unit.

3,307,768
ORNAMENT CARTON

Lawrence J. Growney, Pearl River, N.Y., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 14, 1964, Ser. No. 417,895
23 Claims. (Cl. 229—28)

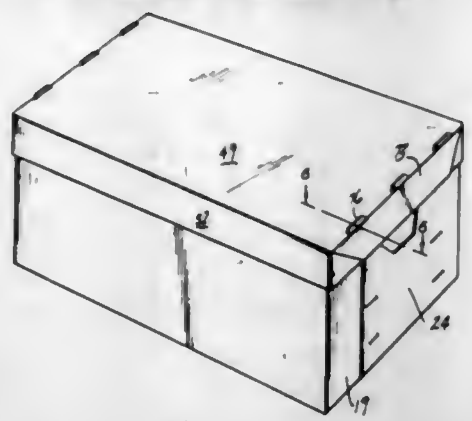


1. A carton blank comprising a substantially rectangular bottom panel, a pair of main enclosure panels formed at opposite ends on said bottom panel, a panel per end, a fold line extending through all of said panels and separating said panels into mirror images of each other, a first side panel formed along one edge of said bottom panel, a top panel secured to said side panel and having portions removed for receiving objects, a second side panel formed along said top panel on a side opposite to said first panel and a glue flap formed along said second side panel on a side opposite to said top panel.

3,307,769
CONTAINER

Robert A. Bamburg, West Monroe, La., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Sept. 28, 1965, Ser. No. 490,811
3 Claims. (Cl. 229—45)

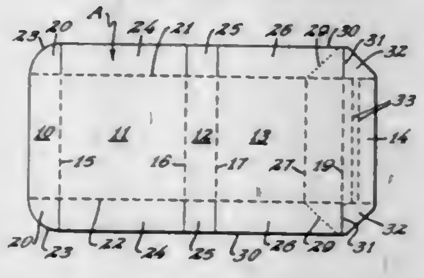


1. A locking device for a container comprising a body portion having opposed end walls, a cover portion including a top wall and opposed end walls complementary to corresponding walls of the body portion, an exterior locking panel hinged to one end wall of the body portion and an interior locking panel hinged to a mating end wall of the cover portion, said exterior locking panel being formed with at least one generally horizontal, through slit, stitch means disposed below said slit operative to compress said one end wall and said exterior locking panel whereby an upper margin of said slit projects beyond the planar face of said compressed exterior locking panel, a slot formed in said interior locking panel disposed generally horizontally and in register with said slit, an upper margin of said interior locking panel being fixed to said top wall effective to cause a lower margin of said slot to project or bow inwardly beyond the planar face of said interior locking panel, said locking panels being in face-to-face contact when the cover portion is in place on the body portion with the upper margin of said slit overriding the lower margin of said slot operative to lock the cover to the container.

3,307,770
BUTTER CARTONS AND THE LIKE

Lawrence S. Wysocki, Chicago, Ill., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota

Filed July 26, 1965, Ser. No. 474,605
5 Claims. (Cl. 299—51)

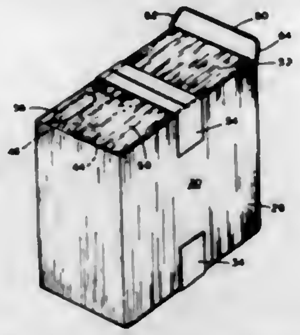


1. A carton for butter and the like including:
an inner front panel, a bottom panel, a rear wall panel, a top panel, and an outer front wall panel hingedly connected along parallel fold lines,
closure flaps hingedly connected to opposite side edges of said panels,
the closure flaps on said outer front panel being folded outwardly of the closure flaps on said bottom panel and inwardly of said closure flaps of said top panel,
said closure flaps on said top panel being secured in face contact to the exposed area of said bottom panel closure flaps and to said outer front wall closure flaps,
weakened lines of separation extending across said top panel closure flaps from top to bottom thereof beyond the ends of said outer front panel closure flaps, and
a fold line extending across said top panel connecting the upper ends of said weakened lines and parellel to the lines of fold connecting said top panel to said rear wall panel and said outer front wall panel.

3,307,771
CONTAINER CARRYING HANDLE

Richard W. Loheed, West Lafayette, Ind., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana

Filed Aug. 25, 1965, Ser. No. 482,501
4 Claims. (Cl. 229—52)

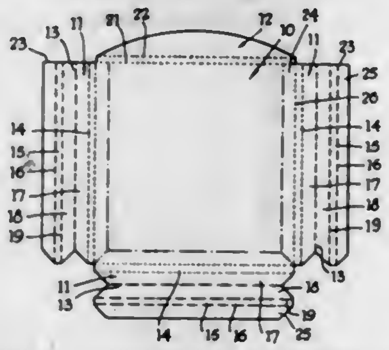


1. A rectangular sectioned corrugated fiber board container having rectangular side wall panels and upper end outer and inner closure flaps formed as integral extensions of the container side wall panels, and defined in part by flap fold lines, the fiber board comprising two liners, and an intervening corrugating medium, the corrugations of which extend crosswise of the flap fold lines, a C shaped handle formed from a section of stiff wire and having straight axially aligned end portions extending toward each other, said end portions being disposed adjacent the inside of the fold line of a closed outer flap and nested substantially entirely within the knee bend formed by the said closed outer flap, between the said closed outer flap, and the closed inner flaps, and means for securing the free end of the said closed outer flap in closed position.

3,307,772
GRAMOPHONE RECORD SLEEVES

Norman John Garrod, 107 Westhall Road, Warlingham, Surrey, England

Filed July 27, 1965, Ser. No. 475,200
Claims priority, application Great Britain, July 29, 1964, 30,112/64
12 Claims. (Cl. 229—68)

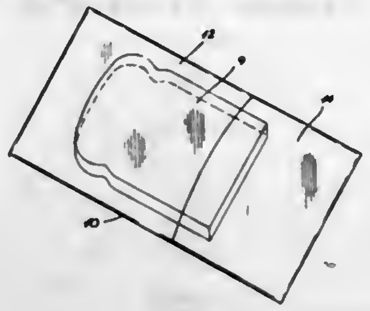


1. A gramophone record sleeve comprising: a first substantially square side member; three spine members integrally connected to respectively different edges of said first side member, each doubled back and affixed to themselves to form a reinforcement, each folded inwardly along said edges, and each folded inwardly along lines parallel to and equally spaced from said edges to form a generally U-shaped channel with the U-base forming a spine for the sleeve; and a second substantially square side member having its periphery affixed along three edges thereof to the U-arm of said channel remote from said first side member.

3,307,773
READILY CLOSABLE AND REOPENABLE PLASTIC BAG

James C. Kratzer, Riverside, Conn., and Peter Wilton, Plainfield, N.J., assignors to Union Carbide Corporation, a corporation of New Jersey

Filed Mar. 26, 1963, Ser. No. 268,117
3 Claims. (Cl. 229—80)

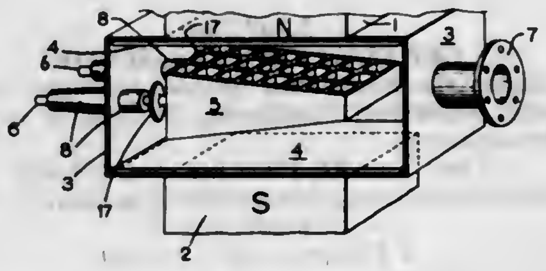


1. A readily closable and reopenable bag made of a flexible plastic material; said bag having a first wall and opposite said first wall a second wall, an open end between said first and second walls, and a flap extending from said first wall for folding over said open end and against said second wall, thereby closing said open end; and said bag having a thin film thereon, on at least one surface which exists between said flap and said second wall when said flap is folded over, consisting essentially of from 54 to about 59% by weight of a monoglyceride selected from the group consisting of glycerol monostearate and glycerol monooleate, not more than 0.5% by weight oleic acid, and the remainder diglycerides and propylene glycol; said film causing said flap to cling to said second wall when said flap is folded over.

3,307,774
VACUUM ION PUMP

Roy Robert Bannock, West Wickham, Kent, and Otto Pressel, Leatherhead, Surrey, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 9, 1964, Ser. No. 409,653
Claims priority, application Great Britain, Nov. 8, 1963, 44,173/63
4 Claims. (Cl. 230—69)

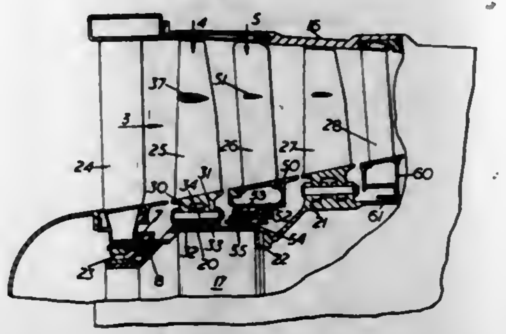


1. In a vacuum ion pump at least one anode and an associated cathode spaced from said anode, the spacing between the anode and cathode being tapered in a longitudinal direction which provides spacing which increases towards an exhaust port spaced from said anode and said cathode for communication to an atmosphere to be pumped.

3,307,775
COMPRESSORS FOR GAS TURBINE JET PROPULSION ENGINES

James Alexander Petrie, Littleover, England, assignor to Rolls-Royce Limited, Derby, England, a British company

Filed Aug. 25, 1965, Ser. No. 482,509
Claims priority, application Great Britain, Sept. 4, 1964, 36,436/64
12 Claims. (Cl. 230—122)

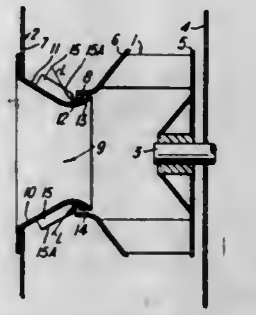


1. An axial flow compressor for a gas turbine jet propulsion engine comprising an external casing, a rotor rotatably mounted in said casing, first stage stator blades having radially inner and outer ends, the radially outer ends being attached to the casing, a common annular abutment interconnecting said radially inner ends, and a further abutment rotatably mounted on said rotor and disposed adjacent said common annular abutment whereby axial movement of said stator blades is restricted.

3,307,776
FLUID-WORKING MACHINES

William W. White, Glasgow, Scotland, assignor to James Howden & Company Limited, Glasgow, Scotland

Filed Apr. 15, 1965, Ser. No. 448,328
Claims priority, application Great Britain, Apr. 15, 1964, 15,564/64
2 Claims. (Cl. 230—127)

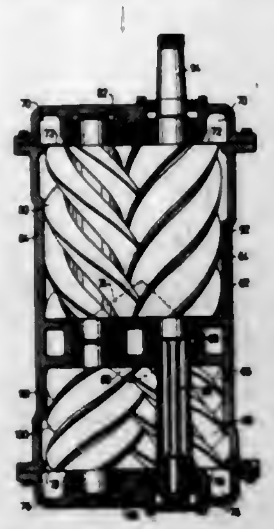


1. In a centrifugal fan comprising a casing having a pair of spaced side walls, an impeller rotatable in the casing between the side walls and having its inlet side spaced from a side wall to define therewith an annular space into which high pressure fluid leaks from the impeller outlet, an inlet opening in said side wall, and an inlet conduit extending within the casing from the inlet opening and at its inner end forming with the impeller inlet an annular leakage orifice, the annular space opening into the annular orifice so that high pressure leakage fluid flows from the annular space axially through the annular orifice into the impeller; a peripheral series of axially extending guide vanes on the exterior of the inlet conduit to guide and stabilize the leakage flow of fluid through the annular space towards the annular orifice.

3,307,777
SCREW ROTOR MACHINE WITH AN ELASTIC WORKING FLUID

Lauritz Benedictus Schibbye, Saltsjo-Duvnas, Sweden, assignor to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden

Filed Dec. 22, 1964, Ser. No. 420,370
Claims priority, application Sweden, Dec. 23, 1963, 14,418/63
14 Claims. (Cl. 230—143)

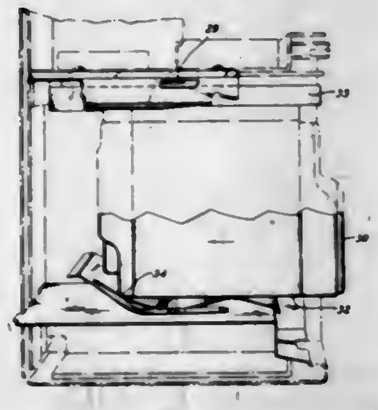


1. A two stage compressor of the screw rotor type having low and high pressure stages arranged in tandem and with each stage comprising male and female rotors with coplanar axes and intermeshing helical lands and grooves enclosed in ported casing structure providing for flow of working fluid serially through said stages from a low pressure inlet to a high pressure outlet, the male rotor of one of said stages being connected to the female rotor of the other of said stages to cause the connected rotors to rotate at the same speed, and an external driving connection for driving one of said connected rotors.

3,307,778
COIN TELEPHONE CASH BOX BOOSTER SPRING

Rembert R. Stokes, Indianapolis, Ind., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 28, 1965, Ser. No. 516,882
7 Claims. (Cl. 232—1)



1. In combination with a coin telephone housing including a cash receptacle vault for containing a cash box and means for guidably inserting said box in said vault and into alignment with a coin chute, the improvement which comprises:

(a) a bow spring including front and rear support surfaces;

(b) means for resiliently mounting the bow spring on the floor of said vault so that the front support surface extends below the level of the cash box bottom during insertion and the rear support surface extends above the level of the cash box bottom during insertion;

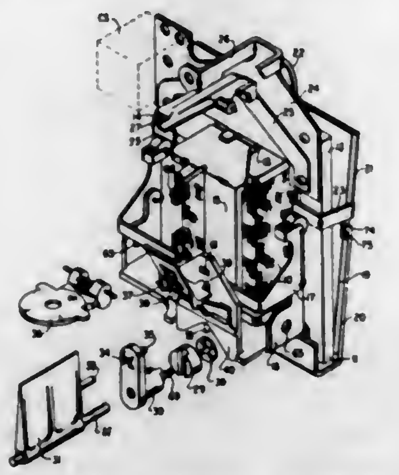
(c) means responsive to insertion of the cash box for depressing the rear support surface into supportive contact with the rear end of the cash box bottom; and

(d) means responsive to the downward deflection of the rear support surface for pivoting the front surface upwardly and into supportive contact with the front end of the cash box bottom.

3,307,779
COIN DISPOSAL APPARATUS FOR TELEPHONE PAYSTATION

Richard J. Hamilton, Lombard, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Oct. 1, 1964, Ser. No. 400,802
3 Claims. (Cl. 232—57.5)



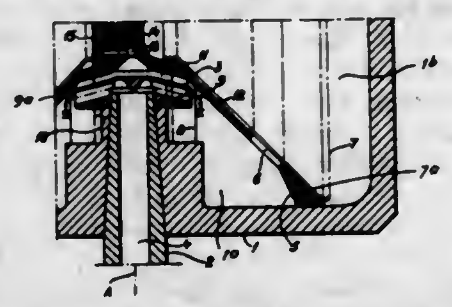
1. In a coin disposal mechanism adapted for use with a telephone paystation; a coin chute having a coin deflector vane pivotally mounted therein by means of a shaft and having one end thereof extending through the side wall of said chute at the pivot point; a coupling arm integral with said deflector vane and extending through an arcuate slotted opening in said chute; a deflector vane control link mounted external of said chute on said one end of said shaft and operatively connected to said coupling arm; an electromagnet; a pole piece having an end portion extending from the core of said electromagnet; a permanent magnet mounted on said vane control link, concentric with said one end of said shaft, directly below said end portion of said pole piece and adapted to be influenced by the direction of the current flowing through said electromagnet and the resulting polarity of said pole piece end portion for selectively prepositioning said control link and said deflector vane in an initial direction of movement to the right or to the left to determine the subsequent direction of a complete movement of said deflector vane for the execution of a desired coin disposal operation.

3,307,780
CENTRIFUGAL SEPARATOR

Paul Kompert, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden

Filed Apr. 22, 1964, Ser. No. 361,682
Claims priority, application Sweden, May 8, 1963, 5,047/63
6 Claims. (Cl. 233—45)

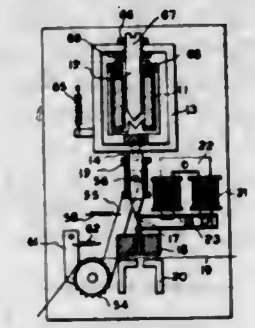
1. In a centrifugal separator, the combination of a hollow centrifugal rotor adapted to be rotated about a central axis, a distributor disk in the rotor defining therewith a main separating chamber at one side of the disk and a sub-chamber at the other side of the disk, said chambers having a communication with each other for flow of a liquid from said sub-chamber to said main chamber, said disk having a central portion forming a channel constituting an additional communication between said chambers, said channel having an outlet orifice opening into said separating chamber and also having a part opening into the sub-chamber and located nearer said rotation axis than is said orifice, the rotor having an inlet for said liquid, and means in the rotor forming an hermetically closed feed passage leading from said inlet and opening into said sub-chamber at a distance from said axis which is greater than the distance of said outlet orifice from the axis.



3,307,781
PAPER TAPE PUNCH

John Paul Jones, Jr., Wynnewood, Pa., assignor to Navigation Computer Corporation, Norristown, Pa., a corporation of Pennsylvania

Filed June 18, 1965, Ser. No. 465,009
8 Claims. (Cl. 234—111)



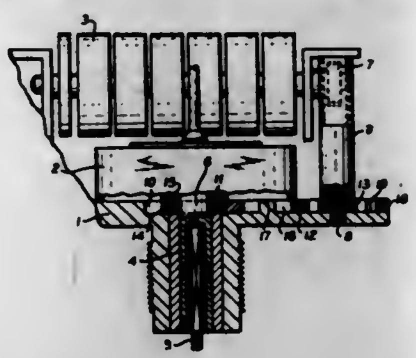
1. In a paper tape punch, a reciprocating power source, a set of punch pins, an interposer of ferromagnetic material positioned for selective entry between the power source and each of said pins to drive the pins through a cutting stroke by said power source, wherein the interposer is an elastic finger having a fixed mount at one end permitting free three dimensional motion at the outer end serving as said interposer for elastic deformation in a first degree of motion by force of said power source, and magnetic means for deflecting the free end of said elastic finger selectively in and out of the interposing position in a second degree of motion.

3,307,782
EDDY CURRENT TACHOMETER WITH A COUNTER FOR THE LENGTH OF PATH DRIVEN BY THE MAGNET SHAFT BY MEANS OF A REDUCTION GEAR

Heinrich Henss, Oberhochstadt im Taunus, and Heinz Rietmüller, Frankfurt am Main, Germany, assignors to VDO Tachometer Werke Adolf Schindling G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Jan. 19, 1966, Ser. No. 521,587
2 Claims. (Cl. 235—95)

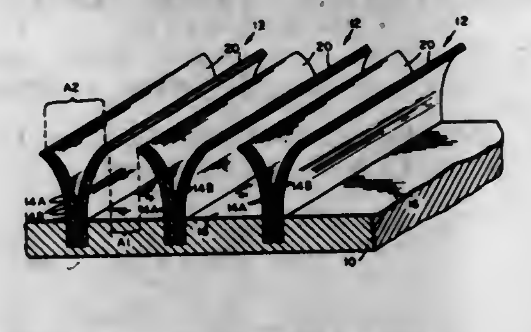
1. An eddy current tachometer with a counter for the length of path driven by the magnet shaft by means of a reduction gear, comprising
  a bearing unit,
  a main drive shaft,
  a magnet shaft rotatably mounted in said bearing unit,
  means for operatively connecting said magnet shaft with said main drive shaft,
  a counter operatively connected with said magnet shaft,
  a worm shaft mounted in said bearing unit,
  an eccentric secured to said magnet shaft,
  a reduction gear means operatively connected with said eccentric,
  means for driving said reduction gear means by said eccentric to perform as a swinging crank-guide,
  said means for driving said reduction gear means by said eccentric comprising
  a swinging lever having a longitudinal slot and rotatably mounted at one of its ends on said eccentric,
  an immovable pin projecting upwardly from said bearing unit and received in and sliding relative to said longitudinal slot of said swinging lever, and
  said swinging lever being swingably retained by said pin and longitudinal slot on said bearing unit.



3,307,783
THERMOSTATIC SURFACE

John A. Wiebelt, Stillwater, Okla., granted to National Aeronautics and Space Administration under the provisions of 42 U.S.C. 2457(d)

Filed Mar. 4, 1964, Ser. No. 349,368
5 Claims. (Cl. 236—1)



1. A thermostatic surface comprising:
  an imperforate base skin having an exterior diffused surface; and
  a multiplicity of paralleled rows of thermostatic bi-metallic strips, each of said strips having one edge thereof affixed to said base skin, said bi-metallic strips having specular surfaces, said bi-metallic strips warping to shade increased areas of said base skin as the temperature thereof decreases.

3,307,784
PROGRAM TEMPERATURE CONTROLLING APPARATUS

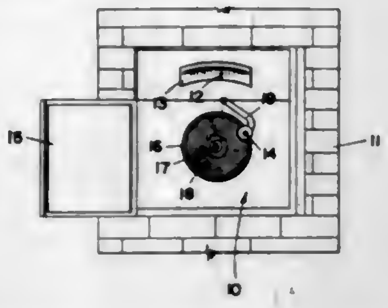
Joseph T. Gilbert, 505 Robbins Ave.,
Philadelphia, Pa. 19111

Filed Mar. 3, 1965, Ser. No. 436,967
1 Claim. (Cl. 236—46)

In a heat treatment system having heat producing means and temperature program means for controlling said heat producing means,
  the improvement which comprises:
  a rotatably mounted disk having a central axis of rotation,
  means for rotating said disk about said axis at a predetermined speed,

said disk having a substantially spirally-shaped camming groove on the surface of said disk, said camming groove being configured in accordance with a multi-stage temperature controlled program for said system which includes at least one constant temperature stage,

said camming groove including a plurality of spiral-shaped groove portions defining points along said groove of relatively increasing deviational radial distances from said central axis,



said spiral-shaped portions being interconnected by at least one groove portion containing points whose corresponding distances from said central axis define a reduced rate of deviation for said constant temperature stage of said program,

said reduced rate groove portion points being in a substantially circular arc and radially substantially equidistant from said central axis, and

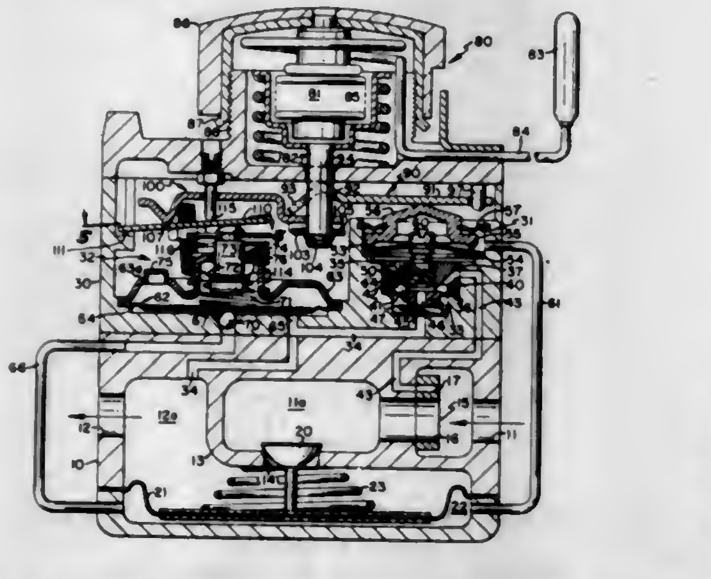
a cam follower engaging said camming groove and operatively connected with said heat producing means for controlling the temperature of said system through a plurality of stages in response to the temperature controlled program of said camming groove.

3,307,785
ON-OFF AND MODULATING CONDITION CONTROL VALVE

Courtlyn B. Currie, Long Beach, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Minnesota

Filed July 22, 1965, Ser. No. 474,032

4 Claims. (Cl. 236—80)



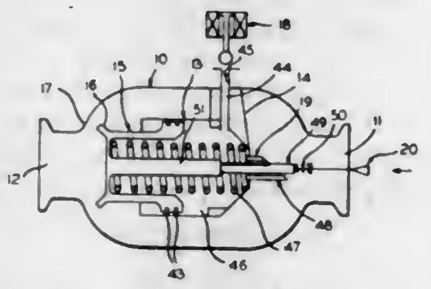
4. A condition responsive pilot valve for controlling the pressure in the operating pressure chamber of a main valve, the pilot valve comprising: a two-position control valve; first passage means adapted to connect said control valve to the inlet, the outlet, and the pressure chamber of the main valve so that in one of its positions said control valve connects the pressure chamber to the inlet and, in the other of its positions, said control valve connects the chamber to the outlet; second passage means adapted to connect the chamber to the outlet of the main valve; modulating valve means in said second passage means and including pressure responsive operating means adapted to be connected so that it is operable by pressure at the outlet of the main valve to position said modulating valve means to control the pressure in the chamber to maintain a substantially uniform pressure at the outlet; loading means operably associated with said operating means and variable between minimum and maximum loading conditions to vary the pressure at which said operating means operates; a condition responsive operator including sensing means and an output member movable in response to variations of the condition being sensed; snap-acting means operably connected to said two-position valve and normally maintaining said two-position valve in one of its positions; yieldable means normally maintaining said loading means in a first of its positions; a first lever pivoted on said housing and having one end operably connected to said snap-acting means; a second lever pivotally connected to the other end of said first lever and operably connected at one of its ends to said output member; a third lever pivotally connected to the other end of said second lever and having one end pivoted on said body and the other end operably connected to said loading means, the resilience of said snap-acting means and of said yieldable means and the effective lengths of said levers being chosen so that upon initial movement of said output member in one direction said third lever remains substantially stationary and said second lever pivots with respect thereto and pivots said first lever with respect to said body until said snap-acting means is snapped over-center and operates said two-position valve to the other of its positions and so that upon further movement of said output member in the same direction, said first lever remains substantially stationary and said second lever pivots with respect thereto and pivots said third lever to vary the loading on said operator for said modulating valve.

3,307,786
MODULATING INLINE VALVE

Paul G. Salerno, Glenview, Ill., assignor to Vapor Corporation, Chicago, Ill., a corporation of Illinois

Filed Sept. 17, 1965, Ser. No. 487,971

10 Claims. (Cl. 236—80)



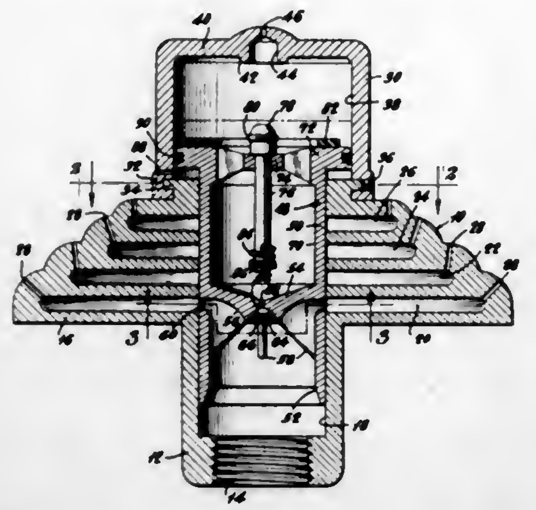
1. A modulating inline valve comprising, a tubular casing having an inlet and an outlet axially aligned therewith, a cylindrical shell supported within said casing and axially aligned with said inlet and outlet, the end of the shell adjacent the inlet being closed and the end thereof adjacent the outlet being open, a piston axially and slidably received in said shell, a seat at said outlet, valve closure means on said piston adapted to coact with said seat to close said outlet, spring means normally biasing said piston toward said outlet and said valve closure means to seated position, means for selectively venting said shell to control movement of said valve closure means between open and closed positions, a pilot valve in said shell for limiting the maximum opening of said valve closure means, and means adjacent the inlet responsive to the condition of the fluid flowing therethrough to adjust the pilot valve for varying the maximum opening of said valve closure means.

3,307,787
FOUNTAIN

Harold H. Hall, Jr., 2908 NW. 6th Ave., Fort Lauderdale, Fla. 33308

Filed May 24, 1966, Ser. No. 562,026

17 Claims. (Cl. 239—17)



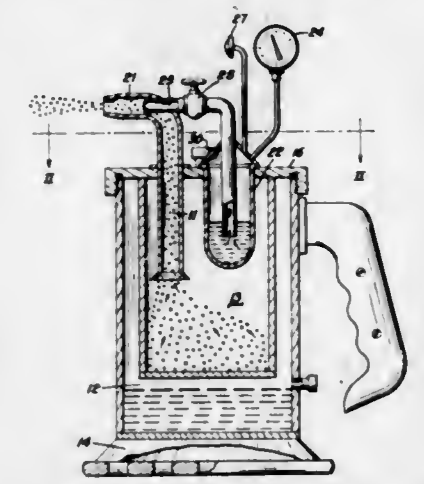
1. A fluid flow control device comprising a body having an axial opening, a plurality of flow passageways provided in said body and leading from the axial opening, a sleeve valve slidably received in close engagement within the axial opening, at least one port provided in the sleeve valve and adapted to be placed in sequential communication with respective ones of the passageways in said body, said sleeve valve having partition means provided with an inlet orifice leading to an upper chamber provided in said device, an enlarged end portion of the sleeve valve positioned within the chamber and having an upper surface area larger than the lower surface area of said partition means, said device having a distance orifice of greater diameter than that of the inlet orifice, and a control valve operatively associated with the sleeve valve and adapted to block said discharge orifice in an operating position thereof.

3,307,788
FIELD APPLICATION OF FOAM COATINGS

Alvin R. Ingram, Murrysville, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Dec. 3, 1963, Ser. No. 327,691

1 Claim. (Cl. 239—138)



Apparatus for spraying solvent softened expanded polymeric particles onto diverse substrates under a variety of atmospheric conditions, said apparatus comprising a liquid housing including a chamber for containing expandable polymeric particles suspended within said housing and having discharge means for said expandable polymeric particles located in said chamber, cylinder means for supplying a spray of solvent into a nozzle located within said cylinder means for directing said solvent into contact with said particles and heating means attached to said housing for introducing heat into said housing to expand said particles and vaporize said solvent.

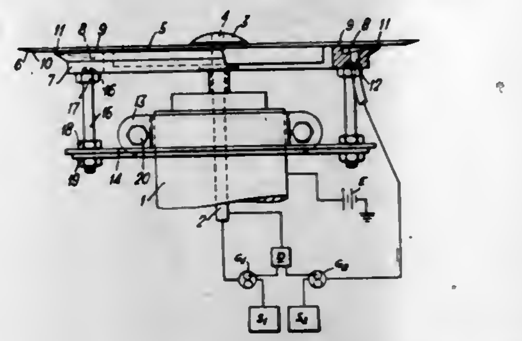
3,307,789
ELECTROSTATIC SPRAYING OF TWO COMPONENTS

Leonard Clark, Woodford Green, Essex, England, assignor to Berger, Jenson & Nicholson Limited, London, England, a British company

Filed Jan. 8, 1964, Ser. No. 336,405

Claims priority, application Great Britain, Jan. 10, 1963, 1,233/63

4 Claims. (Cl. 239—214.25)



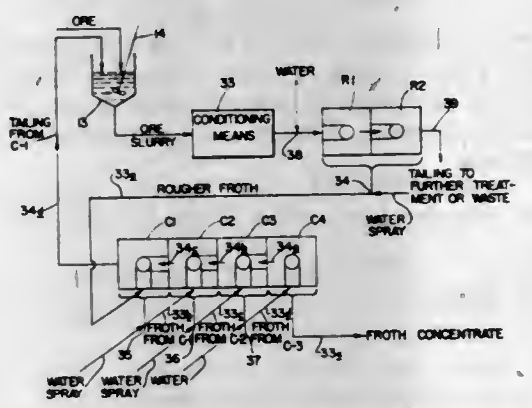
1. An apparatus for forming a spray of two reactive components of a surface coating composition and which is adapted to be used in an electrostatic spray apparatus, said apparatus comprising a disc, a hollow rotating shaft on which said disc is mounted, means coupled to said shaft for driving said shaft, said shaft having a delivery orifice adjacent the upper surface of said disc for delivering a stream of one component of the surface coating composition being fed through the hollow shaft to the upper surface of said disc, a circular trough mounted coaxially with said disc and having an inner edge in rubbing engagement with the under side of said disc and having an outer edge spaced from the under side of said disc a distance sufficient to allow the second component of the surface coating composition to flow in a thin layer from said circular trough onto the under side of said disc, a conduit opening into said trough for feeding the second component to said trough, and feed means coupled to said conduit and said hollow shaft for feeding one of the two components to said hollow shaft and separately feeding the other component to said conduit and said circular trough.

3,307,790
FLOTATION METHOD AND APPARATUS

Morris I. Cohn, Needham, and Roy D. Perdue, Tewksbury, Mass., assignors to Mineral Industries Corporation of America, Needham, Mass., a corporation of Massachusetts

Filed Mar. 20, 1963, Ser. No. 266,555

19 Claims. (Cl. 241—5)

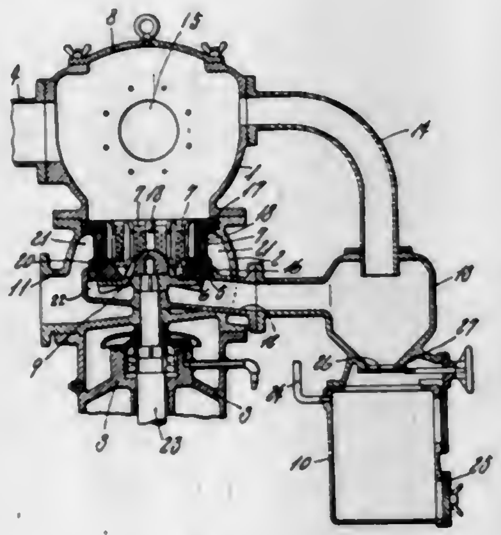


5. A method of mineral beneficiation comprising forming a liquid slurry of mineral particles, forcing said slurry

in the form of a thin film edgewise through a thin, hard-surfaced gap under a high pressure and at a high velocity by virtue of reduction of said high pressure to a substantially lower pressure, and subjecting the resulting slurry to froth flotation.

3,307,791
APPARATUS FOR SEPARATING AND REMOVING SOLID FOREIGN ELEMENTS IN BEATER FOR PROCESSING PAPER STOCK

Ryoichi Nagai, 1461—40 Aza Nikawa, Tatsu, Kurando, Takarazuka-shi, Japan
Filed Sept. 9, 1964, Ser. No. 395,182
Claims priority, application Japan, Oct. 25, 1963, 38/57,159; Nov. 25, 1963, 38/88,452; May 14, 1964, 39/37,601
3 Claims. (Cl. 241—74)

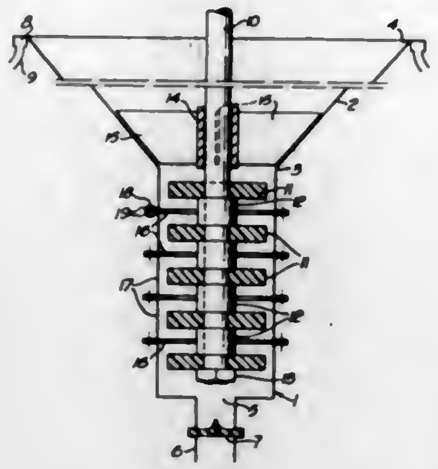


1. An apparatus for separating and removing solid foreign elements in a beater for processing paper stock and the like, characterized by comprising a screen plate tightly installed to surround a plurality of circularly arranged stationary blades, rotary blades on a rotary circularly arranged disc and brought close to the stationary blades, and an escapement passageway allowing the passage and discharge of foreign elements defined by a clearance between the periphery of the rotary disc and the stationary blades, whereby the foreign elements which fall into a foreign element separating chamber at the lower part of the rotary disc through said escapement clearance by the action of centrifugal force due to the rotation of the rotary disc are allowed to be discharged into a precipitation tank, and the refined paper stock beaten by the stationary and rotary blades is passed through the screen plate by utilization of centrifugal force to be introduced into an introduction chamber outside the foreign element separating chamber, from which introduction chamber it is then delivered through a discharge pipe.

3,307,792
TREATMENT OF PARTICULATE SOLIDS

William Hughes and Harold Edward Haigh, Norton, England, assignors to British Titan Products Company Limited, Durham, England, a corporation of the United Kingdom
Filed Oct. 23, 1963, Ser. No. 322,548
Claims priority, application Great Britain, Nov. 1, 1962, 41,387/62
10 Claims. (Cl. 241—98)

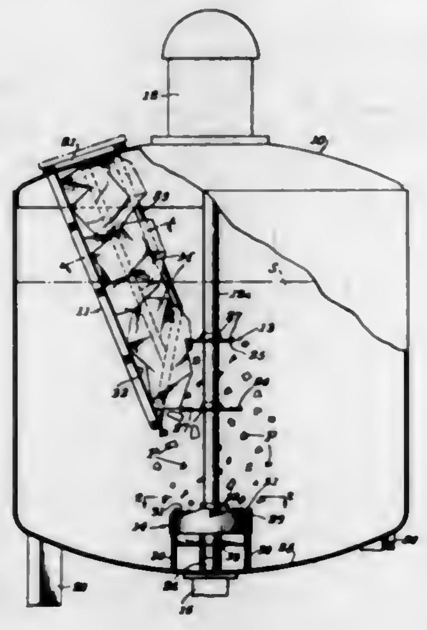
1. An apparatus for sand milling comprising:
(a) a generally vertical container;
(b) means for feeding particulate solids and liquid into the bottom of said container;
(c) means for removing milled solids and liquid from the upper portion of said container;
(d) a rotatable shaft extending axially into said container;
(e) a plurality of impellers spaced along said shaft and attached thereto so as to be rotatable therewith; and



(f) at least one fixed baffle extending substantially continuously around the inner wall of said container and projecting inwardly from said interior wall between a pair of adjacent impellers, overlapping the respective edges of said impellers, said baffle adapted to deflect upwardly flowing fluid impinging thereon in the general direction of said rotatable shaft and between said adjacent impellers.

3,307,793
MEANS TO CONVERT SOLUBLE MATERIAL INTO A VISCOUS SOLUTION OF THE SAME

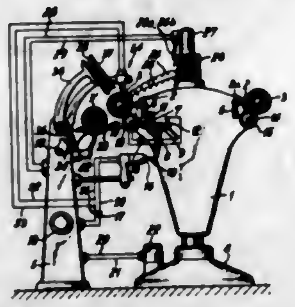
Claude K. Myers, Bell, Calif., and Gary A. Myers, Pico Rivera, Calif. (both of 8376 Salt Lake Ave., Bell, Calif. 90201)
Filed Sept. 8, 1964, Ser. No. 394,933
4 Claims. (Cl. 241—152)



1. Means to comminute pieces of soluble material into particles thereof in the presence of a solvent in which said material is soluble, said means comprising:
(a) a stationary tubular member disposed on a vertical axis within the solvent and provided with vertical shear edges,
(b) and a blade rotational on said axis and having peripheral cutting teeth arranged in circumferential groups on helices pitched relative to said axis and in shearing engagement with said edges.

3,307,794
AUTOMATIC YARN-PACKAGE WINDING MACHINE WITH TAKE-UP SPOOL EXCHANGING DEVICE

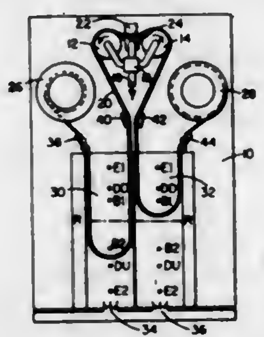
Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed June 1, 1964, Ser. No. 371,285
Claims priority, application Germany, Aug. 16, 1963, R 35,914; Aug. 19, 1963, R 35,932
10 Claims. (Cl. 242—35.5)



1. A machine for winding cross-wound yarn packages, comprising winding stations with respective take-up spool journalling means, a spool exchanging device common to said winding stations for exchanging completed spools for empty spool cores, drive means for imparting relative motion between said winding stations and said exchange device to place said device in spool exchanging relation to one of said stations at a time, control means responsive to spool completion and connected with said drive and said exchange device for stopping said drive and actuating said exchange device when a spool is completed, a spool collecting surface structure having a lay-off area at said exchange device for receiving the completed spools from said journalling means, and an intermittently operating spool feed device engageable with a spool on said lay-off area and having a feed stroke approximately equal to the dimension of the completed spool in the feed direction, whereby said lay-off area is vacated by action of said feed device to receive another spool.

3,307,795
TAPE LOOP CONTROL SYSTEM

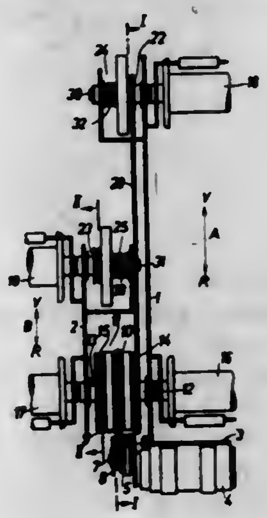
Robert A. Pendleton, Dedham, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 16, 1964, Ser. No. 411,202
15 Claims. (Cl. 242—55.12)



7. In a web transport, means for selectively moving said web from a supply reel to a take-up reel, the path of said web including at least one web loop, an elongated loop chamber open at one extreme to accept said loop, means for applying a vacuum pressure at the other extreme of said chamber to maintain said web under tension, first sensing means disposed in said loop chamber, a pair of mutually spaced sensing means bracketing said first sensing means and defining a first zone, at least a second zone extending from said first sensing means past one of said pair of sensing means toward said other extreme of said loop chamber, drive means coupled to said reels, means responsive to said pair of sensing means for actuating said drive means to return said web loop to said first zone when it is outside the latter, and means responsive to said first sensing means throughout the travel of said web loop in said second zone toward said other extreme for applying a substantially unilateral braking force to said drive means adapted to arrest said travel.

3,307,796
DRIVE FOR TAPE TRANSPORT

Karl Faber, Oftersheim, Baden, Germany, assignor to Brown, Boveri & Cie Aktiengesellschaft, Mannheim-Kafertal, Germany, a corporation of Germany
Filed Mar. 10, 1966, Ser. No. 535,296
Claims priority, application Germany, Apr. 8, 1965, B 61,412
5 Claims. (Cl. 242—67.4)



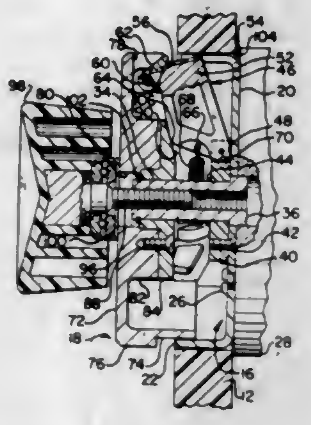
1. A drive arrangement for independently respectively moving tape in a pair of tape transport devices in parallel paths in both the forward and reverse directions, each of said transport devices comprising a pair of reels, each of the reels in a transport device being adapted to function both as a feed and a takeup reel comprising; a drive motor capable of being rotated in respective opposite rotational directions, a bilateral clutch, means for selectively transferring rotational movement from said motor through said bilateral clutch to corresponding ones of said pairs of reels respectively to cause said tape to be wound on said one reels when said movement is in a given direction, said tape being concurrently unwound from the corresponding others of said pairs of reels by the pulling force of said moving tape, a ratchet wheel associated with each of said other reels respectively, means for coupling the motor movement through said bilateral clutch to said ratchet wheels, said ratchet wheels being arranged to rotate in the free wheeling direction when tape is wound on said one reels at a velocity which exceeds the unwinding velocity of said other wheels whereby the rotation of said ratchet wheels in the free wheeling direction has no influence on said unwinding in said given direction, means associated with said ratchet wheels and said other reels for imparting the movement of said ratchet wheels to said other reels when said ratchet wheels have transferred thereto movement from said motor through said bilateral clutch in a direction opposite to said given direction, whereby tape is wound on said other reels and unwound from said one reels.

3,307,797
REEL RETAINING ASSEMBLY

Earl W. McFeaters, Dayton, and Charles H. Wagner, Xenia, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed June 4, 1965, Ser. No. 461,317
6 Claims. (Cl. 242—68.3)

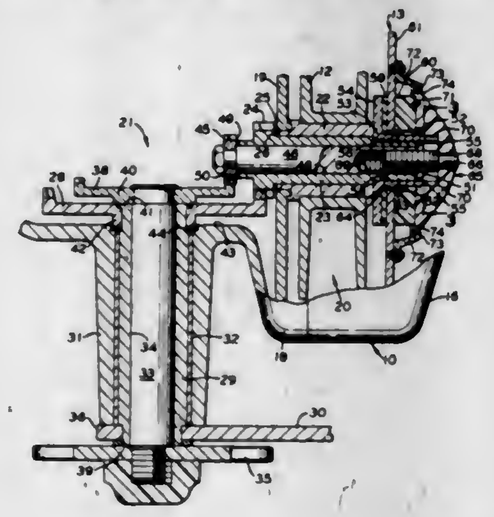
1. A reel retaining assembly comprising:
housing means having a base adapted to be secured to a rotatable member for concentric rotation therewith

and also having an outer perimeter adapted to receive the mounting aperture of a reel to be supported by said assembly,
said outer perimeter having slots in equally spaced relation thereabout,
jaw means positioned along radial lines in said housing means and having first and second ends,
means for pivotally mounting said first ends of said jaw means in said housing means,



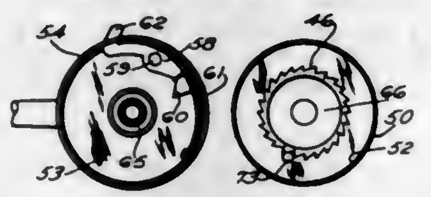
and actuating means to pivot said jaw means and move said second ends out of said housing means through said slots,
said second ends having thereon means to first resiliently engage said reel and move it in a direction towards said base and secondly to releasably hold said reel on said assembly upon the movement of said second ends out of said housing means.

3,307,798
DRAG OPERATING MECHANISM FOR FISHING REELS
Thomas F. Sarah, Akron, Ohio, assignor to Pflueger Corporation, Akron, Ohio, a corporation of Ohio
Filed Nov. 23, 1964, Ser. No. 413,064
8 Claims. (Cl. 242—84.2)



1. A drag adjusting mechanism for a spinning reel in which a pressure responsive drag mechanism connects the flyer and the rotatable shaft on which the flyer is carried comprising, a head axially movable to vary the pressure on said drag mechanism, a drag spindle rotatably mounted in said reel, connecting means between said head and said drag spindle to effect axial translation of said head in response to rotation of said drag spindle with respect to said head, an adjusting knob means remotely of the drag spindle, first gear means attached to and selectively rotatable by said adjusting knob, second gear means attached to said drag spindle for rotation therewith, said first and second gear means engaged so that said spindle rotates relative to said head on manipulation of said adjusting knob.

3,307,799
DRAG MECHANISM FOR FISHING REEL
Robert B. Ransom, Westerly, R.I.
(N. Williams Road, Weekapaug, R.I. 02891)
Filed July 10, 1964, Ser. No. 381,814
9 Claims. (Cl. 242—84.44)



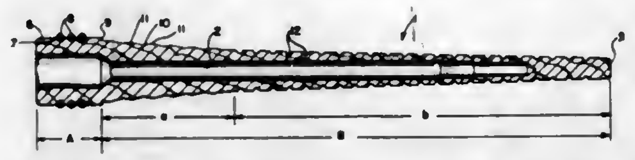
1. In a fishing reel having a drag means comprising a pair of telescoping members through which the application of relative axial motion varies the friction applied on said means, means for applying relative opposite axial forces on said members comprising threaded means on one member and a hub threadingly engaging said threaded means and a notched wheel on one of said members and spring pressed pawl on the other of said members for holding said threaded engagement in different relative positions for determining the setting of the drag means.

3,307,800
WINDING SPINDLE
Frank A. Macedo, Pawtucket, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Dec. 18, 1964, Ser. No. 419,331
6 Claims. (Cl. 242—115)

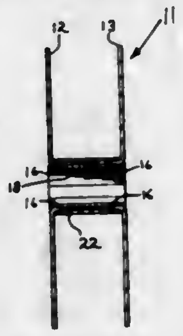
1. A yarn collecting device comprising, a sleeve having first and second end portions and adapted to have yarn wound thereon, first and second flanges arranged respectively at said first and second end portions, said first flange being movable into and out of engagement with said sleeve, support means extending longitudinally of said sleeve, said support means being mounted for movement longitudinally of said sleeve when said first flange is disengaged from said sleeve, said support means having a surface protruding above the periphery of said sleeve for engaging the yarn wound on said support means, the yarn engaged on said surface being movable cooperatively with said support means, one end of said support means being slidably received in an opening in said second flange, the opposite end of said support means communicating with said first flange when said first flange is engaged with said sleeve, and retaining means for holding said first flange on said first end portion to thereby secure said support means in a yarn receiving location with said sleeve, said retaining means being releasable to permit disengagement of said first flange from said sleeve whereby the yarn wound on the sleeve may be moved longitudinally of said sleeve.

3,307,801
TAPERED FILLING QUILL
Charles C. Bagwell, Jr., Columbus, Ga., and Ernest R. Stewart, Charlottesville, Va., assignors to Institute of Textile Technology, Charlottesville, Va., a corporation of Virginia
Filed Apr. 1, 1964, Ser. No. 356,600
7 Claims. (Cl. 242—118.3)

1. A filling quill comprising an elongated spindle member having a mounting section at one end and a winding section beginning adjacent the mounting section and extending the remaining legth of the spindle member substantially to the other end thereof, said winding section including first and second tapered winding surfaces with said first winding surface being disposed between said mounting section and said second winding surface and being tapered at a greater angle with respect to the longitudinal axis of said spindle than said second winding surface, said winding section further having a plurality of circumferential grooves spaced along the longitudinal axis of said spindle with the grooves in said first winding surface being defined by shallow, smoothly curved surfaces separated by rounded ridges and having a width greater than their depth to provide said first winding surface with a smooth, continuously rippled outer yarn engaging contour.



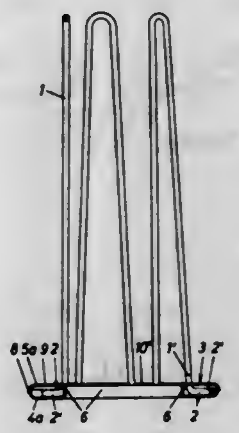
3,307,802
SHIPPING REEL
Frank A. David, Collinsville, Ill., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Aug. 19, 1964, Ser. No. 390,656
6 Claims. (Cl. 242—118.8)



1. A shipping reel formed of relatively stiff sheet-like material, said reel comprising in combination:
a pair of annular panels in spaced parallel relationship, said panels each having an inner and outer periphery defining a polygon.
a plurality of tabs integral with and foldably connected to the inner periphery of each panel, said tabs extending inwardly toward the other of the panels,
a spindle disposed interiorly of and coextensive with said folded array of tabs, said spindle being polygonal cross sectional configuration and in surface abutment with said tabs, said spindle defining a polygonal opening adapted to engagingly receive a polygonal mandrel such that rotation of the mandrel will rotate the reel,
a tubular spacer extending between said panels, said spacer being of polygonal cross sectional configuration and in surrounding surface abutment with said tabs, whereby said panels, spindle and spacer are held in relative nonrotational engagement, without auxiliary fastening means.

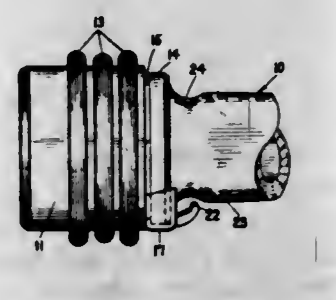
3,307,803
YARN WINDING CARRIER
Gerhard Tigges, Wuppertal-Cronenberg, Germany, assignor to Firma Lebrecht Tigges K.G., Wuppertal-Cronenberg, Germany, a corporation of Germany
Filed June 2, 1965, Ser. No. 460,761
Claims priority, application Germany, June 18, 1964, T 26,394; July 11, 1964, T 26,570
1 Claim. (Cl. 242—118.11)

A yarn winding carrier comprising
a continuous bent spring wire radially resilient,
said spring wire having at the lower end U-shaped, radially outwardly directed angular portions disposed in a single plane and constituting feet of said spring wire,
an annular, rigid shoe gripping said angular portions of said spring wire,
said shoe comprising an annular upper shoe portion and an annular lower shoe portion,
said shoe portions being connected together and locating therebetween said radially outwardly directed feet,
said annular upper shoe portion having a smooth upper annular face and a plurality of slots receiving said radially outwardly directed angular portions,



said annular, lower shoe portion having at its inner edge an upwardly directed, inner peripheral cylindrical wall extending to said annular upper shoe portion and closing said slots in radial direction,
said annular, lower shoe portion having a smooth bottom face, the entire surface of the latter lying in the same plane,
said lower shoe portion being connected to said annular upper shoe portion at the outer side edge thereof above the plane of the bottom plane, and
said annular upper shoe portion having for each of said outwardly directed angular portions a separate one of said slots.

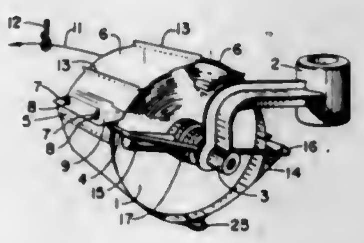
3,307,804
THREAD ATTACHING MEANS FOR BOBBINS
Paul C. Consoletti, Milford, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Feb. 17, 1965, Ser. No. 433,285
1 Claim. (Cl. 242—125.1)



A bobbin for automatic bobbin changing looms upon which filling thread is adapted to be wound having a cylindrical butt portion and an integrally formed barrel portion of lesser diameter extending axially therefrom, said butt portion including a cylindrical stepped portion, a circular bobbin wind cleat, means for fixedly positioning said cleat on said stepped portion, a plurality of outwardly directed projections extending from one end of said cleat, said projections extending in a plane oblique to the axis of said bobbin and equally disposed about said cleat in overlying spaced relation to the periphery of said barrel portion, said projections having an outer and inner surface defining a web, each one of said projections including a leading edge generally parallel to the axis of said bobbin, and a hook forming the terminus portion of said projections for capturing and retaining the free end of filling thread to initiate the winding of a filling package on said bobbin.

3,307,805
YARN TENSIONING DEVICE

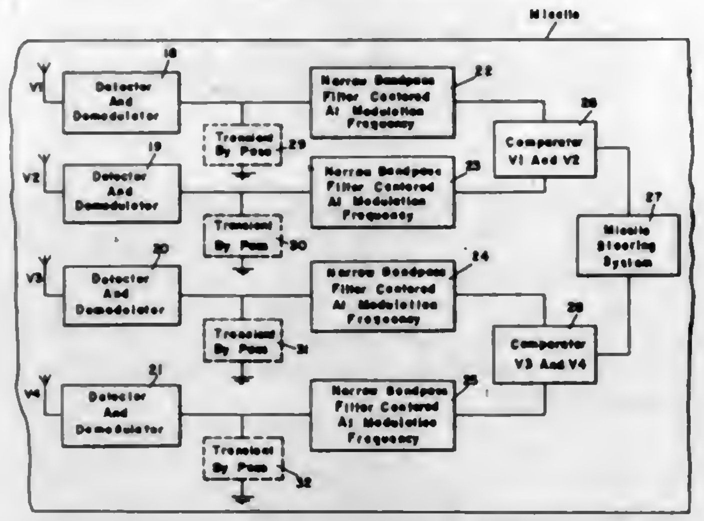
Petrus Verbeek, Steenbergen, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,589
Claims priority, application Netherlands, May 16, 1964, 64/05516
8 Claims. (Cl. 242—129.8)



1. An apparatus for preventing snarls and tangles in a twisted yarn during end-wise removal of the yarn from a substantially cylindrical yarn package supported by a yarn support means, said apparatus being attached to said yarn support means and comprising substantially a horizontal peg attached at its base to said yarn package support means and having a free end to receive a yarn package thereon, a fixed fastening bracket attached to the base of the horizontal peg and having an arm extending the length of the yarn package and being spaced from the outer periphery thereof, a fabric retarding strip having one end attached to and extending the length of said arm, said retarding strip completely encircling the outer periphery of a full yarn package and extending from said fastening bracket arm in the same direction as the rotation of yarn thread during removal from said yarn package, the other end of said retarding strip being removably attached to said fastening bracket arm, a tensioning strip having one end secured to said retarding strip intermediate the ends thereof, the other end of said tensioning strip secured to the arm of a weighted tensioning bracket, said tensioning bracket being rotatably affixed to the base of said peg, a weight on said tensioning bracket positioned to exert a force on said retarding strip to maintain said retarding strip in contact with the peripheral surface of said yarn package at all times during yarn removal therefrom, a slit located in said retarding strip extending substantially parallel to the axis of said yarn package and completely across said retarding strip, a U-shaped fastening pin for securing the ends of said retarding strip on each side of said slit, the closed end of said U-shaped pin being located adjacent the base of said peg, a closing strip of material secured along one edge to the inner face of said retarding strip and located coextensive with said slit, the other edge of said closing strip overlying said slit to shut off communication of said slit with the surface of said yarn package, and a plurality of weights secured at circumferential intervals to the outer face of said retarding strip.

3,307,806
MISSILE GUIDANCE BY FREQUENCY MODULATED CONTROL SIGNALS

Morton L. E. Chwalow, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 21, 1963, Ser. No. 317,849
3 Claims. (Cl. 244—3.14)



1. An improved missile guidance system comprising,

means responsive to two directional control signals for steering a missile,

means for transmitting first and second frequency signals modulated by a relatively low frequency signal, the lobes of said first and second frequency signals being oriented in a single plane and overlapping to establish a first pair of intersecting points,

means for transmitting third and fourth frequency signals modulated by said relatively low frequency signal, the lobes of said third and fourth frequency signals being oriented in a plane perpendicular to said single plane and overlapping to establish a second pair of intersecting points, said first and second pairs of intersecting points defining a desired straight line flight course for said missile,

two pairs of signal receiving means adapted to be carried by said missile, the first of said pairs of receiving means having antenna means for picking up the first and second frequency signals and being tuned respectively to said first and second frequency signals and the second of said pairs of receiving means having antenna means for picking up the third and fourth frequency signals and being tuned respectively to said third and fourth frequency signals,

a signal detector and demodulator means connected in each of said receiving means to derive the modulation signal as an output signal therefrom,

means connected to receive and compare the modulation signal outputs of said first pair of receiving means thereby to derive a difference signal as one of said control signals for the steering means, whereby said missile is guided in said single plane, and

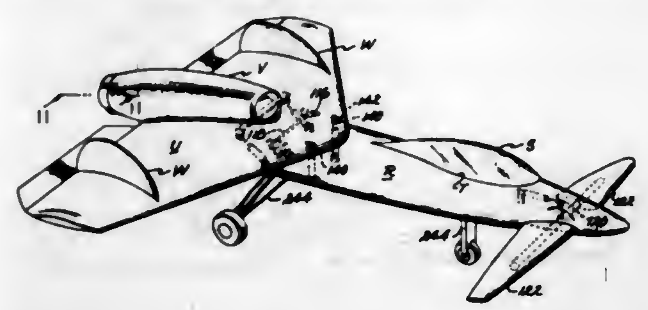
mean connected to receive and compare the modulation signal outputs of said second pair of receiving means thereby to derive a difference signal as the other of said control signals for the steering means, whereby said missile is guided in said perpendicular plane, and

means for minimizing the detrimental effect of clutter signals on the operation of said system, said means being connected in each of said receiving means following the detector and modulator means, thereby to prevent spurious clutter signals from being applied to said steering means, and

the modulation period of said relatively low-frequency modulation signal being such that said spurious clutter signals are of relatively-short time duration as compared therewith.

3,307,807
VARIABLE LIFT WING

Willy G. Stoppe, Long Beach, Calif., assignor of one-half to Nancy Vos, Long Beach, Calif.
Original application July 17, 1963, Ser. No. 295,754, now Patent No. 3,190,583, dated June 22, 1965. Divided and this application Dec. 11, 1964, Ser. No. 417,553
12 Claims. (Cl. 244—48)

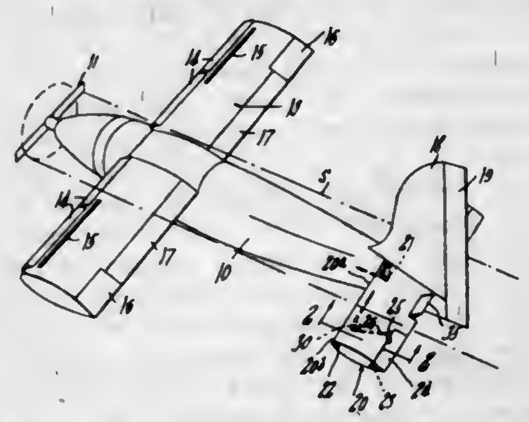


1. In combination with an aircraft including a fuselage having an enclosed cockpit in the forward portion thereof and a landing gear:

- (a) a wing disposed above said fuselage and extending transversely thereacross rearwardly of said cockpit;
- (b) first means for pivotally connecting said wing to said fuselage;
- (c) a jet engine rigidly mounted on the upper central surface of said wing and projecting rearwardly therefrom;
- (d) power means for selectively pivoting said wing and engine between a first position and a second position, which wing when in said second position tilts downwardly and rearwardly at a greater angle than when in said first position; and
- (e) second means for selectively varying the direction of the discharge stream from said engine to at least partially guide said aircraft as said wing is tilted between said first and second position.

3,307,808
AIRPLANE LONGITUDINAL TRIM CONTROL

Otto Carl Koppen, Wellesley Hills, Mass., assignor to Helio Aircraft Corporation, Bedford, Mass., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 514,837
3 Claims. (Cl. 244—87)



1. In a fixed wing airplane having a propeller producing a slipstream

longitudinal trim control means effective to reduce power-on, power-off trim changes comprising

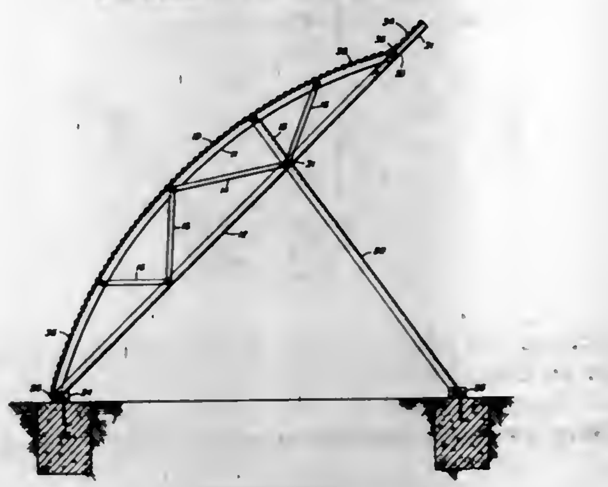
a manual movable elevator having a portion within said slipstream and a portion outside of said slipstream

a manual downwardly-directable adjustable trim tab on said elevator portion outside of said slipstream and

a compensating tab on said elevator portion within said slipstream and maintained in upwardly directed position at least when said trim tab is in downwardly directed position.

3,307,809
CONVEXLY CURVED DEFLECTOR FOR ELEVATED JET ENGINES BLASTS

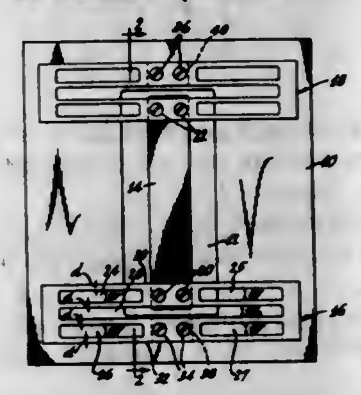
Bernard Stanley Lynn, 19451 Black Road, Los Gatos, Calif. 95030
Filed June 1, 1965, Ser. No. 460,083
6 Claims. (Cl. 244—114)



1. A blast deflector fence to lessen the overturning moment resulting while deflecting blasts from modern jet aircraft; the engines of which are located high above ground level, comprising a series of rigid trusses each pivotally connected to the ground at its lower forward leading edge, with strut means to adjustably alter the angle of the trusses with respect to the ground level, said trusses each carrying a corrugated blast deflecting surface which when viewed from the blast side is convexly curved.

3,307,810
IRROTATIONAL LOAD MOUNT

Abraham Lichowsky, Los Angeles, Calif., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 29, 1965, Ser. No. 468,077
10 Claims. (Cl. 248—27)



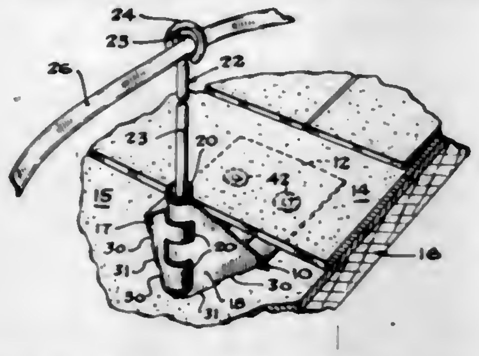
1. In combination: a load; supporting means; and an elongated parallelogram flexure bearing comprising a block of resilient material formed with a plurality of elongated parallel apertures parallel to the long dimension thereof, secured at the center region of a longer edge portion thereof to the load and at the center region of the opposite edge portion thereof to the supporting means, whereby the load is constrained to move along a path perpendicular to the long dimension of the flexure bearing.

3,307,811
WIRE TIE DOWN ASSEMBLY

Roy A. Anderson, 6939 43rd Ave., Kenosha, Wis. 51140
Filed July 27, 1965, Ser. No. 475,159
14 Claims. (Cl. 248—43)

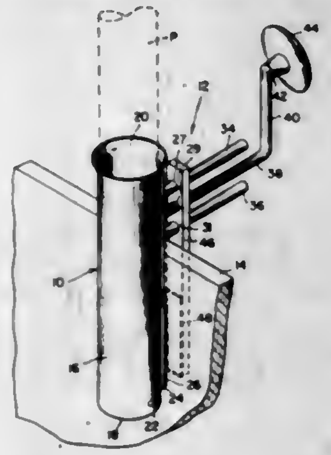
1. A leakproof wire tie down and standoff assembly for a shingled roof comprising a first flange portion adapted to fit beneath a shingle, second and third flange portions integral with said first flange portion lying substantially

flat and in substantially the same plane as said first flange portion in a first position, but bendable to a plane substantially transverse to said first flange portion in a second position, alternating frictional gripping means



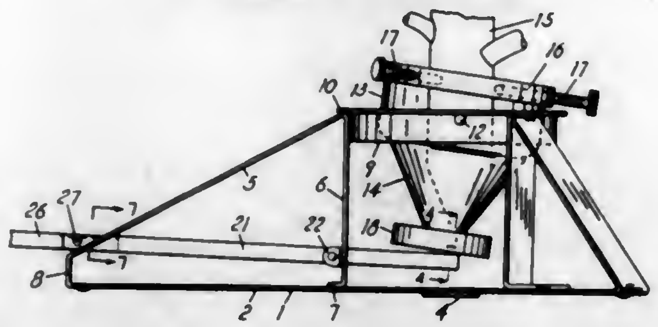
spaced on the edges of said second and third flange portions for complementary junction between said second and third flange portions in said second position for securely holding a rod-like standoff member transversely to a roof.

3,307,812
FISHING POLE HOLDER
Abe Brenner, 255 W. 23rd St., New York, N.Y. 10010
Filed Mar. 25, 1966, Ser. No. 537,412
1 Claim. (Cl. 248—43)



A fishing pole support adapted to be secured to opposite sides of a supporting surface comprising
an adjustable clamp,
said clamp including a stationary jaw, a movable jaw and means to move said jaws toward and away from each other,
said stationary and movable jaws each having raised clamping surfaces of a yieldable high friction material,
said raised clamping surfaces being positioned in face-to-face relationship to frictionally engage the opposite sides of the supporting surface,
said moving means including a plurality of spaced guide means extending from said stationary jaw,
guide apertures defined in said movable jaw and slidingly receiving said guide means to guide the movement of said movable jaw toward and away from said stationary jaw,
a crank handle having a threaded shaft, the extreme end of which is rotatably connected to said stationary jaw and the threaded portion thereof threadedly engaging said movable jaw to threadingly move the same toward and away from said stationary jaw,
said threaded shaft being spaced remote from said raised clamping surfaces and maintaining said movable jaw parallel to said stationary jaw during movement of said movable jaw,
and an open-ended tube secured to said stationary jaw on a side thereof opposite said raised clamping surface.

3,307,813
SUPPORT FOR CHRISTMAS TREES AND THE LIKE
Gordon S. Pleiss, Ludington, Mich., assignor to Handy Things Manufacturing Company, Ludington, Mich.
Filed Feb. 15, 1965, Ser. No. 432,720
13 Claims. (Cl. 248—44)

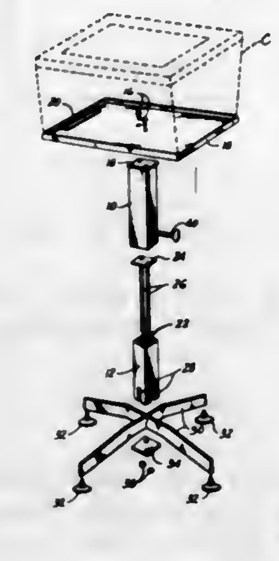


1. A support for Christmas trees and the like comprising a plurality of radially disposed frame members formed of bendable strip-like stock of flat cross section and including horizontally disposed base portions having angled inner end portions disposed in interlocking engagement and having upwardly and inwardly projecting leg portions terminating at their inner ends in downwardly projecting struts which are supportedly secured to the upper sides of the base portions in outwardly spaced relation to the inner ends thereof, the inner ends of said base portion being disposed upon and fixedly secured to a coupling member, an annular frame member disposed within and fixedly secured to the upper ends of said leg portions of said frame members and having an outwardly projecting flange overlapping the upper ends thereof, an annular holder support member disposed within said annular frame member and pivotally connected thereto to permit its tilting adjustment, an article holder member having a cylindrical upper portion terminating at its upper end in an outwardly and downwardly projecting flange disposed in vertically spaced relation to said holder support member, said holder member having a downwardly tapering bottom portion adapted to receive the end of a supported article, said holder member being provided at its upper end with radially disposed threadedly adjustable article clamping screws, a downwardly facing clutch member fixedly secured to the lower end of said holder member and having resiliently yieldable clutch material therein, and anchoring means including a lever of downwardly facing channel section pivotally mounted on one of said uprights and having a prong at its inner end engageable with said yieldable material in said clutch member whereby said holder member may be held in various tiltably adjusted positions, one of said leg members having an opening therein through which said lever is disposed permitting adjustment thereof, said opening having a keeper-like recess at its lower end with which said lever may be retainingly engaged with the lever in actuated position, said lever including an outer section provided with a footpiece so that said lever may be manipulated by the foot of an operator to engage said prong on said lever with said clutch member with an operator positioned to manipulatingly grasp the tree, said outer section being pivotally connected to the inner section to permit its being inwardly collapsed upon the leg through which said lever is disposed.

3,307,814
ADJUSTABLE STAND FOR INSTRUMENTS
Earl M. Bogar, Jr., 3308 Texas Ave., Houston, Tex. 77003
Filed May 9, 1966, Ser. No. 548,594
1 Claim. (Cl. 248—188.5)

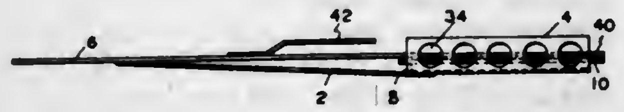
A stand for an instrument of the type having a box-like casing comprising,

(A) crossed leg elements,
(B) longitudinally extensible upright means including
  (a) upper and lower, telescopingly arranged tubular parts of polygonal shape in cross-section, slidable longitudinally relative to each other, said lower part having end slots at its lower end into which said leg elements are fitted,
  (b) means for securing the lower part to said leg elements comprising
    (1) an upper end plate on said lower part,



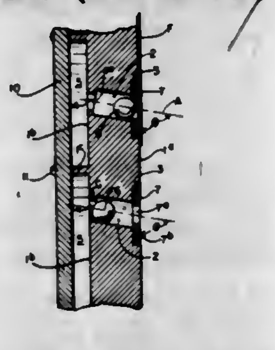
    (2) fastening means connected to said upper end plate and extending downwardly through said lower part, and
    (3) means positioned for coaction with said leg elements and said fastening means to hold said leg elements in said slots,
(C) a tray-like member supported on the upper end of said upright means, and
(D) means on said member positioned for engagement with said casing when the casing is positioned on the member to hold a casing against vertical movement relative to the member.

3,307,815
APPARATUS FOR DETERMINATION OF SHRINK-TEMPERATURE OF LEATHER
Martin L. Fein, Philadelphia, Edward H. Harris, Jr., Ambler, and Robert R. Calhoun, Jr., Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of Agriculture
Filed May 11, 1965, Ser. No. 455,021
3 Claims. (Cl. 248—316)



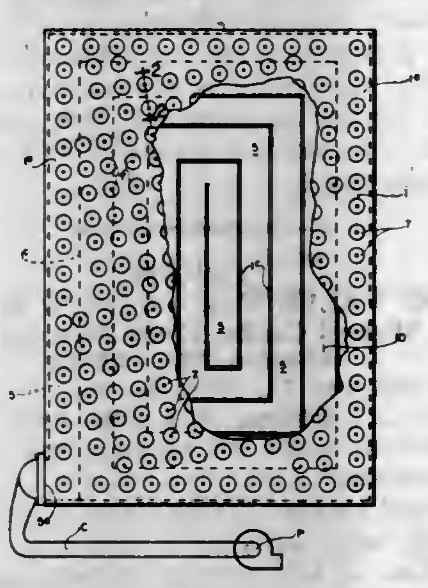
1. A holder for a leather specimen comprising an elongated handle, a channel-like member secured to said handle, said channel-like member adapted to at least partially enclose an area along, and approximate one end of, said handle, said channel-like member conforming approximately to the size and shape of a test specimen, a resilient member rigidly secured by one end to said handle and adapted at the other end to clamp one end of said specimen in the channel-like member, and means for supporting the holder.

3,307,816
INCLINED-BORE VACUUM BOARD VALVE
Joe Michael Cocito, 11008 Nicholas Drive, Wheaton, Md. 20902
Filed Mar. 31, 1965, Ser. No. 444,111
9 Claims. (Cl. 248—362)



1. A vacuum board for holding flexible sheets in a plane, comprising:
(a) a panel member having plural suction holes therethrough, each including a bore extending from the front face of said member therethrough to the rear and having a shoulder therein, at least one portion of the bore located between the shoulder and the front face having its walls inclined downwardly toward the latter when the panel member is upright;
(b) vacuum manifold means on the rear of the panel member and communicating with said bores;
(c) vacuum-operated valve means in each suction hole and comprising a ball which is a free rolling-fit in said one portion of the bore;
(d) each shoulder having an opening therethrough which is smaller than the diameter of the ball and which communicates with another portion of the bore which extends through the rear of the panel member, the center of the opening through the shoulder being more than one radius of the ball from the nearest wall surface of said one portion of the bore near the shoulder, and the ball being weighted beyond the capability of the vacuum in the manifold means to lift it into fully seated position in the opening at the shoulder; and
(e) means near the front-face for retaining the balls in the bores.

3,307,817
VACUUM BOARD VALVES
Joe Michael Cocito, 11008 Nicholas Drive, Wheaton, Md. 20902
Filed Mar. 19, 1965, Ser. No. 441,206
20 Claims. (Cl. 248—362)



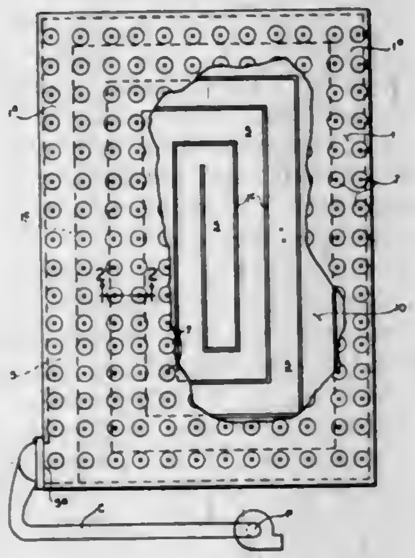
1. A vacuum board for holding sheets of photographic apparatus, comprising:
(a) a panel member having plural suction holes therethrough, each including a larger bore extending in-

wardly from a front face of said member and changing at a shoulder to a smaller bore which extends through the rear of the member;

(b) vacuum manifold means on the rear of the panel member and communicating with said bores; and

(c) vacuum-operated valve means in each suction hole and comprising piston means slidable in said larger bore, and a coiled spring disposed axially in the larger bore between the piston means and the shoulder to be compressed by the former against the latter when the piston means is displaced theretoward by air pressure entering the larger bore from the front face, thereby providing spacing between spring convolutions and forming an imperfect seal.

3,307,818
VACUUM BOARD MANIFOLD
Joe Michael Cocito, 11008 Nicholas Drive,
Wheaton, Md. 20902
Filed Mar. 19, 1965, Ser. No. 441,207
5 Claims. (Cl. 248—362)



1. A vacuum board for holding sheets of photographic apparatus, comprising:

(a) a front panel member having a pattern of suction holes therethrough;

(b) vacuum-operated valve means in each hole for closing the latter when the hole is not covered by a sheet;

(c) manifold means behind the front panel member and comprising multiple channels disposed against said member in communication with said holes, the channels being mutually connected together in series to form one continuous passageway, one end of the series being closed and the other end having an evacuation outlet, the channels being shallow as compared with their width, and their width being small as compared with an edge length of the vacuum board.

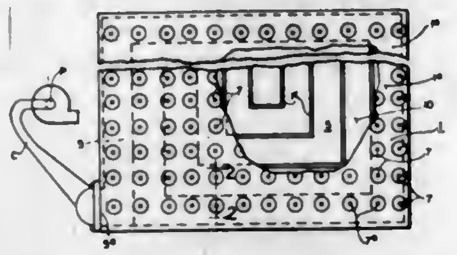
3,307,819
DISC VALVE FOR VACUUM BOARD
Joe Michael Cocito, 11008 Nicholas Drive,
Wheaton, Md. 20902
Filed Apr. 12, 1965, Ser. No. 447,190
12 Claims. (Cl. 248—363)

1. A vacuum board for holding flexible sheets in a plane, comprising:

(a) a panel member having plural suction holes therethrough, each including a bore extending from the front face of said member therethrough to the rear and having a shoulder therein at a location where the bore changes from a larger front bore portion to a smaller bore portion extending through the rear of the panel member;

(b) vacuum manifold means on the rear of the panel and communicating with said bores;

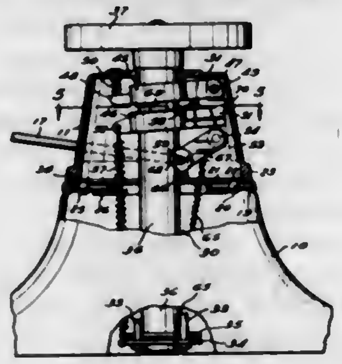
(c) disc and spiral spring means in said larger bore portion, the disc means fitting snugly therewithin and having a central area located opposite said smaller bore portion and urged away therefrom by said spring means, and said disc and spring means being movable



by air-flow in the larger bore portion toward said manifold means to displace said central area toward said shoulder and restrict the smaller bore portion; and

(d) means for preventing perfect seating of the disc means on the shoulder in the vicinity of the smaller bore portion.

3,307,820
CHAIR LIFT MECHANISM
George H. Martin, Chagrin Falls, Ohio, assignor to The Martin Brothers Electric Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 30, 1964, Ser. No. 422,308
8 Claims. (Cl. 248—410)



1. Apparatus for lifting and lowering a load comprising a base portion,

an extensible and retractable leg element having a generally vertically extending longitudinal axis and mounted on and supported by said base portion for extension and retraction along its said longitudinal axis,

a locking ring encircling said leg element and pivotally connected along one side to said base portion for swinging movement about a generally horizontal axis, the inside transverse dimensions of said locking ring being large enough to permit passage therethrough of said leg element when said ring swings to a free-passage position placing said transverse dimensions substantially in a plane normal to said longitudinal axis of said leg element and small enough to prevent passage therethrough of said leg element by gripping engagement on opposite sides thereof by adjacent portions of said ring when said ring swings away from a free-passage position,

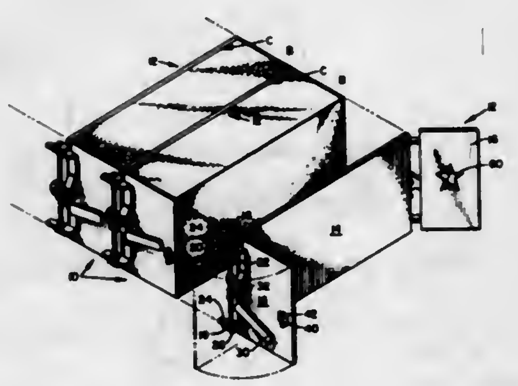
a lifting ring encircling said leg element below said locking ring and having a loose tipping fit with said leg element, the inside transverse dimensions of said lifting ring being large enough to permit passage therethrough of said leg element when said ring tips to a free-passage position placing said transverse dimensions in a plane normal to said longitudinal axis of said leg element and small enough to prevent passage therethrough of said leg element by gripping

engagement on opposite sides thereof by adjacent portions of said ring when said ring tips away from a free-passage position,

movable operating means supported by said base portion and comprising a tipping and lifting portion having an up and down component of motion adjacent to and extending along said leg element, said tipping and lifting portion having cooperating engagement with the side of said lifting ring generally vertically below the pivotally connected side of said locking ring and movable upwardly for tipping said lifting ring into gripping engagement with opposite sides of said leg element and for lifting said lifting ring so tipped and engaged and thereby extending said leg element upwardly and through said locking ring,

said movable operating means having a range of motion of sufficient extent while engaged with said lifting ring to raise said lifting ring to an upper lifted position of cooperating engagement with said locking ring, said tipping and lifting portion of said movable operating means having supportable engagement with said lifting ring radially inwardly of the horizontal axis of pivotal motion of said locking ring and said base for urging together and tipping both of said rings out of their tipped positions of gripping engagement into their free-passage positions permitting the downward passage of said leg element through both of said rings.

3,307,821
GANG MOLD ASSEMBLY FOR CONCRETE BLOCKS
Decio Torricelli, 11 Bowles Park,
Springfield, Mass. 01104
Filed Sept. 24, 1964, Ser. No. 398,912
1 Claim. (Cl. 249—129)



In a gang mold assembly for concrete blocks comprising,

a plurality of identical mold frame members,

each said mold frame member comprising,

a side plate

and a pair of end plates

with each end plate being hingedly mounted at one end of the side plate by means of a laterally-movable pivot rod for lateral movement of the end plate between inward closed and outward opened positions with respect to the side plate of the next adjacent mold frame member,

a cam latch means pivotally mounted with respect to each end plate and including a latch handle

and a locking finger having a forwardly-extending hook shaped portion having a rearwardly-extending extension

and an offset portion

and cam finger having a rearwardly-extending arcuate cam portion having an offset portion

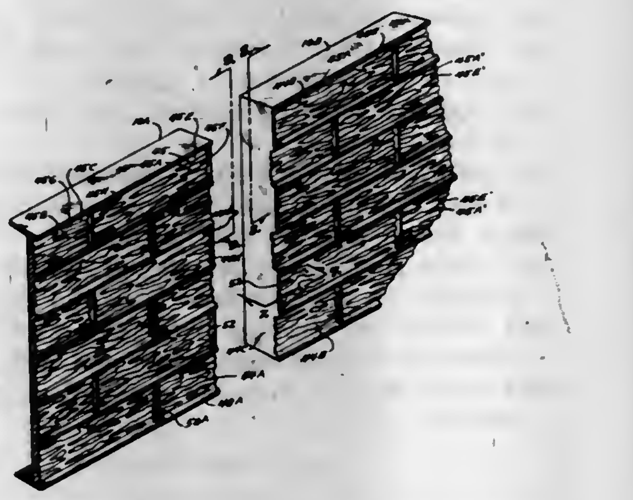
a notched locking boss on each end plate,

each said notched locking boss extending horizontally-outwardly from its respective end plate,

the offset portion of the locking finger of each end plate upon rotation of the latch handle in a certain direction being engageable with the forwardly-facing face of the respective locking boss of the next adjacent end plate with the hook-shaped portion of the locking finger being receivable in the notch of the locking boss for locking adjacent mold frame members together,

the offset portion of the locking finger of each end plate upon rotation of the latch handle in an opposite direction being removable from engagement with the forwardly-facing face of locking boss of the respective next adjacent end plate and the hook-shaped portion of the locking finger being removable from the notch in the locking boss for unlocking adjacent mold frame members and the offset portion of the cam fingers upon rotation of said latch handle in said opposite direction being movable into engagement with the pivot rod and the arcuate cam portion of the cam finger being movable into engagement with the rearwardly-facing face of the locking boss of the respective next adjacent end plate as the latch handle is rotated for urging the pivot rod laterally forwardly for forcing the adjacent mold frame members apart and away from the sides of the formed block.

3,307,822
CONCRETE WALL CONSTRUCTION FORM
Robert K. Stout, Norwalk, Iowa, assignor, by direct and mesne assignments, to International Concrete Systems Company, Bala-Cynwyd, Pa., a corporation of Delaware
Filed Jan. 7, 1963, Ser. No. 250,461
1 Claim. (Cl. 249—189)



In a wall construction form,

a sheet member,

a plurality of parallel spaced apart elongated straight bars integral with and formed on one side of said sheet member to present a pattern of simulated indented mortar joints in a poured and hardened concrete wall,

exposed areas on said sheet member in between said bars,

said exposed areas presenting irregular surfaces of said sheet member one side,

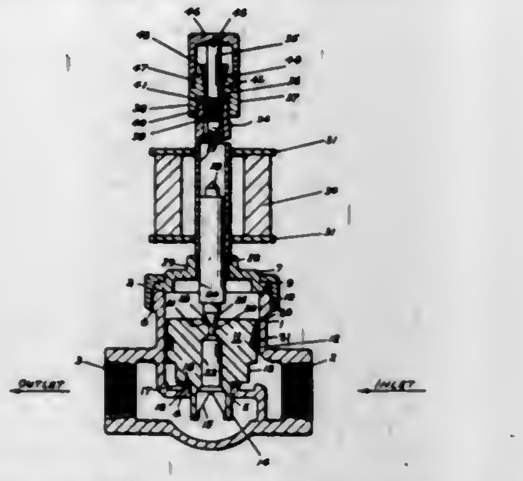
said irregular surfaces being comprised of a plurality of dissimilar indentations and protruding portions of different sizes located in an irregular and non-symmetrical pattern,

said indentations and protruding portions being substantially arcuate in cross-section,

said irregular surfaces each presenting a different contoured surface, and some of said bars are intermittently vertically positioned between rows of other horizontal bars to create a pattern of simulated indented mortar joints in a poured and hardened concrete wall; said horizontal bars extending outwardly further than said vertically positioned bars.

3,307,823
PILOT CONTROLLED VALVE HAVING IMPROVED SEALING MEANS

Leonard S. Greer, Erie, Pa., assignor to Hays Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1963, Ser. No. 319,292
3 Claims. (Cl. 251—30)

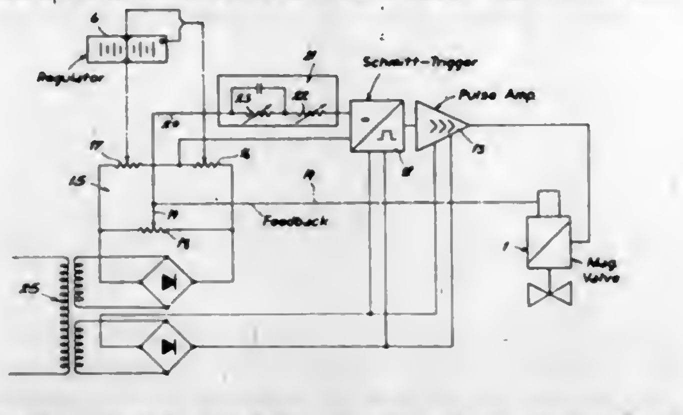


1. In combination, a valve and a magnetic operating means for said valve,
- said valve comprising a hollow cylindrical body having an enlarged portion at one side thereof,
- a partition in said cylindrical body having an opening therein,
- a piston having an orifice.
- said piston disposed in said enlarged portion,
- said piston having means to close said opening when said piston is in closed position,
- said opening being open when said piston is in open position,
- said enlarged portion having a chamber therein adapted to receive fluid to hold said piston in closed position,
- and a piston ring on said piston,
- said piston ring having two spaced ends defining a flow passage for fluid to flow into said chamber,
- said piston ring having outer sides which converge outwardly toward each other and define a crest,
- said crest slidably engaging the undersurface of said enlarged portion.

3,307,824
CONTROL SYSTEM FOR FLOWING MEDIA

Georg Weisheit, Trappenbergstrasse 37, Essen-Stadtwald, Germany
Filed Sept. 27, 1963, Ser. No. 312,142
Claims priority, application Germany, Sept. 29, 1962, W 33,034
4 Claims. (Cl. 251—131)

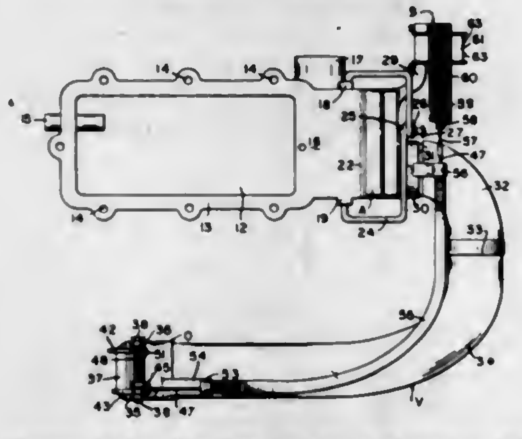
1. In a system for the control of a fluid medium having a regulator circuit responsive to a parameter of the flowing medium, in combination:
- an electromagnetically operable valve having a valve element for controlling the flow of said medium, shiftable between a rest position of said valve and at least one control position, at least one electromagnet member and a core member co-operating with said electromagnet member, one of said members being connected with said element for shifting same upon energization of said electromagnet member and being movable with said element, and damping means coupled with said valve elements for damping oscillations thereof;
- an electronic triggering circuit connected between said regulator circuit and said electromagnet member for energizing said electromagnet member with a succession of pulses in one condition of said triggering circuit and de-energizing said electromagnet member in another condition of said triggering circuit; and



- feedback means operable by said valve element and connected with said triggering circuit for switching same into said one condition to displace said element from said rest position to said control position and thereafter switching said triggering circuit to said other condition.

3,307,825
DUMP VALVE FOR WASHING MACHINES

Neil W. Sollenbarger, 3425 W. 26th Ave., Denver, Colo. 80205
Filed Nov. 4, 1965, Ser. No. 513,631
11 Claims. (Cl. 251—138)



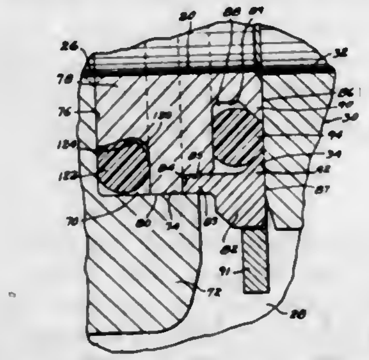
1. A dump valve for use on an automatic washer having a sump, including:
- a mouth attachment adapted to be connected to a mouth of the sump and having an outlet;
- a waste conveying conduit connected to said outlet, turning and extending generally rearwardly and downwardly and to one side of said sump a distance sufficient to minimize splashing, due to discharge from the conduit exit, extending to said sump mouth and to positions forwardly thereof adjacent or above the level of said sump;
- a valve gate mounted at the exit end of said conduit;
- a solenoid mounted forwardly of said mouth and at a level sufficient to avoid splashing thereon; and
- means operatively connecting said solenoid to said valve gate so that the valve gate will be opened upon energization of said solenoid.

3,307,826
BIFACED GATE VALVE

William E. Lowrey, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Dec. 2, 1963, Ser. No. 327,301
1 Claim. (Cl. 251—327)

A gate valve having a valve body formed with flow passages, a valve chamber formed in the valve body and

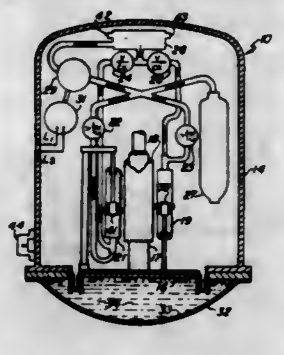
intersecting the flow passages, a gate member having parallel planar sealing surfaces and being disposed for movement within the valve chamber between open and closed positions, opposed seat recesses formed in said valve body about said flow passages, a seat assembly disposed in each of said seat recesses for sealing engagement with a parallel sealing surface of said gate member, each of said assemblies comprising an annular seat member movably received within the respective seat recess, said seat member having a first reduced diameter portion defining an annular abutment, an annular retainer member having an axial flange thereof press-fitted about said first reduced diameter portion with said axial flange in intimate engagement with said annular abutment, said seat member and retainer member each having annular planar sealing surfaces for sealing engagement with said gate and disposed in coplanar relation for distribution of the load applied by said gate to said seat assemblies, a second reduced diameter portion of said seat member cooperating with said retainer member to define an annular groove, an exterior lip formed on said seat member and an interior lip formed on said retainer, said lips being spaced defining a restricted annular opening for said groove, an annular face sealing member disposed within said groove and being of greater axial dimension than the axial dimension of said groove causing an annular sealing portion of said sealing member to protrude through said restricted opening and beyond said planar sealing surfaces for sealing engagement with said gate, said annular sealing member being slightly smaller in cross-sectional dimension than the cross-sectional dimension of said groove to allow for displacement of the protruding portion of said sealing member into said groove, said lips defining opposed internal frusto-conical surfaces of said groove which bear on said sealing member retaining the sealing member under compression within said groove for preventing excessive shifting of said sealing member in response to pressure and to maintain the sealing member in a centered position within the groove, said frusto-conical surfaces establishing sealing engagement with said sealing member to prevent fluid from entering said groove and getting behind said sealing member, a third reduced diameter portion defined on said seat member at the rear portion thereof and cooperating with said seat recess to define an annular chamber, back face sealing member disposed within said annular chamber and being of greater axial width than the axial width of said annular chamber causing said back face sealing member to be maintained under compression between said seat member and the bottom wall of said seat recess thereby maintaining sealing engagement between the seat assembly and the valve body.



3,307,827
WAVE POWER CONVERTER

John P. Silvers, Wilmington, and Ronald P. Danis, Andover, Mass., assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Mar. 23, 1965, Ser. No. 442,109
11 Claims. (Cl. 253—4)

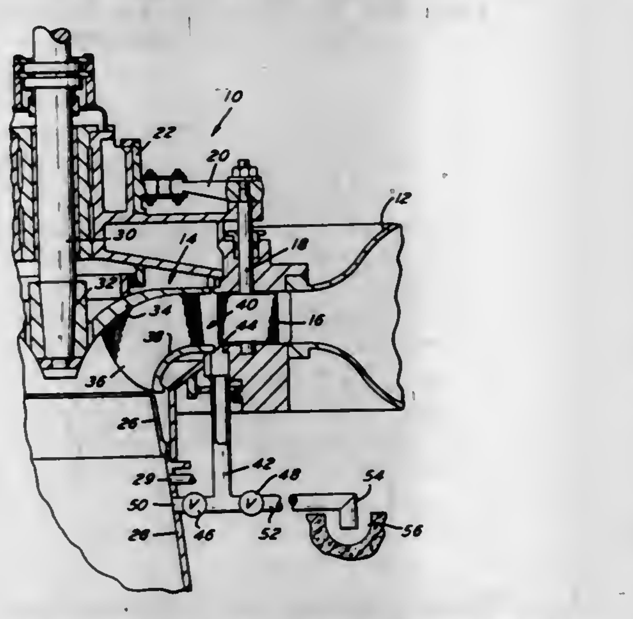
1. A device for utilizing the wave energy of a body of water which comprises;
- a housing placed in a body of water with a portion of said housing submerged at a predetermined depth below the surface thereof,



- pressure sensing means maintained in said submerged portion of said housing for movement relative to said housing in response to changes in subsurface pressure caused by waves on the water surface, and
- means for utilizing movement of said sensing means.

3,307,828
TORQUE REDUCING MEANS

Richard B. Willi, Norristown, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 29, 1966, Ser. No. 561,580
5 Claims. (Cl. 253—117)



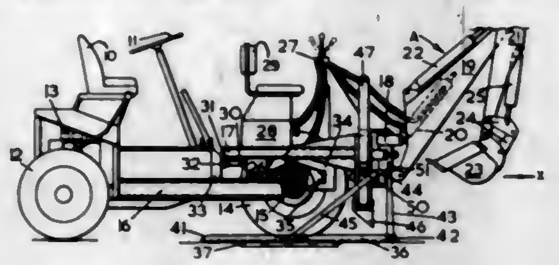
1. A hydraulic machine comprising a runner, said runner including a plurality of blades, a plurality of wicket gates mounted in said hydraulic machine, said wicket gates having an opened and a closed position, an annular chamber defined between said runner and said wicket gates when said wicket gates are in closed position, means for introducing compressed air into said chamber and the space below the blades, means selectively communicating with said annular chamber for venting said annular chamber to atmosphere.

3,307,829
APPARATUS TO TRANSFER A POWER-OPERATED IMPLEMENT BETWEEN A TRACTOR CHASSIS FRAME AND THE GROUND

Leslie B. Thwaites, % The Thwaite Engineering Company Limited, Welch Road Works, Cubbington, near Leamington Spa, Warwickshire, England
Leamington Spa, England
Filed Dec. 16, 1964, Ser. No. 418,810
Claims priority, application Great Britain, Dec. 18, 1963, 49,913/63; Jan. 3, 1964, 318/64
5 Claims. (Cl. 254—88)

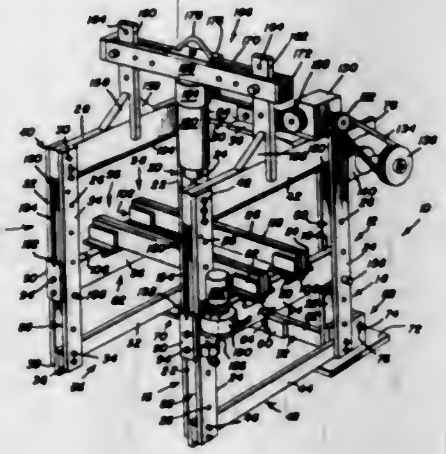
1. A stand for use in transferring a power-operated implement, having a frame carried during use by the chassis frame of a tractor, from the tractor chassis frame to

the ground, comprising a portable rigid planar frame, guide means secured to said frame, said guide means adapted to direct a wheel of said tractor into a particular direction across said frame, a ramp secured to said frame lying in a vertical plane parallel with said guide means, said ramp adapted to engage said implement frame when a wheel of said tractor is engaged by said guide means, means for inhibiting movement of said implement frame down said ramp under its own weight, and abutment means secured to said frame for preventing the implement frame from being pushed off the top of the ramp in the direction of its upward slope by the tractor.



3,307,830
COMBINATION HYDRAULIC PRESS AND PULLER

John L. Van Allen, 223 Alder St., Missoula, Mont. 59801
Filed Oct. 23, 1965, Ser. No. 503,742
11 Claims. (Cl. 254—93)

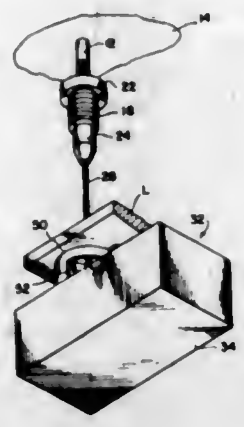


1. A hydraulic pushing and pulling device comprising in combination, a frame including upstanding leg means, oppositely mounted crossbeams connecting adjacent leg means, said adjacent connected leg means comprising sides of said frame, means adjustably connecting said sides for horizontal movement with respect to each other, press bed support means mounted in said sides, means for vertically adjusting said press bed support means in said sides, press bed means slidably mounted on said press bed support means for receiving work thereon, and press means removably mounted between said opposed crossbeams and above said press bed means, and means for operating said press means either in mounted position on said opposed crossbeams or in demounted position removed from said opposed crossbeams.

3,307,831
METHOD OF ELEVATING A LOAD AND LIFT APPARATUS THEREFOR

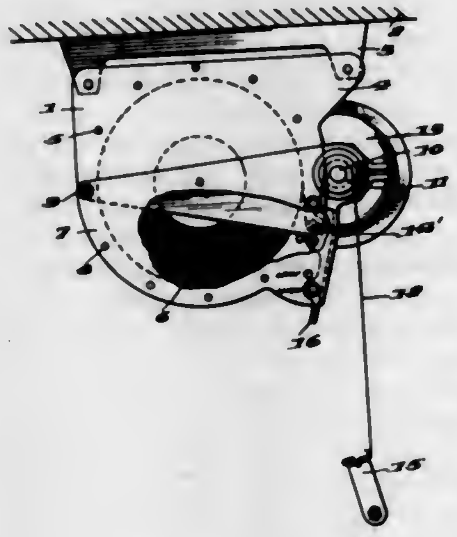
Bernard H. Friedman, 4 Sadore Lane, Yonkers, N.Y. 10710
Filed Oct. 5, 1965, Ser. No. 493,107
13 Claims. (Cl. 254—150)

1. An apparatus to raise and lower a load comprising a fixed overhead hanger,
first means depending from said hanger,
operating means connected to said first means and being selectively operable to move up and down said first means,
spacing means mounted on said operating means and adapted to abut the load for moving the load in the same direction as that of the operating means,
and support means on said operating means engageable with said hanger and the load for releasably supporting the load in a raised position,
said fixed overhead hanger including a threaded portion, and said support means comprising a complementary threaded nut adapted to threadedly engage the threaded portion of said hanger.



3,307,832
CARGO LOWERING DEVICE

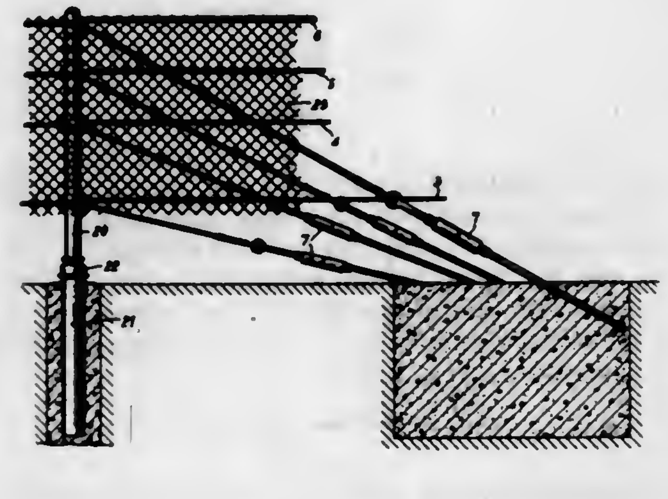
Willem D. Van Zelm, Ruxton, and Martin A. Jackson, Bradshaw, Md.; said Jackson assignor to Van Zelm Associates Inc., Baltimore, Md., a corporation of Maryland; said Van Zelm assignor to Entwistle Manufacturing Corporation, Providence, R.I.
Filed Mar. 1, 1965, Ser. No. 436,089
3 Claims. (Cl. 254—156)



1. A cargo lowering device comprising a metal tape having an end portion formed into a coil, a storage container for the coil of said metal tape mounted on a base member, a metal bender energy absorbing means, and a velocity sensitive energy absorbing device mounted on said base member having a pulley-like member rotatably driven by said tape during extraction of the tape from said coil for resisting acceleration of the pulley-like member, said metal bender energy absorbing means comprising a pair of spaced rod-like members having parallel axes extending transversely of the path of said tape around both of which said tape makes a single pass before passing over said pulley-like member to support a load to be lowered, a load selective control member mounted on said base member, one end of said control member formed with an edge having a cylindrical face formed about an axis extending substantially parallel with the axes of said rod-like members, and means supporting said control member at a position disposing said face in bending engagement with the tape in the space between said rod-like members for progressively and successively deforming increments of the tape beyond the elastic limit of the metal a predetermined amount depending upon the weight to be dropped as the tape is extracted during the drop, to partially absorb the energy of the drop.

3,307,833
SAFETY FENCE FOR ROADS

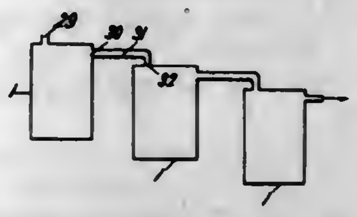
Hugo Müller, Stuttgart, and Helmut Bertram, Soest, Westphalia, Germany, assignors to J. Bertram K.G., Soest, Westphalia, Germany, a firm
Filed July 23, 1964, Ser. No. 384,643
Claims priority, application Germany, Sept. 13, 1963, B 73,507
4 Claims. (Cl. 256—13.1)



1. In a safety fence for delineating at least one boundary of a road and to prevent a colliding automobile from escaping that boundary, the combination comprising a plurality of spaced post members, each of said post members having a socket member, said socket member being firmly embedded and protruding from the ground along the edge of the road; a shearing pin for each of the socket members; said shearing pin having an upper and a lower portion, said lower portion being accepted within the protruding portion of said socket member, said shearing pin having a weakened portion thereon which will fail upon the introduction of a predetermined force; a post member detachably attached to said shearing pin and vertically spaced, along said shearing pin, from said socket member, said upper portion of said shearing pin being accepted within said post member, said shearing pin having a collar portion, said collar portion having a diameter larger than said upper and lower portions, said collar portion overlying the protruding end of said socket member and separating said socket member and said post member; and, yieldable cable means fixedly attached to each of said post members thereby interconnecting said post members, said cable means constraining the impact force of and reorienting the direction of a colliding vehicle through the increase of slack caused by yielding of the cable means which results when a colliding vehicle creates a sufficient force on the cable means to cause the shearing pins to fail and the post members and socket members joined thereby to become disoriented.

3,307,834
METHODS FOR MIXING FINELY-DIVIDED MATERIALS

Dennis Wilde, Ormskirk, England, assignor to Pilkington Brothers Limited, Liverpool, Lancashire, England, a corporation of Great Britain
Filed Mar. 3, 1964, Ser. No. 349,121
Claims priority, application Great Britain, Mar. 5, 1963, 8,787/63
5 Claims. (Cl. 259—66)



1. A method of intimately mixing the components of a glass batch, which components are in a dry particulate form, the mixing being performed in a confined substantially cylindrical space, which is disposed with the axis of the cylinder defining said confined space substantially vertical, by causing all the particles which are to be mixed to circulate within the confined space in a flow in which those particles of the batch which are at any time in the circumferential region of the confined space move upwardly therein and those particles of the batch which are at any time in the central region of the confined space move downwardly therein, the movement in the said flow together with a general rotation of all particles in the said confined space being caused by rotation of a plurality of similar blades mounted on a common shaft having its axis parallel to the axis of the said cylinder defining the confined space, the said plurality of similar blades being in spaced relation in the direction of the axis of the common shaft, whereby the blades shear through the particles comprising the batch at a plurality of levels and act over substantially the whole height of the confined substantially cylindrical space to thrust in one direction over substantially the whole height of the confined space in a region selected from the said circumferential region and the said central region of the confined space, so that rapid movement in both said upwardly and downwardly moving streams takes place and shear forces exist at the boundaries between said central and circumferential regions and a rapid blending of the components of the batch is effected by the exchange and the shearing action between the moving streams in the said flow pattern, while turbulence within the moving streams breaks down agglomerates of particles of individual components.

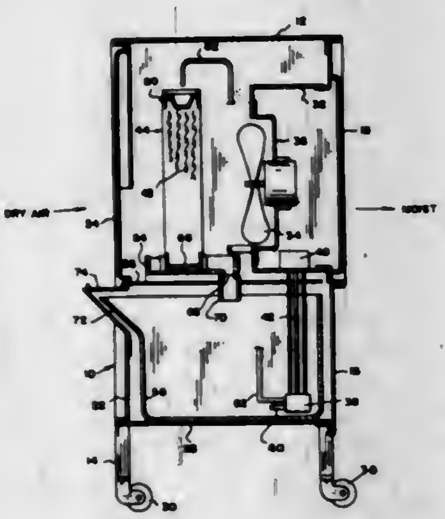
3,307,835
PORTABLE HUMIDIFIER

Joseph Perlman, Detroit, Mich., assignor to Auto-Flo Corporation, Detroit, Mich.
Filed Aug. 2, 1965, Ser. No. 476,257
4 Claims. (Cl. 261—27)

1. A portable cabinet type humidifier comprising:
a cabinet fully enclosing the humidifier except for the upper front and upper rear portions thereof;
front and rear grilles removably mounted in the open front and rear portions, respectively, of said cabinet;
a water tank in the lower portion of said cabinet;
a horizontally disposed drip tray supported by said cabinet directly above said tank;
an evaporator element vertically disposed across the upper rear portion of said cabinet and having its lower edge resting in and supported by said drip tray;
mounting plate means secured to said cabinet, said mounting plate means forming a partition between the upper front portion of said cabinet and the remainder of said cabinet;

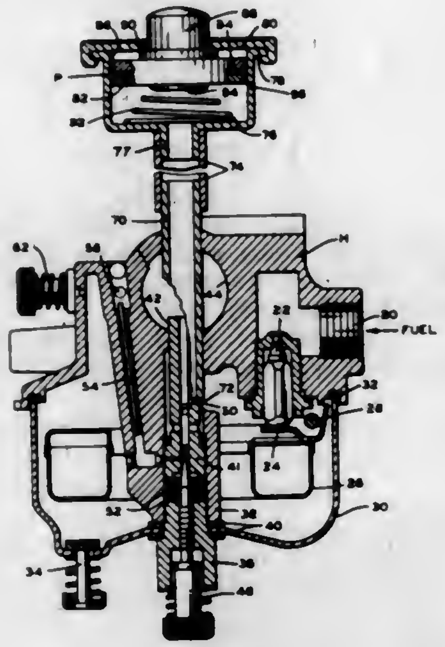
a fan secured to the front face of said mounting plate means, said front and rear grilles and said evaporator element and said fan being horizontally and transversely aligned within said cabinet;
a water pump secured to the front face of said mounting plate means;
fan and water pump controls secured to the front face of said mounting plate means;
conduit means establishing a water flow path from said pump to said evaporator element;
water distributing means unitary with said evaporator element for distributing water from said conduit means uniformly over the upper length of said evaporator element;
and means providing access to said water tank from the exterior of said cabinet, whereby said tank may be filled with water without the necessity of disassembling any portion of said cabinet.

4. A cabinet type portable type humidifier comprising:
a cabinet fully enclosing the humidifier except for the upper front and upper rear portions thereof;
front and rear grilles removably mounted in the open front and rear portions, respectively, of said cabinet;
a water tank in the lower portion of said cabinet;
guide means removably supporting a horizontally disposed drip tray for rearward sliding movement in said cabinet directly above said tank;
an evaporator element separate and independent of the tray and vertically disposed across the upper rear portion of said cabinet and having its lower edge resting in and removably supported on and by said removable drip tray;
said evaporator element and said drip tray being readily removable for servicing of both of them by first removing said rear grille, then sliding said drip tray and said evaporator element then mounted thereon out through the open upper rear portion of said cabinet, and finally removing the element from the tray to separate and expose both of them for servicing; with the element and tray being returnable as a unit to their place in the cabinet above the tank after being serviced, with the tray carrying the element during removal and return of both of them.

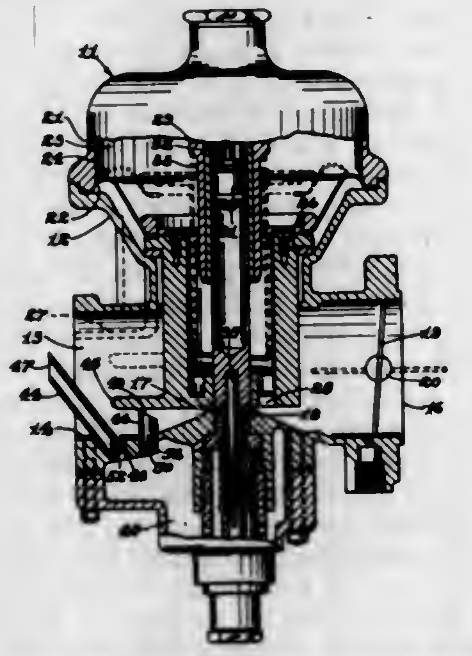


3,307,836
MANUAL PRIMER MECHANISM
Donald N. Arndt, Charles H. Tuckey and J. D. Tuckey, Cass City, Mich., assignors to Walbro Corporation, Cass City, Mich., a corporation of Michigan
Filed Jan. 15, 1965, Ser. No. 425,715
1 Claim. (Cl. 261—34)

In a carburetor for furnishing fuel to the intake manifold of an internal combustion engine and of the type having a fuel supply chamber connected to a venturi passage, an improvement for introducing supplemental fuel into said venturi passage comprising:
(a) a rigid tube mounted in said carburetor and projecting upwardly therefrom, said tube having a connection to the top of a fuel supply chamber above the normal fuel level in said chamber,
(b) a cup mounted on and supported by said tube having a depending hollow projection pneumatically associated with the interior of said tube, said cup having a lipped upper edge,
(c) an apertured cap for said cup having a peripheral flange to snap over the lipped edge of said cup, and
(d) a piston in said cup retained therein by said cap and having a button projection extending through said cap, said piston being biased outwardly wherein it may be reciprocated to create above atmospheric pressure in said tube.

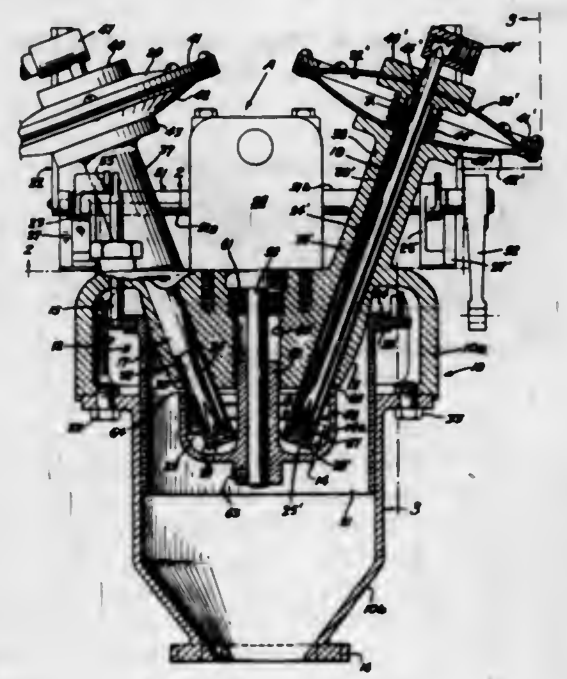


3,307,837
ENRICHMENT DEVICE FOR AIR VALVE CARBURETOR
Albert H. Winkler, Elmira, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 13, 1965, Ser. No. 486,983
10 Claims. (Cl. 261—44)



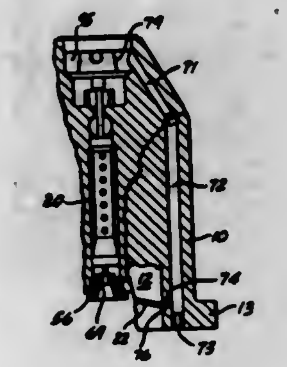
1. In an air valve carburetor the combination of:
a body having a fuel-air induction passage;
a fuel orifice opening in the passage;
air valve means mounted for reciprocal movement in the passage;
fuel metering means connected to the air valve means, said fuel metering means adapted to cooperate with said orifice to control orifice exposure to pressure in the passage;
a fuel chamber means for supplying fuel to said orifice;
a throttle valve means in the passage for controlling the introduction of the fuel-air mixture to the engine;
an impact vent means for communicating said fuel chamber means to substantially atmospheric pressure;
a suction vent means for communicating said fuel chamber to a reduced pressure; and
control means for selectively opening and closing said impact vent means and said suction vent means to regulate the fuel-air mixture supplied to the engine.

3,307,838
CARBURETOR FOR INTERNAL COMBUSTION ENGINE
Harold B. Niles, 1443 Callecita St., San Jose, Calif. 95125
Filed Aug. 21, 1964, Ser. No. 391,242
13 Claims. (Cl. 261—50)



1. A carburetor for an internal combustion engine comprising:
a housing having an air inlet and an outlet formed for connection to an engine intake manifold for drawing a stream of intake air through the housing,
an annular chamber in the housing openly communicating with the air inlet,
an inverted, frusto-conical member mounted with its upper end coaxially within the annular chamber, and with its truncated end directed toward the housing outlet,
a rotary fuel cup having a peripheral wall terminating in a rim surrounding the open end of the fuel cup, the fuel cup being mounted with the rim thereof spaced slightly from the truncated end of the frusto-conical member, the cup being rotatable coaxially of the frusto-conical member,
a fuel nozzle mounted to discharge metered quantities of fuel into the fuel cup,
drive means for rapidly spinning the fuel cup about its axis to discharge, in vapor form, from the rim of the cup, by centrifugal force, liquid fuel fed into the fuel cup by the nozzle, for entrainment of such fuel vapor in a stream of intake air flowing from the air inlet through the annular chamber, past the frusto-conical member and the fuel cup toward the housing outlet, and
throttle means mounted to control the flow of intake air through the housing.

3,307,839
CARBURETOR HAVING A VACUUM REGULATED METERING ROD
Juris Berzlapa, St. Louis, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Dec. 1, 1965, Ser. No. 510,811
6 Claims. (Cl. 261—60)



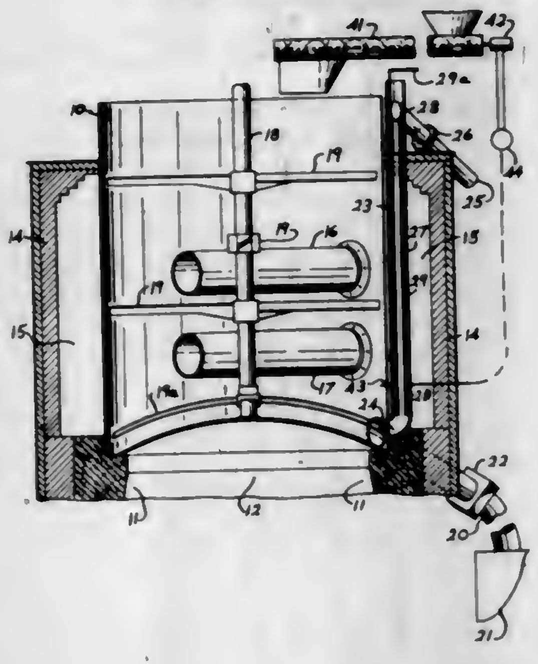
1. In a carburetor for an internal combustion engine having an intake manifold including; a body, a mixture conduit formed in the body, a throttle valve including a throttle plate carried on a throttle shaft, the latter being journalled in the mixture conduit and being operable to regulate the passage of air and fuel mixture therethrough, a fuel bowl formed in said body holding a supply of fuel, a venturi in said body including a nozzle opening therein, a duct carrying a fuel stream from said fuel bowl to said nozzle for injecting fuel into said mixture conduit, a metering orifice in said fuel duct adapted to regulate the flow rate of said fuel stream, an air motor associated with said carburetor and having a first passage means connected to a source of varying vacuum in said engine, said air motor having a displaceable diaphragm at one wall thereof moveable between inner and outer positions in response to variations in said engine vacuum, said metering rod having opposed ends, one of said ends being disposed in said metering orifice, the other rod end engaging said diaphragm to reciprocate said rod between said inner and outer positions in said orifice in response to a vacuum change in said air motor, the improvement therein of; means forming a second passage in communication with said air motor and having a port opening into said mixture conduit, said throttle plate being moveable in said mixture conduit between open and closed positions to regulate the speed of said engine, and said throttle when positioned in the closed position in the mixture conduit providing a sufficient passage for air fuel mixture to maintain an engine at idle speed and said throttle plate when in said closed position having an edge disposed immediately below said port opening into said mixture conduit, to prevent air flow through the latter, and when said throttle plate is displaced slightly from said closed position, said port will be positioned upstream of said throttle plate edge to permit a metered flow of air through said second passage and into said first passage, whereby the degree of vacuum imposed on said diaphragm for urging said metering rod into the inner position is instantaneously lessened thus permitting the air motor to instantaneously actuate the metering rod a predetermined

distance toward the outer position to instantaneously form a greater fuel passage with the metering orifice to provide an increased fuel flow to said mixture conduit.

3,307,840

CONTINUOUS CALCINATION OF GYPSUM

Joseph E. Conroy, Jr., Media, Pa., assignor, by mesne assignments, to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia
Filed Jan. 14, 1964, Ser. No. 337,559
5 Claims. (Cl. 263—21)



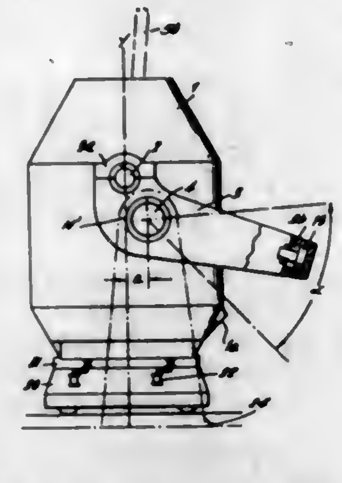
1. Apparatus for continuously calcining gypsum and the like, comprising a reactor kettle, means for feeding pulverized gypsum into the kettle, a source of heat for calcining the gypsum within the kettle, a flue system including a wall surrounding the kettle and spaced therefrom to form an annular heating chamber for the circulation of heating gases around the outside of the kettle walls, the gases in the chamber being at a temperature substantially higher than that of the gypsum in the kettle, control means for maintaining the gypsum within the kettle at calcining temperature, a standpipe having an inlet communicating with the kettle near the bottom thereof and having a discharge passage extending vertically upwardly parallel to the kettle side walls to a discharge point near the top of the kettle, an outwardly extending spout connected to said standpipe and communicating with said discharge passage at said discharge point, means for heating the discharge passage including a first standpipe wall in heat exchange contact with the heating gases in the heating chamber throughout at least the major portion of the height of the discharge passage and a second standpipe wall out of heat exchange contact with said heating gases to provide a temperature well below that of the heating gases, said second standpipe wall being in heat exchange contact with the gypsum in the discharge passage throughout the height of the discharge passage.

3,307,841

TILTING CONVERTER WITH A BOW-SHAPED CARRIER FRAME AND AN EXCHANGEABLE CONVERTER VESSEL

Wolfgang Lixenfeld, Zweibrucker Str. 15,
Cologne-Nippes, Germany
Filed Nov. 19, 1963, Ser. No. 324,620
Claims priority, application Germany, Nov. 23, 1962,
D 40,339
10 Claims. (Cl. 266—36)

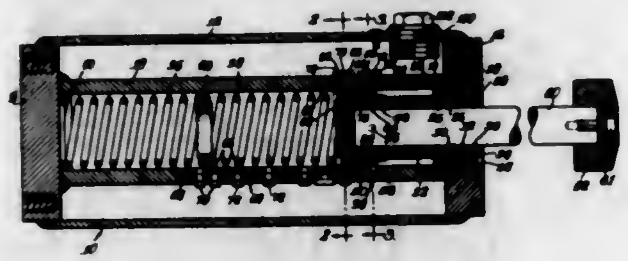
1. A tilting converter comprising a support stand, tipping pins rotatably mounted in said stand, a bow-shaped carrier frame fixed to said tipping pins, an exchangeable tilting vessel having trunnions fixed thereto, said trunnions being journalled in said carrier frame, said trunnions being offset from said tipping pins, and means on said tipping pins for rotating said tipping pins and hence said carrier frame to raise and lower said tilting vessel.



3,307,842

SHOCK ABSORBER

John T. Ellis, Jr., Chicago, Ill., assignor to Ellis Fluid Dynamics Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 1, 1964, Ser. No. 415,110
5 Claims. (Cl. 267—1)

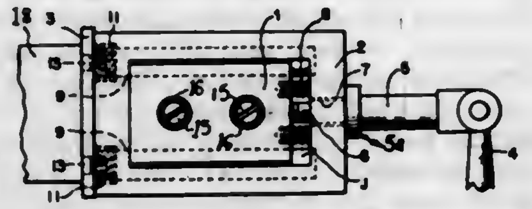


1. A hydraulic shock absorber comprising a housing adapted to be substantially filled with hydraulic fluid, a horizontal pressure tube within said housing, a piston assembly axially movable within said pressure tube and dividing the latter into a high pressure chamber and a low pressure chamber, said piston assembly having a normal rest position, a piston rod connected to said piston assembly and extending outwardly of said pressure tube and said housing for receiving impact forces, said pressure tube having bore means in the wall thereof through which hydraulic fluid is metered from said high pressure chamber when impact forces are imposed on said piston rod, said pressure tube having first and second radial ports in the upper side of the wall thereof, said first port communicating with said high pressure chamber when said piston assembly is substantially in its normal rest position for permitting trapped air to bleed therefrom, said piston assembly interrupting communication between said first port and said high pressure chamber as said piston assembly moves away from its normal rest position in response to impact forces imposed on said piston rod whereby to permit normal metering operation of said bore means, said second port communicating with said low pressure chamber when said piston assembly is axially spaced from its normal rest position for permitting hydraulic fluid to flow outwardly of said low pressure chamber as said piston assembly moves toward its normal rest position upon the removal of impact forces from said piston rod, said piston assembly interrupting communications between said second port and said low pressure chamber as said piston assembly closely approaches its normal rest position for entrapping hydraulic fluid within said low pressure chamber whereby to cushion said piston assembly, and baffle means overlying said first and second ports for deflecting fluid emitted through said ports.

3,307,843

INDEPENDENT MOBILE JAW AND METHOD OF MANUFACTURING SAME

Edouard M. Torossian, Zurich, Switzerland, assignor to Wilton Corporation, a corporation of Illinois
Filed Apr. 13, 1962, Ser. No. 187,331
Claims priority, application Switzerland, Apr. 19, 1961,
4,480/61
8 Claims. (Cl. 269—157)

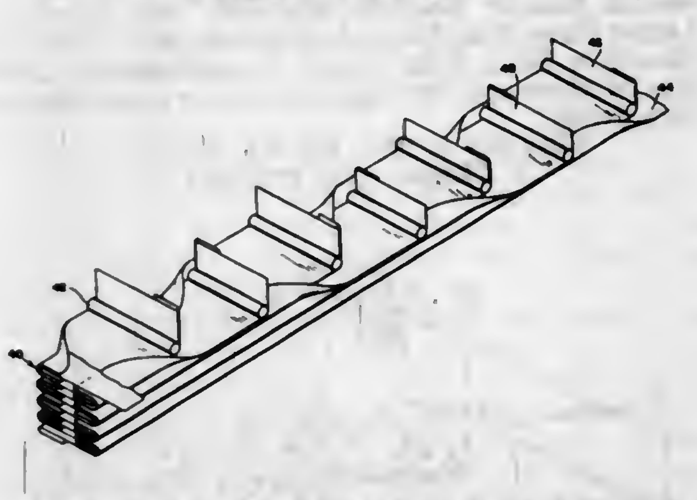


1. A mobile independent jaw adapted to be fixed to a machine tool table or the like, the said jaw comprising a frame, said frame having an elongated opening therein within its outer portions,
- a jaw face element supported on said frame,
- an apertured base slidable within the opening of said frame,
- said frame being capable of limited displacement relatively to said base, said base and said frame having at least one slideway extending along the adjacent portions of said frame and of said base, and a guide bar mounted in said slideway.

3,307,844

INTERFOLDING FACIAL TISSUES

Harold L. Stultz, 37 Hillside Ave.,
Short Hills, N.J. 07078
Filed May 21, 1964, Ser. No. 369,066
5 Claims. (Cl. 270—40)

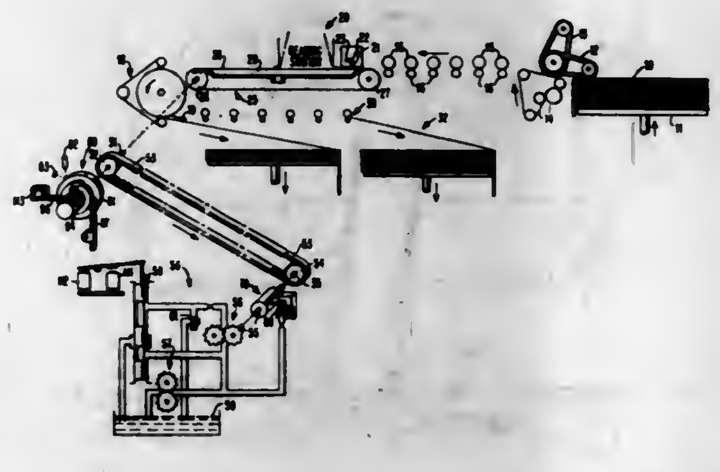


1. The method of forming stacks of interfolded disposable paper tissues of the type identified as facial tissues comprising, the steps of, unwinding a plurality of webs of the paper tissue having the width desired as one dimension of the tissues, said webs corresponding in number to the number of tissues desired in the stacks and the webs being identified below in a numerical series starting with the web from which the end tissue in the stack is formed, folding the first web toward one of its faces away from its other face to form a first side fold portion which is substantially one-quarter of the width of the web and which is positioned against the adjacent portion of said one face, folding said second web toward one of its faces and away from the other of its faces to form a first side fold portion which is substantially one-quarter of the width of the web and which is positioned against said one face of the second web, moving said webs longitudinally thereof along paths which bring them together with their center lines being substantially together and with said first side fold portions being opposite each other with respect to said center lines, and with said first side fold portion and said one face of the second web being positioned against said other face of the first web, whereby the unfolded side edge portion of each web extends away from the center lines of the webs beyond the folded edge of the other web, folding the third web in the above-described manner of folding said first web to produce a first side fold portion of the third web corresponding to said first side fold portion of the first web and positioned similarly with respect to the same side edge and face of the third web, moving the third web longitudinally thereof along a path which brings it against the second web with its center line in alignment with the center lines of the first and second webs and with said first side fold portion of the third web being in alignment with said first side edge portion of the first web and positioned against said other side of the second web, folding said unfolded side portion of the second web around said first side fold portion of the third web and against the respective other side of the third web, continuing the folding and assemblying of successive webs in the numerical series with each even-numbered web being interfolded with the next adjacent odd-numbered webs in the manner identical with the second web and with the odd-numbered webs being interfolded with the next adjacent even numbered webs in the manner identical with the first and third webs, thereby to produce a continuous rope of interfolded webs, and cutting the rope into successive lengths to produce the desired stacks.

3,307,845

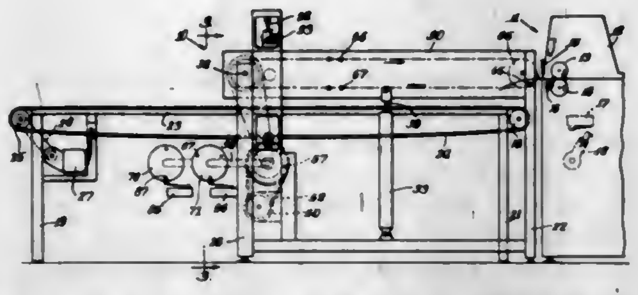
DOCUMENT SYNCHRONIZING AND INDEXING CONTROL APPARATUS

Theodore H. Anderson, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 12, 1964, Ser. No. 403,230
14 Claims. (Cl. 271—57)



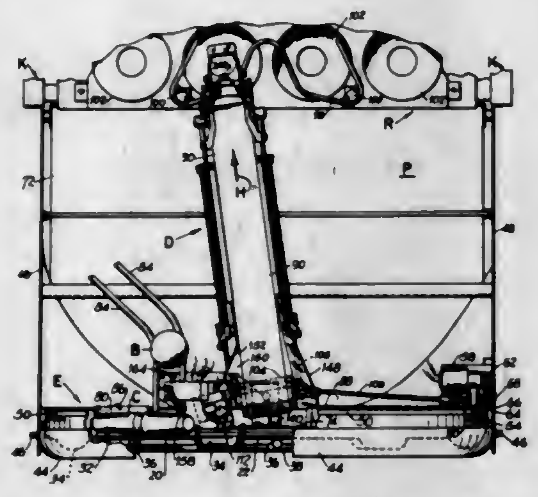
1. Control apparatus for document transports comprising:
- detecting means for detecting the leading edge of a document prior to entry thereof into a work station;
- stopping means responsive to said detecting means for stopping said document with its leading edge in a predetermined position within said work station;
- emitter means responsive to said detecting means to couple with said transport and thereafter turn therewith to generate a signal for activating said stopping means; and
- means for transmitting signals from said emitter means to said stopping means.

3,307,846
STACKER FOR SHEETS OR BAGS
Bengt A. Arvidson, Villa Park, Ill., assignor to Corley-Miller, Inc., a corporation of Ohio
Filed Dec. 28, 1964, Ser. No. 421,304
2 Claims. (Cl. 271—68)



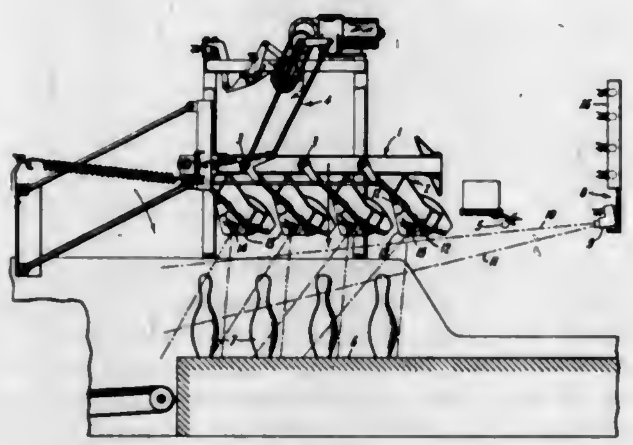
1. A bag stacking apparatus comprising, a pair of endless members movable intermittently along opposite sides of a support for stacked bags, a plurality of bag supports mounted on said endless members and extending therebetween, and a control system for causing the movement of the endless members a sufficient distance to advance a bag to stacked position and to leave a bag support in position to receive the next bag including a first control means usable with a first number of bag supports and a second control means usable with an increased number of bag supports with each control means causing a movement of the endless members equal to the total length of the endless members divided by the number of bag supports to be successively operative, a circuit including both of said control means, and means in said circuit for making one or the other of said control means operative.

3,307,847
CANDLEPIN ELEVATOR, DISTRIBUTOR AND CONTROL SYSTEM
Anthony Kostopoulos, Stamford, Conn., and Paul V. Colombo, Mount Vernon, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Apr. 15, 1964, Ser. No. 366,214
2 Claims. (Cl. 273—43)



1. In a bowling pin spotting machine, the combination of
a stationary pin receiving and guiding table mounted above the alley bed, said table comprising
a plurality of upwardly flaring pin guiding funnels spaced apart horizontally in triangular fashion such that each of said funnels is aligned at least generally above the playing position for a different one of the bowling pins to be spotted;
a vertically reciprocatable pin spotting table disposed beneath said pin receiving and guiding table and equipped with a plurality of pin cups each aligned beneath a different one of said funnels;
a continuously driven bowling pin elevator spaced rearwardly from said tables, said elevator comprising
endless conveyor means arranged to receive pins from the pit of the bowling alley and carry the pins successively to an elevated pin discharge position;
a pin distributor comprising
a continuously driven extensible endless conveyor having a pin receiving portion disposed adjacent said elevated pin discharge position,
means mounting said conveyor for pivotal movement in a generally horizontal path of travel about a generally upright axis located at said pin receiving portion,
a stationary guide track mounted above said pin receiving and guiding table and lying in a plane transverse to said generally upright axis, said extensible conveyor having a delivery end adjacent said guide track, and
indexing means connecting the delivery end of said extensible conveyor to said guide track, said guide track and indexing means being operative to successively position the delivery end of said extensible conveyor in operative locations for delivery of pins to said funnels;
pin deflecting means mounted adjacent said elevated pin discharge position and actuatable to a pin deflecting position in which said deflecting means deflects each pin onto said pin receiving portion of said extensible conveyor as the pins are presented at said elevated pin discharge position by said elevator;
pin counting means operatively arranged to count the pins as they are delivered by said elevator; and
control means responsive to said pin counting means for operating said pin deflecting means to deflect onto said pin receiving portion of said extensible conveyor only a predetermined number of pins equal to the number of said funnels.

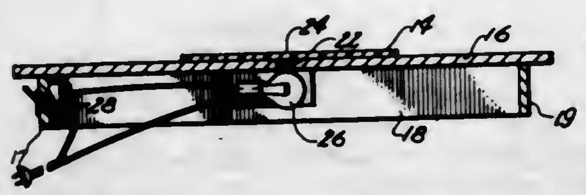
3,307,848
BOWLING PIN DETECTING APPARATUS
Frederick Sumner Brackett, Rockville, and Joseph C. Leifer, Oxon Hill, Md., and Drummond L. Scott and Ronald N. Stock, Falls Church, Va., assignors to American Machine and Foundry Company, a corporation of New Jersey
Filed Oct. 9, 1963, Ser. No. 315,015
8 Claims. (Cl. 273—54)



8. In a bowling alley installation having a pin deck provided with a plurality of predetermined pin positions, the combination of:
a plurality of transducers spaced from said pin positions each operatively arranged to provide an electrical output in response to presence of a pin at a different one of said pin positions;

a plurality of electrically operated signalling devices equal in number to said transducers for indicating pinfall results after the rolling of a ball;
a supply circuit;
a plurality of electrically operated switching devices each arranged to connect a different one of said electrically operated signalling devices to said supply circuit and each comprising holding means for maintaining such connection once the same has been made;
sequence switching means arranged to sequentially connect said switching devices each to receive the output of a different one of said transducers;
a starting circuit connected to said sequence switching means to initiate operation thereof;
control means connected to control said starting circuit;
said control means being responsive to occurrence of a predetermined playing event; and
means for simultaneously deactivating said electrically operated devices, said deactivating means including an electrically operated deactivating switch and a time delay device, said time delay device being connected to be placed in operation in response to completion of said starting circuit and to operate said deactivating switch when a predetermined time has elapsed after the placing of said time delay device in operation.

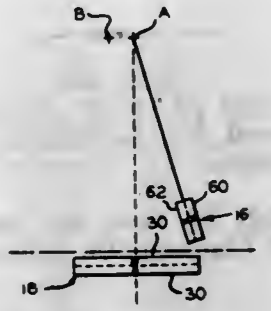
3,307,849
MESSAGE REVEALING APPARATUS
Paul R. Foght, Jr., Kenosha, Wis., assignor to Clark Publishing Company, Evanston, Ill., a corporation of Illinois
Filed June 29, 1964, Ser. No. 378,494
7 Claims. (Cl. 273—161)



1. An amusement device for revealing mediumistic messages comprising in combination a stationary first member including a horizontally disposed panel element having a substantially planar top surface and having an interiorly disposed portion of restricted size that is substantially more transmissive of visible light than the surrounding portions of said panel element, a light source positioned below said panel element whereby light from said source may pass upwardly through the interiorly disposed light-transmissive portion of said panel element, and a second member freely movable at random over the top surface of said panel element, said second member having light-transmissive properties and having a plurality of discrete indicia thereon, whereby when said second member is positioned over the light-transmissive interiorly disposed portion of said first member panel element an indicia-bearing portion of said second member will be visibly illuminated and thereby distinguished from the other indicia-bearing portions of said second member to reveal at least a portion of the message being sought.

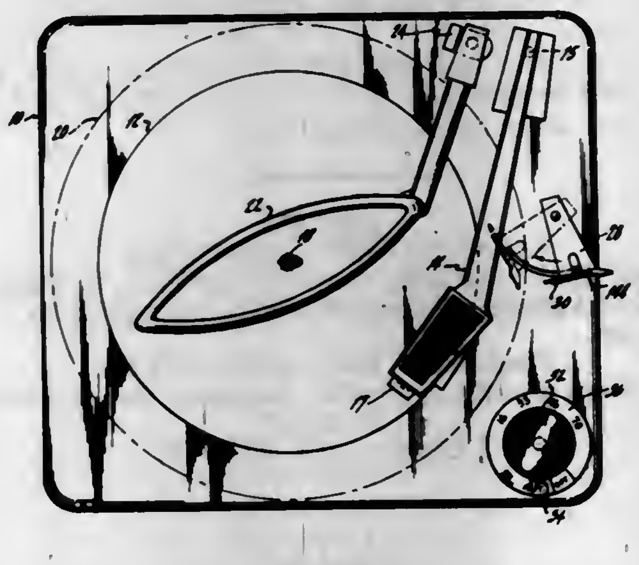
3,307,850
MAGNETICALLY INFLUENCED QUESTION AND ANSWER GAME
Walter Nathaniel Thomas, 8634 S. Indiana, Chicago, Ill. 60619
Filed July 6, 1964, Ser. No. 380,252
6 Claims. (Cl. 273—161)

1. A magnetic question and answer game comprising:
a gameboard,
a disc magnet carried by the gameboard and disposed in a plane that parallels said gameboard,
said disc magnet being magnetized to provide its faces with opposite polarity,
answer indicating indicia formed on said gameboard about the axis of said disc magnet as a center,
and a pointer magnet adapted to be suspended over said disc magnet,



said pointer magnet comprising:
a strip of magnetic material defining oppositely facing side surfaces,
said strip being magnetized to provide its said faces with opposite polarity,
and means for suspending said pointer magnet over and in substantial alignment with said disc magnet with said pointer magnet faces disposed crosswise of said disc magnet faces.

3,307,851
AUTOMATIC RECORD CHANGER
John A. Tourtellot, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 20, 1963, Ser. No. 303,257
4 Claims. (Cl. 274—15)

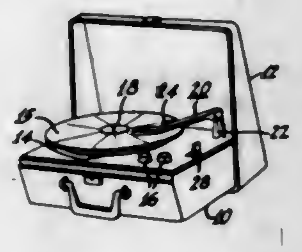


1. In an automatic record changer of the type including a rotatable turntable, the combination of:
a tone arm,
a tone arm shaft mounted adjacent the turntable for rotation about its axis and for pivoting movement in a vertical plane,
means for mounting said tone arm near one end thereof on one end of said tone arm shaft so that the free end of said tone arm is movable in a path to scan the groove of a record supported on said turntable,
means coupled to said tone arm shaft and operative during a record changing cycle to cause said tone arm to pivot in said vertical plane in a direction to raise the free end of said tone arm and to cause said tone arm to move by force of gravity in an outward direction toward one side of said rotatable turntable, and

a tone arm landing position ramp positioned adjacent said turntable to stop the movement of said tone arm, said tone arm landing position ramp including a surface for guiding said tone arm toward the starting position of a record deposited on said turntable, said means coupled to said tone arm shaft also being operative to cause said tone arm to ride upwardly on said ramp prior to it being guided toward the starting position of a record deposited on said turntable.

3,307,852
RECORD PLAYER APPARATUS

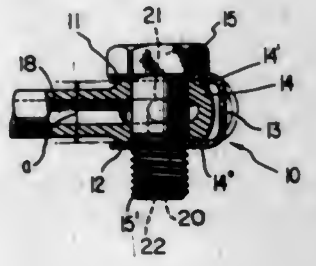
Richard S. Bagwell, Jr., Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 27, 1964, Ser. No. 385,106
8 Claims. (Cl. 274—23)



1. In a phonograph record player:
a unitary support post including a generally spherically shaped portion, and
an elongated tone arm having a mounting end including a pair of spaced generally parallel side walls being formed with aligned apertures therein, said tone arm being positioned over said support post so that the spherically shaped portion of said support post and the aligned apertures in said spaced side walls define a ball and socket joint permitting rotational movement of said tone arm, a guideway formed in said tone arm for capturing a portion of said support post to limit the rotation of said tone arm about its longitudinal axis.

3,307,853
SEALING RING ASSEMBLY

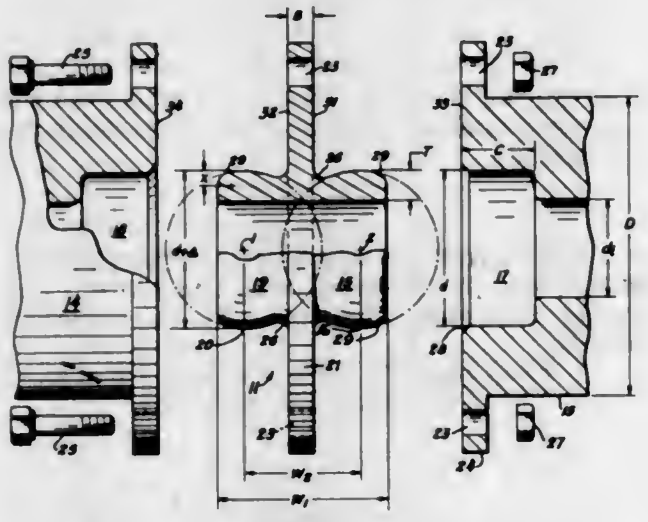
Franz Hauk, Fellbach, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 3, 1963, Ser. No. 327,610
Claims priority, application Germany, Dec. 8, 1962, D 40,467
5 Claims. (Cl. 277—58)



1. Sealing means for fluid receiving duct means comprising:
a first duct member including ring structure,
a second duct member disposed with its longitudinal axis transverse to the longitudinal axis of said first duct member,
a third duct member disposed between and communicating with said first and second duct members,
said ring structure surrounding said third duct member and comprising spaced sealing surfaces,
said sealing means further comprising sealing rings engaging said spaced sealing surfaces,
connecting means between said sealing rings, said connecting means comprising a connecting piece joining said sealing rings and forming therewith a bow-type sealing structure adapted to prevent the escape of fluid,
said third duct member comprising a hollow screw member adapted for operative engagement with said second duct member thereby to bring pressure of said sealing rings on said spaced sealing surfaces.

3,307,854
HIGH PRESSURE CLOSURE

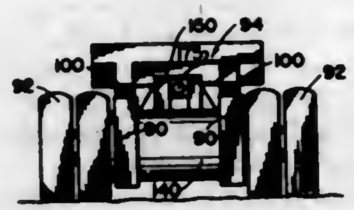
Paul E. Hatfield, Beaver, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed June 11, 1964, Ser. No. 374,454
1 Claim. (Cl. 277—236)



A high pressure self-sealing closure comprising:
(a) a pair of substantially cylindrical sockets located in the ends of two steel members to be joined by said closure; and
(b) a steel closure ring;
  (1) said ring having a pair of spherical sealing surfaces comprised of two substantially spherical sealing segments which are integrally connected to each side of a coaxial reinforcing ring by a pair of curved fillets;
    (a) said segments and said reinforcing ring having a coaxial substantially cylindrical bore;
    (b) said segments having a diameter at the crests of said sealing surfaces which is slightly larger than the diameter of said sockets and said segments having a Brinell hardness number of 20–40 points less than said sockets such that when said segments are assembled in said sockets an interference seal is created between the surfaces of said sockets and the sealing surfaces of said closure ring; and
    (c) the thickness of said closure ring at the crests of said sealing surfaces being between .1 to .2 times the width of said closure ring, the width of said reinforcing ring being between .1 to .3 times the width of said closure ring and the distance between the crests of said sealing surfaces being between .5 to .75 times the width of said closure ring.

3,307,855
LATERAL SUSPENSION MOUNTING

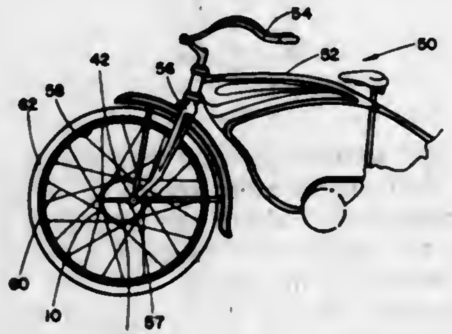
Henry C. Doennecke, Tulsa, Okla., assignor to Unit Rig & Equipment Company, Tulsa, Okla., a corporation of Delaware
Continuation of application Ser. No. 471,098, July 12, 1965, which is a division of application Ser. No. 338,459, Jan. 17, 1964. This application May 16, 1966, Ser. No. 558,171
3 Claims. (Cl. 280—124)



1. A suspension mounting device for a wheeled vehicle having front and rear wheels and comprising a support housing rigidly secured to the rear wheels, a pair of oppositely disposed chambers provided in the support housing, said chambers having the facing sides thereof open, a plurality of resilient pad members disposed in each of said chambers, block means disposed above the rear wheel axis and interposed between the open sides of said chambers, means connecting said block means with the vehicle, compression plate means disposed adjacent the outer-most resilient pad member disposed in each chamber and bearing against said block means, said compression plate means cooperating with said block means for alternate compression and expansion of the resilient pad members upon relative lateral movement between the rear wheels and the vehicle for absorbing substantially all of said lateral movement.

3,307,856
WHEEL SUSPENSION DEVICE

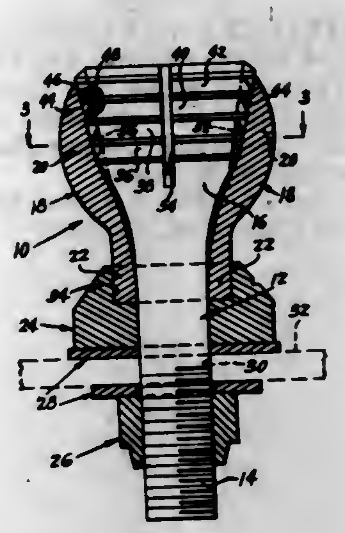
Frank T. Christian, Elmira, Frederick A. Seelig, New Hartford, and Charles B. Gibbons, Utica, N.Y., assignors to The Bendix Corporation, Elmira, N.Y., a corporation of Delaware
Filed Feb. 4, 1965, Ser. No. 430,396
9 Claims. (Cl. 280—286)



1. In a suspension system for a wheel comprising:
an inner hub means;
an outer hub means journalled thereon;
an axle disposed within said inner hub means;
a first flat spring means connected on one end to said inner hub means;
a second flat spring means connected on one end to said inner hub means and spaced longitudinally from said first spring means and crossed with said first spring means; and
connecting means for connecting said axle to said crossed first and second spring means.

3,307,857
BALL HITCH CONSTRUCTION

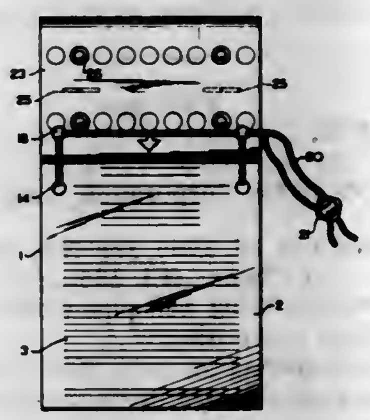
Jesse E. Robertson, Central National Bank, % Clyde Vinson, San Angelo, Tex. 76901
Substituted for abandoned application Ser. No. 368,889, May 20, 1964. This application June 14, 1966, Ser. No. 562,058
6 Claims. (Cl. 280—511)



1. In a ball hitch construction having a male hitch member carried by a first hitch element and a female hitch member carried by a second element and engageable over said male hitch member removably to secure said first and second elements to each other, said male hitch member including a stem element having a shank portion at one end and a frusto-conical portion at its opposite end, said frusto-conical portion tapering to an enlarged end remote from said shank portion, means to secure said shank portion of said stem element to said first element, a plurality of segmental elements having bulbous portions together defining a ball, and means to secure said segmental elements to said stem element at a selected position on said frusto-conical portion whereby the effective size of said ball may be varied.

3,307,858
BLOCK OF LOTTERY TICKETS

Stig Sanden, Eslov, Sweden, assignor to Stig Sanden Aktiebolag, Eslov, Sweden, a body corporate of Sweden
Filed Sept. 22, 1965, Ser. No. 489,257
9 Claims. (Cl. 283—8)



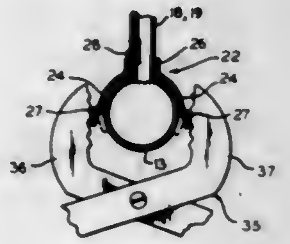
1. A block of lottery tickets comprising: a plurality of slips arranged in a pile, each slip consisting of a main part; at least one separate section connected to the main part and partially separated from the main part by a slit; a lottery number in the main part adjacent said slit; said section being connected with the main part by a tear-

ing line; sealing means passing through said slips and securing all the slips together, a sheet metal member covering one end of all the slips, including the main part bearing the lottery number and said section; and the main part with the lottery number being detachable without difficulty from within said covering by tearing at said tearing line.

3,307,859
SADDLE FITTING AND CONNECTION FOR BRANCHING PIPING SYSTEMS

Edwin Bennett Tidd, Park Ridge, and Edgar Milton Peterson, Clarendon Hills, Ill., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Sept. 28, 1964, Ser. No. 399,744
1 Claim. (Cl. 285—39)



A saddle fitting for making a connection with a main and a branching pipe, said saddle fitting having a central portion with an internal radius and a contour corresponding to the O.D. of said main, said fitting and said pipe being made of a metal capable of being soldered, a ferrule integral therewith and extending therefrom and aligned with an opening in said main when said saddle fitting is placed on said main, a pair of tabs integral with said central portion and extending therefrom in divergent directions so that said central portion can be placed on said main over said opening therein with said ferrule in register with said opening, said tabs and said central portion combined being of a length to encompass more than half the outside circumference of said main, each of said tabs being deformed about said main so as closely to embrace the same, each of said tabs being provided with small protuberances extending outwardly from the surface of said main, and releasable means engageable with each of said tabs during assembly of said saddle on said main to exert a substantially constant pressure radially inwardly and in a direction opposite from said ferrule to cause said tabs to deform about said main and to retain said tabs so deformed to thereby provide capillary flow while said branch is soldered to said main.

3,307,860
JOINT FOR LINER-CARRYING WELL PIPE

Floyd E. Blount and Alvin V. Metler, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed Jan. 15, 1965, Ser. No. 425,760
1 Claim. (Cl. 285—55)

A joint interconnecting well pipe carrying a thin-walled liner of titanium comprising:

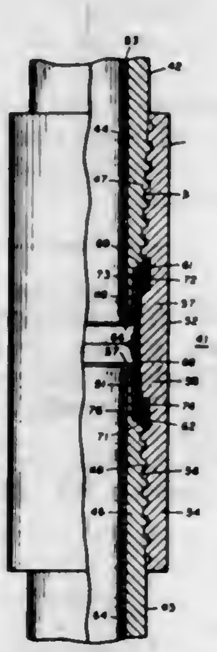
(a) well pipe having an axial flow passage for carrying fluids at an elevated pressure and integrally carrying at its ends tubular pin and box members, said pin member of one well pipe received axially forwardly into said box member carried on another well pipe, said pin and box members having interfitting threads for mechanically interconnecting adjacent well pipe carrying said members and means through which sealing pressure is exerted between said pin and box members,

(b) a tapered reduced diameter portion projecting from said pin member at the beginning of its threads,

(c) said box member provided a tapered increased diameter portion at the inner ends of its threads and extending rearwardly therefrom, and said tapered portions of said pin and box members residing opposite one another at least in part when said members are interfitted,

(d) said box member adjacent the inner ends of its threads and in said increased diameter portion having a groove of a depth at least the height of said threads and a width at least equal to the distance between adjacent threads next to said groove, said groove residing opposite said tapered reduced diameter portion projecting from said pin member when said pin and box members are interfitted,

(e) a thin-walled liner of titanium disposed within each well pipe and extending between said pin and box members carried thereon, said liner outwardly distended into a sidewall engaging relationship against the inner surfaces of said well pipe and said pin and box members so that upon fluids, at elevated pressure, entering said flow passage said liner undergoes insufficient radial expansion that longitudinal contraction causes rupturing of said liner, said liner in said box member conforming in sidewall engaging relationship to the interior sidewall and bottom surfaces of said groove, and said liner extending in said box member outwardly to the outer end of said groove adjacent said threads, and said liner in said pin member returning in sidewall engaging relationship about the terminus of said pin member to enclose said tapered reduced diameter portion projecting therefrom,



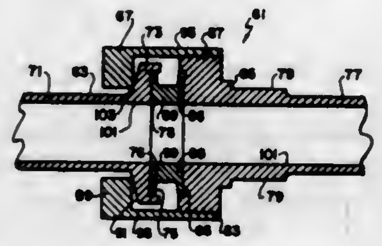
(f) said tapered reduced and increased diameter portions spaced apart a distance sufficient that said thin-walled liner carried on said pin and box members does not engage with an injurious force when said members are interfitted, and

(g) a deformable sealing ring of polymeric plastic material substantially filling said groove and having a thickness sufficient to engage the exterior sidewall surface of said liner returned about said tapered reduced diameter portion of said pin member and to engage the interior sidewall and bottom surfaces of said groove in said box member, and said ring being compressed axially in said groove by said threads of said pin member when said pin and box members are interfitted and by such engagement producing a seal against fluid leakage between said sealing ring and the engaged sidewall surfaces of said liner within each said pin and box member, and when said pin and box members are interfitted, said ring providing a mechanical lock to anchor said liner about the terminus of said pin member and within said groove in said box member that elongation of said well pipe to its yield point will not pull said liner from its operative position in said pin and box members.

3,307,861
COUPLING WITH A DEFORMABLE SEAL

James W. Adam, Bernard Goobich, and Thomas M. Trainer, all of Columbus, Ohio, assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

Filed Mar. 2, 1964, Ser. No. 348,737
3 Claims. (Cl. 285—334.2)



1. A coupling for connecting the adjacent open ends of a duct system, comprising:

(a) a first coupling end and a second coupling end each connectable to an open end of the duct system;

(b) a primary cylindrical sealing surface on each said first and second coupling ends with the central axis of said primary cylindrical sealing surface substantially coinciding with the axis of said duct system, a secondary sealing surface in the form of a truncated cone, having its central axis substantially coinciding with the central axis of said duct system, connected to each said primary cylindrical sealing surface, said primary cylindrical sealing surface and said secondary sealing surface partially facing one another and forming an acute angle with one another, and an annular surface adjacent to each said secondary sealing surface, said annular surface lying substantially in a plane perpendicular to the central axis of said duct system;

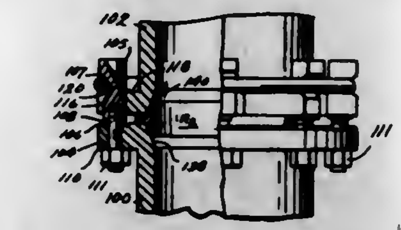
(c) threaded means connected to said first and second coupling ends whereby rotation of said threaded means causes movement of said first and second coupling ends toward one another;

(d) a seal positioned between said first and second coupling ends, said seal including an annular-shaped tang and two flanges extending from the sides of said annular-shaped tang, the free edge of each said two flanges substantially mating with a primary cylindrical sealing surface and the outer side surface of each said two flanges substantially mating with a secondary sealing surface, whereby upon movement of said first and second coupling ends toward one another said two flanges first contact said secondary sealing surfaces, said secondary sealing surfaces moving said flanges until the free edges of said two flanges contact said primary cylindrical sealing surfaces thereby establishing a seal by plastic deformation of the sealing surfaces of said free edges of the said flanges and upon continued movement of said first and second coupling ends toward one another the constraining effect of said primary cylindrical sealing surfaces exerts a force upon said tang through said flanges producing elastic yielding in said tang and changing the diameter thereof thereby producing a force to maintain a seal and upon further movement of said first and second coupling ends toward one another said annular surfaces on said first and second coupling ends contact said tang to prevent further movement of said coupling ends.

3,307,862
QUICK-DISCONNECT FLUID CONDUIT CONNECTION

Robert T. Brown, Houston, Tex., assignor to Gray Tool Company, Houston, Tex., a corporation of Texas

Filed Sept. 15, 1964, Ser. No. 396,641
1 Claim. (Cl. 285—364)



A high pressure connection comprising: first and second axially aligned fluid confining elements having end surfaces presented toward each other seal means located adjacent said end surfaces; means defining a radially outwardly projecting annular circumferential flange on each of said first and second fluid confining elements adjacent said end surfaces; means defining a plurality of angularly spaced, axially extending apertures through one of said flanges, means defining a plurality of angularly spaced, axially extending, radially outwardly opening recesses in the outer periphery of the other of said flanges in registry with said apertures; finger means secured to said one flange by means passing through said apertures and extending from said apertures toward said other flange into said recesses and axially beyond said other flange; means defining a radially outwardly extending rear surface on said other flange, means defining a radially outwardly extending wedging surface on each of said finger means on the portion thereof which extends beyond said other flange, the wedging surfaces facing said other flange rear surface and defining an acute angle with said flange rear surface and forming an interrupted circumferential, radially outwardly opening channel therewith; positive stop means operatively associated with said end surfaces and constructed and arranged to positively limit axial movement of the first and second fluid confining elements toward one another; an elongated flexible element received in said channel; and tightening means for radially constricting said elongated flexible element to force the elongated flexible element more deeply in said channel said flexible element being so constructed and arranged that when it is radially constricted it will engage the said rear surface and said wedging surfaces thereby forcing said rear surface and said wedging surfaces axially farther apart and thereby force said seal means into sealing engagement with said elements and also force said stop means into engagement to positively limit further axial movement of the first and second fluid confining elements toward one another.

3,307,863
QUICK FASTENING CONNECTION

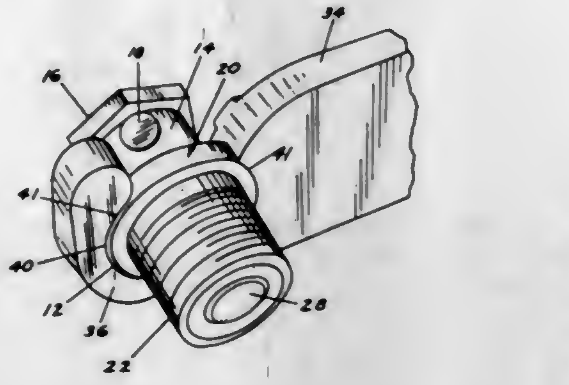
Jerome T. Cipkowski, Dearborn, Mich., assignor to the United States of America as represented by the Secretary of the Army

Filed Sept. 9, 1964, Ser. No. 395,341
5 Claims. (Cl. 287—189.36)

5. A quick release fastening device for securing structural members comprising:

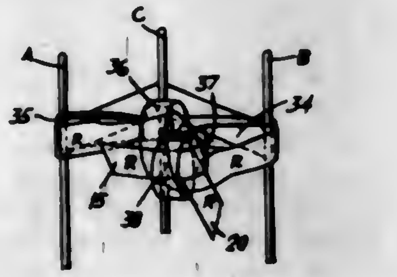
a plate member having a circular opening therethrough together with said plate having a throat cut in the plate and extending into the opening so that the

sides of the throat are each tangent to the opening and parallel to each other for at least a portion of the throat;
the opening in said plate being counterbored to a depth of approximately one-half the thickness of said plate to form a recessed seat on one side of said plate;
a bolt member adapted to be engaged by said plate;
said bolt having a threaded end, a cylindrical end adapted to pass through said throat and a concentric shoulder portion intermediate said ends;
said shoulder being formed complementary to said seat whereby said plate is withheld from radial movement, by the cooperation of said shoulder and said counterbore, until it is moved in a direction parallel to the axis of said bolt in an amount sufficient to disengage the shoulder from the counterbore;
a bore extending through said bolt and having its axis normal to the principal axis of said bolt;
a spring biased locking plunger mounted within the bore and extending therefrom an amount sufficient to maintain said plate in journaled relation with said shoulder;
said plunger having a section cut away whereby when said plunger is depressed said plate can be moved in an axial direction to clear said shoulder and thereby permit disengagement of said plate from said bolt.



3,307,864
LOOP BOWS AND METHOD

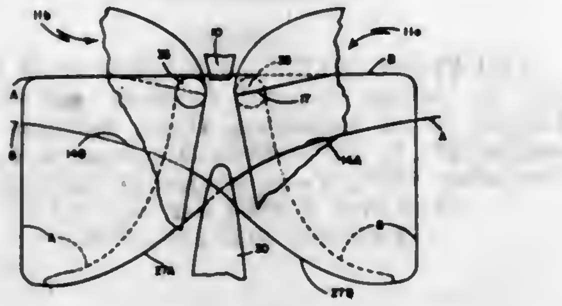
**William Rosenzweig, 61 Westwood Circle,
Roslyn, N.Y. 11576
Filed Mar. 26, 1965, Ser. No. 442,980
20 Claims. (Cl. 289—1.2)**



7. A loop bow having a central knot, a body mounting loop extending inwardly of said knot and having its ends fixed at said knot, so that the length of said loop is not variable, a pair of depending legs extending downwardly from said knot, each leg having one end fixed at said knot, so that the lengths of said legs are not variable, a pair of bow loops extending from said knot, each of said bow loops having two portions, the first portion of each of said bow loops being fixed at said knot, and the second portion of said bow loops being joined to each other and slidably passing through said knot.

3,307,865
MECHANISM FOR USE IN JOINING TEXTILE THREADS

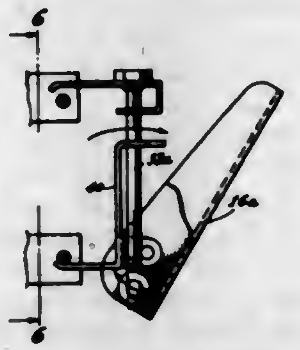
**Clarence H. Porter, 295 North St.,
Hingham, Mass. 02043
Original application Mar. 25, 1964, Ser. No. 354,698, now Patent No. 3,264,023, dated Aug. 2, 1966. Divided and this application June 1, 1966, Ser. No. 554,538
7 Claims. (Cl. 289—18)**



1. Mechanism for use in joining thread, comprising means for receiving separate threads in a configuration wherein the courses of said threads have three crossings which alternate in type as to over and under relation, two releasable loop-holding members across which a portion of a junction of end parts of the thread interiorly of the first and third crossings can be placed, the thread receiving means permitting the thread after joining to be drawn out relative to said loop-holding members to shorten the extent of thread in which the crossings lie and thereby reposition the crossings into the region of the thread junction, and clamps for clamping the thread at two places in the region of the repositioned crossings, exteriorly thereof, said clamps while in clamping engagement with the thread being relatively separable to tighten the thread into a knot.

3,307,866
QUICK-DISCONNECT LATCH

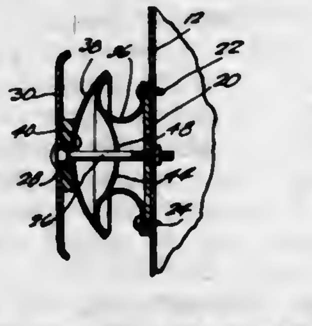
**Conrad R. Barlow, 103 Via Mesa Grande,
Redondo Beach, Calif. 90277
Filed July 17, 1964, Ser. No. 383,339
4 Claims. (Cl. 292—113)**



1. A quick-disconnect mechanism for releasably interconnecting two parts, comprising:
a clamp member to releasably engage one of the two parts, said clamp member having an aperture therein;
a tension member extending through said aperture and having an enlargement thereon at a first end thereof of non-circular cross section larger than the aperture for engagement with the clamp member;
a body having a base end and a handle end, said body having a pivot axis for connection to the other of said two parts; and
a trunnion pivotally connecting the second end of the tension member with the body to permit the body to be swung towards the tension member through an operating angle from a first release position extending laterally of the tension member to a second latching position,
the axis of the trunnion being spaced from said pivot axis towards the base end of the body and being offset from the pivot axis to swing past center when the body swings through the operating angle,
said trunnion having a tapped bore and the second end of the tension member being screw-threaded and extending into said bore in screw-threaded engagement with the trunnion whereby said enlargement at the first end of the tension member may be utilized to rotate the tension member for screw-threaded action in said bore to adjust the distance between the clamp member and the trunnion while said body is in its latching position with the latch mechanism interconnecting said two parts,
where the tapped bore in the trunnion is a diametrical bore having a transverse slot at the far end of the bore to cause the trunnion to flex into clamping engagement with the bolt in response to tightening of the bolt.

3,307,867
SPRING BIASED BUMPER

**Edward Michael McGovern, 435 Jefferson Ave.,
Avon, N.J. 07717
Filed Sept. 24, 1965, Ser. No. 490,002
1 Claim. (Cl. 293—62)**

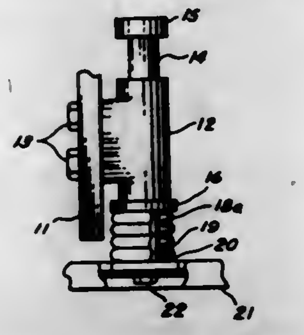


An auto bumper comprising a plurality of bumper plates to be mounted about the four horizontal sides of an automobile, a series of bolts having one end extending through central holes in the bumper plates and mounted by the other end of the bolts from said automobile sides, shock absorbing means interposed between the bumper plates and the automobile sides and including a series of arcuately contoured spring deflecting members, an elastomeric pad further interposed between said series of arcuately contoured spring deflection members and the bumper plate, a partially toroidially contoured spring member being axially disposed on said bolt, and a pair of opposing segmented spherical portions are arranged and comprise said series of arcuately contoured spring deflecting members of said shock absorbing means, said shock absorbing means including a base having disposed and mounted thereon a partially toroidially contoured spring member axially disposed upon said bolt, said pair of opposing segmented spherical portions each having a polar opening through which passes one of said bolts.

3,307,868
ENERGY ABSORBING VEHICLE BUMPER ASSEMBLY

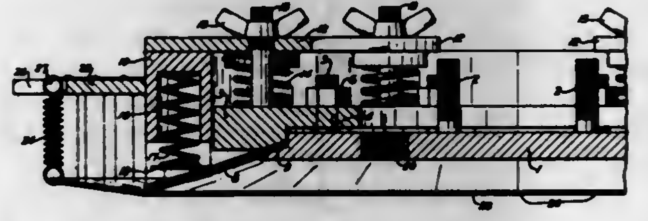
**Stewart M. Blank, 4634 Manhattan Beach Blvd.,
Lawndale, Calif. 90260
Filed Oct. 22, 1965, Ser. No. 507,626
12 Claims. (Cl. 293—70)**

1. A safety bumper system for vehicles which comprises: bumper means; a multiplicity of shock energy absorbers, each of said shock energy absorbers including a mounting bracket, said mounting bracket adapted to be attached to the structure of a vehicle, a bumper mounting shaft, said bumper mounted on one end of said shaft, said shaft slidably mounted in said mounting bracket, mechanical stop means on the other end of said shaft, said mechanical stop means adapted to prevent sliding of said bumper mounting shaft in the direction of said bumper, a deformable member, said deformable member mounted between said mounting bracket and said bumper means, said deformable member of tubular configuration, said tubular configuration having a wall thickness with a dimensional ratio to the diameter and length of said tubular deformable member adapted to produce a columnar buckling failure, said deformable member mounted concentrically over said bumper mounting shaft thus preventing sliding motion of said bumper mounting shaft until the yield strength of said deformable member is exceeded in shock energy.



3,307,869
VACUUM LIFTING PAD

**Richard M. Warfel, Pittsburgh, Pa., assignor to Banbury Manufacturing Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1965, Ser. No. 439,673
15 Claims. (Cl. 294—64)**



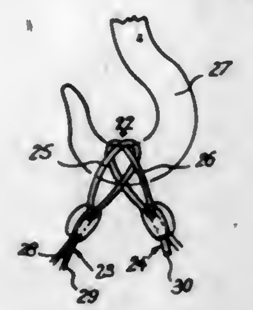
1. A vacuum lifting pad, comprising a substantially horizontal supporting member adapted to be raised and lowered, a flexible sheet-like sealing ring beneath said member secured thereto in an area spaced inwardly from the outer edge of the ring, the ring extending downward from the supporting member and outward, and separate spring means carried by said member for engaging the upper surface of said ring to resist upward flexing of the ring, said supporting member being provided with an evacuating opening surrounded by said ring.

3,307,870
CASING FOR LIMITING THE CLEARANCE OF THE STRANDS OF A SLING AND SLINGS UTILIZING SUCH CASINGS

**Jean-François Archer, Hameau des Perdrix,
La Celle-Saint-Cloud, France
Filed Oct. 23, 1964, Ser. No. 406,070
Claims priority, application France, Nov. 4, 1963, 952,553
6 Claims. (Cl. 294—74)**

1. A casing with limited clearance for the two strands of a cable connected by an inset sleeve, said casing being axially bored, the bore being substantially cylindrical in order to constitute a confining hoop for slidably and removably receiving an inset sleeve and relieving lateral strain thereon, said bore being connected on one end, without discontinuity of form, to the exterior of said casing by means of an inlet conduit which emerges into an oval section for limiting the inlet clearance of the strands of an encased cable, said bore being connected on

the other end to the exterior of said casing by an outlet conduit, the width of the inner end of said outlet conduit being less than the shortest distance across said other end of said bore whereby the inner end of the outlet conduit



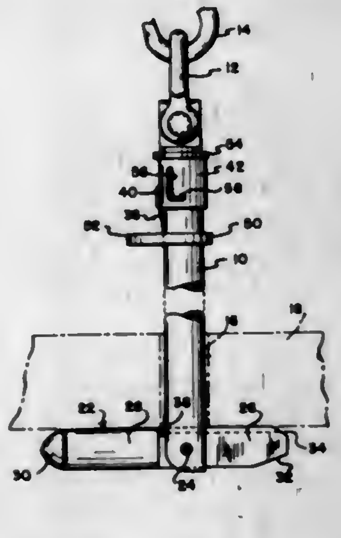
constitutes a locking shoulder providing a rest for an inset sleeve disposed in said bore, said outlet conduit emerging into a substantially oval section in order to limit the outlet clearance of the strands of an encased cable.

3,307,871
TOGGLE DEVICE FOR LIFTING HEAVY OBJECTS

John S. Russell and Kenneth L. Cianchette, Pittsfield, Maine, assignors to Cianbro Mfg. Corp., Pittsfield, Maine, a corporation of Maine

Filed Feb. 4, 1965, Ser. No. 430,273

12 Claims. (Cl. 294—86)



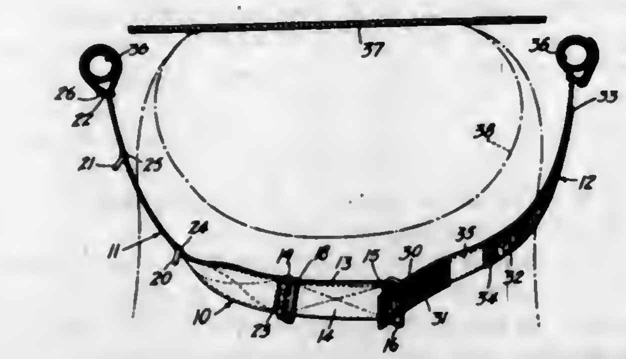
1. In a lifting toggle mechanism for lifting heavy objects in which the object to be lifted is adapted to be engaged by a portion of the lifting toggle mechanism, said lifting toggle mechanism including an elongated shaft provided with a lifting attachment at its upper end, an elongated toggle member pivoted intermediate its ends to the lower end portion of the elongated shaft, said toggle member being swingable into a first position in which it is in general alignment with the elongated shaft for movement with the lower end portion of the shaft into engagement with the object to be lifted, and said toggle member being swingable from said first position into a second position in which it extends transversely of said shaft for anchoring the lifting toggle mechanism in a lifting relation to the object to be lifted, wherein the improvement comprises pull means attached to one end portion of the toggle member near but spaced from its pivot point and extending upwardly along the shaft to the upper portion thereof for positively swinging the toggle member from its first position with respect to the shaft into its second and lifting position in which it extends transversely of said shaft, and an operating handle means mounted on the upper portion of the shaft to which said pull means is connected.

3,307,872
SUPPORT BELT

Charles E. Murcott, Valley Drive, Bay Crest, Huntington, N.Y. 11743

Filed Apr. 25, 1966, Ser. No. 544,986

10 Claims. (Cl. 297—385)



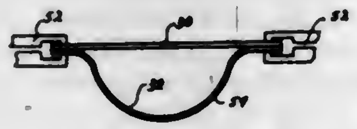
1. A patient support belt comprising two separate body engaging belt parts, one part defining an adjustable part and the other part defining a coupling part, said adjustable part having longitudinally spaced elongated coupling loops secured to said adjustable part at spaced coupling stations, one of said loops being positioned at one end of the adjustable part, another loop being disposed at the other end of said adjustable part, said coupling part having means for attachment of one end thereof to a support, the other end portion of the coupling part being adapted to pass through one of the loops of the adjustable part, said last named end portion of the coupling part having interengaging means adjustably positioning the coupling part in the loop of the adjustable part engaged by said coupling part in properly positioning the belt upon the body of a patient, and the second named end loop and other loops of said adjustable part providing adjustable coupling of said adjustable part with respect to another support.

3,307,873
RETRACTABLE SEAT BELT AND METHOD OF MAKING SAME

Henry Blaszkowski, 7312 Bingham, Dearborn, Mich. 48126

Filed Jan. 16, 1964, Ser. No. 338,061

4 Claims. (Cl. 297—388)



1. The method of constructing a self-rolling seat belt strap comprising clamping a base layer and a layer of resilient material together at at least two spaced apart points with a suitable adhesive between said layers, said base layer extending loosely between the clamps, and increasing the spacing between said clamps and thereby stretching said resilient layer and removing the slack from said base layer so as to bring said two layers into abutment along their lengths.

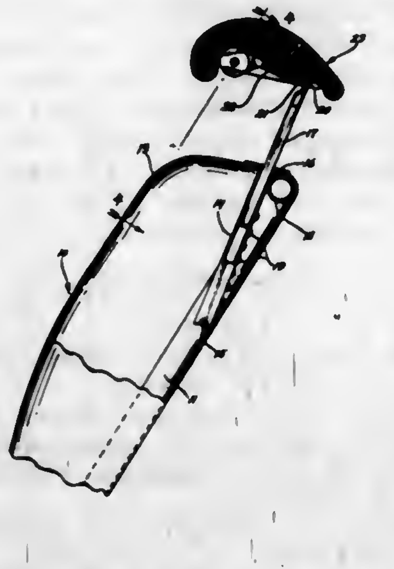
3,307,874
HEADREST

Thomas C. Wilson, Detroit, Mich., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland

Filed Feb. 23, 1966, Ser. No. 529,320

4 Claims. (Cl. 297—410)

1. A head rest assembly for use with a vehicle seat back rest comprising: a stem carried by and interiorly of the seat back rest and projecting exteriorly therefrom at the upper end thereof; a pillow; a base secured to the pillow at the underside thereof and having spaced side walls at opposite ends thereof; a frame embedded in the pillow and having one end projecting through one side wall of the base and another end projecting through the other side wall of the base, said frame ends being directed toward and spaced from each other so as to be substantially axially aligned; ratchet means carried on each of the frame ends for preventing rotation of the pillow assembly relative to the stem in one direction and said means permitting rotation of the pillow assembly relative to the stem in the reverse direction; additional means permitting limited rectilinear movement of the pillow assembly relative to the stem in a direction axially of the frame ends, whereby rotation of the pillow assembly in either direction can be effected.

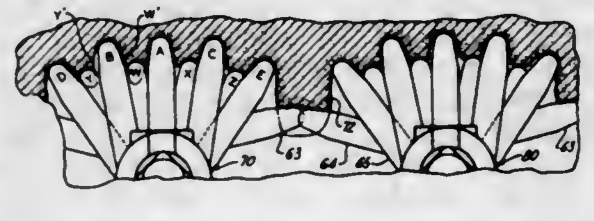


3,307,875
PRIMARY AND SECONDARY CUTTER BIT ARRANGEMENT AND METHOD OF OPERATION

Glenn S. McDowell, Claremont, N.H., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 22, 1964, Ser. No. 369,510

5 Claims. (Cl. 299—10)



5. A mining method in which a plurality of orbitally moving members have cutting edges sequentially engaging a mineral in situ comprising the step of: cutting spaced portions of such mineral to form a plurality of elongated laterally spaced kerfs in said mineral with elongated free edged cores of unmined mineral therebetween; subsequently cutting a second portion of minerals to deepen adjoining kerfs and increase the height of the core therebetween; thereafter removing a major portion of said core from the free edge thereof.

3,307,876
TUNNELLING MACHINE HAVING CYLINDRICAL ROTOR AND CENTRAL CONVEYOR

Donald H. Akkerman, Brownsdale, Minn. 55918

Filed June 22, 1964, Ser. No. 376,893

6 Claims. (Cl. 299—56)

1. In an earth boring machine:

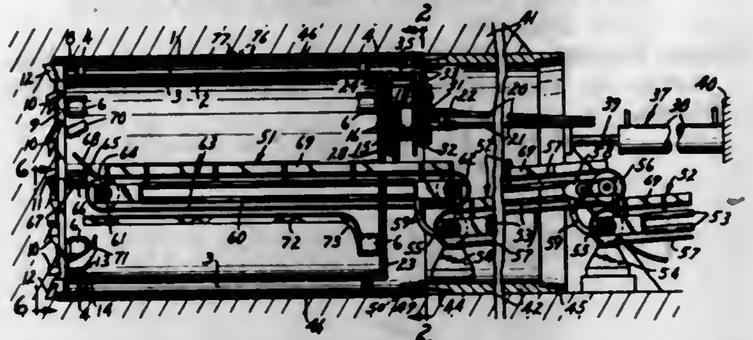
(a) a cylindrical open ended casing disposed on a generally horizontal axis,

(b) an open ended cylindrical rotor of slightly less diameter than said casing disposed concentrically within said casing and having a front end disposed adjacent one end of said casing and a rear end axially inwardly spaced a short distance from the other end of said casing,

(c) means mounting said rotor for rotation in said casing on the common axis thereof,

(d) a boring bar extending diametrically of said rotor and releasably anchored at its opposite ends to the front end of said rotor for common rotation therewith,

(e) a plurality of boring bits on said boring bar projecting forwardly of the adjacent end of said casing,



(f) rotor driving means mounted on said casing in close proximity to the inner surface of said casing and remotely of the axis thereof adjacent the rear end of said rotor for imparting rotation to said rotor and boring bar relative to said casing,

(g) a conveyor including a relatively stationary frame extending longitudinally of said casing and rotor,

(h) means on said frame and said boring bar centrally of its ends releasably pivotally supporting th eadjacent end of said stationary frame independently of said casing and rotor,

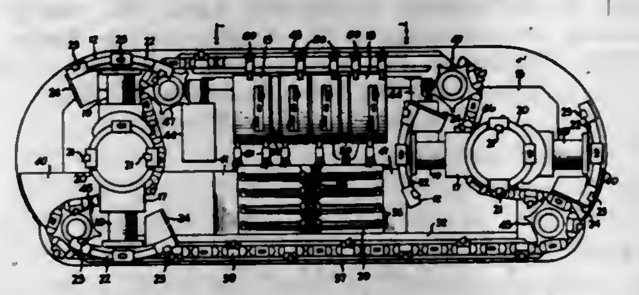
(i) and means disposed longitudinally outwardly of said rear end of the rotor for supporting the opposite end of said conveyor frame.

3,307,877
BORING TYPE CONTINUOUS MINER WITH CENTRAL RIPPER CUTTER DRUM

Joseph Gonski, Chicago, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 17, 1964, Ser. No. 383,324

7 Claims. (Cl. 299—57)



1. In a continuous mining machine having a mobile main frame,

a cutter frame mounted on said main frame and projecting forwardly therefrom,

two widely spaced boring heads mounted on said cutter frame and extending in advance thereof and having cutter bit carrying cutter supports projecting forwardly therefrom, performing rotary boring operations from the roof to the floor of a mine,

at least one boom arm pivotally mounted on said cutter frame for movement about a horizontal transverse axis and extending in advance of said cutter frame, means vertically feeding said boom arm about said horizontal transverse axis,

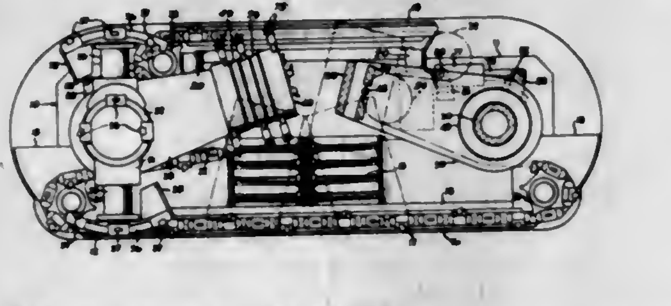
a ripper cutter drum mounted on the end of said boom arm between said boring heads for rotation about an axis parallel to the axis of pivotal movement of said boom arm and having cutter bits projecting therefrom,

and means driving said ripper cutter drum by power upon feeding movement thereof by said boom arm to mine a vertical swath in the mine face between said boring heads.

3,307,878
BORING TYPE OF CONTINUOUS MINER HAVING CENTRAL OSCILLATING CUTTER DRUMS

Joseph Gonski, Chicago, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa.

Filed July 17, 1964, Ser. No. 383,473
13 Claims. (Cl. 299—57)



1. In a continuous mining machine

a cutter frame supported in vertically spaced relation with respect to the ground and for movement toward a working face of a mine,

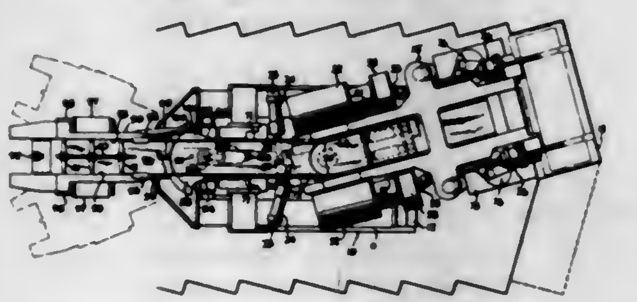
a pair of widely spaced boring heads mounted on said cutter frame and extending in advance thereof and having cutter supports projecting forwardly therefrom,

a pair of oscillatibly movable cutter drums disposed inwardly of said boring heads and means mounting said cutter drums on said cutter frame for oscillatible movement in the space between said cutter drums from the roof to the floor of a mine about laterally spaced axes extending longitudinally of the machine.

3,307,879
CONTINUOUS MINER HAVING VERTICALLY AND HORIZONTALLY SWINGABLE CUTTER DRUM AND CONVEYOR SECTIONS

Ernst R. Bergmann, Evergreen Park, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 16, 1964, Ser. No. 383,083
7 Claims. (Cl. 299—64)



1. In a continuous mining machine,

a mobile main frame,

a turntable pivotally mounted on said main frame for movement about a vertical axis disposed intermediate the ends of said main frame,

a forwardly extending boom pivotally mounted on said turntable for movement about a horizontal transverse axis,

a rotary mining head rotatably mounted on the forward end of said boom,

a conveyor extending longitudinally along said main frame and boom to a position forwardly of the forward end of said main frame into engagement with the ground,

trunnion support means on said turntable for said boom,

for pivotally mounting said conveyor on said turntable intermediate the ends of said conveyor,

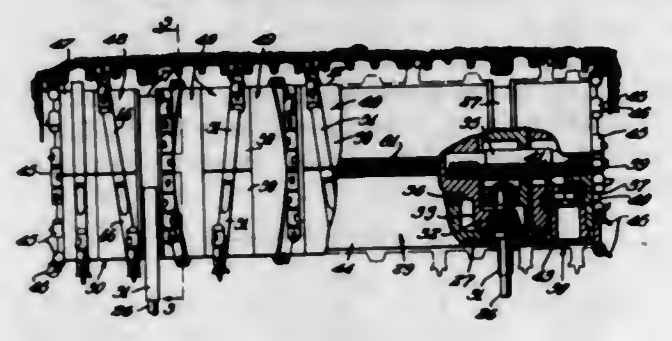
for up and down movement with respect thereto, said conveyor having articulated forward and rear end portions articulated about upright axes,

and one of the axes of articulation of said conveyor being coincident with the axis of said turntable for at least one position of adjustment.

3,307,880
CUTTER BIT MOUNTING FOR RIPPER TYPE MINER

John S. Newton, Glen Ellyn, and James M. Kemper, Hometown, Ill., assignors, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 22, 1963, Ser. No. 325,588
12 Claims. (Cl. 299—75)



1. In a continuous mining machine,

a rotary cutter drum supported for rotation about a horizontal axis extending parallel to a face to be mined and moved vertically along the face, to mine out a working place,

a series of cutter support rings stacked along the exterior of said drum and secured thereto for rotation therewith and having clusters of cutter bits extending outwardly therefrom, certain of which bits are pitched at angles to cut clearance for said rings,

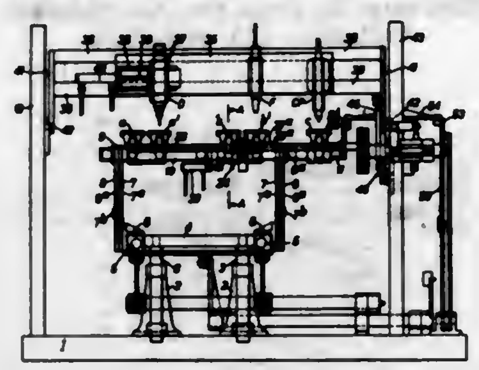
said clusters of cutter bits on each ring being circumferentially misaligned with respect to a plane extending perpendicular to the axis of rotation of the drum and intersecting the periphery of the ring and the clusters of cutter bits on adjacent rings being out of axial alignment with respect to each other.

3,307,881
MACHINE FOR DRILLING AND/OR FILLING BRUSH STOCKS

Russell Henry Richard Parker, Portchester, England, assignor to J. Evans & Son (Portsmouth) Limited, Portsmouth, England, a British company

Filed Jan. 13, 1964, Ser. No. 337,306
Claims priority, application Great Britain, Jan. 28, 1963, 3,508/63
6 Claims. (Cl. 300—3)

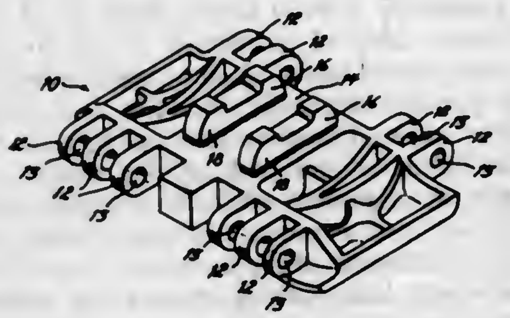
1. Apparatus for operating on a brush stock comprising a workholder for supporting a brush stock, a tool for operating on one face of a brush stock supported on said workholder, means supporting said tool for pivotal movement relative to said workholder and means for imparting a series of predetermined pivotal movements to the tool so as to vary the angular relation between the tool and the brush stock on said workholder while a cycle of operations are carried out by said tool, the axis about which the tool pivots being located on an imaginary line substantially coincident with the said one face of the said brush stock when mounted on the workholder and when the latter is in the at rest position.



3,307,882
REPLACEABLE DRIVING LUGS FOR CRAWLER TREAD

Thurman L. McFayden, 1463 E. Vernon Road, Philadelphia, Pa. 19150

Filed June 8, 1964, Ser. No. 373,410
2 Claims. (Cl. 305—56)

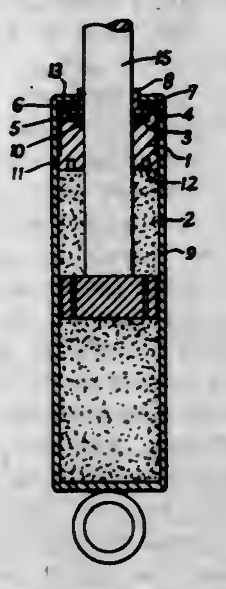


1. In combination with a worn metal crawler track tread section wherein the original driving lugs have been removed leaving a flat upper surface portion, a pair of spaced parallel metal driving lugs positioned longitudinally of the tread section and located substantially centrally of said tread, each of said lugs comprising an elongate body section having convexly curved driving surfaces at opposite ends thereof and having beveled lower edges forming with said flat surface a triangular groove extending the length of and on each laterally opposite side of each of said lugs, and weld metal positioned within said grooves to anchor each of said lugs to said surface.

3,307,883
PNEUMATIC SPRINGS

Ernst Wustenhagen and Fritz Gottling, Koblenz, Gunter Otto, Moselweiss, and Wilfried Ferdinand Roos, Guls (Moselle), Germany, assignors to Stabilus, Industrie- und Handelsgesellschaft m.b.H., Koblenz-Neuendorf, Germany

Filed Jan. 14, 1964, Ser. No. 342,845
3 Claims. (Cl. 308—3.5)

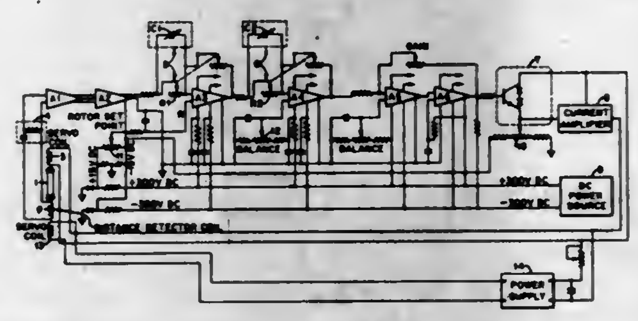


1. A pneumatic spring comprising a cylinder having first and second end walls, a piston rod extending through said second end wall, a guide bush located in the cylinder near the second end wall of the cylinder and subjected to pressure of a gaseous filling medium in the cylinder, flat annular surfaces on the guide bush located at one end of the guide bush and spaced apart from each other axially of the guide bush, a bearing bush having a cylindrical portion extending through the second end wall of the cylinder and surrounding the piston rod and having an annular flange portion located within the cylinder and axially between said flat annular surfaces, a first sealing ring axially located between the second end wall of the cylinder on one side and the annular flange portion of the bearing bush and one of said flat annular surfaces on the other side and in engagement therewith, a second sealing ring axially located on its one side adjacent the annular flange portion of the bearing bush and on its other side the other of the flat annular surfaces of the guide bush, and an annular recess in the guide bush located at said one end of the guide bush and surrounding the piston rod to allow sealing ring displacement.

3,307,884
CONTROL SYSTEM FOR MAGNETIC SUSPENSION OF CENTRIFUGE ROTORS

Harlan F. Dunlap, Concord, Ernest C. Evans and William G. S. Fort, Oak Ridge, William Smith, Rockwood, and Harold A. Kermicle, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 8, 1964, Ser. No. 402,665
3 Claims. (Cl. 308—10)

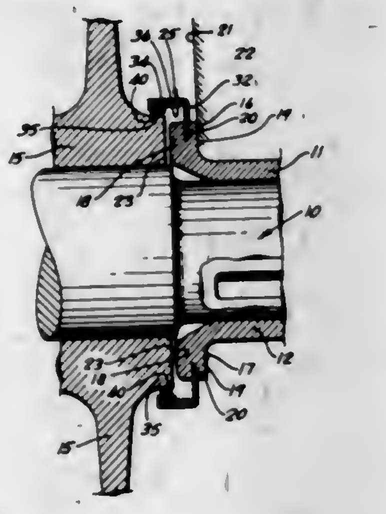


1. A control system for magnetically suspending a centrifuge rotor and for automatically maintaining the rotor in a selected suspended position comprising a first servo magnetic suspension coil disposed above said rotor and in alignment with the vertical axis of said rotor; a distance detector coil and a second servo coil disposed beneath said rotor and aligned with said rotor axis, said first and second servo coils being coupled by a magnetic yoke to provide a closed magnetic loop, said detector coil providing an output signal proportional to the position of and to any axial movement of said rotor; an amplifier network having first, second, third, fourth, fifth, and sixth stages; a high-pass filter circuit connected between the output of said detector coil and the first stage of said amplifier network; an adjustable source of reference voltage; a first differentiating network connected to the output of the second amplifier stage; means for connecting said reference voltage and the output of said differentiating network to said third amplifier stage to provide a comparison therebetween, said third amplifier stage providing an output error signal proportional to any deviation from

a selected rotor position; a second differentiating network connected to the output of said third amplifier stage; a balance potentiometer; means for connecting said potentiometer and the output of said second differentiating network to said fourth amplifier stage to provide a comparison therebetween, said fourth amplifier stage providing an output signal proportional to the error in the rotor position and to the first and second time derivatives of this error; a transistor gate network; a solid-state, high current power supply connected to the output of said gate network; a reference potentiometer connected to said gate network for providing a steady state reference current at the output of said power supply; means for connecting the output of said power supply to said first rotor servo coil; means connected to the output of said power supply for reversing the polarity thereof, for filtering out any derivative control signals therefrom, and for feeding the resulting signal to said second servo coil; and means for connecting the output of said sixth amplifier stage to the input of said gate network, whereby any rotor position error signal appearing at the output of said sixth amplifier stage modifies the gate network output signal thereby automatically varying the current input to said first rotor servo coil to maintain said rotor in a predetermined selected position, the net total current to both said servo coils being maintained at a constant value to thereby provide a substantially constant magnetic flux in said closed loop.

3,307,885
DUST GUARD

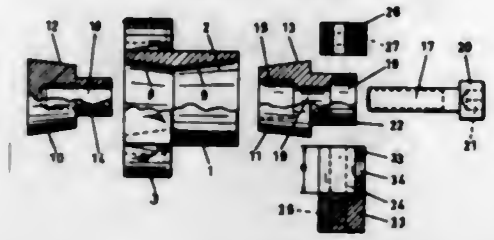
Isaac E. Cox, Kirkwood, Mo., assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Nov. 8, 1963, Ser. No. 322,372
4 Claims. (Cl. 308—36.1)



1. The combination of a dust guard and a bearing, said bearing having a main cylindrical bearing surface and an integral and upstanding arcuate thrust flange at one end of said bearing, said thrust flange having a thrust bearing surface, said thrust flange having a groove formed therein extending in an arcuate manner in said thrust flange, said groove being bounded by opposed side walls spaced apart a predetermined distance, said dust guard having an arcuate collar, sealing means carried by said arcuate collar, and an attaching flange secured to said arcuate collar, said attaching flange being of a cross-sectional thickness to fit in said recess means between said side walls, said attaching flange being flexible and having a portion flexed and biased against at least one of said side walls to suppress the vibration of said attaching flange in said groove, and means for securing said attaching flange to said thrust flange of said bearing.

3,307,886
PIVOT BEARING FOR WINDOWS

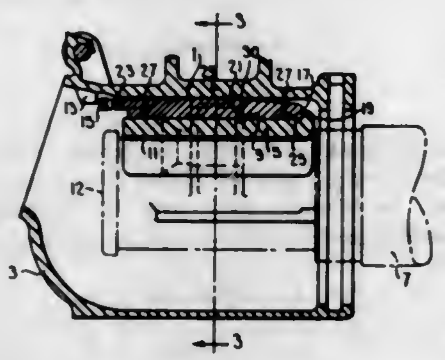
Stig Axel Rune Flodell, Vastra Frolunda, Sweden, assignor to Karl Anders Davidson, Orkelljunga, Sweden
Filed Aug. 30, 1963, Ser. No. 305,646
2 Claims. (Cl. 308—22)



1. A pivot bearing for a closure pivotally mounted in an upright frame comprising a bearing housing adapted to be mounted on the frame, bearing means adapted to be mounted on the closure and one of its ends being adapted to be received in the bearing housing and the other of its ends constituting a spigot having a non-circular cross-section, and a socket adapted to be secured to the closure, said socket comprising a U-shaped member adapted to be secured to the closure with its branches oriented downwards and a locking member extending across the free ends of the U-shaped member, the U-shaped member being provided with holes therethrough extending essentially normal to the plane of its U-shape, said holes being adapted to receive screws for securing the U-shaped member to the closure, said U-shaped member having parallel internally threaded holes extending longitudinally of its branches and opening at the free ends of the branches and said locking member having parallel holes in alignment with the internally threaded holes of the U-shaped member, said spigot being of greater thickness than the length of the branches of said U-shaped member, whereby said locking member is adapted for the insertion through the holes thereof of screws, said U-shaped member is adapted to receive and engage the screws in the internally threaded holes thereof and said socket is adapted for clamping of the spigot by tightening of said screws in said internally threaded holes.

3,307,887
WEDGE

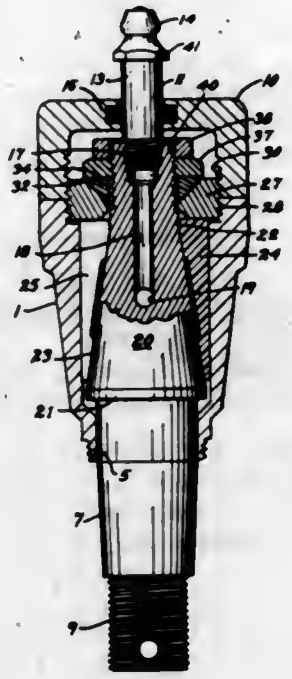
Eugene R. Purdy, 6051 Pernod, St. Louis, Mo. 63139
Filed Oct. 1, 1964, Ser. No. 400,656
9 Claims. (Cl. 308—55)



1. A shock absorbing wedge for mounting between a railway car journal box and a journal bearing, said wedge comprising an assembly of a plurality of rigid segments arranged end-to-end of the wedge with elastomeric material between adjacent segments and bonded thereto so as to form resilient joints between the segments for absorbing shocks imposed endwise of the wedge, a central one of said segments being longer than the other segments and crowned relative to said other segments.

3,307,888
IDLER ARM REPLACEMENT BEARING

Janis Dumpis, St. Ann, Mo., assignor to Champ-Items, Inc., St. Louis, Mo., a corporation of Missouri
Filed Apr. 22, 1964, Ser. No. 361,647
8 Claims. (Cl. 308—71)

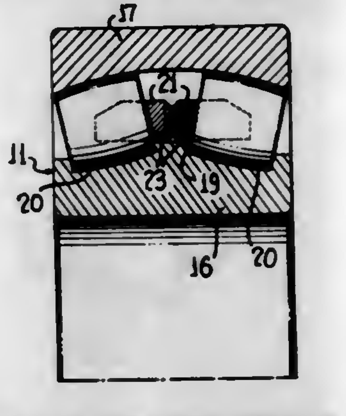


1. A replacement bearing adapted to be press fit in the eye of a member in an articulated linkage, said bearing having a tubular housing dimensioned to be forced into said eye, and a spindle in said tubular housing with an end projecting beyond said tubular housing, the improvement comprising, a combined radial and thrust bearing unit including a sleeve type bearing member seated in said tubular housing, said sleeve having internal cylindrical bearing surfaces of varying diameter in an axial direction with a larger diameter at one end and the smaller diameter at its other end, said spindle having cylindrical external bearing surfaces of varying diameter in an axial direction and being contoured to mate with the internal bearing surfaces on said sleeve type bearing member, an axially movable ring retainer concentric with and threadedly engaging said tubular housing approximate one open end thereof, said ring retainer having a lip overhanging the smaller diameter end of said sleeve type bearing member, means for limiting movement of said ring retainer in a direction away from said tubular housing, and a thrust bearing unit having a part secured on said spindle and a relatively rotatable part supported by the side of said ring retainer opposite from said sleeve type bearing member for holding said sleeve type bearing member positioned in said tubular housing against said ring retainer.

3,307,889
BEARING RETAINER

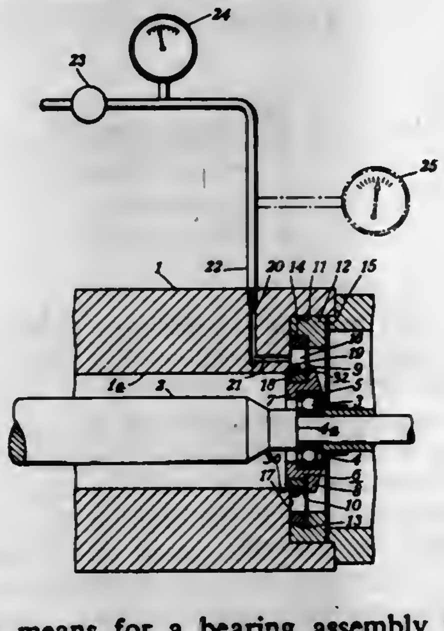
Arthur S. Grange, South Bend, Ind., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed July 14, 1964, Ser. No. 382,458
8 Claims. (Cl. 308—187)

1. A bearing retainer assembly comprising a pair of retainers disposed in back-to-back relation, each of said retainers having inner and outer surfaces and a back surface, the back surface of at least one retainer being provided with a plurality of circumferentially spaced lubricant passages for delivering lubricant between said retainers from the outer surfaces thereof to the inner surfaces thereof, each of said lubricant passages being arcuate in outline and having a central portion opening through the outer edge of said back surface for the reception of lubricant and two end portions opening through the inner edge of said back surface for the delivery of lubricant depending upon the direction of rotation of said retainer assembly.



3,307,890
ROLLING BEARING MOUNTING

Erik Lennart Waldemar Johansson, Goteborg, Sweden, assignor to Aktiebolaget Svenska Kullagerfabriken, Goteborg, Sweden, a corporation of Sweden
Filed Apr. 6, 1964, Ser. No. 357,376
Claims priority. application Sweden, Apr. 18, 1963, 4,249/63
5 Claims. (Cl. 308—189)



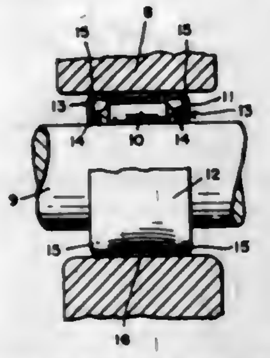
1. Mounting means for a bearing assembly for supporting a first member for rotation relative to a second member, said bearing assembly including an outer ring and an inner ring mounted on said first member, said means defining an annular chamber surrounding said outer ring, at least one wall of said chamber being defined by a flexible diaphragm and means for pressurizing said chamber thereby to exert an axial pressure on said outer ring.

3,307,891
PRESTRESSED ROLLER BEARING

Paul A. Carullo, Torrington, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed Dec. 31, 1964, Ser. No. 425,104
9 Claims. (Cl. 308—213)

1. A preloaded roller bearing assembly particularly adapted for use in a bearing which includes at least an outer race member, an inner race member and a series of parallel rollers disposed in rolling contact with said inner and outer race members, said preloaded roller bearing assembly comprising a series of parallel rollers and an outer race member surrounding the rollers, said outer race member having a resilient midportion of concavo-convex longitudinal section, the center of which bears on the outer surface of the rollers and which rollers when

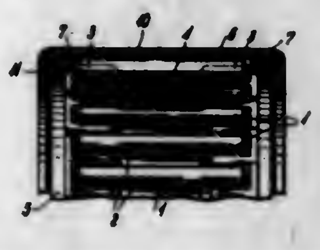
in contact with the center of said outer race member have inner surfaces which generally define a cylinder of a diameter less than the diameter of the intended inner



race member whereby when said preloaded roller bearing assembly is assembled with an inner race member, said rollers will be in resilient pressure engagement with the inner race member.

3,307,892
CAGE FOR CYLINDRICAL ROLLERS

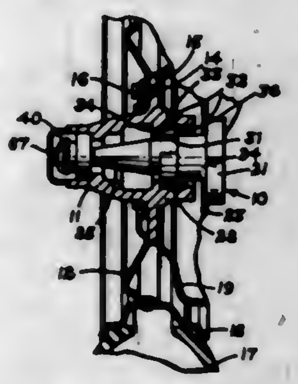
Karl-Albert Eckstein, Herzogenaurach, Germany, assignor to Industriewerk Schaeffler, Herzogenaurach, Germany, a corporation of Germany
Filed Aug. 3, 1964, Ser. No. 387,127
Claims priority, application Germany, Aug. 13, 1963, J 24,241
4 Claims. (Cl. 308—217)



1. A roller bearing comprising a laterally closed outer raceway and cylindrical rollers in a thin-walled cage, the said cage comprising apertures to accommodate the rollers bounded by cross-bars which guide the rollers and end rings at both axial ends of the cross-bars connecting the cross-bars together, the outer diameter of the end rings being sufficient to guide the cage on the outer roller raceway within the laterally closed outer raceway and the diameter of the side of the end rings adjacent to the cross-bars narrows to the smaller diameter at which the cross-bar ends are situated.

3,307,893
WHEEL SUPPORT STRUCTURE

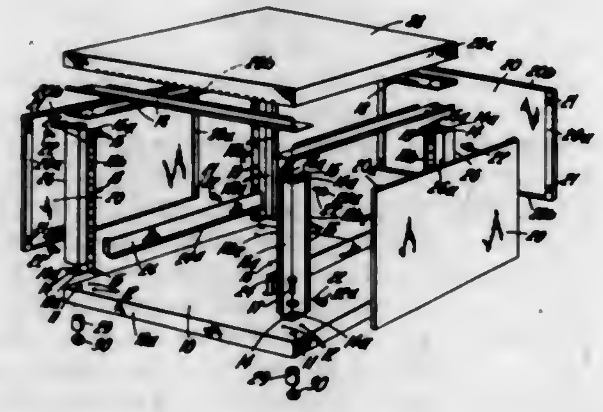
Everett H. Williams, 1614 B Ave., New Castle, Ind. 47362
Filed May 24, 1965, Ser. No. 458,097
5 Claims. (Cl. 308—236)



1. A retainer assembly for securing a hub to a spindle comprising, a roller bearing having an inner race secured to the spindle and an outer race secured to the hub, a semi-spherical depression of predetermined radius in the spindle, a locking washer having a tubular portion on said spindle above said depression and having one end adjacent said inner race, an internal axial groove in said tubular portion having a radius slightly larger than said predetermined radius, a spherical ball in said depression and adapted to be received in said groove to prohibit rotation of said locking washer on the spindle while permitting axial movement of said locking washer, exterior threads on the spindle adjacent the opposite end of said locking washer, a nut received on said threads and contacting said opposite end of said locking washer to prohibit axial movement of said locking washer and said inner race, and means for locking said nut against rotary movement on the spindle.

3,307,894
STRUCTURAL MEMBERS FOR MODULAR UNITS

David Collier, London, England, assignor to C. & N. (Electrical) Limited, Hampshire, England, a British company
Filed May 4, 1965, Ser. No. 453,085
Claims priority, application Great Britain, May 4, 1964, 18,459/64
10 Claims. (Cl. 312—257)



1. A structure comprising:

(a) a plurality of spaced apart parallel main upright structural members;

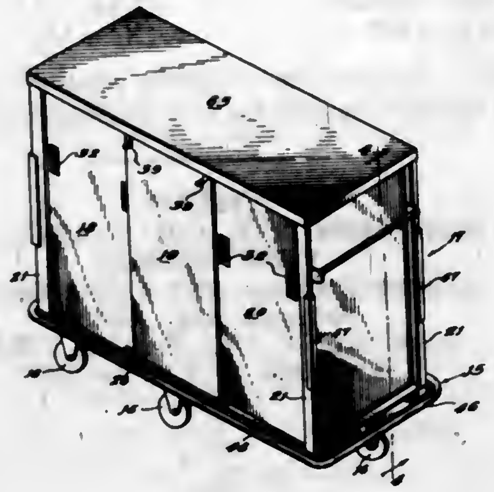
(b) each of said upright structural members, in cross section, defining two main flanges at right angles to one another and directed outwardly from the structure; and,

(c) a W section member the inner limbs of which are at right angles to one another and abut and are secured to the outer faces of said two main flanges.

3,307,895
FOOD TRAY CART

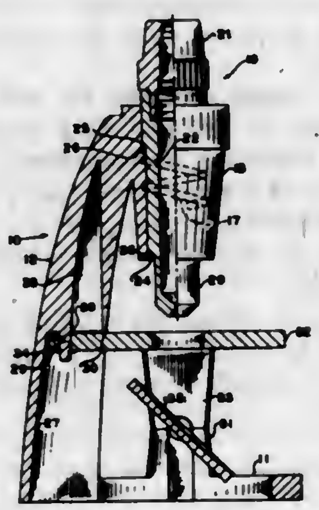
Frank J. Renner, 1710 Surrey Ridge Drive, Arlington Heights, Ill. 60538; William M. Renner, 1202 Orchard Drive, and George B. Renner, 211 Olive St., both of Prospect Heights, Ill. 60070
Filed Oct. 20, 1965, Ser. No. 498,811
8 Claims. (Cl. 312—295)

6. A food tray cart comprising a base member, an enclosure mounted on said base member, removable tray supporting racks disposed within said enclosure, and slidably mounted door means forming one side wall of said enclosure to provide access to said tray supporting racks, a pair of tracks located above said sliding door means, said sliding door means including a middle door and two end doors, said doors each comprising a pair of pan-shaped sheet metal elements telescoped one into the other, and a panel of fibrous material enclosed within said pan-shaped elements, a first trolley means supporting said middle door from one of said tracks, and second and third trolley means supporting said end doors from the other of said tracks to permit sliding movement of any one of said three doors into a position where it overlaps another one of said doors, and means preventing sliding movement of any one of said doors in the direction of said overlapping position in order to lock all of said doors in their extended positions.



3,307,896
MICROSCOPE WITH UNITARY MOLDED STAND AND ATTACHED STAGE

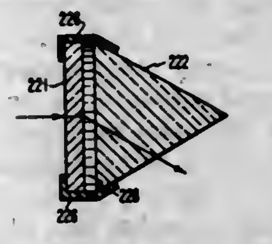
Paul A. Hoogesteger, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Dec. 26, 1962, Ser. No. 247,017
2 Claims. (Cl. 350—84)



1. In a microscope having a viewing tube containing the optical elements of the microscope, the improvement comprising a unitary stand molded of a thermosetting plastic and comprising a unitary base, upright arm and overhanging sleeve for receiving said viewing tube with the microscope optical elements contained therein, said upright arm including means defining an integral molded downwardly extending projection disposed at a level beneath the lower extremity of said overhanging sleeve and an abutment portion spaced from said projection and disposed at a level slightly below the upper end of said projection, said base including a pair of integral molded upstanding struts, a stage having an opening therein receiving said projection therethrough, and a fastener for retaining said projection within said opening, said stage being disposed in engagement with said abutment portion and respectively supported on opposite sides by said upstanding struts to thereby position said stage beneath said viewing tube.

3,307,897
LIGHT MODULATOR

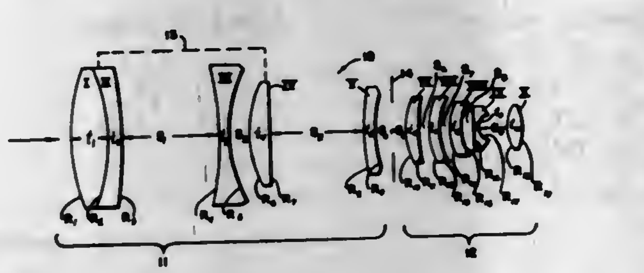
Adolf W. Lohmann, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 1, 1963, Ser. No. 292,035
1 Claim. (Cl. 350—160)



A light modulating device comprising,
a diffraction grating,
a transparent element juxtaposed to said diffraction grating,
said diffraction grating and said element being separated by several thousand angstroms whereby a fringing field extends into said transparent element when light is incident on said diffraction grating,
an electro-optic element filling the same between said diffraction grating and said transparent element, said electro-optic element having an index of refraction which changes in response to the electrical field applied thereto, and
means for applying an electric field to said electro-optic element thereby changing its index of refraction,
whereby the total transmissivity of said device is changed when said electric field is applied to said electro-optic element.

3,307,898
OPTICALLY COMPENSATED LOOM TYPE OPTICAL OBJECTIVE

Lena M. Hudson, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 30, 1963, Ser. No. 312,636
4 Claims. (Cl. 350—184)



1. A variable focal length optical objective of the zoom optically compensated type having a range of focal length variation of about 3 and having a relative aperture of $f/1.0$, said objective being corrected in a superior manner for spherical and chromatic aberrations, sagittal and tangential astigmatism, coma, and field curvature, said objective being composed of two spaced lens groups between which a diaphragm is interposed,
the front lens group nearest to entrant light comprising a movable front doublet lens which is composed of a front double convex lens element designated I in contact with a rear negative meniscus lens element designated II, the group further comprising a stationary rearwardly spaced double concave singlet lens designated III, a movable plano convex singlet lens designated IV which is coupled to said doublet lens at a constant distance therefrom and movable therewith to vary the focal length of said objective, and lastly comprises a rearwardly spaced negative meniscus singlet lens designated V,

the rear lens group comprising three positive meniscus singlet lenses designated VI, VII, and VIII spaced from each other and from a rearward plano concave singlet lens designated IX, and spaced rearmost therefrom is a double convex singlet lens designated X,
the values of the lens parameters for one specific form of the objective being given substantially in the table of mathematical statements herebelow wherein R_1 to R_{19} represent the radii of the successive lens surfaces, the minus (—) sign being applied to those surfaces whose centers of curvature lie on the entrant side of their vertices, the axial thicknesses of the successive lens elements I to X being designated t_1 to t_{10}, the interlens axial air spaces being designated S_1 to S_9, S_4 and S_5 lying on either side of said diaphragm, F denotes the equivalent focal length of said rear lens group, and n_D and ν represent the refractive index and Abbe number respectively of the glasses from which said lens elements are made,

$R_1=8.40F$
$-R_2=5.18F$
$-R_3=14.33F$
$-R_4=12.89F$
$R_5=2.86F$
$R_6=2.79F$
$R_7=\text{Plano}$
$R_8=40.3F$
$R_9=4.46F$
$R_{10}=1.10F$

$R_{11}=3.28F$
$R_{12}=1.023F$
$R_{13}=1.50F$
$R_{14}=.568F$
$R_{15}=1.81F$
$R_{16}=\text{Plano}$
$R_{17}=.318F$
$R_{18}=.925F$
$-R_{19}=.672F$

$t_1=.892F$
$t_2=.176F$
$t_3=.168F$
$t_4=.552F$
$t_5=.1115F$
$t_6=.1513F$
$t_7=.1053F$
$t_8=.1777F$
$t_9=.0768F$
$t_{10}=.188F$

$S_1=2.561F(T)$
$S_1=.1238F(WA)$
$S_2=6.30F(T)$
$S_2=3.08F(WA)$
$S_3=2.565F(T)$
$S_3=.123F(WA)$
$S_4=.384F$
Diaphragm
$S_5=.0769F$
$S_6=.00384F$
$S_7=.0100F$
$S_8=.0786F$
$S_9=.2255F$

Absolute values:
$n_D(\text{I})=1.611$
$n_D(\text{II})=1.720$
$n_D(\text{III})=1.720$
$n_D(\text{IV})=1.720$
$n_D(\text{V})=1.720$

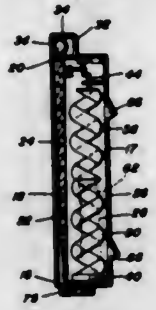
Absolute values:
$\nu(\text{I})=57.2$
$\nu(\text{II})=36.2$
$\nu(\text{III})=42.0$
$\nu(\text{IV})=50.0$
$\nu(\text{V})=47.5$

Absolute values:—Con.
$n_D(\text{VI})=1.720$
$n_D(\text{VII})=1.720$
$n_D(\text{VIII})=1.691$
$n_D(\text{IX})=1.7506$
$n_D(\text{X})=1.691$

Absolute values:—Con.
$\nu(\text{VI})=47.5$
$\nu(\text{VII})=47.5$
$\nu(\text{VIII})=54.8$
$\nu(\text{IX})=27.8$
$\nu(\text{X})=54.8$

wherein T signifies the telephoto position of the optical system and WA signifies the wide angle position.

3,307,899
LIGHT SENSITIVE ADJUSTABLE REAR VIEW MIRROR
Jacob Rabinow, 6920 Selkirk Drive,
Bethesda, Md. 20034
Filed Oct. 29, 1963, Ser. No. 319,862
5 Claims. (Cl. 350—281)



1. A rear view mirror having a reflective panel movable rapidly between two stable positions, the first position providing a bright image and the second position providing a dim image,
   (a) photoelectric circuit means mounted to receive light from the rear window of a vehicle in which the mirror is mounted and to produce an electrical signal in response to a predetermined intensity of such light,
   (b) driver means actuated by said photoelectric circuit means for moving said panel rapidly between said two positions in accordance with the presence or absence of a signal from said photoelectric means,
   (c) said driver means comprising a bimetallic actuator including an electric heater controlled by said electrical signal,
   (d) and detent means for holding said panel in either of its stable positions until a predetermined amount of force is applied to move the panel toward its other position.

CHEMICAL

3,307,900
PROCESS FOR DYEING ACRYLONITRILE POLYMER FIBERS AND THEIR PRODUCTS
Ishihiko Nakanome and Tomoji Ohkubo, Saidaiji, Japan, assignors to Japan Exlan Company Limited, Osaka, Japan
No Drawing. Filed Dec. 2, 1963, Ser. No. 327,517
Claims priority, application Japan, Dec. 6, 1962, 37/55,479
5 Claims. (Cl. 8—4)

1. A method for dyeing a shaped article comprising an acrylonitrile polymer which comprises padding the article with a padding liquor containing (1) dyestuff selected from the group consisting of cationic dyestuffs, acidic dyestuffs and metal-containing dyestuffs, (2) cresol selected from the group consisting of m-cresol, o-cresol and p-cresol and (3) at least twice by weight based on the cresol of aliphatic polyhydric alcohol having not more than 6 carbon atoms, and then treating the wet padded article with steam.

3,307,901
PROCESS FOR DYEING POLYAMIDE TEXTILE MATERIALS AND AUXILIARIES THEREFOR
Jakob Bindler and André Pugin, both of Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland
No Drawing. Continuation of application Ser. No. 306,601, Sept. 4, 1963. This application Nov. 26, 1965, Ser. No. 510,063
Claims priority, application Switzerland, May 24, 1961, 6,020/61; Apr. 18, 1962, 4,735/62; Sept. 17, 1962, 10,959/62
9 Claims. (Cl. 8—54)

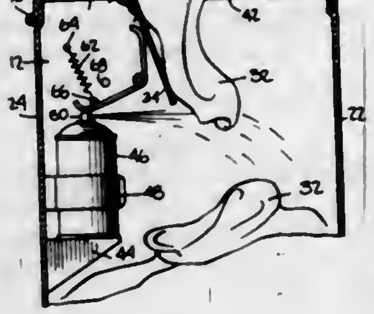
1. In a process for the dyeing of wool with an aqueous dye bath containing a water soluble salt of a metal phthalocyanine containing chemically bound at least one member selected from the group consisting of $—SO_3H$,

$$—SO_2—NHCH_2CH_2—OSO_3H$$

and $—SO_2—NHCH_2CH_2CH_2OSO_3H$ and mixtures thereof wherein the metal is of atomic number of 28 to 29,

the improvement comprising mixing with the aqueous dyebath containing the aforesaid salt a quaternary condensation product of a primary amine selected from the group consisting of a higher alkylamine, a higher alkenylamine and higher alkyl-benzylamine, with, per equavalent of said primary amine from 7–30 equivalents of ethylene oxide, one equivalent of styrene oxide and from 0 to 2 equivalents of propylene oxide quaternized with the ester of a lower alkanol and a strong acid.

3,307,902
DISINFECTING AND DEODORIZING RECEPTACLE
Laura Nardi, 59 St. Nicholas Ave.,
Brooklyn, N.Y. 11208
Filed Apr. 24, 1964, Ser. No. 362,284
3 Claims. (Cl. 21—77)



1. A disinfecting and deodorizing receptacle for soiled clothing and the like comprising a base with upstanding side walls and a hinged cover pivotally secured to one of the side walls adjacent its upper edge, a slot provided in the cover through which soiled clothes are hand-deposited into the receptacle, a downwardly swingable closure flap of sufficient size to cover the slot pivotally supported by a hinge on the undersurface of the cover adjacent one side of the slot, spring means in the hinge urging the flap upwardly against the undersurface of the cover adjacent another side of said slot in covering relationship to said slot, a spray can of disinfecting and deodorizing liquid vertically disposed in the receptacle, means to removably secure the spray can to a side wall of the receptacle, the spray can provided at its top with a spring-actuated, vertically-depressible, valve having an intermediate opening therein positioned to discharge a liquid spray therefrom in a horizontal direction across an area directly beneath said slot upon depression of the valve, a pivot bar rotatably secured to a side wall of the receptacle positioned between the closure flap and the can valve, the bar comprising a first arm disposed to extend above and in alignment with the can valve and a second arm disposed to extend below and in alignment with the closure flap so that depression of the closure flap to swing downwardly in an arc into the receptacle causes its engagement with the second arm to actuate said pivot bar whereby the first arm depresses the can valve to spray a charge of disinfecting and deodorizing liquid laterally across the receptacle adjacent to and below the arc of the downwardly swinging closure flap to spray each article of clothing as it is inserted through the slot, spring means secured to the pivot bar and to a side wall of the receptacle to return the pivot bar to a free position when the flap is released, and stud means to limit rotation of the first arm away from the can valve.

3,307,903
PROCESS FOR THE PREPARATION OF HIGH PURITY AMMONIUM PERCHLORATE
Fabrizio Lazari, Milan, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy
No Drawing. Filed Jan. 20, 1964, Ser. No. 338,630
Claims priority, application Italy, Jan. 30, 1963, 1,881/63
8 Claims. (Cl. 23—85)

1. A process for the preparation of very high purity ammonium perchlorate with a predetermined granulometry, comprising the steps of (a) reacting an aqueous solution of sodium perchlorate with an excess of concentrated sulphuric acid wherein the molar ratio of $H_2SO_4/NaClO_4$ is between 2 and 4.3 to produce a 50 to 72% pure perchloric acid solution; (b) distilling the perchloric acid under reduced pressure of between 15 and 400 mm. Hg, and at a temperature of 170° C.; (c) neutralizing the resulting aqueous solution of perchloric acid with gaseous ammonia in a reactor operating under atmospheric pressure in the presence of added aqueous ammonium perchlorate solution saturated at 40° C. in crystallization stage, so that the whole of this solution consisting of formed ammonium perchlorate and water introduced with the acid, yields a solution of ammonium perchlorate saturated at a temperature between 40° and 90° C.; (d) introducing this solution into a crystallization vessel; and (e) cooling said solution saturated with ammonium perchlorate to a temperature between 0° and 40° C. under a pressure of about 50 mm. Hg, thus obtaining crystalline ammonium perchlorate having a titre of 99.9% NH_4ClO_4 with a predetermined granulometry and a saturated solution of ammonium perchlorate which is recycled to the neutralization stage.

3,307,904
PREPARATION OF NITROSYLSULFURIC ACID OF HIGH PURITY
Ryoichi Ysuda, Fumio Nishikawa, and Takao Iwamura, Minami-ku, Nagoya, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Dec. 26, 1962, Ser. No. 247,001
Claims priority, application Japan, Dec. 26, 1961, 36/47,444
2 Claims. (Cl. 23—139)

1. A method of preparing nitrosylsulfuric acid of high purity which comprises oxidizing ammonia to obtain a hot mixed gas of nitrogen monoxide and nitrogen peroxide, cooling the said mixed gas positively by passing the same through at least two successive cooling zones, regulating the temperature of the mixed gas at the end of the final cooling zone wherein the nitrogen monoxide and nitrogen peroxide mixed gas at the time of its contact with a sulfuric acid portion will be maintained substantially equimolar, said temperature regulation being carried out in response to fluctuations in the mole ratio of the mixed gas, and thereafter reacting said mixed gas with said sulfuric acid portion and recovering the nitrosylsulfuric acid.

3,307,905
PROCESS FOR THE MANUFACTURE OF HYDROGEN CYANIDE AND ACETIC ACID FROM OXIMINOACETONE
Hans Fernholz, Bad Soden, Taunus, and Helmut Gössel, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Aug. 12, 1963, Ser. No. 301,591
Claims priority, application Germany, Oct. 10, 1962, F 38,002
11 Claims. (Cl. 23—151)

1. A process for the preparation of hydrogen cyanide and acetic acid which comprises reacting oximinoacetone

with a catalytic amount of an organic acylating agent at a temperature in the range of from 100° C. to 200° C.

3,307,906
SILICA PIGMENTS AND PREPARATION THEREOF

Oliver W. Burke, Jr., Fort Lauderdale, Fla.
(P.O. Box 1266, Pompano Beach, Fla. 33062)
No Drawing. Filed May 24, 1965, Ser. No. 458,480
12 Claims. (Cl. 23—182)

1. In the preparation of silica pigment by the acidulation of an aqueous solution of alkali metal silicate with the aid of carbon dioxide, the improvement which comprises adding water essentially free of electrolyte to the solution during that part of the period in the acidulation thereof in which the value of x in the composition of the alkali metal silicate designated by the formula $M_2O(SiO_2)_x$—wherein M is alkali metal—has become greater than 3.75; said water being added in the proportion of from 10 parts to 150 parts per 100 parts of water present just prior to such addition.

3,307,907
REMOVAL OF IRON FROM CONCENTRATED BARIUM HYDROXIDE SOLUTIONS

Bennie Leroy Benning, Modesto, Calif., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 17, 1964, Ser. No. 338,319
4 Claims. (Cl. 23—186)

1. Method for producing concentrated aqueous solutions of barium hydroxide containing no more than 10 parts per million of iron impurities which comprises adding magnesium oxide to an aqueous barium hydroxide solution containing from 67 to 73% by weight of barium hydroxide monohydrate, said magnesium oxide being present in amounts sufficient to render insoluble said iron impurities, maintaining said solution and said added magnesum oxide at a temperature of from about 85° to 110° C. for at least about an hour, filtering said solution to remove insolubles from said solution, and recovering a filtrate of said solution containing no more than 10 parts per million of iron.

3,307,908
PREPARATION OF ALUMINUM NITRIDE

Victor Mandorf, Jr., Olmsted Falls, Ohio, assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation of application Ser. No. 255,650, Feb. 1, 1963. This application Aug. 16, 1965, Ser. No. 480,091
9 Claims. (Cl. 23—192)

9. A process for preparing aluminum nitride, which process comprises forming a mixture consisting of finely divided aluminum in an amount of from about 30 to about 60 percent by weight and from about 70 to about 40 percent by weight finely divided carrier material selected from the group consisting of aluminum nitride, aluminum fluoride, and mixtures thereof, providing around said mixture a nitrogen atmosphere, heating said mixture to a temperature between about 800° C. and about 1300° C. while under said atmosphere, thereby nitriding the aluminum in said mixture to form aluminum nitride, and then heating said mixture to a temperature between about 1900° C. and about 2100° C. under an atmosphere of an inert gas at least during temperatures above 1900° C., thereby subliming any aluminum fluoride present and stabilizing the reaction product.

3,307,909
CHEMICAL PROCESS FOR THE PRODUCTION OF HYDROGEN PEROXIDE

Victor Joseph Reilly, Memphis, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 4, 1962, Ser. No. 228,265
4 Claims. (Cl. 23—207)

1. In a cyclic anthraquinone process for producing hydrogen peroxide involving the successive steps of: (1) hydrogenating in the presence of a solid particulate hydrogenation catalyst an alkylanthraquinone in solution in a water-immiscible solvent, and (2) oxygenating the resulting alkylanthrahydroquinone dissolved in said solvent to regenerate the solution of said alkylanthraquinone for recycling in the process after first separating therefrom the hydrogen peroxide which is simultaneously formed, the improvement comprising effecting said hydrogenation in step (1) at a temperature not exceeding about 50° C. and in the presence of a solid, catalyst-free, particulate inorganic alkaline material which is insoluble in said solvent and is in admixture with said hydrogenation catalyst, said alkaline material being present in said solution in an amount sufficient to effectively neutralize any acidity which may develop in said solution, and said alkaline material being a member of the group consisting of the carbonates, the hydroxides and the oxides of magnesium and the alkaline earth metals.

3,307,910
PROCESS FOR STABILIZING AQUEOUS SOLUTIONS OF HYDROGEN PEROXIDE

André Ryckaert, Uccle, Brussels, Belgium, and Charles Domen, deceased, late of Etterbeek, Brussels, Belgium, by Lucie Jeanne Henriette Domen nee Depauw, heir, Brussels, Belgium, assignors to Solvay & Cie, Brussels, Belgium, a company of Belgium
No Drawing. Filed Feb. 25, 1964, Ser. No. 347,310
Claims priority, application Belgium, Mar. 4, 1963, 503,441
6 Claims. (Cl. 23—207.5)

1. Process for stabilizing aqueous hydrogen peroxide solutions characterized by adding thereto minor amounts of an acid of the formula

$$HOOC—CH_2—Y—CH_2—COOH$$

in which Y represents oxygen or sulphur.

3,307,911
PRODUCTION OF CARBON BLACK

Joseph C. Krejci, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 28, 1962, Ser. No. 206,087
9 Claims. (Cl. 23—209.4)

1. A process for producing a furnace carbon black product characterized by desired lower than normal modulus properties in rubber, which process comprises:

charging a hydrocarbon feedstock to a carbon black producing furnace;

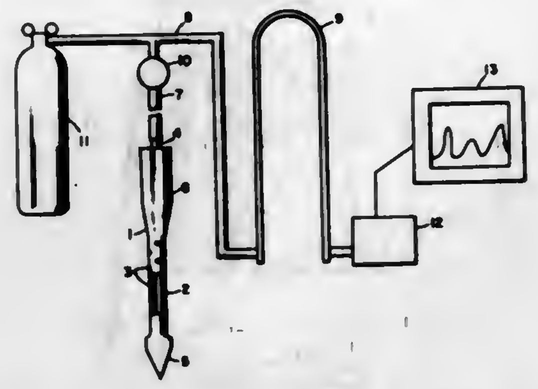
producing carbon black by partially burning said feedstock under carbon black producing conditions in the reaction zone of said furnace in the presence of a substance comprising an alkali metal present in an amount within the range of from 1 to 200 parts by weight of potassium per million parts by weight of said feedstock and which is sufficient to effect only from about 25 percent to not more than about 75 percent of said desired decrease in modulus properties;

maintaining said thus produced carbon black in said reaction zone under said carbon black producing conditions for an increased period of time which is longer than that necessary to produce a tar-free carbon black having a photelometer value of 100 and which is sufficient to effect the remainder of said desired decrease in moduls properties; and

recovering said carbon black product from the effluent from said furnace.

3,307,912
METHOD FOR ANALYZING SOIL GAS

John B. Davis, Dallas, Tex., assignor to Mobile Oil Corporation, a corporation of New York
Filed June 21, 1963, Ser. No. 289,476
1 Claim. (Cl. 23—232)

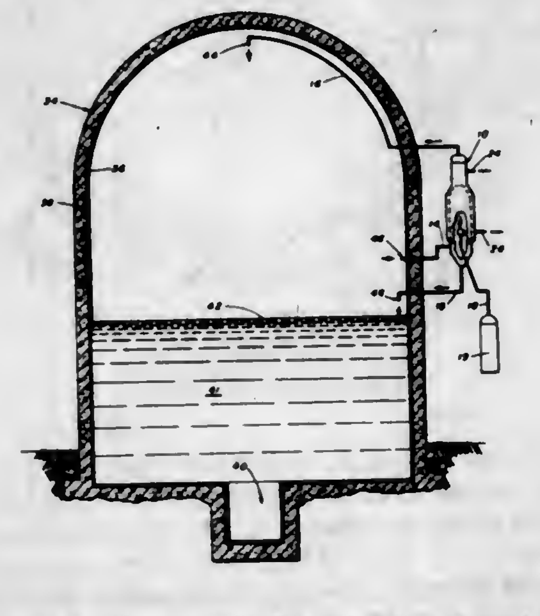


A method of geochemical prospecting, comprising the steps of:

(a) forcing a gas conducting probe into an undisturbed portion of the ground,
(b) flowing gas from the adjacent soil through said probe to a chromatographic column whereby the component hydrocarbon gases of the soil gas will appear in the effluent from said column at different times,
(c) burning at least a portion of said effluent comprising a plurality of component hydrocarbon gases in a hydrogen flame whereby ionized gases are produced,
(d) generating a signal representative of the amount of ionized gases produced by step (c),
(e) recording said signal as a function of time, and
(f) repeating steps (a), (b), (c), (d), and (e) at intervals over a designated portion of the earth's surface.

3,307,913
VACUUM PRODUCING APPARATUS FOR CONTAINMENT VESSELS

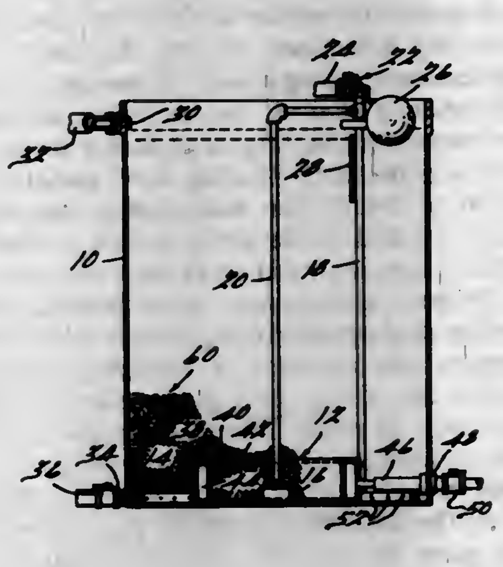
Charles T. Chave, Wellesley, Mass., assignor to Stone & Webster Engineering Corporation, Boston, Mass., a corporation of Massachusetts
Filed July 27, 1962, Ser. No. 212,863
7 Claims. (Cl. 23—252)



1. In containment vesels for nuclear reactors and the like, the combination comprising a containment vessel, a burner having a combustion chamber, means having an inlet within the containment vessel for continuously introducing air from the containment vessel into the combustion chamber of the burner, means for introducing hydrogen gas into the combustion chamber of the burner, means for igniting and burning the hydrogen within the combustion chamber of the burner as an open flame and in the presence of air introduced from the containment vessel, means having an outlet within the containment vessel for returning the exhaust gas from the burner to the containment vessel, the outlet of the means for returning the exhaust gas from the burner to the containment vessel being located at a high point within the containment vessel and the inlet of the means for continuously introducing air from the containment vessel into the burner being located at a lower point within the containment vessel, means for cooling the exhaust gas to condense water vapor therein prior to return of the exhaust gas to the containment vessel, and means for draining condensed water vapor from the combustion chamber of the burner, whereby oxygen is continuously removed from the air in the containment vessel through its chemical combination with the hydrogen to form water vapor, and a partial vacuum in the containment vessel is thereby induced.

3,307,914
SALT DISSOLVER WITH SELF-CLEANING SOLUTION OUTLET-FILTER

John F. Heiss, St. Clair, and Richard Kolasinski, Richmond, Mich., assignors to Diamond Crystal Salt Company, St. Clair, Mich., a corporation of Michigan
Filed July 26, 1963, Ser. No. 297,791
4 Claims. (Cl. 23—267)



1. A salt dissolver-filter unit comprising a tank adapted to be at least partially filled with a particulated liquid soluble compound, a filter unit positioned in substantially the bottom portion of said tank comprising a pair of spaced-apart porous side walls connected together along the upper edges thereof by an upper porous wall and along the lower edges thereof by a bottom wall defining therebetween an internal chamber for receiving the saturated solution passing therethrough, the predominant area of the exterior face of each of said side walls disposed in an upright position, conduit means disposed in communication with said chamber for withdrawing the saturated solution therefrom to a point exteriorly of said tank, and liquid supply means including a first distributor conduit incorporating a plurality of outlet nozzles therein for discharging fresh liquid into said tank at a point spaced below the level of one of said porous side walls, and a second distributor conduit having outlet means for discharging fresh liquid into said tank at a point spaced below the level of the other of said porous side walls.

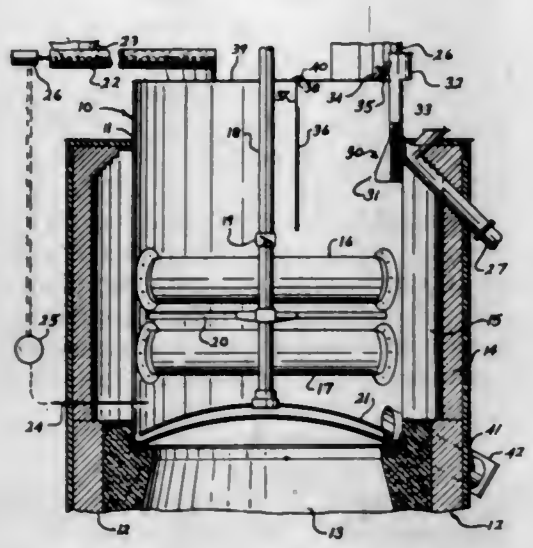
3,307,915

APPARATUS FOR CONTINUOUS CALCINATION OF GYPSUM

Joseph E. Conroy, Jr., Media, Pa., and J. Sharland Jorgensen, Marysville, Kans., assignors, by mesne assignments, to Georgia Pacific Corporation, Portland, Oreg., a corporation of Georgia

Filed Jan. 22, 1964, Ser. No. 339,390

5 Claims. (Cl. 23—277)



1. In apparatus for the continuous calcination of gypsum and like materials in a kettle type reactor having a source of heat for calcining raw material within the the kettle, a flue system including a wall surrounding the kettle and spaced therefrom to form an annular chamber for circulating hot gases around the kettle wall, and ventilator means creating a draft at the top of the kettle to draw off steam and dust, the combination comprising: conveyor means terminating in an outlet at the top of the kettle for continuously feeding raw material into the kettle; control means for maintaining the temperature of the raw material in the kettle within a predetermined temperature range; an opening in the kettle side wall near the top thereof; a discharge spout leading away from said opening, said opening being structurally remote from the incoming raw material; a vertically disposed baffle plate within the kettle, said plate intersecting the said kettle side wall at points intermediate the conveyor outlet and the discharge opening, and extending into the mass of material whereby to block the migration of uncalcined material to the discharge opening; and means mounting the baffle plate for vertical movement within the kettle whereby the depth of penetration of the plate into the mass may be adjusted.

3,307,916

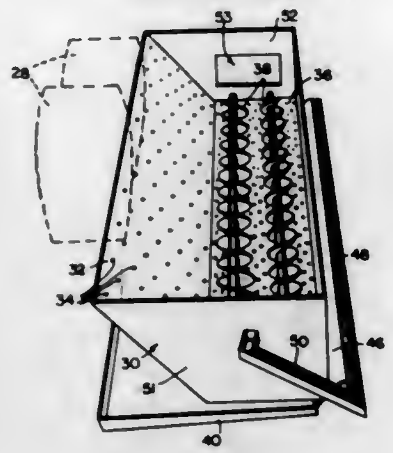
RENDERING APPARATUS

Joseph Corrigan, Newton Center, Mass., assignor to J. C. Corrigan Co., Inc., Boston, Mass., a corporation of Massachusetts

Filed Dec. 18, 1962, Ser. No. 245,462

2 Claims. (Cl. 23—280)

1. Apparatus for rendering tallow comprising, in combination, at least one cooker adapted to heat the tallow-containing raw material to a temperature sufficient to liquefy the tallow therein, a first elongated container for receiving the discharge of said cooker, said container including a bottom wall and a plurality of side walls, at least one of said side walls having a plurality of perforations therein, at least two parallel screw conveyors within said container extending substantially the length thereof adjacent said bottom wall, means for causing rotation of said screw conveyors in opposite directions, a substantially flat drain pan located below said container for receiving the tallow and particles of solid material which pass through said perforations, said drain pan having an opening therein and being inclined toward said opening whereby a substantial amount of said solid material is retained in said pan as said tallow flows through said opening, and conveyor mean: adjacent said drain pan for transporting said solid material back to said container and depositing it therein said drain pan and said conveyor means being suitably connected to an inclined side wall, said side wall being inclined downwardly from said conveyor means to said drain pan.



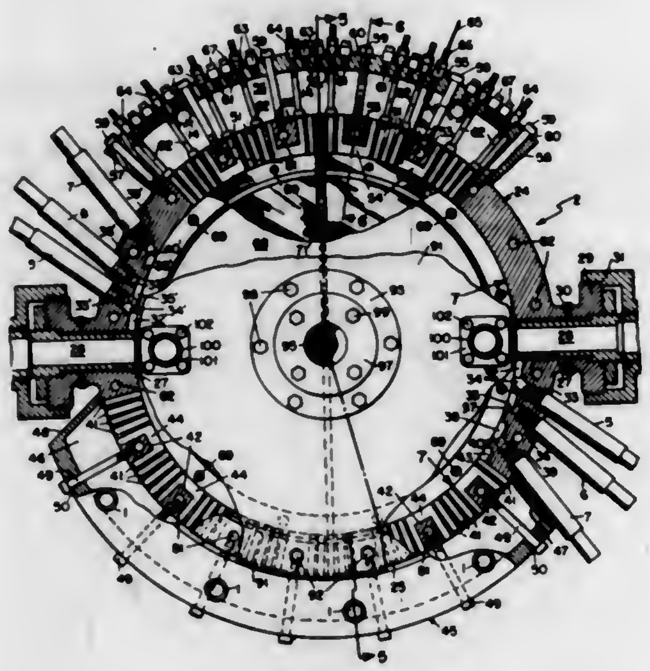
3,307,917

WAVE REACTOR

William B. Hansel, Media, Pa., and James L. Lauer, La Jolla, Calif., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Feb. 4, 1965, Ser. No. 430,412

10 Claims. (Cl. 23—284)



1. In a wave reactor, a disc-like rotor having a single straight passage extending transversely to the axis of the rotor and along a diameter of the disc; and a stationary port ring closely surrounding said rotor, said ring having at one side thereof an arcuately-elongated outlet coupling comprising a plurality of closely adjacent holes extending through said ring in a radial direction, the center lines of said holes all lying in a common plane.

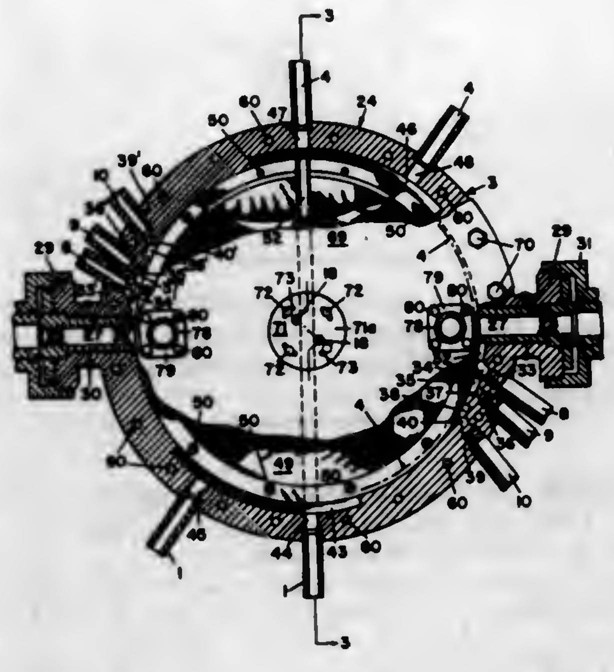
3,307,918

WAVE REACTOR

Jakob E. Bodmer, Media, and James L. Lauer, Penn Wynne, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Apr. 8, 1966, Ser. No. 541,213

6 Claims. (Cl. 23—284)



1. In a wave reactor, a disc-like rotor carrying an elongated shock tube extending transversely to the axis of the rotor and along a diameter of the disc, the rotor axis passing through the midpoint of the longitudinal center line of said tube; a stationary port ring closely surrounding said rotor, means providing a driving gas inlet in said ring, said ring having therein a driving gas outlet and also having therein a reactant gas inlet; said rotor being rotatable to bring one end of said tube successively into communication with said reactant gas inlet, said driving gas inlet, and said driving gas outlet; said tube having in a side wall thereof a restricted aperture which is centered on said axis; and means operating to extract product gases from said tube, by way of said aperture, during a portion only of a complete revolution of said tube.

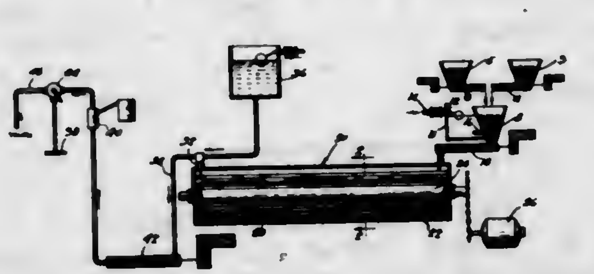
3,307,919

APPARATUS FOR MAKING ULTRAFINE CALCIUM SULFATE DIHYDRATE CRYSTALS

Robert E. McCleary, Geneva, and William A. Kinkade, Lisle, Ill., assignors to United States Gypsum Company, a corporation of Delaware

Original application Aug. 1, 1960, Ser. No. 50,816, now Patent No. 3,262,799, dated July 26, 1966. Divided and this application Jan. 10, 1966, Ser. No. 519,565

7 Claims. (Cl. 23—287)



1. An apparatus for producing ultrafine calcium sulfate dihydrate crystals comprising, an elongate substantially closed container, having an inlet adjacent one end and an outlet adjacent the opposite end, a shaft mounted longitudinally within said container for relative rotative movement with respect thereto, said shaft carrying a plurality of elongated longitudinally extending impeller ribs the transverse portions of which protrude radially outward from said shaft, a plurality of freely movable elements disposed within and substantially filling said container circumjacent said shaft, means for continuously feeding an aqueous charge of calcium sulfate hemihydrate and water in through the inlet of said container, and means for effecting rotation of said shaft within said container, whereby the aqueous charge is subjected to division, agitation and impact and the product is continuously discharged from said outlet.

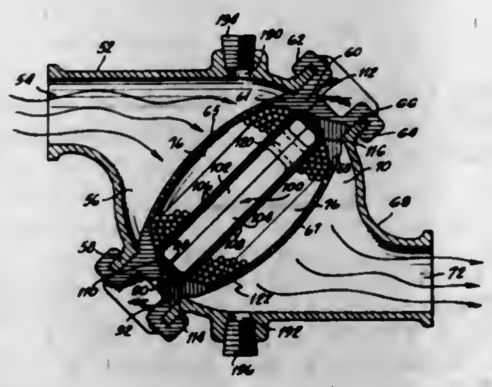
3,307,920

APPARATUS FOR PURIFYING EXHAUST GASES

Llewellyn T. Barnes, 155 Atlantic Ave., Freeport, N.Y. 11520

Filed July 10, 1962, Ser. No. 208,703

3 Claims. (Cl. 23—288)



1. A catalytic degasser comprising a chamber, a catalyst casing surrounding said chamber, exhaust gas inlet and outlet conduits, means detachably connecting said conduits to said casing, catalyst pellets disposed in the space between said chamber and said casing so that exhaust gas from said inlet conduit will pass over said catalyst pellets into said chamber for oxidation reaction, said chamber being formed of a pair of perforated chamber sections, means for holding said chamber sections in alignment, said casing including a pair of abutting rings provided with perforated screens, said rings holding said chamber sections in position, and means detachably holding said rings in contact with each other.

3,307,921

APPARATUS FOR CONTROLLING CHEMICAL REACTOR TEMPERATURES BY MEANS OF SUPERHEATED STEAM

Alberto Junginger, Milan, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy

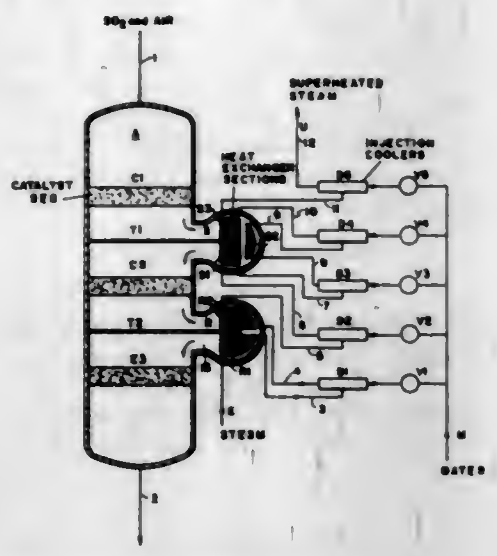
Original application Apr. 15, 1963, Ser. No. 272,980. Divided and this application May 25, 1965, Ser. No. 458,622

Claims priority, application Italy, Apr. 13, 1962, 7,365/62

3 Claims. (Cl. 23—288)

1. Apparatus for controlling the temperature of reacting fluid passing through a multi-stage reactor having a reactor wall with vertical wall sections and successive reaction stages for exothermic reactions, comprising a heat exchanger between successive stages for exchange of heat between the reaction fluid and a cooling vapor, said heat exchanger being simultaneously within the reactor and external to the adjacent vertical reactor wall section and provided with a plurality of sections and a tube system for circulation of the cooling vapor and for superheating said vapor by said exchange of heat, cooling means interconnected in said tube system for reducing the degree of superheat of the vapor passing therethrough, liquid injection means for injecting liquid at an adjustable rate into said cooling means, and at least one baffle wall

between successive reaction stages of said reactor, said baffle wall dividing the flow path of said reaction fluid



through said heat exchanger sections so as to direct said reacting fluid into one of said sections and out from another of said sections.

3,307,922

EXTRACTION OF LITHIUM VALUES FROM BRINES CONTAINING CALCIUM SALTS IN THE PRESENCE OF AMMONIA

Robert D. Goodenough and Remigius A. Gaska, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Aug. 5, 1963, Ser. No. 300,066
8 Claims. (Cl. 23—312)

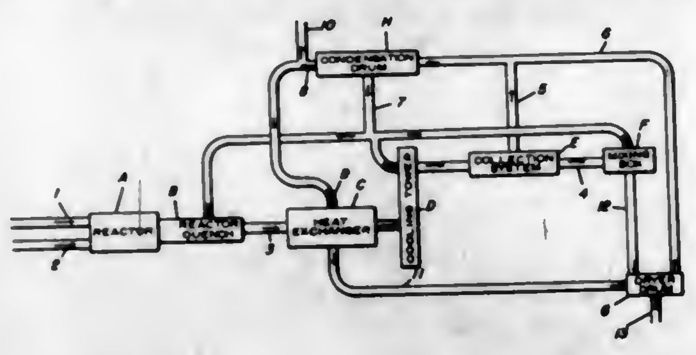
1. The process of recovering lithium values from a brine containing lithium salts and other salts dissolved therein including calcium salts which comprises admixing with said brine an organic solvent selected from the class consisting of C_3 to C_5 monoalkanols and C_5 to C_8 aliphatic ketones in a ratio of the organic solvent to the brine of between about 0.01 and about 10 by volume, in the presence of ammonia in a ratio of between about 5% and 40% thereof based on the weight of the brine, at between about 0° and about 100° C., and at a pH value of between about zero and about 12, while agitating the mixture to maintain a substantially uniform state of equilibrium therein, for a period of time sufficient to permit the organic solvent to extract a substantial portion of the lithium values from the brine, substantially discontinuing agitation to provide a separation of an upper organic phase containing a substantial portion of the lithium values and a lower aqueous phase containing a substantial portion of the calcium values and separating the organic phase from the aqueous phase.

3,307,923

PROCESS AND APPARATUS FOR MAKING CARBON BLACK

Theodore A. Ruble, Houston, Tex., assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware
Filed Dec. 9, 1964, Ser. No. 417,158
4 Claims. (Cl. 23—314)

1. A process for making pelletized carbon black which includes obtaining a hot gaseous effluent containing suspended carbon black from a reactor with a water quench connected thereto: passing the hot gaseous effluent through a heat exchanger having heating and heated portions; passing the hot gaseous effluent containing the carbon black from the heat exchanger through a cooling tower to a collection system wherein particulate carbon black is separated from the gaseous effluent; passing the particulate carbon black from the collection system to a mixing box wherein is wet pelletized; passing the wet pellets to a pellet dryer; passing the clean effluent gases from the collection system to a condenser; passing the dried clean effluent gases from the condenser to the heated portion of the heat exchanger wherein the temperature is substantially raised; and passing the dried clean effluent from the heated portion of the jacket of the heat exchanger to the pellet dryer.



3,307,924

COPPER INFILTRATING COMPOSITION FOR POROUS FERRUGINOUS MATERIAL

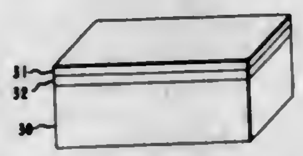
Arthur B. Michael, Munster, Ind., assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed June 30, 1965, Ser. No. 468,591
8 Claims. (Cl. 29—182.5)

1. A copper composition for infiltrating porous ferruginous material, which composition consists essentially of an intimate mixture of about 0.6 to 0.9 weight part of impalpable refractory, 0 to about 1 weight part of impalpable carbon, about 5 to 12 weight parts of particulate iron having particle size finer than 325 mesh, and finely-divided copper, wherein said composition constitutes substantially 100 weight parts.

3,307,925

PROTECTED COLUMBIUM OR TANTALUM ARTICLE

Howard W. Jacobson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Original application May 7, 1963, Ser. No. 278,711. Divided and this application Sept. 7, 1965, Ser. No. 509,657
11 Claims. (Cl. 29—195)



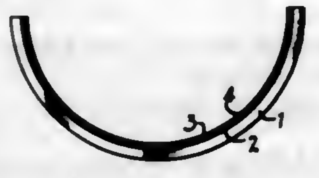
1. A coated refractory-metal-base article comprising a refractory-metal-base alloy selected from the group consisting of columbium-base and tantalum-base alloys, upon the surface of which article there is a firmly bonded multilayer coating comprising a first layer of titanium and a second layer of a disilicide of a metal selected from the group consisting of tungsten and molybdenum.

3,307,926

BEARING CONSTRUCTION

Robert E. Thomas, Detroit, and David C. Mitchell, Bloomfield Hills, Mich., assignors to Detroit Aluminum & Brass Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 2, 1964, Ser. No. 401,061
3 Claims. (Cl. 29—196.4)

1. In a composite bearing construction comprising a steel backing layer, an intermediate layer of a good heat conducting medium modulus of elasticity metal on said backing layer, a surface layer of a tin containing bearing alloy metal, the improvement comprising a barrier layer consisting essentially of from 60% to 75% by weight of tin and from 25% to 40% by weight of nickel between said intermediate layer and said surface layer, all of said layers being uniformly bonded to each other over their entire surfaces.



3,307,927

PROCESS FOR THE TREATMENT OF PULVERULENT MATERIAL

Walter Müschenborn, Elfriedenstrasse 39; Walter Schinzel, Ehrenaue 36; and Friedrich Breitrück, Engelsbecke 10; all of Essen, Germany
No Drawing. Filed Feb. 28, 1963, Ser. No. 261,885
Claims priority, application Germany, Oct. 13, 1959, B 55,161; June 3, 1960, B 58,111
5 Claims. (Cl. 44—19)

1. A method of treating solid particulate material having non-uniform surface characteristics and selected from the group consisting of solid carbonaceous materials, sand, flue dust, and ore and metal powders, and having a particle size of up to about 6 mm., comprising the steps of forming an intimate mixture of 100 parts by weight of said solid particulate material and between ½ and 30 parts by weight of an oil in water emulsion consisting essentially of between 1 and 39 parts by weight of a hydrophobic oil in between 60 and 95 parts by weight of water having between 4 and 39 parts by weight of a water-soluble binder dissolved therein, so as to form a mass consisting essentially of particles of said material with said hydrophobic oil and said binder adhering thereto, whereby a pulverulent material will be formed consisting of particles of more uniform surface characteristics than said solid particulate material, adapted to be packed more densely than said solid particulate material and also adapted to be briquetted upon admixture of a water-insoluble binder; mixing the thus formed mass with a water resistant binder in an amount sufficient to permit briquetting of the thus formed mixture; and briquetting the thus formed mixture, whereby briquettes of highly uniform quality are formed.

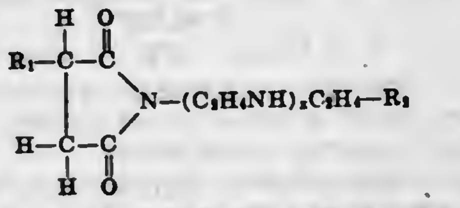
3,307,928

GASOLINE ADDITIVES FOR ENHANCING ENGINE CLEANLINESS

Michael Chalkivsky, Elizabeth, John D. Turner, North Plainfield, and Louis N. Calvino, Scotch Plains, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Jan. 30, 1963, Ser. No. 254,878
7 Claims. (Cl. 44—63)

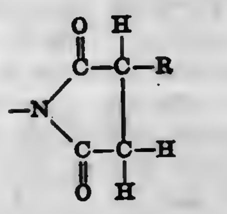
1. A motor fuel composition comprising a major proportion of a petroleum distillate fuel boiling in the gasoline range, a minor amount sufficient to enhance engine cleanliness, of an additive combination comprising:

(A) A polyolefin succinimide having the following formula:



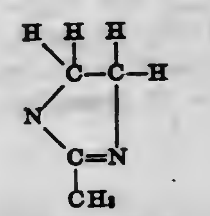
wherein R_1 is a polyolefin having a molecular weight of from 780 to 1500, x is in the range of from 1 to 3 inclusive, and R_2 is selected from the class consisting of:

(1)



and

(2)



and

(B) a phosphosulfurized polyolefin having a molecular weight of from 500 to about 20,000; wherein said additive combination is employed in the ratio of from 1:1 to 3:1 parts by volume of the polyolefin succinimide per part by volume of the phosphosulfurized polyolefin;

and a second additive combination in an amount sufficient to substantially separate said petroleum distillate fuel from water which it may contact, said additive combination comprising:

(C) dodecylbenzene sulfonic acid, and

(D) an ethoxylated fatty acid polyester,

said second additive combination being employed in a weight ratio of dodecylbenzene sulfonic acid to ethoxylated fatty acid ester in a range of from 0.3:1 to 4.5:1.

3,307,929

METHOD OF MANUFACTURING GLASS

Hendrikus Johan Lodewijk Trap, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 27, 1964, Ser. No. 370,709
Claims priority, application Netherlands, June 28, 1963, 294,727
3 Claims. (Cl. 65—32)

1. A method of preparing glass which contains ferrous ions in addition to ferric ions, characterized in that for this purpose a mixture of the following composition in mol percent indicated as oxides, the total amount of ferrous oxide and ferric oxide being calculated as Fe_3O_4:

B_2O_3	35–80
Fe_3O_4	1–20
Al_2O_3	2–15
Na_2O	5–20
PbO	5–20

where

$$0.3 < \frac{PbO}{Na_2O} < 3.3$$

is melted in an inert to weakly oxidizing atmosphere.

3,307,930

METHOD OF AND APPARATUS FOR BENDING GLASS SHEETS

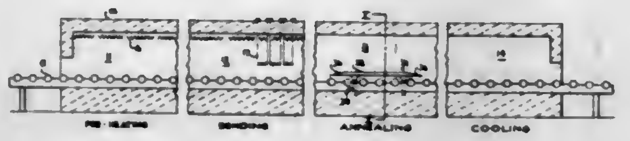
Stephen Stevens, Crystal City, Mo., and Paul D. Shaffer, New Kensington, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 21, 1963, Ser. No. 317,484
10 Claims. (Cl. 65—103)

1. In a method of bending and annealing a glass sheet while the glass sheet is supported and conveyed through a controlled temperature atmosphere, having successive zones providing a bending and annealing range of temperatures, the steps of

supporting the glass sheet along peripheral portions thereof throughout the bending range of temperature and while cooling the glass sheet to substantially the top of its annealing range of temperature,

removing a portion only of the glass sheet support from contact with the glass sheet surface until the thus unsupported portion of the glass sheet surface is cooled to the bottom of its annealing range of temperatures, and

thereafter returning the removed portion of the glass sheet support into supporting contact with the glass sheet surface while maintaining the glass sheet temperature below its annealing range.



3. In glass sheet bending apparatus comprising at least one mold assembly, including a mold carriage and a glass laden mold of sectionalized construction, said mold having a center section and flanking end sections pivotally interconnected thereto, a heated furnace having a bending zone and an annealing zone, said annealing zone including a portion therein maintained at a temperature range substantially equal to the glass annealing range, and a continuous conveyor supporting said mold assembly and extending through said furnace, the improvement comprising actuating means located within said furnace and end section opening means on said mold assembly arranged to coact with said actuating means and move the flanking end sections away from the glass sheet surface through said portion of the annealing zone where the temperature of the glass sheet is within its annealing range, whereby an improved stress pattern is imparted to the unsupported side portions of the peripheral edge of the bent, annealed glass sheet.

3,307,931

HERBICIDAL COMPOSITION AND METHOD

Victor H. Unger, Willow Grove, and Robert E. Wolfrom, Jenkintown, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed May 3, 1965, Ser. No. 452,902

14 Claims. (Cl. 71—2.2)

1. A herbicidal composition comprising a herbicide present in an amount per acre to achieve a desired control of weeds, in combination with a hydrotrope and a surfactant wherein the hydrotrope-surfactant combination is present in the amount of one half pint to twenty pints and in which the volume ratio of hydrotrope to surfactant is in the range of 10:1 to 1:10, wherein said herbicide is selected from the group consisting of

(1) monosodium methanearsonate,
(2) disodium methanearsonate,
(3) sodium arsenate,
(4) sodium arsenite,
(5) 2,2-dichloropropionic acid and its alkali metal salts,
(6) trichloroacetic acid and its alkali metal salts,
(7) 2,2,3-trichloropropionic acid and its alkali metal salts,
(8) 2,3-dichloroisobutyric acid and its alkali metal salts,
(9) magnesium chlorate,
(10) potassium chlorate,
(11) sodium chlorate,
(12) 3,6-endoxohexahydrophthalic acid and its disodium salt,
(13) 1,1′-ethylene-2,2′-dipyridylium dibromide,
(14) 1,1′-dimethyl-4,4′-dipyridylium dichloride,
(15) N′-(4-chlorophenyl)-N,N-dimethylurea,
(16) N′-(3,4-dichlorophenyl)-N,N-dimethylurea,
(17) 2-chloro-4-ethylamino-6-isopropylamino-1,3,5-triazine,
(18) alkali and amine salts and esters of 2,4-dichlorophenoxyacetic acid, and
(19) sodium pentachlorophenate,

wherein said hydrotrope is at least one alkali metal salt of a phenoxypolyethoxyethyl phosphoric acid of the formula R-phenyl$(CH_2CH_2O)_x$phosphate wherein R is selected from the group consisting of hydrogen and alkyl groups of 1 to 12 carbon atoms and x is a number 1 to 20, and wherein said surfactant is selected from the group consisting of

(1) octyl- and nonyl-phenoxypolyethoxyethanol having a total of 6 to 20 ethoxy units,
(2) alkali metal salts of octylphenoxyethyl sulfate and of octylphenoxypolyethoxyethyl sulfates having a total of 2 to 6 ethoxy units,
(3) water-soluble salts of alkylbenzenesulfonic acid wherein the alkyl group constains 8 to 16 carbon atoms, and
(4) alkali metal salts of 1-β-(carboxymethoxy)ethyl-1-carboxymethyl-2-undecyl-2-imidazolinium hydroxide.

3,307,932

PROCESS FOR TREATING SUGAR PRODUCING PLANTS TO EFFECT IMPROVED SACCHAROSE YIELD

Hubert M. Guyot, Capesterre, Guadeloupe, French West Indies, assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 12, 1964, Ser. No. 366,907

Claims priority, application France, Sept. 1, 1960, 837,561, Patent 1,273,464

7 Claims. (Cl. 71—2.3)

1. A process for improving the saccharose yield from sugar cane plants comprising treating the said plants about 15 to 30 days before harvest with a mineral oil composition comprising a major amount of mineral oil boiling in the range of about 300° to 580° F. at 10 mm. Hg, having a viscosity in the range of about 50 to 175 SUS at 100° F., a specific gravity in the range of about 0.840 to 0.880 and an aromatic content below about 26% by weight, in a quantity less than the phytotoxic limit of the said oil composition for the particular plants under treatment, said amount being sufficient to substantially halt the growth of said plants.

3,307,933

COMPOSITION AND METHOD FOR CONTROLLING PLANT GROWTH

Klaus Sasse, Cologne-Stammheim, Richard Wegler, Leverkusen, Ludwig Eue, Cologne-Stammheim, and Helmuth Hack, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed July 28, 1964, Ser. No. 385,754

Claims priority, application Germany, Sept. 10, 1963, F 40,716

4 Claims. (Cl. 71—2.3)

1. A method for controlling the growth of plants which comprises applying to said plants an effective amount of a mixture consisting essentially of

(A) 2,3-dichlorobenzyl cyanide and 0–85% by weight of active ingredients of
(B) 3,4-dichlorobenzyl cyanide.

3,307,934

METHOD OF MAKING A GRANULATED PEAT FERTILIZER

Robert Wilson Palmer and Francis Neil Wilson, Ipswich, England, assignors to Fisons Horticulture Limited, Felixstowe, England

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,597

Claims priority, application Great Britain, Jan. 23, 1963, 2,807/63, 2,808/63, 2,809/63

5 Claims. (Cl. 71—24)

1. A process for preparing granular fertilizer materials which comprises forming a composition comprising peat, water and a fertilizer salt selected from the group consisting of ammonium sulphate, monoammonium phosphate, diammonium phosphate, potassium phosphate, monocalcium phosphate, potassium chloride and potassium sulphate, agitating the said composition to form granules, drying the granules at a temperature of less than 110° C. in the absence of substantial movement between the granules and recovering the dried granules, the water content of the composition which is agitated being in the range 30–55% by weight based on the weight of the composition and the proportion of peat being in the range 20–60% by weight based on the weight of the fertilizer salt on a dry basis.

3,307,935

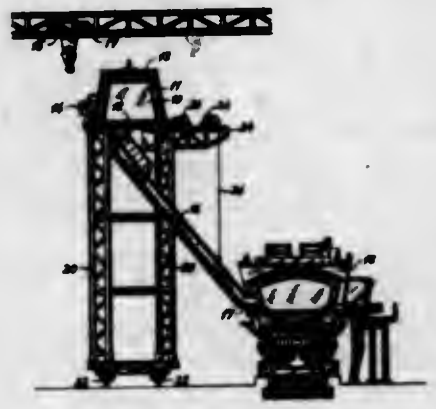
METHOD OF MAKING STEEL USING SCRAP TOGETHER WITH HOT METAL AS WELL AS A CHARGING APPARATUS FOR CHARGING SCRAP INTO A STEEL MAKING FURNACE

Jørgen P. Lindholm, Villa Nila, Las Rozas, Madrid, Spain

Filed Mar. 5, 1963, Ser. No. 262,873

Claims priority, application Great Britain, Mar. 5, 1962, 8,382/62; Mar. 27, 1962, 11,746/62

16 Claims. (Cl. 75—43)



1. In apparatuses for charging a steel making furnace having a plurality of loading doors with scrap in combination: a bin effectively providing a container for a predetermined amount of scrap, a frame structure effectively providing a support for said bin, means for supplying heat to scrap material enclosed inside said bin, a chute effectively providing a passageway for scrap material from said bin to said furnace, means operatively supporting said chute on said frame structure, and means for delivering scrap from said bin to said chute, and means supporting said frame structure for movement along said furnace to selectively deliver said scrap from said chute through selected ones of said loading doors.

13. A method of producing steel using scrap material together with hot metal in an LD-type steel making furnace comprising the steps of preheating at least a plurality of portions of scrap material to temperatures below that temperature at which scrap will clog, imparting rapid movements to said plurality of portions of preheated material solely in the direction of the furnace, the furnace being in a tilted position, said movements being exclusively imparted by gravity and being effective to rapidly charge said furnace with said preheated portions of scrap material, pouring hot metal into said furnace, processing the mixture of hot metal and scrap material to effectively produce steel in said furnace, and recovering the steel produced in the form of ingots.

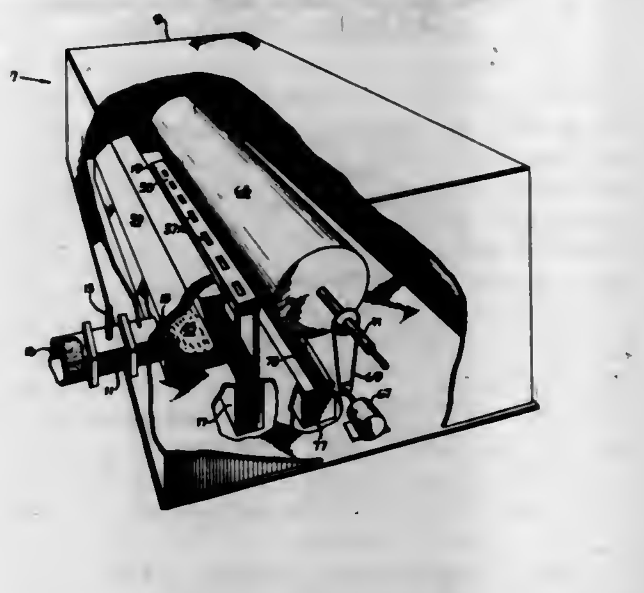
3,307,936

PURIFICATION OF METALS

Hugh R. Smith, Jr., Piedmont, Calif., assignor to Temescal Metallurgical Corporation, Berkeley, Calif., a corporation of California

Filed June 12, 1963, Ser. No. 287,285

9 Claims. (Cl. 75—10)



1. The method of purifying a metal selected from the group consisting of chromium, manganese, beryllium, calcium and aluminum, comprising introducing a raw material mixture of a metal to be purified and impurities including a suitable carrier metal into a hearth within a first region of an electron beam furnace, maintaining said first region at a first reduced pressure of between about 0.1 and 50 millimeters Hg, said first region being substantially surrounded by a second region of said furnace maintained at a second reduced pressure of less than about 1.0 micron of Hg; heating said raw material mixture in said first region with a beam of electrons to a temperature substantially above the melting point of the raw material mixture which is sufficient to rapidly vaporize said metal at said pressure but insufficient to vaporize said carrier metal, vaporizing said metal without vaporizing said carrier metal and condensing said metal on a condenser within said first region adjacent the interface between said first and second regions at substantially said first pressure, the amount of carrier metal in said raw material mixture being selected so as to maintain a molten residue of said carrier metal and nonvolatile impurities in said hearth at said temperature throughout said vaporization, the pressure gradient between said first and second regions causing the rapid flow of metal vapors from said hearth to said condenser, and recovering said metal from said condenser in a highly purified form.

3,307,937

METHOD WHEN DEGASSING CARBON-CONTAINING METAL MELTS

Karl Erik Pihlblad and Anton Robert Wagner, Nybybruk, Sweden, assignors to Nyby Bruks Aktiebolag, Torshalla, Sweden, a company of Sweden

No Drawing. Filed Apr. 12, 1965, Ser. No. 447,567

Claims priority, application Sweden, Apr. 28, 1964, 5,266/64

5 Claims. (Cl. 75—59)

1. A method for decarburizing and degassing molten steel, comprising blowing at least one powerful jet of an

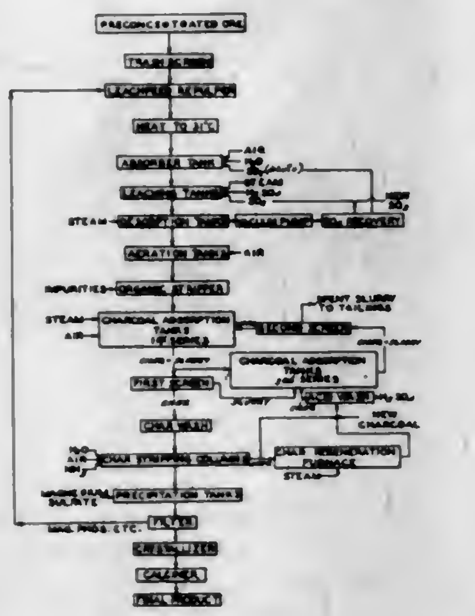
inert gas against the surface of the molten steel, thereafter adding oxygen to said jet of inert gas in a quantity sufficient for oxidizing carbon but insufficient for producing heavy iron fume, and continuing adding oxygen until the desired carbon content has been reached.

3,307,938
PROCESS FOR EXTRACTING METAL VALUES

Richard A. Ronzio, Golden, Wayne C. Hazen, Wheatridge, Enzo L. Coltrinari, Arvada, and Robert E. Cuthbertson, Denver, Colo., assignors, by direct and mesne assignments, to American Metal Climax, Inc., New York, N.Y., a corporation of New York

Filed Apr. 27, 1964, Ser. No. 363,007

32 Claims. (Cl. 75—103)



1. Process for extracting molybdenum values from an ore containing oxidized molybdenum in association with iron, comprising: leaching the ore with sulfuric acid and sulfur dioxide, desorbing the sulfur dioxide, adsorbing the molybdenum values with activated charcoal, and stripping the molybdenum values from the loaded charcoal.

3,307,939
CORROSION-RESISTING COBALT-CHROMIUM-TUNGSTEN ALLOYS

Anton Bäumel, Lank (Lower Rhine) Germany, assignor to Gebr. Bohler & Co. Aktiengesellschaft, Vienna, Austria

No Drawing. Filed June 2, 1964, Ser. No. 372,089

Claims priority, application Austria, June 4, 1963, A 4,457/63

2 Claims. (Cl. 75—134)

1. A corrosion-resisting cobalt-chromium-tungsten alloy consisting essentially of 2.2–2.5% carbon, 30–32% chromium, 13–20% tungsten; 39–47% cobalt, up to 1% manganese, up to 1% silicon, 0.3–6% copper and up to 6% molybdenum.

3,307,940
ELECTROPHOTOGRAPHIC PROCESS EMPLOYING PHOTOCONDUCTIVE POLYMERS

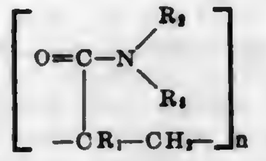
Helmut Hoegl and Heinz Schlesinger, Wiesbaden, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Filed May 23, 1960, Ser. No. 30,747

Claims priority, application Germany, May 30, 1959, K 37,869

21 Claims. (Cl. 96—1)

1. A photographic reproduction process which comprises exposing an electrostatically charged supported photoconductive insulating layer to light under a master and developing the resulting image with an electroscopic material, the photoconductive layer comprising a polymer having the formula



$$\left[\begin{array}{c} O{=}C{-}N\begin{smallmatrix} R_2 \\ R_3 \end{smallmatrix} \\ | \\ -CR_1{-}CH_2{-} \end{array}\right]_n$$

in which R_1 is selected from the group consisting of hydrogen and lower alkyl groups, R_2 is selected from the group consisting of hydrogen, aryl and heterocyclic groups, R_3 is selected from the group consisting of aryl and heterocyclic groups, R_2 and R_3 taken together with the amide nitrogen form a heterocyclic group, and *n* is an integer greater than 1.

3,307,941
PLASTIC DEFORMATION IMAGING FILM AND PROCESS

Robert W. Gundlach, Victor, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed June 3, 1963, Ser. No. 284,962

5 Claims. (Cl. 96—1.1)

1. A plastic deformation imaging film comprising a mixture including a substantial proportion of the esterification product of partially hydrogenated abietic acid and a photopolymer selected from the group consisting of cinnamic acid esters of polyvinyl alcohol and cellulose.

3. The method of forming a plastic deformation image comprising the steps of:

(a) providing a film comprising a softenable material which has an electrical resistivity greater than about 10^{10} ohm-centimeters at its softening point and is capable of accepting and mechanically responding to a charge pattern deposited on a film of said material to form surface wrinkles, and a photopolymer;

(b) forming an electrostatic latent image on the surface of said film;

(c) softening said film whereby the surface wrinkles in image configuration; and

(d) exposing said film to electromagnetic radiation of a frequency which causes polymerization of said photopolymer thereby permanently hardening and fixing said plastic deformation image.

3,307,942
XEROGRAPHIC MEMBER AND PROCESS THEREFOR

Albert J. Cole, New Hanover Township, Montgomery, County, Pa., assignor to The Firestone Tire & Rubber Company, a corporation of Ohio

No Drawing. Filed Mar. 29, 1963, Ser. No. 269,194

39 Claims. (Cl. 96—1.8)

1. A xerographic binder plate comprising a substrate having firmly bonded thereto a continuous photoconductive insulating layer comprising photoconductive particles uniformly dispersed through a resinous layer comprising a copolymer of from about 2 to about 30 parts by weight of alkali-soluble shellac, from about 60 to about 80 parts by weight of at least one monovinyl aromatic compound and from about 20 to about 40 parts by weight of at least one conjugated diolefin, the ratio of said photoconductor to said resin in said layer on a dry basis being within the range of from about 1 to 10 parts of photoconductor to 1 part of resin by weight.

3,307,943
IMAGE REPRODUCTION ELEMENTS AND PROCESSES

Robert Bernard Heiart, Middletown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 14, 1963, Ser. No. 280,457

3 Claims. (Cl. 96—28)

1. A process which comprises

(A) exposing, imagewise, to actinic radiation a photopolymerizable element comprising (1) a support and (2) a photopolymerizable stratum solid below 40° C., thermally transferable by having a transfer temperature above 18° C. and below 220° C., said layer comprising:

(a) an ethylenically unsaturated compound containing at least one terminal $CH_2{=}C{<}$ group, having a boiling point above 100° C. at normal atmospheric pressure and being capable of forming a high polymer by photo-initiated addition polymerization,

(b) a free radical generating addition polymerization initiator system activatable by actinic radiation and inactive thermally below 85° C., and

(c) an ultraviolet radiation absorber in such concentration as to absorb at least 80% of the radiant energy in some region of the ultraviolet spectrum from 180 to 380 millimicrons and providing an optical density less than 0.3 in a spectral region which is actinic for the initiator;

until polymerization with an accompanying increase in stick temperature of the photopolymerizable stratum takes place in the exposed image areas with substantially less polymerization and less increase in stick temperature in the underexposed complementary coplanar image areas to provide a difference of at least 10° C. in the stick temperatures of said exposed and underexposed areas;

(B) transferring said image corresponding to the underexposed areas by bringing the surface of the exposed element into operative contact with the surface of an image-receptive support at an operating temperature intermediate between the stick temperature of said exposed and underexposed areas;

(C) subsequently separating the two surfaces at a temperature intermediate between the stick temperatures of the exposed and underexposed image areas, and

(D) exposing a radiation-sensitive element by means of radiation embodying ultraviolet rays through the element containing the transferred image.

3,307,944
MERCAPTO-DIHYDROCARBYL-TRIAZOLES IN DIFFUSION TRANSFER PROCESS

Edith Weyde, Leverkusen, Harald von Rintelen, Cologne-Rodenkirchen, and Anita von König, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 20, 1963, Ser. No. 260,038

Claims priority, application Germany, Mar. 10, 1962, A 39,676

10 Claims. (Cl. 96—29)

1. In the diffusion transfer process by which an imagewise exposed silver halide emulsion is developed in contact with a receiving layer to cause undeveloped silver halide in the emulsion to transfer to the receiving layer and there be converted to a visible image, the improvement according to which the transfer is accelerated and the image tone improved by carrying out the developing in the presence of a 3-mercapto-4,5-dihydrocarbyl-1,2,4-triazole in which the hydrocarbyl groups are alkyl or olefinically unsaturated alkyl having up to 3 carbon atoms, the triazole being present in a concentration of about 15 to 50 milligrams per liter of the developer.

3,307,945
DIFFUSION TRANSFER OF DICHROIC IODINE STAIN IN VECTOGRAPH PRODUCTION

Joseph Mahler, Fiskdale, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed May 9, 1963, Ser. No. 279,213

8 Claims. (Cl. 96—29)

1. The method of transferring image information onto a transparent vectograph film member from a conventional photographic master member including a backing support having on one side thereof a continuous layer of water absorptive material containing fully developed image means and background means, one of said means embodying reduced metallic silver and the other of said means being free from said reduced metallic silver, said vectograph film member embodying a support of transparent material having a continuous layer of water-absorptive material laminated to at least one side thereof with its molecules oriented in a given direction; said method comprising the steps of applying to at least one of said layers an aqueous staining solution containing a dichroic iodine stain capable of being bleached by reduced metallic silver, placing said members in intimate superimposed relationship with said water absorptive layers in direct contact with each other and retaining the same in said relationship for a time interval sufficient to cause said dichroic iodine stain in said staining solution to render said molecularly oriented material of said film light polarizing substantially only where contacted by the area of said photographic master member which is free of said reduced metallic silver, said reduced metallic silver in said master member eliminating by bleaching the presence of dichroism of said stain in said film member throughout areas where said metallic silver contacts said film member, separating said photographic master member and film member and subjecting said film member to a fixing solution to stabilize the same.

3,307,946
DIFFUSION TRANSFER OF DICHROIC IODINE STAIN IN VECTOGRAPH PRODUCTION

Joseph Mahler, Fiskdale, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed May 9, 1963, Ser. No. 279,263

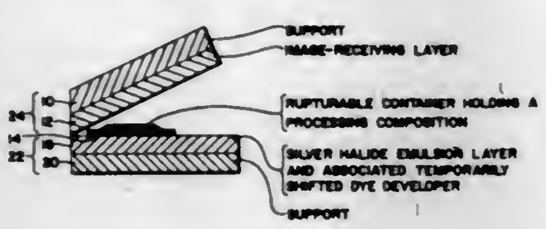
4 Claims. (Cl. 96—29)

1. The method of transferring image information onto a transparent vectograph film member from a conventional photographic master member including a backing support having on one side thereof a continuous layer of water absorptive material containing fully developed image means and background means, one of said means embodying reduced metallic silver and the other of said means being free from said reduced metallic silver, said vectograph member embodying a support of transparent material having a continuous layer of water absorptive material laminated to at least one side thereof with its molecules oriented in a given direction; said method comprising the steps of applying to said continuous layer of water absorptive material of said vectograph member an aqueous staining solution containing a dichroic iodine stain capable of being bleached by reduced metallic silver, wetting said photographic master member sufficiently to soften same, placing said water absorptive layers of said master member and vectograph member in direct contact with each other and retaining the same in said relationship for a time interval sufficient to cause said reduced metallic silver in said master member to eliminate by bleaching the presence of dichroism of said stain in said vectograph member throughout areas where said metallic silver contacts said vectograph member, separating said master and vectograph members and subjecting said vectograph member to a fixing solution to stabilize same.

3,307,947

PHOTOGRAPHIC PRODUCTS AND PROCESSES

Elbert M. Idelson, Newton, and Howard G. Rogers, Weston, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 16, 1964, Ser. No. 418,628
14 Claims. (Cl. 96—29)


SUPPORT
IMAGE-RECEIVING LAYER
RUPTURABLE CONTAINER HOLDING A PROCESSING COMPOSITION
SILVER HALIDE EMULSION LAYER AND ASSOCIATED TEMPORARILY SHIFTED DYE DEVELOPER
SUPPORT
24
10
12
14
18
22
20

1. A process of forming transfer images in color which comprises the steps of exposing a photosensitive element containing a silver halide emulsion and an azo dye which contains a dihydroxyphenyl sliver halide developing radical and at least one group selected from the group consisting of a hydrolyzable acylated hydroxyl group and a hydrolyzable acylated amino group in at least one of ortho and para positions to an azo group; permeating said photosensitive element with an aqueous alkaline solution; providing thereby solubilization of said dye, deacylation of said acylated group, by hydrolysis, and thereby a nonreversible bathochromic shift of the spectral absorption characteristics of said dye, and development of said exposed silver halide emulsion; immobilizing said dye in developed areas of said element, as a result of development; forming thereby an imagewise distribution of mobile dye, as a function of the point-to-point degree of exposure of said emulsion; and transferring, by imbibition, at least a portion of said mobile dye to a superposed image-receiving layer to provide thereto a dye image.

3,307,948

DEVELOPMENT ACCELERATORS

Robrecht Julius Thiers, Brasschaat, Jozef Frans Willems, Wilrijk-Antwerp, and Raymond Leopold Florens, Edegem, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a company of Belgium
No Drawing. Filed May 24, 1965, Ser. No. 458,489
Claims priority, application Belgium, June 2, 1964, 43,694, Patent 648,710
11 Claims. (Cl. 96—66.3)

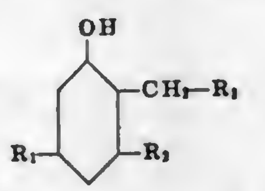
1. Process for developing photographic materials containing light-sensitive silver halide which comprises the step of developing said materials in the presence of a photographic developing agent and of a water-soluble compound formed by condensation of at least one member selected from a dialkanolamine and a dialkanolamide with an organic diisocyanate and a polyoxyalkylene glycol the amount of organic diisocyanate to said member being in the range of a molar ratio of 1–2:1 and the amount of said glycol being sufficient to impart water solubility to the ultimate condensation product.

3,307,949

DIAZOTYPE INTERMEDIATE COMPRISING A LAYER CONTAINING A TRI-SUBSTITUTED PHENOL COUPLER

Heinz Schlesinger, Wiesbaden, and Johannes Munder, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Keuffel & Esser Company, Hoboken, N.J.
No Drawing. Filed Aug. 12, 1963, Ser. No. 301,623
Claims priority, application Germany, Aug. 15, 1962, K 47,505
26 Claims. (Cl. 96—75)

1. A diazotype intermediate original material comprising a transparent support and a diazotype layer coated on said support, said layer comprising a para-amino diazonium compound and a coupler having the formula:



where R_1 and R_2 are alkyl groups having up to three carbon atoms, and R_3 is a member selected from the group consisting of sulfonic acid, alkali metal salts of sulfonic acid, sulfonic acid morpholide, and sulfonic acid piperidide.

3,307,950

STRIPPING FILMS

Arthur Appelbaum, Highland Park, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 19, 1963, Ser. No. 310,153
8 Claims. (Cl. 96—83)

1. A photographic stripping film comprising a flexible film base bearing on at least one surface a stripping layer comprising an n-butyl methacrylate/higher alkyl ester/itaconic acid copolymer, wherein said higher alkyl ester is a member selected from the group consisting of the alkyl acrylates and methacrylates wherein the alkyl group contains 6–12 carbon atoms, the components being present within the ranges 76–96.5%, 20.3% and 4.0–0.5%, respectively.

3,307,951

LITHOGRAPHIC PLATE

Dolor N. Adams, Cleveland Heights, and Daniel C. Thomas, Warrensville Heights, Ohio, assignors, by mesne assignments, to Lithoplate, Inc., Covina, Calif., a corporation of California
No Drawing. Filed Feb. 1, 1963, Ser. No. 255,673
5 Claims. (Cl. 96—86)

1. In a lithographic plate having a support member, an overlying layer of a light sensitive coating and an intermediate coat between said support member and light sensitive coating, the improvement characterized by providing as said coat a substantially water insoluble coating produced by applying to said support member a composition comprising a cycloaliphatic polyphosphoric acid of the nature of phytic acid, said support member being substantive to said acid.

3,307,952

FORMATION OF DIAZO COUPLERS IN SITU

Claude M. Aebi, Endicott, and Leon A. Teuscher, Rochester, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 20, 1963, Ser. No. 325,171
6 Claims. (Cl. 96—91)

1. A composition of matter comprising a light-sensitive diazonium compound and 1,5-diphenyl-3-pentanol-1,5-dione.

3,307,953

VISCOUS CHOCOLATE FLAVORING COMPOSITION AND PROCESS OF MAKING SAME

Barton Heard Siebers, Fulton, N.Y., assignor to Afico S.A., Lausanne, Switzerland, a corporation of Switzerland
No Drawing. Filed June 21, 1965, Ser. No. 466,516
17 Claims. (Cl. 99—23)

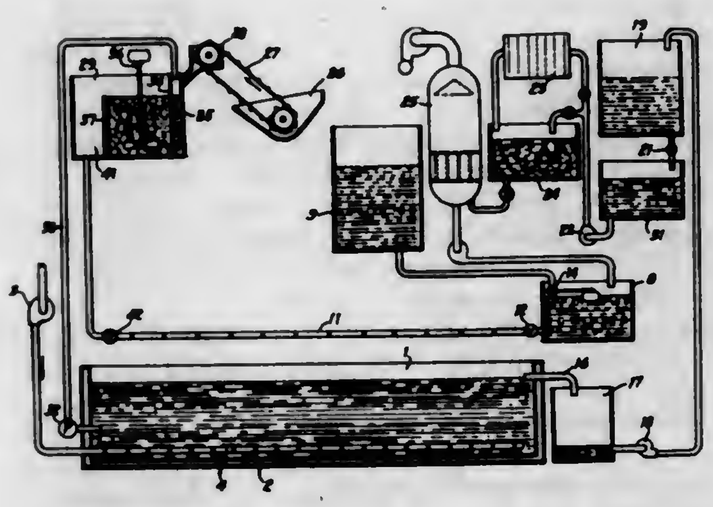
9. A process for making a viscous chocolate flavoring composition flowable over the temperature range 65°–80° F., which comprises intimately admixing about 35% to about 65% cocoa powder with about 65% to about

35% edible fat blend having a Solid Fat Index at 70° F. between about 0.1 and about 17.5, at a temperature at which said fat blend is completely molten, cooling the mixture to a temperature at which crystal formation occurs and maintaining the mixture at a temperature at which crystal growth continues for a period of time sufficient to crystallize the mixture to an extent that a substantial oil phase does not separate therefrom after two weeks' storage at 83° F.

3,307,954

PROCESS FOR PREPARING A BRINED, SWEETENED FRUIT PRODUCT

Samuel M. Blakemore, 822 Delta Ave., Cincinnati, Ohio 45226
Filed Sept. 24, 1962, Ser. No. 225,734
12 Claims. (Cl. 99—102)



1. In a process of preparing a brined, sweetened cherry product from brined cherries, the steps of subjecting brined cherries to an aqueous treating solution consisting essentially of water and a molecularly dehydrated phosphate for a time sufficient to permit the phosphate to diffuse into the cherries, and sweetening the cherries to form a brined, sweetened cherry product of improved appearance.

3,307,955

METHOD OF COOKING POULTRY

Mabel Pirtle, 3926 Tomlinson Ave., Riverside, Calif. 92503
Filed May 7, 1962, Ser. No. 192,780
2 Claims. (Cl. 99—107)

1. A method of cooking poultry, comprising:
filling a reticulated bag with poultry stuffing;
placing the bag within the breast cavity of a fowl and closing the same in any desired manner;
cooking for the required period; and finally
removing the bag and emptying the stuffing into a serving dish.

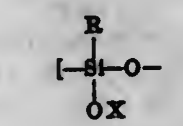
3,307,956

PROCESS OF MAKING A SAUSAGE CASING WITH AN ORGANOSILOXANE

Herman S. Chiu and Albert J. Veith, both of Chicago, Ill., assignors to Union Carbide Corporation, a corporation of New York
Filed Feb. 2, 1966, Ser. No. 524,448
10 Claims. (Cl. 99—176)

1. A process for improving the peelability of a tubular, regenerated, cellulosic food casing when in contact with a processed food mass encased therein comprising;

(a) treating the external surface of a tubular, regenerated, cellulosic food casing with an alkaline aqueous solution of an organosiloxane having the unit formula



$$[-\overset{\displaystyle R}{\underset{\displaystyle OX}{Si}}-O-$$

wherein R is selected from the class consisting of alkyl, aryl, aralkyl and alkaryl radicals and mixtures thereof wherein R can be different radicals, and X is a metal selected from the class consisting of sodium and potassium;

(b) allowing said organosiloxane solution to diffuse through said tubular cellulosic casing until an organosiloxane layer is present on the inner surface of said tubular cellulosic casing; and,

(c) drying the thusly treated tubular cellulosic casing to form an adherent organosiloxane coating on the inner surface of said tubular cellulosic casing such that said tubular cellulosic casing can be easily and readily peeled from a processed food mass encased therein without scarring the surface of said food mass.

3,307,957

METHODS OF AND COMPOSITIONS FOR MAKING MOLDS AND CORES

August Tobler, Brunneggstrasse 906, Windisch, Switzerland
No Drawing. Filed Oct. 5, 1965, Ser. No. 493,225
9 Claims. (Cl. 106—38.35)

4. A composition for making foundry cores and molds consisting essentially of foundry sand admixed with a binder made up of about 3 to 8 parts by weight of Portland cement and 2 to 5 parts by weight of a mixture of 40 to 80% molasses, 5 to 35% of the reaction product of the disintegration of starch by reaction at a temperature between about 65° to 125° for a time period between about 1½ and 10 hours with a member selected from the group consisting of organic acids, materials carrying a peroxide group and mixtures thereof and sufficient water to make a formable mass.

3,307,958

CERAMIC MATERIAL

John A. Earl, Alhambra, Calif., assignor, by mesne assignments, to Physical Sciences Corporation, a corporation of California
Filed Apr. 11, 1960, Ser. No. 21,525
23 Claims. (Cl. 106—49)

1. In a high-temperature compression-seal material suitable for use with nuclear reactors, a boron-free ceramic material made from a mixture which has been smelted, quenched, wet ground, and fired, said mixture consisting of from 31 to 58 percent by weight of the oxide of lead, the presence up to about 5 percent by weight of zinc oxide, the presence up to about 5 percent by weight of aluminum oxide, from 5 to 13 percent by weight of bismuth trioxide, from 20 to 34 percent by weight of silicon dioxide, the presence up to about 9 percent by weight of cerium dioxide, the presence up to about

5 percent by weight of molybdenum trioxide, and up to about 4 percent by weight of lanthanum oxide; said oxides constituting a glass.

13. In a ceramic material having properties of electrical insulation and having a low thermonuclear capture effect:

the oxide of bismuth with a relative weight of about 5% to 13%;
the oxide of lead with a relative weight of about 31% to 58%; and
the oxide of silicon with a relative weight of about 20% to 34%;
said oxides constituting a glass.

3,307,959
CLAY STRUCTURES

Ronald H. Cooper, Clare, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 18, 1965, Ser. No. 480,749
7 Claims. (Cl. 106—67)

1. A curable clay composition consisting essentially of clay containing from 17 to 20 weight percent water, from 3 to 5 weight percent of a monosaccharide and from 3 to 5 weight percent of an alkali metal hydrogen sulfate wherein the weight ratio of monosaccharide to alkali metal hydrogen sulfate is from 1:2 to 2:1.

3,307,960
COMPOSITE COPPER PHTHALOCYANINE PIGMENTS

Adrian R. Pitrot, Uniondale, N.Y., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

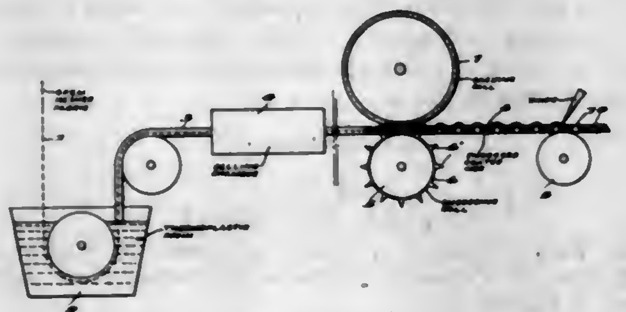
No Drawing. Filed May 24, 1963, Ser. No. 282,852
6 Claims. (Cl. 106—288)

1. A new composition of matter consisting essentially of a silica particle coated with copper phthalocyanine.

3,307,961
METHOD OF PRODUCING AIR PERMEABLE SHEET MATERIAL

Karl Stiehl and Klaus Oberländer, Hanau am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

Filed Nov. 21, 1963, Ser. No. 325,433
Claims priority, application Germany, Nov. 21, 1962, D 25,864
6 Claims. (Cl. 117—4)

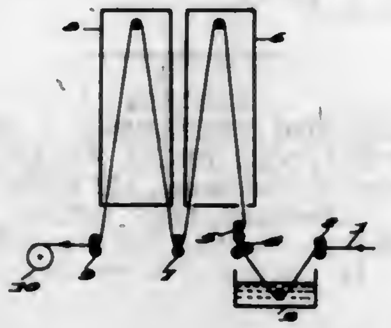


1. A method of producing air permeable thermoplastic sheet material reenforced with a fiber fabric which comprises coating at least one side of an open meshed fiber fabric with a continuous coating of a thermoplastic synthetic resin, embossing such coating at a temperature within the thermoplastic range thereof with a decorative design while simultaneously in the same operation embossing such coating so deeply as to provide spaced hollow nob like protrusions from at least one side thereof and removing such nob like protrusions to provide spaced openings in such sheet material.

3,307,962
PROCESS FOR TREATING NYLON CORD WITH AN ADHESIVE LATEX

Henry Benjamin Hardy, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 16, 1964, Ser. No. 418,849
1 Claim. (Cl. 117—7)



A process comprising the steps of: advancing a twisted cord prepared from nylon filaments from an adhesive latex dip to and through a heat treatment zone; stretching the cord from 6–20%, in its advance through said zone, by applying tension thereto; heating the stretched cord for from 10–120 seconds by maintaining said zone at a temperature of from 400–300° F.; advancing the stretched cord through an annealing zone maintained at 480–400° F. for 3–10 minutes with from −3 to +3% stretch applied thereto; advancing the annealed cord through a relaxing zone maintained at 360–320° F. for 30–90 seconds with a tension of from 0–0.1 gram/denier applied thereto; and winding the relaxed cord on a take-up device, said nylon being selected from the group consisting of melt blends of (1) polyhexamethylene adipamide with polyhexamethylene isophthalamide, (2) polyhexamethylene adipamide with polyhexamethylene 5-t-butyl isophthalamide and (3) polyhexamethylene adipamide with a copolymer of hexamethylene isophthalamide and hexamethylene-5-t-butyl isophthalamide.

3,307,963
ACRYLATE-POLYSTYRENE PRESSURE SENSITIVE ADHESIVE TAPE

Charles S. Webber, Loudonville, N.Y., assignor to Norton Company, Troy, N.Y., a corporation of Massachusetts

No Drawing. Filed Mar. 5, 1964, Ser. No. 349,732
5 Claims. (Cl. 117—68.5)

1. A pressure sensitive adhesive tape comprising a backing and, applied to a surface thereof, an adhesive mass consisting essentially of a polymer of an acrylic ester in which the acrylic ester is the major constituent and has an average of up to eight carbon atoms in the alcohol moiety, poly-alpha-methyl styrene present in an amount of between five and forty-five percent by weight of the total adhesive mass, and up to fifty percent based upon the weight of said polymer of an acrylic ester of sucrose acetate-isobutyrate.

3,307,964
PROCESS OF FORMING PROTECTIVE COATINGS ON COLUMBIUM AND TANTALUM USING A FLUIDIZED BED

Howard W. Jacobson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 7, 1963, Ser. No. 278,711
6 Claims. (Cl. 117—71)

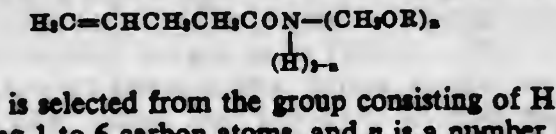
5. In a process for the production of a coated refractory-metal-base article resistant to oxidation at high temperatures, the steps comprising (1) heating an article, comprising a refractory metal selected from the group consisting of columbium and tantalum and having titanium at least at the surface thereof, in a fluidized bed consisting essentially of (a) particles of an oxide selected from the group consisting of silica, alumina, thoria and zirconia, (b) a powdered metal selected from the group consisting of molybdenum and tungsten, (c) silicon, and (d) iodine vapor, whereby deposition on said titanium-comprising refractory-metal article of a layer of disilicide of the metal chosen in (b) is effected, and (2) heating said metal-disilicide-coated article in a fluidized bed comprising (a) an oxide selected from the group consisting of silica, alumina, thoria and zircona, (b) silicon, and (c) iodine vapor, whereby a layer of silicon is deposited on said disilicide-coated article.

3,307,965
ARTICLE WITH PLURAL COATS OF A COPOLYMER HAVING DIFFERENT T_i VALUES AND PROCESS OF PRODUCING THE SAME

Maurice I. Seifer, Levittown, and Chien-Pen Lo, Philadelphia, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Dec. 10, 1963, Ser. No. 329,389
6 Claims. (Cl. 117—76)

1. An article of manufacture comprising a flexible fibrous base carrying on at least one surface thereof a multi-layer coating comprising a subcoating comprising a copolymer, having an apparent second order transition temperature of −10° C. to −50° C. of copolymerizable monoethylenically unsaturated monomers comprising 1 to 10% by weight of at least one monomer of the formula



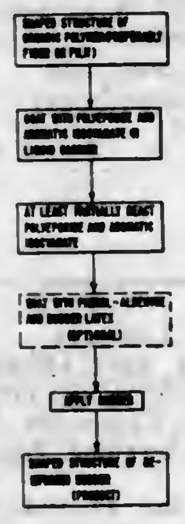
$$H_2C{=}CHCH_2CH_2CO\underset{(H)_{2-n}}{N}-(CH_2OR)_n \qquad \text{I}$$

wherein R is selected from the group consisting of H and alkyl having 1 to 6 carbon atoms, and n is a number having an average value of about 0.5 to 2.0, and up to 99% by weight of at least one ester of acrylic acid with a saturated alcohol having 1 to 18 carbon atoms, and an outer coating of a copolymer, having an apparent second order transition temperature between 10° and 40° C., of copolymerizable monoethylenically unsaturated monomers comprising 1 to 10% by weight of at least one monomer of the aforesaid formula and up to 99% by weight of at least one ester of acrylic acid with a saturated alcohol having 1 to 18 carbon atoms.

3,307,966
SHAPED STRUCTURES TREATED WITH POLYEPOXIDE AND POLYISOCYANATE FOR IMPROVING ADHERENCE TO RUBBERS

Charles Jefferson Shoaf, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 29, 1963, Ser. No. 320,605
10 Claims. (Cl. 117—76)



1. A shaped structure of an organic polymer bearing from about 0.2 to about 5% by weight of a coating consisting essentially of the reaction product of (A) a polyepoxide having an average of at least two epoxy groups in each molecule, a melting point below about 150° C., an average molecular weight below about 3000 and an epoxide equivalent below about 2500 and (B) an aromatic polyisocyanate from the class consisting of $Ar(NCO)_n$, $[Ar(NCO)_n]_m$, and $Ar(NHCOX)_n$ wherein Ar is an organic residue containing at least one aromatic nucleus, X is a radical selected from the group consisting of aryloxy, arylthio, iminoxy and lactam-N-yl, and m and n are whole numbers of at least 2, the weight ratio of (A)/(B) being within the range of from about 0.01 to about 5.0.

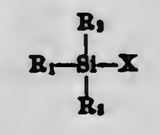
3,307,967
RUBBER REINFORCING ARTICLES

Byron M. Vanderbilt and Robert E. Clayton, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 3, 1965, Ser. No. 485,107
24 Claims. (Cl. 117—77)

1. A process for preparing a reactive rubber-reinforcing article which comprises, in combination, the steps of:

(a) treating the surface of a reinforcing agent with a liquid composition containing about 0.2 to 5 wt. percent of an organosilane compound so as to deposit on said surface about 0.1 to 3.0 wt. percent of said organosilane compound which is selected from the group consisting of an unsaturated silane, its siloxane and mixtures thereof, said unsaturated silane having the formula



$$R_1-\underset{R_2}{\overset{R_3}{Si}}-X$$

wherein R_1 is a radical containing vinyl-type unsaturation and is selected from the group consisting of alkenyl, styryl, alkenoylalkyl and alkenoyloxyalkyl, X is selected from the group consisting of halogen, hydroxyl, alkoxy and acyloxy, and R_2 and R_3 are independently selected from the group consisting of hydroxyl, methyl, halogen, alkoxy, acryloxy and R_1;

(b) applying to the organosilane-treated reinforcing agent a liquid composition containing a free radical curable elastomer and 0.2 to 10 parts, per 100 parts of elastomer, of a free radical curing agent so as to obtain a thin coating of said composition on said agent; and

(c) drying the resultant product from step (b) sufficiently to substantially free it of any diluent or solvent but insufficiently to cause substantial cross-linking reactions between said elastomer and said silane so as to obtain a reinforcing agent whose surfaces have been substantially coated a thin film of about 10 to 60 wt. percent, based on the total weight of the elastomer-coated reinforcing agent, of said curing agent-containing free radical curable elastomer.

3,307,968
METHOD AND APPARATUS FOR CONTROLLING THE ALLOYING OF ZINC COATINGS

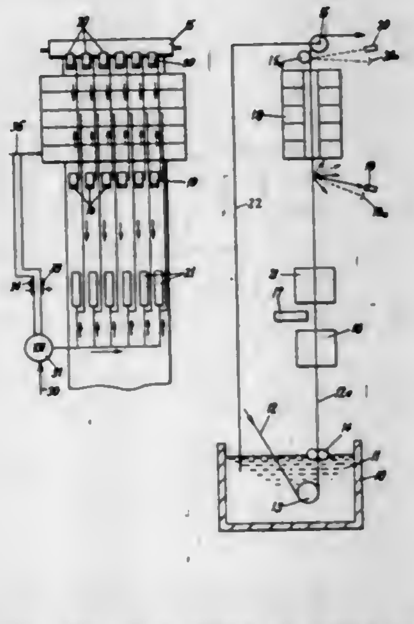
Paul E. Schnedler, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed Sept. 3, 1963, Ser. No. 306,123
8 Claims. (Cl. 117—114)

1. In a coating apparatus for coating a strip of metal with a layer of another metal, wherein the strip passes through a bath of molten coating metal and then up-

wardly vertically in an alloying run; booster heating means positioned just above said bath to heat said strip to a temperature at which alloying of said coating metal with the metal of said strip will take place, electrical means for supplying heat to the strip from within over the entire alloying run to maintain alloying temperature in the strip during the alloying reaction, a plurality of supplemental heating devices immediately above said booster heating means to provide heat to longitudinal zones of the strip selectively, and a plurality of control means responsive to the reflectivity of the strip in said longitudinal zones disposed above said supplemental heating devices and in the latter portion of said alloying run for controlling respective ones of said supplemental heating devices.

7. The method of producing on a metallic strip a highly uniform one phase alloyed zinc coating, wherein molten zinc is applied to the strip by passing the strip through a bath of molten zinc and thence vertically upwardly in an alloying run; which includes the steps of rapidly heating said strip to alloying temperature as it leaves said coating bath, maintaining said strip at alloying temperature by electrically heating said strip from within throughout said alloying run, supplementary heating applying to longitudinal zones of said strip immediately after said rapid heating, sensing the reflectivity of said zones adjacent the end of said alloying run at points at which alloying should be complete, causing sensings indicating high reflectivity, and therefore incomplete alloying, in a particular one of said zones to increase the application of supplementary heating in said zone, sensing the reflectivity of said zones in the latter port of said alloying run at points at which alloying should not have started, and causing sensings indicating low reflectivity, and therefore incipient alloying, in a particular one of said zones to decrease the application of supplementary heating in said zone.



3,307,969
FRICTION MATERIAL

Robert G. Quinn, Bound Brook, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed Feb. 21, 1963, Ser. No. 260,290

20 Claims. (Cl. 117—126)

1. Friction material composed of a hard, dense composition comprising asbestos fiber and organic binder, having distributed therethrough at least approximately 5% by weight thereof of comminuted expanded perlite sized substantially between about 1–50 microns and of a bulk density of about 4–30 lbs./cu. ft.

3,307,970
PREPARATIONS FOR THE PRODUCTION OF METAL 8-HYDROXY QUINOLINATES AND PROCESS FOR UTILIZING SAME

Nathaniel Grier, Englewood, N.J., assignor, by mesne assignments, to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 30, 1961, Ser. No. 187,999

9 Claims. (Cl. 117—138.5)

9. The method for incorporating a metal 8-quinolinolate within a fibrous or porous material which comprises dissolving an ester of 8-quinolinol and a salt of a non-alkali metal in an organic solvent in the absence of sufficient water to cause substantial hydrolysis of the ester before it reacts with the metal salt, and passing said fibrous or porous material through the solution so obtained before a substantial amount of metal quinolinolate is formed and heating the so treated material to accelerate the formation of said metal quinolinolate within the material.

3,307,971
METHODS OF ALTERING THE SURFACE CHARACTERISTICS OF SOLID RESIN SURFACES AND ARTICLES PRODUCED THEREBY

Leonard D. Kurtz, Woodmere, N.Y., assignor to Sutures, Inc., Coventry, Conn.

No Drawing. Filed Sept. 30, 1963, Ser. No. 312,328

8 Claims. (Cl. 117—138.8)

1. A method of modifying characteristics of a surface consisting essentially of a solid synthetic resin selected from the group consisting of polytetrafluoroethylene, polyester reaction product of an organic polycarboxylic acid and an organic polyol, and mixtures thereof, comprising the steps of contacting said surface with a solution of solid polyester reaction product of an organic polycarboxylic acid and an organic polyol in a solvent to deposit a coating of said polyester on said synthetic resin surface, removing solvent from said coating to provide solid polyester on said surface, and subjecting the solid polyester and subjacent solid resin surface to heat and pressure to adhere said solid polyester to said surface.

3,307,972
ELECTROLESS COPPER DEPOSITION

Robert A. Ehrhardt, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 11, 1963, Ser. No. 264,060

4 Claims. (Cl. 117—130)

1. A method for electroless plating with copper comprising the step of contacting a metal surface or a sensitized nonmetal surface with an aqueous plating solution catalyzed by said surface at a temperature of 30° C. to 70° C. said solution having a pH value of 11.0 to 12.0 and consisting essentially of:

Copper sulfate pentahydrate	g./l	10–50
Ethylenediamine-tetra-acetic acid	g./l	25–200
Trisodium phosphate (anhydrous)	g./l	[1] 25
Methyl or ethyl alcohol	ml./l	20–100
Triethanolamine	ml./l	10–35
Formaldehyde (38%)	ml./l	5–50

[1] To solubility limit.

3,307,973
DIALKYLSTANNOXY ORGANOMETALLIC COMPOUNDS AND CONDENSATION PRODUCTS

Ambrose J. Gibbons, Jr., Catonsville, Md., assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 17, 1964, Ser. No. 338,294

5 Claims. (Cl. 117—154)

4. The method of rendering cellulosic webs water-repellent comprising contacting said cellulosic web with a solution of an organometallic compound according to the formula

$$[R_2SnO—]_nE$$

wherein R is an alkyl group of 1–8 carbons;
wherein E is a radical selected from the group consisting of MX_{v-n} and $M(R'_m)X_{v-n-m}$;
wherein X of the above radicals is a monovalent radical selected from the group consisting of $—OR^0$ radicals and halogens;
wherein R^0 is a monovalent radical selected from the group consisting of hydrocarbyl radicals and fluohydrocarbyl radicals of 1–8 carbon atoms;
wherein R' is a monovalent hydrocarbyl radical of 1–12 carbon atoms;
wherein M is selected from the group consisting of Al, Si, B, Ti, Zr and the trivalent vanadyl radical$=$VO;
wherein v is the valency of M(i.e. 3 or 4);
wherein m is an integer between 1 and $v-1$ inclusive;
wherein n is an integer between 1 and v inclusive;
and wherein $m+n$ is not greater than v.

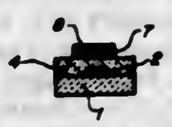
3,307,974
METHOD OF FORMING THERMIONIC CATHODES

Edwin John Davis, West Brompton, London, England, assignor to Rank Radio and Television Limited, London, England, a British company

Filed Feb. 8, 1963, Ser. No. 257,293

Claims priority, application Great Britain, Mar. 19, 1962 10,374/62

6 Claims. (Cl. 117—212)



1. A method of forming a thermionic cathode on an insulating body comprising in the order named the steps of: depositing a first layer of conductive material onto said body to form a heater for the cathode; coating said heater at least in part with a layer of insulating material; and depositing a layer of electron emissive material on at least a portion of said insulating layer.

3,307,975
METHOD OF FRACTIONATING STARCH

Matthias Schmidt, Rudolf Brandes-Alee 93, Bad Salzuflen, Nordrhein-Westfalen, Germany

No Drawing. Filed June 30, 1965, Ser. No. 468,616

Claims priority, application Germany, Feb. 12, 1962, H 44,850

7 Claims. (Cl. 127—71)

1. A process of fractionating starch for the production of amylose and amylopectin, comprising
preparing an aqueous solution of starch at normal temperature;
heating the solution to a temperature less than approximately 100° C. while subjecting the formed starch gel to substantial shear forces in a generally cylindrical dispersing device rotating at a high speed corresponding to 2900–10,000 r.p.m. for a disperser having a diameter of 150–45 mm. so as to decompose the starch gel into amylose and amylopectin, said speed of rotation being selected on the basis of the diameter of the dispersing device;
cooling the decomposed gel;
and separating the fluid amylopectin from the deposited amylose.

3,307,976
PRIMARY CELL

John J. Stokes, Jr., Murrysville, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 25, 1964, Ser. No. 413,874

15 Claims. (Cl. 136—100)

1. An electrolyte paste for a dry cell having an aluminous metal anode, said paste containing on a dry weight basis as the essential electrolyte component from 3 to 30 percent of chromic chloride hexahydrate, from 35 to 80 percent of manganese dioxide depolarizer, from 5 to 30 percent of finely divided carbon, and sufficient water to give a paste of the desired consistency, said paste having a pH of less than 7, said paste being characterized by having a capacity in a fresh cell with an aluminous metal anode of not less than 810 minutes discharge time until the voltage has dropped to 0.90 volt as measured by the National Bureau of Standards heavy industrial flashlight test.

3,307,977
HYDROGEN ANODE INCLUDING ALUMINUM SPINEL AND PLATINUM FAMILY COATINGS AND METHOD OF MAKING SAME

Karl V. Kordesch, Lakewood, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed July 30, 1962, Ser. No. 213,246

6 Claims. (Cl. 136—122)

1. A method for catalyzing a hydrogen anode, which method comprises providing a gas-permeable body composed of activated carbon, coating a solution of a heavy metal salt and an aluminum salt on a surface of said body, said heavy metal being at least one of the elements iron, cobalt, nickel, manganese, chromium, copper, silver, gold, vanadium, titanium, uranium, thorium and the rare earths, heating said coated body at a temperature of at least about 700° C. to decompose said heavy metal salt and said aluminum salt and thereby form a spinel on said surface, coating a second solution of a salt of a platinum family metal on said surface, and heating said coated body to a temperature up to 200° C. and at which said salt of said platinum family metal decomposes, thereby forming a metal catalyst on said surface in combination with said spinel.

3,307,978
PROCESS FOR PREPARING HIGH STRENGTH FABRICATED ARTICLES FROM ALUMINUM-BASE ALLOYS CONTAINING COPPER

George S. Foerster, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 17, 1964, Ser. No. 345,109

7 Claims. (Cl. 148—2)

6. A method of preparing a high strength aluminum-base alloy extruded article consisting by weight essentially of an amount of copper within the range of from about 9.5 to about 16 percent, the balance being aluminum, which comprises the steps of atomizing the alloy into pellets from the molten state, extruding the pelleted alloy at a temperature within the range of from about 750° to about 850° F., solution heat treating the alloy at a temperature within the range of from about 960° to about 990° F. for a period of time within the range of from about 5 seconds to about 2 hours, and aging the so-treated alloy at a temperature within the range of from about 320° to about 340° F. for a period within the range of from about 10 to about 20 hours.

3,307,979
PHOSPHATING SOLUTIONS

Wesley B. Upham, Hollywood, Fla., assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 179,196, Mar. 12, 1962. This application Oct. 11, 1965, Ser. No. 494,889
6 Claims. (Cl. 148—6.15)

1. An aqueous phosphating solution having a total acidity within the range from about 5 to 100 points wherein the active ingredients consist essentially of zinc ion, phosphate ion, nitrate ion, an ion selected from the group consisting of lithium, beryllium, magnesium, calcium, strontium, cadmium, and barium ions, and from about 0.002 to about 5.0% of the anion of a hydroxy-aliphatic carboxylic acid having 3 to about 20 carbon atoms, said anion having not more than two hydroxy groups if it contains five or more carbon atoms.

3,307,980
TREATMENT OF METAL SURFACES

Dennis B. Freeman, Harrow, Middlesex, England, assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

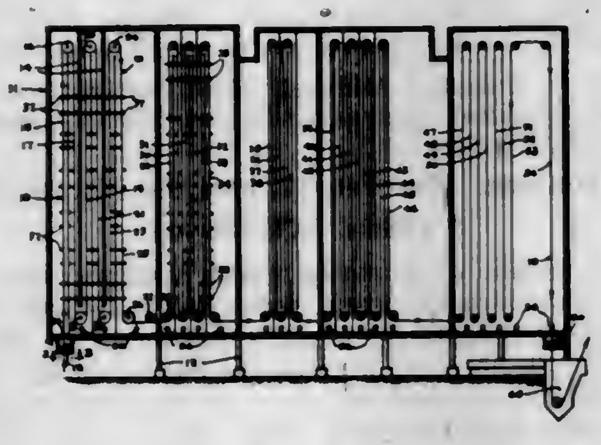
No Drawing. Filed Aug. 13, 1963, Ser. No. 301,906
Claims priority, application Great Britain, Aug. 15, 1962, 31,334/62
8 Claims. (Cl. 148—6.21)

1. A chromating solution for producing an improved chromate coating on the surfaces of aluminum and aluminum alloys consisting predominantly of aluminum comprising an aqueous acidic mixture containing a hexavalent chromium compound present in an amount of from about 1 to about 10 grams per liter calculated as CrO_3, an activator agent comprising fluoride ions present in an amount of from about 0.05 to about 5 grams per liter, and an aqueous soluble aliphatic alpha-amino acid compound selected from the group consisting of primary, secondary, and tertiary alpha-amino acids, compatible metal salts thereof, as well as mixtures thereof present in an amount from about 0.1 to about 10 grams per liter.

3,307,981
CONTINUOUS BLUING AND ANNEALING PROCESS

Thomas G. Katsahnias, South Holland, Ill., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed Nov. 14, 1963, Ser. No. 323,802
6 Claims. (Cl. 148—6.35)



1. A process of continuously oxidizing the surface of a ferrous metal strip to effect bluing thereof which comprises; passing an endless ferrous metal strip into a continuous annealing furnace chamber through a strip entry passage, guiding said strip within said furnace chamber through a heating zone and a cooling zone, said strip being raised to an annealing temperature within said heating zone, introducing into said furnace chamber a non-oxidizing furnace gas in an amount insufficient to equal the amount of gas leaving said furnace chamber whereby the pressure within said furnace heating zone is below atmospheric pressure, drawing oxygen-containing air into said furnace chamber through said strip entry passage to provide a furnace atmosphere containing free oxygen in said heating zone thereof, maintaining said furnace atmosphere at a dew point above 0° F. and below that at which condensation forms within said furnace chamber, and heating said strip while exposed to said furnace atmosphere in said heating zone to a temperature between about 1000° F. and 1450° F.; whereby the surface of the said strip is oxidized to provide thereon a firmly adherent oxide coating effectively bluing the said strip.

3,307,982
TUNGSTEN-BASE ALLOYS

Edward J. Milligan and James C. Kenney, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

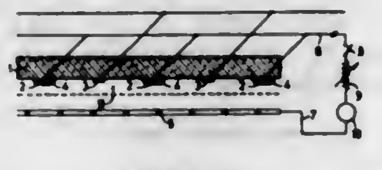
No Drawing. Filed Feb. 17, 1964, Ser. No. 345,087
4 Claims. (Cl. 148—133)

1. In a process for heat-treating an alloy consisting of 75–99% tungsten, balance nickel and copper, the steps of heating the alloy to a temperature of 500–1200° C. in a neutral atmosphere, quenching rapidly, reheating to a temperature of 350–600° C. in a substantially neutral atmosphere for one-half to twelve hours and quenching, to increase elongation and tensile strength.

3,307,983
METHOD OF MANUFACTURING A PHOTOSENSITIVE DEVICE

Edward Fokko De Haan and Paulus Philippus Maria Schampérs, both of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 10, 1964, Ser. No. 350,872
Claims priority, application Netherlands, Mar. 12, 1963, 290,120
5 Claims. (Cl. 148—178)



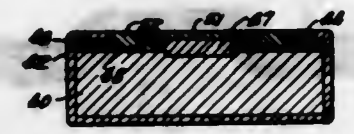
1. A method of manufacturing a photosensitive device comprising the steps, applying to portions of a support a layer consisting essentially of lead monoxide, biasing selected areas of said layer of lead monoxide negatively to effect an electrical discharge through an atmosphere containing oxygen at a pressure of about 4000 to 6000×10^{-6} mm. Hg to form oxygen ions which bombard said areas and introduce oxygen into the layer at said areas.

4. A method of manufacturing a photosensitive device comprising the steps, applying to portions of a support a layer consisting essentially of lead monoxide biasing selected areas negatively, to effect an electrical discharge through an atmosphere containing oxygen at a pressure of about 4000 to 6000×10^{-6} mm. Hg whereby oxygen is introduced into said layer at said selected areas, subjecting the layer to the action of an atmosphere selected from the group consisting of sulphurated hydrogen, seleniated hydrogen, tellurated hydrogen, water vapor, and mixtures thereof, and repeating said step of effecting an electrical discharge in an atmosphere containing oxygen.

3,307,984
METHOD OF FORMING DIODE WITH HIGH RESISTANCE SUBSTRATE

Henry D. Frazier, Rolling Hills Estates, Calif., assignor to TRW Semiconductors, Inc., a corporation of Delaware

Filed Dec. 7, 1962, Ser. No. 243,021
2 Claims. (Cl. 148—187)



1. The method of manufacturing a diffused junction semiconductor diode from a unitary silicon starting crystal wafer having a resistivity in excess of two ohm-centimeters, including the steps of:

(a) diffusing atoms of a conductivity determining type active impurity into a predetermined surface of said starting crystal wafer to establish a first surface region of one conductivity type therein, the resistivity of said first surface region being less than 2 ohm-centimeters;

(b) diffusing atoms of another conductivity determining type active impurity into a portion of said predetermined surface of said starting wafer to establish a second surface region of the opposite conductivity type from said first surface region and extending through said first surface region to form a rectifying junction of tubular configuration therebetween, the resistivity of said second surface region being less than two ohm-centimeters;

(c) gold doping said starting crystal wafer to increase the resistivity of that portion of the wafer having a resistivity in excess of two ohm-centimeters to a value in excess of 100 times the resistivity of said first and second surface regions and to reduce its lifetime to a value not in excess of 0.1 microsecond;

(d) establishing low resistance ohmic contact to said first surface region; and,

(e) establishing low resistance ohmic contact to said second surface region.

3,307,985
STABILIZED PROPELLENT COMPOSITIONS CONTAINING HYDRAZINE NITROFORM AND NITROCELLULOSE

William H. Jago, Washington, D.C., assignor to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia

No Drawing. Filed July 6, 1961, Ser. No. 125,628
9 Claims. (Cl. 149—18)

1. In a propellent composition comprising nitrocellulose and hydrazine nitroform, the improvement comprising the addition of up to about 10% by weight of a salt of a Group II–A metal, said salt serving to stabilize said nitrocellulose and hydrazine nitroform.

3,307,986
AMMONIUM NITRATE-ALKALI METAL NITRATE EXPLOSIVE CONTAINING ALUMINUM OF PARTICULAR SIZE DISTRIBUTION

Charles H. Grant, Chisholm, Minn., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 16, 1964, Ser. No. 419,262
10 Claims. (Cl. 149—21)

1. A water resistant metallized, flowable explosive composition which comprises on a weight basis;

(a) to about 60 percent alkali metal nitrate,

(b) from about 10 to about 85 percent ammonium nitrate,

(c) from about 5 to about 25 percent water,

(d) from about 0.2 to about 1.5 percent of a member selected from the group consisting of water swellable gelling and thickening agents, and

(e) from about 5 to about 40 percent particulate aluminum, said aluminum ranging in size from about 4 to about 150 mesh U.S. Standard Sieve and having a gauge of from about 0.025 to about 30 mils and being further characterized in having a particle size distribution wherein from about 60 to about 80 percent is from about 12 to about 50 mesh the balance being substantially 50 to 100 mesh and wherein from about 5 to about 10 percent of the particles have a maximum gauge of about 1 mil, from about 10 to about 80 percent have a gauge of from 1 to about 10 mils, balance ranging from 10 to about 30 mils in gauge.

6. A process for preparing a water resistant, metallized high energy explosive which comprises:

(a) adding from about 0.5 to about 1.5 parts by weight of a cross-linkable, hydrophobic, water-swellable guar gum to from about 2 to about 16 parts by weight of a water miscible, organic liquid selected from the group consisting of monohydroxy alkanols having from 1 to about 4 carbon atoms, ethylene, glycol, proplyene glycol, glycerol, formamide and mixtures thereof, said organic liquid being supersaturated with ammonium nitrate,

(b) agitating said mix to disperse said gum throughout the mass,

(c) introducing from about 6 to about 16 parts by weight of an aqueous saturated ammonium nitrate solution therein and mixing thereby to provide a substantially homogeneous mass,

(d) stopping the mixing operation and permititng the mixture to stand for a period of time such that the gum swells to a predetermined state,

(e) successively blending into said mixture

  (1) from about 5 to about 40 parts by weight sodium nitrate,

  (2) from about 10 to about 30 parts by weight particulate aluminum, said aluminum being from about 60 to about 80 percent of 12 to about 50 mesh, balance being substantially 50 to 100 mesh in size and where from about 5 to about 10 percent of the particles have a maximum thickness of about 1 mil, from about 70 to about 80 percent range from about 1 to about 10 mils in thickness, the balance being substantially from 10 to about 30 mils, and

  (3) from about 10 to about 40 parts by weight ammonium nitrate,

(f) adding to said mass about 0.2 cubic centimeter per pound weight of total mixture of a member selected from the group consisting of aqueous sodium dichromate containing about 5% by weight of the solute and Diver's liquid as cross-linking agent for said gum, and

(g) blending said cross-linking agent into the final composition thereby to cross-link said gum to a predetermined degree and produce a water resistant, high energy, flowable metallized explosive.

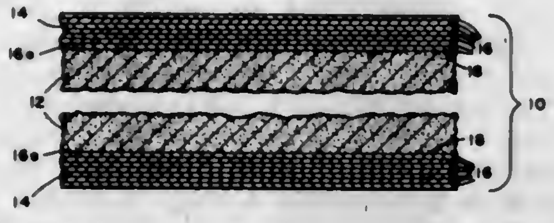
3,307,987
PROCESS OF MAKING A GYPSUM WALLBOARD HAVING A DECREASED STARCH CONTENT IN THE GYPSUM CORE

David Bieri, Tonawanda, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware

Filed Aug. 12, 1959, Ser. No. 833,281
2 Claims. (Cl. 156—41)

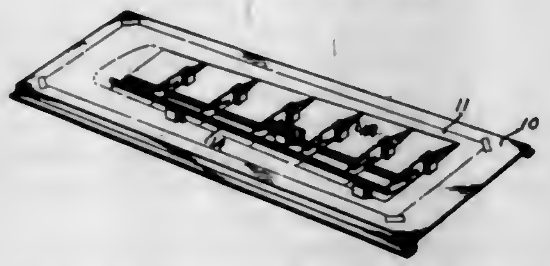
1. The method of making paper covered gypsum wallboard comprising the steps of forming into board form an aqueous calcined gypsum slurry between two paper

liners, said aqueous calcined gypsum slurry containing about 2 pounds of starch per per thousand square feet per ⅜ inch of thickness, each of said liners being of about .020 inch thickness, with said paper liner inner surfaces being disposed inwardly for bonding to said gypsum, said paper liners having, immediately prior to said forming, a Gurley densimeter minimum porosity of no greater than about 300 seconds per 100 cc. of air, said paper liner inner surfaces having, immediately prior to said forming, a water repellency such that the water drop test as defined herein results in substantially no spread after five minutes, and drying said board.



3,307,988
METHOD OF ASSEMBLING AN ARTICLE BY USING MAGNETS

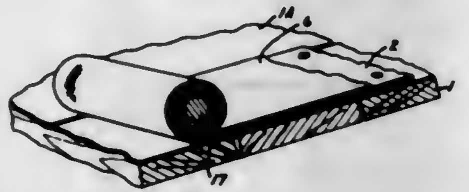
David E. Berg, R.D. 3, Jamestown, N.Y. 14701
Filed Apr. 26, 1963, Ser. No. 275,957
1 Claim. (Cl. 156—60)



The method of assembling the various generally platelike parts of an article of manufacture consisting in providing a rigid planar steel surface, applying a printed outline or plan of the unit to said surface, successively locate, in superposed relationship, each said platelike part of said unit on the said outline and secure each part by applying permanent magnets to said steel surface on opposite sides of each said part and adjusting them into clamping abutment with said parts whereby each said part is sandwiched between two said magnets applying a bonding agent to all joined parts, and finally, after the bonding agent has set, removing the magnets from the steel surface.

3,307,989
ROOFING PRODUCT AND METHOD OF APPLICATION

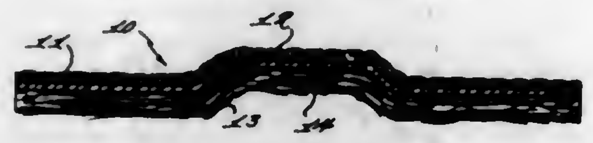
Norman P. Harshberger, 1446 Las Lunas St., Pasadena, Calif. 91106
Filed June 15, 1964, Ser. No. 375,179
33 Claims. (Cl. 156—71)



1. The method of forming and laying roofing, comprising the formation of pulp and cement on to a surface through and from which fluid is dewatered to form thereon a pliable felted sheet, conveying said sheet to a point on a roof while the sheet is pliable, unset and soft, and laying said sheet in place on said roof surface for set and cure.

3,307,990
METHOD OF MAKING A COMPOSITE PRODUCT

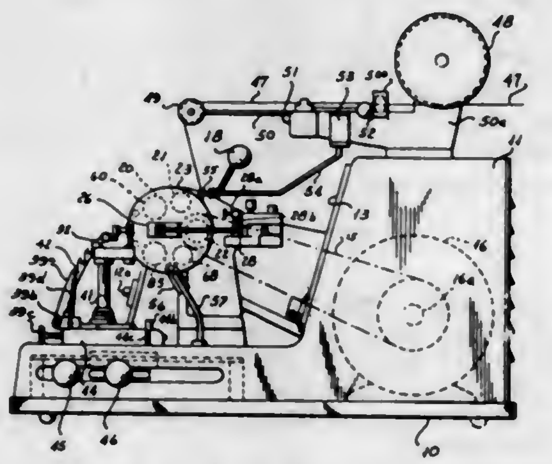
Paul A. Homler, Landgdale, and Rupert A. McDaniel, Jr., Fairfax, Ala., assignors to West Point-Pepperell, Inc., a corporation of Georgia
Filed Dec. 3, 1962, Ser. No. 241,941
6 Claims. (Cl. 156—72)



1. Method of making a composite product comprising the steps of placing a non-woven fabric web in surface contact with a relatively thin thermoplastic film, needle punching the assembled web and film so that fiber ends protrude from said film, applying a relatively thick adhesive thermoplastic sheet to the film side of said nonwoven fabric so that said protruded fiber ends are embedded therein, heating the opposite surface of said sheet to soften it, contacting said softened opposite surface with a fibrous pad, pressing the assembly in a mold to integrally join said sheet to said pad and impart shape to the assembly, and cooling the assembly in the shape imparted by the mold.

3,307,991
METHOD AND APPARATUS FOR WINDING TOROIDAL COILS

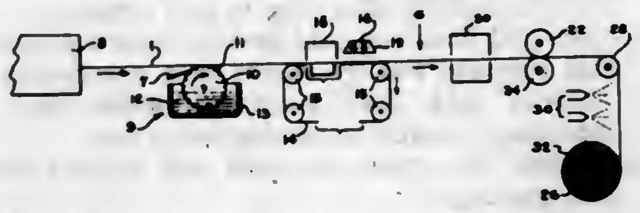
Rudolf Fahrbach, Union, N.J., assignor to Universal Manufacturing Company Incorporated, Irvington, N.J., a corporation of New Jersey
Filed Apr. 1, 1963, Ser. No. 269,565
9 Claims. (Cl. 156—172)



1. The method of winding wire upon a closed core, said wire having an insulated surface which is rendered tacky by a suitable solvent, comprising the steps of forming a single length of wire into a bundle of a plurality of loops substantially in a plane at an angle to the plane of the core upon a plurality of pulleys spaced from the aperture of said core frictionally engaging a portion of the loops, simultaneously guiding by a fixed, rigid, non-rotating plate an arcuate portion of said bundle through the aperture of the core, applying a suitable solvent to the wire to render the surface of the wire tacky for bonding contiguous loops, attaching one end of the wire to a fixed position, rotating the bundle, peeling rfom the bundle a portion of the loop last formed from the attached end, guiding the loop portion into a plane spaced from the plane of the bundle and substantially parallel to the plane of the bundle, tensioning the loop portion into a gradually shortened loop, tightening a portion of said loop portion on said core, repeating in sequence the peeling, guiding, tensioning and tightening steps, whereby a core may be wound with a plurality of windings.

3,307,992
PROCESS OF MANUFACTURING A WEB PRODUCT USING AN ADHESIVE PLASTISOL

Eugene H. Condon and Thomas A. Hadley, both of Neenah, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Nov. 13, 1961, Ser. No. 151,804
1 Claim. (Cl. 156—181)



In a process of forming a web product in which process a first set of longitudinally moving laterally spaced threads has applied and adhered thereto a second set of spaced threads extending transversely to the first set, the steps of:

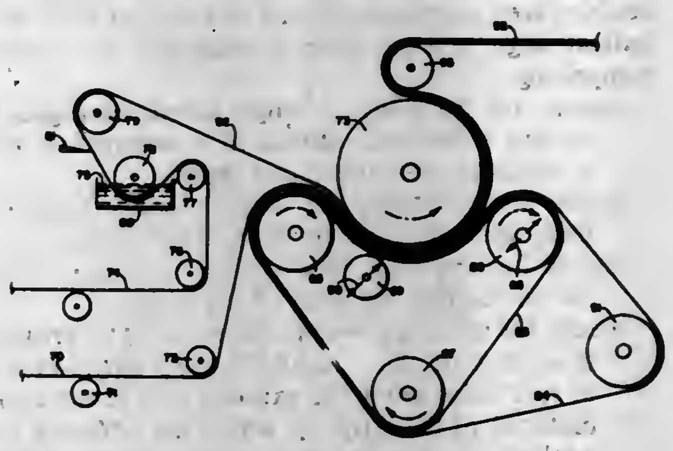
- (a) forming a liquid adhesive plastisol by first dispersing a polyvinyl resin selected from the group of resins consisting of polyvinyl chloride and polyvinyl chloride-polyvinyl acetate copolymers containing at least 95% polyvinyl chloride by weight in a plasticizer and then admixing with the so dispersed resin a true solution of a rosin ester in a plasticizer, said rosin ester being selected from the group consisting of a pentaerythritol ester of rosin and a hydrogenated glycerine ester of rosin, the said rosin ester being present to the extent of between about 5 and 40 parts by weight per 100 parts of the said polyvinyl resin and the said plasticizer which dissolves the rosin ester being compatible with the polyvinyl resin-plasticizer dispersion;
- (b) prior to the application of said second set of threads coating the longitudinally moving threads with the liquid adhesive plastisol;
- (c) heating the said coated threads to a temperature of at least 200° F. and below the fusion point of the said polyvinyl resin as the threads move to a zone of application of the transverse threads to materially increase tackiness in the coating and to initiate setting of the coating but without any substantial fusing of the polyvinyl resin;
- (d) applying the second set of threads transversely to the longitudinally moving threads while the coating is tacky and substantially unset to partially embed the second set of threads in the tacky coating and to provide an open web;
- (e) continuing heating as the said second set of threads is applied and as the web formed by the sets of threads moves longitudinally to further set the coating and decrease the tackiness of the coating;
- (f) thereafter further embedding the transverse threads in the coating by pressing the web while heating to a temperature of between about 270° F. and 350° F. and at least sufficient to effect fusion of the polyvinyl resin and to cause occlusion of the tackifying agent; and
- (g) thereafter cooling the web to harden the coating.

3,307,993
PROCESS OF CAST COATING PAPER AND SIMULTANEOUSLY LAMINATING

Bruce C. Gottwald and John M. Haigh, Richmond, Va., assignors to Albemarle Paper Company, Richmond, Va., a corporation of Virginia
Filed Nov. 12, 1963, Ser. No. 323,017
7 Claims. (Cl. 156—278)

1. A process for cast coating paper and the like comprising in combination,

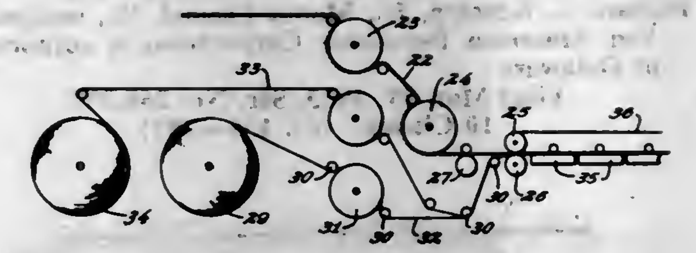
- a. coating one surface of a substantially dry first paper web with a hardenable liquid coating containing a volatile liquid and an adhesive which coating is conformable to a smooth forming surface,
- b. passing the uncoated surface of said first paper web into contact with a substantially dry second paper web to form a composite paper web having an exterior coating and no interior adhesive,
- c. compressing said composite paper web by means of a continuous pressing surface against a heated smooth forming surface with said exterior coated surface against said heated smooth forming surface, said heated smooth forming surface being heated to a temperature sufficient to boil said volatile liquid and said compressing being at sufficient pressure to continuously maintain said coating against said heated smooth forming surface,



- d. maintaining a vapor receiving web between the exterior surface of said second paper web of said composite paper web and said pressing surface, and
- e. continuously maintaining the heating and compressing for a period of time to vaporize and remove sufficient volatile liquid from the surface of the coating to cause the cohesive strength of the coating to resist any distortion due to further drying and to adhere the first paper web to said second paper web.

3,307,994
CORRUGATED PAPERBOARD AND METHOD OF MAKING THE SAME

Raymond G. Scott, Jr., Edina, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed June 30, 1964, Ser. No. 379,094
7 Claims. (Cl. 156—210)

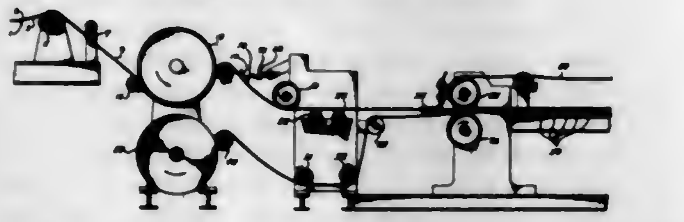


1. A method of forming double face corrugated paperboard having a moisture proof corrugated medium comprising the steps of:

- corrugating a web of paperboard,
- applying adhesive to one side thereof,
- applying a first liner to the adhesively coated side of said corrugated web,
- extruding a film of polyolefin material upon a second liner,
- applying the polyolefin coated surface of the second liner to the other surface of the corrugated web,
- subjecting the second liner to heat sufficient to render the film tacky and to adhere the second liner to the corrugated web.

3,307,995
MACHINE AND PROCESS FOR MAKING WRAPPED CORRUGATED BOARDS

Harry F. Martin, Sr., Alamo, Calif., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Feb. 5, 1963, Ser. No. 256,434
16 Claims. (Cl. 156—216)



1. In a machine for producing a plurality of strips of double-faced corrugated board in which at least one longitudinal edge of each strip is wrapped, the combination comprising,

means for severing a single-faced corrugated sheet having a first face affixed to a corrugated sheet into a plurality of single-faced strips,

means for spreading the strips laterally apart substantially predeterminately from each other,

means for applying adhesive to the exposed ridges of the corrugated material of the strips,

means for affixing a second facing sheet of greater width than that of the laterally spaced single-faced strips to said strips along the exposed side of the corrugated material of the strips to which the adhesive has been applied so as to produce double-faced strips joined together by said second facing sheet,

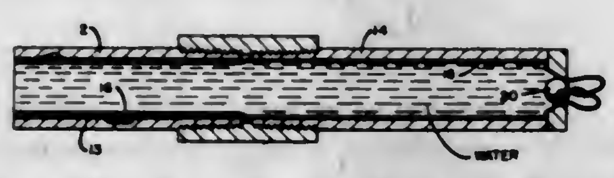
means for severing said second facing sheet so as to produce a plurality of separate double-faced strips each having a portion of said second facing sheet extending beyond and entirely along one longitudinal edge of the strip,

means for applying adhesive to each of the double-faced strips longitudinally along said first face of the strip near said one longitudinal edge of the strip, and

means for wrapping the extending portion of each separate double-faced strip around the longitudinal edge of the strip adjacent thereto and over the portion of said first face having adhesive thereon and for securing said extending portion to said face portion so as to produce a wrapped longitudinal edge on the strip.

3,307,996
METHOD FOR PLACING A PROTECTIVE COATING ON THE INTERIOR OF A PIPE

Richard L. Kenelpp, Jr., Mount Carmel, Ill., assignor to Pan American Petroleum Corporation, a corporation of Delaware
Filed Mar. 29, 1963, Ser. No. 268,997
10 Claims. (Cl. 156—287)



1. In a method for rendering resistant to corrosion the interior surface of a metal conduit having corroded areas on said surface the improvement which comprises:

injecting into one end of said conduit an amount of a thermosetting resin in excess of that required to fill said areas with said resin,

forcing the latter through the length of said conduit by means of a mandrel of substantially the same diameter as the internal diameter of said conduit,

coating the interior of said conduit with a film of said resin,

affixing to one end of said conduit a section of a second conduit having an opening in the free end thereof which is smaller in diameter than the internal diameter of the first-mentioned conduit,

peripherally connecting a collapsible tubular plastic liner to the opposite end of said first-mentioned conduit, said liner being longer than the overall length of both conduits and having tied to the free end an element capable of seating in said opening,

forcing said liner into said first-mentioned conduit via said opposite end by means of a pressurized fluid whereby said liner is placed inside said first-mentioned conduit by turning inside out,

continuing this lining step until said element seats in said opening,

applying hydrostatic pressure to the liner adhering to the walls of said first-mentioned conduit,

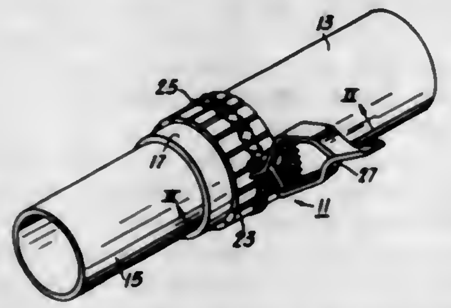
releasing said pressure,

disconnecting said conduits from one another, and

removing excess liner from said first-mentioned conduit.

3,307,997
METHOD AND APPARATUS FOR ADHESIVELY JOINING TOGETHER CONTIGUOUS THERMOSETTING RESIN IMPREGNATED FILAMENT REINFORCED MEMBERS

Robert Sherman Detrick, Bethel Park, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Mar. 9, 1966, Ser. No. 533,088
5 Claims. (Cl. 156—294)



3. The method for adhesively joining together contiguous thermosetting resin impregnated filament reinforced members comprising:

(a) applying to at least one surface of one of the members a heat curable adhesive;

(b) placing the adhesive coated surface of one said member in mating surface relation with another said member;

(c) placing upon the surface of one said member at a location overlying said adhesive a length of combustible fuel element which generally conforms to the contour of said surface;

(d) temporarily securing in such position said fuel element; and

(e) igniting said fuel element whereby the same burns progressively and generates heat that is transmitted to said adhesive to accelerate its curing.

3,307,998
FILAMENT WINDING EQUIPMENT

Le Roy R. Boggs, Bristol, Tenn., assignor to Universal Moulded Fiber Glass Corp., Bristol, Va., a corporation of Delaware
Filed Sept. 18, 1962, Ser. No. 224,472
11 Claims. (Cl. 156—361)

1. A filament winding machine comprising:

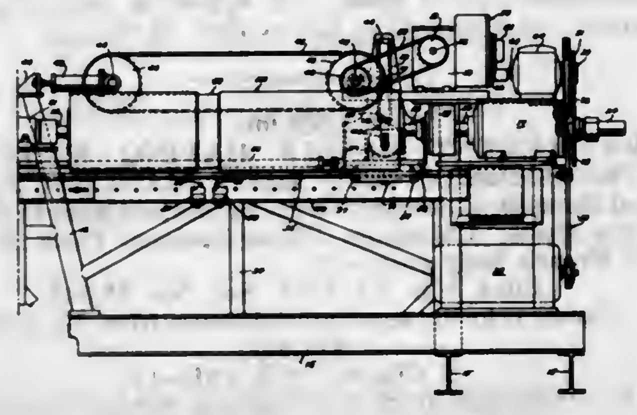
(a) a mandrel adapted to receive a plurality of filaments thereon;

(b) means supporting said mandrel for rotation about an axis;

(c) a filament feed guide mounted for reciprocable movement in the direction of said axis;

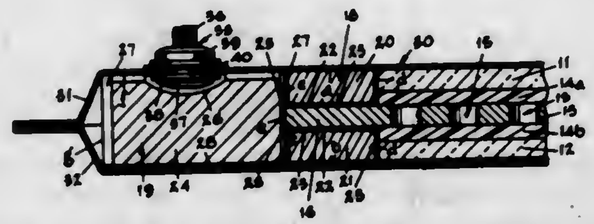
(d) a drive system for imparting reciprocating motion to said filament feed guide axially of said mandrel including mechanism providing for reciprocating strokes of said guide with harmonic motion reversal thereof at the ends of the strokes; and

(e) means operable at will to effect repeated reversal of the direction of motion of said guide thus establishing a reciprocating stroke of said guide that is shorter than the stroke provided by continuous rotation of said mechanism in one direction.



3,307,999
APPARATUS FOR PRODUCING A LAMINATED ASSEMBLY

James H. Boicey, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Oct. 14, 1963, Ser. No. 315,878
8 Claims. (Cl. 156—382)

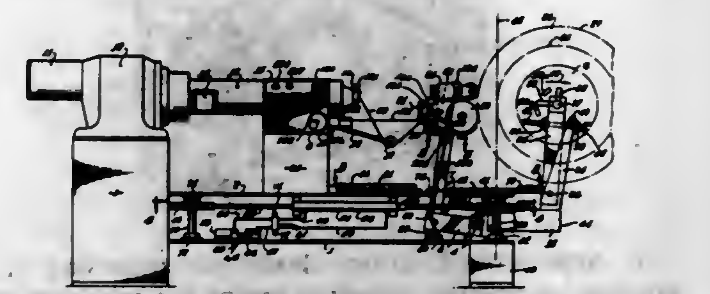


1. Apparatus for producing a laminated assembly composed of a pair of glass sheets and an interposed foraminous member integrally bonded to said glass sheets through a thermoplastic interlayer material which completely fills the perforations in said member, said apparatus comprising an evacuation frame adapted to encircle the peripheral edge of said assembly with the inwardly disposed surface of said frame being in abutting relationship with said peripheral edge, means forming a plurality of passageways through said frame at spaced points about the periphery of said assembly from the inwardly disposed surface of said frame outwardly thereof, and a flexible air-tight envelope encasing said frame and said assembly and having a vacuum connection therein communicating with said passageways for withdrawing air therefrom.

3,308,000
TIRE TREAD WINDING MACHINE HAVING A PUNCHED TAPE CONTROL SYSTEM

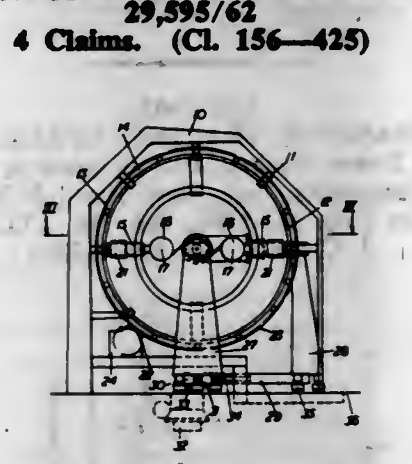
Rudolph G. Holman, Santa Ana, Calif., assignor to W. J. Voit Rubber Corp., a corporation of California
Filed Aug. 5, 1963, Ser. No. 299,947
7 Claims. (Cl. 156—397)

1. A machine for winding an elastomeric ribbon for producing an external elastomeric layer on a tire casing, said machine including stationary feed means for the ribbon, a rotatable azimuth shaft, an azimuth column fixed to said azimuth shaft for transverse movement relative to the feed means, a wheel rotatively mounted on said column and having the tire casing mounted thereon to wind said ribbon on the casing, drive means for rotating said azimuth shaft and said azimuth column to space the respective windings of the ribbon on the tire casing, and a programmer for controlling the operation of said drive means, said programmer including a perforated tape having a plurality of perforations located along the length of said tape to determine the winding program, means for moving said tape along its length driven by and synchronized with said azimuth shaft, means for sensing said perforations, a spin switch mounted on the azimuth column and a cam mounted on the wheel for operating said spin switch during each revolution of said wheel, a first relay means energized upon momentary closure of said spin switch by said cam during the rotation of said wheel, said first relay means energizing said drive means to rotate said azimuth shaft and said azimuth column upon momentary closing of said spin switch by said cam to produce a predetermined winding pattern on the casing, and a second relay means controlled by the programmer, said second relay means de-energizing said first relay means and said drive means upon encounter of predetermined perforations on said tape by said sensing means.



3,308,001
APPARATUS FOR WINDING HOLLOW ARTICLES

Frederick William Angrave, Bristol, England, assignor to Bristol Aeroplane Plastics Limited, Bristol, England, a British company
Filed July 23, 1963, Ser. No. 296,954
Claims priority, application Great Britain, Aug. 1, 1962, 29,595/62
4 Claims. (Cl. 156—425)



1. A pipe winding machine comprising a supporting structure, a rotating member supported by the supporting structure, a spool upon which material from which the pipe is to be formed may be wound, means mounting the spool pivotally on the rotating member, a curved mandrel upon which the pipe is to be wound and which can be removed from the wound pipe, a curved rigid guide member whose axis is of the same contour as the centre line of the mandrel, means attaching this rigid guide member to the mandrel, and means for relatively moving the rigid guide member and thus the mandrel with respect to the spool in such a way that the point on the centre line of the mandrel in the plane which contains the spool and which is perpendicular to the centre line of the mandrel remains coinciding at all times with the axis of rotation of the rotating member.

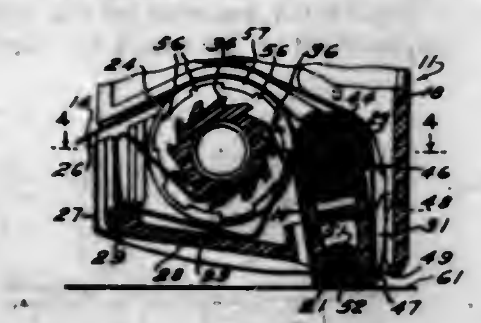
3,308,002

METHOD AND APPARATUS FOR APPLICATION OF PRESSURE SENSITIVE ADHESIVE MATERIAL

Rudolph Hurwich, Berkeley, and Georg Bremer, Albany, Calif., assignors to Dymo Industries, Inc., Emeryville, Calif., a corporation of California

Filed Nov. 27, 1963, Ser. No. 326,556

2 Claims. (Cl. 156—577)



1. Apparatus of the type described comprising, in combination, a housing including means for rotatably retaining a roll of flexible carrier material, a hammer member secured adjacent an outer surface of said housing, a drive arm pivotally mounted on said housing at one end thereof and having a contact portion at its other end disposed adjacent said hammer, said drive arm being normally positioned with said contact portion spaced outwardly away from said face of said housing and said hammer, means resiliently urging said drive arm towards said normal position thereof, a drive roller rotatably mounted on said housing, means interconnecting said drive arm to said drive roller for incremental rotation of the latter upon movement of said drive arm contact portion towards said housing, and an idler roller rotatably mounted on said housing in peripherally adjacent position to said drive roller, said housing including guide means for guiding said carrier material from said retaining means around said hammer and into operational engagement with said drive and idler rollers for incremental advancement past the hammer by said rollers, said contact portion being movable inwardly relative to said housing to a position unobstructing said hammer from forcing said strip against a surface.

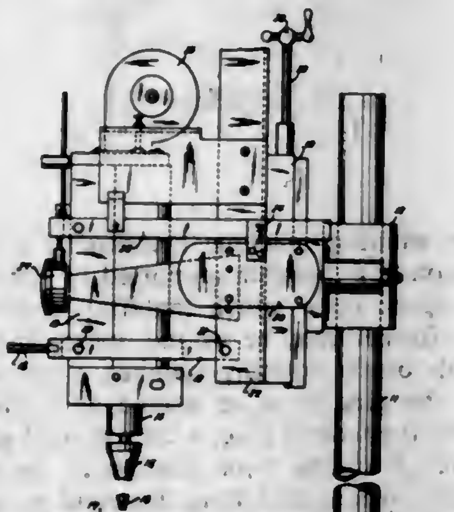
3,308,003

ULTRASONIC SEALING APPARATUS

Howard Deans, Secane, Pa., assignor to Kleer-Vu Industries, Inc., New York, N.Y.

Filed Feb. 16, 1962, Ser. No. 173,750

1 Claim. (Cl. 156—580)



An ultrasonic plastic sheet material sealing machine having a transducer with a vertical axis, a counterbalance for balancing the weight of the transducer, a flat anvil and a tool for ultrasonic sealing comprising a heavy metal structure of downwardly convergent inwardly curved side wall having a vertical conical cross-section and a horizontal circular cross-section with a reduced diameter active tip and enlarged carrier mounting portion of decreasing diameter toward the work, with downwardly convergent curved sides, said active tip consisting of a narrow, thin, projecting semicylindrical blade.

3,308,004

TRANSLUCENT PANELS HAVING SELECTIVE TRANSMISSION AND THEIR MANUFACTURE

Paul Rouault, Colombes, Siene, France, assignor to Societe des Usines Chimiques Rhone-Poulenc, Paris, France, a French body corporate

Filed Mar. 13, 1961, Ser. No. 95,048

Claims priority, application France, Mar. 12, 1960, 821,677

5 Claims. (Cl. 161—1)

1. Translucent reinforced building panels consisting of a sheet of cross-linked unsaturated polyester resin containing glass fibres and carrying on one face a contiguous continuous metallic layer of thickness such as to arrest a substantial proportion of infra-red radiation striking said layer but transmitting a substantial proportion of visible light striking said layer.

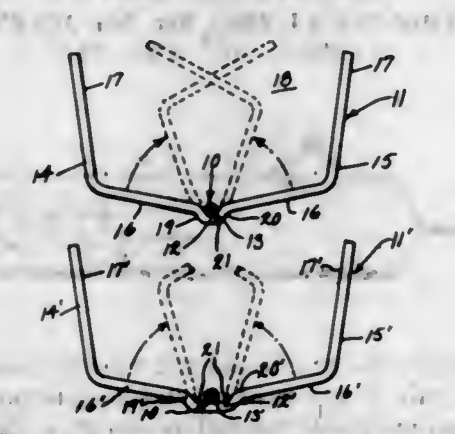
3,308,005

FLORAL DISPLAY

Wald Pinnecker, P.O. Box 312, Oshkosh, Wis. 54901

Filed Feb. 27, 1964, Ser. No. 347,879

1 Claim. (Cl. 161—31)



A floral display comprising a central wire base form member capable of being shaped to a given design, a plurality of resilient wire fastening members capable of permanent deformation, said wire fastening members being spaced about and affixed to said base form member, each fastening member including a central offset portion providing a recess of a size and configuration to receive a respective portion of the under surface of said wire base form, a pair of inclined stretches each secured to a respective end of said central offset portion, and an upwardly and outwardly extending stretch secured to the end termination of each inclined stretch, said central offset portion being welded at its apex to the under surface of said wire base frame, whereby when said fastening members are deformed to an over-lapping locking position the apex of said central offset portion will retain its original form and said point of weld will not be strained or weakened.

3,308,006

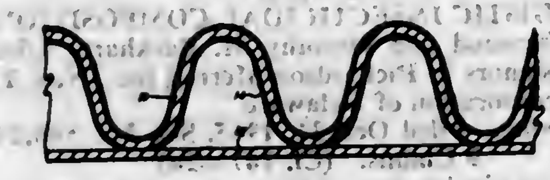
LAMINATED CORRUGATED PAPER BOARD

Herman J. Kresse, Houston, Tex., and Travis L. Gordy, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Oct. 19, 1961, Ser. No. 146,114

4 Claims. (Cl. 161—137)

1. A corrugated paperboard comprising at least one corrugated medium, said corrugated medium being coated with a wax-copolymer blend, and at least one monoplanar liner, said corrugated paperboard being characterized further in that said monoplanar liner is bonded to said corrugated medium through said wax-copolymer blend, said wax-copolymer blend comprising a wax containing from about 25 to about 60 weight percent ethylene-ethyl acrylate copolymer and being characterized further in that the wax is selected from the group consisting of paraffin wax, microcrystalline wax and mixtures thereof.



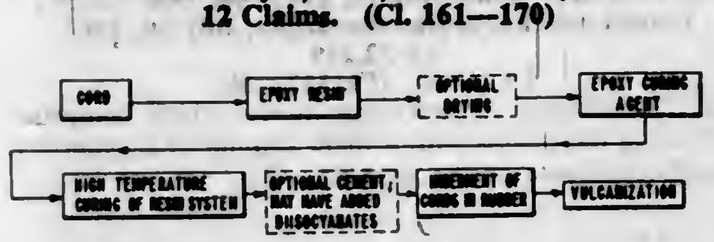
3,308,007

TREATMENT FOR IMPROVING ADHESION OF FIBROUS MATERIAL TO RUBBER

Marvin S. Shepard, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 6, 1963, Ser. No. 282,830

12 Claims. (Cl. 161—170)


CORD
EPOXY RESIN
OPTIONAL DRYING
EPOXY CURING AGENT
HIGH TEMPERATURE CURING OF RESIN SYSTEM
OPTIONAL CEMENT; MAY HAVE ADDED DIISOCYANATES
IMBEDMENT OF CORDS IN RUBBER
VULCANIZATION

1. In the process of preparaing a rubber article reinforced with a structure composed of synthetic fibrous material, selected from the group consisting of polyester, nylon and viscose rayon yarn, which includes forming a bonding coat on the structure by treatment with an epoxy compound together with a curing agent for the epoxy compound, treatment with a latex of synthetic elastomer and drying the coating, forming an assembly of the coated structure with rubber and then vulcanizing the assembly; the improvement of applying to the synthetic fibrous material a first layer containing a low molecular weight epoxy compound free from curing agent, applying thereover a distinct second layer comprising a curing agent for the epoxy compound and a latex of synthetic elastomer composition containing at least 25% of copolymers of butadiene and a vinylpyridine, heating the coated structure at a temperature of 300° to 500 F. for a time sufficient to cause a curing reaction between the epoxy compound and the curing agent at the interface between the first and second layers, bringing the coated structure into contact with a vulcanizable elastomer composition, and thereafter curing the assembly with heat and pressure.

3,308,008

METALLIC LAMINATE BONDED BY AN ADHESIVE COMPOSITION CONTAINING A POLYVINYL BUTYRAL, A PHENOLIC NOVOLAK AND A POLYMERIC NITROGEN SILANE COMPOUND

Thomas E. Ronay, Oak Park, Ill., assignor, by mesne assignments, to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed May 3, 1963, Ser. No. 277,685

11 Claims. (Cl. 161—207)

8. An article of manufacture comprising a metallic laminae bonded to a base with a heat-cured adhesive comprising: (1) a polyvinyl resin consisting predominantly of polyvinyl butyral; (2) a permanently fusible, phenolic-aldehyde condensation product; and (3) the reaction product of a member of the class consisting of (a) ammonia or primary amine witth (b) a halosilane having the general formula:

$$R_nSiHal_{4-n}$$

wherein R is a monovalent hydrocarbon radical and n is an integer from 1 to 2, whereby each halogen atom of (b) is substituted with an NH_2 or NHR amino group and a silamine is thereby obtained.

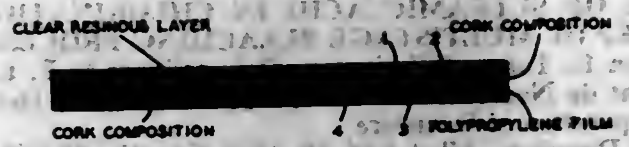
3,308,009

CURL-RESISTANT VINYL CORK TILE

George L. Baumgartner, Jr., 635 Hedgerow Lane, Manheim Township, Lancaster County, Pa. 17601

Filed Dec. 16, 1963, Ser. No. 330,879

5 Claims. (Cl. 161—211)



1. A curl-resistant floor and wall covering comprising a main body of cork composition having a wear layer of polymerized vinyl resin affixed to the upper surface thereof, a film of polypropylene disposed on the back surface of said main body of cork composition, a thin layer of cork composition positioned on the side of said polypropylene film opposite the side attached to said main body of cork composition, said thin layer of cork composition being adhered to said main body of cork composition by said film of polypropylene.

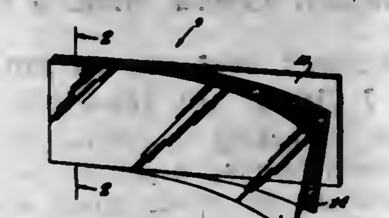
3,308,010

CRYOGENIC AND THERMAL SEAL FOR ELECTRICAL MEMBERS

Hermann Engelhardt, Gardena, and Alfred M. Nelson, Redondo Beach, Calif., assignors to The Magnavox Company, Torrance, Calif., a corporation of Delaware

Continuation of application Ser. No. 45,391, July 26, 1960. This application Mar. 23, 1966, Ser. No. 543,461

8 Claims. (Cl. 161—231)



5. An information storage element for use in data processing apparatus, including:

- a flat base member formed with a polyethylene terephthalate,
- a flat overlay of substantially the same length and width as the base member and formed from the same polyethylene terephthalate as the base member, said overlay also having a similar crystalline orientation as the base member,
- a mixture of polyester adhesive, and
- powdered ferric oxide sandwiched between the base member and the overlay, the overlay being positioned over the base member to form the sandwich arrangement with its crystalline orientation being aligned with the crystalline orientation of the base member.

3,308,011

STEAM DIGESTION OF IMPREGNATED CHIPS

James H. Ross, Montreal, Quebec, Canada, assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

No Drawing. Filed June 20, 1963, Ser. No. 289,436

1 Claim. (Cl. 162—68)

The method of recovering cellulosic pulp from wood chips which comprises charging the chips into a pressure vessel while displacing the air therefrom with steam, circulating with said chips a sulfide liquor having an alkali concentration of 50 to 100 grams per liter for 10 to 30 minutes at a temperature range of 80° to 120° C. at atmospheric pressure, draining excess sulfide liquor from the chips, holding the drained impregnated chips at a temperature substantially in the range of 120° to 150° C. at a pressed of substantially 30 to 60 pounds per square inch gauge for a period of time 10 to 120 minutes and thereafter steam cooking the impregnated chips at a temperature ranging from 160° to 185° C.

3,308,012
USE OF SULFAMIC ACID IN CHLORINATION STEP OF MULTISTAGE BLEACHING PROCESS

Ramon U. Tober, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 19, 1963, Ser. No. 303,176
7 Claims. (Cl. 162—73)

1. In the multiple stage chlorination bleaching of wood pulp which involves a first stage chlorination bleach of the pulp at pH 1–2, a second stage extraction with caustic, and a third stage hypochlorite bleach at pH 6–11 and a temperature of 30° to 80° C. for 1 to 3 hours, the process improvement of admixing with the pulp in said first stage bleach from 5 to 20% by weight of a compound selected from the group consisting of sulfamic acid and its alkali, alkaline earth and ammonium salts calculated on an acid equivalent basis and based on the weight of the available chlorine in said first stage bleach.

3,308,013
COMPRESSIBLE MAT OF WHOLE WOOD FIBERS AND UNCURED RESIN AS OVERLAY FOR WOOD PRODUCT AND PROCESS OF MAKING SAME

Benjamin S. Bryant, Seattle, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Dec. 7, 1965, Ser. No. 520,018
7 Claims. (Cl. 162—103)

1. A process of making an overlaid woody product, comprising; screen forming a porous compressible mat consisting essentially of whole wood fibers from an aqueous, fiber slurry to a thickness of from 0.1 to 0.5 inch thick and a specific gravity of from 0.15 to 0.30; said fibers having an uncured synthetic resin solids precipitated uniformly thereon in an amount of at least about 5% based on the dry fiber weight; adjusting the moisture content of said porous mat to between about 12% and 200% based on the dry fiber weight; disposing said mat in face to face relation to an unconsolidated substrate of adhesive bearing woody members; consolidating said substrate and mat heat and pressure to cure the resin and adhesive content and provide said cured mat with a specific gravity of between about 0.7 and 0.95, thereby filling any voids in the surface of said substrate.

3,308,014
ACIDIC AQUEOUS IODINE CONCENTRATES

Abraham Cantor, Elkins Park, Pa., and Otto E. Neracher, Mount Vernon, and Murray W. Winicov, Flushing, N.Y., assignors to West Laboratories, Inc., Long Island City, N.Y., a corporation of New York
No Drawing. Filed Mar. 30, 1962, Ser. No. 183,740
2 Claims. (Cl. 167—17)

1. An acidic aqueous iodine concentrate consisting essentially of an aqueous solution of hydroxyacetic acid, iodine and a water soluble iodide, with the amount of iodide (I^-) being equal to at least one-half the amount by weight of available iodine and sufficient to solubilize the iodine in said hydroxyacetic acid, said concentrate containing about 5 to 65% by weight of hydroxyacetic acid and 5 to 45% by weight of available iodine.

3,308,015
SYNERGISTIC INSECTICIDAL COMPOSITIONS

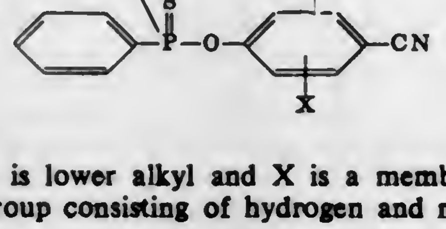
Paul D. Harwood and Dorothy M. Burkhart, Ashland, Ohio, assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,248
9 Claims. (Cl. 167—24)

1. An insecticidal composition comprising piperonyl butoxide and a member selected from the group consisting of a Lobelia alkaloid and an acid addition salt thereof.

3,308,016
NEW ORGANO-PHOSPHORUS COMPOUNDS AND THE INSECTICIDAL COMPOSITIONS CONTAINING THE SAME

Saichiro Kuramoto and Yoshihiko Nishizawa, Toyonaka-shi, Hideo Sakamoto, Itami-shi, and Toshio Mizutani, Minoo-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed July 11, 1961, Ser. No. 123,101
Claims priority, application Japan, July 20, 1960, 35/32,259
9 Claims. (Cl. 167—30)

8. The method of destroying insects which comprises contacting the insects with a toxic amount of a cyanoaryl phosphonothioate of the structure

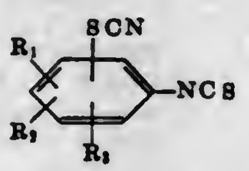


wherein R_1 is lower alkyl and X is a member selected from the group consisting of hydrogen and methyl.

3,308,017
PESTICIDAL COMPOSITIONS CONTAINING THIOCYANO-PHENYL-ISOTHIOCYANATES

Enrico Knüsli, Riehen, near Basel, and Anton G. Weiss, Basel, Switzerland, assignors, by mesne assignments, to H. A. Whitten & Co., New York, N.Y., a partnership
No Drawing. Original application Mar. 18, 1963, Ser. No. 266,037, now Patent No. 3,231,596, dated Jan. 25, 1966. Divided and this application Aug. 2, 1963, Ser. No. 306,647
Claims priority, application Switzerland, Mar. 23, 1962, 3,481/62
9 Claims. (Cl. 167—30)

1. A composition of matter which comprises a major portion of an agriculturally useful carrier and a minor portion of an effective amount of at least one pesticidal compound of the formula



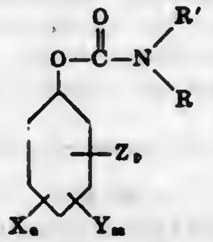
wherein each of R_1, R_2 and R_3, independently, is a member selected from the group consisting of hydrogen, halogen, cyano, carboxy, carbamyl, carbalkoxy, acetylamino, lower alkyl, halogenated lower alkyl, lower alkenyl, halogenated lower akenyl, lower alkinyl, lower alkoxy, halogenated lower alkoxy, lower alkenyloxy, halogenated lower alkenyloxy, lower alkinyloxy and lower alkylthio,

the said carrier being compatible with said pesticidal compound.

3,308,018
CARBAMATE FUNGICIDES AND NEMATOCIDES

Delta W. Gier, Parkville, and Ralph W. Pritchard II, Kansas City, Mo., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Mar. 11, 1965, Ser. No. 439,069
20 Claims. (Cl. 167—30)

1. A process of killing a pest selected from the group consisting of nematodes and fungi comprising applying to the pest a carbamate having the formula

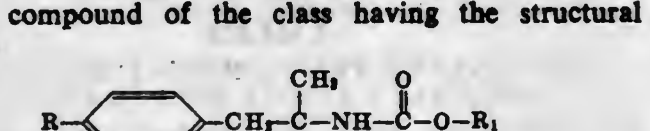


where X is chlorine, Y is nitro, Z is selected from the group consisting of methyl and hydrogen, R and R′ are selected from the group consisting of hydrogen, phenyl, tolyl, chlorophenyl, alkyl and cycloalkyl, *n* and *m* are integers from 1 to 3 and *p* is an integer from 0 to 3.

3,308,019
ALKYL - N - [α,α - DIMETHYL - β - (p - HALOPHENYL) - ETHYL] - CARBAMATES AND COMPOSITIONS THEREOF

Rudolf Kopf, Bergisch-Gladbach, Karl-Heinz Boltze, Cologne-Mulheim, Dietrich Lorenz, Kleinburden Post, Bensberg, and Johannes Mühlenbein, Bergisch-Gladbach, Germany, assignors to Tropon Dinklage & Co., Cologne-Mulheim, Germany, a corporation
No Drawing. Filed Sept. 16, 1963, Ser. No. 309,341
Claims priority, application Germany, July 11, 1961, T 20,422
10 Claims. (Cl. 167—55)

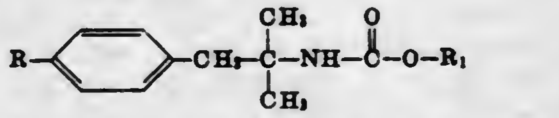
1. A compound of the class having the structural formula



(I)

wherein R is halogen and R_1 is aa straight chain lower alkyl group having from 1 to 3 carbon atoms.

10. A method of curtailing appetite which comprises administering to a dieting patient a therapeutic composition in effective dosage unit form comprising a compound having the structural formula:



(I)

wherein R is halogen, R_1 is a straight chain lower alkyl group having from 1–3 carbon atoms, as active ingredient combined with a pharmaceutical carrier.

3,308,020
COMPOSITIONS AND METHOD FOR BINDING BILE ACIDS IN VIVO INCLUDING HYPOCHOLESTEREMICS

Frank J. Wolf, Westfield, N.J., and David M. Tennent, Ashland, Ohio, assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Sept. 22, 1961, Ser. No. 139,880
18 Claims. (Cl. 167—65)

11. The method of lowering cholesterol blood level in a hypercholesterolemic patient which comprises administering orally from 0.1 to 1250 g. of a non-toxic polymer which is a water-soluble polymeric amine selected from the group consisting of,

(a) polyacrylic acid esterified by sufficient of a quaternary ammonium substituted alcohol to give an equivalent weight, based on the quaternary ammonium groups, of less than 500,
(b) polyacrylic acid esterified by sufficient of a tertiary amine substituted alcohol to give an equivalent weight, based on the tertiary amine groups, of less than 500,
(c) polyethyleneimine,
(d) the copolymer of 30 parts by weight of acrylamide and 70 parts by weight vinyl benzyl trimethyl ammonium chloride,
(e) polystyrene substituted in the phenyl groups with sufficient number of quaternary ammonium methyl groups to give an equivalent weight, based on the ammonium groups, of less than 500,
(f) polyacrylamide in which sufficient of the amide side chains have been converted to quaternary ammonium alkyl ester groups to give an equivalent weight, based on the ammonium groups, of less than 500,
(g) polyacrylonitrile in which sufficient of the nitrile side chain groups have been converted to quaternary ammonium alkyl ester groups to give an equivalent weight, based on the ammonium groups, of less than 500,

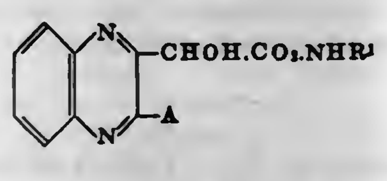
said polymer being further characterized by,
  (1) a molecular weight of at least 1500,
  (2) the property of binding at least 80% of an equal weight of glycocholic acid in vitro into a form incapable of dialysis through a cellophane membrane, and
  (3) a polymeric skeleton inert to degradation by digestive enzymes,

and an orally ingestible carrier, said carrier being a balanced synthetic diet for human consumption of controlled caloric content.

3,308,021
ALKYLAMINO QUINOXALYL ETHANOLS

Reginald Peter Slatcher, Macclesfield, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Sept. 27, 1963, Ser. No. 311,972
Claims priority, application Great Britain, Oct. 23, 1962, 40,174/62
8 Claims. (Cl. 167—65)

1. A quinoxaline derivative selected from compounds of the formula:



wherein R^1 is alkyl of up to 6 carbon atoms and A is selected from hydrogen and alkyl of up to 6 carbon atoms, and the pharmaceutically acceptable acid-addition salts thereof.

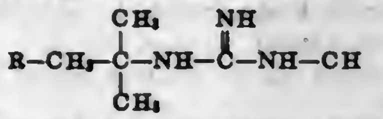
8. As a pharmaceutical composition of matter, a quinoxaline derivative according to claim 1 in admixture with a major amount of an inert pharmaceutically-acceptable carrier.

3,308,022
NOVEL HYPOTENSIVE COMPOSITIONS CONTAINING 1-SUBSTITUTED-3-CYANO GUANIDINES

John Rhodes Cummings, Suffern, and Elliott Cohen, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed June 25, 1964, Ser. No. 378,038
6 Claims. (Cl. 167—65)

4. The method of lowering elevated blood pressure which comprises administering orally to a mammal an

amount ranging from 5 mg. to 25 mg. per kilogram of body weight per day of a compound of the formula:



$$R-CH_2-\underset{CH_3}{\overset{CH_3}{\underset{|}{\overset{|}{C}}}}-NH-\overset{NH}{\overset{\|}{C}}-NH-CH$$

wherein R is selected from the group consisting of hydrogen and lower alkyl of from 1 to 3 carbon atoms.

3,308,023

THERAPEUTIC COMPOSITIONS CONTAINING 6-[D-2-(D-2-AMINO-2-PHENYLACETAMIDO)-2-PHENYLACETAMIDO]PENICILLANIC ACID

Peter B. Russell, Villanova, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 20, 1964, Ser. No. 391,833

8 Claims. (Cl. 167—65)

7. A composition comprising:

Ingredient:	Amount (grams)
6-[*D*-2-(*D*-2-amino-2-phenylacetamido)-2-phenylacetamido]penicillanic acid	2.4
Ampicillin	2.4
Kaolin	76.8
Pectin	4.8
Pharmasorb (attapulgite clay)	32.0

3,308,024

METHOD OF TRANQUILIZATION

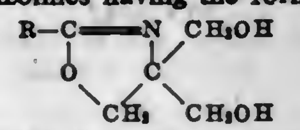
Leslie Frederick Wiggins, Wargrave, and John William James, Langley, England, and Colin Beard, Mexico City, Mexico, assignors to Aspro-Nicholas Limited, a British company

No Drawing. Original application Dec. 24, 1963, Ser. No. 333,177, now Patent No. 3,235,557, dated Feb. 15, 1965. Divided and this application Mar. 8, 1965, Ser. No. 449,666

Claims priority, application Great Britain, Oct. 2, 1959, 33,489/59

14 Claims. (Cl. 167—65)

1. A method of tranquilizing an animal comprising administering to an animal in need of tranquilization an effective dose of a compound selected from the group consisting of oxazolines having the formula:



wherein R is selected from the group consisting of halogenophenyl, o-hydroxyphenyl and m-trifluoromethylphenyl; and non-toxic pharmacologically acceptable salts thereof.

3,308,025

METHOD FOR THE TREATMENT OF ESTROGEN DEFICIENCIES

Pierre Destouches, Paris, France, assignor to Roussel-Uclaf, S.A., Paris, France, a corporation of France

No Drawing. Filed Apr. 30, 1963, Ser. No. 277,043

3 Claims. (Cl. 167—74)

1. A process for the treatment of estrogenic deficiencies in human therapy which comprises administering orally to humans a composition containing as an estrogen, 17α-ethynyl-$\Delta^{1,4}$-androstadiene-11β,17β-diol-3-one in a daily dose between about 0.5 mg. and about 5 mg.

3,308,026

PROCESS FOR THE PRODUCTION AND RECOVERY OF THE KALLIKREIN-INACTIVATOR FROM PROTEINACEOUS HORMONE WASTES

Fritz Schultz, Wuppertal-Elberfeld, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,125

7 Claims. (Cl. 167—74)

1. In a method wherein pancreas gland material is treated to provide an acidic alcoholic pancreas extract containing insulin, said extract is neutralized to form a discardable precipitate and an aqueous solution, said aqueous solution is treated with a 20 to 25 percent sodium chloride solution to produce crude insulin and a discardable mother liquor from which insulin is separated, the improvement which comprised treating a said discardable material with an alcoholic reagent to produce a solution containing kallikrein-inactivator in recoverable form, said alcoholic reagent consisting essentially of alcohol in case of the discardable mother liquor and in the case of the discardable precipitate being selected from the group consisting of an alcoholic salt solution and alcoholic acetic acid.

3,308,027

BOVINE PITUITARY GROWTH HORMONE PROCESS

Fritz Reusser, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed May 13, 1965, Ser. No. 455,598

1 Claim. (Cl. 167—74)

A process of resolving bovine growth hormone into higher and lower molecular weight fractions which comprises:

(1) dissolving bovine growth hormone in an aqueous ammonia solution of molarity no higher than about 0.05;
(2) applying the aqueous solution to cross-linked dextran gel having a water regain value of about 2.5 gm./gm.; and
(3) serially eluting resolved fractions of bovine growth hormone with purified water and recovering said fractions.

3,308,028

PROCESS FOR THE PURIFICATION OF BIOLOGICALLY ACTIVE PREPARATIONS

Jan Willem de Vries, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed June 25, 1964, Ser. No. 378,065

4 Claims. (Cl. 167—75)

1. Method for the decolourization of a biologically active product obtained from the group consisting of animal tissues and animal body fluid comprising contacting an aqueous solution of said product at a pH between about 1 and 8 with particles of a synthetic linear polyamide selected from the group consisting of a polymer obtained by the polymerization of a diamine with a dibasic acid, a polymerized amino carboxylic acid, and a polymerized lactam of an amino carboxylic acid.

3,308,029

DENTIFRICE COMPOSITIONS COMPRISING DICALCIUM ORTHOPHOSPHATE AND SODIUM MONOFLUOROPHOSPHATE

Elerington Saunders, St. Louis, and Thomas Schiff, Clayton, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,689

4 Claims. (Cl. 167—93)

1. A toothpaste composition containing from about 20% to about 60%, by weight, of an abrasive material and from about 0.2% to about 2.0%, by weight, of sodium monofluorophosphate; said abrasive material consisting of dicalcium orthophosphate and being characterized by having a particle size small enough to pass through a No. 200 mesh U.S. Standard screen.

3,308,030

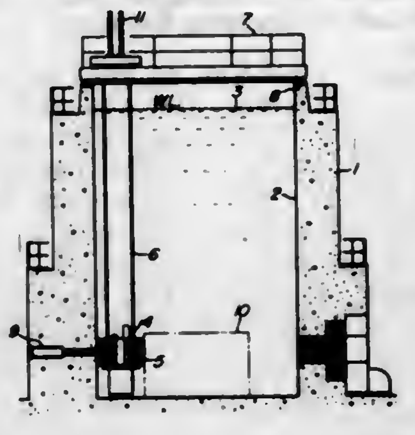
CORE SUSPENSION SYSTEM FOR SWIMMING POOL TYPE REACTOR

Tadashi Aizu and Kiyomi Kiryu, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Apr. 15, 1964, Ser. No. 359,982

Claims priority, application Japan, Apr. 16, 1963, 38/18,191

2 Claims. (Cl. 176—27)



2. In a circular pool-type reactor, the subcombination, comprising:

bridge means mounted to be rotated about the upper periphery of said pool,
carriage means mounted on said bridge means to move along said bridge means, said carriage means including reactor core means suspended therefrom into said pool,
control means for independently activating and moving said bridge means and said carriage means to locate said reactor core in any position within the pool by the combined rotational motion of said bridge means and translational motion of said carriage means.

3,308,031

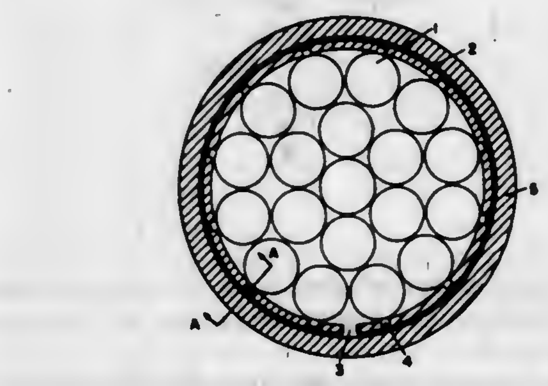
METHOD AND APPARATUS FOR INCREASING BURNOUT HEAT FLUX IN REACTOR PRESSURE TUBES

George A. Pon, Deep River, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed June 17, 1965, Ser. No. 464,690

Claims priority, application Canada, Aug. 21, 1964, 910,012

11 Claims. (Cl. 176—43)



1. Apparatus for increasing the burnout heat flux in a boiling water reactor of the type having fuel bundles made up of a group of fuel elements positioned in pressure tubes passing through the core of the reactor comprising a series of metal rings encircling the said fuel bundles and engaging the inner surface of the said pressure tubes such that water from the steam/water coolant will not accumulate on the pressure tube surfaces but will be directed inwardly toward the fuel elements of the said fuel bundles.

3,308,032

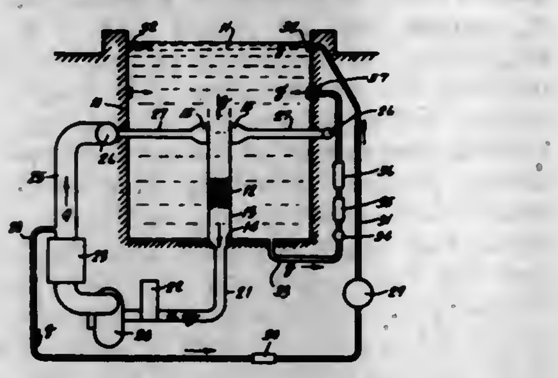
SWIMMING POOL TYPE REACTORS

Louis Berthod, Grenoble, France, assignor to Societe Grenobloise d'Etudes et d'Applications Hydrauliques, Grenoble, France, a corporation of France

Filed Apr. 1, 1964, Ser. No. 356,444

Claims priority, application France, Apr. 5, 1963, 4,555; May 21, 1963, 4,579; May 22, 1963, 4,580; Mar. 13, 1964, 4,659

15 Claims. (Cl. 176—62)



1. The combination in a swimming pool type reactor having a reactor core immersed in a pool of water contained in an open swimming pool, of means for establishing a closed circuit of highly radioactive cooling water which passes through the pool of water and said reactor core, and a portion of such circuit being open to the pool of water so that the cooling water flows as a stream through the pool of water, said means comprising a duct circuit portion connected at its ends with said open circuit portion and forming with the latter said closed cooling water circuit, said duct circuit portion including a pump for circulating the cooling water through said closed circuit, deactivating means, and a heat exchanger, and means associated with said open circuit portion for controlling the flow of the cooling water from one end of said duct circuit portion and through the pool of water to the other end of said duct circuit portion, said controlling means being located in the pool of water above said reactor core and being constructed and arranged in said pool of water as to enable access to said reactor core from the upper free surface of said pool of water.

3,308,033

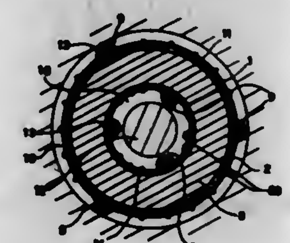
TUBULAR FUEL PENCIL HAVING A THIN FLEXIBLE CAN FOR NUCLEAR REACTORS

Lucien Alfille, Paris, France, and Jean Claude Charrault, Rasco-Upanne, and Francois Lafontaine, Ispra, Italy, assignors to European Atomic Energy Community, Brussels, Belgium

Filed July 20, 1965, Ser. No. 473,420

Claims priority, application Belgium, Aug. 14, 1964, 1,852/64

11 Claims. (Cl. 176—72)



1. A tubular fuel pencil for a nuclear reactor comprising tubular inner and outer sheath, said sheath defining therebetween an annular space, a substantially cylindrical body of nuclear fuel, said nuclear fuel being placed in said annular space, means for closing the ends of the said annular space, inwardly projecting longitudinal corrugations on said inner sheath and a rigid cylindrical member mounted within said inner sheath, said rigid cylindrical member being rigidly secured to said end closing means,

said corrugations bearing against said cylindrical member to thereby support said inner sheath, and outwardly projecting longitudinal corrugations on said outer sheath.

3. A tubular fuel pencil for a pressure fluid cooled power reactor, comprising a cylindrical outer sheath, a cylindrical inner sheath, said sheaths being assembled to define an annular space therebetween, a substantially hollow cylindrical member of fissile material, two annular plugs for closing the end portions of said sheaths, said sheaths being constructed of a flexible material preferably of stainless steel no greater than .1 mm. in thickness, longitudinal folds formed in said sheaths between portions receiving the annular plugs, said longitudinal folds permitting radial deformation of said sheaths, peripheral folds at least in part of the portion between the plug receiving portions permitting axial deformation of said sheaths, said sheaths having equidistant longitudinal folds whose fold height is greater than the fold height of at least the folds permitting axial deformation, internally fixed supporting wires strengthening said equidistant longitudinal folds, a viscous layer of material which is plastic at the working temperatures of the pencil and the reactor coating said annular space, a rigid cylindrical member mounted in the interior of said inner sheath against whose surfaces said equidistant longitudinal wire strengthened folds bear and the ends of said cylindrical member being rigidly secured to the pencil ends.

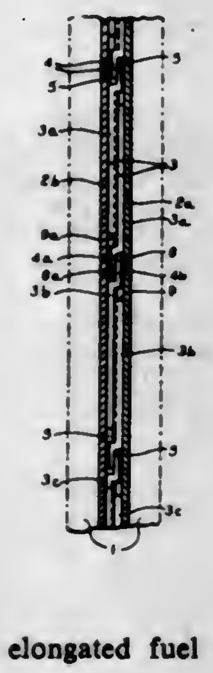
3,308,034
FUEL ELEMENT FOR NUCLEAR REACTORS

Gerhard Schmidt, Leopoldshafen, Germany, assignor to Gesellschaft Fuer Kernforschung m.b.H., Karlsruhe, Germany, a corporation of Germany

Filed Aug. 14, 1964, Ser. No. 389,810

Claims priority, application Germany, Aug. 17, 1963, K 50,550

3 Claims. (Cl. 176—78)



1. A plurality of elongated fuel elements in assembled relation,

(a) said elements being disposed with their axes parallel to each other,

(b) a plurality of circumferentially spaced axially directed fins projecting radially outwardly from each element,

(c) the fins of adjacent elements being in abutting relation spacing said adjacent elements from each other, and having flush meeting bevel surfaces oppositely offset along the length of abutting fins preventing rotational movement of the elements,

(d) abutting fins having inter-engaging hooks securing the corresponding elements against radial displacement with respect to each other.

3,308,035
PROCESS FOR PRODUCING A HIGH PROTEIN COMPOSITION BY CULTIVATING MICROORGANISMS ON AN N-ALIPHATIC HYDROCARBON FEED

John D. Douros, Jr., Millington, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 10, 1964, Ser. No. 410,299

7 Claims. (Cl. 195—28)

1. A process for biosynthetically producing a high protein composition having a protein content in excess of 50 percent and an essential amino acid index in excess of 45 which comprises cultivating a microorganism selected from the group consisting of:

Pseudomonas ligustri (A.T.C.C. No. 15522),
Pseudomonas pseudomallei (A.T.C.C. No. 15523),
Pseudomonas orvilla (A.T.C.C. No. 15524),
Alcaligenes sp. (A.T.C.C. 15525),
Cellumonas galba (A.T.C.C. No. 15526),
Brevibacterium insectiphilium (A.T.C.C. No. 15528),
Corynebacterium sp. (A.T.C.C. No. 15529), and
Corynebacterium pourometabolum (A.T.C.C. No. 15530)

on an n-aliphatic hydrocarbon feed in a media comprising an aqueous growth medium containing oxygen and other essential cell nutrients at temperatures ranging from about 20 to 55° C., and harvesting by centrifuging and spray drying said microorganism cells.

3,308,036
PROCESS FOR THE PRODUCTION OF RIBONUCLEOTIDES BY FERMENTATION

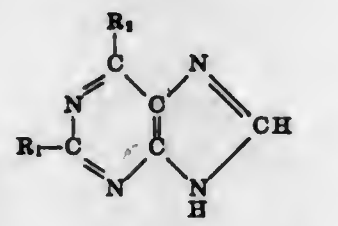
Kiyoshi Nakayama, Sagamihara-shi, Zenroku Sato, Machida-shi, and Haruo Tanaka, Tokyo, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Nov. 25, 1964, Ser. No. 413,994

Claims priority, application Japan, Nov. 27, 1963, 38/63,231

14 Claims. (Cl. 195—28)

1. A process for the production of 5'-ribosyl phosphate of purine base of the formula



(I)

wherein

R_1 represents a member selected from the group consisting of H and amino, lower alkylamino and di-lower alkylamino, and

R_2 represents a member selected from the group consisting of amino, lower alkylamino, di-lower alkylamino and mercapto when R_1 is other than H, and R_2 represents mercapto when R_1 is H,

which comprises aerobically culturing a bacterium belonging to *Brevibacterium ammoniagenes* in a fermentation medium therefor which, in addition to the normal constituents thereof, contains a member selected from the group consisting of a purine base compound of Formula I and a riboside thereof, and recovering the accumulated 5'-ribosyl phosphate.

3,308,037
MANUFACTURE OF STARCH DECOMPOSITION PRODUCTS

Hanno Goos and Hans Wolfgang Maurer, Ravensburg, Germany, assignors, by mesne assignments, to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed Aug. 10, 1962, Ser. No. 216,105

Claims priority, application Germany, Oct. 21, 1961, E 21,843; July 5, 1962, E 23,149

14 Claims. (Cl. 195—31)

1. A process for the manufacture of starch decomposition products comprising continuously adding a chemically active starch modification substance to an aqueous suspension of starch; forming a continuous stream of the so-obtained mixture; passing said stream through a zone and enforcing temporary flow acceleraiton in said zone and then passing said stream through a second zone and enforcing deceleration of said stream in said second zone, the added starch modification substance being thus permitted to become active in a region where the stream is under high imposed stress, which exists in the region immediately following said temporary flow acceleration; admixing steam with said mixture during deceleration; repeating flow acceleration of the so-obtained product; and immediately after said repeated flow acceleration admixing with said product a reagent causing the starch modification to be broken off.

3,308,038
PROCESS OF MAKING SPORE-CONTAINING CULTURES OF JAPANESE BEETLE MILKY DISEASE BACTERIA

Robert A. Rhodes, George R. Hrubant, and Margaret S. Roth, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Nov. 13, 1964, Ser. No. 411,161

3 Claims. (Cl. 195—96)

1. An in vitro process for inducing sporulation to the extent of about 3 percent to about 5 percent based on the total number of Japanese beetle milky disease bacterial cells present in the form of discrete colonies grown on a solid culture medium, said process comprising inoculating a distilled water medium containing 1.5 percent by weight of separately autoclaved yeast extract, 0.3 percent dipotassium phosphate buffer, and 0.2 percent of a fermentable carbohydrate selected from the group consisting of trehalose, glucose, and fructose with viable vegetative cells obtained by liquid culture of a Japanese beetle milky disease organism selected from the group consisting of *Bacillus popilliae* NRRL B–2309L and *Bacillus popilliae* NRRL B–2309S,

fermenting the inoculated medium at 30° C. in the presence of aeration equivalent to 0.15–0.5 v./v./min. until the resulting vegetative cells reach a late log phase population of about 5×10^{8} cells per ml.,

promptly diluting a small amount of the fermented liquid medium with 10^7 volumes of a 0.1-percent tryptone solution,

spreading 0.3 ml. aliquots of the diluted fermentation medium on the surface of each of replicated solid media plates prepared by adding as separately autoclaved components 0.10 percent to 0.150 percent by weight of K_2HPO_4 based on the aqueous solution and 0.035 percent to 0.070 percent (w./v.) of sodium acetate to a distilled water solution containing 1.5 percent of yeast extract and 2.0 percent of agar,

promptly overlaying the thusly inoculated plates with 5 ml. of an autoclaved 1-percent solution of exhaustively washed agar,

incubating the overlaid plates at 30° C. for 42 days whereby to obtain not more than about 30 colonies per plate in which colonies about 3 percent to about 5 percent of the individual cells thereof are in the spore form,

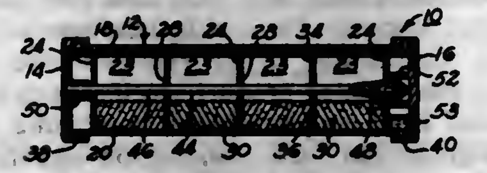
subjecting suspensions of the above colonial material to heating for 15 minutes at 50° C. to kill the vegetative cells and provide an agar plate having thereon only sporulated cells of a said Japanese beetle milky disease organism, said sporulated cells having improved germinability.

3,308,039
DISPOSABLE CULTURING DEVICE

Eric L. Nelson, Los Angeles, Calif., assignor to Allergan Pharmaceuticals, Inc., Santa Ana, Calif., a corporation of California

Continuation of application Ser. No. 341,530, Jan. 31, 1964. This application Feb. 15, 1966, Ser. No. 532,830

6 Claims. (Cl. 195—140)



1. In a disposable culturing device, the combination of:

(a) a rigid, transparent, elongated, tubular member having an open end;

(b) compartments within and spaced apart lengthwise of said tubular member;

(c) passage means within and extending lengthwise of said tubular member and interconnecting said compartments;

(d) jelled culture media having different characteristics respectively disposed in said compartments and respectively having exposed surfaces extending lengthwise of said tubular member adjacent said passage means, said exposed surfaces of said culture media being in substantially the same plane;

(e) an elongated inoculation member extending lengthwise of said tubular member and disposed in said passage means and movable lengthwise of said passage means to contact and inoculate successive ones of said exposed surfaces of said culture media; and

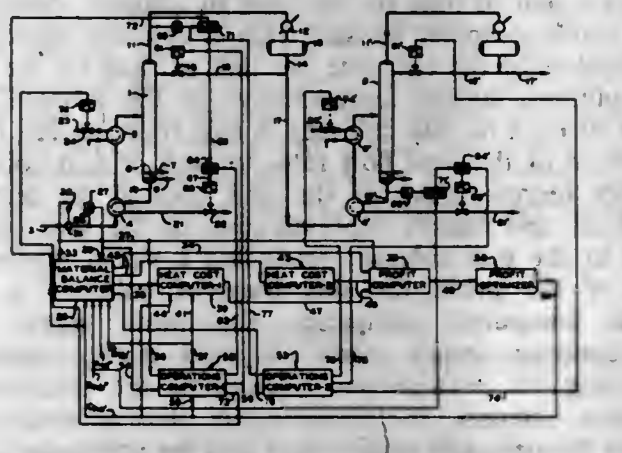
(f) closure means connected to and closing said open end of said tubular member.

3,308,040
CONTROLLING THE OPERATION OF A TRAIN OF DISTILLATION COLUMNS

Merion L. Johnson and Dale E. Lupfer, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 8, 1963, Ser. No. 263,988

4 Claims. (Cl. 203—1)



1. In a process wherein a multicomponent feedstock is separated in a train of fractional distillation columns to product a plurality of terminal product streams wherein the control of each of said columns is manipulated in accordance with signals representative of desired products necessary to realize maximum profit from the production of terminal products in each of said columns in said

train, the process comprising the steps of measuring a process variable indicative of the flow rate of said feedstock to the first of said columns in the train; producing in response thereto a signal representative of the feed flow rate; analyzing said feedstock to determine the concentration of key components contained in said feedstock; producing in response thereto signals representative of said concentrations of said key components; combining the feed flow rate signals and the feed composition signals together with signals representative of predetermined product specifications desired in the said plurality of terminal product streams and signals representative of manipulated purity of intermediate product streams desired in said train of columns in a material balance computer; transmitting from said material balance computer said feed composition signals and said feed flow rate signals to a heat cost computer for said first column in said train of columns; transmitting signals representative of predetermined or manipulated product specifications associated puted to said heat cost computer; combining said feed flow rate signals and feed composition signals together with said first column from said material balance comwith said signals representative of predetermined or manipulated product specifications associated with said first column in a heat cost computer according to the following expression:

$$H_R=f(F, F_c, E; F_T, F_e, H_D, L_B)$$

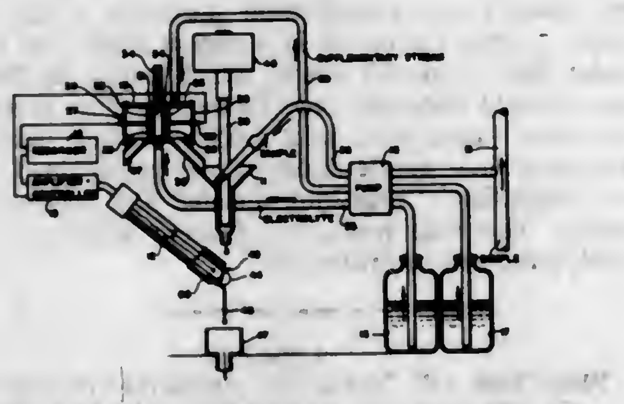
wherein:

H_R=predicted heat supplied to column by reboiler
F=flow rate of feed stream to column
F_c=generic symbol for components in feed stream, each expressed as a liquid volume fraction of feed stream
E=average column tray efficiency
F_e=enthalpy of feed stream
F_T=feed tray (numbering trays from top of column)
H_D=liquid volume fraction of heavy key component desired in distillate product of column
L_B=liquid volume fraction of light key component desired in bottom product of column,

producing in said heat cost computer a signal proportional to H_R; multiplying in said heat cost computer said H_R signal by a signal representative of the rate cost of heat (dollars per B.t.u.) for said first column; producing a signal representative of the cost rate in dollars per unit time for said first column in said train of columns; repeating each of said aforementioned steps for each of said columns in said train in order to produce a signal representative of the cost rate for each of said columns; totaling each of said cost rate signals per unit of time in a profit computer to produce a signal representative of the cost rate per unit of time for the train of columns; combining in a profit computer for said train of columns signals representative of the cost rate per unit of time for the train of columns, signals representative of the terminal flow rates of each of said columns in said train, signals representative of the feed flow rates to each of said columns, signals representative of the unit cost of the terminal products and signals representative of the unit cost of feed to the first column; producing a signal representative of the profit for said train of columns in said profit computer; comparing the profit signal with an optimum profit signal in said profit optimizer; changing the manipulated purities of the intermediate product streams in response to the difference between the optimum profit signal and the profit signal produced in the material balance computer; combining said signal representative of said manipulated purities of the intermediate product stream in an operations computer for each of said columns with signals representative of the flow rates and compositions of the streams entering and leaving each of said columns respectively to produce signals representative of desired terminal product purities for each of said columns in said train; controlling in response to said combined signals the flow rate of a stream selected from the group consisting of bottoms product stream, distillate product stream, external reflux stream, reboiler steam stream, and feed preheater steam stream for each of said columns in said train thereby assuring the operation of the columns in said train at optimum profit conditions.

3,308,041
METHOD AND APPARATUS FOR TITRATION

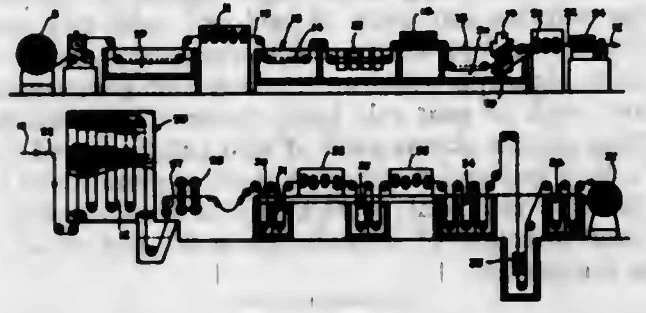
Allen Strickler, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Dec. 5, 1961, Ser. No. 157,130
20 Claims. (Cl. 204—1)



12. In a continuous titrator, the combination of:
a mixer having an inlet and an outlet;
a coulometric reagent generator for continuously generating a titrant by electrical current flow through an electrolyte supplied to said generator, said generator having an electrolyte inlet and a titrant outlet, said outlet being positioned to deliver titrant to said mixer inlet;
means connected to said generator inlet for delivering a flow of electrolyte from a source of electrolyte to said generator, said electrolyte delivery means including means for controlling said electrolyte flow;
means coupled with said mixer inlet for delivering a flow of sample from a source of sample to said mixer inlet, said sample delivery means including means for controlling said sample flow, said mixer mixing said sample and titrant to produce a reaction product at said mixer outlet;
electrolytic means for receiving said reaction product and measuring the ion concentration of said reaction product which concentration varies as a ratio of titrant to sample, said electrolytic measuring means including highly wettable material in contact with the lower portion thereof for rapidly removing said reaction product from said measuring means to minimize reaction product holdup on said measuring means;
means for providing flow communication between said mixer outlet and said electrolytic measuring means, said flow communication means including means defining a gap between said mixer outlet and said electrolytic measuring means, said electrolytic flow control means and said sample flow control means being set to provide delivery of said reaction product in discrete drops from said mixer outlet, through said gap, to said electrolytic measuring means; and
current control means coupling said electrolytic measuring means and said generator for varying the current in said generator and thereby the titrant output thereof as a function of the measured ion concentration of said reaction product to produce a particular ion concentration in said reaction product at said measuring means.

3,308,042
ELECTROLYTIC TIN PLATING

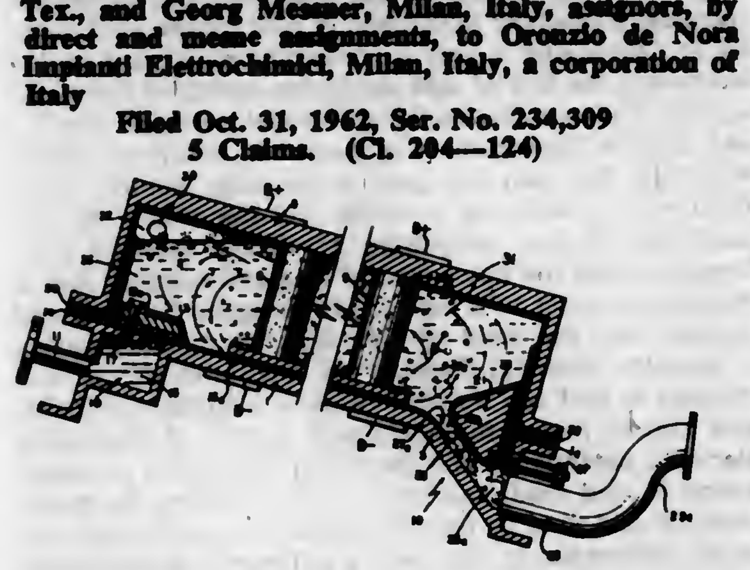
Robert Lozano, Hammond, Coy S. Ham, Munster, Charles C. Marshall, Gary, and Jack E. Joyce, Chesterton, Ind., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed June 11, 1963, Ser. No. 287,138
9 Claims. (Cl. 204—28)



1. A process of producing electrolytic tin plate having superior corrosion resistance which comprises; contacting the surface of a steel strip with a fluid containing phosphorus which forms a surface film containing phosphorus on said strip and which at an elevated temperature in a reducing atmosphere provides a diffused layer containing phosphorus in the surface of said strip, holding said strip with said film at an elevated temperature in a reducing atmosphere until a diffused layer containing phosphorus is formed in the surface layer of said strip, and applying a coating of tin over said diffused layer by immersing said strip in an electrolytic tin plating bath; whereby a more economical electrolytic tin plate is produced which has corrosion resistance properties characterized as Grade A tin plate.

3,308,043
METHOD OF DISCHARGING AMALGAM FOR INCLINED PLANE MERCURY CELLS

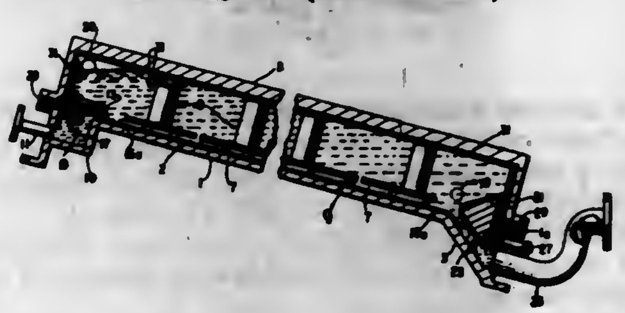
Richard Eric Loftfield, Chardon, and Alexander Louis Barbato, Perry, Ohio, Henry William Laub, Pasadena, Tex., and Georg Messner, Milan, Italy, assignors, by direct and mesne assignments, to Oronzio de Nora Impianti Elettrochimici, Milan, Italy, a corporation of Italy
Filed Oct. 31, 1962, Ser. No. 234,309
5 Claims. (Cl. 204—124)



1. The method of operating an inclined plane mercury cell having an essentially box type cell structure with anodes, a cathode base plate and the cell cover substantially parallel, a mercury inlet, an electrolyte inlet, a depleted electrolyte and gas discharge outlet at the upper edge of the cell, a mercury amalgam discharge end and means to pass an electrolysis current through said cell which comprises maintaining said cell at an inclination of about 2° to about 85° from the horizontal, filling said cell with electrolyte substantially to the upper edge thereof, flowing mercury down said cathode base plate between the base plate and the anodes, passing an electrolysis current through said cell to decompose the electrolyte and from amalgam with said mercury, changing the directional angle of amalgam flow at the mercury amalgam discharge end of said cell to form a churning pool of amalgam at the discharge end of said cell, with the upper surface of said pool in contact with the electrolyte, absorbing the kinetic energy of said flowing amalgam stream in said amalgam pool and causing the churining motion at the surface of the pool to keep solid impurities on the top of the amalgam pool, circulating the electrolyte by the gas bubbles generated by the electrolysis of said electrolyte moving vertically and diagonally upward through said electrolyte above the anodes and along the bottom side of said cell cover to the upper edge of the cell and by the downward flow of mercury on said cathode base plate to circulate said electrolyte over the churning surface of said amalgam pool to remove solid impurities from the top of the amalgam pool and carry them out of the cell, while maintaining the electrolysis current on said electrolyte and said amalgam and the electrical continuity of said amalgam.

3,308,044
INCLINED MERCURY CELL AND METHOD OF OPERATION

Alexander Louis Barbato, Perry, and Henry W. Laub, Painesville, Ohio, Georg Messner, Milan, Italy, and Richard Eric Loftfield, Chardon, Ohio, assignors to Oronzio de Nora Impianti-Elettrochimici, Milan, Italy, a corporation of Italy
Filed May 20, 1966, Ser. No. 560,032
20 Claims. (Cl. 204—125)



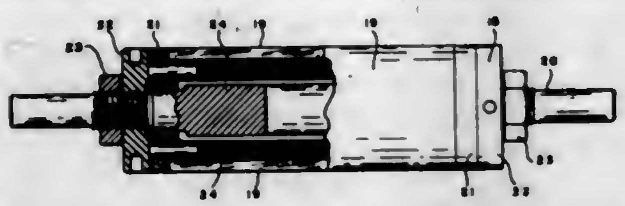
1. The method of operating a horizontal-type, flowing mercury cathode electrolysis cell, having a stationary base, an inclined top, anodes and a flowing mercury cathode with an electrolyte gap and no diaphragm between the anodes and the cathode, said base, top and anodes being spaced from each other with the base and anodes substantially parallel with each other which comprises maintaining the cell base at an inclination of between about 2° and about 85° from the horizontal, maintaining the electrolyte gap between 0.12 and 0.04 inch, flowing a mercury film of a thickness of below .062 inch by gravity over the base of said cell, flowing an electrolyte through said cell between the anodes and the flowing mercury cathode, filling the cell with electrolyte solution to the top thereof, providing a gas separating space at the upper edge of the inclined cell where the top and end wall intersect and passing an electric current through the electrolyte between said anodes and said flowing mercury cathode, to dissociate said electrolyte into anode and cathode products, recovering the cathode product in the flowing mercury cathode and recovering the anode product above the electrolyte level of said cell.

3,308,045
PROCESS AND APPARATUS FOR TREATING PLASTICS

Michael W. Sullivan, Morristown, N.J., assignor to Monsanto Company, a corporation of Delaware
Filed Oct. 16, 1962, Ser. No. 230,911
16 Claims. (Cl. 204—165)

8. A method for treating flexible plastic film with an electrostatic discharge comprising passing a sheet of said film through an electrostatic discharge device comprised of an electrostatic discharge electrode on one side

of the film and on the other side a rotatably mounted roller adapted to support the film and provide one electrode for the electrostatic discharge device comprised of a substantially non-conductive, non-metallic outer shell

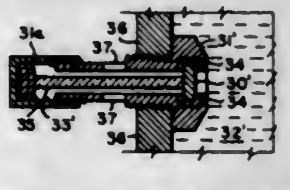


rigidly attached on the ends to a rotatable spindle with the inner portion in spaced-apart relation to said spindle, the space between the outer shell and the spindle being substantially filled with a substantially comminuted conductive material.

3,308,046

GALVANIC ACTION DEVICE FOR SCUTTLING FLOATING OBJECTS

Anthony C. Suleski, Centerport, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois
Filed Feb. 6, 1963, Ser. No. 256,562
8 Claims. (Cl. 204—196)

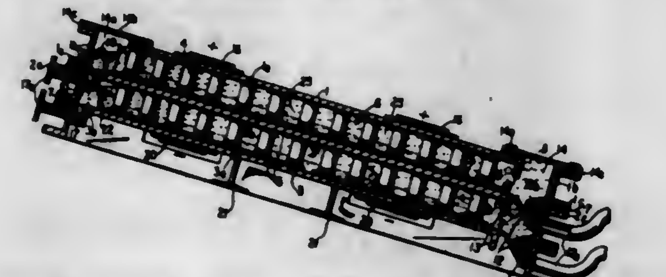


1. A galvanic action device comprising:
a galvanic cell which develops a corrosion current having a magnitude dependent upon the temperature of an electrolyte in which said cell is immersed;
a bimetallic disc which expands or contracts in response to temperature changes for detecting changes in said temperature;
and a carbon resistive element electrically connected in series with the electrodes of said galvanic cell and capable of varying in resistance by contracting or expanding in response to expansions or contractions of said bimetallic disc for varying the resistance through which said corrosion current flows to compensate for changes in said current which tend to be developed by changes in said temperature.

3,308,047

MULTIPLE TIER INCLINED MERCURY CELL

Henry William Laub, Pasadena, Tex., Georg Messner, Milan, Italy, Richard Eric Loftfield, Chardon, and Alexander Louis Barbato, Perry, Ohio, assignors, by direct and mesne assignments, to Oronzio de Nora Impianti Elettrochimici, Milan, Italy, a corporation of Italy
Filed Oct. 31, 1962, Ser. No. 234,379
14 Claims. (Cl. 204—219)

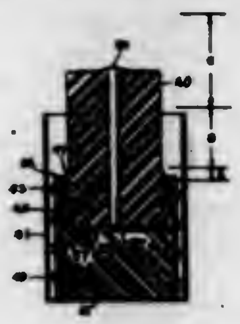


1. In a multiple tier bipolar electrolytic cell a plurality of cell units, each comprising a cell box having an exposed electrically conducting metal top and an insulation-lined box-like structure below said top forming the enclosure for the next lower cell in the tier, insulated anode support means electrically connected to and projecting downward from the top of said insulation-lined box-like structure, anodes supported from said insulated anode support means and electrically connected to and spaced from said electrically conducting metal top of said cell and from the exposed metal base of the next lower cell unit in said tier, means to introduce mercury into each of said cell units and cause it to flow over said electrically conducting metal tops, means to introduce a brine solution into each of said cell units and means to withdraw a depleted brine solution from each of said cell units, means to withdraw mercury amalgam separately from each of said cell units, means to impress electrolyzing current across each of said cell units and from said cell to cell and means to support a plurality of said cell units in electrical contact and at an inclination in the same direction of between about 2° and about 85° to the horizontal.

3,308,048

ELECTROLYTIC CLEANING DEVICE

Everette C. Olson, 1482 College Hill Drive, Columbus, Ohio 43209
Filed July 25, 1962, Ser. No. 212,301
2 Claims. (Cl. 204—272)



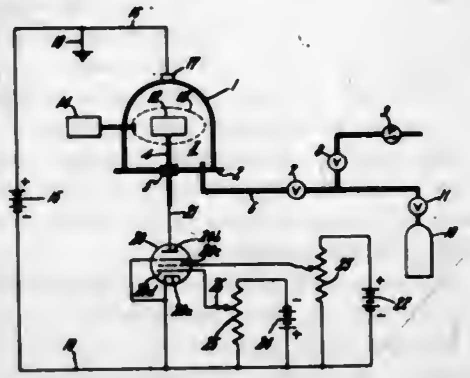
1. A device for cleaning foreign deposits from metallic objects comprising a container adapted to retain a conducting fluid therein, a combustion region, means for supporting said objects in said container, and an electrochemical transducer positioned in said region, said transducer comprising a pair of coaxially positioned spaced electrodes, the first of said electrodes extending from said support and terminating in an upright enlarged cup-like end member having the rim thereof in electrical contact with said fluid and the space in said cup member being filled with a dielectric material and the second of said electrodes further comprising a cylinder spatially positioned around the outer wall of said end member and in electrical contact with said fluid, the space between said cylinder and the outer wall of said cup member having a dielectric material therein, the uppermost rim of said cylinder in said cup member being in alignment to define said region, means for applying a source of alternating electrical potential to said electrodes to impart a pulsating action in said fluid, and means for restricting the movement of said fluid to force the fluid in a continuous pulsating movement in the spacing between said electrodes.

3,308,049

GLOW DISCHARGE APPARATUS FOR TREATING WORKPIECES

Claude K. Jones, Marblehead, and Stuart W. Martin, Salem, Mass., assignors to General Electric Company, a corporation of New York
Filed Mar. 6, 1963, Ser. No. 264,167
1 Claim. (Cl. 204—312)

The combination of:
a sealed housing adapted for placement of a workpiece therein,
means for evacuating said housing and for introducing small quantities of ionizable gas,
spaced electrode means arranged for establishing a glow discharge within the housing, at least one of said electrode means being arranged to be connected to the workpiece,
a source of constant D.-C. electric potential,
at least one pentode tube having a plate and cathode connected in series with said electrode means across said potential source, and

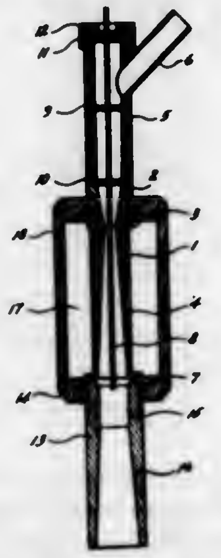


adjustable biasing means connected to select an operating point for said pentode at a D.-C. resistance suitable for maintaining a constant glow between said spaced electrodes, said operating point also lying on a relatively constant-current portion of the pentode characteristic curve.

3,308,050

ELECTRIC DISCHARGE APPARATUS FOR CHEMICALLY REACTING FLOWING GASES

Michel Denis, Saint Germain-en-Laye, France, assignor to Institut de Recherches de la Siderurgie Francaise, Saint Germain-en-Laye, France, a French professional institution
Original application Jan. 15, 1963, Ser. No. 251,685. Divided and this application Aug. 25, 1965, Ser. No. 496,211
Claims priority, application France, Aug. 1, 1960, 834,656
8 Claims. (Cl. 204—312)



1. An apparatus for reacting a gaseous substance comprising:
(a) a nozzle having an inwardly tapering inlet portion, an outwardly flaring outlet portion, and a throat portion connecting said inlet and outlet portions;
(b) means for admitting a gaseous substance to said inlet portion, at a pressure sufficient to cause said substance to be discharged from said outlet portion at supersonic speed;
(c) a collector tube having an axis and being axially aligned with outlet portion, said tube and said nozzle jointly constituting an axial conduit for the flow of said substance, said collector tube having an axially inwardly tapering entrance portion, an outwardly flaring discharge portion, and a central portion connecting said entrance and discharge portions, said outlet portion and said entrance portion defining therebetween an opening transverse of said axis;
(d) a substantially closed expansion chamber communicating with said opening;
(e) and electrode means in said conduit for passage of an electric discharge through the following substance in a portion of said conduit intermediate said throat portion and said discharge portion.

3,308,051

FUEL CONTAINING A SOLVENT EXTRACT POUR POINT DEPRESSANT

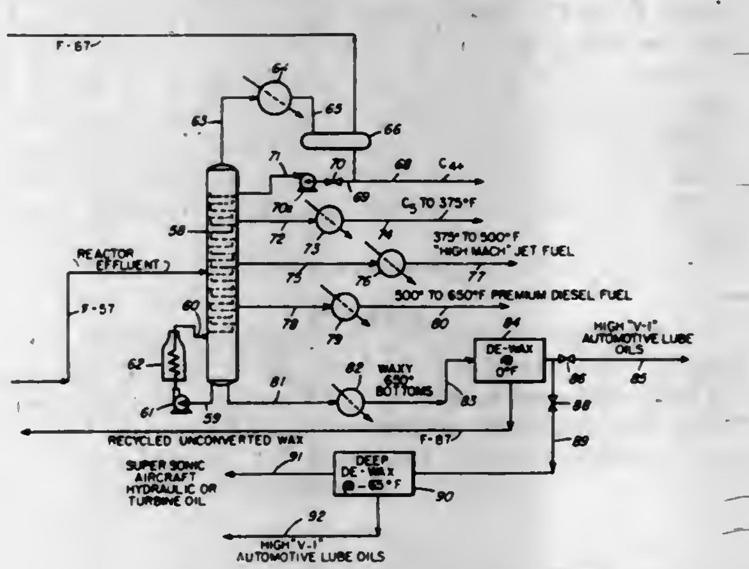
Eugene M. Fauber, Hammond, Ind., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 1, 1964, Ser. No. 371,820
2 Claims. (Cl. 208—15)

1. A fuel composition of improved pour and cloud point consisting essentially of a distillate hydrocarbon fuel boiling above the gasoline range having incorporated therein about 0.75 to 1.25 volume percent of a deasphalted residual oil extract boiling primarily in the range of about 750 to 1050° F. at 40% overhead and having a viscosity at 210° F. of at least about 200° F. obtained by extraction from a Mid-Continent petroleum residual boiling above about 750° F. with a paraffinic hydrocarbon solvent of 3 to 5 carbon atoms.

3,308,052

HIGH QUALITY LUBE OIL AND/OR JET FUEL FROM WAXY PETROLEUM FRACTIONS

Henry R. Ireland, West Deptford Township, Gloucester County, and Michael T. Smilski, Mantua Township, Gloucester County, N.J., assignors to Mobil Oil Corporation, a corporation of New York
Filed Mar. 4, 1964, Ser. No. 349,305
14 Claims. (Cl. 208—27)

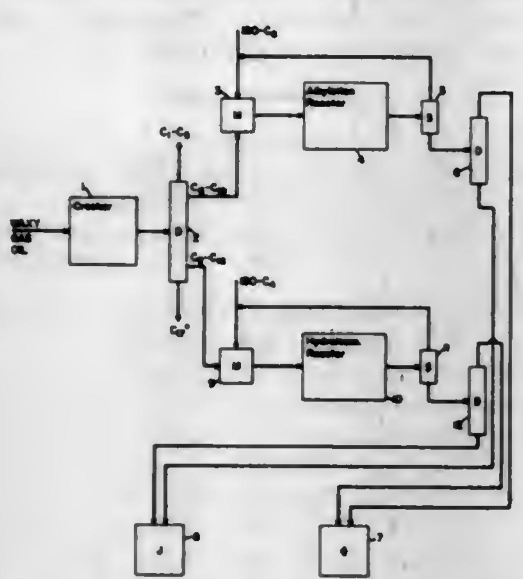


3. A method for upgrading a waxy hydrocarbon mixture containing less than about 50 percent of distillate oil to lower boiling products comprising jet fuels and high VI lube oils which comprises contacting the waxy material combined with a hydrogen in the presence of a hydroisomerizing catalyst under hydroisomerizing conditions to obtain a conversion of said waxy hydrocarbon to products boiling below about 650° F. of from about 25 percent to about 70 percent, separating the hydroisomerized product under conditions to obtain a jet fuel boiling range product and a liquid product boiling above about 650° F., cooling the liquid product boiling above about 650° F. to a temperature below about 20° F. and recovering a high viscosity index lube oil from the product of the cooling step.

3,308,053
HYDROCARBON PRODUCTION PROCESS

Joe T. Kelly and Alan H. Peterson, Littleton, Colo., and Glen C. Templeman, Findlay, Ohio, assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

Filed Jan. 19, 1965, Ser. No. 426,583
11 Claims. (Cl. 208—67)

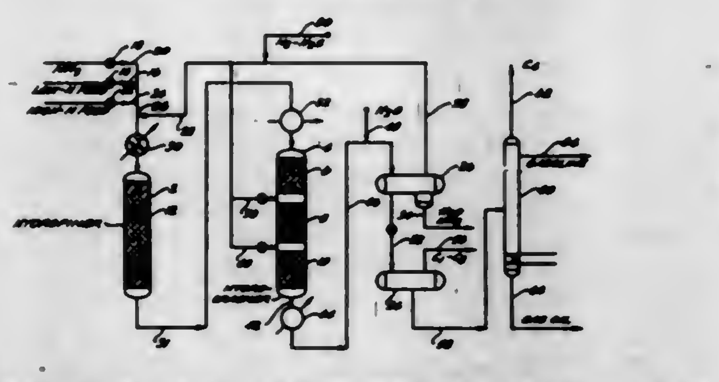


1. A process for the conversion of a waxy gas oil to valuable engine fuel comprising molecularly cracking under moderate conditions to obtain a product comprising substantial amounts of olefins having from about 6 to about 16 carbon atoms, separating a fraction containing from about 12 to about 16 carbon atoms per molecule, hydroisomerizing said fraction at from −20 to 80° C. in the presence of an acid catalyst with an isoparaffin of 4 to about 6 carbon atoms as the hydrogen source to form a gasoline fraction having a boiling point below about 350° F., a jet fuel fraction having a boiling point of from about 350 to 550° F., and a higher boiling fraction having a boiling point above 550° F.; separating out an approximately C_7 to C_{11} fraction from the product of said molecular cracking, alkylating said C_7–C_{11} fraction with a branched chain hydrocarbon containing 4 to about 6 carbon atoms in the presence of an acid catalyst at from −20 to 80° C. to obtain a gasoline fraction boiling below about 350° F., a jet fuel fraction boiling from about 350 to 550° F., and a high boiling fraction boiling above 550° F.

3,308,054
HYDROCRACKING PROCESS STARTUP

John H. Duir, Fullerton, and Arnold E. Kelley, Orange, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Apr. 6, 1964, Ser. No. 357,445
9 Claims. (Cl. 208—89)



1. In an integral catalytic hydrofining-hydrocracking system wherein a hydrocarbon process feedstock contaminated with organic nitrogen compounds is hydrofined with added hydrogen over a bed of hydrofining catalyst at temperatures between about 650° and 850° F., and wherein the total effluent from said hydrofining is then hydrocracked over a bed of hydrocracking catalyst at temperatures between about 650° and 850° F., the improved method for establishing said system and raising the temperature of said catalyst beds from initial temperatures below about 500° F. to the desired hydrofining and hydrocracking temperatures without damaging said hydrocracking catalyst, which comprises:

(1) establishing a startup contacting sequence wherein a feed mixture of hydrogen and a relatively pure hydrocarbon startup feedstock substantially free from organic nitrogen is preheated and passed through said hydrofining catalyst bed and then through said hydrocracking catalyst bed while maintaining added ammonia in the feed mixture to said hydrocracking catalyst bed;

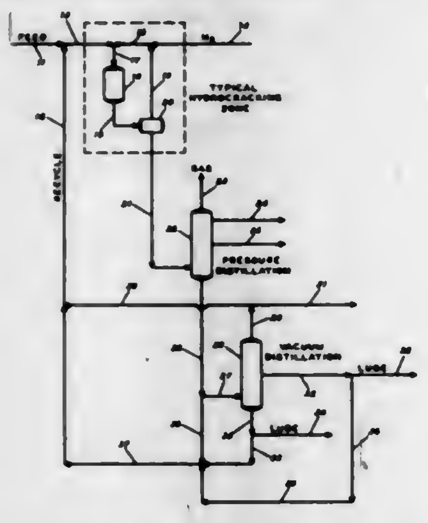
(2) continuing said startup contacting sequence while incrementally raising the hydrofining inlet temperature of said feed mixture, thereby gradually raising the bed temperature of said hydrofining catalyst to the desired initial hydrofining temperature for said hydrocarbon process feedstock, and also gradually raising the bed temperature of said hydrocracking catalyst to the desired initial hydrocracking temperature, between 650° and 775° F.; and then

(3) substantially immediately thereafter, establishing and maintaining the desired process feed contacting sequence by substituting said process feedstock for said startup feedstock and simultaneously terminating said addition of ammonia.

3,308,055
HYDROCRACKING PROCESS PRODUCING LUBRICATING OIL

Robert H. Kozlowski, Berkeley, Calif., assignor to Chevron Research Company, a corporation of Delaware

Filed Apr. 13, 1964, Ser. No. 359,057
7 Claims. (Cl. 208—111)



1. A process for substantially entirely converting a heavy oil feed which has (a) a viscosity index of not more than 35, (b) an end boiling point of not less than 1000° F. and (c) of which at least 30% boils above 800° F. to (i) distillates boiling below about 700° F. and (ii) improved lubricating oil base stock boiling substantially entirely above 700° F.,

which process comprises hydrocracking said heavy oil feed in admixture with a heavy recycle oil boiling substantially entirely above 700° F. and containing at least a substantial portion of the highest boiling components of said heavy oil feed

in a catalytic hydrocracking reaction zone at conditions for converting between 20 and 40% of the combined feed and recycle oil which does not boil below 700° F. to distillates boiling between 400° and 700° F. and no more than an equal amount but at least 10% of the combined feed and recycle oil which does not boil below 700° F. to distillates boiling below 400° F.,

said recycle oil being supplied in a volume ratio to heavy oil feed between 0.3 and 1.5,

distilling the normally liquid hydrocarbon effluent of said hydrocracking reaction zone to separate said effluent into distillates boiling below about 700° F. and a remainder boiling higher than said distillates,

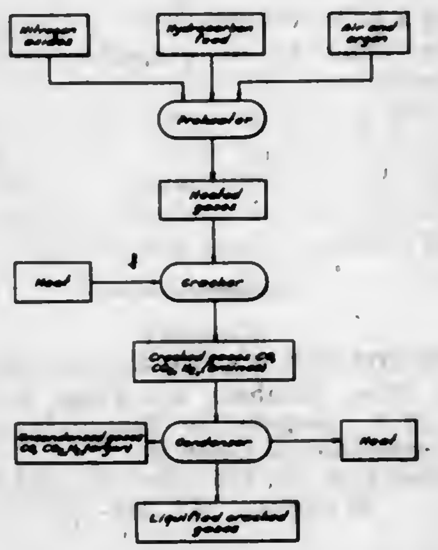
further distilling at least a portion of said remainder to separate it at least into a distillate lubricating oil fraction and a residual lubricating oil fraction and recovering from said lubricating oil fractions at least one lubricating oil base stock in a limited yield such that the portion of said total lubricating oil base stock recovered which boils within the boiling range of said heavy oil feed is equal in amount to between 2% and 40% of said heavy oil feed,

and forming said heavy recycle oil by combining each portion of said remainder boiling substantially entirely above 700° F. which was not so further distilled with each portion of the remainder which was so further distilled and boils substantially entirely above 700° F. but was not recovered as lubricating oil base stock, including a substantial portion of said remainder boiling over the same boiling range as a portion recovered as lubricating oil base stock.

3,308,056
USE OF NITROGEN OXIDES TO INHIBIT COKE FORMATION IN HYDROCARBON THERMAL CRACKING PROCESSES

John A. Schultz, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 18, 1966, Ser. No. 557,335
3 Claims. (Cl. 208—128)



1. In a process for the thermal cracking of hydrocarbons, the improvement which comprises admixing from 0.1 to 10 mole percent of an oxide of nitrogen to the hydrocarbon feed prior to subjecting such feed to thermal cracking temperatures.

3,308,057
TWO STAGE HYDRONITRIFICATION AND HYDROGENATION PROCESS

Roger P. Van Driesen, Hopewell, N.J., assignor to Cities Service Research and Development Company, New York, N.Y., a corporation of New Jersey

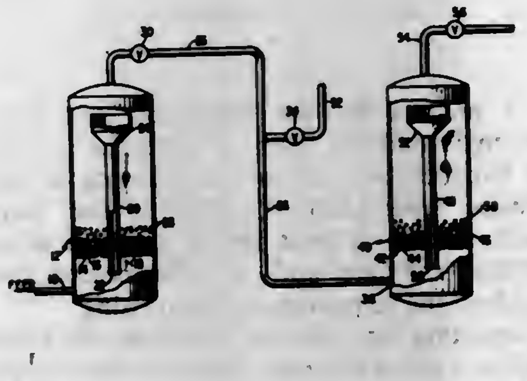
Filed Apr. 21, 1964, Ser. No. 361,407
2 Claims. (Cl. 208—254)

1. Process for hydrogenating hydrocarbons which comprises:

(a) feeding an admixture of hydrogen and a heavy gas oil feed boiling in the range of from about 650° F. to about 1100° F. and containing at least about 0.1% by weight of organic nitrogen into a first hydrogenation zone upwardly through a mass of hydrogenation catalyst contained therein at a rate sufficient to maintain the catalyst mass in a random motion expanded state; but below that at which substantial quantities of catalyst are raised to an upper portion of said hydrogenation zone, said catalyst mass being maintained under substantially isothermal conditions;

(b) withdrawing a first heated effluent of said hydrogenated oil from an upper portion of said first hydrogenation zone wherein said hydrogenated oil effluent contains a weight proportion of organic nitrogen that is between about 10% and about 80% of that contained in said heavy gas oil feed;

(c) mixing said heated effluent with a naphtha hydrocarbon boiling in the range of from about 80% F. to about 380° F. and having a bromine number of at least about 50, said naphtha being at a lower temperature than said heated effluent, and at least a portion of said naphtha admixed with the effluent being in the liquid phase;



(d) feeding hydrogen and said admixture of said first effluent and said naphtha into a second hydrogenation zone upwardly through a catalyst mass contained therein at a rate sufficient to maintain the catalyst mass in a random motion expanded state, but below that at which substantial quantities of catalyst are raised to an upper portion of said hydrogenation zone, said catalyst mass being maintained under substantially isothermal conditions, and said first effluent being maintained substantially in the liquid phase while said naphtha is maintained substantially in the vapor phase in said second hydrogenation zone; and

(e) withdrawing an effluent wherein the bromine number of the naphtha range hydrocarbons has been reduced by about 70% to about 90% compared to the naphtha feed and wherein the organic nitrogen content of the first effluent has been reduced by about 10% to about 80%.

3,308,058
SEPARATION PROCESSES USING MOLECULAR SIEVES

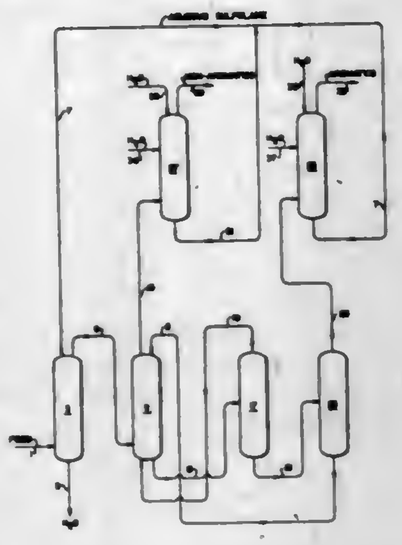
Clive Leonard Hicks, Sunbury-on-Thames, England, assignor to The British Petroleum Company Limited, London, England, a corporation of England

No Drawing. Filed June 18, 1964, Ser. No. 376,218
Claims priority, application Great Britain, July 12, 1963, 27,686/63
2 Claims. (Cl. 208—310)

1. A process for the separation of straight chain hydrocarbons from petroleum fractions boiling in the C_{10}–C_{20} range and containing discrete iron-containing particles which comprises passing the feedstock through the filter means to remove the iron-containing particles from the feedstock, passing the substantially iron free feedstock through 5 A. molecular sieve means and recovering straight chain hydrocarbons.

3,308,059
SULFOLANE SOLVENT RECOVERY FROM WATER WASH

Carl H. Deal, Jr., Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,366
6 Claims. (Cl. 208—321)

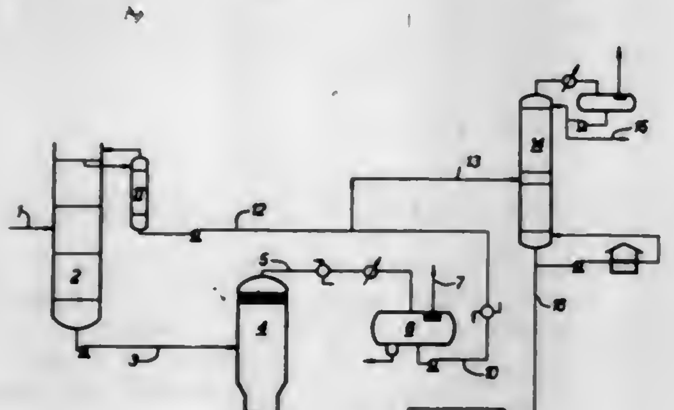


1. In a process for the extraction and recovery of aromatic hydrocarbons with a sulfolane solvent, from a liquid hydrocarbon mixture containing aromatic and non-aromatic hydrocarbons, wherein the sulfolane is water-washed from at least one of a sulfolane-containing non-aromatic raffinate and a sulfolane-containing aromatic product, the improvement comprising:

(a) contacting the resulting sulfolane-containing water-wash in a pre-wash zone with said hydrocarbon feed, thereby extracting the sulfolane from the sulfolane-containing water-wash by said feed, and
(b) recovering a water phase of substantially reduced sulfolane content.

3,308,060
PETROLEUM DISTILLATION

John Francis Griffith Ellis, Ashford, Middlesex, England, assignor to The British Petroleum Company Limited, London, England
Filed Jan. 28, 1965, Ser. No. 428,821
Claims priority, application Great Britain, Feb. 21, 1964, 7,320/64
1 Claim. (Cl. 208—364)



In a crude oil distillation process, combining the heavy gas oil side stream fraction obtained in an atmospheric pressure fractionation zone with the front 10–40% weight portion of the atmospheric residue obtained in that zone, said portion being a product of the vacuum flashing of said residue, followed by redistilling of the combined fraction under vacuum in a reboiled fractionation zone, to give an additional gas oil product.

3,308,061
OZONE TREATMENT OF WASTE AQUEOUS EFFLUENT FROM ALKYLLEAD MANUFACTURE

Herman E. Collier, Jr., Bethlehem, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 5, 1965, Ser. No. 437,542
7 Claims. (Cl. 210—50)

1. A process for treating an aqueous effluent from the manufacture of alkyllead compounds, said effluent containing about 5 to 5000 p.p.m. of lead as dissolved organic lead, said dissolved organic lead being further characterized by remaining in solution after pH adjustment to between 8 to 9.5, which process comprises the steps of

(A) adjusting the pH of the aqueous effluent to between 8.0 to 9.5,
(B) intimately contacting the aqueous effluent with an ozone containing gas thereby converting said water-soluble organic lead products to water-insoluble products, and thereafter
(C) precipitating the converted lead compounds, and
(D) separating the precipitated lead-containing compounds from the aqueous effluent.

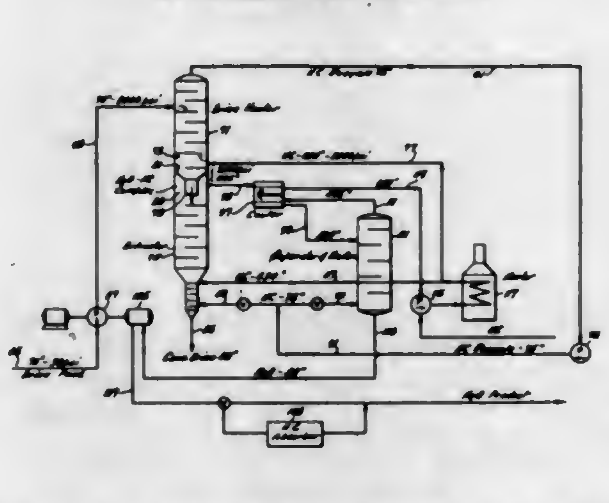
3,308,062
PROCESS FOR PREVENTING THE FORMATION OF BOILER SCALE

Donald A. Gunther, Erie, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 24, 1965, Ser. No. 442,500
1 Claim. (Cl. 210—58)

A process of preventing boiler scale from forming in a boiler evaporator comprising
providing a boiler evaporator,
providing water to be evaporated in said boiler evaporator,
and placing a treating agent consisting essentially of gluconic acid in said water to bring the pH of said boiling water to approximately 8.5, and maintaining said boiling water at said pH of approximately 8.5 by said addition of said gluconic acid.

3,308,063
REMOVING WATER FROM BRINE

Howard V. Hess, Glenham, and Frank E. Guptill, Jr., Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 16, 1963, Ser. No. 308,930
29 Claims. (Cl. 210—59)



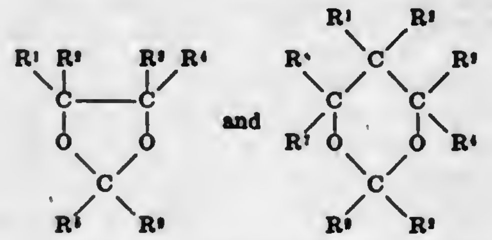
1. A process for extracting water from brine comprising passing relatively cool brine into direct counter-current contact with relatively hot hydrocarbon liquid in a contacting zone whereby said hydrocarbon is cooled and said brine is heated to an elevated temperature at a pressure sufficient to maintain said brine in liquid phase at said elevated temperature, contacting resulting heated brine with a further amount of hot hydrocarbon liquid thereby extracting salt-free water from said brine, withdrawing hot hydrocarbon liquid containing extracted water from contact with resulting concentrated brine and cooling said withdrawn hydrocarbon liquid containing said water by an amount sufficient to effect the formation of separate water and hydrocarbon liquid phases, and removing said water phase from said hydrocarbon phase.

3,308,064
DERIVATIVES OF CYCLIC KETALS

Raymond C. Schlight and Elmer E. Schallenberg, Fishkill, and Eugene Moroz, New York, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 10, 1966, Ser. No. 548,868
9 Claims. (Cl. 252—46.6)

1. A method of preparing a cyclic ketal derivative comprising:

(a) contacting P_2S_5 with an aliphatic polyolefin of an average molecular weight between about 250 and 50,000 in the presence of between about 0.1 and 5 wt. percent sulfur at a temperature between about 100 and 320° C., the P_2S_5 comprising between about 5 and 40 wt. percent of the reaction mixture to form a polyolefin-P_2S_5 first reaction product;
(b) contacting said polyolefin-P_2S_5 first reaction product with steam in a mole ratio of steam to said first reaction product of at least about 1 at a temperature between about 100 and 260° C. to form a steam hydrolyzed, inorganic phosphorus acid containing polyolefin-P_2S_5 second reaction product;
(c) separating said inorganic phosphorus acid from said second reaction product;
(d) contacting the resultant inorganic phosphorus acid free, hydrolyzed second reaction product with a cyclic ketal compound of the general formula:



where R^1, R^2, R^3, R^4, R^7 and R^8 are radicals of less than 11 carbons selected from the group consisting of hydrogen, alkyl, aryl, alkaryl, aralkyl and alkylol and where R^5 and R^6 are radicals of less than 11 carbons selected from the group consisting of hydrogen, alkyl, aryl, alkaryl and aralkyl, in a mole ratio of said cyclic ketal compound to said hydrolyzed, inorganic phosphorus acid free second reaction product of between about 1:1 and 10:1 to form an inorganic phosphorus acid free, steam hydrolyzed polyolefin-P_2S_5 derivative of said cyclic ketal compound.

2. A method in accordance with claim 1 wherein the polyolfin-P_2S_5 first reaction product of said "a" step prior to contacting with steam in said "b" step is diluted with a mineral lubricating oil of an SUS viscosity at 100° F. of between about 50 and 1000 to form a diluted polyolefin-P_2S_5 reaction mixture having a mineral lubricating oil content of about 25 and 75 wt. percent, wherein reaction step "d" is conducted in the presence of between about 0.001 and 10 wt. percent catalyst selected from the group consisting of sodium methoxide, p-toluene sulfonic acid, sulfuric acid, zinc chloride and triethylamine.

3,308,065
SCALE REMOVAL, FERROUS METAL PASSIVATION AND COMPOSITIONS THEREFOR

Chester A. Lesinski, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 22, 1963, Ser. No. 296,464
7 Claims. (Cl. 252—82)

1. A process for removing (1) hardness scale and one or more iron oxide-containing deposits of the group of Fe_2O_3-containing and Fe_3O_4 containing deposits or (2) one or more iron oxide-containing deposits of the group of Fe_2O_3-cotaining and Fe_3O_4-containing deposits from a metal surface containing one or more of the aforesaid hardness scale and iron oxide-containing deposits by contacting said metal surface with an aqueous alkaline saline solution having a pH of 8 to 11, the active ingredient of which consists of at least one salt of the group consisting of ammonium, amine and hydroxyalkylamine salts of nitrilotriacetic acid, N-2-hydroxyethyliminodiacetic acid, alkylenepolyamine polycarboxylic acids, said amine and hydroxyalkylamine having substitutent groups, each of which has up to 5 carbon atoms, for a time sufficient to dissolve said hardness scale and said iron oxide-containing deposits.

7. A process for passivating a ferrous metal surface by contacting said metal surface with an aqueous alkaline saline solution wherein the solution employed contains as an essential constituent at least one salt of the group consisting of ammonium, amine and hydroxyalkylamine salts of nitrilotriacetic acid, N-2-hydroxyethyliminodiacetic acid and, alkylenepolyamine polycarboxylic acids, said amine and hydroxyalkylamine having substituent groups, each of which has up to 5 carbon atoms, for a time sufficient to form a thin, continuous, adherent film of magnetic iron oxide, whereby said ferrous metal surface is rendered resistant to further oxidation.

3,308,066
PAINT STRIPPING COMPOSITION AND METHOD

Donald P. Murphy, Roseville, and George L. Tupper, St. Clair Shores, Mich., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed July 27, 1964, Ser. No. 385,457
12 Claims. (Cl. 252—158)

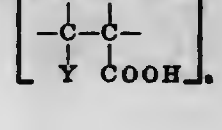
1. A composition useful when dissolved in water for removing paint films which consists essentially of a major amount of an alkali metal hydroxide and tripropylene glycol in an amount within the range of about 1 to about 10% by weight of the total composition.

3,308,067
POLYELECTROLYTE BUILDERS AND DETERGENT COMPOSITIONS

Francis L. Diehl, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Apr. 1, 1963, Ser. No. 269,359
15 Claims. (Cl. 252—161)

1. A cleansing and laundering composition comprising

(1) an organic water-soluble detergent surfactant selected from the group consisting of anionic, nonionic, zwitterionic, and ampholytic deterent surfactants, and mixtures thereof, and
(2) a polyelectrolyte builder material consisting of water-soluble salts of a polymeric aliphatic polycarboxylic acid selected from the group consisting of
    (a) water-soluble salt of the homopolymer of an aliphatic polycarboxylic acid having the following empirical formula:

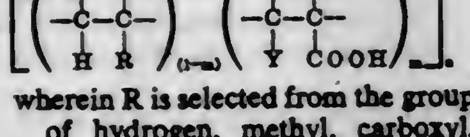


$$\left[-\underset{Y}{\overset{X}{\underset{|}{\overset{|}{C}}}}-\underset{COOH}{\overset{Z}{\underset{|}{\overset{|}{C}}}}-\right].$$

wherein X, Y, and Z are each selected from the group consisting of hydrogen, methyl, carboxyl, and carboxymethyl, at least one of X, Y, and Z being selected from the group consisting of carboxyl and carboxymethyl, provided that X and Y can be carboxymethyl only when Z is selected from carboxyl and carboxymethyl, wherein only one of X, Y, and Z can be methyl, and wherein *n* is a whole integer having a value within a range, the lower limit of which is three and the upper limit of which is determined by the solubility characteristics in an aqueous system;

(b) a water-soluble salt of a coplymer of at least two of the monomeric species having the empirical formula described in (a); and,

(c) a water-soluble salt of a copolymer of a member selected from the group of alkylenes and monocarboxylic acids with the aliphatic polycarboxylic compounds described in (a), said copolymers having the general formula:

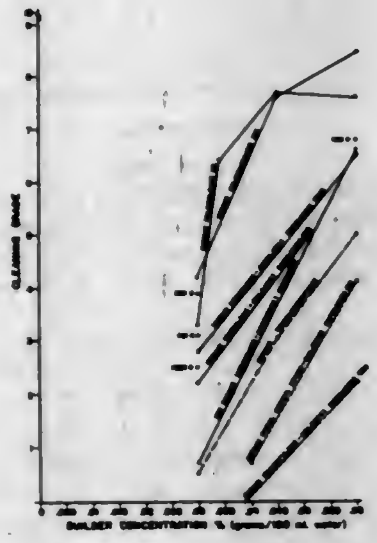


$$\left[\left(-\overset{R}{\underset{H}{C}}-\overset{R}{\underset{R}{C}}-\right)_{(1-m)}\left(-\overset{X}{\underset{Y}{C}}-\overset{Z}{\underset{COOH}{C}}-\right)_{m}\right].$$

wherein R is selected from the group consisting of hydrogen, methyl, carboxyl, carboxymethyl, and carboxyethyl;

wherein only one R can be methyl;

wherein *m* is at least 45 mole percent of the copolymer;



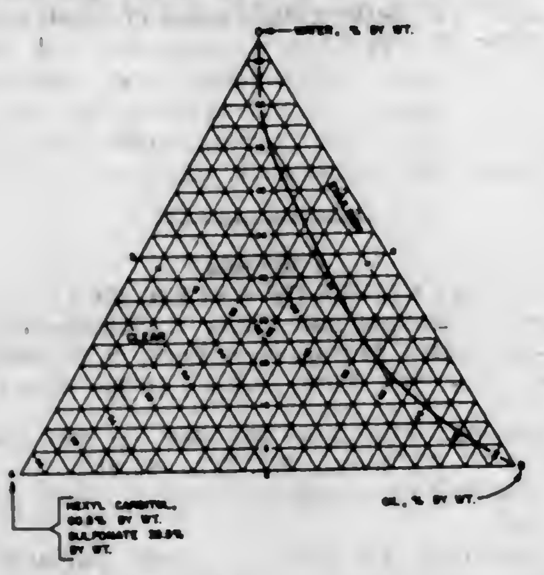
wherein X, Y, and Z are each selected from the group consisting of hydrogen, methyl, carboxyl, and carboxymethyl, at least one of X, Y, and Z being selected from the group of carboxyl and carboxymethyl provided that X and Y can be carboxymethyl only when Z is selected from carboxyl and carboxymethyl, wherein only one of X, Y and Z can be methyl; and

wherein *n* is a whole integer within a range, the lower limit of which is three and the upper limit of which is determined primarily by the solubility characteristics in an aqueous system;

said polyelectrolyte builder material having a minimum molecular weight of 350 calculated as the acid form and an equivalent weight of about 50 to about 80, calculated as the acid form, the ratio of said polyelectrolyte builder to said detergent surfactant being in the range of from about 1:3 to about 10:1, by weight.

3,308,068
DETERGENT COMPOSITION

Loyd W. Jones, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Apr. 25, 1963, Ser. No. 275,545
5 Claims. (Cl. 252—161)



1. A substantially clear aqueous solution to which an infinite amount of water can be added without a phase change consisting essentially of diethylene-glycol monohexyl ether and a petroleum alkali metal sulfonate, said mono-hexyl ether and sulfonate being present in a weight ratio ranging from about 9:1 to about 3:7, and a mineral oil, the percentage of said mono-hexyl ether, said sulfonate, water, and said oil being defined by a point lying to the left of curve in FIGURES 1, 2 and 3.

3,308,069
CATALYTIC COMPOSITION OF A CRYSTALLINE ZEOLITE

Robert L. Wadlinger, Oneonta, N.Y., and George T. Kerr, Lawrence Township, Mercer County, and Edward J. Rosinski, Almonesson, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed May 1, 1964, Ser. No. 364,316
14 Claims. (Cl. 252—455)

13. A method for preparing a catalyst composition which comprises treating with an aqueous fluid medium containing a source of positive ions selected from the group consisting of acids and ammonium compounds, a crystalline synthetic aluminosilicate having the formula:

$$[XNa(1.0\pm0.1-X)TEA]AlO_2\cdot YSiO_2\cdot WH_2O$$

where X is less than 1, Y is greater than 5 but less than 100, W is up to about 4, and TEA represents tetraethylammonium ion; carrying out such treatment for a period of time sufficient to provide a hydrogen aluminosilicate composition, washing the treated material free of soluble anions, and thereafter drying and thermally activating the product by heating at temperatures ranging from about 400–1700° F.

3,308,070
REFRACTORY CATALYST CARRIER AND METHOD OF PREPARATION THEREOF

Eldon D. Miller, Jr., Bridgeville, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed May 10, 1963, Ser. No. 279,612
10 Claims. (Cl. 252—455)

1. A chemically basic, ceramically bonded relatively porous, permeable refractory material suitable for use as a catalyst carrier and made from a size-graded batch comprising, on a solids basis and in weight percent, about 15 to 25% expanded perlite, about 5 to 25% of a low ash organic burnout material, at least about 25% dead burned

magnesite, the remainder heavy refractory aggregate, said refractory material being resistant to attack by alkalies and substantially chemically inert to nickel sulfate; said refractory material having a bulk density between about 45 and 55 p.c.f., a porosity of at least about 60% and a permeability of at least about 35 units, said batch being formed into shapes and fired for a sufficient time at a sufficient temperature to develop a ceramic bond.

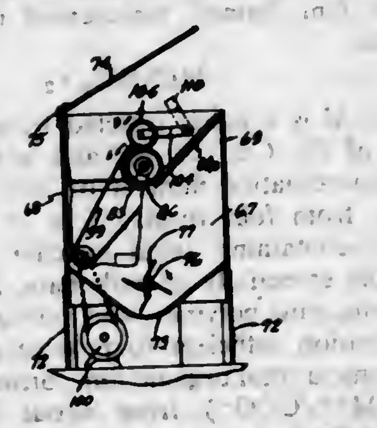
3,308,071
METHOD OF PREPARING A SUPPORTED NICKEL CATALYST

Peter Thomas White, Sunbury-on-Thames, England, assignor to The British Petroleum Company Limited, London, England, a British joint-stock corporation
No Drawing. Continuation of application Ser. No. 103,981, Apr. 19, 1961. This application June 19, 1963, Ser. No. 288,865
Claims priority, application Great Britain, May 4, 1960, 15,757/60
6 Claims. (Cl. 252—457)

1. A method of preparing extruded catalysts composed of nickel supported on a carrier, in which the nickel content is from 1% to 50% of nickel, expressed as elemental nickel, by weight of total catalyst which catalysts require activation by decomposition of a nickel compound to elemental nickel, comprising, forming an extrudate of said nickel compound and carrier, drying the extrudate, and thereafter, before the activation, subjecting the extrudate to attrition to remove from 0.2 to 1% wt., by weight of total catalyst, of the extrudate exterior.

3,308,072
METHOD AND APPARATUS FOR MAKING AN AIR FELTED FIBROUS CATALYST BED

Herbert A. Harrington, Cincinnati, Ohio, and John W. Dickey, Esmont, Va. (both % Development Consultants, Inc., 5657 Vine St., Cincinnati, Ohio 45216)
Filed Sept. 21, 1962, Ser. No. 225,198
10 Claims. (Cl. 252—477)



1. A method of making an air felted fibrous catalyst bed having distinct layers within said bed, comprising the steps of providing an enclosed chamber, agitating catalyst bearing fibers within said chamber to air suspend them, providing a cylindrical foraminous member within said chamber, causing said suspended fibers to be deposited about the whole periphery of said cylindrical foraminous member by drawing a vacuum within said cylindrical member, and rotating said cylindrical member through a plurality of complete revolutions during said deposition whereby to form said bed having said layers.

3,308,073
POROUS POLYOLEFIN OBJECTS

James E. Kepple, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Apr. 9, 1962, Ser. No. 185,838
13 Claims. (Cl. 260—2.5)

1. A porous polymeric object prepared by blending a normally solid polymer of a monoolefinic compound and a normally liquid hydrocarbon having a boiling point above the softening point of said polymer at a temperature above the softening point of said polymer but below the boiling point of said normally liquid hydrocarbon, cooling the resultant blend below the solidification point of said polymer and thereafter removing substantially all of said liquid hydrocarbon by evaporation so as to form a porous polymeric object.

3,308,074
PROCESSES FOR THE MANUFACTURE OF CELLULAR PRODUCTS

Yvan Landler, Sceaux, and Pierre Henri Lebel, Rueil-Malmaison, Seine-et-Oise, France, assignors to Societe anonyme dite: Pneumatiques et Caoutchouc Manufacture et Plastiques Kleber Colombes, Colombes, France
No Drawing. Filed Oct. 23, 1963, Ser. No. 318,168
Claims priority, application France, Oct. 24, 1962, 913,314
28 Claims. (Cl. 260—2.5)

1. An improved process for the manufacture of rigid cellular products having a polyvinyl chloride base, comprising the steps of heating, in a first stage, within an air-tight mold under pressure a starting mixture having a polyvinyl chloride base and additionally containing a polyisocyanate, a blowing agent and an ethylenically unsaturated polymerizable monomer,

removing the cellular product from said mold in a hot state at a temperature of about 90 to 140° C.,

and reacting, in a second stage, the cellular product removed from the mold with hot water or stream.

3,308,075
POLYMERIC HARDENERS FOR GELATIN

Louis M. Minsk and Hyman L. Cohen, both of Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Original application Aug. 6, 1962, Ser. No. 214,815. Divided and this application Oct. 8, 1965, Ser. No. 516,181
2 Claims. (Cl. 260—8)

1. A composition of matter comprising gelatin containing as a hardener therein an effective hardening amount of copoly(ethylene-mucochloryl acid maleate).

2. A composition of matter comprising gelatin containing as a hardener therein an effective hardening amount of copolymer of N-acrylyl-O-mucochloryl carbamate-maleic anhydride.

3,308,076
POLYAMIDES PRODUCED FROM POLYEPOXIDES, DIMERIC FATTY ACIDS AND POLYAMINES

Ernest De Lia, deceased, late of Brooklyn, N.Y., by Lucy De Lia, administratrix, Brooklyn, N.Y., Walter R. Pepis, Cincinnati, Ohio, Daniel J. Carlick, Berkeley Heights, N.J., and William J. Kissel, New York, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Original application July 28, 1961, Ser. No. 130,218, now Patent No. 3,207,653, dated Sept. 21, 1965. Divided and this application June 1, 1965, Ser. No. 470,659
2 Claims. (Cl. 260—18)

1. New resinous polyamides comprising products of the reaction between (1) about one equivalent of the polybasic acids obtained as products of the reaction between about one equivalent of a bis(4-hydroxyphenyl) dimethyl methane epichlorohydrin resin having an epoxide equivalent of 175 to 1,025 and about two equivalents of a substance selected from the group consisting of polymerized naturally occurring ethylenically unsaturated higher fatty oils, the polymerized acids of said oils, and the polymerized esters of the acids of said oils with the lower alkyl alcohols and (2) about one equivalent of an alkylene

polyamine having the formula $H_2N(RNH)_nH$, where R is an alkylene radical and n is an integer from 1 to 5, said polyamine having free amino groups the reaction product having an amine number in the range of about 0–200 and an acid number of about 0 to 10.

2. The new resinous polyamides described in claim 1 in which the polybasic acids are products of the reaction between a bis(4-hydroxyphenyl) dimethyl methane epichlorohydrin resin and polymerized linoleic acid.

3,308,077

AQUEOUS COATING COMPOSITIONS COMPRISING AN ACIDIC ESTER PREPARED FROM A MALEINIZED FATTY ACID AND A PARTIALLY ESTERIFIED POLYOL

James Parker Pattison, Etobicoke, Ontario, and Reinhold Adelbert Prelk, Toronto, Ontario, Canada, assignors to Canadian Industries Limited, Quebec, Quebec, Canada, a corporation of Canada

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,253

Claims priority, application Great Britain, Dec. 21, 1962, 48,471/62

8 Claims. (Cl. 260—23)

1. An aqueous coating composition containing as its essential ingredient a salt of a resinous ester obtained by partially esterifying one mole of a polyol having at least three hydroxyl groups per molecule and a molecular weight of at least about 500 with at least two moles of a drying oil fatty acid until the acid value of the reaction mixture has fallen below 5, thereafter esterifying at least part of the remaining unesterified hydroxyl groups of the polyol at a temperature not exceeding 240° F. with maleinized fatty acid prepared by heating a mixture of maleic anhydride with fatty acid in a mole ratio of about 1:1, and substantially completely neutralizing the resultant resinous ester with a volatile base.

3,308,078

COATING COMPOSITIONS

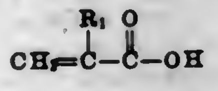
John R. Rogers and Louis M. Sesso, Racine, Wis., assignors to S. C. Johnson & Son, Inc., Racine, Wis.

Filed Aug. 30, 1965, Ser. No. 483,761

15 Claims. (Cl. 260—27)

1. A stable aqueous coating composition containing from about 5% by weight to about 40% by weight solids comprising:

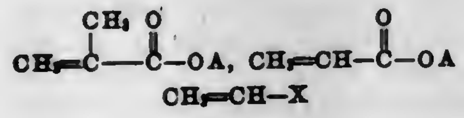
A. An organic film former containing:
  (1) a polyligand emulsion polymer having a minimum film forming temperature of less than about 80° C. comprising:
    (a) from about 5% to about 35% by weight of a ligand-containing, polymerizable, ethylenically unsaturated monomer having the structural formula



$$CH_2{=}\overset{R_1}{\overset{|}{C}}-\overset{O}{\overset{\|}{C}}-OH$$

wherein R_1 is selected from the group consisting of hydrogen and a methyl radical and

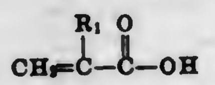
(b) from about 65% to about 95% by weight of at least two ligand-free, polymerizable, ethylenically unsaturated monomers selected from the group consisting of monomers having the structural formulas:



$$CH_2{=}\overset{CH_3}{\overset{|}{C}}-\overset{O}{\overset{\|}{C}}-OA,\ CH_2{=}CH-\overset{O}{\overset{\|}{C}}-OA \quad CH_2{=}CH-X$$

and mixtures thereof wherein A is an organo radical having from about one to about ten carbon atoms, and X is an organo radical selected from the group consisting of aryl and alkaryl radicals;

  (2) a resin cut containing:
    (a) an aqueous base selected from the group consisting of ammonium hydroxide, potassium hydroxide, sodium hydroxide, borax, methyl amine, ethyl amine, propyl amine, morpholine, and mixtures thereof, provided that at least a major amount of said alkaline substance has a fugitive cation and
    (b) a polyligand, alkali soluble resin having a number average molecular weight up to about 5,000 selected from the group consisting of:
      (1) rosin/maleic anhydride/polyol condensation resins having an acid number from about 120 to about 220,
      (2) addition resins having an acid number from about 140 to about 300 containing at least two ethylenically unsaturated monomers having the structural formulas: $CH_2{=}CH{-}X$ and



$$CH_2{=}\overset{R_1}{\overset{|}{C}}-\overset{O}{\overset{\|}{C}}-OH$$

wherein X and R_1 are as defined above, and

      (3) mixtures of said condensation resins and said addition resins,

wherein the weight ratio of said resin to said polymer is from about 20:80 to about 30:70;

B. Aqueous ammonia in a concentration sufficient to provide an equivalent of ammonium to total organic film former ligand equivalents (NH_4^+/COO^-) from about 0.7 to about 3.5;

C. A metal-fugitive ligand complex which is capable of undergoing ligand transfer with ligands of the organic film former, represented by the structural formula:

$$M(NH_3)_nY_2$$

wherein M is a metal selected from the group consisting of Zn, Cd, Cu, Ni, and mixtures thereof, n is the coordination number of said metal and is an interger from four to six, Y is an equivalent of a carboxyl-containing anion selected from the group consisting essentially of carbonate, formate, acetate, said resin, said polymer, and mixtures thereof in a concentration sufficient to provide a mole ratio of metal ions to total organic film former ligand equivalents (M^{++}/COO^-) from about 0.075 to about 0.500; and

D. A stabilizing agent selected from the group consisting of:
  (1) aqueous ammonia,
  (2) a water soluble, nonionic ethylene oxide condensate emulsifier, containing at least about 12 moles of ethylene oxide per mole of condensate, and
  (3) mixtures thereof,

in a combination and in a concentration sufficient to provide a change in optical density of no greater than about 0.1 after about 7 days at about 51° C. with the proviso that the aqueous ammonia concentration is sufficient to provide an increase in said NH_4^+/COO^- ratio up to about 2.8 with the total NH_4^+/COO^- ratio being no greater than about 3.5 and that said emulsifier concentration is no greater than about 8% by weight.

3,308,079

RELEASE COATING COMPOSITION COMPRISING (1) A DIORGANOPOLYSILOXANE, (2) A PHENYLMETHYLPOLYSILOXANE AND (3) AN ORGANOSILOXANE BLOCK COPOLYMER

Sharon R. Haenni, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,363

73 Claims. (Cl. 260—29.1)

1. A release material consisting essentially of

(A) a diorganopolysiloxane of the unit formula

$$R_n\overset{(OH)_m}{\overset{|}{Si}}O_{4-n-m/2}$$

wherein
  R is a monovalent radical selected from the group consisting of alkyl radicals, alkenyl radicals and aryl radicals,
  n has an average value from 1.98 to 2.0145 inclusive, at least 90 percent of the silicon atoms having two methyl radicals per silicon atom bonded to the silicon atom through silicon-carbon bonds,
  m has an average value of not more than 0.02, said diorganopolysiloxane having a viscosity of at least 350 cs. of 25° C., there being no more than 2 mol percent of the units with alkenyl radicals attached to the silicon atom through silicon-carbon bonds, the sum of $n+m$ does not exceed 2.0145,

(B) a phenylmethylpolysiloxane of the unit formula $(C_6H_5)_x(CH_3)_ySiO_{4-x-y/2}$, wherein
  x has an average value from 0.08 to 1.1 inclusive,
  y has an average value from 0.9 to 1.92 inclusive, the sum of $x+y$ is 2,
  said phenylmethylpolysiloxane being endblocked with groups selected from the group consisting of hydroxyl radicals and triorganosiloxy units selected from the group consisting of

$$(CH_3)_3SiO_{0.5}$$

$(C_6H_5)(CH_3)_2SiO_{0.5}$, $(C_6H_5)_2(CH_3)SiO_{0.5}$ and $(C_6H_5)_3SiO_{0.5}$, said phenylmethylpolysiloxane having a viscosity at 25° C. of at least 50 cs., and

(C) a block copolymer consisting essentially of
  (1) polymer blocks of the average structure

$$[(CH_3)_2SiO]_s[R'_2SiO]_t[R'SiO_{1.5}]_u$$

wherein
  R' is a monovalent radical selected from the group consisting of methyl, ethyl, vinyl and phenyl radicals, the sum of
  $s+t+u$ has an average value from 6 to 100 inclusive, and
  t and u each have a value of up to 10 percent of the sum of $s+t+u$, and
  (2) polymer blocks of the average unit formula $(C_6H_5)_q(CH_3)_wSiO_{4-w-q/2}$ wherein
    q has an average value from 1 to 1.25 inclusive,
    w has an average value of up to 0.25, and the sum of $q+w$ does not exceed 1.25,

the siloxane units in (1) being from 10 to 75 mol percent and the siloxane units in (2) being from 25 to 90 mol percent of the total siloxane units in said block copolymer, the minimum mol percent of siloxane units (2) when the sum of $s+t+u$ has an average value from 50 to 100 being determined by the equation $50M/S+0.1S=30$, where M is the minimum mol percent of siloxane units (2), and S is the sum of $s+t+u$, there being present 10 to 85 inclusive weight percent of (A), 2 to 55 inclusive weight percent of (B), and 5 to 85 inclusive weight percent of (C), each weight percent being based on the combined of $(A)+(B)+(C)$.

3,308,080

RELEASE COATING COMPOSITIONS COMPRISING A DIORGANOPOLYSILOXANE AND AN ORGANOSILOXANE BLOCK COPOLYMER

Sharon R. Haenni, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,384

36 Claims. (Cl. 260—29.1)

1. A release material consisting essentially of

(A) a diorganopolysiloxane of the unit formula $R_n(OH)_mSiO_{4-n-m/2}$ wherein R is a monovalent radical selected from the group consisting of alkyl radicals, alkenyl radicals and aryl radicals, n has an average value from 1.98 to 2.0024 inclusive, at least 90 percent of the silicon atoms having two methyl radicals per silicon atom bonded to the silicon atom through silicon-carbon bonds, m has an average value of not more than 0.02, the sum of $m+n$ does not exceed 2.0024, said diorganopolysiloxane having a viscosity of at least 50,000 cs. at 25° C., there being no more than 2 mol percent of the units with alkenyl radicals attached to the silicon atom through silicon-carbon bonds,

(B) a block copolymer consisting essentially of
  (1) polymer blocks of the average structure $[(CH_3)_2SiO]_s[R'_2SiO]_t[R'SiO_{1.5}]_u$, wherein R' is a monovalent radical selected from the group consisting of methyl, ethyl, vinyl and phenyl radicals, the sum of $s+t+u$ has an average value from 6 to 100 inclusive and t and u each have a value of up to 10 percent of the sum of $s+t+u$,
  (2) polymer blocks of the average unit formula $(C_6H_5)_q(CH_3)_wSiO_{4-w-q/2}$, wherein q has an average value from 1 to 1.25 inclusive, w has an average value of up to 0.25 inclusive and the sum of $q+w$ does not exceed 1.25,

the siloxane units in (1) being from 10 to 75 mol percent and the siloxane units (2) being from 25 to 90 mol percent of the total siloxane units in said block copolymer, the minimum mol percent of siloxane units (2) when the sum of $s+t+u$ has an average value of from 50 to 100 being determined by the equation $50M/S+0.1S=30$, where M is the minimum mol percent of siloxane units (2) and S is the sum of $s+t+u$, there being present 15 to 95 inclusive weight percent of (A) and 5 to 85 inclusive weight percent of (B), each based on the combined weight of (A)+(B).

3,308,081

STABLE AQUEOUS DISPERSIONS OF COPOLYMERS OF ETHYLENE AND UNSATURATED AMINES

Dietrich Glabisch, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Mar. 12, 1962, Ser. No. 179,242

Claims priority, application Germany, Mar. 21, 1961, F 33,464

7 Claims. (Cl. 260—29.6)

1. A process for the production of a stable latex of ethylene copolymers having a high solids content which are free from usual emulsifiers, which comprises polymerizing ethylene in an aqueous medium (a) at pressures above 100 atmospheres, (b) with the aid of a water-soluble substance capable of forming free radicals in an amount of from 0.1 to 3% by weight calculated on the quantity of polymer, (c) in the presence of 0.1 to 10% by weight, calculated on the polymer, of an amine containing one polymerizable carbon-to-carbon double bond, said amine being selected from the group consisting of a primary amine, a secondary amine and a tertiary amine.

3,308,082

FUNGICIDAL AND BACTERICIDAL COMPOSITIONS AND COATING COMPOSITIONS AND PLASTIC MATERIALS CONTAINING THEM

Otto Pauli and Hermann Genth, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellshaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed June 26, 1963, Ser. No. 290,577
Claims priority, application Germany, Nov. 27, 1959, F 29,946
6 Claims. (Cl. 260—29.5)

1. Polymeric structures and coatings having fungicidal and bactericidal surfaces, characterised in that they contain a combination of (A) a compound selected from the group consisting of tetramethylthiuram mono- and disulphide, tetraethylthiuram mono- and disulphide, tetrapropylthiuram mono- and disulphide and bis-pentamethylenethiuram disulphide, and (B) a water-insoluble metal salt of pentachlorophenol selected from the group consisting of copper, lead, cadmium and zinc pentachlorophenate, said combination being in an amount from about 0.05 to about 5 percent by weight.

3,308,083

STABLE EMULSIONS OF VINYL ACETATE POLYMERS CONTAINING AN AMMONIUM CARBOXYLATE

Alonzo L. Mantz, Tarrytown, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed May 1, 1961, Ser. No. 106,481
3 Claims. (Cl. 260—29.6)

1. A process for the preparation of stable emulsions of polymers which comprises adding to an aqueous polymerization medium maintained at a temperature between about 60° C. and 90° C. a polymerizable monomer charge of vinyl acetate and between about 0 and 40 weight percent based on total monomer weight of monomer selected from the group consisting of vinyl esters of lower alkanoic acids and lower alkyl esters of an acid selected from the group consisting of acrylic acid, methacrylic acid, crotonic acid, cinnamic acid, atropic acid, maleic aid and itaconic acid, at a rate between about 10 and 50 weight percent of the monomer charge per hour, wherein said polymerization medium has a pH between about 4 and 8 and contains a mixture of components consisting essentially of between about 0.05 and 1 percent based on the monomer charge of emulsion polymerization catalyst, between about 1 and 6 weight percent based on the monomer charge of water-miscible nonionic emulsifier consisting of the alkylene oxide adducts of an aliphatic alcohol, between about 0.25 and 2 weight percent based on the monomer charge of water-miscible anionic emulsifier, and between about 0.05 and 1.0 weight percent based on the monomer charge of an ammonium salt of a carboxylic acid containing between two and about ten carbon atoms, and the total solids content of the final emulsion product is between about 15 and 70 weight percent.

3,308,084

AQUEOUS BRIGHT-DRYING DISPERSIONS OF POLYETHYLENE-POLYGLYCOL GRAFT COPOLYMERS

Herbert Bestian, Frankfurt am Main, Helmut Korbanka, Hofheim, Taunus, and Joachim Lange, Neuenhain, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft Meister Lucius & Bruning, Frankfurt am Main-Hoechst, Germany, a company of Germany
No Drawing. Filed Oct. 8, 1963, Ser. No. 314,622
Claims priority, application Germany, Oct. 11, 1962, F 38,006
15 Claims. (Cl. 260—29.6)

1. A process for the manufacture of an aqueous bright-drying dispersion consisting essentially of 30 percent to 50 percent by weight of a graft polymer of ethylene on a compound having polyglycol groups in the molecule, which comprises polymerizing ethylene, in an aqueous alkaline medium at a temperature in the range of 50–160° C. and a pressure in the range of 250 to 850 atmospheres in the presence of about 0.2 to 10 grams per liter of a water-soluble persulfate, with 1.5 to 20 percent by weight, calculated on the quantity of aqueous medium, of a polyglycol having from 10 to 30 ethylene oxide groups per molecule, said polyglycol being selected from the group consisting of stearyl alcohol polyglycol ethers, oleyl alcohol polyglycol ethers, coconut-oil fat alcohol polyglycol ethers, stearic acid polyglycol esters, oleic acid polyglycol esters, and coconut-oil fatty acid polyglycol esters.

9. A polymer dispersion having a solids content of 30 to 50% by weight of polyethylene-polyglycol graft copolymer, said copolymer containing at least 2.5% by weight polyglycol component and up to 97.5% by weight of polyethylene component, in which said polyglycol component contains from 10 to 30 ethylene oxide groups per molecule and is a member selected from the group consisting of stearyl alcohol polyglycol ethers, oleyl alcohol polyglycol ethers, coconut-oil fat alcohol polyglycol ethers, stearic acid polyglycol esters, oleic acid polyglycol esters, and coconut-oil fatty acid polyglycol esters.

3,308,085

PROCESS FOR CONTROLLING THE PEPTISATION OF SULPHUR MODIFIED POLYCHLOROPRENE LATEX

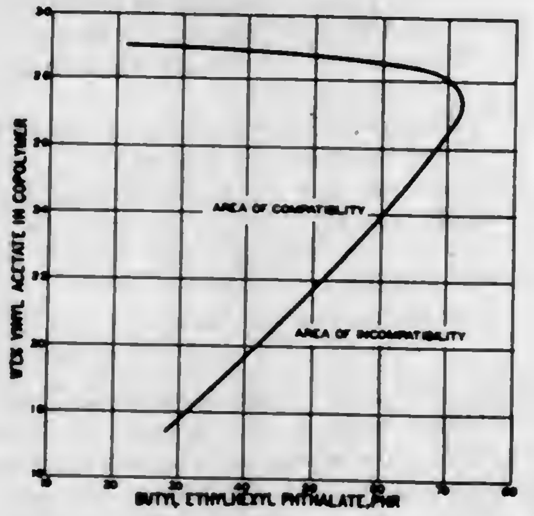
Anthony Archibald Sparks, Epsom Downs, and Robert Charles Moore, Sutton, England, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company
No Drawing. Filed June 2, 1964, Ser. No. 372,077
5 Claims. (Cl. 260—29.7)

1. A process for retarding peptisation of sulphur modified polychloroprene latex which comprises peptising a sulphur modified polychloroprene latex with a tetra lower alkyl thiuram disulphide and a dialkyl dithiocarbamate, adding a persulphate salt in an amount sufficient to oxidize the dithiocarbamate to thiuram and maintaining the pH of the latex at at least 10.5.

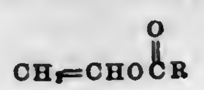
3,308,086

ETHYLENE COPOLYMERS WITH VINYL ESTERS PLASTICIZED WITH PHOSPHATE AND CARBOXYLIC ESTERS

Lloyd H. Wartman, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
Filed Aug. 30, 1963, Ser. No. 305,787
7 Claims. (Cl. 260—30.6)



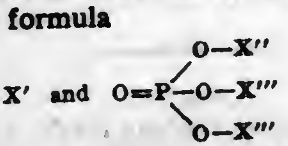
1. The novel homogeneous plasticized compositions of (i) a copolymer of ethylene and a vinyl ester of the formula:



$$\mathrm{CH_2{=}CHO}\overset{\mathrm{O}}{\overset{\|}{\mathrm{C}}}\mathrm{R}$$

wherein R is selected from the group consisting of hydrogen and alkyl containing 1 to 10 carbon atoms; and (ii) a plasticizer selected from the group consisting of compounds of the formula

XOOCR″COOX′ and



$$\mathrm{O{=}P(O{-}X'')(O{-}X''')(O{-}X''')}$$

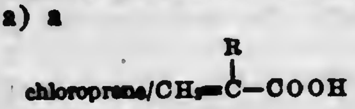
wherein X is alkyl containing 3 to 14 carbon atoms, X′ is selected from the group consisting of alkyl having 3 to 14 carbon atoms and aralkyl, R″ is selected from the group consisting of alkylene, cycloalkylene and arylene, X″ is alkyl containing 4 to 12 carbon atoms and X‴ is selected from the group consisting of alkyl containing 4 to 12 carbon atoms, cycloalkyl containing 1 to 8 carbon atoms, aryl of up to 10 carbon atoms, alkaryl and aralkyl.

3,308,087

NON-SETTLING CHLOROPRENE COPOLYMER MODIFIED PHENOLIC RESIN ADHESIVE SOLUTION

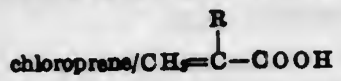
Robert Roth Garrett, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 17, 1964, Ser. No. 411,705
6 Claims. (Cl. 260—31.2)

1. A stable solvent cement and coating composition comprising (I) an organic solvent solution of a carboxyl-containing chloroprene polymer selected from the group consisting of (a) a



$$\text{chloroprene}/\mathrm{CH_2{=}}\overset{\mathrm{R}}{\overset{|}{\mathrm{C}}}\mathrm{{-}COOH}$$

copolymer wherein R is hydrogen or C_1 to C_4 alkyl, which copolymer contains from about 0.02 to about 0.7 weight percent carboxyl groups, and (b) a mixture of a



$$\text{chloroprene}/\mathrm{CH_2{=}}\overset{\mathrm{R}}{\overset{|}{\mathrm{C}}}\mathrm{{-}COOH}$$

copolymer containing up to about 1 weight percent carboxyl groups, with a conventional chloroprene polymer, said mixture containing from about 0.02 to 0.4 weight percent carboxyl groups based on the total weight of polymer mixture; (II) an oil-soluble phenol-aldehyde resin in an amount of from 10 to 100 parts per 100 parts of chloroprene polymer; and (III) an alkaline stabilizing ingredient selected from the group consisting of magnesium oxide, calcium oxide, calcium sulfide, lead oxide and mixtures thereof in amounts at least equivalent to 2 parts of magnesium oxide per 100 parts of chloroprene polymer.

3,308,088

SILICON RESIN VARNISHES CONTAINING COBALT AND CHROMIUM COMPLEXES

Tamotsu Wada, Kita-ku, Tokyo, and Mitsuo Ishizaka, Kohoku-ku, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
No Drawing. Filed Mar. 26, 1964, Ser. No. 355,082
14 Claims. (Cl. 260—33.4)

1. A silicone varnish comprising a solution of an organopolysiloane resin represented by a general formula

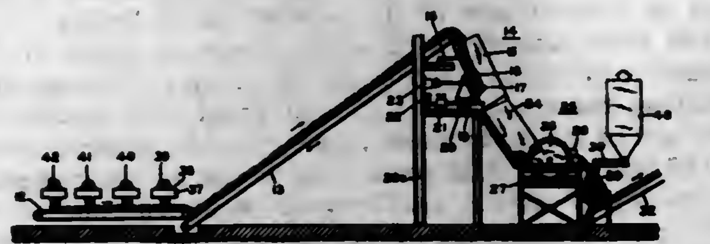
$$\mathrm{RnSiO}_{\frac{4-n}{2}}$$

(where R represents a CH_3 group and a C_6H_5 group and $n=1$ to 2) and a drying accelerator consisting of a polynuclear complex compound represented by a general formula [MaXbYc]Zd (where M represents the atom of a core metal having a coordination number of six and selected from a group consisting of Co and Cr, X a ligand selected from a group consisting of ammonia, ethylenediamine and water, Y is a bridging group interconnecting core metal atoms and selected from a group consisting of hydroxo group, imido group, amido group and acetate group, Z an acetic acid group, *a* the number of core metals and is equal to from 2 to 4, *b* the number of ligands, *c* the number of bridging groups and *d* the number of acetic acid groups) said polynuclear compound being present in said solution in an amount of 0.3 to 2.0% by weight, based on the resin component of said solution.

3,308,089

METHOD FOR THE CONTINUOUS MANUFACTURE OF LIGHT BUILDING PANELS

Gerrit Jan van Elten, Tromplaan 1, Voorthuizen, Netherlands
Filed Aug. 20, 1962, Ser. No. 217,877
2 Claims. (Cl. 264—40)



1. A method for the continuous manufacture of light building panels from wood wool mixed with bonding agents which comprises feeding wood wool directly from at least one disintegrating machine to a weighing unit, weighing out uniform quantities of said wood wool, discharging said uniform quantities from said weighing unit and, in response to the weight of said uniform quantity and as said uniform quantity of wood wool is discharged from said weighing unit, measuring a quantity of bonding agent, feeding said wood wool from said weighing unit through an impregnating unit, impregnating said wood wool in said impregnating unit with water, feeding said water impregnated wood wool and said measured quantity of bonding agent simultaneously into said mixing unit, mixing said impregnated wood wool with said bonding agent, and feeding said wood wool with said bonding agent.

3,308,090

PROCESS FOR THE PREPARATION OF VULCANIZATES FROM MIXES OF OLEFINIC COPOLYMERS, MINERAL FILLERS AND A DISPERSION PROMOTER, AND VULCANIZED ARTICLES THEREOF

Luigi Falcone, Como, and Luigi Torti, Ferrara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy
No Drawing. Filed Jan. 28, 1965, Ser. No. 428,871
Claims priority, application Italy, Jan. 29, 1964, 1,978/64
24 Claims. (Cl. 260—41)

1. A process for preparing a vulcanized product having high mechanical properties, said process comprising mixing a saturated and amorphous copolymer of ethylene and a higher alpha-olefin having the formula

$$CH_2{=}CH{-}CH_2R$$

in which R is selected from the group consisting of hydrogen and methyl group, with a reinforcing mineral filler selected from the group consisting of alkaline earth metal carbonates, alkaline earth metal sulfates, silica, natural complex silicates and synthetic complex silicates, and with a dispersion promoter selected from the group consisting of a diamine derivative of maleic acid having two maleic groups, a diepoxy derivative of maleic acid having two maleic groups, a diamine derivative of maleic anhydride having two maleic groups, a diepoxy derivative of maleic anhydride having two maleic groups, a copolymer of maleic acid with a vinyl compound and a copolymer of maleic anhydride with a vinyl compound, in an amount of from 0.1 to 15 parts by weight per 100 parts of filler, subjecting the thus obtained mix to mechanical homogenization, then adding a vulcanizing amount of an organic peroxide and sulfur and, finally, vulcanizing the whole mix by heating at a temperature between 110° and 220° C.

3,308,091
STABILIZED POLYAMIDES CONTAINING CUPRIC ACETATE, CUPRIC CHLORIDE AND 2-MERCAPTOBENZOTHIAZOLE

John Adam Zapp, Jr., Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 24, 1963, Ser. No. 290,198
7 Claims. (Cl. 260—45.75)

1. A hydrolysis and oxidation resistant long chain fiber forming polymeric amide having recurring amide groups as an integral part of the polymer chain having 20 to 140 gram equivalents of amine groups in excess of the number of carboxyl groups per 10^6 grams of polymer containing between about 0.02 and about 0.08 percent by weight of the composition cupric chloride, between about 0.02 and about 0.08 percent by weight of the composition cupric acetate, and between about 0.05 and about 0.5 percent by weight of the composition of 2-mercaptobenzothiazole.

3,308,092
TRIS-TRIS AND BIS-TRIS SILOXYSILANES

Charles W. Lentz, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Aug. 28, 1963, Ser. No. 305,190
4 Claims. (Cl. 260—46.5)

1. Tris[tris(trimethylsiloxy)siloxy]chlorosilane which has the formula $\{[(CH_3)_3SiO]_3SiO\}_3SiCl$.

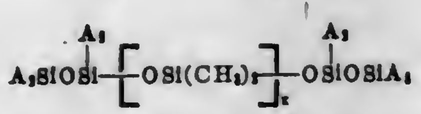
3,308,093
TRIMETHYLSILOXY ENDBLOCKED DIMETHYLSILOXANES

Charles W. Lentz, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Aug. 28, 1963, Ser. No. 305,207
11 Claims. (Cl. 260—46.5)

1. A siloxane selected from the group consisting of siloxanes having the general formulae

$$A_3Si{-}\left[OSi(CH_3)_2\right]_x{-}OSiA_3$$

and



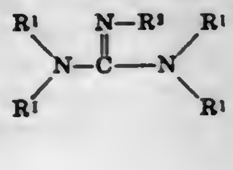
$$A_3SiO\overset{A_3}{\overset{|}{Si}}{-}\left[OSi(CH_3)_2\right]_x{-}O\overset{A_3}{\overset{|}{Si}}OSiA_3$$

wherein A is a trimethylsiloxy group and *x* is an integer equal to at least 1.

3,308,094
CATALYST FOR CURING POLYEPOXIDES

Allan E. Sherr, Norwalk, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Nov. 8, 1962, Ser. No. 236,430
16 Claims. (Cl. 260—47)

1. A composition comprising (A) an organic resin forming polyepoxide compound selected from the group consisting of monomeric and polymeric epoxides having a plurality of reactive 1,2-epoxy groups, and an epoxide equivalency of at least 1.0 and (B) a catalytic amount of a guanidine represented by the general formula:



wherein each R^1 represents an alkyl group having from 1 to 6 carbon atoms, inclusive, and R^2 represents a member selected from the group consisting of hydrogen and a lower alkyl group.

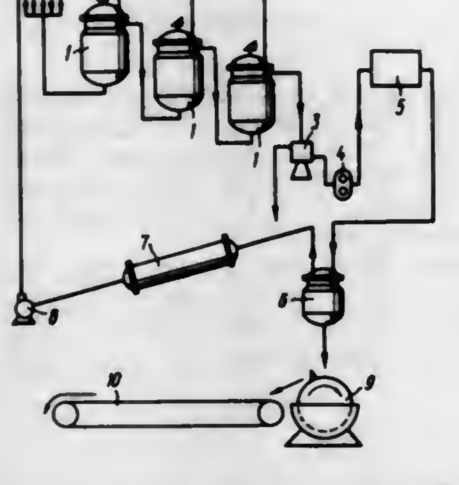
3,308,095
FIBER-FORMING CONDENSATION POLYESTERS HAVING ENHANCED RESISTANCE TO PHOTODEGRADATION

Sidney B. Maerov, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 14, 1965, Ser. No. 472,038
4 Claims. (Cl. 260—47)

1. In the condensation polymerization of bifunctional ester-forming monomers which are free from ethylenic unsaturation to prepare a synthetic linear fiber-forming polyester, the method of providing enhanced resistance to photodegradation which comprises reacting and polycondensing said monomers with 0.1 to 10 mol percent, based on the number of ester linkages present in the fiber-forming polyester, of an ester-forming compound which exhibits a strong absorption of electromagnetic radiation having a wave-length in the range of 290 to 390 millimicrons and no significant absorption of radiations in the range of 400 to 800 millimicrons, said ester-forming compound being free from ethylenic unsaturation and selected from the class consisting of 2,2′,4- and 2,4,4′-trihydroxybenzophenones having said three hydroxy groups as the only ester-forming groups, 2-(dicarboxybenzamidophenyl)-2,1,3-benzotriazoles, 2 - (dihydroxybenzamidophenyl)-2,1,3-benzotriazoles, 2 - (dicarboxybenzsulfonamidophenyl)-2,1,3-benzotriazoles, 2 - (dihydroxybenzsulfonamidophenyl)-2,1,3-benzotriazoles, 2(2-hydroxyphenyl)-naphtho[2,3-d]triazole-5,8 - dicarboxylic acid, 2(2-mercaptophenyl)-naphtho[2,3-d]-triazole-5,8-dicarboxylic acid, and 2(2-aminophenyl)-naphtho[2,3-d] triazole-5,8-dicarboxylic acid.

3,308,096
METHOD OF CONTINUOUS MANUFACTURING OF A PHENOL-ALDEHYDE RESIN

Petr Sergeevich Ivanov, 70 Gazetnaia ul, Apt. 34, Nizhny Tagil, U.S.S.R., and Vladimir Mikhailovich Diomkin, 5/20 Staroroosskaia ul, Apt. 98, Leningrad, U.S.S.R.
Filed Aug. 23, 1965, Ser. No. 481,533
4 Claims. (Cl. 260—54)

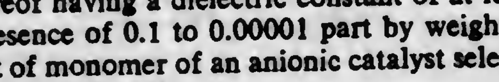


3. A continuous process for producing phenol-aldehyde resins, comprising polycondensation of a phenol with an aldehyde in the presence of a catalyst, separating from the reaction mass produced at the polycondensation stage a layer consisting of resinous polycondensation products insoluble in water, separating and removing an aqueous layer from said resinous polycondensation products; thereafter drying said resinous polycondensation products effected by continuously passing said products through an externally heated elongated passageway, said passageway having an inlet end maintained at a pressure slightly higher than the pressure at the outlet end of said passageway, thereby assisting said products to flow in said passageway from the relatively higher pressure inlet towards the relatively lower pressure outlet and along which these products travel together with the vapors of volatile substances which are liberated from said products as the result of heating, the heat exchange areas of said passageway being sufficient to transfer to said products an amount of heat which permits of diminishing as the result of evaporation the content of volatile substances in said products, polycondensation products being fed into said passageway in such an amount per unit time and said passageway having a cross sectional area related to said amount so that the travel velocity of volatile substances in the passageway reaches at least 15 mm. per sec., separating the resin from said vapors of volatile substances, cooling and liquefying said vapors of volatile substances, which are liberated from the resinous polycondensation products, using the produced condensate, which is an aqueous solution of unconverted starting components, predominantly a phenol, as raw material at the polycondensation stage.

3,308,097
PROCESS FOR THE PREPARATION OF POLYMERS HAVING A POLYESTER STRUCTURE

Gianfranco Pregaglia and Giancarlo Pozzi, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy
No Drawing. Filed July 22, 1963, Ser. No. 296,470
Claims priority, application Italy, July 23, 1962, 14,721/62
19 Claims. (Cl. 260—63)

1. A process of preparing ketene polymers having essentially a polyester structure having the formula:



$$-CH_2-\underset{O}{\underset{\|}{C}}-\left[-O-\underset{CH_2}{\underset{\|}{C}}-CH_2-\underset{O}{\underset{\|}{C}}-\right]_n-O-\underset{CH_2}{\underset{\|}{C}}-$$

which comprises polymerizing ketene in a reaction medium containing a polar solvent selected from the group consisting of ketones, acid anhydrides, nitriles and mixtures thereof having a dielectric constant of at least 8 and in the presence of 0.1 to 0.00001 part by weight per part by weight of monomer of an anionic catalyst selected from the group consisting of

- (a) hydroxides of metals from Groups I and II of the Mendeleeff Periodic Table;
- (b) organometallic compounds having the formula R_nMe where Me is a metal of Groups I and II of the Mendeleeff Periodic Table, *n* is the valence of the metal, and R is selected from the group consisting of alkyl and alkoxy groups containing 1 to 8 carbon atoms;
- (c) alkali metals, oxides, and hydrides;
- (d) alkaline earth metals, oxides, and hydrides;
- (e) triphenylamine and
- (f) basic aluminum oxide

at a temperature ranging from about —100 to +20° C.

3,308,098
UREA-THIOUREA FORMALDEHYDE RESINS

Joseph J. Nemes, Bridgewater Township, Somerset County, Raymond Polansky, Middlesex, and William F. Herbes, Bridgewater Township, Somerset County, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Aug. 30, 1960, Ser. No. 52,787
5 Claims. (Cl. 260—70)

1. A process for preparing a water-soluble resinous product, said process comprising reacting in aqueous medium relative proportions of 1 mole of urea with from 1.5 to 2.4 moles of formaldehyde at a pH of 7 to 10, and at a temperature between 70° and 100° C. for 0.25 to 2.0 hours, adjusting the pH of the reaction mixture to between 4.0 to 6.0, partially polymerizing the urea-formaldehyde condensate at temperature of 70° to 100° C. until the viscosity at 25° C. of a resin solution containing 40–60% solids is 25–40 centipoises, adjusting the pH to between 7.2 and 9.0, concentrating the reaction mixture to a solids content of at least 70%, adding between 0.2 and 0.6 mole of thiourea and reacting said thiourea in said concentrated solids and in the presence of the partially polymerized urea-formaldehyde condensate reaction mixture with 0.7 to 1.3 moles of formaldehyde per mole of thiourea at a temperature of 20° to 70° C. for 5 to 250 minutes at a pH of about 5.0–9.0.

3,308,099
PRODUCTION OF POLYLACTAMS

Charles Mermoud, Lyon, and Jean Abeille, St-Rambert L'Ile Barbe, France, assignors to Societe Rhodiaceta, Paris, France, a French body corporate
No Drawing. Filed Mar. 21, 1963, Ser. No. 266,826
Claims priority, application France, Mar. 29, 1962, 892,711
10 Claims. (Cl. 260—78)

1. Process for the production of a linear polyamide which comprises heating a lactam of at least 5 carbon atoms under anhydrous conditions at between 130° C. and the melting point of the polyamide product in the presence of an alkaline anionic catalyst together with, as cocatalyst, 0.1 to 5% by weight of the lactam of a linear polyether of formula:

$$X[(RO)_nH]_p$$

where X is hydroxy, lauryl, lauroyl, or N-p-toluene sulphonamide, each R is independently selected from the class consisting of $—CH_2CH_2—$, $—CH(CH_3)CH_2—$, and $—(CH_2)_4—$, *n* is an integer equal to or greater than 2, and *p* is 1 or 2.

3,308,100
PREPARATION OF NOVEL POLYMERS

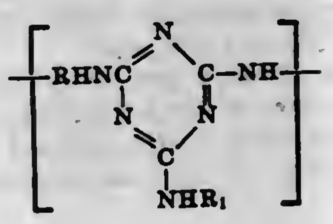
Edwards S. Rothman, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Dec. 6, 1963, Ser. No. 328,762
3 Claims. (Cl. 260—78)

1. A process for preparing a condensation polymer which comprises heating a mixture of N,N′-dimethylazelaamide and a diisopropenyl ester of a saturated aliphatic dicarboxylic acid having from 5 to 10 carbon atoms at a temperature up to about 200° C. in the presence of a catalytic amount of an acid selected from the group consisting of p-toluenesulfonic acid and methanesulfonic acid until the condensation reaction is substantially complete.

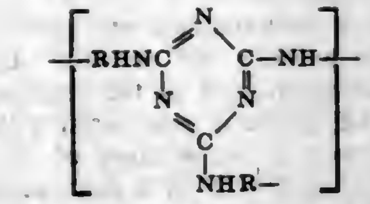
3,308,101
NOVEL POLYMERIC MATERIALS

Carol K. Ikeda, Wallingford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 24, 1963, Ser. No. 311,242
8 Claims. (Cl. 260—78.4)

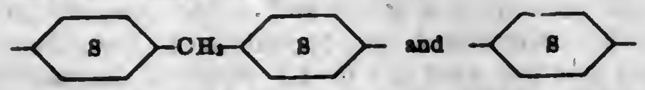
1. A solid triazine copolymer of recurring monomeric units having the structures



and



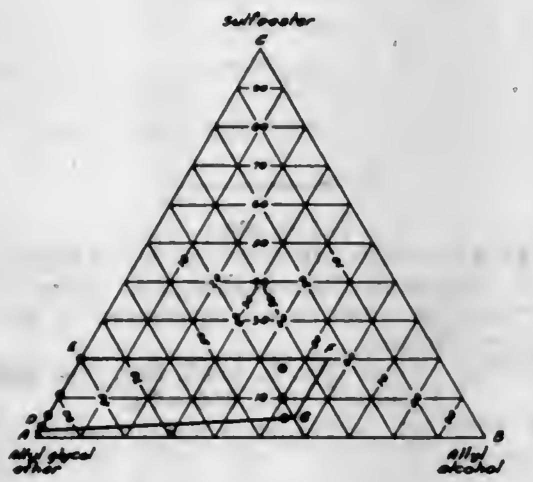
where R is selected from the group consisting of straight chain alkylene radicals of 4 through 14 carbon atoms, branched chain alkylene radicals of 4 through 14 carbon atoms, phenylene, xylylene,



and R_1 is selected from the group consisting of straight chain alkyl radicals of 2 through 18 carbon atoms; branched chain alkyl radicals of 2 through 18 carbon atoms; aryl radicals; aryl radicals substituted with a radical selected from the group consisting of alkoxy radicals of 1 through 5 carbon atoms, alkyl radicals of 1 through 5 carbon atoms, fluorine, chlorine and bromine; $-(CH_2)_a-O-(CH_2)_b-CH_3$ radicals and $-(CH_2)_a-S-(CH_2)_b-CH_3$ radicals where *a* is a number 2 through 8 and *b* is a number 0 through 8.

3,308,102
POLYSULFONE FLOCCULANTS

Billy W. Wilson, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 8, 1964, Ser. No. 365,963
4 Claims. (Cl. 260—79.3)



1. A water-soluble resinous polysulfone comprising in substantially equimolar quantities:

(A) Sulfur dioxide and

(B) A mixture of ethylenically unsaturated monomers consisting of:

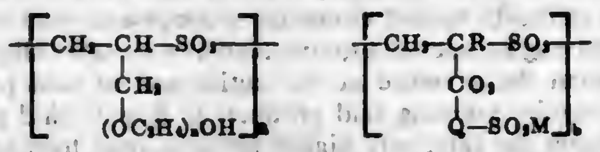
  (1) 2 to 20 mole percent of a water-soluble sulfoester of an α-methylene-carboxylic acid having the formula:

$$CH_2=CR-CO_2-Q-SO_3M$$

  wherein:
  R is one of hydrogen, methyl and ethyl,
  Q is a C_2 to C_8 alkylene radial, and
  M is a monovalent cation;

  (2) 25 to 98 mole percent of a monoallyl ether of a polyoxyethylene glycol, said ether having an average molecular weight in the range from about 200 to 1,000; and

  (3) 0 to 55 mole percent of allyl alcohol; the proportions of these ethylenically unsaturated onomers being further defined as falling with the DEFG of the accompanying figure, said polysulfone being characterized by recurring ethylenesulfone moieties of the formula:



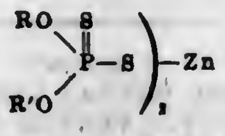
$$\left[-CH_2-\underset{\substack{|\\ CH_2\\ |\\ (OC_2H_4)_nOH}}{CH}-SO_2-\right]_a \quad \left[-CH_2-\underset{\substack{|\\ CO_2\\ |\\ Q-SO_3M}}{CR}-SO_2-\right]_b$$

wherein each *n* is an integer from 0 to 25, and the ratio of *a* and *b* is consistent with initial monomer composition as defined by the area DEFG.

3,308,103
SYNERGISTIC ACCELERATOR COMBINATIONS FOR ETHYLENE-PROPYLENE TERPOLYMERS

Aubert Y. Coran, Charleston, and Eiichi Morita, St. Albans, W. Va., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Oct. 30, 1964, Ser. No. 407,905
6 Claims. (Cl. 260—79.5)

1. A method of vulcanizing sulfur-vulcanizable ethylene-propylene diene terpolymer which comprises mixing the terpolymer with a sulfur-containing vulcanizing agent, an accelerating amount of a synergistic combination of a thiazole accelerator and a zinc phosphorodithioate of the formula

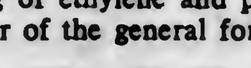


where R and R′ are organic radicals containing less than 19 carbon atoms selected from the group consisting of alkyl alicyclic, alkenyl and aralkyl radicals and heating the mixture at vulcanizing temperature.

3,308,104
CRYSTALLINE COPOLYMERS OF AN ALPHA-OLEFIN AND AROMATIC ALKENYL THIOETHER

Manfred Feldhoff, Oberseelbach, Taunus, Albert Gustav Martin Gumboldt, Frankfurt am Main, and Jürgen Helberg, Kelkheim, Taunus, Germany, assignors to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 29, 1964, Ser. No. 407,570
Claims priority, application Germany, Nov. 28, 1963, F 41,410
9 Claims. (Cl. 260—79.7)

1. Crystalline copolymers of an α-olefin selected from the group consisting of ethylene and propylene with an unsaturated thioether of the general formula



$$\underset{\substack{|\\ Ar}}{S}-(CH_2)_n-CH=CH_2$$

in which *n* is a number from 0 to 12 and Ar is an aromatic radical, said copolymers having a definite crystalline melting point and being comprised of 99 to 70% by weight of α-olefin and 1 to 30% by weight of unsaturated thioether.

3,308,105
CATALYST SOLUBILIZING AGENTS

John M. Hoyt, Cincinnati, Ohio, Thomas B. Junas, Marlboro, Mass., and Lou Cornelia Key, Mount Airy, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Jan. 16, 1963, Ser. No. 251,727
18 Claims. (Cl. 260—88.2)

1. A method of removing ash from a normally solid, polymerized olefin product prepared with a heavy metal catalyst formed by admixing (a) strong reducing agent selected from Group I-A, II-A and III-A metals, metal alkyls, metal alkyl hydrides, metal alkyl halides and mixtures thereof, and (b) a halide of a metal selected from Group IV-B, V-B and VI-B which comprises contacting

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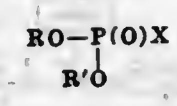
the polymerization product containing polymer and catalyst residues with a minor amount, sufficient to solubilize the catalyst residues, of a treating agent consisting of a phosphorus ester corresponding to the formula



$$RO-\underset{\substack{|\\ R'O}}{P}(O)X$$

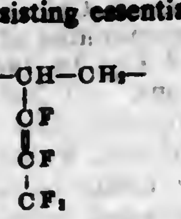
wherein R is selected from the group consisting of alkyl radicals containing from 1 to about 20 carbon atoms and aryl radicals, R′ is selected from the group consisting of hydrogen, alkyl radicals containing from 1 to about 20 carbon atoms, and aryl radicals, and X is selected from the group consisting of hydrogen and hydroxyl radical, and separating the solubilized residue and the phosphorus ester from the polymer.

6. The method of claim 1 in which the polymerized product is polyethylene.

3,308,106
COPOLYMERS OF 3,4,5,5,5-PENTAFLUOROPENTADIENE-1,3

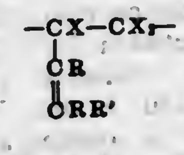
Anthony J. Butler, George A. Grindahl, and Ogden R. Pierce, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Jan. 9, 1964, Ser. No. 336,623
6 Claims. (Cl. 260—85.5)

1. A copolymer consisting essentially of (1)



$$-\underset{\substack{|\\ CF\\ \|\\ CF\\ |\\ CF_3}}{CH}-CH_2-$$

units and (2) at least one unit selected from the group consisting of

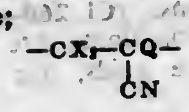


$$-\underset{\substack{|\\ CR\\ \|\\ CRR'}}{CX}-CX_2-$$

units, where X is selected from the group consisting of fluorine and hydrogen, at least one X being hydrogen, R is selected from the group consisting of fluorine, hydrogen, and perfluoroalkyl radicals, and R′ is selected from the group consisting of the trifluoromethyl radical and fluorine, the number of X's that are hydrogen exceeding the number of R's that are hydrogen;

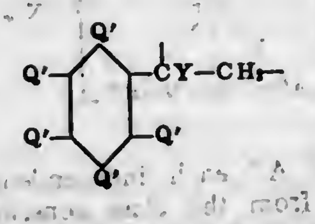
$$-CRZ-CF=CF-CX_2-$$

where Z is selected from the group consisting of the trifluoromethyl radical, fluorine, and hydrogen, X is selected from the group consisting of fluorine and hydrogen, and R is as defined above;



$$-CX_2-\underset{\substack{|\\ CN}}{CQ}-$$

units, where X is as defined above, and Q is selected from the group consisting of hydrogen, fluorine and methyl; and



units, where Q′ is selected from the group consisting of the trifluoromethyl radical and fluorine, no more than two Q′ groups being trifluoromethyl, and Y is selected from the group consisting of methyl radicals and hydrogen.

3,308,107
PERFLUORO(2-METHYLENE-4-METHYL-1,3-DIOXOLANE) AND POLYMERS THEREOF

Stanley Selman, Wilmington, Del., and Edward Noonan Squire, Glen Mills, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 30, 1965, Ser. No. 452,367
10 Claims. (Cl. 260—87.5)

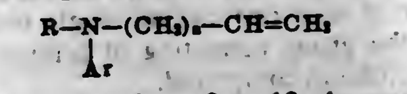
1. Perfluoro(2-methylene-4-methyl-1,3-dioxolane).

3. Solid polymers of perfluoro(2-methylene-4-methyl-1,3-dioxolane) in which polymerization of said dioxolane occurs thru the double bond.

3,308,108
PROCESS FOR COPOLYMERIZING α-OLEFINS WITH TERTIARY N-ALKYLENE-ARYLAMINES

Manfred Feldhoff, Oberseelbach, Albert Gustav Martin Gumboldt, Frankfurt am Main, and Jürgen Helberg, Kelkheim, Taunus, Germany, assignors, by mesne assignments, to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 13, 1964, Ser. No. 403,643
Claims priority, application Germany, Oct. 19, 1963, F 41,038
6 Claims. (Cl. 260—88.1)

1. A copolymer of propylene with a tertiary N-alkenyl aryl amine of the general formula



$$R-\underset{\substack{|\\ Ar}}{N}-(CH_2)_n-CH=CH_2$$

in which *n* is a number from 2 to 12, Ar represents aryl, and R represents alkyl or aryl, said copolymer being crystalline and comprising from 99 to 70 weight percent of propylene and from 1 to 30 weight percent of said amine, said copolymer having a crystalline melting point within the range of 158.5 to 165° C. and a molecular weight sufficiently high to be useful for the preparation of fibers and films by melt extrusion.

3,308,109
PROCESS FOR RECOVERING UNPOLYMERIZED MONOMER

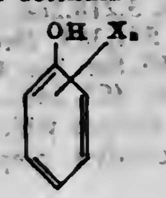
Herman J. Sampson, Jr., Martinsville, and Richard D. Tomey, Waynesboro, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 7, 1965, Ser. No. 424,109
5 Claims. (Cl. 260—88.7)

1. In a process for recovering unpolymerized monomers from an aqueous filtrate obtained by washing with water and filtering acrylonitrile polymer prepared by a process wherein at least 85% acrylonitrile and up to 15% of an ethylenically unsaturated copolymerizable monomer are polymerized at a pH of from about 2.5 to 5.0 in the presence of a sulfoxy activator and a peroxygen catalyst present in a ratio to provide an excess of activator, and trace amounts of a heavy metal ion with polymerization being terminated by addition of about 50 to 500 parts per million parts of filtrate of an amino carboxylic acid sequestering agent to said medium, the method of recovering unpolymerized monomers comprising

(a) adjusting the pH of said filtrate to provide a pH from about 2.5 to about 4.8, by adding sulfur dioxide,

(b) passing the resulting filtrate into a distillation zone and vaporizing acrylonitrile monomer therefrom,

(c) adding to the resulting acrylonitrile-containing vapor about 40 to about 400 parts per million based on the weight of monomers in the distillate of a phenol having the formula



wherein X is selected from the class consisting of H, OH, aliphatic and alkoxy radicals having from one to fifteen carbon atoms, and aryloxy- and phenolic-substituted radicals having from six to fifteen carbon atoms, and *n* is an integer from one to five, and about 40 to about 400 parts per million based on the weight of monomers in the distillate of said amino carboxylic acid sequestering agent,

(d) condensing the vapors and permitting two liquid layers to form, and

(e) returning the top monomer layer to the polymerization zone and returning the bottom aqueous layer to the distillation zone.

3,308,110

PROCESS FOR POLYMERIZING CONJUGATED DIENES USING A CATALYST COMPRISING A NON-POLYMERIZING DIENE AND LITHIUM OR A HYDROCARBON LITHIUM

Ervin G. Pritchett, Cincinnati, Ohio, assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed July 12, 1963, Ser. No. 294,762

22 Claims. (Cl. 260—94.2)

17. A process for the polymerization of an active conjugated diene monomer which comprises reacting said monomer in the presence of a catalyst comprising (1) a non-polymerizing diene wherein the double bonds are separated by at least one carbon single bond and (2) a member of the group consisting of lithium metal and a hydrocarbon lithium compound.

3,308,111

POLYOLEFIN COMPOSITIONS

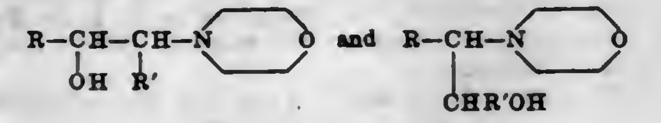
Harry Braus, Springdale, and Fred D. Waas, Cincinnati, Ohio., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 8, 1963, Ser. No. 322,518

11 Claims. (Cl. 260—94.9)

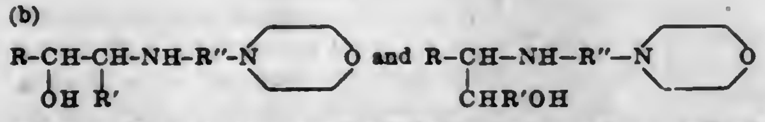
6. A composition comprising a polyolefin and an anti-static agent, said anti-static agent comprising a mixture of compounds selected from mixtures of compounds having the general structures

(a)



and

(b)



wherein R is a saturated aliphatic hydrocarbon radical having from about 8 to 22 carbon atoms, R′ is a member of the group consisting of hydrogen and a saturated aliphatic hydrocarbon radical having from about 1 to 6 carbon atoms, and R″ is a saturated hydrocarbon diradical containing about 1 to 4 carbon atoms.

3,308,112

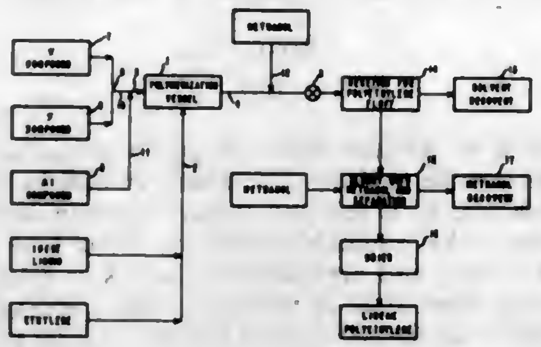
POLYMERIZING ETHYLENE IN THE PRESENCE OF CATALYST CONSISTING OF ALUMINUM TRIALKYL MIXED WITH A SOLUTION OF A VANADIUM HALIDE AND A TITANIUM HALIDE

David Blodgett Ludlum, Hamden, Conn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation of application Ser. No. 390,007, Aug. 17, 1964, now Patent No. 3,218,266, which is a division of application Ser. No. 551,389, Dec. 6, 1955. This application Sept. 15, 1965, Ser. No. 487,392

3 Claims. (Cl. 260—94.9)

1. A polymerization process which comprises contacting ethylene with a catalyst prepared by combining streams containing (1) an aluminum trialkyl and (2) a solution of $TiCl_4$ and a vanadium chloride selected from the group consisting of VCl_4 and $VOCl_3$ in an inert liquid hydrocarbon medium, and recovering linear polyethylene.



3,308,113

METHOD OF PREPARING PROTEINACEOUS FOOD MATERIAL BY TREATING COLLAGENEOUS MATERIAL WITH AQUEOUS SULFITE SOLUTION AND ADDING TO THE RESULTANT PROTEINACEOUS MATERIAL A PEROXIDE

Vernon L. Johnsen, La Grange, and Eugene V. Matern and Raymond S. Burnett, Chicago, Ill., assignors to Wilson & Co., Inc., a corporation of Delaware

No Drawing. Filed Aug. 14, 1963, Ser. No. 301,962

7 Claims. (Cl. 260—118)

1. A method of preparing light colored, water soluble proteinaceous material from hydrolyzed protein obtained through treatment of collagen-containing material with heat and water at elevated temperatures and pressures to produce a solution of at least reduced gel-forming character which comprises heating collagen-containing material in aqueous solution containing sulfite ion in an amount in the range between 0.1% and 5% based on a weight of the solids in solution, at a temperature in the range between about 250° F. and 350° F., introducing into the resultant aqueous solution a water soluble peroxide agent in an amount in the range between 0.05% and 0.5% based on the weight of solids in solution, and recovering the proteinaceous product.

3,308,114

UNSYMMETRICAL CHROMIUM CONTAINING AZO DYESTUFFS

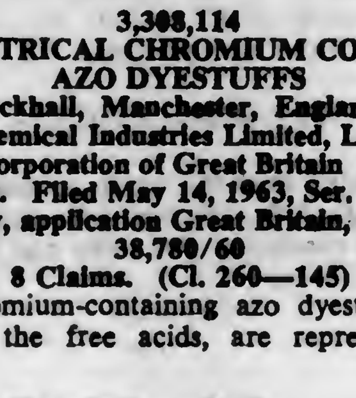
Alexander Blackhall, Manchester, England, assignor to Imperial Chemical Industries Limited, London, S.W. 1, England, a corporation of Great Britain

No Drawing. Filed May 14, 1963, Ser. No. 280,424

Claims priority, application Great Britain, Nov. 11, 1960, 38,780/60

8 Claims. (Cl. 260—145)

1. The chromium-containing azo dyestuffs which, in the form of the free acids, are represented by the formula:



wherein A′ and A″ each independently represent a radical selected from the class consisting of benzene and naphthalene radicals;

Z′ and Z″ which are attached to A′ and A″ respectively in ortho positions to the azo groups are independently selected from the class consisting of —O— and —COO—;

B′ and B″ each independently represent the radical on a coupling component selected from the class consisting of acetoacetanilide, phenol, naphthol, naphthylamine, 2:4-dihydroxyquinoline, 1-phenyl-5-pyrazolone and 1-naphthyl-5-pyrazolone coupling components which couple in a position adjacent to a metallisable group selected from the class consisting of hydroxy, amino and enolisable keto groups and only one of the benzene and naphthalene rings present in A′, A″, B′ and B′ is substituted by a sulphonic in order to more clearly point out that the claimed dyestuff is unsymmetrical.

A″, B′ and B″ are together substituted by a single sulphonic acid group and any further substituents on said rings are selected from the class consisting of chlorine, bromine, nitro, lower alkyl, lower alkoxy, lower alkyl sulphonyl, sulphamyl, sulphonmorpholide, N-lower alkyl sulphamyl, N-hydroxy lower alkyl sulphamyl, N-phenylsulphamyl, N-phenyl-N-lower alkyl sulphamyl, acetyl, acetylamino, propionylamino, benzoylamino, benzene sulphonylamino, toluene sulphonylamino and carbo lower alkoxyamino;

m represents a positive integer not exceeding 2; and X represents a member selected from the group consisting of acryloylamino and β-chloropropionylamino.

3,308,115

METAL-CONTAINING REACTIVE MONOAZO DYESTUFFS

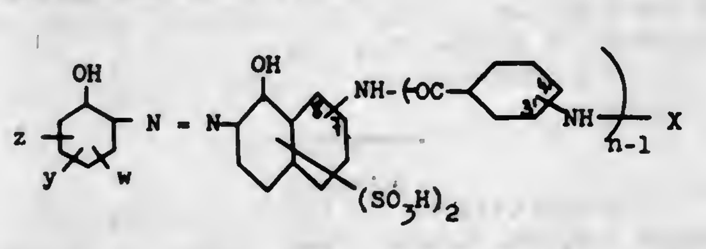
Jakob Benz, Oberwil, Basel-Land, and Hanspeter Uehlinger, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed July 1, 1963, Ser. No. 292,157

Claims priority, application Switzerland, Apr. 10, 1959, 71,848/59

6 Claims. (Cl. 260—151)

1. A member selected from the group consisting of the 1:2-chromium and the 1:2-cobalt complex compounds of the dyestuff of the formula



wherein

X is an acyl selected from the group consisting of halogenacetyl, β-halogenopropionyl, α.β-dihalogenopropionyl, acrylyl and α-halogenoacrylyl, halogen having an atomic number from 17 to 35, inclusive,

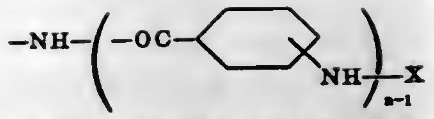
w is a member selected from the group consisting of hydrogen and chlorine,

y is a member selected from the group consisting of hydrogen, chlorine and nitro,

z is a member selected from the group consisting of chlorine, bromine, nitro lower alkyl, lower alkoxy, lower alkanoylamino, lower carboalkoxyamino, benzoylamino, lower alkylsulfonyl, sulfonic acid amide, sulfonic acid lower alkylamide, sulfonic acid lower hydroxyalkylamide, sulfonic acid lower alkoxyalkylamide, sulfonic acid di-(lower alkyl)-amide, sulfonic acid di-(lower hydroxyalkyl)-amide, sulfonic acid phenylamide, sulfonic acid carboxy-phenylamide, sulfonic acid sulfamylphenylamide, sulfonic acid N-lower alkyl-N-phenylamide, sulfonic acid N-lower hydroxyalkyl-N-phenylamide, sulfonic acid cyclohexylamide, sulfonic acid benzylamide, sulfonic acid lower alkylphenylamide, sulfonic acid lower alkoxyphenylamide and sulfonic acid chlorophenylamide and

n is one of the integers 1 and 2,

the group stands in one of the positions 7 and 8 of the naphthalene nucleus, and the group —NH— stands in one of the positions 3′ and 4′.



3,308,116

2-CARBOXY AMIDE-3-AMINO AND 2,3-ISOXAZOLE STEROIDS

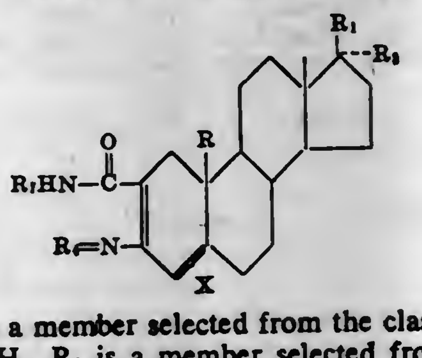
Pietro de Ruggieri, Carmelo Gandolfi, and Umberto Guzzi, Milan, Italy, assignors to Ormonoterapia Richter S.p.A., Milan, Italy

No Drawing. Filed July 6, 1964, Ser. No. 380,626

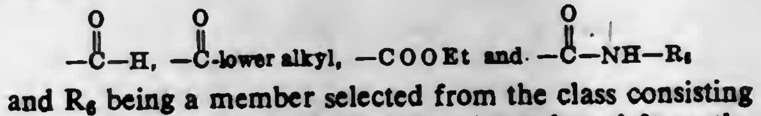
Claims priority, application Italy, July 5, 1963, 14,023/63; June 9, 1964, 12,667/64

4 Claims. (Cl. 260—211.5)

4. The compounds of the formula:

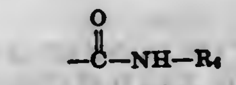


wherein R is a member selected from the class consisting of H and CH_3, R_1 is a member selected from the class consisting of C_8H_{17} and OR_2 in which R_2 is a member selected from the class consisting of H and an acyl radical derived from an aliphatic acid of from 2 to 10 carbon atoms, R_3 is a member selected from the class consisting of H and lower alkyl, R_4 is a member selected from the class consisting of the grouping $\genfrac{}{}{0pt}{}{H}{R_5}\!\!>$ $=CHNH-R_6$ and $=CHO-R_6$, R_5 being a member selected from the class consisting of H, lower alkyl, ribosyl, 2′-deoxyribosyl, 2′,3′,5′-tri-O-benzoyl-ribosyl, 3′,5′-di-O-benzoyl-2′-dexoyribosyl,



$$-\overset{O}{\overset{\|}{C}}-H,\ -\overset{O}{\overset{\|}{C}}\text{-lower alkyl},\ -COOEt \text{ and } -\overset{O}{\overset{\|}{C}}-NH-R_6$$

and R_6 being a member selected from the class consisting of H and lower alkyl, R_7 is a member selected from the class consisting of H, lower alkyl, benzyl, acyl of 1 to 4 carbon atoms,



$$-\overset{O}{\overset{\|}{C}}-NH-R_4$$

and COOEt, and X is a member selected from the class consisting of single and double bonds.

3,308,117

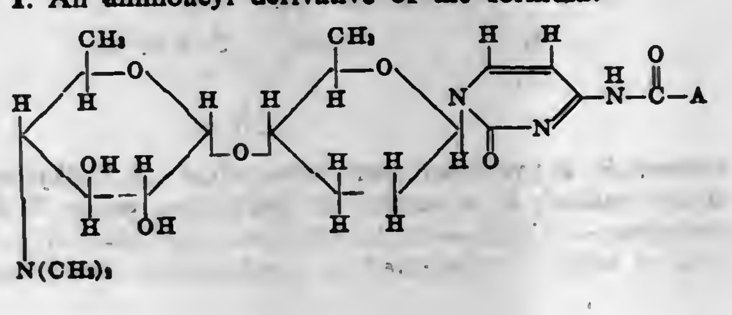
AMINOACYL CYTOSAMINE DERIVATIVES AND PROCESS

Ronald B. Kelly, Cooper Township, Kalamazoo County, and Harold E. Renis, Portage, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

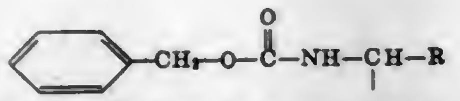
No Drawing. Filed Sept. 21, 1964, Ser. No. 398,108

6 Claims. (Cl. 260—211.5)

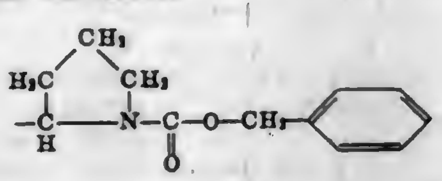
1. An aminoacyl derivative of the formula:



wherein A is selected from the group consisting of the radical



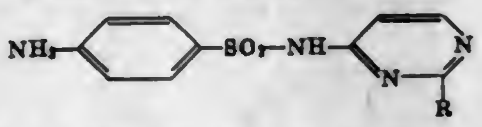
in which R is selected from the group consisting of hydrogen, alkyl and aralkyl, having from 1 to 8 carbon atoms, inclusive, and the radical



3,308,118
SULFANILAMIDES

Markus Zimmermann, Riehen, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 5, 1963, Ser. No. 328,174
Claims priority, application Switzerland, Dec. 7, 1962, 14,454/62
3 Claims. (Cl. 260—239.75)

1. A compound of the formula

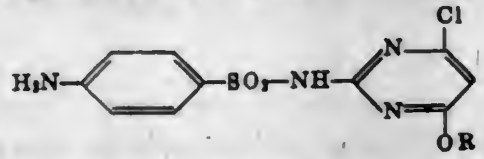


wherein R is a halogen atom of an atomic number of from 17 to 35.

3,308,119
SULFANILAMIDES

Markus Zimmermann, Riehen, near Basel, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed June 8, 1965, Ser. No. 462,387
Claims priority, application Switzerland, Oct. 31, 1961, 12,588/61
4 Claims. (Cl. 260—239.75)

1. A compound of the formula

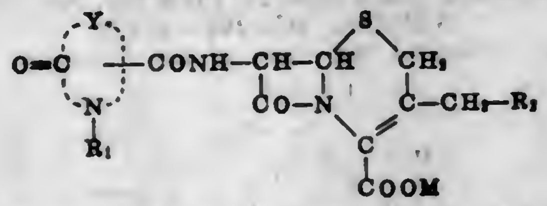


wherein R is alkyl of from 1 to 3 carbon atoms.

3,308,120
7 - (NITROGEN - CONTAINING HETEROCYCLIC CARBONAMIDO) CEPHALOSPORANIC ACID AND DERIVATIVES THEREOF

Tadayoshi Takano, Hirakata, Kiyoshi Hattori, Ibaragi, Kazuo Nakanishi and Kazuko Miura, Osaka, Suminori Umio, Nishinomiya, and Teiji Kishimoto, Kyoto, Japan, assignors to Fujisawa Pharmaceutical Co., Ltd., Higashi-ku, Osaka, Japan, a company of Japan
No Drawing. Filed July 20, 1965, Ser. No. 473,508
Claims priority, application Japan, July 23, 1964, 39/42,132
13 Claims. (Cl. 260—243)

1. A compound having the general formula:

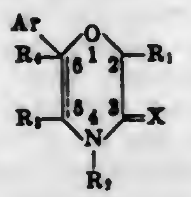


wherein R_1 is hydrogen atom, lower alkyl cycloalkyl or aralkyl radical; R_2 is acetoxy or pyridinium group; Y is propylene $—(CH_2)_3—$ or 1.3-butadiene $—(CH{=}CH)_2—$ each of which is substituted or unsubstituted with lower alkyl radical; M is hydrogen atom, a pharmaceutically acceptable non-toxic cation or an anionic charge.

3,308,121
3-MORPHOLINONES, THIONES AND 5,6 OXAZINES

Walter Francis Gannon, Evanston, Ill., and George Ireland Poos, Ambler, Pa., assignors to McNeil Laboratories, Inc., a corporation of Pennsylvania
No Drawing. Filed Mar. 22, 1965, Ser. No. 441,925
26 Claims. (Cl. 260—244)

1. The chemical compound:



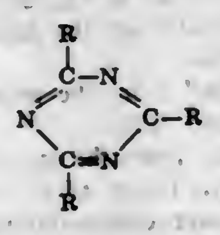
wherein X is a member selected from the group consisting of oxygen and sulfur; R_1 is a member selected from the group consisting of hydrogen, hydroxy, lower alkyl and phenyl, provided that, when R_1 is hydroxy, said X is oxygen; R_2 is a member selected from the group consisting of hydrogen, lower alkyl, amino-lower alkyl, lower alkyl-amino-lower alkyl and acyl, said acyl being a member selected from the group consisting of lower alkanoyl, benzoyl, halobenzoyl and trifluoromethylbenzoyl, provided that, when R_2 is such acyl, said X is oxygen and R_1 is other than hydroxy; R_3 is a member selected from the group consisting of hydrogen, lower alkyl and phenyl; R_4 is a member selected from the group consisting of hydrogen, lower alkyl and phenyl; Ar is a member selected from the group consisting of phenyl and phenyl substituted with a member selected from the group consisting of halo, hydroxy, lower alkoxy, benzyloxy and halolower alkyl; and the dotted line between the 5- and 6-carbon atoms indicates the presence of an optional double bond with Ar the sole substituent in the 6-position, provided that, when said double bond is present, R_1 is other than hydroxy.

21. 6 - (p - chlorophenyl) - 5 - methyl - 4H - 1,4 - oxazin-3-(2H)one.

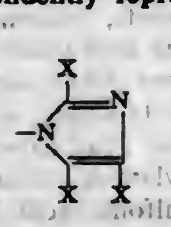
3,308,122
TRIIMIDAZOLYL TRIAZINE COMPOUNDS

Henry Tolkmith, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 10, 1965, Ser. No. 454,647
5 Claims. (Cl. 260—249.6)

1. Compound of the formula



wherein each R independently represents an imidazolyl radical of the formula



wherein each X independently represents a member selected from the group consisting of hydrogen, loweralkyl, and phenyl, the total number of carbon atoms in all X substituents in any one imidazolyl radical being an integer of from 0 to 15, both inclusive.

3,308,123
METHOD OF SEPARATING MELAMINE FROM WASTE GAS

Atsuo Murata, Tokyo, Ryo Kokubo, Mizuhiko Nagakura, and Toshiro Ohba, Neigun, Toyama, and Mitsuo Arata, Urawa, Saitama, Japan, assignors to Nissan Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed July 7, 1964, Ser. No. 380,876
Claims priority, application Japan, July 18, 1963, 38/36,658
1 Claim. (Cl. 260—249.7)

A process for the separation of melamine from waste gases, which comprises introducing a mixture of the molten substance, composed mainly of melamine, and gaseous ammonia and carbon dioxide into a separator, spraying the molten substance with water, the amount of water sprayed being so controlled that the average diameter of the water drops is less than 200μ and the temperature in the separator is 90 to 200° C., simultaneously cooling and solidifying the molten substance and discharging the solidified melamine from the separator.

3,308,124
PROCESS FOR PREPARING 1,1′-ALKYLENE-2,2′-BIPYRIDYLIUM DIHALIDES

John Theodore Braunholtz and Charles Shepherd, Bracknell, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed June 1, 1964, Ser. No. 371,771
Claims priority, application Great Britain, June 5, 1963, 22,319/63
10 Claims. (Cl. 260—250)

1. A process of making a 1,1′-alkylene-2,2′-bipyridylium dihalide comprising contacting 2,2′-bipyridyl with a mixture of a halogen and a 1-alkene at a temperature from about ambient temperature to about 211° C.

3,308,125
QUATERNARY AMMONIUM ORTHOCHLORO MERCURI P TOLUENE SULFONATES

Reginald L. Wakeman, Philadelphia, Pa., and Edward Griffin Shay, Belle Mead, N.J., assignors, by mesne assignments, to Millmaster Onyx Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 29, 1964, Ser. No. 363,620
3 Claims. (Cl. 260—270)

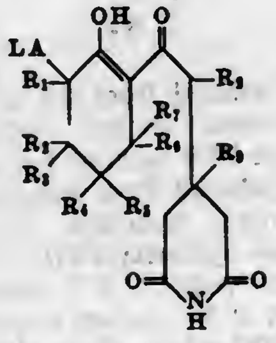
3. Alkyl isoquinolinium o-chloro-mercuri-p-toluene sulfonate.

3,308,126
PROCESS FOR PREPARING CYCLOHEXIMIDE ESTERS

Francis Johnson, Newton Lower Falls, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 22, 1963, Ser. No. 267,329
9 Claims. (Cl. 260—281)

1. The process for preparing cycloheximide esters comprising

(i) hydrogenating a dehydrocycloheximide having the formula



wherein LA is a lower alkyl and R_1 to R_9 are selected from the group consisting of hydrogen, lower alkyl, and lower alkoxy, to the dialcohol using a catalyst selected from the group consisting of platinum, rhodium, and nickel, in a solvent selected from the group consisting of organic acids, organic alcohols, and organic esters;

(ii) monoacylating said dialcohol, by reacting one equivalent of an acylating agent with said dialcohol under basic conditions to obtain the monoester-alcohol; and

(iii) oxidizing said monoester-alcohol by reacting said monoester-alcohol with an oxidizing agent in an inert solvent under acid conditions at a temperature below about 100° C., to obtain the cycloheximide ester.

3,308,127
PROCESS FOR THE PRODUCTION OF NAPHTHALIC ACID DERIVATIVES

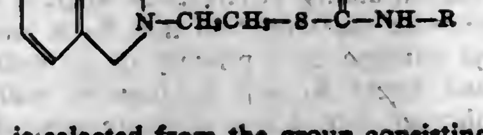
Hisashi Senshu, Kitakyushu-shi, Japan, assignor to Mitsubishi Chemical Industries Limited, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Aug. 24, 1964, Ser. No. 391,776
12 Claims. (Cl. 260—281)

1. A process for the production of 4-halogeno-naphthalic acid or anhydride thereof, or 4-halogeno-naphthalimide or N-derivative thereof which comprises heating in an aqueous solution 4-sulpho-naphthalic acid or anhydride thereof, or 4-sulpho-naphthalimide or an N-derivative thereof, or an alkali metal salt of any of them in an aqueous solution with a hydrohalic acid selected from a group consisting of hydrochloric acid and hydrobromic acid and an alkali metal halogenate selected from a group consisting of sodium chlorate, potassium chlorate, sodium bromate, and potassium bromate.

3,308,128
TETRAHYDRO-2-ISOQUINOLYLALKYL DITHIOCARBAMATES

Richard A. Robinson, Evanston, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Jan. 29, 1964, Ser. No. 341,130
4 Claims. (Cl. 260—288)

1. A compound of the formula

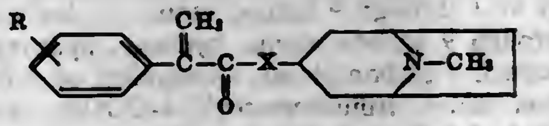


wherein R is selected from the group consisting of lower alkyl, phenyl, and benzyl.

3,308,129
3-TROPANYL ESTERS OF ATROPIC AND THIOATROPIC ACIDS

Henry C. Caldwell, Ambler, and William G. Groves, Norristown, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed June 5, 1964, Ser. No. 373,044
7 Claims. (Cl. 260—292)

1. A chemical compound of the formula:

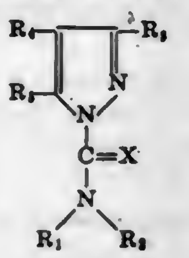


in which X is a member selected from the group consisting of oxygen and sulfur and R is a member selected from the group consisting of halogen, lower alkyl, lower alkoxy and trifluoromethyl.

3,308,130
N-DISUBSTITUTED CARBAMYL PYRAZOLES

Euclid W. Bousquet, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 1, 1963, Ser. No. 312,871
6 Claims. (Cl. 260—294)

1. A compound of the formula

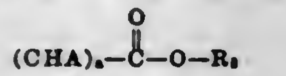


where

X is selected from the group consisting of oxygen and sulfur;

R_1 is methyl;

R_2 is selected from the group consisting of alkyl of 1 through 6 carbon atoms, alkenyl of 3 through 6 carbon atoms, alkoxyalkyl of 2 through 6 total carbon atoms, hydroxyalkyl of 2 through 6 carbon atoms, methylalkylamino of 2 through 5 carbon atoms, dialkylaminoalkyl where each alkyl in the dialkyl portion has 1 through 2 carbon atoms and the remaining alkyl has 1 through 4 carbon atoms with a total of 3 through 7 carbon atoms in said dialkylaminoalkyl,

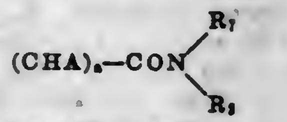


$$(CHA)_a{-}\overset{O}{\overset{\|}{C}}{-}O{-}R_6$$

where *a* is an integer of 1 through 5,

A is selected from the group consisting of H, CH_3 and C_2H_5 and wherein $(CHA)_a$ has a total of 6 carbon atoms, and

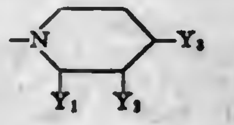
R_6 is selected from the group consisting of hydrogen and alkyl of 1 through 4 carbon atoms,



$$(CHA)_a{-}CON\begin{matrix}R_7\\R_8\end{matrix}$$

where *a* and A are as above and

R_7 and R_8 are separately selected from the group consisting of hydrogen and alkyl of 1 through 5 carbon atoms with the limitation that R_7 and R_8 together cannot exceed 5 carbon atoms, $(CHA)_aCN$ where *a* and A are as above; with the limitation that R_2 is joined to the carbamyl nitrogen by a primary or secondary carbon atom; and where R_1 and R_2 together with the carbamyl nitrogen form a ring structure selected from the group consisting of morpholino, pyrrolidino, dihydropiperidino, azabicyclononyl and piperidino of the structure:



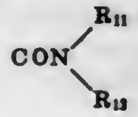
where

Y_1 is selected from the group consisting of hydrogen and methyl;

Y_2 is selected from the group consisting of hydrogen, methyl, ethyl and $—COOR_9$ where

R_9 is alkyl of 1 through 4 carbon atoms; and

Y_3 is selected from the group consisting of hydrogen, alkyl of 1 through 9 carbon atoms, cycloalkylalkyl of 4 through 9 carbon atoms, hydroxy, hydroxyalkyl of 2 through 9 carbon atoms, alkoxyalkyl of 3 through 9 carbon atoms, trifluoromethyl, $—COOR_{10}$ where R_{10} is alkyl of 1 through 4 carbon atoms,



$$CON\begin{matrix}R_{11}\\R_{12}\end{matrix}$$

where R_{11} and R_{12} are each separately selected from the group consisting of hydrogen and alkyl of 1 through 4 carbon atoms, dialkylaminoalkyl of 3 through 8 carbon atoms where each alkyl in the dialkyl portion has 1 through 2 carbon atoms and the remaining alkyl has 1 through 4 carbon atoms, pyrrolidinomethyl, benzyl, phenethyl, and o-, m- and p-tolylethyl, with the limitation that when Y_1 is CH_3, Y_2 and Y_3 must be H;

R_3 is selected from the group consisting of hydrogen and alkyl of 1 through 3 carbon atoms, trifluoromethyl, fluorine, chlorine, bromine, sulfur pentafluoride and pyridyl;

R_4 is selected from the group consisting of hydrogen, chlorine, bromine, fluorine, alkyl of 1 through 3 carbon atoms, trifluoromethyl, sulfur pentafluoride, alkoxy of 1 through 3 carbon atoms, amino, cyano and nitro; and

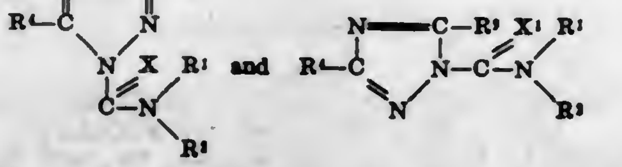
R_5 is selected from the group consisting of hydrogen, alkyl of 1 through 3 carbon atoms, trifluoromethyl, fluorine, chlorine, and bromine with the limitation that when X is sulfur, R_5 must be hydrogen and when R_2 is other than methyl, R_5 must be hydrogen; with the further limitation that R_3, R_4 and R_5 together have a maximum total of 6 carbon atoms.

2. 4-chloro-1-(4-isopropyl-1-piperidinocarbonyl)pyrazole.

3,308,131
TERTIARY CARBAMYL TRIAZOLES

Blaine C. McKusick, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 9, 1964, Ser. No. 381,530
9 Claims. (Cl. 260—294)

1. A 1,2,4-triazole selected from the class consisting of



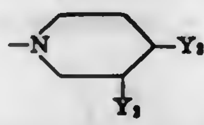
wherein

(A) X is selected from the group consisting of O and S;

(B) R^1 and R^2 are selected from the group consisting of

  (1) individually, groups wherein R^1 is methyl, and R^2 is of up to 8 carbon atoms and is selected from the group consisting of alkyl, alkenyl, alkoxyalkyl, hydroxyalkyl, methylalkylamino, alkylaminoalkyl, dialkylaminoalkyl, carboxyalkyl, carbalkoxyalkyl, carbonamidoalkyl and cyanoalkyl, and

  (2) joined together, groups which form a heterocyclic ring with the carbamyl nitrogen selected from the group consisting of morpholino, pyrrolidyl, piperidyl, dehydropiperidyl, azabicyclononyl, α-methylpiperidyl, and substituted piperidyl of the structure



  wherein

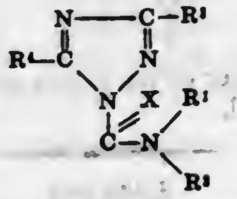
  Y_2 is selected from the group consisting of hydrogen, methyl, ethyl and $—COOR^5$ where R^5 is alkyl of 1–4 carbon atoms, and

  Y_3 is selected from the group consisting of hydrogen, hydroxyl, alkyl of 1–4 carbon atoms, cycloalkylalkyl of 4–9 carbon atoms, hydroxyalkyl of 2–9 carbon atoms, alkoxyalkyl of 3–9 carbon atoms, trifluoromethyl, $COOR^5$ where R^5 is alkyl of 1–4 carbon atoms, carbonamido having up to two 1–4 carbon alkyl groups attached to the amide nitrogen, dialkylaminoalkyl where each alkyl of the dialkyl portion has up to 2 carbon atoms and the remaining alkyl up to 4 carbon atoms, pyrrolidinomethyl, and arylalkyl of 7–9 carbon atoms,

  and wherein at most one of Y_2 and Y_3 is hydrogen; and

(C) R^3 and R^4 together contain up to 14 carbon atoms free of aliphatic unsaturation and are selected from the group consisting of hydrogen, halogen, sulfonyl, mercapto, cyano, hydrocarbyl, halohydrocarbyl, nitrohydrocarbyl, hydrocarbyloxycarbonylhydrocarbyl, hydrocarbylsulfonyl, hydrocarbylmercapto, nitrohydrocarbylmercapto, halohydrocarbylmercapto, aminohydrocarbylmercapto and hydrocarbyloxyhydrocarbyl.

2. A 1,2,4-triazole of the formula



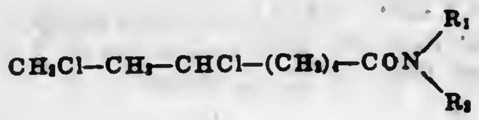
wherein

X is oxygen,
R^1 is $—CH_3$,
R^2 is alkyl of up to eight carbon atoms,
R^3 is hydrogen, and
R^4 is hydrogen.

3,308,132
6,8-DITHIOOCTANOYL AMIDES AND INTERMEDIATES

Masao Ohara, Ibaraki, Kiyotsugu Yamamoto, Osaka, Yoshio Deguchi, Suita, and Kichizo Endo, Minamiku, Kyoto, Japan, assignors to Fujisawa Pharmaceutical Co., Ltd., Osaka, Japan, a company of Japan
No Drawing. Filed Oct. 11, 1960, Ser. No. 61,822
Claims priority, application Japan, Oct. 13, 1959, 34/32,467, 34/32,468, 34/32,469, 34/32,471
13 Claims. (Cl. 260—294.8)

1. A 6,8-dichlorooctanoyl amide of the formula



$$CH_2Cl{-}CH_2{-}CHCl{-}(CH_2)_4{-}CON\begin{matrix}R_1\\R_2\end{matrix}$$

wherein

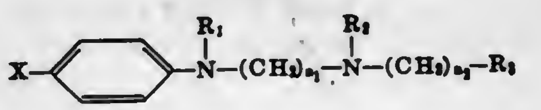
R_1 and R_2 are selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, cyclohexyl, lower alkyl substituted cyclohexyl, decalyl, phenyl, lower alkyl substituted phenyl, phenyl substituted lower alkylene, thiazolyl, pyridyl, lower alkyl substituted pyridyl, and the residues of isonicotinic acid hydrazide, α-amino acids, and lower alkyl esters of α-amino acids.

7. 1-isonicotinoyl-2-(6,8-dichlorooctanoyl)-hydrazine.

3,308,133
NOVEL ALKYLENE DIAMINE DERIVATIVES

Willem Jacob van der Burg, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey
No Drawing. Filed Jan. 11, 1963, Ser. No. 250,782
Claims priority, application Netherlands, Jan. 18, 1962, 273,727
3 Claims. (Cl. 260—296)

1. A compound of the formula:



$$X{-}C_6H_4{-}\overset{R_1}{\overset{|}{N}}{-}(CH_2)_{n_1}{-}\overset{R_2}{\overset{|}{N}}{-}(CH_2)_{n_2}{-}R_3$$

wherein:

R_1 is selected from the group consisting of phenyl, benzyl, pyridyl and pyrimidyl,

R_2 is selected from the group consisting of hydrogen and a lower alkyl,

R_3 is selected from the group consisting pyrazole, imidazole and pyridine,

n_1 is an integer selected from 2 and 3,

n_2 is an integer selected from 1, 2, 3, and 4,

X is selected from the group consisting of hydrogen, halogen and lower alkoxy, and

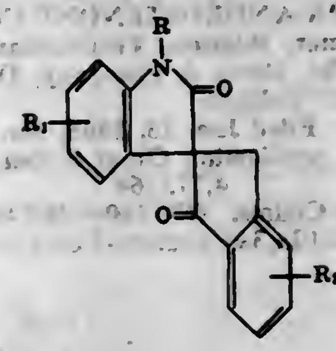
pharmaceutically acceptable acid-addition salts thereof.

2. N-p-halo-phenyl-N - benzyl-N'-methyl-N'-[(pyridyl-2)-ethyl-2]-ethylene diamine.

3,308,134
SPIRO(INDAN-2,3'-INDOLINE)-1,2'-DIONES

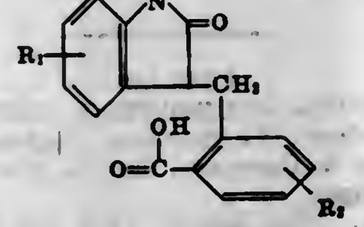
Janis Plostnieks, Philadelphia, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,270
14 Claims. (Cl. 260—325)

1. A spiro(indan-2,3'-indoline)-1,2'-dione of the formula:



wherein R is a member selected from the group consisting of hydrogen and lower alkyl; R_1 is a member selected from the group consisting of hydrogen, lower alkyl and chloro; and R_2 is a member selected from the group consisting of hydrogen, lower alkoxy and chloro.

11. 2-[(2'-oxo-3'-indolyl)-methyl]benzoic acid of the formula:



wherein R is a member selected from the group consisting of hydrogen and lower alkyl; R_1 is a member selected from the group consisting of hydrogen, lower alkyl and chloro; and R_2 is a member selected from the group consisting of hydrogen, lower alkoxy and chloro.

3,308,135
1-DIETHYLAMINO-6-PHTHALIMIDOHEXAN-3-ONE

Alexander Bertus Arnold Jansen, Burnham, and Kenneth Eric Vincent Spencer, Emsworth, England, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 1, 1965, Ser. No. 436,372
Claims priority, application Great Britain, Mar. 3, 1964, 9,024/64
1 Claim. (Cl. 260—326)

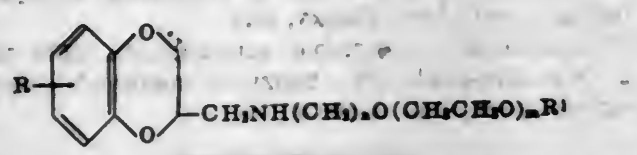
1-diethylamino-6-phthalimidohexan-3-one.

3,308,136

2-SUBSTITUTED-1,4-BENZODIOXANES

Maurice Shapero, Edgware, and Peter Nicholl Green, Pinner, England, assignors to Ward Blenkinsop & Company Limited, Middlesex, England, a British company
No Drawing. Filed Aug. 31, 1964, Ser. No. 393,429
Claims priority, application Great Britain, Sept. 3, 1963, 34,778/63
9 Claims. (Cl. 260—340.3)

1. A member selected from the group consisting of a compound of the formula



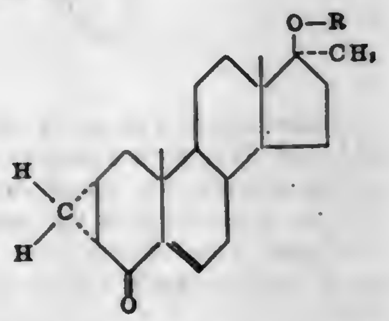
and pharmaceutically acceptable acid addition salts thereof, in which R is selected from the group consisting of hydrogen and halogen and alkyl and alkoxy having one to six carbon atoms, R¹ is alkyl having one to six carbon atoms, *n* is an integer which is greater than zero but less than four and *m* is an integer which is greater than zero but less than three.

3,308,137

CYCLOPROPA-ANDROSTENONE COMPOUNDS

Peter John Palmer, Whitton, Twickenham, England, assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed Jan. 15, 1965, Ser. No. 425,948
Claims priority, application Great Britain, Feb. 4, 1964, 4,773/64
4 Claims. (Cl. 260—397.4)

1. Cyclopropa-[2α,3α]-androst-5-en-4-one compounds of the formula:



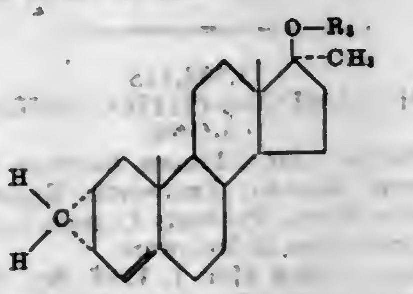
where R is a member of the group consisting of hydrogen and lower alkanoyl.

3,308,138

CYCLOPROPA-ANDROSTENE COMPOUNDS

Peter John Palmer, Twickenham, England, assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed Jan. 15, 1965, Ser. No. 425,928
Claims priority, application Great Britain, Feb. 4, 1964, 4,774/64
8 Claims. (Cl. 260—397.5)

1. A member of the group consisting of cyclopropa-[2α,3α]-androst-4-en-17β-ol, cyclopropa-[2α,3α]-19-nor-androst-4-en-17β-ol and cyclopropa-[2α,3α]-androst-4-ene compounds of the formula:



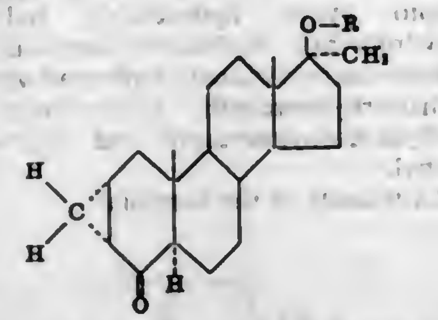
where R is a member of the group consisting of hydrogen and methyl, and R₂ is a member of the group consisting of hydrogen and lower alkanoyl.

3,308,139

CYCLOPROPA-ANDROSTANONE COMPOUNDS

Peter John Palmer, Whitton, Twickenham, England, assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed Jan. 15, 1965, Ser. No. 425,930
Claims priority, application Great Britain, Feb. 4, 1964, 4,472/64
4 Claims. (Cl. 260—397.4)

1. Cyclopropa-[2α,3α]-5α-androstan-4-one compounds of the formula:



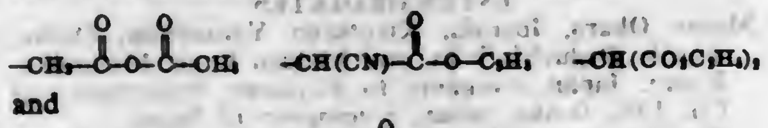
where R is a member of the group consisting of hydrogen and lower alkanoyl.

3,308,140

CHAIN SUBSTITUTED HIGHER FATTY ACIDS

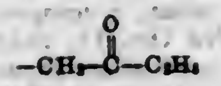
Edward T. Roe, Flourtown, and Dolores A. Konen and Daniel Swern, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Agriculture
No Drawing. Filed June 24, 1963, Ser. No. 290,261
9 Claims. (Cl. 260—404)

1. A compound of the formula $\mathrm{A{-}CH_2{-}(CH_2)_x{-}COOR'}$ wherein R′ is a short carbon chain alkyl group and A is selected from the group consisting of



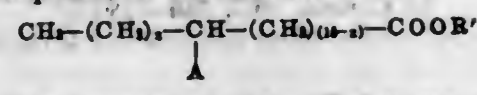
$$-\mathrm{CH_2{-}\overset{O}{\overset{\|}{C}}{-}O{-}\overset{O}{\overset{\|}{C}}{-}CH_3}\qquad -\mathrm{CH(CN){-}\overset{O}{\overset{\|}{C}}{-}O{-}C_2H_5}\qquad -\mathrm{CH(CO_2C_2H_5)_2}$$

and



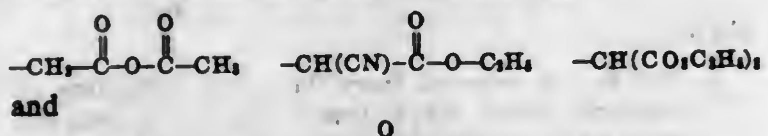
$$-\mathrm{CH_2{-}\overset{O}{\overset{\|}{C}}{-}C_6H_5}$$

5. A compound of the formula



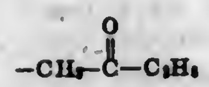
$$\mathrm{CH_3{-}(CH_2)_x{-}\underset{\underset{A}{|}}{C}H{-}(CH_2)_{(15-x)}{-}COOR'}$$

where R′ is a short carbon chain alkyl group, *x* is a number selected from the group consisting of 7 and 8, and A is selected from the group consisting of



$$-\mathrm{CH_2{-}\overset{O}{\overset{\|}{C}}{-}O{-}\overset{O}{\overset{\|}{C}}{-}CH_3}\qquad -\mathrm{CH(CN){-}\overset{O}{\overset{\|}{C}}{-}O{-}C_2H_5}\qquad -\mathrm{CH(CO_2C_2H_5)_2}$$

and



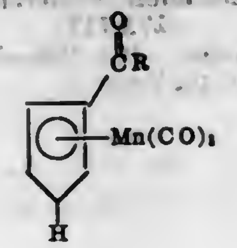
$$-\mathrm{CH_2{-}\overset{O}{\overset{\|}{C}}{-}C_6H_5}$$

3,308,141

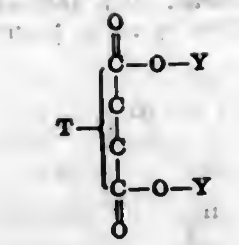
PROCESS FOR PREPARING ACYLCYCLOPENTADIENYL MANGANESE TRICARBONYL ESTER CONDENSATION PRODUCTS

John Kozikowski, Walled Lake, Mich., and Michael Cais, Haifa, Israel, assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Original application Dec. 28, 1960, Ser. No. 78,820. Divided and this application May 3, 1965, Ser. No. 463,427
2 Claims. (Cl. 260—429)

1. Process comprising reacting an acylcyclopentadienyl manganese tricarbonyl compound having the formula:



in which R is a hydrocarbon group containing from one to 20 carbon atoms and the cyclopentadienyl ring can be substituted with hydrocarbon groups containing from one to 8 carbon atoms with an ester having the formula:



in which Y is an alkyl group containing from one to about 8 carbon atoms and T is a hydrocarbon group containing from one to about 18 carbon atoms and which is connected to one of the 2 middle carbon atoms in the ester molecule, said process being carried out in the presence of sodium hydride as a condensing agent.

3,308,142

PRODUCTION OF ORGANOTIN-PHOSPHORUS COMPOUNDS

Harold Coates, Wombourn, and Peter Albert Theodore Hoye, Stourbridge, England, assignors to Albright & Wilson (Mfg.) Limited, Oldbury, Warwickshire, England
No Drawing. Filed Aug. 15, 1963, Ser. No. 302,448
Claims priority, application Great Britain, Aug. 15, 1962, 31,270/62
15 Claims. (Cl. 260—429.7)

1. The process which comprises mixing (i) an organotin halide having the formula R_nSnX_{4-n} wherein R is a hydrocarbon radical, X is halide selected from the group consisting of chlorine bromine and iodine, and $n=1-3$ with (ii) a phosphorus-containing ester selected from the group consisting of trialkyl phosphate and dialkyl phosphite esters; heating the so-formed reaction mixture to at least about 100° C., thereby forming alkyl halide and organotin ester; and separating said alkyl halide from said reaction mixture.

3,308,143

PROCESS FOR DECOMPOSING TRIALKYLALUMINUM COMPLEX

Ronald L. Poe and Billy J. Williams, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Nov. 14, 1962, Ser. No. 237,558
6 Claims. (Cl. 260—448)

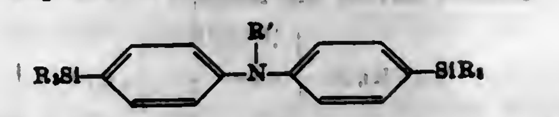
1. A process for decomposing a complex material containing a 2:1 complex of a trialkylaluminum in which the alkyl radicals contain an average of about 2 to 5 carbon atoms and a compound having the formula R_nMX, wherein R is an alkyl radical containing an average of about 1 to 5 carbon atoms; M is an element selected from the group consisting of nitrogen, arsenic, phosphorus, sulfur, selenium, and tellurium; X is a halogen; and *n* varies from 3 to 4, depending on the particular element M, which comprises contacting said complex with a hydrocarbon liquid for a period of time sufficient to remove trialkylaluminum from the 2:1 complex material and at a temperature between 100 and 200° C. sufficient to remove trialkylaluminum from said 2:1 complex material but less than the boiling point of said hydrocarbon liquid at a pressure sufficient to maintain the hydrocarbon in the liquid phase.

3,308,144

4,4′-BIS(TRIORGANOSILYL)DIPHENYLALKYLAMINES

Matthew J. Napoli, Chicago, Ill., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed June 17, 1963, Ser. No. 288,526
6 Claims. (Cl. 260—448.2)

1. A compound of the formula



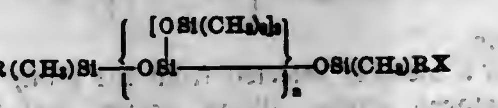
wherein R is a monovalent hydrocarbon group free of aliphatic unsaturation containing from 1 to 18 inclusive carbon atoms and R′ is an alkyl group containing from 1 to 18 inclusive carbon atoms.

3,308,145

SILOXANES

Charles W. Lentz, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Aug. 28, 1963, Ser. No. 305,209
14 Claims. (Cl. 260—448.2)

1. A siloxane having the general formula



$$\mathrm{XR(CH_3)Si}\left\{\mathrm{O\overset{[OSi(CH_3)_3]}{\overset{|}{Si}}}\right\}_n\mathrm{OSi(CH_3)RX}$$

wherein

X is a member selected from the group consisting of the hydrogen atom, chlorine atom, hydroxyl group and alkoxy groups containing from 1 to 4 carbon atoms,
R is a member selected from the group consisting of the phenyl and methyl groups, and
n is an integer equal to at least 1.

3,308,146

POLYSILYLMETHANES AND THEIR METHOD OF PREPARATION

Robert L. Merker, Pittsburgh, Pa., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Dec. 3, 1962, Ser. No. 241,534
6 Claims. (Cl. 260—448.2)

1. A method comprising adding a compound selected from the group consisting of $D_aBr_bCCl_{4-b-a}$ and Ph_xCX_{4-x}, in which D is selected from the group consisting of methyl and hydrogen, *b* is an integer from 1 to 4 inclusive, *a* is 0 to 1 inclusive, *x* is 1 to 2 inclusive and X is a halogen having an atomic weight above 19, to a mixture of magnesium and a silane of the formula Me_2RSiCl in which R is selected from the group consisting of methyl, hydrogen and OR′ radicals where R′ is an alkyl radical of 1 to 3 carbon atoms in a solvent comprising tetrahydrofuran in amount such that there is at least 1 mol of silane per gram atom of magnesium whereby there is obtained a compound of the formula

$$[Me_2RSi]_nCY_{4-n}$$

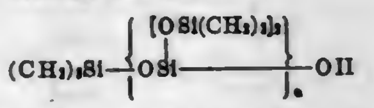
in which *n* is from 2 to 4 inclusive, when *n* is 2, Y is selected from the group consisting of phenyl and hydrogen, when *n* is 3, Y is selected from the group consisting of phenyl, methyl and hydrogen and R is as above defined.

2. A compound of the formula $[Me_2RSi]_nCR''_{4-n}$, in which *n* is an integer from 2 to 4 inclusive, R is selected from the group consisting of methyl, hydrogen and OR′ radicals where R′ is an alkyl radical of 1 to 3 inclusive carbon atoms and when present R″ is selected from the group consisting of phenyl and hydrogen, at least one R″ is a phenyl radical, and no more than 1 R″ radical per molecule being hydrogen.

3,308,147
HYDROXYLATED TRIMETHYLSILOXY-SILOXANES

Charles W. Lentz, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Aug. 28, 1963, Ser. No. 305,215
3 Claims. (Cl. 260—448.2)

1. Siloxanes having the formula



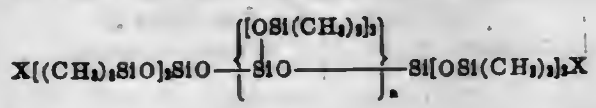
$$(CH_3)_3Si-\left\{\begin{matrix}[OSi(CH_3)_3]_2\\ |\\ OSi-\end{matrix}\right\}_n-OH$$

wherein *n* is an integer equal to at least 2.

3,308,148
CHLORINE, HYDROXY AND ALKOXY END-BLOCKED TRIMETHYLSILOXYSILOXANES

James R. Hahn and Charles W. Lentz, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Aug. 28, 1963, Ser. No. 305,216
19 Claims. (Cl. 260—448.2)

1. Siloxanes having the general formula



$$X[(CH_3)_3SiO]_2SiO-\left\{\begin{matrix}[OSi(CH_3)_3]_2\\ |\\ SiO-\end{matrix}\right\}_n-Si[OSi(CH_3)_3]_2X$$

wherein:

X is a member selected from the group consisting of halogen atoms, alkoxy groups and the hydroxyl group, and

n is zero or an integer.

3,308,149
ORGANIC POLYALKYLENEOXY SILICATES

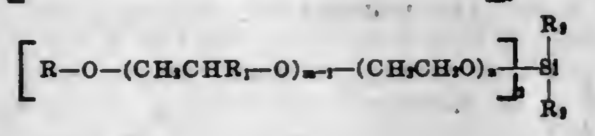
Leslie M. Schenck, Mountainside, Leslie G. Nunn, Jr., Metuchen, and Robert E. Leary, Westfield, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 13, 1963, Ser. No. 287,510
6 Claims. (Cl. 260—448.8)

1. An organic polyalkyleneoxy silicate selected from the class consisting of those characterized by the following formulae:

(1) $$\left[R-O-(CH_2CHR_1-O)_{m-1}-(CH_2CH_2O)_n\right]_4Si$$

(2) $$\left[R-O-(CH_2CHR_1-O)_{m-1}-(CH_2CH_2O)_n\right]_3SiR_2$$

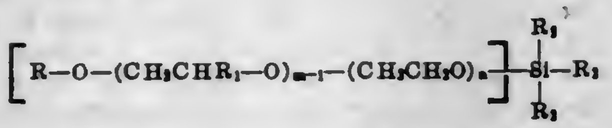
(3)



$$\left[R-O-(CH_2CHR_1-O)_{m-1}-(CH_2CH_2O)_n\right]_2\begin{matrix}R_2\\ |\\ Si\\ |\\ R_2\end{matrix}$$

and

(4)



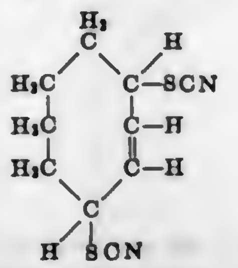
$$\left[R-O-(CH_2CHR_1-O)_{m-1}-(CH_2CH_2O)_n\right]\begin{matrix}R_2\\ |\\ Si-R_2\\ |\\ R_2\end{matrix}$$

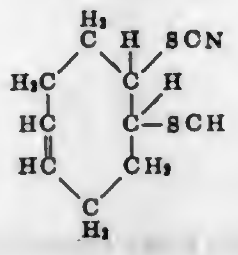
wherein R represents a member selected from the class consisting of alkyl of from 10 to 28 carbon atoms and aryl of from 6 to 14 carbon atoms, said aryl containing as a substituent a member selected from the class consisting of hydrogen, mono-, di- and tri-alkyl groups of from 1 to 18 carbon atoms, R_1 represents a member selected from the class consisting of hydrogen, methyl and ethyl, the R_2's represent members independently selected from the class consisting of alkoxy of from 1 to 27 carbon atoms and aryloxy of from 6 to 14 carbon atoms, said alkoxy and aryloxy containing as a substituent a member selected from the class consisting of hydrogen, halogen, alkyl of from 1 to 22 carbon atoms and polyethyleneoxy chain having from 5 to 35 units of ethylene oxide, and *m* and *n* represent a positive integer of from 1 to 150.

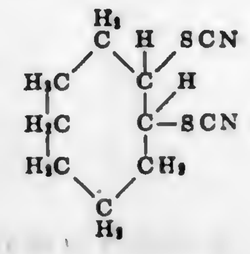
3,308,150
DITHIOCYANATE OF C_8 CYCLO OLEFINIC HYDROCARBONS AND METHODS

Eldon E. Stahly, 2812 NE. 27th St., Pompano Beach, Fla. 33062
No Drawing. Filed July 24, 1963, Ser. No. 297,455
6 Claims. (Cl. 260—454)

1. The dithiocyanate selected from the group consisting of







3,308,151
PROCESS FOR THE OXIDATION OF OLEFIN-AMMONIA MIXTURES TO UNSATURATED NITRILES

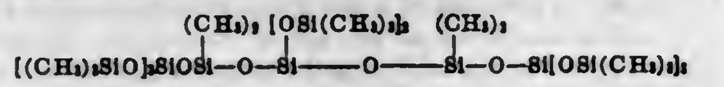
James L. Callahan, Cuyahoga County, Ohio, and Berthold Gertisser, Essex County, N.J., assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Jan. 11, 1965, Ser. No. 462,460
6 Claims. (Cl. 260—465.3)

1. A process for the oxidation of propylene and isobutylene to form acrylonitrile and methacrylonitrile, respectively, which comprises the step of contacting in the vapor phase at a temperature within the range from about 550 to about 1100° F. a mixture of ammonia, oxygen and an olefin selected from the group consisting of propylene, isobutylene, and mixtures thereof in a molar ratio of olefin to ammonia of from about 1:0.05 to about 1:5, and a molar ratio of oxygen to olefin within the range from about 0.5:1 to about 4:1, in the presence of a catalyst composition consisting essentially of an active catalytic oxide complex of antimony and uranium as an essential catalytic ingredient, the Sb:U atomic ratio being within the range from about 1:50 to about 99:1, said complex being formed by heating the mixed oxides of antimony and uranium in the presence of oxygen at an elevated temperature of above 500° F. but below their melting point for a time sufficient to form said active catalytic oxide complex of antimony and uranium.

3,308,152
1,1,1,3,3,5,5,5-OCTA-(TRIMETHYLSILOXY)-2,2,4,4-TETRAMETHYLPENTASILOXANE

Charles W. Lentz, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Aug. 28, 1963, Ser. No. 305,191
1 Claim. (Cl. 260—448.2)

1,1,1,3,3,5,5,5-octa(trimethylsiloxy)-2,2,4,4 - tetramethylpentasiloxane which has the formula



$$[(CH_3)_3SiO]_3SiO\overset{(CH_3)_2}{Si}-O-\overset{[OSi(CH_3)_3]_2}{Si}-O-\overset{(CH_3)_2}{Si}-O-Si[OSi(CH_3)_3]_3$$

3,308,153
PROCESS FOR PRODUCTION OF BIS (β-HYDROXYETHYL) TEREPHTHALATE

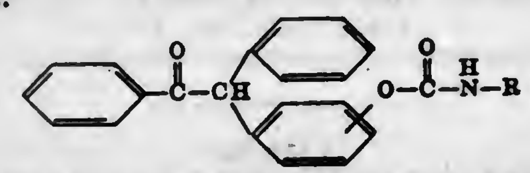
Seikichi Matsuhisa, Yoshio Miyama and Tadao Tsutsumi, Shizuoka-ken, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Aug. 12, 1963, Ser. No. 301,594
Claims priority, application Japan, Aug. 15, 1962, 37/33,768; Sept. 13, 1962, 37/39,619; Oct. 9, 1962, 37/44,619
2 Claims. (Cl. 260—475)

1. Process for production of bis (β-hydroxyethyl) terephthalate which comprises reacting terephthalonitrile, water and ethylene glycol in the presence of at least one metallic compound as a catalyst selected from the group consisting of corresponding oxides and salts of copper, zinc, cadmium, mercury, nickel, manganese and cobalt, at a temperature within the range of from about 100 to about 300° C.

3,308,154
PHENYL N-ALKYLCARBAMYLOXY-BENZHYDRYL KETONES

Edward L. Schumann, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Dec. 27, 1963, Ser. No. 334,044
5 Claims. (Cl. 260—479)

1. A phenyl carbamyloxybenzhydryl ketone of the formula:



wherein R is a lower-alkyl radical having from 1 to 6 carbon atoms, inclusive.

3,308,155
PREPARATION OF 3,3-DISUBSTITUTED CARBOXYLIC ACIDS

Allan J. Lundeen, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Filed Feb. 25, 1963, Ser. No. 260,846
8 Claims. (Cl. 260—540)

1. A method of preparing a 3,3-disubstituted carboxylic acid in which the 3 position substituents are monovalent hydrocarbon radicals, which method comprises reacting trialkylaluminum with a 3,3-disubstituted propiolactone in which the 3 position substituents are monovalent hydrocarbon radicals in liquid phase and at a temperature in the range of −80° to +100° C., thereby forming a dialkylaluminum salt of the corresponding 3,3-disubstituted carboxylic acid; and then hydrolyzing the aluminum salt to the 3,3-disubstituted carboxylic acid.

3,308,156
PREPARATION OF AMINOBIURET SALTS

Harold T. Gerry, Petersburg, and Jamell Ameen, Hopewell, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 3, 1964, Ser. No. 394,332
14 Claims. (Cl. 260—554)

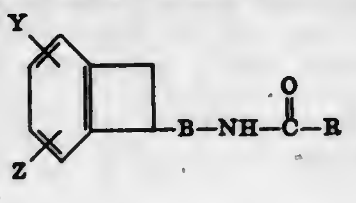
1. A process for the production of aminobiuret salts which comprises reacting nitrobiuret with hydrogen at a pressure of at least 2000 p.s.i.g. in an aqueous medium in the presence of a catalyst selected from the group consisting of rhodium on alumina and powdered platinum dioxide and an effective amount of an oxidizing acid.

3,308,157
N-(BENZOCYCLOBUTENE-1-LOWERALKYL)-CARBOXYLIC ACID AMIDES

Jerry E. Robertson, St. Paul, Minn., and Joseph A. Skorcz, Milwaukee, Wis., assignors to Colgate-Palmolive Company, a corporation of Delaware
No Drawing. Filed Aug. 7, 1964, Ser. No. 388,299
3 Claims. (Cl. 260—562)

2. N-acetyl-1-aminoethyl-benzocyclobutene.

3. A compound of the formula

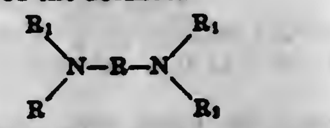


in which B is lower alkylene and R is a member of the group consisting of hydrogen, lower alkyl, phenyl, phenyl-lower alkyl, cycloalkyl having 3 to 7 carbons in the ring, cycloalkyl-lower alkyl having 3 to 7 carbons in the ring and 2-(5-pyrrolidone), and Y and Z are hydrogen, hydroxy, lower alkoxy, methylenedioxy or trifluoromethyl.

3,308,158
DIAMINO-POLYCHLORODIPHENYL COMPOUNDS

Laszlo Szobel, Grenoble, Isere, and Ludovic Parvi, Pont-de-Claix, Isere, France, assignors to Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieres Electriques d'Ugine, Paris, France, a corporation of France
No Drawing. Filed June 6, 1963, Ser. No. 285,869
Claims priority, application France, June 7, 1962, 899,999
6 Claims. (Cl. 260—570.5)

1. A compound of the formula

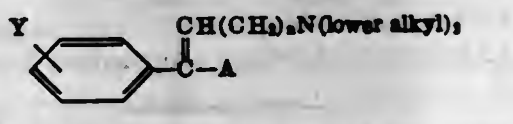


in which R is a diphenyl radical containing from 6 to 8 chlorine atoms and R_1 and R_2 are selected from the group consisting of hydrogen, alkyl radical having from 2 to 8 carbon atoms, hydroxy lower alkyl radical, allyl, benzyl, $-(CH_2)_n-[NH-(CH_2)_n]_m-NH_2$, in which *n* is between 2 and 6 and *m* is between 0 and 3, not more than one of R_1 and R_2 being hydrogen.

3,308,159
1-PHENYL-1-CYCLOALKYL-ω-AMINO-1-ALKYLENE COMPOUNDS

Karl J. Doebel, Ossining, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 20, 1964, Ser. No. 431,236
7 Claims. (Cl. 260—570.5)

1. Compounds of the class consisting of a base of the formula



wherein;

A is cycloalkyl selected from the group consisting of cyclopentyl and cyclohexyl;

Y is selected from the group consisting of chlorine, bromine, trifluoromethyl, lower alkyl and lower alkoxy;

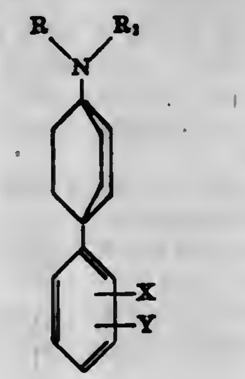
n is an integer of 2 to 5

and the non-toxic, pharmaceutically acceptable acid addition salts thereof.

3,308,160
4-PHENYLBICYCLO[2.2.2]OCTANE-1-AMINES AND SALTS THEREOF

Jack A. Snyder, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 21, 1965, Ser. No. 449,896
19 Claims. (Cl. 260—570.5)

1. A compound selected from the group consisting of those of the formula



where

R and R_1 are selected from the group consisting of hydrogen alkyl of 1 through 4 carbon atoms and allyl, and where R and R_1 can be joined together to form $—(CH_2)_n—$ where *n* is a positive integer of 4 through 6;

X and Y are selected from the group consisting of hydrogen, methyl, ethyl, cyano, chlorine, bromine, fluorine, trifluoromethyl, nitro, amino, monoalkylamino where said alkyl has 1 through 4 carbons, dialkylamino where said alkyl has 1 through 4 carbons, hydroxy, alkoxy of 1 through 4 carbons, carboxy and alkoxycarbonyl where said alkyl has 1 through 2 carbons; and

non-toxic salts of the basic compounds of said formula.

3,308,161

ALKALI METAL-DIMETHYL DODECYL AMINE SALTS OF OXYACIDS OF PHOSPHOROUS AND SULFUR

Kwan-Ting Shen, St. Louis, Mo., assignor to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 21, 1962, Ser. No. 196,861

4 Claims. (Cl. 260—583)

1. The inorganic amine salt consisting of the reaction product formed by reacting (1) an alkali metal salt of phosphorous acid, phosphoric acid, sulfurous acid or sulfuric acid and (2) dimethyl dodecyl amine.

3,308,162

POLYBENZOYL POLY-(2-PROPYNYLOXY) BENZENE

George B. Sterling, Mogadore, Ohio, and Chester E. Pawloski, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,691

2 Claims. (Cl. 260—591)

1. 1,3-dibenzoyl-2,4-bis(2-propynyloxy)benzene.
2. 1,3,5-tribenzoyl-2,4-bis(2-propynyloxy)benzene.

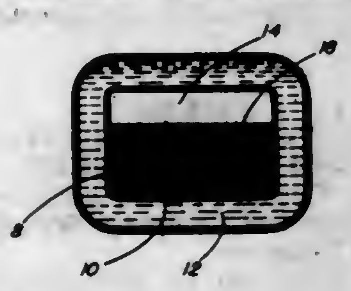
3,308,163

PROCESS FOR PREPARING PEROXY COMPOUNDS

Wilbur H. McKellin, Buffalo, N.Y., assignor to Wallace and Tiernan, Inc., Buffalo, N.Y., a corporation of Delaware

Filed Mar. 9, 1964, Ser. No. 350,185

7 Claims. (Cl. 260—610)



1. A process for the preparation of peroxy compounds which process comprises:

reacting an olefin having at least 3 carbon atoms directly with hydrogen peroxide in the presence of an acidic solid ion exchange resin catalyst.

7. A process for preparing t-butyl hydroperoxide which process comprises:

reacting isobutylene directly with 90% hydrogen peroxide at a temperature of about —30° to —20° C., in the presence of a solid sulfonic acid ion exchange resin, catalyst, and

separating solid catalyst to recover a reaction product mixture including t-butyl hydroperoxide.

3,308,164

1,3,5-TRICYCLOHEXYLBENZENE MONOHYDROPEROXIDE

Alvin F. Shepard, Grand Island, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Feb. 23, 1966, Ser. No. 529,265

1 Claim. (Cl. 260—610)

1,3,5-tricyclohexylbenzene monohydroperoxide.

3,308,165

1,3,5-TRI-SECONDARY-BUTYLBENZENE MONOHYDROPEROXIDE

Alvin F. Shepard, Grand Island, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Feb. 23, 1966, Ser. No. 529,266

1 Claim. (Cl. 260—610)

1,3,5-tri-secondary-butylbenzene monohydroperoxide.

3,308,166

PREPARATION OF ORGANIC POLYSULPHIDES

Michel Biensan and Pierre Bapseres, Pau, France, assignors to Societe Nationale des Petroles d'Aquitaine, Paris, France

No Drawing. Filed May 18, 1964, Ser. No. 368,403

Claims priority, application France, May 20, 1963, 935,385

5 Claims. (Cl. 260—608)

1. A process for producing organic polysulphides, which consists in making react a mercaptan with sulphur at a temperature comprised between the ambient temperature and 150° C., a catalytic amount of an amine and a promoter constituted by an aliphatic alcohol being admixed with the mercaptan and the sulphur.

3,308,167

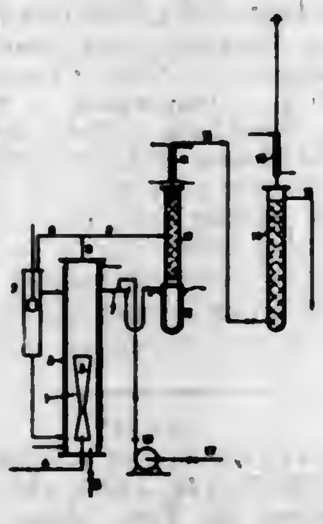
PROCESS FOR THE PRODUCTION OF PHENOL FROM BENZOIC ACID

Dino Costabello and Aldo Forni, Novara, and Piero Ramello, Turin, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

Filed Nov. 23, 1962, Ser. No. 239,458

Claims priority, application Italy, Nov. 27, 1961, 21,273/61

1 Claim. (Cl. 260—621)



In the process for the production of phenol by catalytic oxidation of benzoic acid with oxidizing gases at atmospheric pressure and temperatures of about 230–250° C. in the presence of 1 to 2% by weight of copper salts as catalyst and catalysis promoters, the improvement which comprises: carrying out the oxidation in reactors at least lined with Hastelloy C and in heat exchange relationship with a thermostatic liquid, with an oxidizing air flow corresponding to 2–20 liters per hour of oxygen per kg. of reaction mixture and with a steam flow corresponding to 100–250 g. per 100 g. of produced phenol, and diluting the mixture of entering oxidizing gases and steam with inert gases recycled from the exit gases to have in the exit gases a ratio, by volume, of inert gases and steam to phenol between 10:1 and 30:1 and draining off a portion of the reacted reaction mixture to prevent accumulation of pitches.

3,308,168

METHOD FOR EFFECTING ALKYL RING SUBSTITUTION OF PHENOLS EMPLOYING A SULFONATED POLYVINYL ARYL RESIN DERIVATIVE AS A CATALYST

Robert J. O'Neill, deceased, late of Arlington Heights, Ill., by Anthony Scariano, administrator, Park Forest, Ill., and Thomas C. Tesdahl, Creve Coeur, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 92,739, Mar. 2, 1961, now Patent No. 3,278,463, dated Oct. 11, 1966. This application Oct. 2, 1963, Ser. No. 314,088

14 Claims. (Cl. 260—624)

1. A method for effecting ring substitution of an alkylatable phenol which comprises heating in the presence of phenol a sulfonated aryl resin having an apparent acidity of from about 1 milliequivalent per gram to 6 milliequivalents per gram, the physical characteristics of said resin being such that it does not form a gel in the presence of phenol and is sufficiently porous that it can be readily permeated by organic liquids, said heating being conducted under dehydrating conditions such that water released during said heating is removed from the reaction mixture, and at a temperature within the range of from about 140 to 200° C. for a period of time sufficient to result in the apparent acidity of said resin being reduced at least about 3% but not more than about 90%, separating unreacted phenol present during said heating from said resin, and thereafter heating a mixture of an alkylatable phenol and an olefin in the presence of said resin at a temperature of from about 40° C. to 150° C.

3,308,169

PROCESS FOR FORMING OPTICALLY ACTIVE MENTHOL

Daniel Lerner, Clifton, N.J., and Basilio Pispisa, Naples, Italy, assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 17, 1963, Ser. No. 317,028

4 Claims. (Cl. 260—631)

1. A process for forming menthol rich in one optical antipode thereof which comprises reacting 3-p-menthene with diborane in the presence of an optically active ether solvent to form a boron complex of said 3-p-menthene, and hydrating said boron complex with alkali and hydrogen peroxide to form a mixture of menthol antipodes in which one antipode is present in a concentration greater than that at which it occurs in racemic menthol.

3,308,170

SUBSTANTIALLY LINEAR POLYDIENE ALCOHOLS HAVING MAJORITY OF HYDROXY GROUPS TERMINAL BY PREPARING POLYDIENE IN HYDROCARBON AND THEN USING ETHER MEDIUM DURING EPOXIDE ADDITION

Ervin G. Pritchett, Cincinnati, Ohio, and Noel L. Hofmann, University Park, Pa., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Aug. 28, 1963, Ser. No. 305,227

13 Claims. (Cl. 260—632)

1. A process for the preparation of substantially pure linear hydroxyl-terminated polydienes having a molecular weight in the range of about 500 to 10,000, characterized by a ratio of alkenyl to internal unsaturation within the range of about 0.1 up to 1, and in which more than about 92 percent of the polydiene chains are terminated with primary hydroxyl groups which comprises reacting at a temperature between about —60° and +10° C. a linear lithium-terminated polydiene with an olefin oxide in a solvent selected from the group consisting of ethers and hydrocarbon-ether mixtures and recovering said linear hydroxyl-terminated polydiene, said linear lithium-terminated polydiene being obtained by the reaction of a lithium compound with a diene in an ether-free hydrocarbon medium, said polydiene being selected from the group consisting of mono- and dilithium-terminated linear poly-1,3-butadiene, polyisoprene, poly-1,3-pentadiene, polychloroprene, poly-2,3-dimethyl-1,3-butadiene, and mono- and dilithium-terminated copolymers of styrene and said 1,3-dienes; said ether being selected from the group consisting of hydrocarbyl aliphatic ethers and hydrocarbyl aromatic ethers; and said olefin oxide being selected from the group consisting of ethylene oxide, propylene oxide, butylene oxide, and styrene oxide.

2. The process of claim 1 wherein said polydiene is poly-1,3-butadiene.

11. Hydroxyl-terminated polydiene hydrocarbons having a molecular weight in the range of about 500 to 10,000 characterized by a ratio of alkenyl to internal unsaturation within the range of about 0.1 up to 1 and in which more than about 92 percent of the polydiene chains are terminated with primary hydroxyl groups, said hydroxyl-terminated polydiene hydrocarbons being selected from the group consisting of substantially pure monools and substantially pure diols and being prepared by the process of claim 1.

12. The composition of claim 11 wherein the hydroxyl-terminated polydiene hydrocarbon is a substantially pure monool.

13. The composition of claim 11 wherein the hydroxyl-terminated polydiene hydrocarbon is a substantially pure diol.

3,308,171

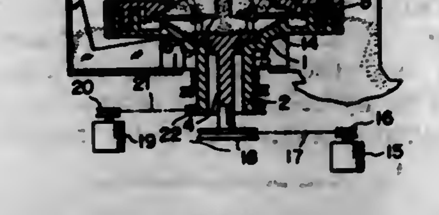
METHOD FOR PRODUCING GRANULAR OR POWDERY SORBITOL FROM SORBITOL SOLUTION

Hideo Oikawa, Yokohama-shi, Japan, assignor to Yokohama Seito Kabushiki Kaisha, Yokohama, Japan, a company of Japan

Filed May 19, 1965, Ser. No. 457,132

Claims priority, application Japan, July 17, 1964, 39/40,123

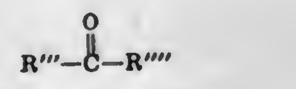
1 Claim. (Cl. 260—637)



A method for continuously producing granular sorbitol which comprises steps of: introducing sorbitol powder as seed onto a first surface rotating at high speed in a substantially horizontal plane so that said powder is projected radially outward under the action of centrifugal force forming a continuous and uniform thin layer on said first surface, said thin layer moving over the periphery of said rotating first surface in a defined first plane onto a second surface rotating coaxially with said first surface; introducing a sorbitol liquid solution of between about 70% to about 94% Brix heated to between about 60° C. to about 100° C. onto a third surface rotating at high speed in a plane substantially parallel to and coaxial with said first surface so as to render said liquid solution into a thin film under the action of centrifugal force, said thin film moving radially outward and over the periphery of said rotating third surface onto said rotating second surface defining a second plane, said second defined plane of liquid thin film from said rotating third surface intersecting said first defined plane of said powder thin layer from said first surface so that mixing of said thin film and thin layer takes place on said second surface, said liquid and powder adhering together as mixed particles; and projecting said mixed phase particles over the periphery of said rotating second surface by the action of centrifugal force in the presence of air so as to solidify said mixed phase particles.

3,308,172
ASYMMETRIC SYNTHESIS OF ALCOHOLS
Bernard Rudner, Pittsburgh, and Richard A. Bafford, Delmont, Pa., assignors to Koppers Company, Inc., a corporation of Delaware
No Drawing. Filed Aug. 22, 1962, Ser. No. 218,567
6 Claims. (Cl. 260—638)

1. Method of making optically active alcohols from unsymmetrically-substituted carbonyl compounds comprising reacting under anhydrous conditions a compound represented by the formula RMgZR′ wherein R is a hydrocarbon residue selected from the group consisting of alkyl, alkenyl, alkinyl, cycloalkyl and cycloalkenyl having from 1–28 carbon atoms; R′ is an optically active hydrocarbon residue selected from the group consisting of alkyl, alkenyl, alkinyl, cycloalkyl and cycloalkenyl having from 4–28 carbon atoms, at least one of said carbon atoms being asymmetric; and Z is a member selected from the group consisting of —O— and —N—R″, wherein R″ is a member selected from the group consisting of R and R′, with an unsymmetrically substituted carbonyl compound of the formula:



$$R'''-\overset{\overset{O}{\|}}{C}-R''''$$

wherein R‴ is a member selected from the group consisting of R and R′, and R⁗ is a member selected from the group consisting of R‴ and H, the members R, R‴ and R⁗ being individually selected so that the hydroxyl-containing carbon atom of the product alcohol is an asymmetric carbon atom, subjecting the reaction product to hydrolysis and recovering an optically active alcohol from the reaction mixture.

6. Method of making optically active 2,4-dimethyl-4-hexanol comprising reacting under anhydrous conditions at a temperature of —50 to 150° C. halide-associated, ether-solvated, optically active ethylmagnesium menthoxide and methylisobutyl ketone, subjecting the reaction mixture to hydrolysis and recovering optically active 2,4-dimethyl-4-hexanol from the reaction mixture.

3,308,173
PREPARATION OF PRIMARY ALCOHOLS FROM GLYCOLS BY TELOMERIZING α-OLEFIN WITH GLYCOL BORATE, HYDROLYSING TO OBTAIN TELOMER GLYCOL, DEHYDRATING THE GLYCOL TO OBTAIN ALKENOL AND THEN HYDROGENATING
Donald D. Emrick, Shaker Heights, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Aug. 30, 1961, Ser. No. 134,834
7 Claims. (Cl. 260—642)

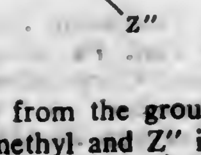
1. A process for producing olefin telomer primary aliphatic alcohols from alkylene glycols, which comprises forming an alkylene glycol borate from an alkylene glycol having from about three to about thirty carbon atoms in the molecule and having a primary hydroxyl group, telomerizing an α-olefin taxogen having from about two to about twelve carbon atoms in the molecule with the alkylene glycol borate in the presence of a free radical initiator capable of initiating the telomerization at a temperature at which an evolution of free radicals from the initiator is obtained, deborating the resulting boron-containing olefin telomer to produce the corresponding glycol, dehydrating the glycol at a temperature within the range from about 150 to about 300° C. which is below the temperature of dehydration of the primary hydroxyl group, and below the temperature of isomerization to remove the hydroxyl group at the branched chain telomeric group and produce an alkenol and hydrogenating the alkenol to produce a primary saturated aliphatic alcohol.

3,308,174
PRODUCTION OF TETRAFLUOROETHYLENE
John Wilmar Edwards, Middlesex, and Stanley Sherratt and Percy Arthur Small, Welwyn Garden City, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Jan. 17, 1963, Ser. No. 252,024
Claims priority, application Great Britain, Jan. 24, 1962, 2,663/62; June 22, 1962, 24,088/62
9 Claims. (Cl. 260—653.5)

1. In a process for the production of tetrafluoroethylene by the pyrolysis of monochlorodifluoromethane, the improvement which comprises passing under substantially adiabatic conditions a mixture of monochlorodifluoromethane and from three to nineteen moles of preheated steam per mole thereof through a zone in which the monochlorodifluoromethane is pyrolyzed at a temperature in the range of 600°–800° C., and then quenching the resulting mixture of pyrolysis products, sufficient heat being contained in the preheated steam to bring the gas mixture to the temperature of pyrolysis and the rate of passage through said zone being such that the steam and monochlorodifluoromethane are in contact with each other for a period of from 0.01 to 1 second.

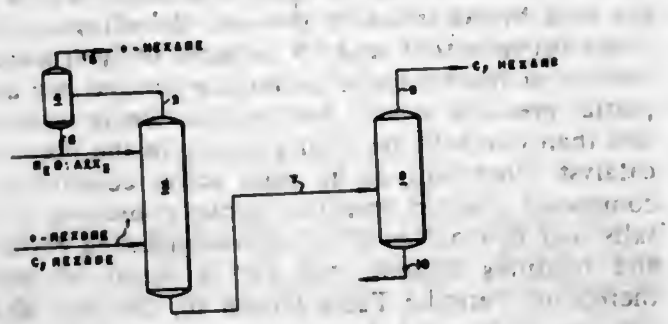
3,308,175
METHOD FOR PREPARATION OF FLUORINE SUBSITUTED DIENES
John T. Barr, Neshaminy, Pa., assignor to Pennsalt Chemicals Corporation, a corporation of Pennsylvania
No Drawing. Filed Apr. 7, 1954, Ser. No. 421,677
3 Claims. (Cl. 260—653.5)

2. A method for the preparation of a fluorine-substituted diene which comprises coupling a 1,1,2-trifluoroethane having three additional halogen substituents other than fluorine, one of these halogen atoms in the 2-position having an atomic weight at least equal to any of the other reactive halogen atoms present, with a compound represented by the formula



wherein Z′ is selected from the group consisting of hydrogen, fluorine and methyl and Z″ is selected from the group consisting of hydrogen and fluorine, with the proviso that when Z′ is methyl, Z″ is hydrogen; and treating the resulting product to effect the removal of one molecule of hydrogen halide and one molecule of halogen without removing the fluorine atoms.

3,308,176
SEPARATION OF PARAFFINS AND NAPHTHENES WITH AN ALUMINUM HALIDE ETHERATE SELECTIVE SOLVENT
David G. Walker, Baytown, Tex., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,219
4 Claims. (Cl. 260—666)



1. A method for separating close boiling paraffins and naphthenes from a mixture thereof which comprises extracting said mixture in a liquid-liquid extraction zone with a compound of the formula: $R_2O:AlX_3$, where R is selected from the group consisting of methyl and ethyl and X is selected from the group consisting of Cl and Br whereby a raffinate phase enriched with paraffins and an extract phase enriched with naphthenes is formed and separating said phases to recover said enriched paraffins and naphthenes.

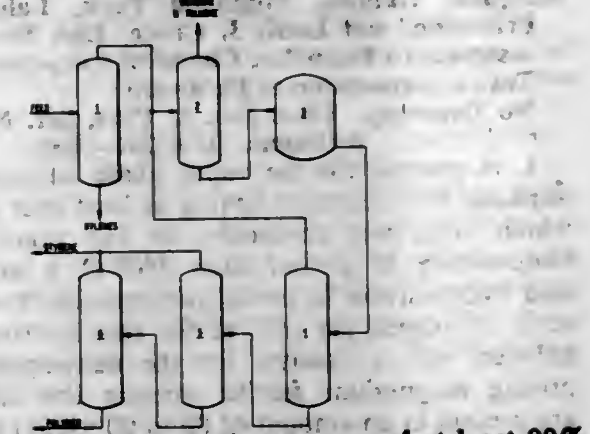
3,308,177
PRODUCTION OF CYCLODODECENE
Kenneth E. Atkins, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed June 28, 1965, Ser. No. 467,735
10 Claims. (Cl. 260—666)

1. In a process for producing cyclododecene by the reaction of 1,5,9-cyclododecatriene with hydrogen in a reaction zone at elevated temperature and pressure, the improvement of (1) effecting said reaction in the presence of from about 0.4 to about 2 moles of carbon monoxide per mole of cyclododecatriene charged to said reaction zone, (2) charging to said reaction zone a cobalt compound selected from the group consisting of dicobalt octacarbonyl and a cobaltous salt in an amount sufficient to catalyze said reaction, (3) conducting said reaction for a period of time sufficient to convert at least 95 percent of said cyclododecatriene to more saturated products, and (4) thereafter recovering said cyclododecene.

3,308,178
PROCESS FOR THE PARTIAL REDUCTION OF AROMATICS
Lynn H. Slaugh, Pleasant Hill, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 17, 1964, Ser. No. 419,195
18 Claims. (Cl. 260—667)

1. The process of producing cyclohexenes by intimately contacting non- to tri-alkylbenzenes of 6 to 20 carbon atoms with from about 2 gram-atoms to about 10 gram-atoms of alkali metal of atomic number from 11 to 55 per mole of said non- to tri-alkylbenzene wherein at least one gram-atom of said alkali metal per mole of said non- to tri-alkylbenzene is alkali metal of atomic number from 19 to 37, in solvent comprising from about 7 moles to about 50 moles per mole of said non- to tri-alkylbenzene of lower alkylamine of from 1 to 4 carbon atoms and up to about 40% mole based on total solvent of ammonia, in the liquid phase at a temperature from about 15° C. to about 110° C.

3,308,179
PROCESS FOR DEHYDROGENATION OF ETHYLBENZENE
John A. Scott, New York, N.Y., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 31, 1964, Ser. No. 341,535
7 Claims. (Cl. 260—669)



1. In the process of producing styrene of at least 99% purity based on C_8 aromatic hydrocarbons from a C_8 aromatic hydrocarbon feed stream consisting essentially of xylene and 95 to 98.5% ethylbenzene based on the C_8 aromatics which consists essentially of combining said C_8 aromatic hydrocarbon with a C_8 aromatic recycle stream, dehydrogenating said combined C_8 material at a temperature of about 1000 to 1200° F. to produce styrene by dehydrogenation of ethylbenzene, removing the high purity styrene product from the reaction effluent and recycling remaining C_8 aromatic effluent to the dehydrogenation reaction as said recycle stream, the conversion of ethylbenzene in said reaction being about 25 to 70% and sufficient to crack xylenes to lower boiling materials in an amount essentially equal to the amount of xylene in the C_8 aromatic hydrocarbon feed stream minus the xylene in the high purity styrene product.

3,308,180
SELECTIVE HYDROGENATION
Harold W. Fleming, Louisville, Ky., assignor to Catalysts and Chemicals, Inc., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 362,635
5 Claims. (Cl. 260—677)

1. In the process for separating acetylene from a gas stream containing both acetylene and ethylene by selective hydrogenation wherein at a given space velocity in the range of 500 to 7000 volumes of gas per volume of catalyst per hour and using a catalyst containing 0.01 to 0.1 weight percent palladium supported on alumina, and wherein a narrow hydrogenation temperature range ΔT must be maintained in the region of $100°F. \leqslant \Delta T \leqslant 400°F.$ for maximum selectivity, the step of broadening the ΔT range consisting essentially of maintaining carbon monoxide in said gas stream in an amount of 5 to 400 parts per million based on the gas stream during the hydrogenation.

3,308,181
OXIDATIVE DEHYDROGENATION WITH ADDED HYDROGEN
Emory W. Pitzer, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 4, 1963, Ser. No. 321,361
6 Claims. (Cl. 260—680)

1. In a catalytic process for the dehydrogenation of an olefin wherein the olefin is dehydrogenated in a dehydrogenation zone in the presence of a dehydrogenation catalyst consisting essentially of 51.0 to 59.0 percent by weight potassium carbonate, 39.0 to 47.0 percent by weight iron oxide and 1.0 to 10.0 percent by weight chromium oxide, the improvement comprising including hydrogen and from 5 mols of oxygen per 100 mols of said

olefin up to twice the amount stoichiometrically required for reaction with the hydrogen added plus hydrogen formed in the reaction with the charge of olefin to said zone.

3,308,182
DEHYDROGENATION OF HYDROCARBONS

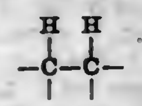
Malgonis Gabliks, Highland Park, Laimonis Bajars, Princeton, and Louis J. Croce, East Brunswick, N.J., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Jan. 2, 1964, Ser. No. 335,365
6 Claims. (Cl. 260—680)

1. A process for the vapor phase dehydrogenation of aliphatic hydrocarbons having at least four carbon atoms which comprises contacting in the vapor phase at a temperature of greater than 250° C. a mixture of the said hydrocarbon to be dehydrogenated, from 0.2 to 2.5 mols of oxygen per mol of the said hydrocarbon and a halogen with a catalyst for the dehydrogenation comprising magnesium ferrite wherein the atoms of iron are present in an amount of 80 to 90 weight percent based on the total weight of the atoms of iron and magnesium, to produce a dehydrogenated hydrocarbon product having the same number of carbon atoms as the said hydrocarbon, the said catalyst having at least 65 weight percent of the atoms of magnesium present as magnesium ferrite.

3,308,183
OXIDATIVE DEHYDROGENATION PROCESS

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,281
13 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. a hydrocarbon compound having a


$$-\overset{\overset{\displaystyle H}{|}}{\underset{|}{C}}-\overset{\overset{\displaystyle H}{|}}{\underset{|}{C}}-$$

group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, chlorine in an amount of less than 0.5 mol of chlorine per mol of said hydrocarbon compound, the ratio of the mols of said oxygen to the mols of said chlorine being at least 2.0, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) a member selected from the group consisting of metals and compounds thereof of Periodic Table Groups II*b*, IV*a*, V*a*, and mixtures thereof.

3,308,184
OXIDATIVE DEHYDROGENATION PROCESS

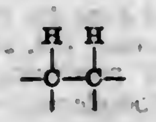
Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,282
10 Claims. (Cl. 260—680)

1. The method for dehydrogenating in a dehydrogenation zone hydrocarbons of 4 to 8 carbon atoms having at least four contiguous non-quaternary carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. the said hydrocrabon with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon, chlorine in an amount of from .005 to 0.25 mol of chlorine per mol of said hydrocarbon with the chlorine being present in an amount of no greater than 10 mol percent of the total gaseous mixture in the dehydrogenation zone, the ratio of the mols of said oxygen to the mols of said chlorine being at least 2.0, the flow rate of the said hydrocarbon in the said dehydrogenation zone being between 0.15 and 15 volumes of hydrocarbon per volume of reactor space containing catalyst per hour, the partial pressure of said hydrocarbon being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) a metal or compound thereof of Periodic Table Group I*b*, the said alkali and alkaline earth metals being present in an amount of from about .01 to .5 atom per atom of the metal elements of the said (2).

3,308,185
OXIDATIVE DEHYDROGENATION PROCESS

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,283
13 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. a hydrocarbon compound having a

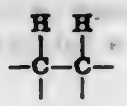

$$-\overset{\overset{\displaystyle H}{|}}{\underset{|}{C}}-\overset{\overset{\displaystyle H}{|}}{\underset{|}{C}}-$$

group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, iodine in an amount of less than about 0.2 mol of iodine per mol of said hydrocarbon compound, the ratio of the mols of said oxygen to the mols of said iodine being at least 2.5, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) a member selected from the group consisting of metals and compounds thereof of Periodic Table Groups II*b*, IV*a*, V*a*, and mixtures thereof.

3,308,186
OXIDATIVE DEHYDROGENATION PROCESS

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,488
12 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. a hydrocarbon compound having a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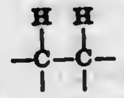
group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, bromine in an amount of less than 0.5 mol of bromine per mol of said hydrocarbon compound, the ratio of the mols of said oxygen to the mols of said bromine being at least 2.5, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) an inorganic compound of a metal selected from the Periodic Table Group III*b*.

3,308,187
OXIDATIVE DEHYDROGENATION PROCESS

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,489
14 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C., a hydrocarbon compound having a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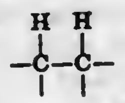
group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, bromine in an amount of less than 0.5 mol of bromine per mol of said hydrocarbon compound, the ratio of the mols of said oxygen to the mols of said bromine being at least 2.5, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) manganese or a manganese compound.

3,308,188
OXIDATIVE DEHYDROGENATION PROCESS

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,490
14 Claims. (Cl. 260—680)

1. The method for dehydrogenating organic compounds selected from the group consisting of hydrocarbons and nitriles having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. said organic compound having a

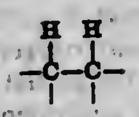

$$-\overset{\overset{\displaystyle H}{|}}{\underset{|}{C}}-\overset{\overset{\displaystyle H}{|}}{\underset{|}{C}}-$$

group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said organic compound, bromine in an amount of less than 0.5 mol of bromine per mol of said organic compound, the ratio of the mols of said oxygen to the mols of said bromine being at least 2.5, the partial pressure of said organic compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) metals or compounds thereof of Periodic Table Group VIII*b*.

3,308,189
OXIDATIVE DEHYDROGENATION PROCESS

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,491
14 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. a hydrocarbon compound having a

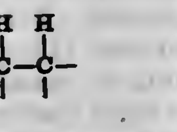

$$-\overset{\overset{\displaystyle H}{|}}{\underset{|}{C}}-\overset{\overset{\displaystyle H}{|}}{\underset{|}{C}}-$$

group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, bromine in an amount of less than 0.5 mol of bromine per mol of said hydrocarbon compound, the ratio of the mols of said oxygen to the mols of said bromine being at least 2.5, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) a metal or compound thereof of Periodic Table Group I*b*.

3,308,190
OXIDATIVE DEHYDROGENATION PROCESS

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,492
12 Claims. (Cl. 260—680)

1. The method for dehydrogenating organic compounds selected from the group consisting of hydrocarbons and nitriles having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. said organic compound having a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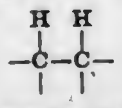
group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said organic compound, iodine in an amount of less than about 0.2 mol of iodine per mol of said organic compound, the ratio of the mols of said oxygen to the mols of said iodine being at least 2.5, the partial pressure of said organic compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) an inorganic compound of a metal selected from the Periodic Table Group III*b*.

3,308,191
OXIDATIVE DEHYDROGENATION PROCESS
Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,493
16 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. a hydrocarbon compound having a

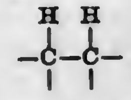


$$-\overset{\overset{H}{|}}{\underset{|}{C}}-\overset{\overset{H}{|}}{\underset{|}{C}}-$$

group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, iodine in an amount of less than about 0.2 mol of iodine per mol of said hydrocarbon compound, the ratio of the mols of said oxygen to the mols of said iodine being at least 2.5, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) a metal or metal compound of Periodic Table Groups IV*b*, V*b* and VI*b* and mixtures thereof.

3,308,192
OXIDATIVE DEHYDROGENATION PROCESS
Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,494
14 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. a hydrocarbon compound having a



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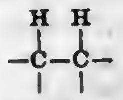
group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, iodine in an amount of less than about 0.2 mol of iodine per mol of said hydrocarbon compound, the ratio of the mols of said oxygen to the mols of said iodine being at least 2.5, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) manganese or a manganese compound.

3,308,193
OXIDATIVE DEHYDROGENATION PROCESS
Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,495
15 Claims. (Cl. 260—680)

1. The method for dehydrogenating organic compounds selected from the group consisting of hydrocarbons and nitriles having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. said organic compound having a

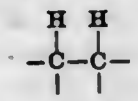


$$-\overset{\overset{H}{|}}{\underset{|}{C}}-\overset{\overset{H}{|}}{\underset{|}{C}}-$$

group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said organic compound, iodine in an amount of less than about 0.2 mol of iodine per mol of said organic compounds, the ratio of the mols of said oxygen to the mols of said iodine being at least 2.5, the partial pressure of said organic compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) metals or compounds thereof of Periodic Table Group VIII*b*.

3,308,194
OXIDATIVE DEHYDROGENATION PROCESS
Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,496
14 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. a hydrocarbon compound having a

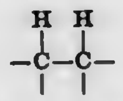


$$-\overset{\overset{H}{|}}{\underset{|}{C}}-\overset{\overset{H}{|}}{\underset{|}{C}}-$$

group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, iodine in an amount of less than about 0.2 mol of iodine per mol of said hydrocarbon compound, the ratio of the mols of said oxygen to the mols of said iodine being at least 2.5, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) a metal or compound thereof of Periodic Table Group I*b*.

3,308,195
OXIDATIVE DEHYDROGENATION PROCESS
Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,580
13 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. a hydrocarbon compound having a



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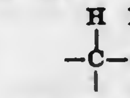
group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, bromine in an amount of less than 0.5 mol of bromine per mol of said hydrocarbon compound, the ratio of the mols of said oxygen to the mols of said bromine being at least 2.5, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) a member selected from the group consisting of metals and compounds thereof of Periodic Table Groups II*b*, IV*a*, V*a*, and mixtures thereof.

3,308,196
OXIDATIVE DEHYDROGENATION PROCESS
Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,581
16 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. a hydrocarbon compound having a

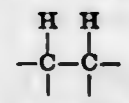


$$-\overset{\overset{H}{|}}{\underset{|}{C}}-\overset{\overset{H}{|}}{\underset{|}{C}}-$$

group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, bromine in an amount of less than 0.5 mol of bromine per mol of said hydrocarbon compound, the ratio of the mols of said oxygen to the mols of said bromine being at least 2.5, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) a metal or metal compound of Periodic Table Groups IV*b*, V*b* and VI*b* and mixtures thereof.

3,308,197
OXIDATIVE DEHYDROGENATION IN THE PRESENCE OF CHLORINE
Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,582
11 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. the said hydrocarbon compound having a

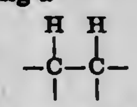


$$-\overset{\overset{H}{|}}{\underset{|}{C}}-\overset{\overset{H}{|}}{\underset{|}{C}}-$$

group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, chlorine in an amount of less than 0.3 mol of chlorine per mol of said hydrocarbon compound and in an amount of no greater than 10 mol percent of the total gaseous mixture in the dehydrogenation zone, the ratio of the mols of said oxygen to the mols of said chlorine being at least 2.0, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) an inorganic compound of a metal selected from the Periodic Table Group III*b* the atoms of the said alkali and alkaline earth metals of (1) being at least about 0.001 atom per atom of the said metals of Group III*b* and further the said (1) being present in an amount of up to 50 weight percent of the total weight of the said (1) and (2) with the weight percent of the cations of the defined (1) and (2) being at least 51 percent of any cations in the catalyst surface exposed to the reaction gases.

3,308,198
OXIDATIVE DEHYDROGENATION IN THE PRESENCE OF CHLORINE
Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,583
13 Claims. (Cl. 260—680)

1. The method for dehydrogenating organic compounds having 2 to 20 carbon atoms selected from the group consisting of hydrocarbons and nitriles to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of about 400° C. the said organic compound having a

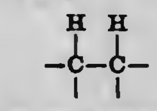


$$-\overset{\overset{H}{|}}{\underset{|}{C}}-\overset{\overset{H}{|}}{\underset{|}{C}}-$$

group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said organic compound, chlorine in an amount of less than 0.3 mol of chlorine per mol of said organic compound and in an amount of no greater than 10 mol percent of the total gaseous mixture in the dehydrogenation zone, the ratio of the mols of said oxygen to the mols of said chlorine being at least 2.0, the partial pressure of said organic compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) metals or compounds thereof of Periodic Table Group VIII*b*, the said (1) being present in an amount of up to 50 weight percent of the total weight of the said (1) and (2) with the weight percent of the cations of the defined (1) and (2) being at least 51 percent of any cations in the catalyst surface exposed to the reaction gases.

3,308,199
OXIDATIVE DEHYDROGENATION PROCESS
Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,584
14 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. a hydrocarbon compound having a



$$-\overset{\overset{H}{|}}{\underset{|}{C}}-\overset{\overset{H}{|}}{\underset{|}{C}}-$$

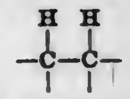
group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, chlorine in an amount of less than 0.5 mol of chlorine per mol of said hydrocarbon compound, the ratio of the mols of said oxygen to the mols of said chlorine being at least 2.0, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) manganese or a manganese compound.

3,308,200

OXIDATIVE DEHYDROGENATION PROCESS

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,597
16 Claims. (Cl. 260—680)

1. The method for dehydrogenating hydrocarbon compounds having 2 to 20 carbon atoms to produce a dehydrogenated product having the same number of carbon atoms and the same structure with the exception of the removed hydrogen atoms which comprises heating in the vapor phase at a temperature of above 400° C. a hydrocarbon compound having a



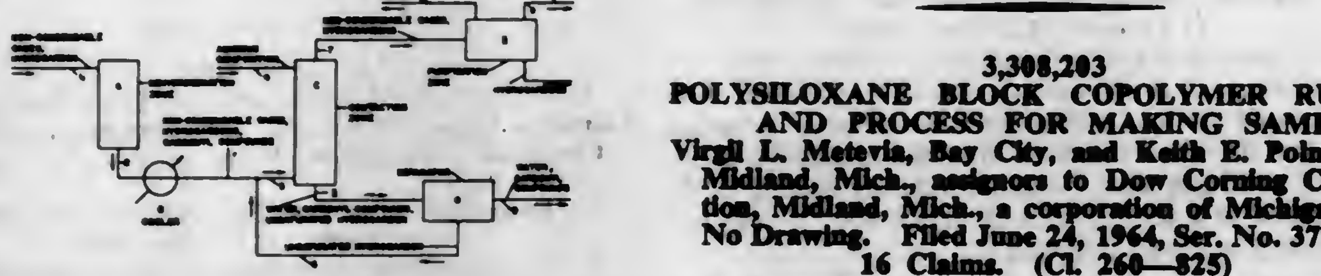
$$-\overset{\displaystyle H}{\underset{|}{\overset{|}{C}}}-\overset{\displaystyle H}{\underset{|}{\overset{|}{C}}}-$$

group with oxygen in a molar ratio of greater than one-fourth mol of oxygen per mol of said hydrocarbon compound, chlorine in an amount of less than 0.5 mol of chlorine per mol of said hydrocarbon compound, the rtaio of the mols of said oxygen to the mols of said chlorine being at least 2.0, the partial pressure of said hydrocarbon compound being equivalent to less than one-half the total pressure in the presence of a catalyst comprising as its main active constituent (1) a compound selected from the group consisting of oxides, salts and hydroxides of alkali and alkaline earth metals and mixtures thereof, and (2) a metal or metal compound of Periodic Table Groups IV*b*, V*b* and VI*b* and mixtures thereof.

3,308,201

PURIFICATION OF HYDROCARBONS

Hugh R. Bowers, Lloyd D. Tschopp, and Rudolph C. Woerner, all of Houston, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
Filed Mar. 8, 1966, Ser. No. 532,795
6 Claims. (Cl. 260—681.5)



1. A process for the purification of unsaturated hydrocarbons contaminated with carbonyl compounds from a gaseous mixture having exclusive of any water present from about 2.5 to 80 mol percent of the said unsaturated hydrocarbon and from about 20 to 93 mol percent of noncondensable gases which comprises:

(1) intimately contacting the said gaseous mixture with contacting water of a pH of at least 10 in a contacting zone, the said contacting zone being maintained at a temperature from at least the dew point of the said unsaturated hydrocarbon to less than the boiling point of water under the conditions in the contacting zone and under conditions such that the phase equilibrium constants of the said carbonyl compounds are no greater than 15,

(2) taking off from the said contacting zone exclusive of any water present a gaseous mixture comprising from about 3.5 to 80 mol precent of the said unsaturated hydrocarbon and from about 20 to 93 mol percent of the said inert noncondensable gas,

(3) removing an aqueous solution from the contacting zone, the said aqueous solution containing dissolved therein based on the total mols of the aqueous solution from about 0.01 to 2.5 mol percent carbonyl compounds and from 0.005 to 0.5 mol percent of the said unsaturated hydrocarbon, the said carbonyl compound dissolved in the aqueous solution being equivalent to at least about 90 mol percent of the carbonyl compound entering the contacting zone in the said gaseous mixture, and

(4) purifying the said gaseous mixture taken off in step (2) to produce purified unsaturated hydrocarbon containing only minute quantities of the said carbonyl compounds.

3,308,202

BORON PHOSPHATE CATALYSTS AND PROCESS FOR PREPARING THE SAID CATALYSTS

Arnaud Marie José de Gramont, Gonfreville-l'Orcher, Joseph Edouard Weisang, Le Havre, and Jean Maurin, Gainneville, France, assignors to Compagnie Francaise de Raffinage, Paris, France
No Drawing. Filed Sept. 25, 1963, Ser. No. 311,294
Claims priority, application France, Sept. 27, 1962, 910,662, Patent 1,344,333
17 Claims. (Cl. 260—681)

15. In the process for the manufacture of isoprene by the catalytic decomposition of the dimethyl metadioxanes in the presence of a boron phosphate catalyst having a controlled acid content, the steps which comprise first preparing the boron phosphate catalyst by reacting boric acid with phosphoric acid, placing the resulting boron phosphate product in cotnact with a predetermined controlled quantity of an acid selected from the group consisting of sulphuric acid, sulphonic acid and arsenic acid, impregnating said boron phosphate product with said predetermined quantity of acid within the range of about .05 to 0.5 milliequivalent of acid per gram of boron phosphate, drying the resulting boron phosphate product having the predetermined quantity of acid contained therein, and decomposing said dimethylmetadioxanes in a catalytic furnace in the presence of said boron phosphate catalyst and water.

3,308,203

POLYSILOXANE BLOCK COPOLYMER RUBBER AND PROCESS FOR MAKING SAME

Virgil L. Metevia, Bay City, and Keith E. Polmanteer, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed June 24, 1964, Ser. No. 377,526
16 Claims. (Cl. 260—825)

1. A process for preparing a siloxane block copolymer which comprises

(A) mixing and heating in an inert organic solvent to produce a heat-curable siloxane block copolymer

(1) 100 parts by weight of an organopolysiloxane which has an average of at least 200 silicon atoms per molecule, said siloxane consisting essentially of units of the formula $R_nSiO_{4-n/2}$, wherein R is selected from the group consisting of methyl, phenyl and vinyl radicals, *n* has an average value of from 1.98 to 2.00 inclusive, there being an average of at least 0.75 methyl radicals per silicon atom and an average of no more than 0.15 vinyl radical per silicon atom in said siloxane, no more than 50 mol percent of said siloxane being $(C_6H_5)_2SiO$ units, said siloxane having an average of at least 2 silicon-bonded hydroxyl radicals per molecule,

(2) from 8 to 220 parts by weight of an organosilicon compound selected from the group consisting of

(a) a siloxane represented by the unit formula $(C_6H_5)_xR'_ySiO_{4-x-y/2}$, wherein R' is a monovalent hydrocarbon radical, *x* has an average value of from 0.65 to 1.3 inclusive, *y* has an average value of less than 0.4 and the sum of *x*+*y* is from 0.95 to 1.3 inclusive with at least 60 mol percent of said siloxane being $(C_6H_5)SiO_{1.5}$ units, said siloxane containing an average of at least two radicals per molecule which are selected from the group consisting of hydroxyl and —OM radicals wherein M is selected from the group consisting of alkali metal atoms and quaternary ammonium radicals,

(b) a silanol of the general formula $(C_6H_5)_aR'_bSi(OH)_{4-a-b}$ wherein R' is a monovalent hydrocarbon radical, *a* has an average value of from 0.65 to 1.3, *b* has an average value of less than 0.4, and the sum of *a*+*b* is from 1 to 1.3 inclusive, at least 60 mol percent of said silanol being of the formula $(C_6H_5)Si(OH)_3$,

(3) a catalytic amount of a catalyst for the condensation of silicon-bonded hydroxyl radicals,

the concentration of solids in the solvent being less than 50 percent by weight based on the total weight of the mixture such that no appreciable gelation occurs during the heating step,

(B) and removing the solvent from the reaction product obtained in step (A), there being sufficient agitation during this step to keep the product substantially homogeneous.

7. A heat-curable siloxane block copolymer consisting essentially of

(1) organopolysiloxane blocks of the formula $(R_nSiO_{4-n/2})_z$, wherein R is selected from the group consisting of methyl, phenyl and vinyl radicals, *n* has an average value of from 1.98 to 2.00 inclusive, *z* has an average value of at least 110, there being an average of at least .75 methyl radical per silicon atom and an average of no more than 0.15 vinyl radical per silicon atom in said organopolysiloxane (1), said organopolysiloxane containing no more than 50 mol percent $(C_6H_5)_2SiO$ units, and

(2) a siloxane represented by the unit formula $(C_6H_5)_xR'_ySiO_{4-x-y/2}$, wherein R' is a monovalent hydrocarbon radical, *x* has an average value of from 0.65 to 1.3 inclusive, *y* has an average value of less than 0.4, and the sum of *x*+*y* is from 0.95 to 1.3 inclusive with at least 60 mol percent of said siloxane (2) being $(C_6H_5)SiO_{1.5}$ units,

the proportions of (1) and (2) in said block copolymer being 8 to 175 parts by weight of (2) per 100 parts by weight of (1).

3,308,204

THERMOPLASTIC POLYHYDROXYETHER WITH POLYCHLOROPRENE AND LAMINATES THEREOF

Thomas E. Bugel, Metuchen, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 1, 1963, Ser. No. 299,202
12 Claims. (Cl. 260—837)

1. Laminate of a substrate and a composition which develops high bond strengths at relatively low bonding temperatures which comprises a mixture of from 50 to 97 parts by weight of thermoplastic polyhydroxyether having the general formula

$$\left[D—O—E—O\right]_n$$

wherein D is the radical residuum of a dihydric phenol, E is an hydroxyl containing radical residuum of an epoxide, and *n* represents the degree of polymerization and is at least 30 and from 3 to 50 parts by weight of chloroprene polymer selected from the group consisting of homopolymers of chloroprene and copolymers of chloroprene wherein at least 80% of the copolymer consists of chloroprene units per 100 parts by weight of the mixture.

3,308,205

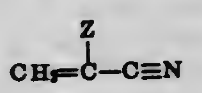
THERMOPLASTIC POLYHYDROXYETHER WITH NITRILE RUBBER AND LAMINATES THEREOF

Thomas E. Bugel, Metuchen, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 1, 1963, Ser. No. 299,203
17 Claims. (Cl. 260—837)

1. Laminates comprising a substrate and an adhesive composition which develops high bond strengths at relatively low bonding temperatures comprising a mixture of from 50 to 95 parts by weight of thermoplastic polyhydroxyether having the general formula

$$\left[D—O—E—O\right]_n$$

wherein D is the radical residuum of dihydric phenol, E is an hydroxyl containing radical residuum of an epoxide, and *n* represents the degree of polymerization and is at least 30 and from 5 to 50 parts by weight of a nitrile rubber, containing at least 50% by weight of a copolymerized conjugated diene having from 4 to 10 carbon atoms, with at least 2% by weight of copolymerized alpha substituted acrylic nitrile having the formula



$$CH_2=\overset{\displaystyle Z}{\overset{|}{C}}-C\equiv N$$

wherein Z is selected from the group consisting of hydrogen, chlorine and methyl, per 100 parts by weight of the mixture.

3,308,206

CATIONIC-DYEABLE AMINE-ALDEHYDE MODIFIED POLYPROPYLENE

Frederick Fordemwalt, Middlesex, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Oct. 31, 1963, Ser. No. 320,519
11 Claims. (Cl. 260—854)

1. In modifying an isotactic polypropylene thermoplast having an apparent molecular weight of from about 30,000 to about 300,000 to form a material dyeable with a cationic dye; the improved process which comprises:

heating said polypropylene to a temperature sufficiently high to form a liquid melt;

while maintaining said melt in the liquid state, adding thereto

from about 0.5 to about 25 weight percent of a water-insoluble polymeric aminoplast selected from the group consisting of (a) a condensation product of melamine with an aldehyde, (b) a condensation product of urea or thiourea with an aldehyde and (c) alkyl derivatives of (a) or (b); said polymeric aminoplast being in particulate form the maximum particle dimension not exceeding about two microns;

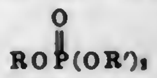
agitating the resultant mixture until dispersion of said aminoplast in said thermoplast becomes substantially uniform;

then forming the so-treated material into a formed solid structure to be dyed.

3,308,207
POLYFLUORINATED PHOSPHATE ESTERS

Christian A. Sell, Santa Monica, Robert H. Boschan, Los Angeles, and James P. Holder, Woodland Hills, Calif., assignors to Douglas Aircraft Company, Inc., Santa Monica, Calif., a corporation of Delaware
No Drawing. Filed May 4, 1964, Ser. No. 364,763
21 Claims. (Cl. 260—953)

1. A phosphate having the formula



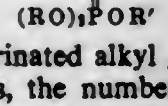
$$\mathrm{RO}\overset{\displaystyle \mathrm{O}}{\overset{\|}{\mathrm{P}}}(\mathrm{OR'})_2$$

where R is a polyfluorinated alkyl group containing from 2 to 12 carbon atoms, the number one carbon atom of said alkyl group connected to the oxygen atom of the phosphate being free of fluorine substituents, and at least one of the carbon atoms of the alkyl group commencing with the carbon atom in 2-position to the carbon atom connected to said oxygen atom is not fully fluorinated, and said last mentioned carbon atom in 1-position is connected to only one carbon atom; and R′ is aryl.

3,308,208
POLYFLUORINATED PHOSPHATE ESTERS

Christian A. Sell, Santa Monica, Robert H. Boschan, Los Angeles, and James P. Holder, Woodland Hills, Calif., assignors to Douglas Aircraft Company, Inc., Santa Monica, Calif., a corporation of California
No Drawing. Filed May 4, 1964, Ser. No. 364,755
20 Claims. (Cl. 260—955)

1. A phosphate having the formula

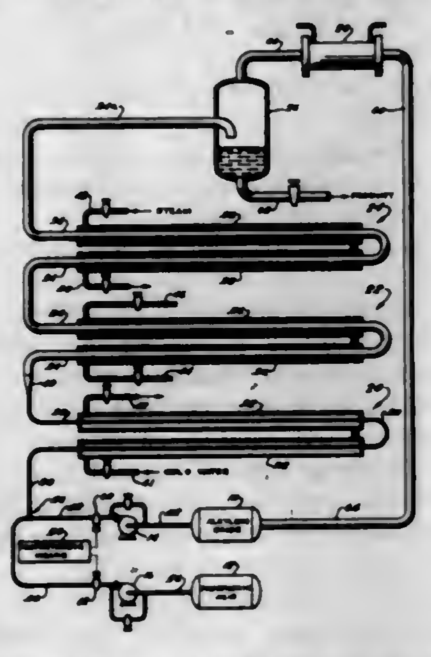


$$(\mathrm{RO})_2\overset{\displaystyle \mathrm{O}}{\overset{\|}{\mathrm{P}}}\mathrm{OR'}$$

where R is a polyfluorinated alkyl group containing from 2 to 12 carbon atoms, the number one carbon atom of said alkyl groups connected to the oxygen atom of the phosphate being free of fluorine substituents, and at least one of the carbon atoms of the alkyl groups commencing with the carbon atom in 2- position to the carbon atom connected to said oxygen atom is not fully fluorinated, and said last mentioned carbon atom in 1- position is connected to only one carbon atom; and R′ is aryl.

3,308,209
METHOD AND APPARATUS FOR PREPARATION OF PHOSPHORIC ACID ESTER POLYOLS

Stephen E. Freeman, Mequon, Wis., assignor to Freeman Chemical Corporation, Port Washington, Wis., a corporation of Delaware
Filed Mar. 15, 1965, Ser. No. 439,683
2 Claims. (Cl. 260—978)

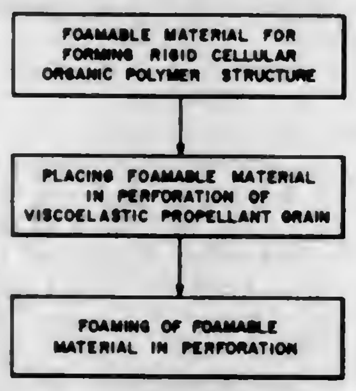


2. A continuous process for preparing phosphorus ester polyols as a reaction product of essentially anhydrous phosphoric acid and alkylene oxide selected from the class consisting of ethylene oxide, propylene oxide, butylene oxide, epichlorohydrin and epibromohydrin comprising:

(a) continuously introducing essentially anhydrous phosphoric acid alkylene oxide as a mixture into a first reaction zone under turbulent flow conditions, the alkylene oxide being provided in an amount from 3–10 mols for every mol of the phosphoric acid;
(b) passing the said mixture through the said first reaction zone under turbulent flow conditions while the said alkylene oxide and the said phosphoric acid react to form phosphoric acid ester polyols;
(c) withdrawing exothermic heat of reaction through the walls of the said first reaction zone;
(d) passing the effluent fluids from the first reaction zone through a second reaction zone under non-turbulent flow conditions;
(e) heating the said second reaction zone to assure substantially complete esterification of the said phosphoric acid;
(f) recovering the effluent from said second reaction zone and separating the product phosphorus ester polyols from unreacted alkylene oxide vapors; and
(g) condensing the said alkylene oxide vapors and recovering the liquefied alkylene oxide for recycle through the process.

3,308,210
PROCESS OF MAKING PROPELLENT SUPPORTS

Martha L. Ross, Washington, D.C., assignor to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia
Filed Jan. 16, 1963, Ser. No. 251,753
8 Claims. (Cl. 264—3)

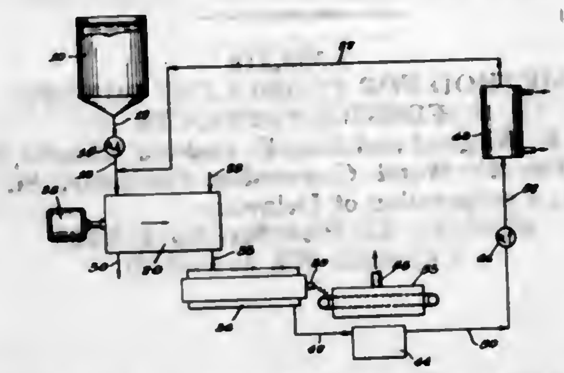

FOAMABLE MATERIAL FOR FORMING RIGID CELLULAR ORGANIC POLYMER STRUCTURE
PLACING FOAMABLE MATERIAL IN PERFORATION OF VISCOELASTIC PROPELLANT GRAIN
FOAMING OF FOAMABLE MATERIAL IN PERFORATION

1. A process for internally supporting against slumping a perforated solid propellant grain comprising introducing a composition capable of being foamed into a rigid cellular organic plastic structure into the perforation of a solid propellant grain subject to viscoelastic flow under gravitational forces and foaming said composition in situ to form an expanded rigid support conforming essentially to the dimensions of said perforation.

3,308,211
PROCESS FOR PRODUCING PLASTIC GRANULES

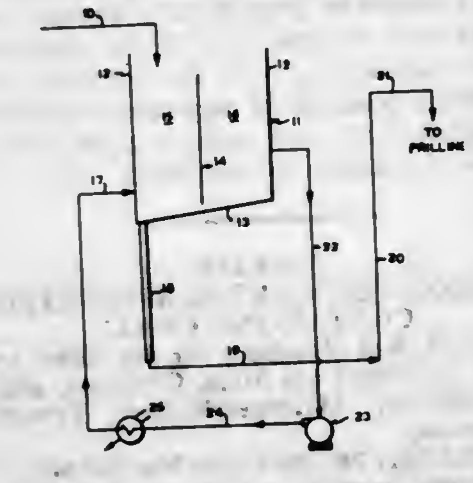
Le Forrest C. Plastridge, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed June 27, 1962, Ser. No. 205,645
10 Claims. (Cl. 264—5)

1. A process for the production of granular synthetic resin which comprises: forming an emulsion of molten, synthetic, thermoplastic resin by mixing the same at a temperature above the melting point of the resin with a liquid dispersant with agitation to produce a liquid-liquid emulsion; cooling said emulsion of resin and dispersant by indirect countercurrent heat exchange while mixing the resin and dispersant and without mixing coolant with the emulsion, the cooling while agitating solidifying the resin in particles of predetermined size and retaining the dispersant in liquid form to produce a resin-in-dispersant suspension; and separating solidified resin particles from said resin-in-dispersant suspension.



3,308,212
PROCESS AND APPARATUS FOR PREPARING UREA PRILLS

Utah Tsao, Jersey City, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Apr. 4, 1963, Ser. No. 270,723
12 Claims. (Cl. 264—13)



1. In a method for preparing prilled urea, an improvement comprising,
- introducing crystalline urea having a biuret content of less than 0.2% into a melting zone;
- introducing an inert liquid that is immiscible with melted urea into said zone, said liquid being at a temperature which is above the melting point of urea;
- passing said inert liquid in countercurrent relation to said urea crystals whereby said urea crystals are melted and the thus formed droplets of urea melt pass through said body of inert liquid; and
- withdrawing urea melt from said zone and passing said urea melt to a prilling zone to form prilled urea having a biuret content of less than 0.5%.

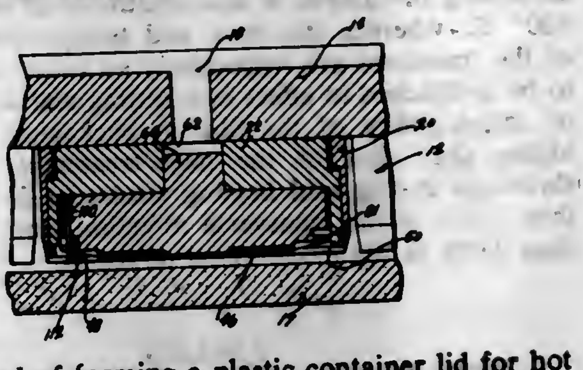
ERRATUM

For Class 264—40 see:
Patent No. 3,308,089

3,308,213
VACUUM FORMING DIE AND METHOD

William H. Carrigan and Robert E. O'Brien, Grand Rapids, Mich., assignors to Kirkhof Manufacturing Corporation, Grand Rapids, Mich., a corporation of Michigan
Filed May 27, 1963, Ser. No. 283,311
8 Claims. (Cl. 264—90)

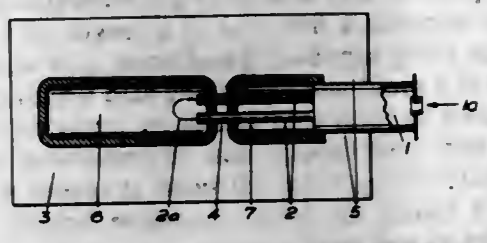
3. A pressure differential forming die for plastic container lids comprising: peripheral means for holding and sealing a plastic sheet against a lower pressure plate; die forming means; and pointed sheet puncturing needle elements projecting from surfaces of said forming means, and so oriented with respect to said surfaces as to be arranged non-perpendicular to the adjacent sheet portions when forced against said forming means without relieving said pressure differential.



7. A method of forming a plastic container lid for hot liquids to be vented, comprising the steps of: holding and sealing the periphery of an imperforate plastic sheet portion; positioning a face pattern and at least one pointed needle projection adjacent said sheet portion; applying a pressure differential to said sheet to force it against said pattern and simultaneously impale it on said needle projection to puncture a temporarily non-leaking orifice; and ejecting the formed sheet portion from said face while sliding it off said needle to provide a vented lid.

3,308,214
METHOD OF THE SIMULTANEOUS MANUFACTURE OF TWO OR MORE BODIES CONNECTED BY AT LEAST ONE CONNECTING ELEMENT

Franz Schöllauf, Fernitz, near Graz, Styria, Austria, assignor, by mesne assignments, to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 13, 1963, Ser. No. 287,666
Claims priority, application Austria, June 14, 1962, A 4,780/62
15 Claims. (Cl. 264—94)



1. A method of manufacturing at least two bodies connected by at least one connecting element, said method comprising holding at least one connecting element in a predetermined position, forming plastics material adapted to assume a plastic state at an elevated temperature into a tubular blank which surrounds said connecting element and has an end portion protruding beyond said connecting element, squeezing said blank at said protruding end portion to close said end portion, squeezing said blank around said connecting element to sever said blank into two sections connected by said connecting element, sealing said blank opposite to said protruding end portion and inflating at least one of said sections in at least one closed, bipartite blow mold while maintaining said blank in a plastic state.

3,308,215
HEAT TREATING OF POLYPROPYLENE FILM TO REMOVE SAGS AND WRINKLES

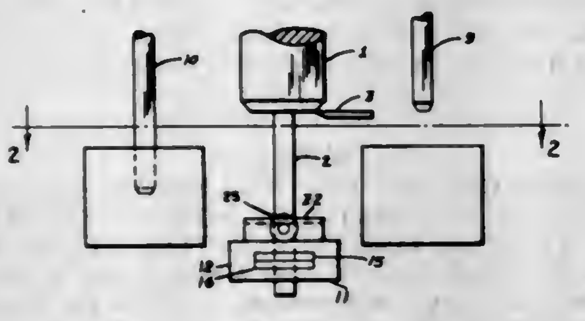
Anthony Graham Marshall Last, Welwyn Garden City, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Dec. 18, 1962, Ser. No. 245,423
Claims priority, application Great Britain, Dec. 22, 1961, 46,037/61; Mar. 9, 1962, 9,125/62
7 Claims. (Cl. 264—95)

1. A process for preparing a shrinkable polypropylene

film having reduced sag and wrinkles therein for use in shrink packaging or the like, said process comprising the steps of providing a polypropylene film which has been biaxially oriented by a tubular process, holding the film at its edges to restrain transverse shrinkage and substantially reducing sags and wrinkles in the film by subjecting the film to a heat treatment of not more than 100° C. wherein the time and temperature conditions of the treatment are respectively so short and so low as to be insufficient to effect heat setting and substantial loss of shrink-ability of the film at packaging temperatures higher than that of the heat treatment, wherein the shrinkage during said heating treatment is by not more than 5.0% in the transverse direction, and by not more than 2.0% in the longitudinal direction.

3,308,216
EXTRUDED PARISON SEVERING METHOD

William A. Jacobs, 75 Westwood Ave.,
Ellenville, N.Y. 12428
Filed Jan. 9, 1964, Ser. No. 336,791
8 Claims. (Cl. 264—99)



1. In a method of forming hollow plastic articles by supplying a substantially continuous tubing of plastic material, said tubing being in a condition of plasticity to permit expansion and setting in predetermined form, severing and gripping a first end of a length of tubing from said tubing being supplied, transferring said severed length of tubing to a mold and expanding said length to the walls of said mold to form said article by applying fluid under pressure into said tubing, that improvement comprising severing said tubing being extruded at spaced apart points along said tubing to form successive lengths of tubing for transfer to said mold.

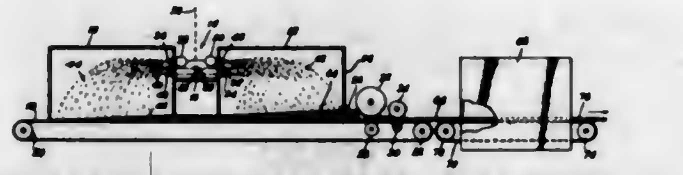
3,308,217
METHOD OF GRANULATING MATERIALS FOR SUBSEQUENT FORMING INTO TABLETS

Lawrence Lowy and William O. Wurtz, both of
30 W. 40th St., New York, N.Y. 10018
No Drawing. Filed Feb. 9, 1965, Ser. No. 431,430
6 Claims. (Cl. 264—117)

1. Granulation method, which comprises uniformly mixing substantially dry particles of a physiologically active material adapted to be ingested and being damaged at elevated temperatures with substantially dry particles of a physiologically inactive and physiologically compatible thermoplastic material which softens at a temperature below the temperature at which said physiologically active material is damaged, heating the thus formed mixture to above the softening temperature of said thermoplastic material and below the temperature at which said physiological active material is damaged so as to cause agglomeration of the particles of physiologically active material with the particles of thermoplastic material and thereby forming powdered agglomerates, and cooling the resulting agglomerates to a temperature below the softening point of said thermoplastic material so as to form a granulate which can be directly pressed into tablets wherein said particles of active material and said particles of thermoplastic material are mixed throughout the steps of heating and cooling.

3,308,218
METHOD FOR PRODUCING BONDED FIBROUS PRODUCTS

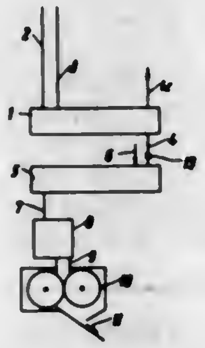
Donald E. Wiegand and John E. Cadotte, Cloquet, Minn., assignors to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Filed May 24, 1961, Ser. No. 112,225
7 Claims. (Cl. 264—121)



1. In the process of mechanically converting a supply of material into intermeshable particles dispersed in air, and depositing the particles and activatable binder from air suspension in superimposed random relation to form a mat, the steps of applying to the particles while suspended in air means to provide tack, whereby said tack, whereby said tack on deposition of the particles creates resistance to intermeshing with the previously deposited particles, shifting positions of deposited particles to effect a predetermined form, and activating the binder to fix the positions of particles in said form.

3,308,219
METHOD FOR MAKING BRIQUETTES CONTAINING COAL

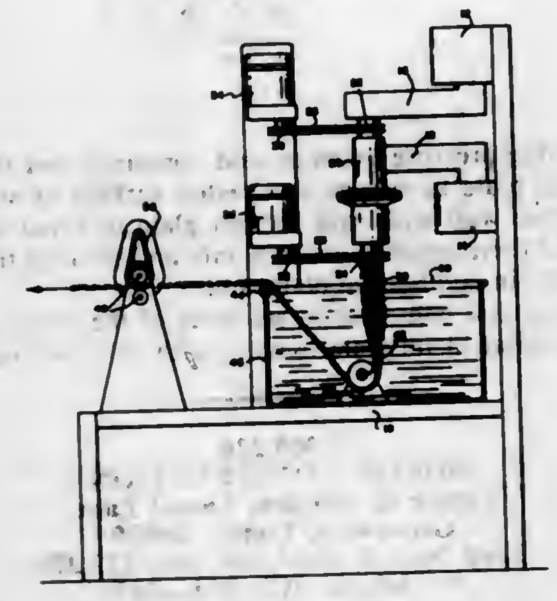
Paul Schmalfeld, Bad Homburg vor der Hohe, and Willibald John, Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed May 18, 1964, Ser. No. 367,961
Claims priority, application Germany, May 16, 1963, M 56,846
5 Claims. (Cl. 264—122)



1. A method of briquetting a nonplasticizable material such as coal, coke, ore or mixtures thereof with a caking coal which is plastic at a temperature range of from about 350 to 480° C. comprising heating the nonplasticizable material to be briquetted to a temperature above the temperature at which the caking coal attains a plastic condition, mixing both the heated non-plasticizable material and the caking coal by forwarding them at a constant speed through a mixing device, a partially degassing the cake coal by direct heat exchange with the hot nonplasticizable material during the first part of the mixing where the caking coal is brought into plastic condition, injecting cooling fluid into the mixture during the last part of the mixing to lower the mixing temperature by about 20 to 100° C., and then briquetting the mixture at the cooled temperature in a briquetting press.

3,308,220
PLASTIC MESH PRODUCING MACHINE

Jesse J. Smith, Garden City, Kans., assignor to U.N.I. Corporation, Boston, Mass., a corporation of Massachusetts
Filed Apr. 22, 1964, Ser. No. 361,908
9 Claims. (Cl. 264—167)

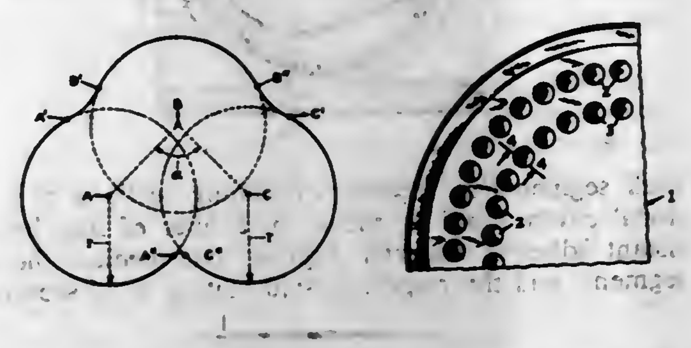


1. In a plastic mesh producing machine the combination of: a plurality of individually and relatively movable hot plastic extrusion dies each having a plurality of spaced apart plastic extruding orifices provided with extruding open ends having extruding axes; said open ends of said orifices of each die spaced from the respective open ends of orifices of an adjacent one of said dies, said open ends of the orifices of one of said dies directed toward the open ends of the orifices of another of said dies to cause extrusion impingement and welding of hot plastic issuing therefrom with the hot plastic issuing from orifices of said one of said dies; said open ends of said orifices disposed such that said impingement and welding occurs outside said dies in free space; the orifices of said one of said dies having their extruding axes directed at an angle relative to the respective extruding axes of the orifices of the other one of said dies, said angle ranging from substantially 90° to substantially 180°; first means for forcing hot plastic under pressure to each of said dies and through said orifices to form plastic filaments; and means for causing relative movement of said dies in a direction laterally of the extrusion axes of said orifices.

3,308,221
MELT SPINNING OF MODIFIED CROSS SECTION YARN

James E. Opfell, Colonial Heights, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Original application May 14, 1963, Ser. No. 280,321, now Patent No. 3,216,186. Divided and this application Oct. 21, 1965, Ser. No. 511,011
3 Claims. (Cl. 264—174)

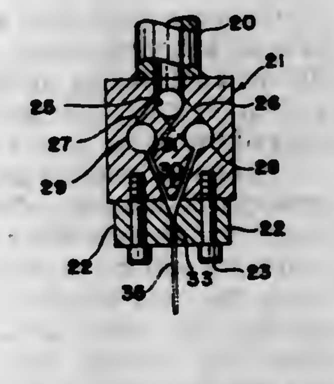
1. A process for the production of polycaproamide yarn comprising extruding downward at constant temperature between about 250° C. and about 285° C. e-polycaproamide having constant Formic Acid Relative Viscosity between about 30 and about 75 ±2 unit, containing not over about 2% of monomer and not over 0.2% moisture through a plurality of spinnerette orifices, each orifice consisting of an inlet passage leading to a group of three circular holes, said three holes arranged with their centers forming an isosceles triangle having apex angle in the range of about 80° to about 120°, the separation between peripheries of the nearest adjoin-



ing holes being in the range of about 0.001 to 0.005 inch; and contacting the extruded polycaproamide filaments with a non-turbulent stream of gas while the filaments are under low take-up tension not greater than about 0.1 gram per denier based on denier of the yarn as taken up, until the three filaments of each group coalesce and solidify, to produce trilobal cross section.

3,308,222
SHEET EXTRUSION DIE

Lloyd Kovacs, Somerset, N.J., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 19, 1964, Ser. No. 390,602
3 Claims. (Cl. 264—176)



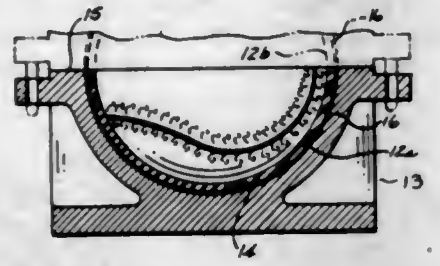
1. The method for equalizing extruding pressure of a thermoplastic material issuing in sheet form from an extruding die comprising, admitting said material into said die at about the midpointof an elongated chamber, splitting the flow therefrom into opposing ends of each of at least two separate generally coextensive chambers, exhausting said material from each of said chambers through generally coextensive side outlet passages, combining the flows from said passages and extruding the combined flows as one.

3,308,223
METHOD OF MAKING MOLDS FOR ELASTOMERIC ARTICLES HAVING SURFACE DETAILS

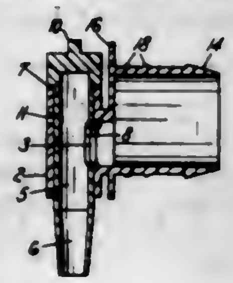
Carlos D. Hoppes, Ashland, Ohio, assignor to The National Latex Products Company, Ashland, Ohio, a corporation of Ohio
Filed Nov. 18, 1963, Ser. No. 324,582
9 Claims. (Cl. 264—220)

1. A method of making a cavity mold, comprising the steps of forming on a model article, having three-dimensional markings thereon, a hollow elastomeric shell of such firm, rubber-like resiliency as will resist molding pressures without substantial deformation of surface details to be formed by said markings; removing the formed

shell as complemental segments thereof from the model article with negative impressions of said markings on the inner surface portions of the shell segments; affixing the shell segments in recesses of mating sections of a sectional cavity mold by means of a filler of high-heat resistant adhesive material disposed intermediate the shell segments and the respective said mating mold sections.



3,308,224
METHOD OF PRODUCING SPIGOT TAPS
Rogor Strange Waddington, Putney, and Bruce Duval, Woldingham, England, assignors to Waddington & Duval (Holding) Limited, a company of England
Filed June 17, 1963, Ser. No. 288,397
5 Claims. (Cl. 264—242)



4. A method of producing spigot taps which comprises forming sleeve parts in a hot-moulding operation from a first thermoplastic material, taking moulded cold tubular spigots having their external diameters greater than the internal diameters of the sleeve parts and a wall thickness of from 8 to 25% of said external diameters formed from a second thermoplastic material which is harder in the cold than is said first thermoplastic material, and, whilst said sleeve parts are still hot from said hot-moulding operation, forcing the cold spigots into said sleeve parts thereby expanding the sleeve parts to fit the exteriors of the spigots and allowing the sleeve parts to cool on the spigots thereby developing circumferential tension and being held in said circumferential tension by the spigots, the difference between the external diameters of the spigot parts and the internal diameters of the sleeve parts being sufficient to ensure that the circumferential tension is adequate to yield a fluid tight mating of the sleeve and spigot parts but insufficient to produce such circumferential tension that the spigot parts are jammed against rotation within the sleeve parts.

3,308,225
METHOD OF FORMING MECHANICALLY INTERLOCKED HEAT SEAL ENGAGEMENT BETWEEN A BOTTOM PLATE AND A PLASTIC CONTAINER IN A COFFEE PERCOLATOR, OR OTHER RECEPTACLE
Robert M. Wells, 4371 Ira Road, Akron, Ohio 44313
Filed Oct. 16, 1963, Ser. No. 316,666
9 Claims. (Cl. 264—249)

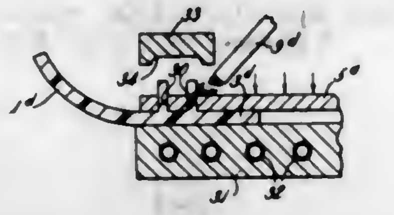
1. That method of making a coffee percolator, or other liquid receiving article, comprising

forming a container from heat resistant thermoplastic material having a melting point appreciably over 212° F., which container has an opening in the bottom thereof,

providing a low heat conductivity metal bottom plate for the container, which plate has a plurality of apertures therein adjacent its periphery,

heating said bottom plate to a temperature appreciably above the melting point of the plastic forming said container,

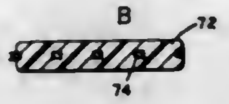
heating one surface of said container adjacent said opening and cooling the opposite surface of said container,



applying pressure between said container and said bottom plate to engage the heated surface of said container wall with said bottom plate to force some of said thermoplastic material into and through the apertures in said bottom plate, and

cooling said container to set some of the thermoplastic material in intimate contact with said bottom plate.

3,308,226
MOSAIC CONSTRUCTION
Luther G. Simjian, Laurel Lane, Greenwich, Conn. 06830
Filed Nov. 8, 1963, Ser. No. 322,378
6 Claims. (Cl. 264—245)



1. A method of reproducing a colored painting, photograph or sign comprising:

(a) automatically depositing suitable colored resinous deformable solid picture elements in the openings of a grid plate so that said grid plate is disposed medially with respect to the height of said elements;

(b) applying heat and pressure to cause lateral deformation of said elements to embed said grid plate,

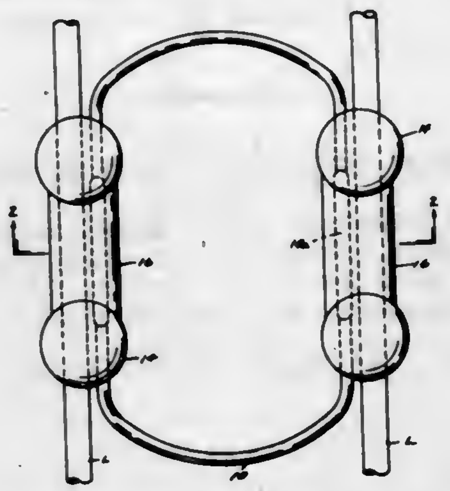
(c) so as to form a colored mosaic reproduction.

3,308,227
PROCESS FOR MAKING EMBOSSED LAMINATES
George Edward Power, Wyoming, and Paul Nicholas Valerius, Cincinnati, Ohio, assignors to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware
No Drawing. Filed Apr. 20, 1964, Ser. No. 361,226
6 Claims. (Cl. 264—284)

1. A process for embossing the decorative surface of a substantially completely cured thermoset synthetic resin laminate comprising passing said laminate through a pair of pressure imparting elements, one of which has an embossed surface, at a speed between about one-half foot per minute to about 20 feet per minute, under a pressure of from about 1,000 to about 4,000 pounds per lineal inch, along the line of contact of said elements, while maintaining a temperature in said elements from about 225° C. to about 375° C., wherein the embossed surface of said pressure imparting element is brought into direct physical contact with the decorative surface being embossed and wherein the depth of embossing imparted to the decorative surface of the laminate varies between about 0.0005" and 0.005".

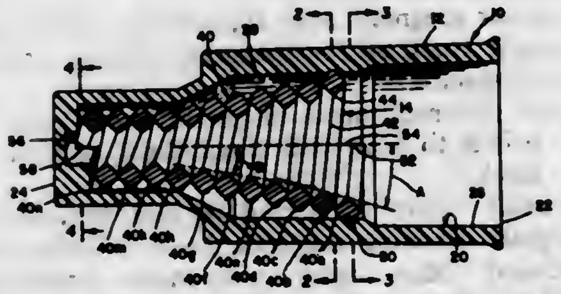
ELECTRICAL

3,308,228
LINE SPACER, DAMPER AND CORONA ELIMINATING MEANS
Seymour N. Schlein, University Heights, Ohio, assignor to The Fanner Manufacturing Company, a division of Textron Inc., Cleveland, Ohio, a corporation of Rhode Island
Filed Aug. 19, 1965, Ser. No. 480,850
13 Claims. (Cl. 174—42)



1. A line spacer and damper comprising a clamp means and a spacer means, said clamp means being arranged to clamp a line and said spacer means including a pair of clamp members formed with first cooperating elongated channels for clamping engagement with a line and second cooperating elongated non-circular channels in clamping engagement with the spacer means, said clamp means being substantially longer longitudinally of said channels than transversely thereof, said spacer means including a closed loop having portions for extending alongside a pair of lines, and said portions of said spacer means which extend alongside said channel being formed complementary to said channels.

3,308,229
ELECTRIC WIRE CONNECTOR ASSEMBLY
Raymond J. Burniston, Madison Township, Old Bridge, N.J., assignor to Buchanan Electrical Products Corporation, Union, N.J., a corporation of New Jersey
Filed Mar. 12, 1965, Ser. No. 445,825
8 Claims. (Cl. 174—87)



1. A device for mechanically securing together a plurality of wires in a bundle, the device having a relatively limited axial length capable of accommodating bundles of diameters which vary over a relatively wide range, said device comprising:

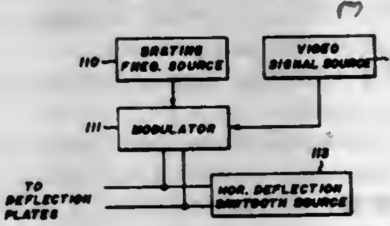
a helically coiled spring member defining an axis and providing a plurality of resiliently dilatable convolutions extending axially from an entrance end to an opposite end, said convolutions having:

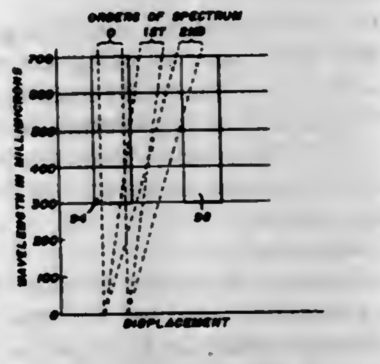
a helical groove-pressing edge confronting said axis, the radius of said edge with respect to said axis being of maximum value adjacent said entrance end and of minimum value adjacent said opposite end, said radius diminishing, in the axial directon away from said entrance end, from said maximum value to said minimum value, relatively steeply at a first location adjacent said entrance end and then more gradually at a second location axially between said first location and said opposite end,

the resilience of said convolutions being such as to allow only limited dilation of each successive convolution as the bundle advances axially through said opening and the rate of change of said radius being great enough so that each successively smaller convolution will tend to press said edge into the wires further than a preceding larger convolution until the spring member is sufficiently interlocked with the wires by a relatively small number of said convolutions to preclude unwanted removal of the device from the bundle and the force required to dilate the next successive smaller convolution and pass the bundle therethrough becomes great enough so that said next convolution serves as a positive stop means to preclude further axial advancement of the bundle,

and a housing of relatively rigid insulating material, said housing having a cavity containing said spring member, the cavity having a configuration generally complementary to the external configuration of said spring member with the relative dimensions of the cavity and the spring member allowing at least the largest convolution to be fixed within the housing and providing a clearance space between the housing and the successive smaller convolutions.

3,308,230
MONOCHROME PROJECTION SYSTEM WITH FIRST AND SECOND ORDER DIFFRACTION
William E. Good, Liverpool, and Michael Graser, Jr., Fayetteville, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 18, 1964, Ser. No. 419,396
7 Claims. (Cl. 178—5.4)





1. A system for controlling the intensity of each point of a beam of light in response to a respective point in an electrical signal for projecting an image corresponding to said electrical signal comprising:

a light modulating medium,

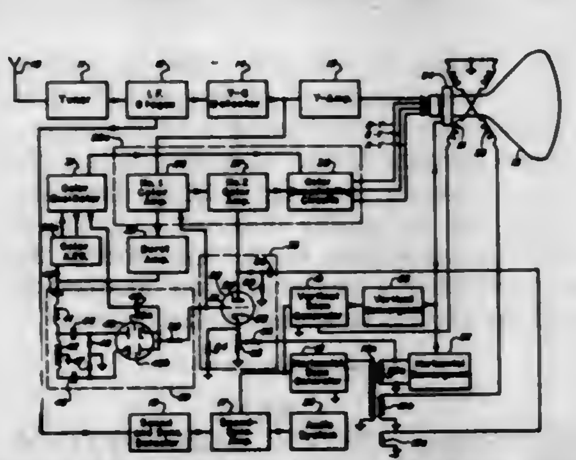
means for directing said beam on said light modulating medium, means for producing a set of deformations in said medium to form a light diffraction grating having uniformly spaced lines extending in the same direction, means for controlling the amplitude of the lines of deformation of said grating in response to said electrical signals,

a light mask positioned in the path of light transmitted from said medium, said mask having at least a pair of transparent portions, said portions being positioned on respective sides of the path of undeviated light from said medium,

said transparent portions being positioned and of an extent in the direction of deviation to pass substantially only all first and second order light of all color components in said beam diffracted by said grating.

3,308,231
COLOR TELEVISION COLOR KILLER WITH VARIABLE SENSITIVITY

Charles H. Heuer, Glencoe, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 241,961, Dec. 3, 1962. This application Mar. 16, 1966, Ser. No. 534,917
4 Claims. (Cl. 178—5.4)



1. Color television apparatus for receiving a television signal modulated with both luminance and chrominance information comprising:

an image reproducer;

a first source of pulses having a predetermined polarity;

a second source of pulses having a polarity opposite said predetermined polarity;

means for selecting, amplifying and detecting said television signal;

a chrominance information processing channel, coupled to said selecting, amplifying and detecting means, for developing from at least a portion of said chrominance information, a signal for use by said image reproducer;

means coupled to said selecting, amplifying and detecting means and responsive to reception of at least a portion of said chrominance information for developing a control signal of predetermined polarity;

a color-killer comprising a signal translating device having a first input electrode coupled to said control signal developing means,

a second input electrode,

and an output electrode connected to said chrominance information processing channel for selectively rendering said channel operative in response to the presence of a control signal at said first electrode;

biasing means comprising a variable impedance device connected to said second input electrode and having an adjustable control element for setting the sensitivity of said signal translating device,

and means for applying a unidirectional potential to said second input electrode with a polarity tending to cut-off said signal translating device;

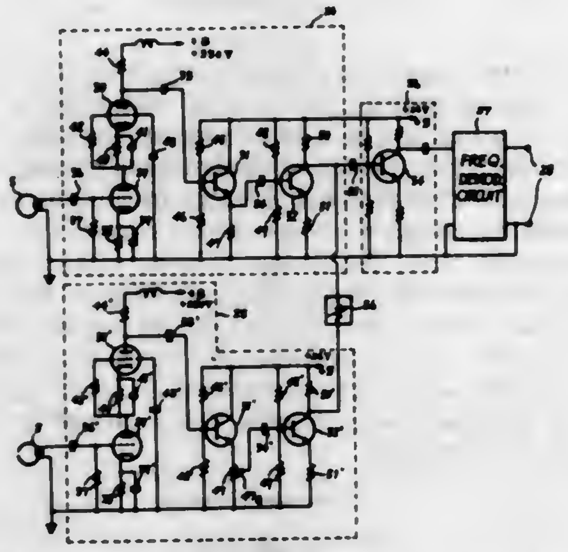
a gating circuit coupled to said first pulse source for applying energizing pulses to said output electrode to render said signal translating device conductive;

and coupling means comprising a D.C. resistance path for applying biasing pulses from said second pulse source to said control element of said variable impedance device in synchronism with the application of said energizing pulses to said output electrode,

said control element being adjustable to vary the magnitudes of said biasing pulse and said biasing potential, as applied to said second input electrode, in opposite senses to permit adjustment of the resultant bias voltage for said second input electrode throughout a range extending above and below a zero biasing potential.

3,308,232
MAGNETIC RECORDING AND REPRODUCING DEVICE

Toshihiko Numakura, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Dec. 6, 1963, Ser. No. 328,618
Claims priority, application Japan, Dec. 7, 1962, 37/55,540
11 Claims. (Cl. 178—6.6)



1. A magnetic transducer device comprising

(a) a magnetic medium,

(b) an obliquely scanning magnetic head for scanning oblique magnetic tracks on said magnetic medium containing video signals,

(c) another magnetic head for scanning a longitudinal magnetic track on the magnetic medium containing control signals,

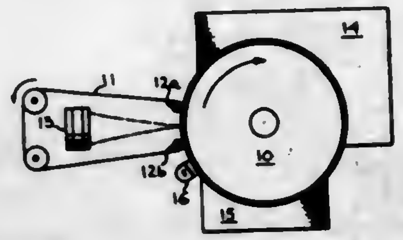
  said first-mentioned magnetic head being compelled to scan the longitudinal control signal track,

(d) circuit means connected to said first-mentioned obliquely scanning magnetic head for receiving reproduced video signal components produced by oblique scanning of said oblique magnetic tracks and for receiving reproduced control signal components produced by oblique scanning of said longitudinal control signal track, and

(e) said circuit means having a frequency selective transmission characteristic to transmit essential frequency components of said reproduced video signal components but to substantially attenuate and essentially to eliminate frequency components corresponding to the fundamental and a plurality of harmonics of said reproduced control signal components for removing said reproduced control signal components during reproducing.

3,308,233
XEROGRAPHIC FACSIMILE PRINTER HAVING LIGHT BEAM SCANNING AND ELECTRICAL CHARGING WITH TRANSPARENT CONDUCTIVE BELT

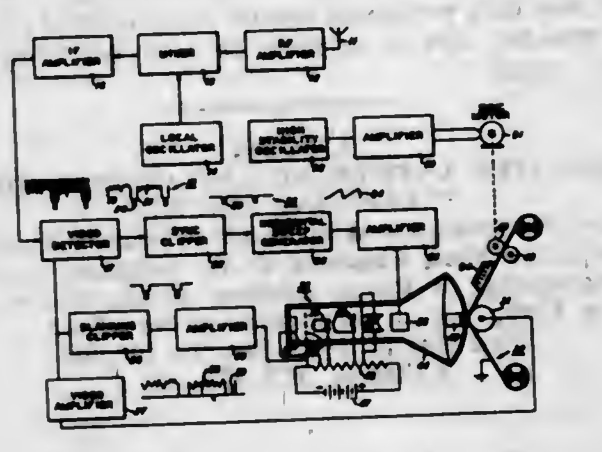
Peter A. Button, Arcadia, and Leland Dale Green and Armand R. Tanguay, Pasadena, Calif., assignors, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 16, 1963, Ser. No. 309,215
12 Claims. (Cl. 178—6.6)



1. A facsimile printer for converting a variable voltage corresponding to a video signal to an electrostatic image, said printer comprising: a rotating conductive drum whose lateral surface is coated with a photoconductive layer; a multilayered moving belt including a transparent conductive layer sandwiched between transparent dielectric and backing layers said belt being mounted so that a portion of it is in intimate contact with said photoconductive layer; means for applying the variable voltage between said drum and said conductive layer; and optical means for scanning the portion of said belt that is in contact with said photoconductive layer with a tiny spot of light of constant intensity.

3,308,234
FACSIMILE RECORDER USING THERMOPLASTIC RECORD WITH PHOTOCONDUCTIVE LAYER

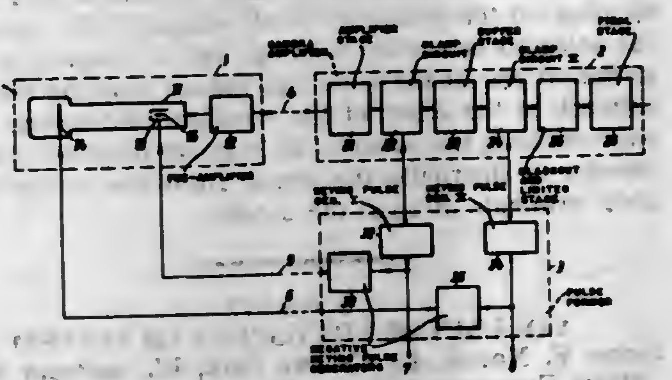
Lloyd F. Bean, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,250
10 Claims. (Cl. 178—6.6)



1. A recorder for the conversion of electrical signals to visible images comprising a recording web made up of a pair of conductive layers separated by as least a layer of a photoconductive insulating material and a layer of an insulating thermoplastic material capable of forming a deformation image and in which at least all of the layers on one side of said photoconductive insulating layer transmit electromagnetic radiation to which said photoconductive insulating material in sensitive, the image forming side of said insulating thermoplastic material being in contact with a layer of material having a different refractive index and capable of conforming with surface deformations of said insulating thermoplastic material, means to apply a varying electrical signal across said conductive layers, means to scan said photoconductive insulating layer with a constant high intensity source of electromagnetic radiation to which said photoconductive insulating layer is sensitive as said electrical signal is applied so as to form a bound charge pattern on the surface of said insulating thermoplastic layer, said charge pattern having an intensity in any one area proportional to the instantaneous magnitude of the electrical signal applied across said conductive layers at the time said area is scanned with said electromagnetic radiation source and means to heat at least the insulating thermoplastic layer of said recording web until its viscosity is reduced to a point where a plastic deformation image is formed on the surface of said insulating thermoplastic layer in response to the charge pattern thereon.

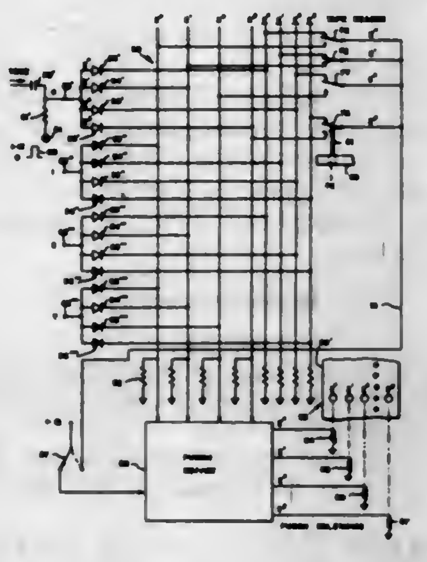
3,308,235
METHOD AND ARRANGEMENT FOR THE OPERATION OF PICK-UP TUBES, PREFERABLY OF THE IMAGE-ORTHICON TYPE

Hermann Greiner and Erich von Gregor, Darmstadt, Germany, assignors to Fernseh G.m.b.H., Darmstadt, Germany
Filed Sept. 27, 1963, Ser. No. 312,128
Claims priority, application Germany, Sept. 29, 1962, F 37,915
20 Claims. (Cl. 178—7.2)



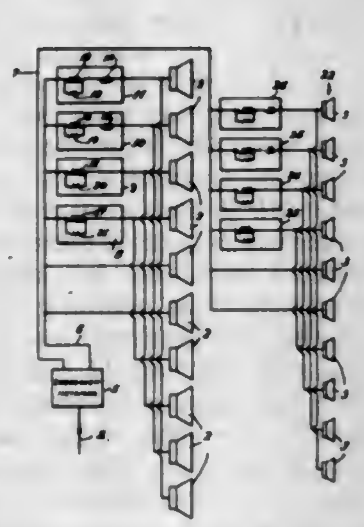
1. A method of operating television pick-up tubes, particularly tubes of the image-orthicon type, having a storage electrode and wherein a charge pattern applied to said storage electrode is scanned by a scanning beam of slow electrons and the picture signal is produced by the beam current provided by the beam returning from the storage electrode, comprising, in combination, the steps of: controlling the intensity of the scanning beam current during one part of its retrace time periods in such a manner that said beam current intensity assumes a mean constant first reference value different from zero but subject to high frequency statistical fluctuations resulting from discontinuities of said scanning beam current; inserting into the picture signal during said one part of said retrace time periods a direct current component corresponding to said mean constant first reference value under the control of a first control circuit having a time constant large enough so that said high-frequency statistical fluctuations of said first reference value are integrated; inserting during a different part of said retrace time periods in the picture signal produced by said pick-up tube a noise-free second reference value of constant level; and restoring in said picture signal during said different part of said retrace time periods a constant level by said noise-free second reference value under the control of a second control circuit having a time constant small enough so that low-frequency noise superimposed on the picture signal is substantially compensated.

3,308,236
BINARY CODING-DECODING CIRCUITS
John Paul Jones, Jr., Wynnewood, Pa., assignor to Navigation Computer Corporation, a corporation of Pennsylvania
Original application May 22, 1963, Ser. No. 282,342, now Patent No. 3,249,199, dated May 3, 1966. Divided and this application Oct. 5, 1965, Ser. No. 493,158
8 Claims. (Cl. 178—75)



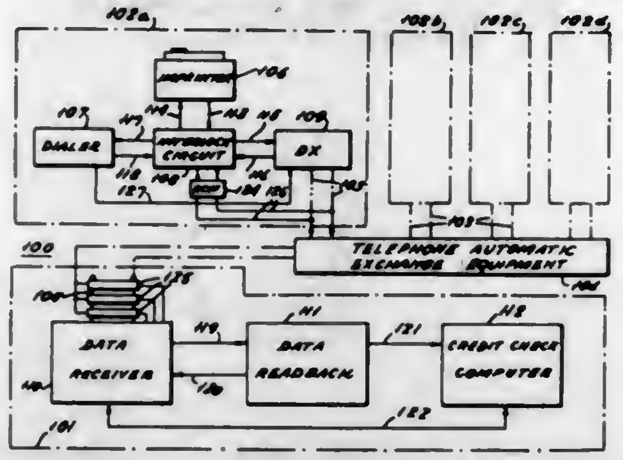
1. Apparatus operable with a solenoid having an actuating winding comprising in combination, a diode network coupled to a plurality of code terminals, an auxiliary winding on the solenoid loosely magnetically coupled to the solenoid actuation winding, means coupling a signal source to one of the windings, means coupling the diode network to the other of the windings and means manually operating the solenoid to improve magnetic coupling thereby to distribute the signal from the source to the code terminals through the diodes.

3,308,237
COLUMNAR LOUDSPEAKER SYSTEM
James F. Novak, La Grange Park, Ill., assignor to The Muter Company, Chicago, Ill., a corporation of Illinois
Filed May 31, 1963, Ser. No. 284,517
11 Claims. (Cl. 179—1)



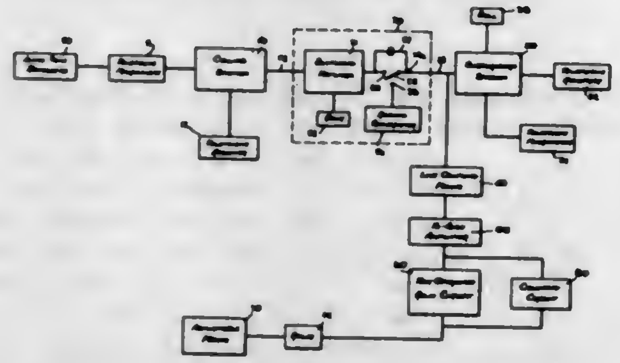
1. A loudspeaker system comprising a linear array of a plurality of loudspeakers and an electrical system associated therewith, said electrical system comprising a plurality of filter networks so modifying the individual signal currents applied to said loudspeakers that the signal current distribution across said array from center to each end substantially conforms to the properties of the Tchebyscheff polynomials.

3,308,238
CREDIT CHECK SYSTEM HAVING COMPARISON OF TRANSMITTED DATA
Abraham Brothman, Dumont, and Richard D. Reiser, Waldwick, N.J., assignors to Transitel International Corporation, Paramus, N.J., a corporation of New Jersey
Filed Nov. 20, 1962, Ser. No. 238,952
12 Claims. (Cl. 179—2)



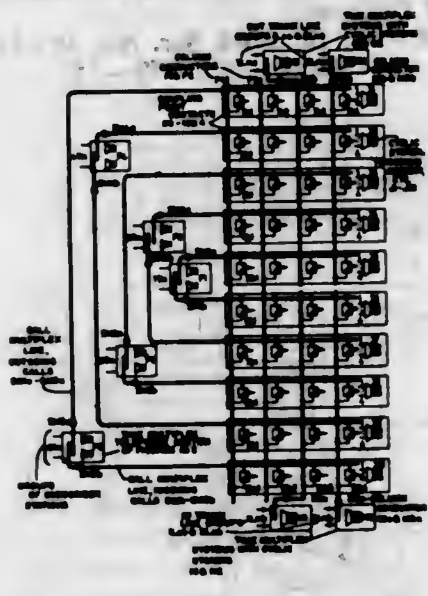
1. A communications system between a remote and a central location comprising, first means at said remote location for signaling said central location to establish a communications link, first receiver means at said central location for generating a signal acknowledgment establishment of said communication link; first data storage means at said remote location; second means at said remote location responsive to said acknowledgment signal for transmitting the encoded data in said first data storage means to said central location through said communications link, recording means at said central location connected to said first receiver means for permanently recording said encoded data; data processing means for evaluating said encoded data stored in said recording means; said data processing means being adapted to generate a signal representative of the data evaluation; third means at said remote location responsive to said data processing means output signal for comparing the encoded data in said first data storage means with the encoded data received at said central location; said data comparison means being adapted to transmit a signal to said central location upon completion of the comparison operation, said data processing means being adapted to record said encoded data in response to said data comparison output signal.

3,308,239
SELECTIVE ANSWERING AND COMMANDING TELEPHONE CIRCUIT
Herbert Waldman, Brooklyn, Wade P. Lamson, Lawrence, and Kalju Meri, Elmhurst, N.Y., assignors, by mesne assignments, to Royal Business Funds Corporation, New York, N.Y., a corporation of New York
Filed May 18, 1962, Ser. No. 195,706
5 Claims. (Cl. 179—2)



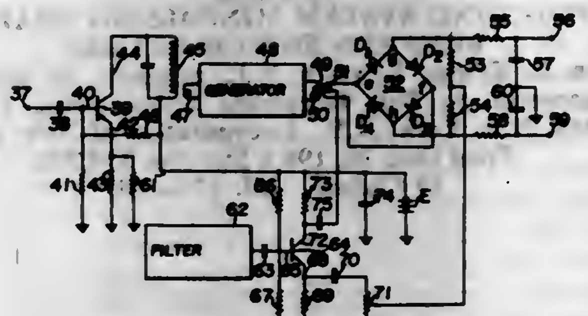
1. In a telephone system wherein a central office has variable current conductive bridging means bridging an open speech circuit and wherein a calling station including a microphone signals a subscriber by means of a ringing tone occurring at intervals during a ringing connection while a speech circuit is open and before it is completed, the method of signalling from a calling station to a subscribers station during the ringing connection and before the subscriber has answered and completed the speech circuit which comprises feeding a variable current signal to the microphone of the calling station during at least some of the intervals between successive rings and utilizing said variable current signal to perform a function at the subscriber's station.

3,308,240
CIRCUIT ARRANGEMENT CONSTRUCTED IN THE MANNER OF A COUPLING MULTIPLE FOR THE CONNECTION OF TIME MULTIPLEX TELEPHONE SYSTEMS
Dieter von Sanden, Munich-Solln, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed July 17, 1962, Ser. No. 210,406
Claims priority, application Germany, July 25, 1961, S 79,976
6 Claims. (Cl. 179—15)



1. A circuit arrangement over which is conducted the traffic of a plurality of time multiplex telephone systems each of which is provided with a call multiplex line serving for calls in which connections are built up in a direction incoming to subscriber stations and a call multiplex line serving for calls in which connections are built up in a direction outgoing from subscriber stations, wherein the subscriber stations of the systems are in given cases of calls periodically impulse-wise connected with the respective call multiplex lines; said circuit arrangement being constructed in the manner of a coupling multiple comprising line conductors and column conductors disposed in crossing relationship therewith, individual call multiplex lines for outgoing and incoming calls being respectively individually connected to said line conductors, coupling point contacts disposed at the crossing points of said line and column conductors, whereby calls within and between the respective systems can be effected by interconnecting call multiplex lines for incoming and for outgoing calls over the respective column conductors, by the actuation of coupling point contacts connected with said line and column conductors, further column conductors disposed in crossing relationship only with line conductors connected with call multiplex lines for outgoing calls, said further column conductors being respectively connected with trunk lines leading to other exchanges, still further column conductors being provided which are disposed in crossing relationship only with line conductors connected with call multiplex lines for incoming calls, said last named still further column conductors being connected with multiplex lines of systems with trunk lines coming from other exchanges, whereby calls extending respectively to and coming from other exchanges can be effected by the actuation of coupling point contacts connected with the corresponding line conductors and column conductors.

3,308,241
FM STEREO DEMODULATING DEVICE USING A DIODE RING MODULATOR SWITCHING CIRCUIT
Shigeru Todokoro, Kohoku-ku, Yokohama-shi, Japan, assignor to Tokyo Shibaura Electric Company Limited, Kawasaki-shi, Japan, a corporation of Japan
Filed Jan. 20, 1964, Ser. No. 338,725
Claims priority, application Japan, Jan. 23, 1963 (utility model), 38/2,123
1 Claim. (Cl. 179—15)

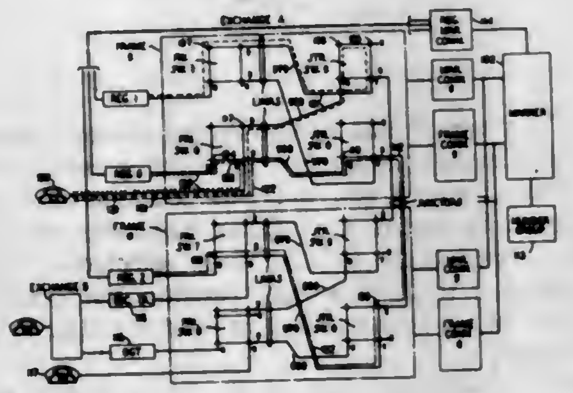


An FM stereophonic demodulating device, comprising:
- a first transistor amplifier including emitter, base and collector electrodes, an input side to receive a stereo composite signal, a coupling capacitor for coupling the input side to the base electrode which is grounded through a base resistor, the emitter electrode being connected to ground through an emitter resistor;
- a first transformer having an LC primary which is tuned to a predetermined pilot sub-carrier frequency of said composite signal, and a secondary, one terminal of said primary being connected to the collector electrode of said first transistor amplifier, the other terminal being connected to the base electrode across a resistor and being fed by a D.C. source line;
- a generator for generating a sub-carrier voltage, fed by the terminals of the secondary of said first transformer;
- a second transformer with a primary and a center-tapped secondary with end leads, the primary receiving the input from said generator;
- a four leg diode ring switching circuit driven by said generated sub-carrier voltage, with input leads at one pair of diagonal ends, said input leads being connected to said second transformer secondary end leads, a pair of series resistors of equal value joined at a junction connected across the other pair of diagonal ends which serve as the output ends, output leads extending from said output ends, resistors in said output leads and connections to ground from said output leads across first and second capacitors;
- a filter for removing the signal sub-carrier connected to said first transistor amplifier emitter across a matching resistor; and,
- a second transistor amplifier including emitter, base and collector electrodes wherein said emitter and collector electrodes produce composite signal voltages of equal but opposite polarities, said filter being coupled to said second transistor base electrode across a capacitor, a first base lead line from said base electrode to said D.C. source line across a first base

resistor, a second base lead line to ground across a second base resistor, the emitter electrode being connected to ground through an emitter resistor across an emitter lead line, the composite signal voltage in one polarity being applied from said emitter electrode to the junction of the pair of series resistors connected across the output ends of the four leg diode ring switching circuit through a circuit having a grounded coupling capacitor and a potentiometer with a center tap acting as a variable attenuator, the center tap being connected to said junction, the collector electrode being connected to said D.C. source across a collector resistor, and said composite signal in the other polarity being applied from the collector to the center tap of said second transformer secondary through a coupling capacitor.

3,308,242
SWITCHING SYSTEM MINIMIZING TRAFFIC BETWEEN SWITCH FRAMES

Edson L. Erwin, Towaco, N.J., assignor, by mesne assignments, to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,353
19 Claims. (Cl. 179—18)

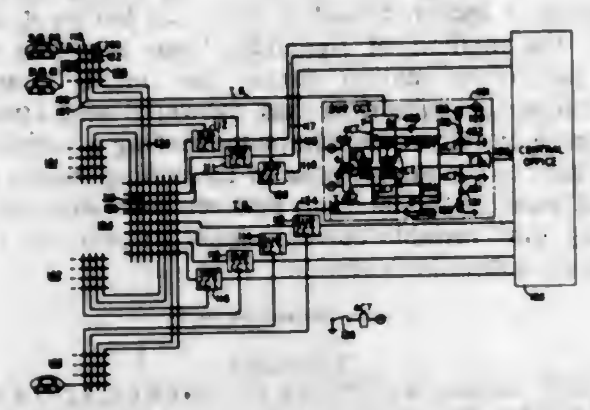


1. In a switching system, a plurality of incoming circuits divided into groups, a plurality of outgoing circuits divided into corresponding groups, switching means for interconnecting any incoming circuit with any outgoing circuit, identifying means responsive to a service request signal on one of said incoming circuits for identifying the particular group containing said one incoming circuit requesting service, and means governed by said group identifying means for selecting an idle one of said outgoing circuits in accordance with the particular identity of said identified group and for directing said switching means to interconnect said one incoming circuit with said selected outgoing circuit entirely within said identified group.

3,308,243
ESTABLISHING INTRACONCENTRATOR CONNECTIONS IN A REMOTE LINE CONCENTRATOR SYSTEM

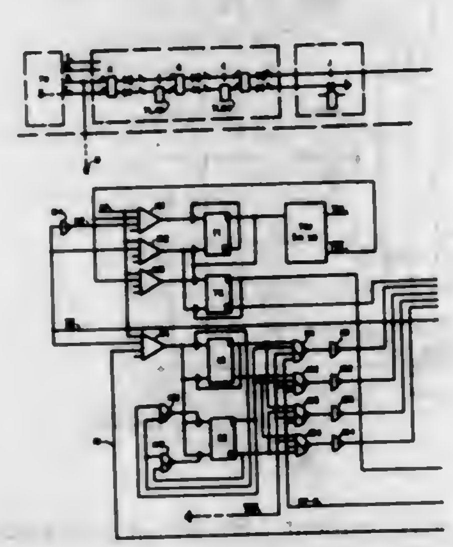
Lawrence C. J. Roscoe, North Brunswick, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 16, 1963, Ser. No. 330,958
10 Claims. (Cl. 179—18)

1. A remote telephone line concentrator system including a telephone central office, a plurality of trunks extending from said office, a plurality of remote lines, remote switching means including first and second stage network means, means responsive to a calling condition on one of said lines for extending a connection to said line over a path including a first trunk and said first network means, means for extending a connection to a called line over a path including a second trunk and said first and second network means, and additional means for governing said second network means to simultaneously release said second trunk and interconnect said calling and called lines to said first trunk.



3,308,244
CROSSPOINT SWITCHING ARRAY HAVING MARKER PULSE MEASURING MEANS

Lucas Bruglemans, Antwerp, Belgium, assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 352,910
6 Claims. (Cl. 179—18)



1. In a communication switching system, a first set of terminals, a second set of terminals, a plurality of switching stages arranged in tandem for selectively electrically connecting terminals of the first set with terminals of the second set, each of said stages comprising a plurality of relays arranged in coordinate arrays, a unidirectional device individual to each of said relays and connected in series with the winding thereof, at the coordinate points of each of said arrays, links interconnecting adjacent stages;

means to apply a first marking potential to a selected terminal of the first set, scanning means including detecting devices coupled to the terminals of the second set to scan said second set to detect said first marking potential and stop the scanning means at the corresponding terminal of the second set;

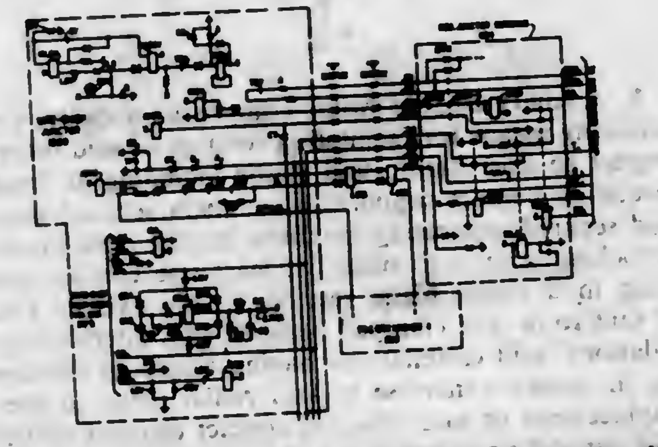
timing means connected to the scanning means to start responsive to said detection of the first marking potential to measure a predetermined time interval, counting means in said timing means, said counting means remaining stopped during this interval only so long as said marking potential continues to be detected and being started upon the absence of the marking potential to continue the scan of other detecting devices for the marking potential;

and means responsive to the continuation of the marking potential for the duration of said interval at one counting position to cause the timing arrangement to generate a signal which locks the counting means in its position and also causes a second marking potential to be applied to the selected terminal of the second set corresponding to the counting means position to produce a potential difference between the first and second marking potentials through the switching stages in the forward direction of said unidirectional devices between the two selected terminals through a series path including the winding of one coordinate point relay of each of said stages, which causes said relays in the path between the two selected terminals to operate and thereby establish a communication path;

whereby noise pulses having a duration less than said given interval induced in the operate path of the switching stages are not effective to cause the scanning means to select and establish a connection.

3,308,245
LOOP SENSING CIRCUIT

Michael Levine, Chicago, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Dec. 20, 1963, Ser. No. 332,208
7 Claims. (Cl. 179—27)

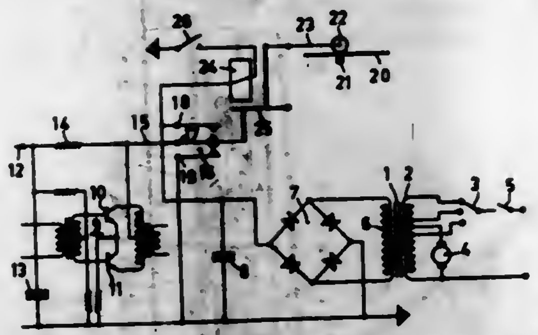


1. In a communication switching system, a plurality of switching stages for extending a set of communication conductors between calling and called lines and for coupling a first polarity pole of a source of direct current power through a first relatively high impedance inductor to a first conductor of said set and a second polarity pole of said source through a second relatively high impedance inductor to a second conductor of said set to thereby supply current to said set of conductors:

a supervisory unit and first coupling means to selectively couple the supervisory unit to a set of busy communication conductors to designate a change of condition in said conductors from busy to idle, the supervisry unit including a loop-sensing relay and a relay coupling means to electrically couple said relay in parallel with the set of busy communication conductors and to couple a shunt circuit in parallel with said second inductor for reducing the impedance in the operate circuit to the relay so that said relay operates and thereby changes to a busy state in response to the current flow in said operate circuit comprising said first inductor and the winding of said relay to said shunt circuit without substantially affecting the current supplied to said set of busy communication conductors, said relay coupling means being arranged to remove said shunt circuit from said second inductor after said relay has operated so that said relay remains operated in parallel with said set of busy communication conductors over a relatively higher impedance operate circuit to thereby remain operated until said set of busy conductors changes from a busy condition to an idle condition.

3,308,246
TRANSISTORIZED AMPLIFYING DEVICE FED ON ALTERNATING CURRENT

Karl Rupp, Vienna, Austria, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 18, 1961, Ser. No. 159,884
Claims priority, application Austria, Dec. 22, 1960, A 9,603/60
3 Claims. (Cl. 179—100.1)



1. In recording and reproducing apparatus of the type having a movable carrier and means for moving said carrier at different rates of speed, a transistor amplifier having an operating voltage terminal and a ground terminal, a source of alternating voltage, rectifier means, a transformer having a primary winding connected to said source and a secondary winding connected to said rectifier means, charging capacitor means connected to said rectifier means and having one electrode connected to said ground terminal, commutating means having first, second and third contacts, means connecting said first terminal to said operating voltage terminal, means connecting said second terminal to said ground terminal, means connecting said third terminal to the other electrode of said capacitor, electromagnetic means having a coil and being mechanically coupled to said commutating means, means mechanically coupled to said electromagnet means for controlling said means for moving said carrier at different rates of speed, and means for connecting said coil in parallel with said capacitor, whereby said amplifier is energized at a first predetermined rate of speed of said carrier and said ground and operating voltage terminals are connected together at a second predetermined rate of speed of said carrier.

3,308,247
AUTOMATIC CORD RETRACTOR FOR UPRIGHT FLOOR APPLIANCE

Henry F. Doersam, North Olmsted, Ohio, and George H. Fitzsimonds, Trumbull, Conn., assignors to General Electric Company, a corporation of New York
Filed Sept. 17, 1964, Ser. No. 397,081
2 Claims. (Cl. 191—12.2)

1. An upright floor appliance comprising:

(a) a tubular handle having a first wall portion and a diametrically opposed second wall portion, a pair of aligned apertures formed in said first and second wall portions;

(b) a generally flat plate having a generally centrally located aperture and outwardly extending mounting means integrally formed therewith, said generally flat plate being fixed to the first wall portion of said tubular handle;

(c) a block of insulating material having an aperture formed therein, said block being fixed to said generally flat plate with the aperture in said block in line with the aperture in said plate;

(d) flexible electrical contact means fixed to said insulated block;

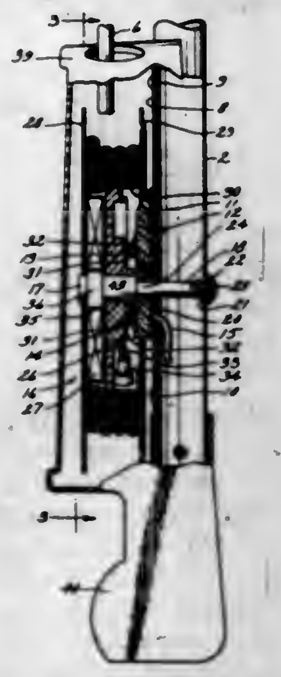
(e) a cord reel for storing cord for the appliance;

(f) a cantilevered spindle for rotatably mounting said reel, one end portion of said spindle extending through the aperture in said insulating block, through the aperture in said generally flat plate and through the apertures in said handle for securely mounting said spindle on said tubular handle, said cantilevered spindle providing the sole support for said reel;

(g) a spiral spring continuously urging said reel in one direction of rotation for winding cord on said reel;

(h) sliding contact means connected with said cord; and

(i) a cover having an enlarged front wall portion,



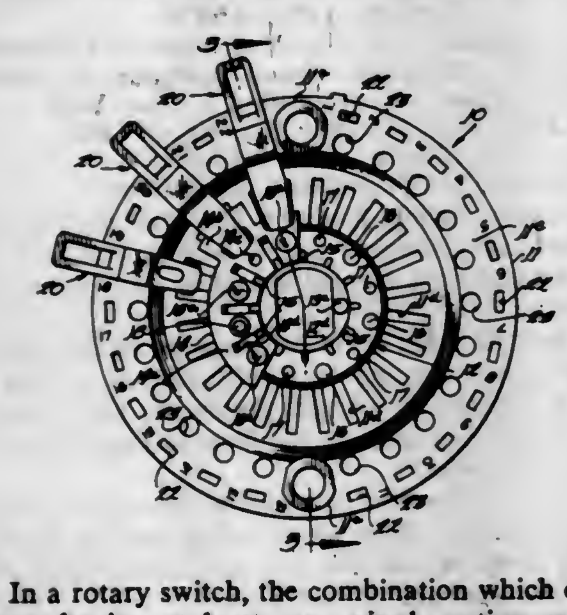
relatively narrow top, bottom and side walls integrally formed with said enlarged front wall portion and arranged generally perpendicular thereto, the relatively narrow side walls of said cover being mounted on said outwardly extending mounting means integrally formed on said generally flat plate, said generally flat plate providing the sole support for said cover.

3,308,248
ROTARY SWITCH WITH IMPROVED CONTACT STRUCTURE

Kurt Stephan and Dennis Pat Tronca, Thiensville, and George Peter Piotrowski, Milwaukee, Wis., assignors to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed Feb. 12, 1965, Ser. No. 432,146

18 Claims. (Cl. 200—11)



1. In a rotary switch, the combination which comprises a stator having at least one raised portion on at least one side thereof, a rotor positioned coaxially within the stator for rotational movement relative to the stator, at least one contact assembly mounted on each side of the rotor associated with a side of the stator having a raised portion, and a selected number of wiper assemblies mounted on the stator for engaging the associated contact assemblies below the outermost associated side surface of the switch as the rotor is rotated relative to the stator so that electrical connections are selectively established therebetween the raised portions being disposed so that the engaging portions of the contact and wiper assemblies are not engageable by a surface when an outermost side surface rests upon the surface.

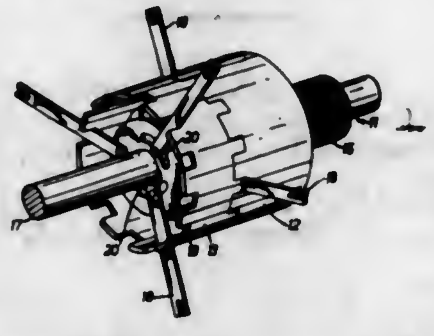
3,308,249
MULTI-CIRCUIT SWITCH WITH IMPROVED CASTELLATED SECTIONS

Geoffrey W. Cullen, Sarisbury, Southampton, England, assignor to The Plessey Company Limited, Ilford, England, a British company

Filed Mar. 30, 1966, Ser. No. 538,618

Claims priority application Great Britain, Apr. 2, 1965, 14,116/65

3 Claims. (Cl. 200—14)



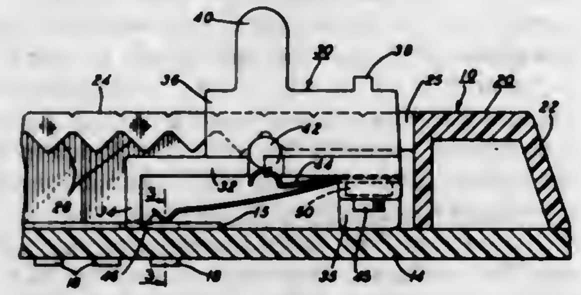
1. A rotary electric switch comprising a stator, a rotor, actuating means for facilitating rotation of said rotor with respect to said stator, said stator including at least two insulating contact supporting members secured together, said secured supporting members having castellations interlocking with each other, at least one contact element lying in a radial plane relative to the axis of rotation of said rotor and clamped between said interlocking castellations, said castellations having clamping surfaces lying in planes transverse to said radial plane to preclude displacement of said clamped contact element relative to said supporting members, said rotor having contacts cooperable with said clamped contact element to effect different switching actions in different angular positions of said rotor.

3,308,250
SLIDE SELECTOR SWITCH

Nathaniel L. Field III, Ann Arbor, Mich., and James F. Ritchey, Carmel, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 15, 1966, Ser. No. 527,410

6 Claims. (Cl. 200—16)



1. A slide selector switch comprising:

a board having an insulated strip conductor and a group of insulated island conductors on the upper surface thereof, the island conductors being spaced from one another and from the strip conductor and being located along a line extending parallel to the strip conductor, each individual island conductor being connected through the board to a conductor extending transverse to the strip conductor, the transverse conductor extending along the underside of the board;

a face plate overlying the board and spaced therefrom, the face plate having a slot therein extending parallel to and in general registration with the strip and island conductors;

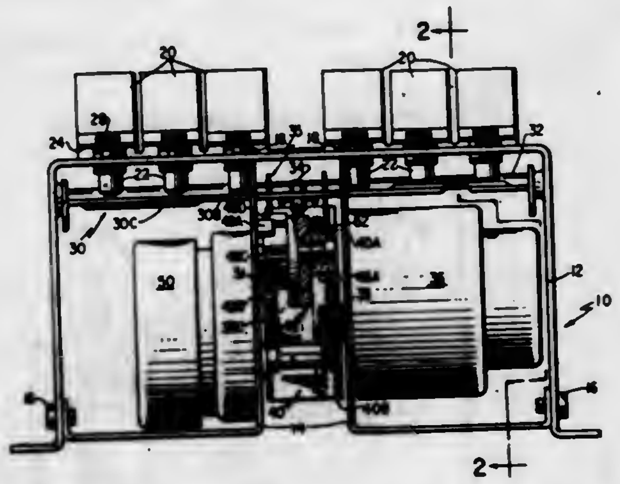
a selector positioned in the slot of the face plate and movable along the length thereof, the selector including a pair of spaced contacts electrically connected to one another and biased toward the board, a first contact engaging the strip conductor and the second contact engaging the line along which the group of island conductors extend, whereby the selector is positionable to connect the strip conductor to any one of the island conductors.

3,308,251
SEQUENCE SWITCH WITH PLATE TYPE SWITCH ACTUATOR

Siegfried H. A. Schmaus, Philadelphia, Pa., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 20, 1964, Ser. No. 412,802

4 Claims. (Cl. 200—38)



1. In a sequence switch, the combination including a frame, a plurality of plunger operated switches arranged side by side on said frame, switch operator plate means pivotally mounted on said frame, for engaging and actuating said plungers, actuator means oscillatably mounted in said frame and engageable with said plate means, a shaft in said frame having gear means thereon, reversible motor means in said frame for rotating said shaft and gear means, gear segment means on said actuator means meshing with said gear means, cam means rotatably mounted in said frame and having segmental gear means thereon, said cam means engaging with said plate means, reset clutch timing motor means mounted in said frame and having a geared shaft, said shaft being in mesh with said gear means on said cam means, whereby said reversible motor means will move said switch operator plate means to sequentially actuate said plungers at a predetermined rate, and said clutch timing motor will move said plate means away from said plungers when de-energized so as to render ineffective said reversible motor means.

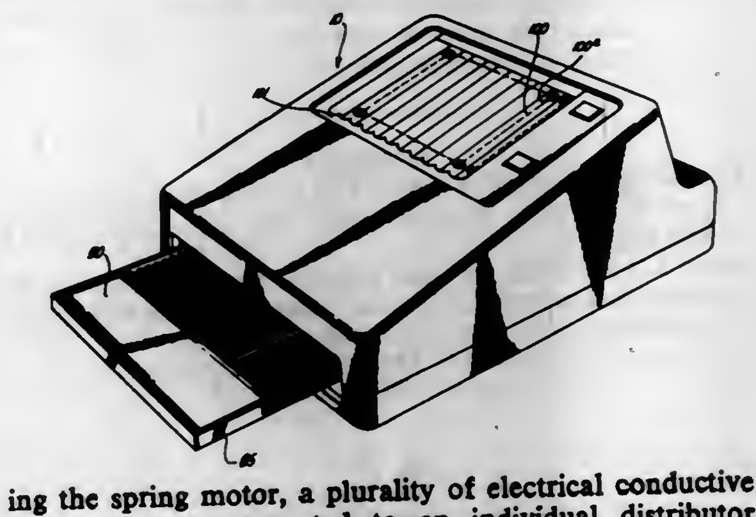
3,308,252
DATA INPUT STATION FOR PUNCHED CARDS

Norman J. Rosen, Altadena, Calif., assignor, by mesne assignments, to Giannini Controls Corporation, Duarte, Calif., a corporation of New York

Filed Mar. 28, 1963, Ser. No. 268,650

5 Claims. (Cl. 200—46)

4. An input station for a data collection system, the station being coupled to a recorder for storing the electrical signals transmitted thereto from a plurality of input stations, said station comprising a base member, a dial telephone type spring motor mounted on the base member, a distributor disc having a plurality of distributing terminals, a conductive distributor arm mounted for rotation by said motor to sequentially contact the distributing terminals, releasable means for maintaining said motor in a non-distributing position and to release the motor upon receiving a command signal, a tray for receiving a perforated record card to be read slidably mounted on said base member from a reading position to a non-reading card receiving position, means coupled between said tray and said motor responsive to the movement of the tray into the reading position for wind-



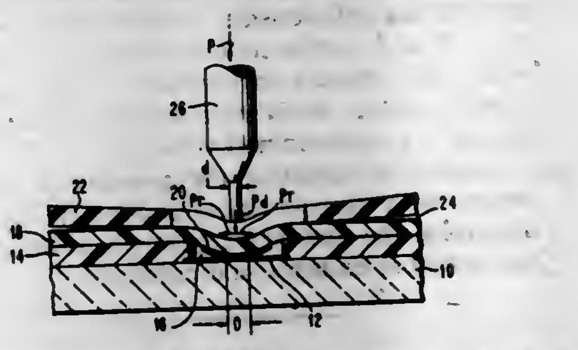
ing the spring motor, a plurality of electrical conductive sensing means connected to an individual distributor terminal and providing an electrical signal identifying the physical location of a sensed perforation on the record card, a plurality of manually operated switch means mounted on the base member for entering additional information at the input station, circuit means connecting each of said switch means with an individual distributing terminal, the distributor arm sequentially contacting the distributor terminals upon actuation of said releasable means whereby the perforation location signals and said switch signals are transmitted to the recorder.

3,308,253
DIAPHRAGM SWITCH HAVING A DIAPHRAGM SUPPORTED ON AN INCOMPRESSIBLE LAYER AND AN ELASTOMER OVERLAYING THE DIAPHRAGM

Morris Krakinowski, Ossining, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Mar. 25, 1965, Ser. No. 442,758

8 Claims. (Cl. 200—46)



1. A switch which is activated by pressure applied to a small area near the center thereof comprising:

a base assembly having a first conductive contact element;

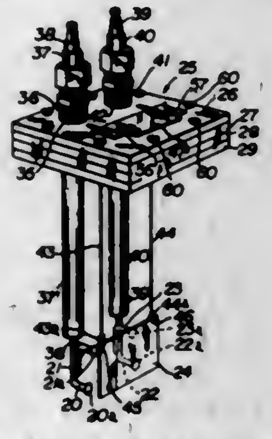
a substantially incompressible insulating layer overlaying said base assembly, said insulating layer having an opening therethrough which is aligned with said first conductive contact element;

a diaphragm assembly overlaying said insulating layer, said diaphragm assembly having a second conductive contact element which is aligned with said first conductive contact element but is normally separated therefrom by a gap formed by said opening;

and an elastomer layer in contact with the upper surface of said diaphragm assembly and having a low coefficient of friction therewith, said elastomer layer coacting with the walls of said opening to deform said diaphragm assembly into said opening with a small radius of curvature as pressure is initially applied to said small area to cause an initial point contact to be established between said contact elements, and further coacting with the walls of said opening to further deform said diaphragm assembly to increase the radius of curvature of the lower surface thereof, as the pressure applied to said small area is increased, to cause the area of contact between said contact elements to be increased.

3,308,254
FLOW RESPONSIVE SWITCH WITH BROAD AREA CONTACT SUPPORTED BY FILAMENTARY MEANS

Irven J. McMahon, Jr., and Leon H. Stuenkel, Painesville, Ohio, assignors to The Coe Manufacturing Company, Painesville, Ohio, a corporation of Ohio
Filed June 16, 1964, Ser. No. 375,576
8 Claims. (Cl. 200—81.9)



1. In a large area duct for conducting a low velocity gaseous medium substantially horizontally, a control instrumentality for sensing the velocity of said flow comprising:

support means adapted to be mounted on the duct;

a pair of spaced electric switch contacts;

a broad area mobile contact member shaped and dimensioned to bridge said contacts;

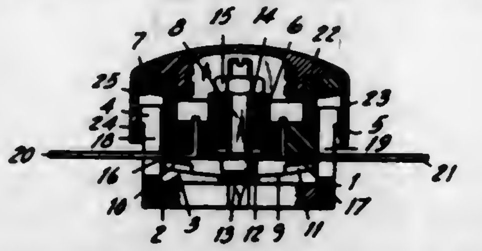
filamentary suspension means connected to said support means and to said mobile contact member for suspending said mobile contact member in spaced confronting relationship to said contacts for movement of said mobile contact member into engagement with said contacts in response to flow against said mobile contact member toward said contacts in excess of a predetermined velocity;

and menas for adjusting the position of said support means with respect to said contacts to selectively determine the flow velocity at which the mobile contact member engages said contacts.

3,308,255
AMBIENT THERMAL PROTECTOR WITH ABUTMENT CONTACT REENGAGEMENT MEANS MOUNTED ON ITS CASE

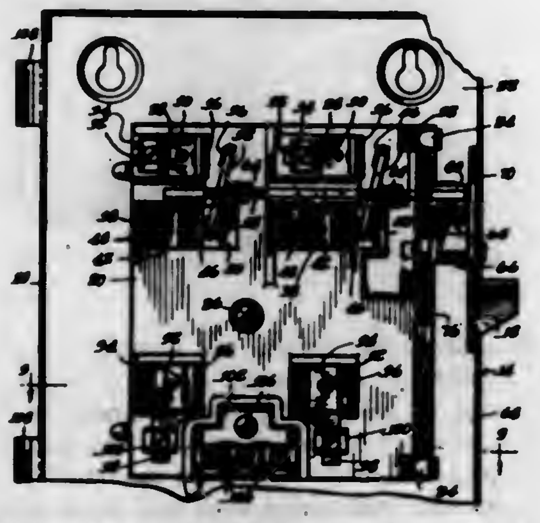
Giuseppe Faggiano, Milan, Italy, assignor to AMF Elettrica S.p.A., Milan, Italy, a corporation of Italy
Filed May 28, 1965, Ser. No. 459,773
Claims priority, application Italy, June 8, 1964, 12,361/64
10 Claims. (Cl. 200—113)

1. In a manual reset thermal protective device for electrical apparatus, an insulating base having an aperture therein, an insulating body movably mounted in said aperture, a stationary contact mounted on said body, a bimetallic member mounted on said body, a movable contact mounted on said bimetallic member, said bimetallic member having a normal curvature whereby said contacts are engaged, said bimetallic member being adapted to automatically reverse its curvature with a snap action to effect disengagement of said contacts when subjected to a predetermined temperature, and abutment means on said base for returning said bimetallic member to normal curvature with a snap action to effect contact reengagement when said body is moved.



3,308,256
SAFETY SWITCH HAVING FLATWISE PIVOTABLE BLADES

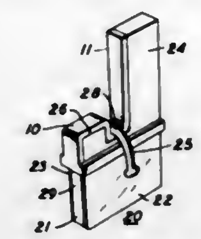
William C. Carlyle, Toronto, Ontario, Canada, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Dec. 30, 1963, Ser. No. 334,222
4 Claims. (Cl. 200—114)



1. A safety switch comprising a box including a back wall portion and a side wall portion, an insulating base in said box secured to said back wall portion, a stationary contact mounted on said base, a generally flat substantially rigid one-piece elongated switch blade pivotally mounted adjacent one end on said base for flatwise pivotal movement about an axis generally perpendicular to said back wall portion of said box and carrying a movable contact adjacent its other end, the movable contact engaging said stationary contact in butt-type engagement upon flatwise pivotal movement of the switch blade, a blade actuator reciprocably mounted on said base for reciprocal movement generally perpendicular to said side wall portion of said box, means connecting said blade actuator and switch blade in a manner such that movement of said blade actuator causes movement of said switch blade, a cam pivotably mounted for pivotal movement about an axis generally perpendicular to said side wall portion of said box, means connecting said cam and blade actuator in a manner such that movement of said cam causes movement of said blade actuator, an operating handle pivotably mounted for pivotal movement about an axis generally perpendicular to said side wall portion of said box, and means connecting said handle and cam in a manner such that movement of said handle causes movement of said cam.

3,308,257
MINIATURE INDICATING FUSE

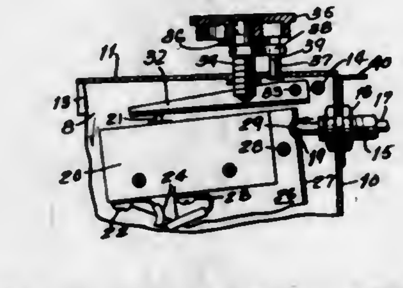
Joel E. Thompson, Newark, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 503,182
9 Claims. (Cl. 200—123)



1. An electrical fuse comprising a body with an end tab extending from the top edge thereof and a pair of electrical contacts with a fusing element therebetween, and means for indicating a burn-out of said fusing element comprising an elongated resilient member having a normally linear shape when under no stress, said member comprising an indicator element, means attaching an end of said member to an edge of said body remote from said tab, and means including said fusing element securing the remainder of said indicator element in a distended position flush with the inner edge of said tab and also the adjacent upper edge of said fuse body, said fusing element releasing said indicator element upon burn-out, whereby said indicator element springs erect to signal a blown fuse.

3,308,258
HIGH OR LOW TEMPERATURE THERMOSTAT WITH OVERTHROW RELIEF

Frank Reingruber, Bartlett, N.H. 03812
Filed July 23, 1965, Ser. No. 474,430
1 Claim. (Cl. 200—139)



A thermostat for high or low temperature conditions, protected against excessive temperature changes in both fields of use comprising

a quadrangular case having parallel side walls connected by parallel end walls,

a rocker pivoted in said case having parallel sides opposed to said side walls and a connecting end opposed to one of the end walls of the case,

a switch confined between the sides of said rocker and having an upwardly projecting operating member,

a thermally actuated member mounted on said last mentioned end wall of the case in opposition to and in engagement with the end of said rocker at a point to one side of the pivotal center of said rocker,

a spring connected with the end of said rocker and tensioning the same into engagement with said thermally actuated member,

a lever pivoted between the sides of said case above the rocker and in operating engagement with said actuating member of the switch,

an adjustment screw mounted on the case above said lever and engageable by said lever as an abutment to limit upward movement of the lever, whereby to effect actuation of the switch on pivotal movement of the rocker effected by said spring under control of said thermally actuated member,

said thermally actuated member being freely separable from said rocker in one direction of movement whereby to permit said rocker to remain in position determined by said adjusting screw operating as an abutment and said spring permitting unrestricted movement of the rocker in the opposite direction, said adjustment screw carrying a projecting stop member,

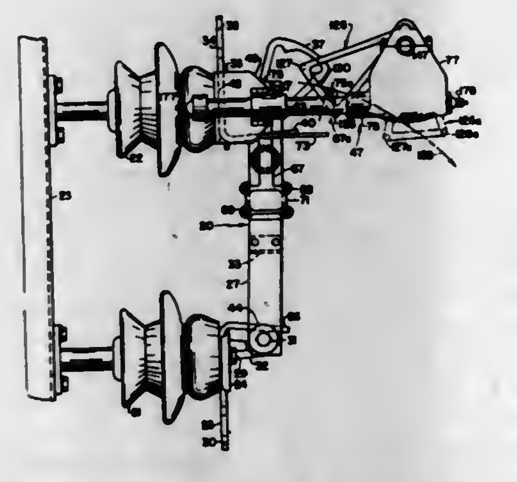
an upstanding post on the case engageable by said stop member, to limit the range of adjustment of said screw,

said post having a slot in the top of the same, and

a band of spring material looped about the stem of said screw and the ends of the same being engaged in said slot and holding said band stationary in frictional clamping engagement with the screw and thereby yieldingly retaining said screw in various positions of adjustment.

3,308,259
EXPULSION-TYPE INTERRUPTER FOR HIGH VOLTAGE DISCONNECT SWITCH

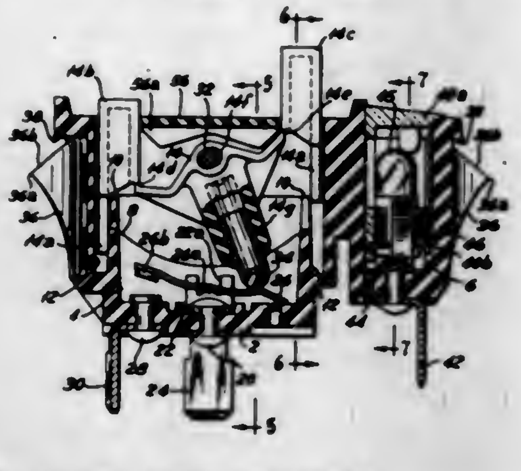
Leonard A. Hulteen and William H. Gilliland, Birmingham, Ala., assignors to USCO Power Equipment Corporation, Birmingham, Ala., a corporation of Alabama
Filed Oct. 5, 1964, Ser. No. 401,300
18 Claims. (Cl. 200—146)



1. An expulsion type arc interrupting device for a high voltage switch comprising:
- (a) a housing;
- (b) a drive lever pivotally mounted within said housing and having a first toggle spring seat adjacent an outer swinging end portion thereof;
- (c) a driven lever pivotally mounted within said housing and having a second toggle spring seat adjacent an outer swinging end portion thereof and facing said first seat;
- (d) a compression toggle spring seated on said seats;
- (e) said housing having stop means therein and said drive lever and said driven lever each being engageable with said stop means to limit their movement in either direction;
- (f) the pivotal axes of said drive and driven levers being so located that said spring seats thereon are closest together when said levers are in coplanar alignment and so that clockwise movement of said drive lever results in a snap action counterclockwise movement of said driven lever after coplanar alignment is passed, and vice-versa;
- (g) means for rotating said drive lever in either direction;
- (h) a hollow tube of arc extinguishing material;
- (i) and a pair of electrical contacts within said tube; and
- (j) said driven lever being connected to one of said contacts to selectively move it with a snap action either into engagement or disengagement with the other contact.

3,308,260
ELECTRIC SWITCHES

Alvan W. Krieger and Thomas J. Schimmels, Milwaukee, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Jan. 28, 1966, Ser. No. 523,766
12 Claims. (Cl. 200—168)



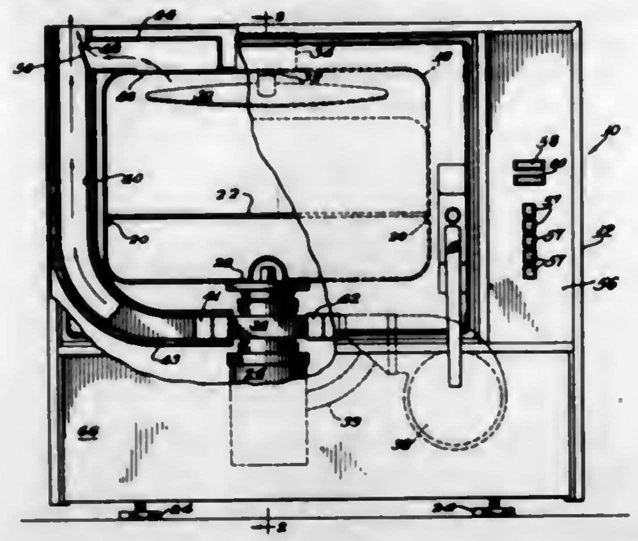
1. An electric switch comprising:
a molded insulating base having a switch compartment open at the top;
stationary contacts in said compartment connected through said base to external terminals;
a movable contact mounted for rocking movement to bridge a pair of said stationary contacts;
an actuator pivoted to said base and having a spring-biased plunger for actuating said movable contact;
and means affording snap-in mounting of said base in an aperture in a mounting panel comprising;
pairs of resilient wings molded integrally with the base, each pair of wings comprising two generally rectangular flaps having adjacent, inner and lower edges integral with the base and having their upper-outer corners curved away from the base, and the outer and upper edges inclined toward each other whereby such inclined outer edges act as a resilient cam when the switch is pressed into an aperture in a mounting panel and the upper inclined edges afford balanced gripping of a range of different thicknesses of panel between it and an overhanging lip on the base.

2. The invention defined in claim 1, wherein said actuator comprises:
a one piece molded pushbutton unit pivoted at a mid-portion to the base and having two pushbuttons at laterally spaced points thereof and a lower portion for actuating the movable contact, each said pushbutton integrally molded with and connected to the remainder of said unit by a thin section of resilient material forming a hinge portion.

3,308,261
MICROWAVE OVEN CONSTRUCTION

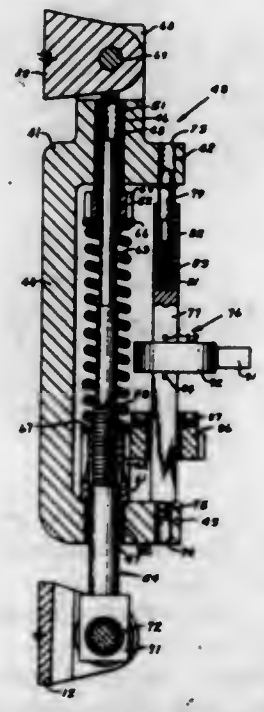
Leonard Velander, Minneapolis, Minn., assignor, by mesne assignments, to Litton Precision Products, Inc., Beverly Hills, Calif., a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,377
3 Claims. (Cl. 219—10.55)

1. A microwave oven comprising a housing having a metallic enclosure therein, means for supplying high frequency energy into said enclosure, said enclosure being adapted to support a load to be heated therein, means for cooling said supplying means comprising blower means for providing an air stream, first duct means within the housing connected to said blower means and to the housing for conveying an air stream past said supplying means to the exterior of said housing, and second duct means connected between said enclosure and said first duct means downstream from said supplying means responsive to the passage of an air stream in said first duct for aspirating air and vapor from said enclosure into said first duct, whereby the build-up of condensation within said enclosure is prevented by exhausting it to the exterior of the housing.



3,308,262
ADJUSTING DEVICE FOR WELDING HEAD

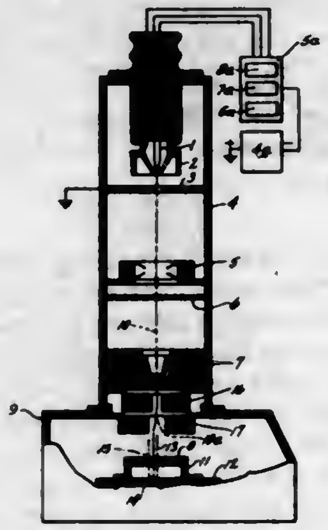
Simon Fisher, Bay City, Harold E. Bach, Monitor Township, Bay County, and Thomas V. De Agostino and Clifford E. Roth, Bay City, Mich., assignors to National Electric Welding Machines Co., Bay City, Mich., a corporation of Michigan
Filed May 6, 1964, Ser. No. 365,373
10 Claims. (Cl. 219—78)



1. In a device for holding a welding electrode in position for engagement with a workpiece, said device independently adjusting both the position of said electrode with respect to said workpiece and the resilient pressure by which said electrode is caused to bear against said workpiece, the combination comprising:
a frame and means operatively associated therewith for positioning said electrode with respect to a workpiece, said frame including a pair of similarly oriented guideways;
a reciprocable element slidably received within said guideways and having a projecting portion extending beyond said frame at one side thereof, the position of said electrode being controlled by such projecting portion of said element;
adjustment position means adjustably coupled with said reciprocable element for limiting travel of said reciprocable element with respect to said frame in a direction with respect to the workpiece to be engaged by said electrode, said adjustment position means having a movable element concentric with said reciprocable element and rotatable relative thereto to cause the limited travel of said reciprocable element to be adjusted, and resilient means operatively arranged between said adjustment position means and said frame for resiliently urging said reciprocable element in said direction to a limit permitted by said adjustment position means.

3,308,263
ARRANGEMENT FOR WELDING, CUTTING OR WORKING MATERIALS BY MEANS OF AN ELECTRON BEAM

Fritz Schleich, Baden-Wurttemberg, Germany, assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,656
Claims priority, application Germany, Feb. 14, 1963, Z 9,916
1 Claim. (Cl. 219—121)



A device for welding, cutting or working materials by means of a source of a beam of charged particles comprising:
means providing a beam source of charged particles,
a first electron optical lens located between the source and the material to be worked,
said first lens providing a reduced image of said beam source,
a second magnetic electron optical lens located between the first lens and the materials to be worked,
said second lens working with a minimum value of the ratio k, comprising the division of the aperture constant by the working distance and where k is defined by the relationship

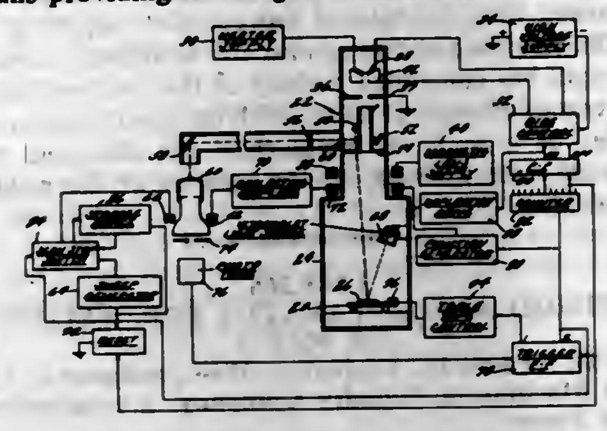
$$k^2=c(\mathrm{Ni})^2\frac{1}{U}$$

wherein c is a constant depending on the ratio of the bore diameter and the slot width of the lens, Ni is the number of ampere turns, and U is the acceleration voltage of the electrons.

3,308,264
ADAPTIVE POSITIONING DEVICE

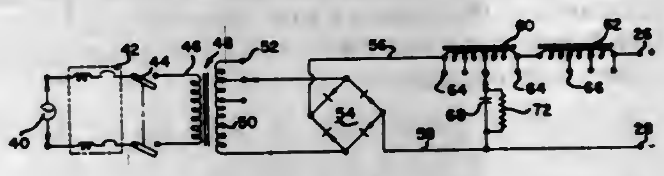
Lee R. Ullery, Jr., Simsbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Original application Apr. 19, 1963, Ser. No. 274,177, now Patent No. 3,267,250, dated Aug. 16, 1966. Divided and this application Feb. 2, 1966, Ser. No. 538,880
5 Claims. (Cl. 219—121)

1. Apparatus for working an article with an energized beam comprising:
means for generating an energized beam,
means for supporting an article to be worked generally in the path of said beam, said article being provided with an emissive material on a preselected area to be worked by the beam,
means for stimulating the emission from emissive areas on the article,
means providing an image of the article to be worked,
means for scanning the image and generating a work initiation signal indicative of an emissive area,
means controlled by the image scanning means for deflecting the energized beam and directing the beam at the area on the article from where the initiating emission emanated,
means responsive to said work initiation signal for causing a highly energized pulse of said beam to perform work at the initiating emissive area on the article.



3,308,265
FILTERING CIRCUIT

Edward J. Hobart, Troy, Ohio, assignor to Hobart Brothers Company, Troy, Ohio, a corporation of Ohio
Filed Oct. 29, 1962, Ser. No. 233,810
3 Claims. (Cl. 219—131)



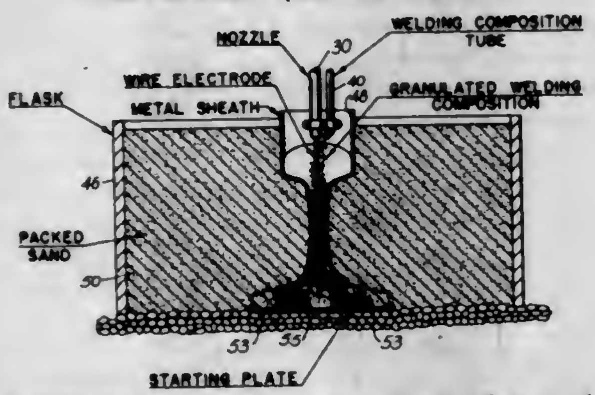
1. A power supply for use in shorted arc transfer welding wherein a consumable electrode is shorted periodically to cause heating and melting thereof with the molten electrode metal sprayed onto the work when an arc between the electrode and work is established, said power supply comprising:
a source of alternating current at substantially the welding voltage;
rectifier means for converting said alternating current to direct current;
output terminal means for connection with the article to be welded and to a consumable welding electrode; and
filter means to reduce the ripple in the output wave form, to protect the rectifier means from the peak currents resulting when the electrode is shorted against the workpiece, and to control the rate of current rise through the electrode, said filter interconnecting said output terminals with said rectifier means and including:
a first and second iron core inductor connected in series between said rectifier means and one of said output terminals, said first inductor connected adjacent said rectifier means and having an adjustable connection thereon; and
a capacitor having one side connected to the other of said output terminals and the other side connected to the adjustable connection on said first inductor,
said filter means providing a high open circuit voltage

to assist in the reestablishment of the arc after melting the electrode to assist in metal transfer and to provide a lower, substantially constant voltage at the output terminals as the current subsequently increases when shorting is again effected,

the positioning of said adjustable connection determining the time constant of the filter and being so adjusted that the rate of current rise occurring when the electrode shorts against the workpiece causes the rapid but controlled melting of the electrode and the reestablishment of an arc with the simultaneous transfer of a spray of metal from the electrode to the workpiece without causing splatter of the weld material.

3,308,266
METHOD AND APPARATUS FOR WELDING OF RAILS

Clyde M. Adams, Jr., Lexington, Mass., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Jan. 15, 1963, Ser. No. 251,613
33 Claims. (Cl. 219—137)



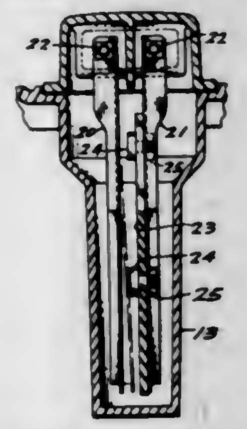
1. A method of enclosed electric welding to joint a pair of rails having their end surfaces arranged to form a welding space, comprising the steps of providing an enclosure at the sides of said space adapted to contain liquid metal and slag and having a heat diffusivity *KdC* of less than 60, wherein

K=thermal conductivity in B.t.u./sq. ft./hr./° F./ft.
d=density in lb./cu. ft., and
C=specific heat in B.t.u./lb./° F.

feeding consumable electrode downwardly within said space passing high amperage electric current through said electrode and a zone at the lower end thereof to cause melting of the electrode, and supplying a layer of slag-forming composition over the liquid metal in said space.

3,308,267
VAPORIZER

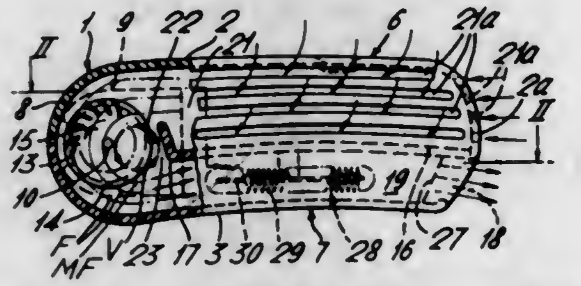
Donald E. Fenstermaker, Toledo, Ohio, assignor to The De Vilbiss Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 30, 1964, Ser. No. 400,358
4 Claims. (Cl. 219—290)



1. In a steam vaporizer having a chamber for water or similar electrolyte and two spaced elongated, facing electrodes disposed in said chamber normally immersed to at least a predetermined depth in said electrolyte and between which electrical current passes to cause heating of said electrolyte, the improvement comprising a facing strip of water impervious insulating material carried by one of said electrodes and between the two electrodes, said strip of insulating material conforming in shape to the shape of said one of said electrodes and having a length at least coextensive with the normally immersed portion of said electrode.

3,308,268
PORTABLE HAIR DRYERS

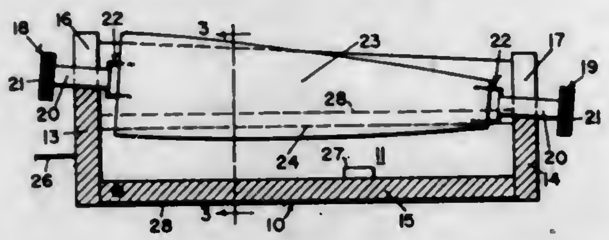
Nikolaus Laing, Hofener Weg. 35, Aldingen, near Stuttgart, Germany
Filed Apr. 12, 1965, Ser. No. 447,264
Claims priority, application Germany, Apr. 15, 1959, L 32,977, L 23,717; Apr. 17, 1959, L 33,210
9 Claims. (Cl. 219—370)



1. A hair dryer comprising a casing having spaced end walls, top and bottom walls interconnecting the end walls, a curved rear wall merging into the top and bottom walls of a size to fit between the thumb and forefinger when the casing is grasped in the hand, the end walls being formed with inlet openings and the casing defining a slot-like outlet opposite the rear wall and extending over the width of the casing between the end walls, a commutator-type electric motor centrally located in the casing adjacent the rear end and having a shaft parallel thereto, a pair of cylindrical bladed rotors overhung mounted on the opposite ends of the motor shaft and extending between the motor and the respective side walls, an outlet duct extending directly from the rotor to said outlet with the interior of said bottom wall of the casing forming a bottom side of said outlet duct, and electric heater means in the outlet duct; the rotors on rotation inducing flow into the inlet openings, through the rotor, through the outlet duct past the heater means and thence out of the outlet in the form of a flat jet.

3,308,269
CORN-ON-THE-COB BUTTERERS

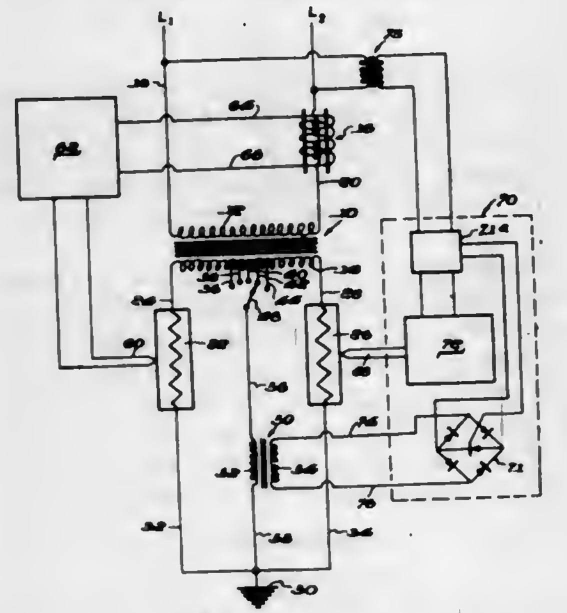
Hans Stocker, 524 Grosvenor Place, Chicago Heights, Ill. 60411
Filed Jan. 27, 1964, Ser. No. 340,238
1 Claim. (Cl. 219—436)



As a new article of manufacture, a corn-cob-butterer constituted to butter cobs of corn which are of decreasing diameter from a large diameter end to a small diameter end, said butterer comprising an open top tray unit, including a floor, end walls and side walls, the end walls being of equal height measured from the floor of the butterer, and being provided with downwardly extending sockets to accommodate the stems of prongs inserted into the ends of a corn-cob which is of the contour above defined, one of said sockets having its floor at greater distance from the floor of the butterer than the floor of the other socket; the floor of the tray unit being concave upwardly on a substantially semi-circular surface wherein said tray unit comprises heat resisting material constituted to withstand temperatures substantially as high as the melting temperature of butter-like material; together with an electric heating element embedded into the floor of the tray unit.

3,308,270
METHOD OF AND APPARATUS FOR CONTROLLING HEATING ELEMENT TEMPERATURE

Thomas H. Jensen, Oakmont, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 27, 1964, Ser. No. 340,432
5 Claims. (Cl. 219—497)



1. Apparatus for maintaining first and second A.C. electrical heating elements energized from the secondary coil of power transformer having a primary and a secondary coil at predetermined temperatures, said apparatus comprising:

first circuit means including a first temperature controller, a first temperature responsive element, and a saturable means, arranged to regulate said power transformer in response to temperature signals from said first A.C. electrical heating element;

said power transformer secondary coil being electrically connected at one end to one side of said first A.C. electrical heating element and at the other end to one side of said second A.C. electrical heating element;

said power transformer secondary coil having a plurality of voltage taps;

a control transformer having a primary coil and a secondary coil;

circuit means for alternately connecting one of said voltage taps to one end of said control transformer primary coil;

circuit means to connect one side of said first A.C. electrical heating element, one side of said second A.C. electrical heating element, and one end of said control transformer primary coil to a common ground;

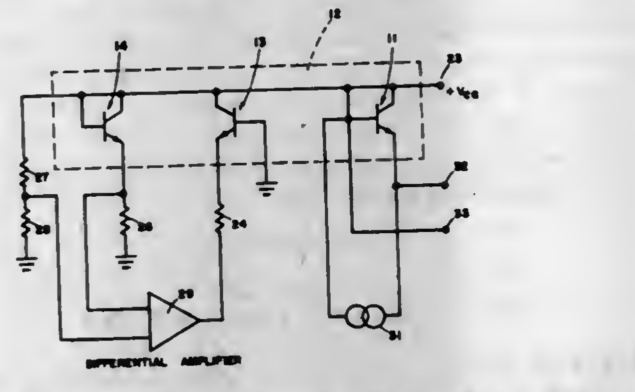
said control transformer secondary coil being electrically connected to a second temperature controller constructed and arranged to vary the impedance on said control transformer secondary coil in response to temperature signals;

a second temperature responsive element connected to said second A.C. electrical heating element and connected to said second temperature controller to transmit temperature signals from said second A.C. electrical heating element to said second temperature controller;

said first and second temperature controllers each being set to maintain said first and second A.C. electrical heating elements at predetermined temperatures.

3,308,271
CONSTANT TEMPERATURE ENVIRONMENT FOR SEMICONDUCTOR CIRCUIT ELEMENTS

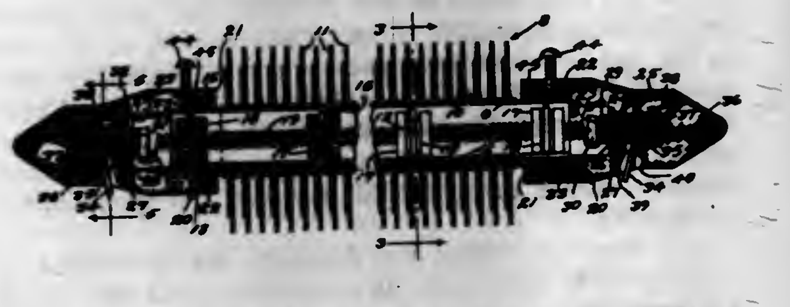
David F. Hilbiber, Los Altos, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed June 8, 1964, Ser. No. 373,375
12 Claims. (Cl. 219—501)



1. An arrangement for maintaining a constant temperature environment for semiconductor circuit elements comprising at least one heating semiconductor device for dissipating heat in accordance with the current flowing therethrough, at least one semiconductor circuit element to be maintained at a constant temperature, a substrate common to said heating device and circuit element and in good thermal contact therewith, and temperature sensing transistor having an emitter, a base, a collector, and a base-emitter junction, said transistor in good thermal contact with said substrate for producing a control voltage signal across said base-emitter junction in proportion to the temperature of said substrate, said temperature sensing transistor being coupled to each of said heating semiconductor device to control said current therethrough in accordance with said control voltage signal to maintain a constant temperature in said substrate and therefore in the vicinity of each of said circuit elements.

3,308,272
ELECTRIC SPACE HEATER

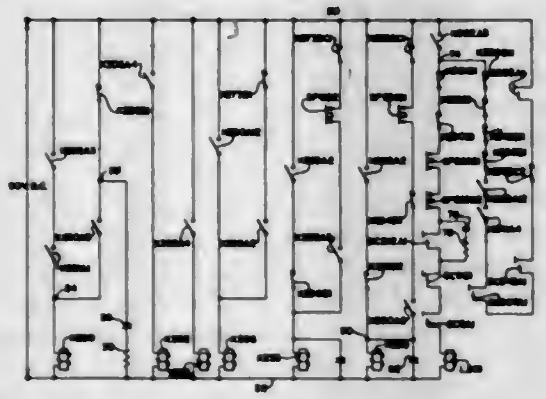
Louis O. Harmon, R.D. 5, Amsterdam, N.Y. 12010
Filed Dec. 22, 1964, Ser. No. 420,374
2 Claims. (Cl. 219—530)



1. An electric space heater comprising an elongated metal heat radiating tube, a plurality of heat conducting fins supported on and extending transversely in all directions from said tube and disposed in spaced apart relation to one another, a coiled electrical resistance element extending longitudinally through said tube, terminals connected to the ends of said resistance element and adapted

to electrically connect said resistance element to two electrical conductors; electrical insulators detachably connected to and extending outwardly from the ends of said tube and supporting said terminals beyond the tube ends for holding the resistance element extended, supporting means detachably mounted in said tube and supporting said resistance element electrically insulated from the tube between said terminals, said supporting means comprising an elongated rod disposed in and resting on a part of said tube, a plurality of collars of electrical insulating material through which said resistance element extends, a plurality of spring clips fixed to and projecting transversely from said rod and embracing said collars for supporting said collars in spaced apart substantially aligned relation to one another, each of said insulators including an elongated body of electrical insulating material having a recess opening through an inner end thereof for receiving one of said tube ends, a restricted cavity disposed beyond and communicating with said recess for accommodating a part of said terminal to which one of said ends of the resistance element is secured, a transverse wall defining an outer end of said cavity having an opening through which a part of the terminal extends, and a fastening of electrical conducting material secured to a part of said terminal and bearing against an outer side of said transverse wall for securing the terminal to the insulator.

3,308,273
PRINTING CONTROL MEANS FOR ACCOUNTING MACHINES
Lloyd D. Turner, Brookville, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Mar. 18, 1963, Ser. No. 265,924
7 Claims. (Cl. 235—61.9)



1. In a device of the class described, having an accounting machine, a feeding device for feeding record members to the accounting machine, and a data input device for entering information into the accounting machine, said accounting machine including printing means, computation means, record member receiving and positioning means, and means to cause a record member to be positioned for printing on its first available line space following a balance operation in which printing has taken place in the last available line space of a record member, said accounting machine being capable of performing computations and recording the results as item and balance entries on successive line spaces in a first column and a second column on a record member, the combination comprising

line detecting means for detecting the exhaustion of available line spaces in each column of the record member;

column detecting means capable of assuming either one of two conditions, depending upon whether recording is taking place in the first column or the second column of the record member;

operation control means controlled by the line detecting means and by the condition of the column detecting means according to the record member line and column being printed upon to energize when the last line space in the first column of a record member has been exhausted;

first disabling means controlled by energization of the operation control means and capable of preventing operation of the feeding device when the last line space in the first column of a record member has been exhausted;

second disabling means controlled by energization of the operation control means and capable of preventing operation of the data input device when the last line space in the first column of a record member has been exhausted;

new balance means controlled by energization of the operation control means, and operable to initiate automatically a new balance operation of the accounting machine when the last line space in the first column of a record member has been exhausted;

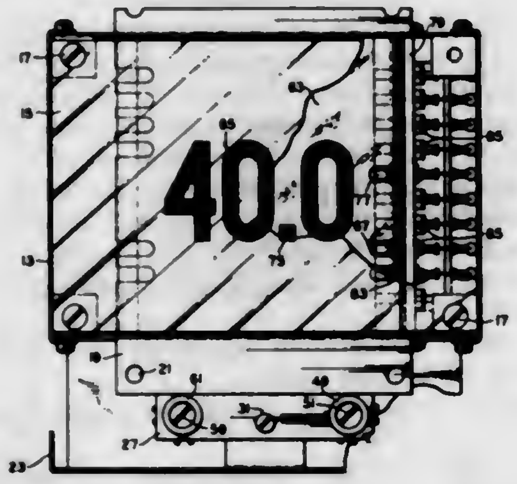
balance pick-up means for automatically initiating a balance pick-up operation immediately following a new balance operation initiated by the new balance means;

means controlled by initiation of a balance pick-up operation to cause deenergization of the operation control means, thus rendering the first and second disabling means inoperable, and permitting further operation of the feeding device and the data input device; and

print control means for controlling the printing means of the device to cause printing to take place in the second column of the record member in an item entry operation following the new balance operation,

whereby recording on the record member during an item entry operation following said balance pick-up operation takes place in the first available line space of the second column of the record member.

3,308,274
PRICE SETTING DEVICE
Albert F. Romanowski, Greeneville, Tenn., assignor to Bowser, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Mar. 5, 1962, Ser. No. 177,435
3 Claims. (Cl. 235—61.11)



1. A price setting device for fuel dispensers comprising, in combination:

(a) a frame member having a pair of spaced shafts,

(b) a pair of supports substantially parallel with said shafts and spaced with respect thereto,

(c) a Mylar tape having numerals photographed in a predetermined sequence thereon,

(d) said tape having a plurality of spaced openings forming a code corresponding to the numerals on the tape,

(e) said tape having one end rolled around one of the shafts and the other end of the tape rolled around the other shaft with a loop disposed around said supports,

(f) means for rotating said shafts for positioning a selected numeral on the tape between the supports,

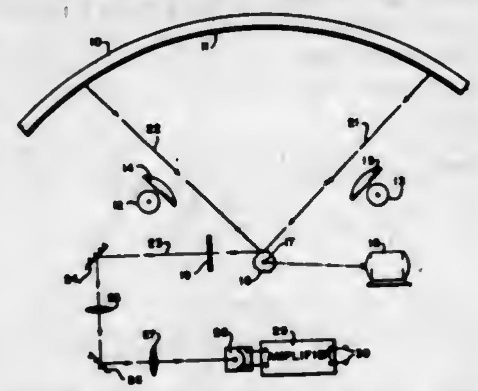
(g) one of said supports having a plurality of spaced recesses corresponding to one or more of the openings in said tape,

(h) a mounting support disposed adjacent the support having the spaced recesses, said mounting support provided with a plurality of slots for receiving a number of actuating discs,

(i) a number of switch leaves secured to the mounting support and disposed over each slot to hold said discs therein,

(j) a common bus bar secured on the mounting support adjacent the slots so that when the code slot on the tape is disposed over a recess in the support, a disc will drop into the recess permitting the switch leaf to make contact with the common bus bar.

3,308,275
ELECTRICAL FUNCTION GENERATOR USING OPTICAL SCANNING TECHNIQUES
Herbert Judin, Huntington, N.Y., assignor to Aeroflex Laboratories Incorporated, a corporation of Delaware
Filed June 19, 1962, Ser. No. 203,650
9 Claims. (Cl. 235—61.11)



1. An apparatus for generating an electrical signal which is a representation of a function graphically illustrating on a sheet by a contrasting line of substantially uniform width comprising:

(a) an arcuate holder for the sheet;

(b) an eight-sided mirror disposed coaxially with said holder;

(c) means for producing relative rotation between said holder and said mirror, whereby said mirror scans said graph;

(d) means independent of a graph sheet disposed in said holder for continuously varying the amount of light translated in the image of each section of a graph on the sheet as it is scanned as a function of the instantaneous ordinate thereof;

(e) and photoelectric means for continuously converting the translated image to an electrical signal.

3,308,276
REMOTE TERMINAL
George D. Panagiotou, New York, and Norman J. Woodland, Chappaqua, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 18, 1962, Ser. No. 231,501
6 Claims. (Cl. 235—61.11)

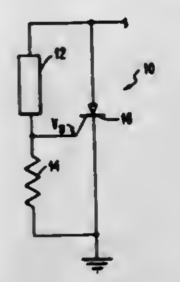
1. A passive remote terminal for use with a central computer comprising a hole sensing circuit utilizing in combination

(a) a light source,

(b) a detection circuit comprising a solid state photoconductor, and

(c) a semiconductor thyratron connected in circuit relationship such that when the photoconductor is illuminated, the thyratron will be caused to fire and

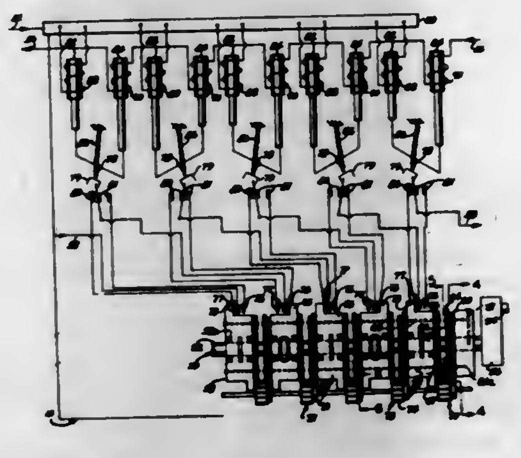
(d) means for supplying a low voltage interrogation pulse to the photoconductor thyratron circuit, which



circuit will appear as a substantially zero resistance path to said pulse when the photoconductor is illuminated,

(e) said means constituting the sole power source for said detection circuit.

3,308,277
TIMING DEVICE UTILIZING ELECTROMECHANICAL BINARY COMPARATOR
William H. Baynes, 4122 Greenbush Ave., Sherman Oaks, Calif. 91403
Filed Aug. 27, 1963, Ser. No. 304,787
1 Claim. (Cl. 235—92)



A mechanical binary comparator comprising:

a plurality of counter cylinders having first cams mounted on the periphery thereof in a predetermined location and second cams mounted on the periphery thereof at a location 180° from said first cams;

a timed input shaft connected to said counter cylinders for rotating said cylinders on a predetermined time base to indicate elapsed time in binary code;

a first pair of contacts adjacent each cylinder and adapted to be closed by said first cams;

a second pair of contacts adjacent each cylinder and adapted to be closed by said second cams;

a set solenoid and a reset solenoid for each relay;

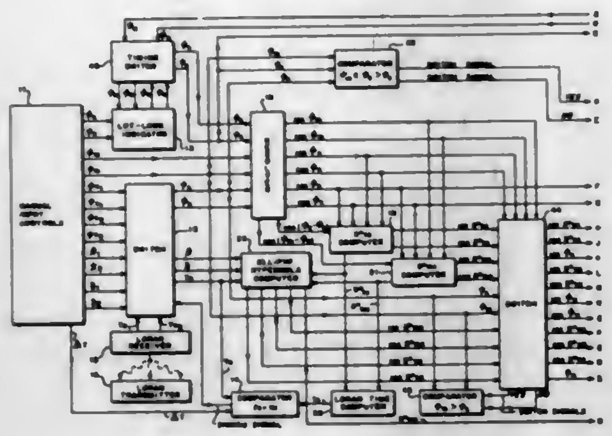
a double throw switch connected to the solenoids for each relay;

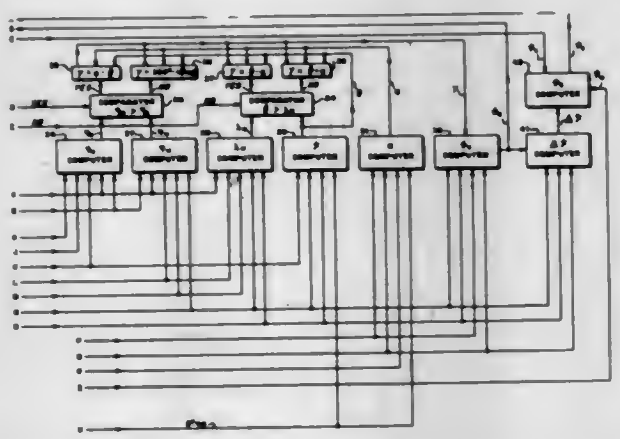
a third pair of contacts adjacent each of said switches and adapted to be closed by a respective switch when a respective set solenoid is energized;

a fourth pair of contacts adjacent each of said switches and adapted to be closed by a respective switch when a respective reset solenoid is energized; and

circuit means connecting all of said contacts together in such a manner that said comparator issues a coincidence signal when the positions of said counter cylinders correspond to the position of said double throw switches.

3,308,278
LATITUDE-LONGITUDE COMPUTER
John H. Davis, Hatboro, and Leonard E. Needles, Churchville, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 26, 1963, Ser. No. 261,236
11 Claims. (Cl. 235—150.27)

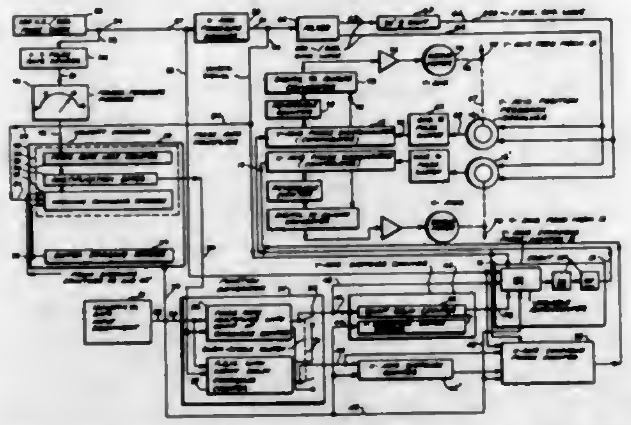




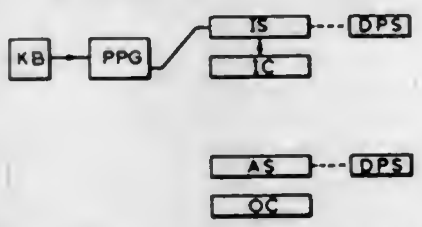
1. A navigation computer system for use in an aircraft, comprising in combination:
- first computer means computing the spherical distance between one of the slave stations of a loran triad and an assumed position of the aircraft,
- second computer means computing the spherical distance between the master station of the loran triad and the assumed position of the aircraft,
- loran receiver means receiving loran signals from the loran triad,
- means comparing the computed distances of said first and second computer means with the signals from said loran receiver means for enabling said first computer means to compute the spherical distance between the other of said slave stations of the loran triad with the assumed position of the aircraft if the comparison is within a predetermined error,
- ellipse-hyperbola computer means connected to said first and second computer means and said loran receiver means computing the sine and cosine function of the spherical distances between the master station of the loran triad and the position of the aircraft and the selected slave station of the loran triad and the position of the aircraft.

3,308,279
ERROR COMPENSATION CIRCUIT FOR CONTROL SYSTEM
Leroy U. C. Kelling, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Original application Sept. 5, 1961, Ser. No. 136,420, now Patent No. 3,226,649, dated Dec. 28, 1965. Divided and this application Mar. 4, 1965, Ser. No. 438,469
6 Claims. (Cl. 235—151.11)

1. In a system for generating a contour at a given velocity, means for developing control signals representative of orthogonal components of said given velocity, generation means controlled by said control signals to generate said contour, and end closure means operative to terminate further control signals in the direction of either of said orthogonal components of velocity upon completion of sufficient motion in a particular direction to generate said contour, means operative upon termination of said control signals before operation of said end closure means to deliver a discrete signal to said generation means until sufficient motion occurs to complete said contour.



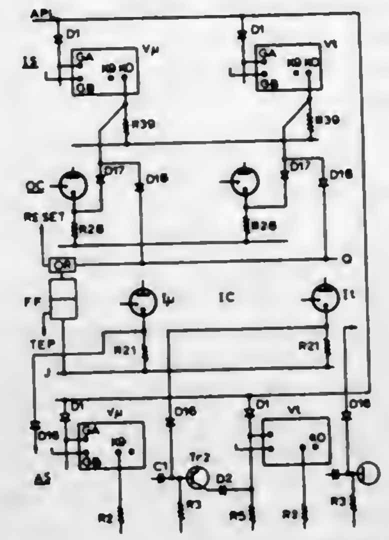
3,308,280
ADDING AND MULTIPLYING COMPUTER
Gerald Offley Crowther, Cheam, and George Charles Dell, Carshalton, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,582
Claims priority, application Great Britain, Nov. 12, 1963, 44,646/63
4 Claims. (Cl. 235—160)



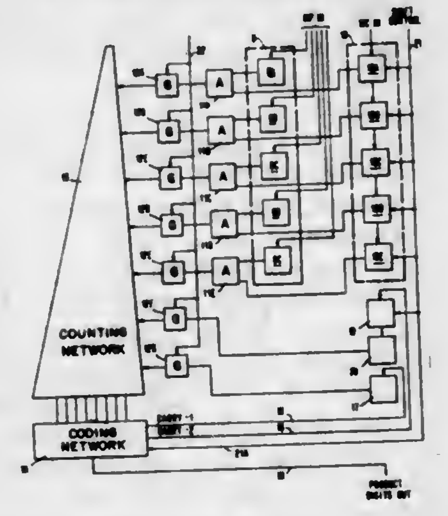
1. A computing machine comprising, a source of counting pulses, an input control, an input store connected to said input control, said source of counting pulses thereby storing a first number in said input store, a first decimal point information store associated with said input store for storing decimal point information, an accumulator store having stored therein a second number and having associated therewith a second decimal point in formation store for storing decimal point information, comparing means connected to said first and second decimal point information store for automatically and continuously comparing the decimal point positions of said first and second numbers, and means responsive to said comparing means for cumulatively conveying information from said input store to said accumulator store in accordance with the positions of the respective decimal points of said first and second numbers.

3,308,281
SUBTRACTING AND DIVIDING COMPUTER
Gerald Offley Crowther, Cheam, and George Charles Dell, Carshalton, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 12, 1694, Ser. No. 410,583
Claims priority, application Great Britain, Nov. 12, 1963, 44,647/63

1. A computing machine comprising an accumulator store having a chain of digit storing cold cathode stepping tubes, a source of counting pulses, means applying said counting pulses to said accumulator store for storing a first number therein, an input store having a series of digit storing cold cathode stepping tubes, means applying said counting pulses to said input store for storing a second number therein, and subtracting means for subtracting said second number from said first number by nines complement addition, said subtracting means comprising common means for applying a series of ten stepping pulses to corresponding digit position cold cathode stepping tube stages of said input and accumulator stores, and pulse responsive means blocking the first of said ten pulses from said accumulator store and responsive to the presence of a pulse at the highest stepping position of each of said stepped input store cold cathode tube stages to electrically isolate said stepped accumulator store cold cathode tube stage from said common means.

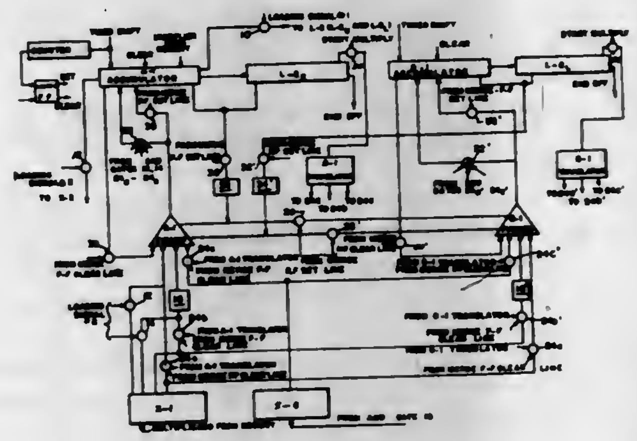


3,308,282
SERIAL CRYOGENIC BINARY MULTIPLIER SYSTEM
Robert I. Roth, Briarcliff Manor, and Harold Fleisher, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 22, 1961, Ser. No. 161,674
8 Claims. (Cl. 235—164)



1. A serially operable binary multiplier system comprising a register having flip-flops for storing the digits of the multiplier, a register having flip-flops for storing the digits of the multiplicand, at least one of said registers being a shift register, the individual digit flip-flops of said multiplier register being paired in ascending digital order with individual digit flip-flops of said multiplicand register in descending digital order, each pair having an individual coincidence circuit connected therewith, a multiple digit adder comprising at least one counting network connected to receive the outputs from all of said coincidence circuits and operable to generate a count of all the one digits indicated thereby, and a coding network connected to receive the count from said counting network and operable to generate binary sum digits and carry digits representative of said count, the system being operable to read out digits from each of said registers at a read cycle time indicating a coincidence of ones in said flip-flop pairs for the generation of a sum representing the sum of one column of an array of partial products, said registers being operable to provide a relative shift of one digit position between said multiplier and said multiplicand after each read cycle time to then cause the representation of the next higher order of said array of partial products, and delay storage apparatus connected to receive and store each carry digit for addition in said adding circuit on a subsequent read cycle.

3,308,283
HIGH SPEED MULTIPLICATION DEVICE
James E. Thornton, Chippewa Falls, Wis., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed June 4, 1963, Ser. No. 285,490
6 Claims. (Cl. 235—164)



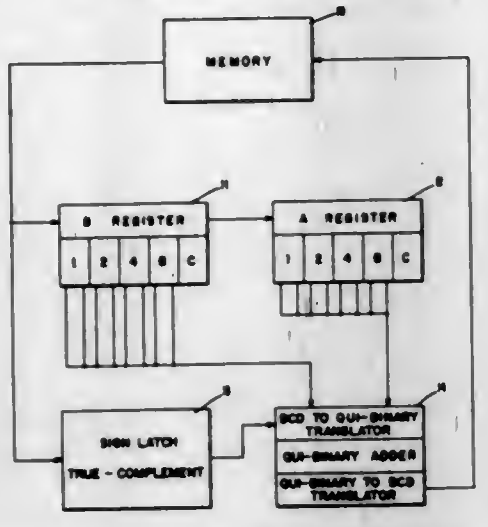
1. A high speed multiplier for a digital computer comprising a first register means for storing multiples of of a multiplicand and a second register means for storing a multiplier, a first adding pyramid and a second adding pyramid, a first information storing accumulator associated with said first pyramid and a first segment of said second register means, a second information storing accumulator associated with said second pyramid and a second segment of said second register means, means under the control of a portion of the multiplier in said first segment of the second register means for introducing appropriate multiples of said multiplicand in the first register means into said first adding pyramid, and means under the control of a portion of the multiplier in said second segment of the second register means for simultaneously introducing appropriate multiples of said multiplicand in the first register means into said second adding pyramid; means for shifting a portion of the information in said first information storing accumulator into said first segment of said second register means and means for simultaneously shifting a portion of the information in said second information storing accumulator into said second segment of said second register means; means for adding the remaining information in said first accumulator with the multiple of said multiplicand introduced into the first pyramid to produce new information in said first accumulator, and means for simultaneously adding the remaining information in said second accumulator with the multiple of said multiplicand introduced into the second pyramid to produce new information in said second accumulator.

3,308,284
QUI-BINARY ADDER AND READOUT LATCH

Harold R. Grubb, Owego, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 28, 1963, Ser. No. 291,345

12 Claims. (Cl. 235—174)



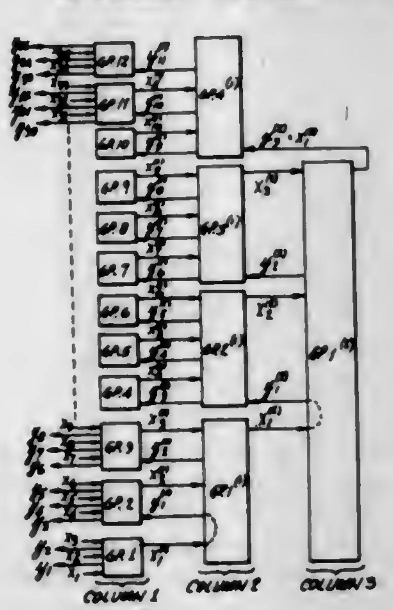
2. A qui-binary adder and readout circuit comprising:
(a) first and second sets of input lines providing first and second sets of concurrent signals representing the decimal digits in accordance with a normal numbering system,
(b) a translating means including a plurality of AND and OR switch circuit configurations for converting the signals on said first and second sets of input lines from binary coded decimal to qui-binary notation,
(c) an adder matrix including capacitive elements for selectively coupling the outputs of said AND and OR switch circuits for deriving sum representing signals, and
(d) a set of sum output lines each including a latch circuit adapted to respond to the sum representing signals from said adder matrix.

3,308,285
LOGIC NETWORKS FOR REALIZING ASSOCIATIVE LOGIC FUNCTIONS

Robert O. Winder, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 19, 1963, Ser. No. 274,188

8 Claims. (Cl. 235—175)



1. In combination,
(1) a source of n input signal representations indicative of n original input digits in a given order;
(2) $k+1$ columns of a given type of associative gate means, each said column except the last column having at least

$$\left[\frac{g_j}{m}\right]+1$$

groups of such gate means, and the last column having one such group of gate means, each group receiving inputs of successive rank, where $g_j=n$ in the case of the first column and is equal to the number of input signal representations received from the preceding column in each other case,
(a) the first group in each column having not more than $m-1$ such gate means,
(b) the last group in each column having g_j-t_j such gate means, where t_j=the number of input signal representations applied to the remaining groups in said column, and g_j-t_j is not greater than $m-1$, and
(c) the remaining groups in each column each having not more than m gate means;
(d) the last said group in the first column receiving g_j-t_j signal representations representing the most significant g_j-t_j of the n input digits, and the last group of each succeeding column receiving the g_j-t_j signal representations representing the most significant g_j-t_j output signal representations of the immediately preceding column, and
(e) the remaining groups in the first column each receiving no more than m of the n input signal representations, and the remaining groups in each succeeding column each receiving no more than m output signal representations of the immediately preceding column;
(f) each group for producing a first output signal representation indicative of the associative function of the digits $x_{im+p} \ldots x_{im+1}$ represented by all of the original input signal representations to said group in the case of a group in the first column, and by all of the input signal representations to said group from the preceding column in the case of a group in another column, and which first output signal representation each group except the single group in the last column applies to the immediately succeeding column, said single group in the last column applying its first output signal representation to the preceding column, and each group for producing other output signal representations indicative of the associative function of $x_{im+p-1} \ldots x_{im+1}$ and y_i through the associative function of x_{im+1} and y_i, where y_i is a cumulative digit indicative of the associative function of all inputs to lower ranking groups in its column, which cumulative digit is represented by a signal representation said group receives from the immediately succeeding column; said other output signal representations being applied to the immediately preceding column in each case except that of the first column,

g_j, n, m, k, i, p, and t_j are all integers, m is less than n but greater than 1 and is the maximum fan-in permitted per gate and is not more than the fan-out which is possible from a gate, a fraction within brackets [] represents the largest whole number obtained when the numerator is divided by the denominator of the fraction, k is at least equal to

$$\left[\log_m \frac{n+1}{m+1}\right]$$

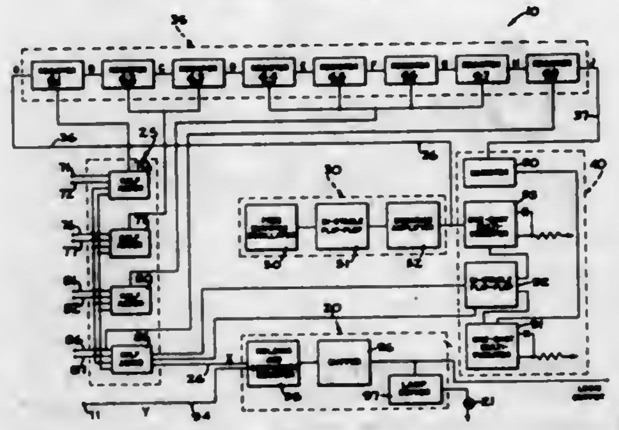
and the term "associative gate means" refers to a gate means which receives a plurality of input signal representations representing digits and which produces an output indicative of a particular logic function of the digits represented by the input signal representations and whose value is independent of the manner of grouping the input signal representations.

3,308,286
STATISTICAL DECISION CIRCUIT

Robert H. Norman, Los Altos, and Laurence E. Banghart, Woodside, Calif., assignors to General Micro-Electronics Inc., Santa Clara, Calif., a corporation of Delaware

Filed Dec. 3, 1964, Ser. No. 415,589

13 Claims. (Cl. 235—177)



1. A statistical decision circuit comprising a plurality of binary counters connected for successive operation, a clock pulse generator connected to a leading binary counter of said binary counters for transmitting thereto a clock pulse signal, a logic circuit connected to each of said binary counters for selectively controlling the operation thereof respectively to produce in the output of a trailing binary counter of said binary counters a pulse signal representing a preselected answer to a decision and to establish the probability of a correct decision, each of said logic circuits being operative to control the operation of its associated binary counter for selecting the frequency of the pulse signal advancing through the associated binary counter, a comparator circuit, means interconnecting said trailing binary counter with said comparator circuit to feed to said comparator circuit a selected answer pulse signal, means for feeding to said comparator circuit a random pulse signal representing information to be analyzed, said comparator circuit being operative to compare said answer pulse signal with said random pulse signal, and indicating means responsive to said comparator circuit for indicating a correct or an incorrect answer.

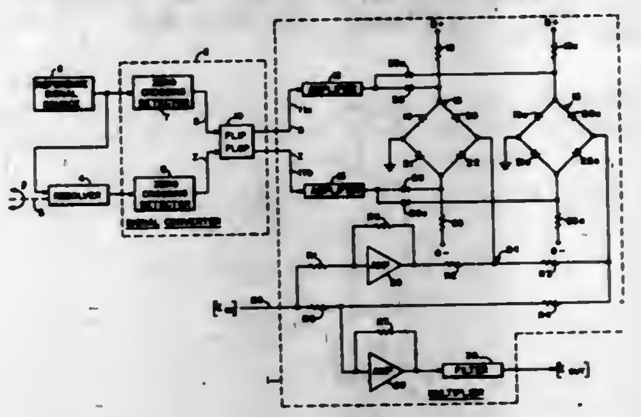
3,308,287
PHASE AND D.-C. VOLTAGE ANALOG MULTIPLIER

Ernest S. Levy and Ernst Herzberg, San Diego, Calif., assignors to Cubic Corporation, San Diego, Calif., a corporation of California

Filed Oct. 16, 1962, Ser. No. 230,841

11 Claims. (Cl. 235—194)

5. An electronic multiplier for multiplying the information contained in the phase difference between a pair of input A.-C. signals and a D.-C. input voltage, said electronic multiplier comprising: means for converting the phase difference between the pair of A.-C. signals into a two-leveled signal, the duration of one level in said two-leveled signal relative to the duration of the other level corresponding to the phase difference; first output means responsive to one level of said two-level signal for producing an output signal corresponding in magnitude and polarity to said D.-C. input voltage; second output means responsive to the other level of said two-level signal for producing an output signal corresponding in magnitude to said D.-C. input voltage, but inverted in polarity therefrom, the relative durations of the signals produced by said first and second output means corresponding to said phase difference; and means for combining and filtering the output signals produced by said first and second output means whereby an output D.-C. voltage is produced which corresponds to the product of said phase difference and D.-C. input voltage.

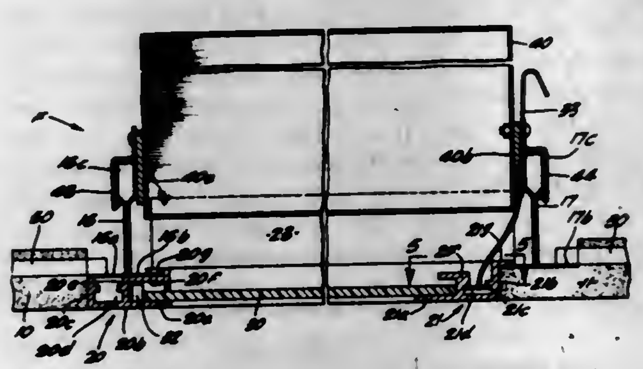


3,308,288
SUSPENDED CEILING CONSTRUCTION

William H. Ades, 6846 Nestle Ave., Reseda, Calif. 91335

Filed Oct. 29, 1964, Ser. No. 407,387

8 Claims. (Cl. 240—9)

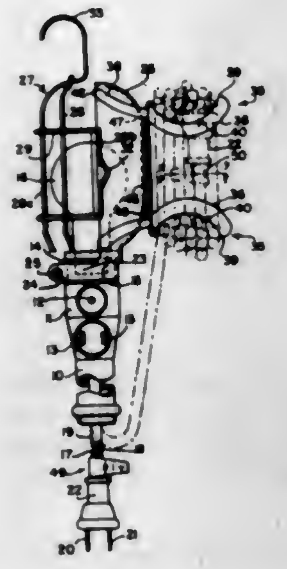


2. In a suspended ceiling construction which includes a parallel pair of beams supported in a common horizontal plane, each of said beams having a pair of outwardly extending horizontal flanges formed on its lower longitudinal edge, and which further includes first and second pluralities of rectangular ceiling tiles disposed in end-to-end array between said beams so as to leave a space between said first and second pluralities of tiles, and supported from and in removable engagement with the immediately adjacent flange of each of said beams, and easily movable light fixture arrangement occupying said space, comprising, in combination:
- a metal can adapted to contain and support at least one fluorescent light bulb;
- spring latch means releasably coupling said can to the upper extremities of said beams;
- a rigid rectangular frame including a pair of side members and a pair of end members, the members of one of said pairs engaging the immediately adjacent flanges of said beams and being removably attached thereto, the members of the other of said pairs engaging the end tile of said first and second pluralities of tiles, respectively;
- a substantially rectangular light-transmissive plate disposed within said frame;
- and spring means releasably retaining said plate within said frame.

3,308,289

ELECTRIC EXTENSION LAMP AND MEANS FOR STORING ITS WIRE OR CORD

Earl R. Conradi, 2507 Forthmann Place,
Cincinnati, Ohio 45211
Filed Nov. 13, 1964, Ser. No. 410,865
4 Claims. (Cl. 240—54)

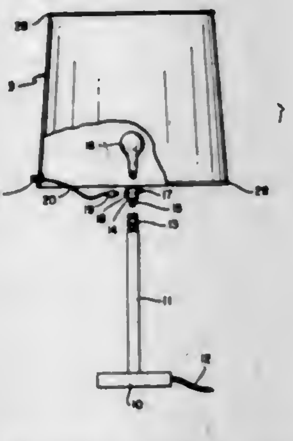


2. In an extension electric lamp of the class described comprising a handle, an electric bulb from the upper end of the handle, a flexible electric wire from said bulb through said handle and beyond the lower end of the handle, and a reflector carried by said handle behind the bulb, the combination of a pair of storage arms located respectively just inwardly of the upper and lower ends of the reflector back face, each storage arm being substantially Y-shaped in plan and therefore including a stem from one end of which extends angularly divergent arms hooked to an end of the reflector back face, the stem of the storage arms rearwardly extending from the reflector back face and on which the wire beyond the lower end of the handle is wrapped, and yieldable means securing said storage arms to the reflector back face.

3,308,290

ELECTROLUMINESCENT LAMP SHADE AND LAMP

George D. Brown, 7001 Bancroft St.,
Toledo, Ohio 43617
Filed Sept. 21, 1964, Ser. No. 397,839
2 Claims. (Cl. 240—108)

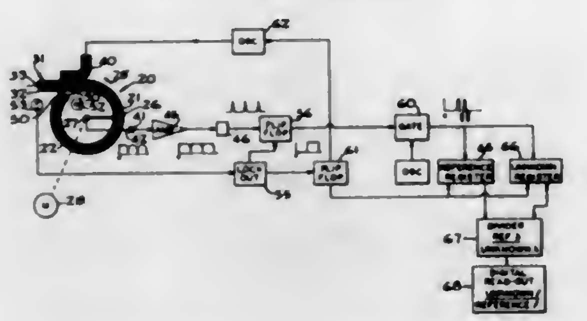


1. A device of the class described comprising, in combination, a socket, an adapter fitting said socket and adapted to receive a lamp bulb, circuit means for delivering alternating electrical potential to said lamp bulb, a switch means in said circuit for selectively energizing said lamp bulb, a lamp shade to enclose said lamp bulb, said shade being of multiply structure and certain plies cooperating to render said shade electroluminescent, and a switch-controlled electrical conductive means leading from said adapter to said certain plies for delivering electrical current thereto.

3,308,291

MICROWAVE FREQUENCY MEASURING BY ALTERNATELY SAMPLING THE STANDING WAVE PATTERN OF REFERENCE AND UNKNOWN FREQUENCY SIGNALS IN A WAVEGUIDE

Fred W. Kruse, Jr., 3230 Ross Road,
Palo Alto, Calif. 94303
Filed Jan. 27, 1964, Ser. No. 340,435
7 Claims. (Cl. 250—39)



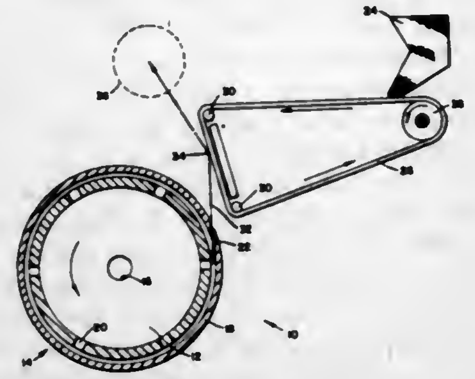
1. A frequency measuring system comprising a substantially circular coaxial transmission line, unknown frequency signal transmitting means connected to said coaxial transmission line for producing along said coaxial transmission line a waveform pattern representative of the frequency of the unknown frequency signal, reference frequency signal transmitting means connected to said coaxial transmission line for producing along said coaxial transmission line a waveform pattern representative of the frequency of the reference signal, a probe disposed in engagement with said transmission line for sampling the waveform patterns along said coaxial transmission line, means imparting relative movement between said coaxial transmission line and said probe for inducing in said probe signals representative of the wavelengths of the waveform patterns along said coaxial transmission line, means responsive to the relative movement between said probe and said coaxial transmission line and connected to said reference signal transmitting means for exciting said reference frequency signal transmitting means during alternate sweep cycles of said probe whereby said probe emits in succession signals representative of the waveform pattern of the unknown frequency signal and signals representative of the waveform pattern of the reference frequency signal, and circuit means connected to said transmission line and responsive to the signals emitted by said probe for registering a digital representation of the ratio between the frequency from said unknown frequency signal transmitting means and the frequency from said reference frequency signal transmitting means.

3,308,292

APPARATUS FOR VAPORIZATION OF POLYATOMIC MOLECULES BY BOMBARDMENT WITH A NEUTRAL PARTICLE BEAM

Manfred von Ardenne, Zeppelinstrasse 7, Dresden-Weisser Hirsch, Germany
Filed Mar. 25, 1964, Ser. No. 356,003
8 Claims. (Cl. 250—41.9)

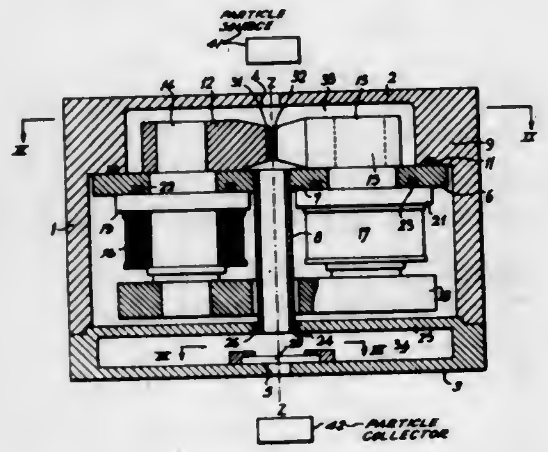
8. Vaporization apparatus comprising an ultracentrifuge, said ultracentrifuge including a rotor having radially directed sheathing bores, a bore extending in a direction perpendicular to the radial direction of said rotor, a housing having an ejection orifice therein encompassing said rotor, whereby bombarding particles may be delivered through said perpendicular bore to said rotor and accelerated therein and delivered through the ejection bore, a charging container having target material therein, a friction roller and a plurality of guard rollers, an endless belt arranged around said friction roller and guard rollers whereby said friction roller may move said endless belt, a charging container being adapted to feed the target material onto said endless belt, said endless belt being adapted to carry the target material to a target area, said target area being in close proximity to the ejection orifice, whereby particles directed through said ejection orifice impinge the target material in the target area, thereby effecting vaporization of the target material without the dissociation thereof.



3,308,293

METHOD OF SELECTIVELY SEPARATING CHARGED PARTICLES USING A VARIABLE INTENSITY NON-UNIFORM MAGNETIC FIELD

Ronald Frank Mathams, Brisbane, Queensland, Australia, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Apr. 20, 1964, Ser. No. 360,968
Claims priority, application Great Britain, Apr. 24, 1963, 16,172/63
5 Claims. (Cl. 250—41.9)

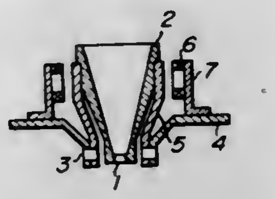


1. A method of forming a spectrum from a beam of charged particles of different energies and/or different masses comprising the steps of:
(a) generating a beam of charged particles;
(b) generating a magnetic field of non-uniform intensity between poles spaced symmetrically about a plane normal to the magnetic field;
(c) introducing the beam of charged particles into the magnetic field along an axis in said plane wherein the intensity of the non-uniform magnetic field increases as function of the distance from the axis;
(d) deflecting the particles from the said axis towards the portion of the field of increasing intensity;
(e) adjusting the intensity of the field so that only particles of a preselected mass and a preselected energy emerge from the field along said axis; and
(f) collecting the particles of predetermined mass and energy.

3,308,294

TILTABLE SPECIMEN HOLDER FOR ELECTRON MICROSCOPES WITH ELECTRICAL DEFLECTING MEANS TO WOBBLE THE ELECTRON BEAM IMAGE

Susumu Ozasa, Hachioji-shi, Tokyo, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Apr. 7, 1964, Ser. No. 357,867
Claims priority, application Japan, May 24, 1963, 38/26,292
6 Claims. (Cl. 250—49.5)

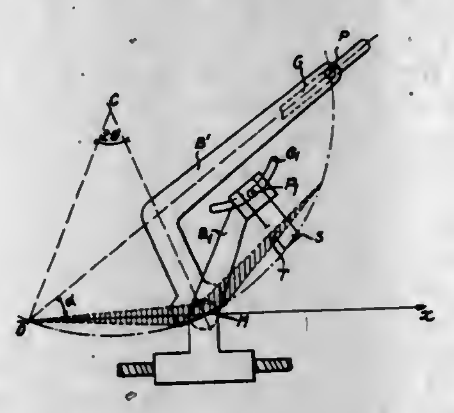


1. A specimen tilting device for electron microscopes, comprising holding means for holding the specimen to be examined, tilting means having a tilting axis acting on said holding means for tilting the specimen, electrical deflecting means physically aligned in a known and fixed manner relative to the tilting axis of said tilting means, and means for energizing said electrical deflecting means with an alternating electric signal for alternately deflecting the electron beam irradiating said specimen to thereby wobble the image of the electron beam in a definite direction with respect to the direction of tilting of said specimen.

3,308,295

X-RAY SPECTROMETER WITH MEANS TO MAINTAIN THE DISTANCE BETWEEN THE CRYSTAL ANALYZER AND DETECTOR FIXED

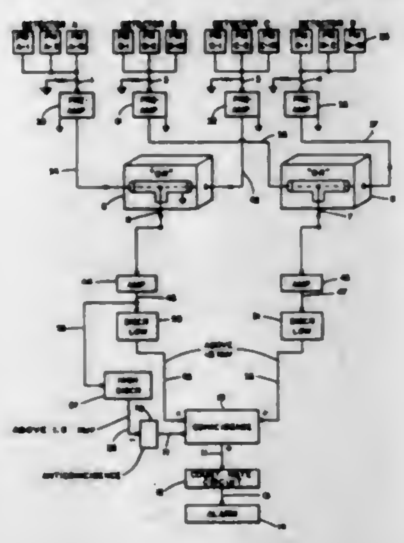
Jean Michel Rouberol and Mathias Tong Yuan Tong, Paris, France, assignors to C.A.M.E.C.A.-Compagnie d'Applications Mecaniques a l'Electronique, au Cinema et a l'Atomistique, a corporation of France
Filed May 6, 1964, Ser. No. 365,440
Claims priority, application France, May 9, 1963, 934,199



1. A spectrometer for analysing the radiation emitted by an X-ray source, comprising: a crystal analyser having a center; a detector having an entrance slit; a crystal holder; means for displacing said holder along a first axis comprising said source; a first arm having a first end rigidly connected to said holder and a second end; means for guiding said second end along a second axis comprising said source; a second arm having a first end carrying said detector and a second end pivotally mounted on said first arm; and means for guiding said first end of said second arm.

3,308,296
HIDDEN EXPLOSIVES DETECTOR UTILIZING LONG-LIVED RADIOACTIVE TRACER MATERIAL

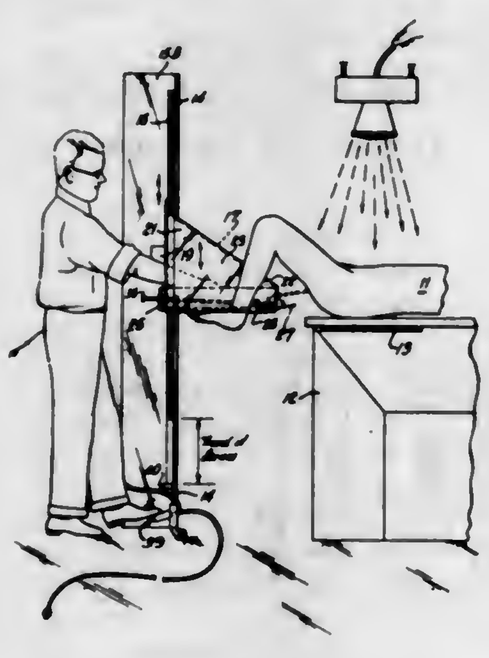
Clyde L. Cowan, Rockville, and Edward D. Jordan, Kensington, Md., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 20, 1964, Ser. No. 353,643
5 Claims. (Cl. 250—71.5)



1. Apparatus for detection of explosives hidden on persons or in luggage in which the explosive has been seeded with a long-life low-activity radioactive tracer which simultaneously emits two substantially equal energy gamma rays in cascade and in which the person or luggage moves down a pathway, comprising first and second detectors positioned on one side of the pathway spaced from each other in the direction of movement; third and fourth detectors positioned on the other side of the pathway opposite said first and second detectors respectively; each detector including a large tank having a liquid scintillator. and a plurality of photomultipliers arranged with their photoemissive cathodes positioned adjacent the scintillator tank and their electrical output terminals commonly connected to a single output terminal for each detector; first and second OR circuit means, each having two input terminals and one output terminal for passing a pulse at each of said input terminals to said output terminal, means for connecting the output of the first detector to one input terminal of the first OR circuit, means for connecting the output of the fourth detector to the other input terminal of the first OR circuit; means for connecting the output of the second detector to one input terminal of the second OR circuit; means for connecting the output of the third detector to the other input terminal of the second OR circuit; coincidence detection means having two input terminals and an output terminal; counting means connected to said coincidence output terminal; one low-level amplitude discriminator means having an input connected to the output terminal of the first OR circuit and having an output terminal connected to one of the coincidence input terminals; another low-level amplitude discriminator having an input connected to the output terminal of the second OR circuit and having an output connected to the other coincidence input terminal; one high-level discriminator having an input terminal and an output terminal with the input terminal connected to the output of the first OR circuit; anti-coincidence means connected to said coincidence means and said high-level discriminator for preventing output pulses from said coincidence means when a pulse exists at the output of the high-level discriminator; said high-and-low-level discriminator circuits providing output pulses having a width of less than 10^{-6} seconds whereby gamma rays are counted only when in coincidence within a very short time and when the amplitude is between the high and low energy levels; said coincidence circuit includes first and second diodes and said anti-coincidence circuit includes a third diode, means for connecting said three diodes in parallel to said coincidence output terminal, a source of power, a resistor connecting said coincident output terminal to said source of power; said diodes being poled for normally conducting to said source of power; means for biasing said third diode to nonconduction; means for connecting the output of said high-level discriminator circuit for reversing the state of conduction of the third diode; means for connecting one of the coincident input terminals to the first diode and the other coincident input terminal to the second diode for reversing their conductive state upon the occurrence of a pulse at the input terminals whereby the occurrence of pulses at both coincident input terminals will result in a pulse at the coincident output terminal unless a pulse occurs at the anti-coincidence circuit.

3,308,297
X-RAY PROTECTIVE SHIELD HAVING AN APERTURE FOR THE PASSAGE OF INSTRUMENTS MANIPULATED BY THE OPERATOR

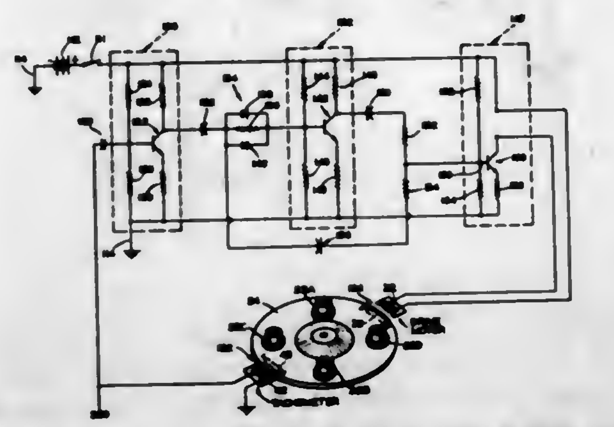
Joseph S. Mansker, 133 E. 58th St.,
New York, N.Y. 10022
Filed Feb. 12, 1964, Ser. No. 348,893
19 Claims. (Cl. 250—108)



15. A movable shield for protection against harmful rays, comprising a vertical central panel and side members of X-ray opaque material, a front panel of X-ray opaque material mounted in said central panel for movement upwardly or downwardly, said panel having a centrally located protective hood of X-ray opaque material extending outwardly at an angle from the central panel, said hood having a bottom and integral protective side shields of X-ray opaque material and a top including a transparent area of X-ray protective material, a movable tray slidably mounted under said hood and having a front of X-ray opaque material, sides, a back and a bottom, said front having a port therein to accommodate medical instruments and being hinged to the bottom of the tray, and means cooperating with said tray to lock it in fixed position.

3,308,298
ELECTROMECHANICAL DISC OSCILLATION MEANS FOR A PHOTOELECTRIC SUN SENSOR DEVICE

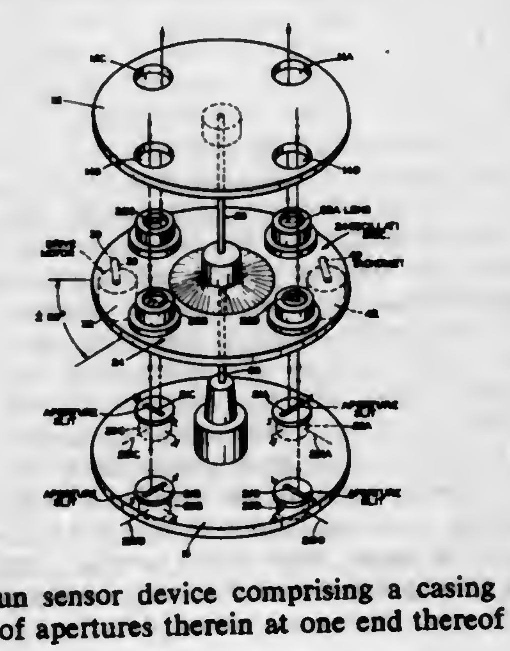
Frederick Rawls, River Edge, Michael T. Krivak, Wood-Ridge, and Sahag Dardarian, Ridgefield, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,927
9 Claims. (Cl. 250—203)



1. In a sun sensor device, the combination comprising a casing, a plurality of photodetector elements mounted therein so as to respond to light rays from the sun, a disc oscillatably mounted in the casing with said oscillatable disc including a plurality of light passage means, and the improvement comprising a pair of bar magnets carried in balanced relation by the disc at points one hundred and eighty degrees apart, a motor coil angularly actuating one of said pair of bar magnets causing oscillation of the disc, a tachometer coil, said tachometer coil responding to movement of said other bar magnet relative to said tachometer coil, said other bar magnet being effective upon actuation of the disc by the motor coil to induce a pulsating alternating current signal in the tachometer coil, electrical circuit means for energizing the motor coil, and means for electrically coupling the pulsating alternating current signal into the circuit means to control the energization of the motor coil and thereby effectively controlling the oscillation of the disc by the motor coil.

3,308,299
PHOTOELECTRIC SUN SENSOR DEVICE INCLUDING AN OSCILLATING DISC WITH A PLURALITY OF APERTURES THEREIN

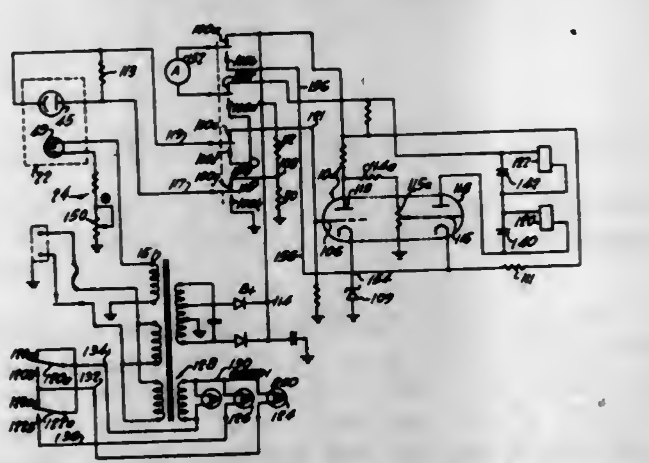
Sahag Dardarian, Ridgefield, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,912
5 Claims. (Cl. 250—203)



5. A sun sensor device comprising a casing having a plurality of apertures therein at one end thereof to admit incident light rays from the sun, corresponding photodetectors carried by another end of the casing, corresponding slits contained in said photodetectors so that said photodetectors will respond to light rays impinging thereon though said slits, an opaque oscillatable disc, torsion members to coaxially mount said disc in the casing and intermediate said ends of the casing, said oscillatable disc including corresponding lens means angularly aligned with the apertures, and the slits, said torsion members supporting the disc within the casing intermediate said ends thereof for oscillating motion, and motor means for oscillating the disc so as to control electrical outputs from said photodetectors varying with the light rays impinging thereon through said slits upon a deviation error in an axis of the sun.

3,308,300
PHOTODETECTION FLUID MONITOR INCLUDING ALARM CIRCUIT WITH FAIL-SAFE MEANS

Norman H. Kadivnik, Chicago, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Sept. 30, 1963, Ser. No. 312,767
5 Claims. (Cl. 250—218)

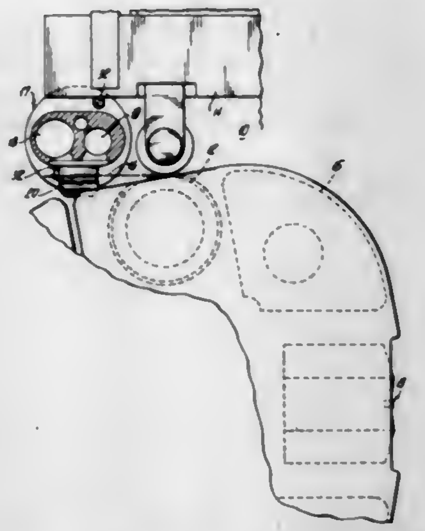


1. Apparatus for monitoring the presence of oil mist particles carried by a sample of air comprising, a light source and photocell optically arranged for producing an electric signal responsive to the optical density of the oil mist in the sample of air, a first amplifier, means including a voltage divider and a zener diode for biasing said first amplifier for stable linear operation, means including a selector switch for connecting said photocell to the input of said amplifier, a second amplifier having its input connected to the output of said first amplifier, first and second relays having their respective coils series connected to the output of said second amplifier and each having a set of make contacts and break contacts, said first relay adapted to operate its contacts at a current level therethrough below a predetermined level, said second relay adapted to operate its contacts at a current level therethrough above said predetermined level, a normal indication device, an abnormal indication device, a circuit extending through the contacts of both said relays to operate said normal indication device when only said first relay is operated, another circuit extending through contacts of both said relays for operating said abnormal indicating device only in response to both of said relays being restored, a third circuit extending only through the contacts of said second relay in response to said second relay being operated for operating said abnormal indicating device, an ammeter connected in series with said relays in response to said selector switch being operated to connect said photocell to the input of said first amplifier, means including said selector switch for selectively disconnecting said photocell from the input of said first amplifier and said ammeter from said relays and connecting said photocell in series with said ammeter and said zener diode, means for varying the intensity of said light source to

control the resistance of said cell in accordance with the setting of said ammeter connected in series with said cell, and means for adjusting the signal level applied from said first amplifier to said second amplifier to select a current level through said relays intermediate the levels at which both said relays are operated in accordance with the setting of said ammeter connected in series with said relays.

3,308,301
LIGHT REFLECTIVE PHOTOELECTRIC TAPE SENSOR SYSTEM

Max Weissbach, 23 Cornell Drive,
Plainview, N.Y. 11803
Filed Mar. 2, 1964, Ser. No. 348,719
3 Claims. (Cl. 250—219)



1. In a magnetic tape handler apparatus for processing information including an information processing station, an opaque tape with a radiation reflective strip along one edge of the tape near one of its ends marking the beginning of the tape and another reflective strip along the other edge of the tape near its other end marking the end of the tape, a sensing device comprising;

a first radiation detector disposed on one side of the tape over one edge thereof,

a second radiation detector disposed on said one side of the tape over the other edge thereof,

a radiation source positioned on said one side of the tape,

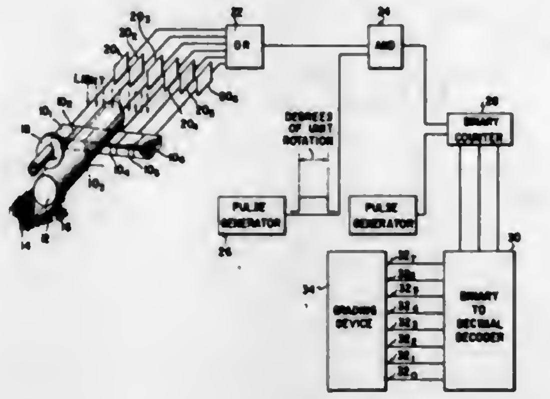
a shield disposed between the radiation source and the first and second radiation detectors to limit the radiation arriving at the detectors to that from the direction of the tape,

a mirror having a reflective surface disposed on the side of the tape opposite said one side, whereby irradiation of said first detector indicates the beginning of the tape, irradiation of the second detector indicates the end of the tape, and irradiation of both of said detectors indicates the tape is missing.

3,308,302
APPARATUS FOR DETERMINING SHAFT CURVATURE INCLUDING ROTATING SHAFT AND PLURAL PHOTOCELLS

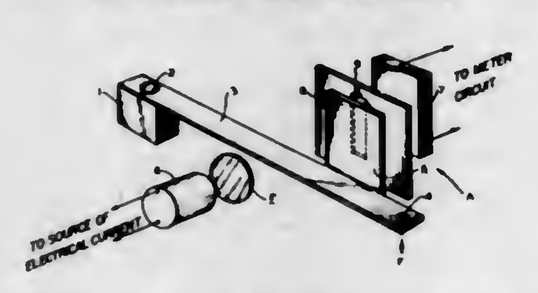
Wolf-Dieter Fuhrmann, Kohlscheid, and Josef Zocher, Birkesdorf, Germany, assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 14, 1965, Ser. No. 487,217
16 Claims. (Cl. 250—219)

1. Apparatus for use in grading elongated elements according to straightness comprising a support adapted to hold an element substantially translationally stationary, means for rotating said element about an axis substantially parallel to the longitudinal axis of said element, a source of radiant energy directed at and perpendicular to the longitudinal axis of said element, sensor means responsive to said radiant energy and disposed to be shadowable from said radiant energy when the figure of revolution of said element exceeds a predetermined amount, and actuable means responsive to the output of said sensor means, whereby grading is determined by whether said actuable means is actuated.



3,308,303
TRANSDUCER SYSTEM EMPLOYING ELECTRO-OPTICAL MEANS

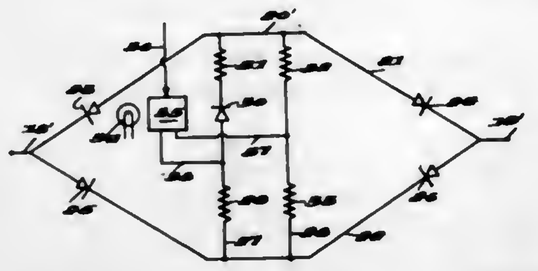
Theodore E. Weichselbaum, Normandy, and Anton J. Horn, Creve Coeur, Mo., assignors, by mesne assignments, to Brunswick Corporation, a corporation of Delaware
Filed June 28, 1963, Ser. No. 292,210
11 Claims. (Cl. 250—231)



1. A measuring device having a transducer system for measuring a variable characteristic in a physical phenomenon, comprising: means for translating said characteristic into mechanical movement; a source of electrical potential; regulating means connected to said potential source, a potential output of said regulating means being substantially constant; a light source having an intensity dependent on the electrical potential impressed thereacross; means connecting said light source to the output of said regulating means to produce substantially constant intensity light regardless of fluctuations in the potential from said potential source; a photoelectric cell located in optical alignment with said light source so that the substantially constant intensity light from the light source will impinge thereon, said cell having an electrical output proportional to the area thereof exposed to substantially constant intensity light; means interposed between the light source and the cell, including an opaque plate having an aperture therein which exposes the cell area therethrough, and an opaque element movably mounted adjacent the aperture and being operatively responsive to variations in said mechanical movement to expose substantially uniform amounts of cell area for linear variations in said mechanical movement; a meter having a reading directly proportional to the current flowing therethrough; and circuit means connecting said meter and the electrical output of said cell in circuit with said regulating means, said meter having a reading substantially linearly proportional to said mechanical movement.

3,308,304
LIGHT-SENSITIVE SWITCH WITH FEEDBACK

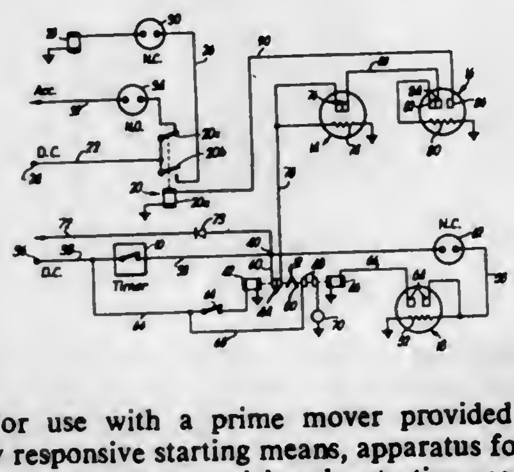
John Seymour Seney, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 18, 1963, Ser. No. 309,767
4 Claims. (Cl. 250—231)



1. A diode network switch comprising: a bridge having two arms connected in parallel, each arm including a pair of oppositely directed diodes; two legs connected in parallel across said bridge at points intermediate the diodes in each arm, one leg including high and low resistances, the other leg including a fifth diode between high and low resistances, said fifth diode being light sensitive; and a pair of negative feedback leads, each lead being connected to a leg between its high and low resistances.

3,308,305
AUTOMATIC STARTER FOR PRIME MOVERS

Arthur C. Morse, Jr., Topeka, Kans., assignor to Electronic Development Mfg. Corp., Holton, Kans., a corporation of Iowa
Filed Aug. 25, 1964, Ser. No. 391,948
8 Claims. (Cl. 290—38)



1. For use with a prime mover provided with electrically responsive starting means, apparatus for automatically intermittently energizing the starting means and for preventing subsequent operation thereof by the apparatus in the event that the prime mover fails to start, said apparatus including:

terminal means adapted for coupling with a source of electrical energy;

a power circuit coupled with said terminal means and adapted for coupling with said starting means for supplying current to the latter;

electrically responsive switching means coupled in said power circuit and having a first operational state for permitting current flow therein and a second, normal operational state preventing said flow;

circuit means intercoupling said switching means and said terminal means, and including a switching device for controlling operation of said circuit means, and means for repeatedly changing the operational state of said switching means in response to the operation of said circuit means, said switching device having a closed position for permitting current flow in said circuit means to place the same in operation, and an open position preventing current flow therein;

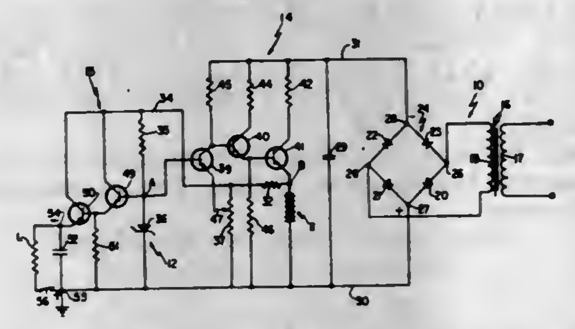
control means coupled with said circuit means for rendering the latter inoperative, independently of the action of said switching device, after a predetermined time interval of operation of the circuit means, and including resettable switching structure for preventing further operation thereof by said switching device upon expiration of said interval; and

means responsive to operation of said prime mover and coupled with said control means for rendering the latter inoperative upon starting of the prime mover, whereby to prevent operation of the control means if the prime mover starts within said time interval;

said circuit means further including time delay means, normally permitting operation of said state changing means, for disabling the latter in response to current flow in the circuit means for a preselected period of time substantially equal to said predetermined time interval, said time delay means returning to its normal condition in response to operation of said switching device to place the latter in the open position thereof, whereby subsequent closing of the switching device again renders the state-changing means operable if starting of the prime mover has previously been effected prior to the expiration of said predetermined time interval.

3,308,306
ELECTRICAL POWER SUPPLY AND BATTERY CHARGES

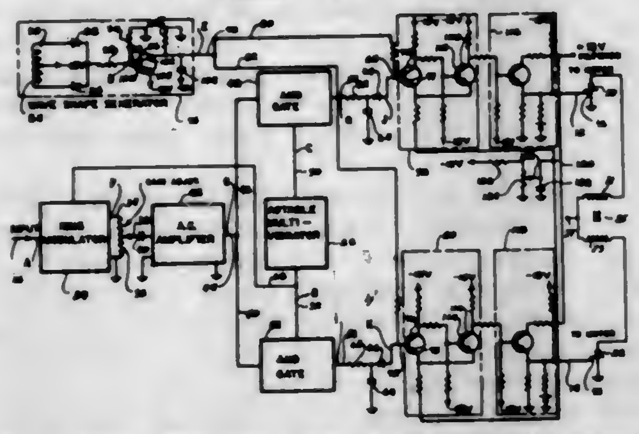
Samuel M. Bagno, Belleville, N.J., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Filed May 8, 1964, Ser. No. 366,089
3 Claims. (Cl. 307—66)



1. In an electrical power supply having a normal and a standby condition, the combination of a source of alternating current power for supplying power under the normal condition, means for converting the alternating current power into direct current power having an input connected to said source and having an output, means providing a variable resistance, a rechargeable battery having a predetermined voltage when fully charged for supplying power under the standby condition upon failure of said alternating current source, said battery being connected in series with said variable resistance means across the output of said converting means, a reference voltage device, circuit means connecting said device across said battery to produce a reference voltage output, a voltage regulating circuit connected across said battery and connected to said reference voltage device to be controlled by said reference voltage output for supplying constant voltage direct current power to a load, said constant voltage being less than said predetermined battery voltage so that said regulating circuit is effective in both normal and standby conditions, circuitry connected to said reference voltage device and to said battery for comparing the battery voltage with said constant voltage and connected to said variable resistance means for controlling said variable resistance means to vary the current flowing through said battery from said converting means inversely to changes in the charge stored in said battery.

3,308,307
SERVO AMPLIFIER UTILIZING COMPOSITE WAVEFORM OF SAWTOOTH WITH HIGH FREQUENCY SIGNAL IMPOSED THEREON

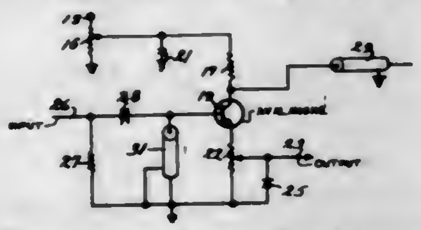
**Frederick G. Moritz, 20 Aberdeen Road,
Hauppauge, N.Y. 11787
Filed Aug. 14, 1963, Ser. No. 302,174
14 Claims. (Cl. 307—88.5)**



6. A circuit for controlling the firing of a gated electronic valve of the type which fires and becomes fully conductive upon receiving a gating signal comprising: means to produce a composite waveform having generally a sawtooth shape of a first constant frequency with pulses at a second higher frequency modulating the amplitude of the sawtooth wave shape, means to vary the amplitude of said pulses in accordance with an applied input signal and bistable circuit means connected to receive said composite waveform and operable to apply a gating signal to said gated electronic valve when said composite waveform reaches a predetermined amplitude.

3,308,308
SQUARE-WAVE PULSE-GENERATOR EMPLOYING TRIGGERED AVALANCHE TRANSISTOR AND TWO EQUAL-LENGTH DELAY-LINES CONNECTED THERETO TO PROVIDE SHARP CUTOFF

**William E. Bray, Houston, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 9, 1964, Ser. No. 373,637
5 Claims. (Cl. 307—88.5)**

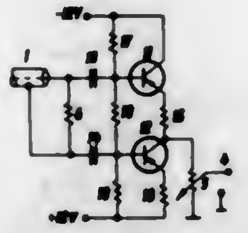


1. A pulse generator comprising a transistor, means to initiate avalanche multiplication in said transistor, a first delay line having one end connected to the collector of said transistor and the other end open circuited, and a second delay line having one end connected to the base of said transistor and the other end short circuited, said second delay line providing a delay equal to that of said first delay line.

3,308,309
CIRCUIT ARRANGEMENT FOR SUPPRESSING SPURIOUS SIGNALS

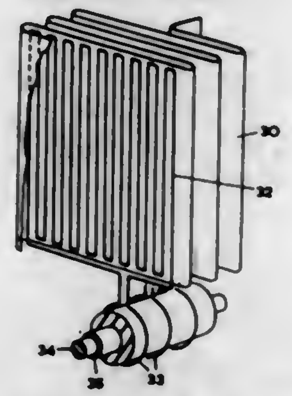
**Lothar Wichmann, Mannheim, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany
Filed Mar. 10, 1964, Ser. No. 350,800
Claims priority, application Germany, Mar. 15, 1963, F 39,249
6 Claims. (Cl. 307—88.5)**

1. A circuit arrangement for suppressing spurious signals caused by differing earth potentials at the ends of an unbalanced transmission line, comprising a first and a second transistor, the emitter of said first transistor being connected to the collector of said second transistor by way of a resistor, the emitter of said second transistor being connected to one terminal of the direct current supply by way of a negative feed-back resistor, both resistors having the same value, the collector of said first transistor being connected to the other terminal of said direct current supply, the base of said second transistor being connected by way of a condenser to one conductor of said transmission line being nominally at earth potential as regards signal potentials, the base of said first transistor being connected by way of a condenser to the other conductor of said transmission line, the collector of said second transistor being connected to an output terminal of the circuit arrangement.



3,308,310
ELECTRICAL SUPERCONDUCTIVE SWITCHES

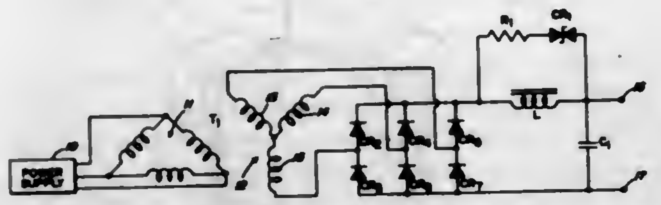
**Thomas Brian Burnett, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Sept. 4, 1964, Ser. No. 394,450
Claims priority, application Great Britain, Sept. 12, 1963, 35,983/63
9 Claims. (Cl. 307—88.5)**



1. An electrical switch including a superconductor switching element having a plurality of layers of a superconducting material which has a transition temperature, a superconductive state, and a normal state, said layers being connected electrically in series, a plurality of layers of insulating material between said layers of superconducting material to insulate said layers of superconducting material from one another, a pair of terminals connected to said superconductor switching element, refrigeration means normally to maintain said superconducting material below its transition temperature, a plurality of control windings, each control winding being adjacent to a said layer of superconducting material, means insulating each control winding from the adjacent layer of superconducting material, pulse transformer means having primary winding means and a plurality of secondary winding means, each said secondary winding means being connected to a said control winding, and a pulsing device connected to said primary winding means to supply a pulse of current thereto, so as simultaneously to energize each of said plurality of secondary winding means, whereby when said primary winding is not energized, said plurality of control windings is not energized, and said superconducting material connected to said terminal is in said superconductive state, and whereby when said primary winding is energized by a said pulse of current, said plurality of control windings is energized, and said superconducting material connected to said terminals adopts said normal state.

3,308,311
TRANSIENT SUPPRESSION CIRCUIT

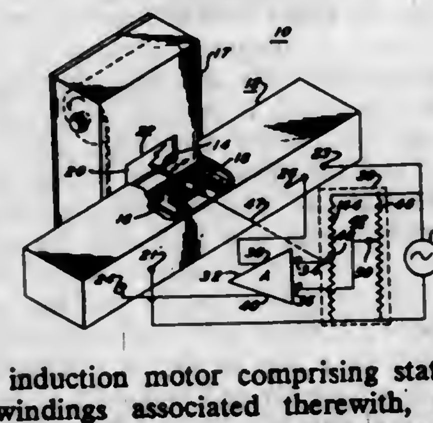
**Hilmer I. Swanson, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Jan. 21, 1964, Ser. No. 339,135
3 Claims. (Cl. 307—93)**



1. A transient suppression circuit for a power supply comprising rectifying means receiving alternating current, a filter connected to the rectifying means to smooth the rectified current, said filter having a choke, and back-to-back diodes connected across said choke, the breakdown voltage of said diodes slightly exceeding the desired maximum voltage across said choke so that said diodes limit the voltage across the choke to the operating range of said choke.

3,308,312
LINEAR INDUCTION MOTOR

**Gustave Ehrenberg, Havertown, Pa., assignor, by mesne assignments, to Electro-Nite Engineering Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 31, 1964, Ser. No. 393,085
7 Claims. (Cl. 310—13)**

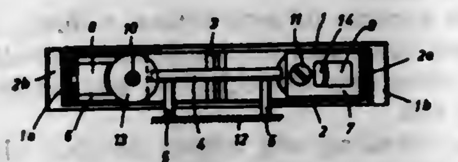


1. An induction motor comprising stator pole pieces having windings associated therewith, armature iron spaced from said pole pieces to define a gap therebetween, a flexible electrically conducting armature in the form of an endless belt movably mounted within said gap for relative motion with respect to said stator pole pieces and said armature iron, said flexible armature comprising conducting side members joined by parallel conducting cross members, magnetic material between adjacent conducting cross members to increase the flux linkage of said flexible armature with the stator and armature iron magnetic circuits, and terminal means for connecting said stator windings to a source of alternating current.

3,308,313
TORSION OSCILLATOR

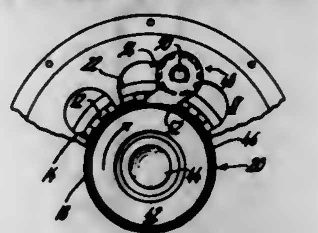
**Robert Favre, Lausanne, Switzerland, assignor to Fabriques Movado, Fonds, Switzerland, and Manufacture des Montres Universal, Perret Freres S.A., Geneva, Switzerland
Filed Jan. 11, 1966, Ser. No. 519,845
4 Claims. (Cl. 310—36)**

2. A torsion oscillator for an electronic clock having a base comprising two torsion spring systems arranged coaxially having torsional axes coinciding in a common axis, a support having two sides and extending at right angles to the common torsional axis, said spring system being fixed to said support, one of said systems extending out from one side of the support and the other system extending out from the other side of the support, two oscillating masses fixed to the free end of the two spring systems adapted to have their oscillations maintained in counterphase by electrodynamic means, and deformable torsive securing means fixing said support to a base of the clock, said two masses comprising two arms which are disposed parallel to each other and whose outside ends are bent normally toward each other.



3,308,314
RESILIENT NO-BACK DEVICE FOR SMALL SYNCHRONOUS MOTORS

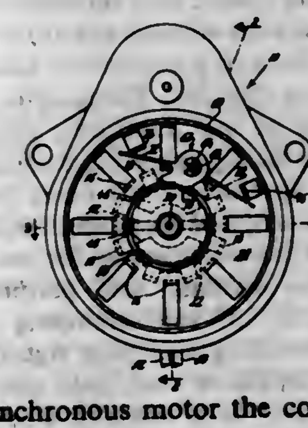
**Nelson C. Spring, Jr., Terryville, and Christian M. J. Jauch, Torrington, Conn., assignors to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,819
7 Claims. (Cl. 310—41)**



1. In a synchronous motor the combination of:
alternate field poles,
a rotatable permanent magnet rotor capable of starting and running in a first or a second direction on effecting alternating opposite polarities in said alternate field poles,
a resilient member rotatable with said rotor,
an element pivotally arranged adjacent said resilient member, and means on said pivotal element for arrestingly engaging and compressing said resilient member when said rotor rotates in said first direction whereupon said rotor is impelled in said second direction.

3,308,315
UNIDIRECTIONAL DRIVE FOR SMALL SYNCHRONOUS MOTORS

**Joseph J. Mahon, Litchfield, and Ralph N. Roberge, Waterbury, Conn., assignors to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 10, 1964, Ser. No. 343,669
7 Claims. (Cl. 310—41)**



1. In a synchronous motor the combination of:
alternate field poles,
a rotor capable of starting and running in a first or a

second rotary direction when affected by alternating opposite polarities in said alternate field poles,

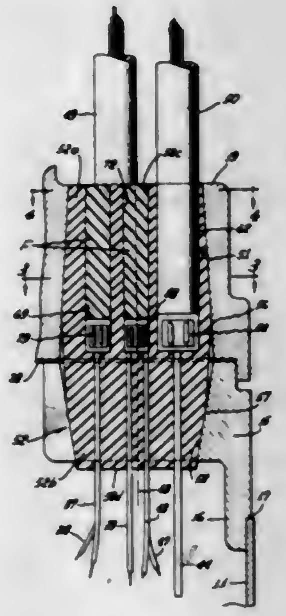
a driven member capable of rotation in a first and in a second direction,

lost-motion coupling means between said rotor and driven member,

said rotor capable of establishing a direct driving engagement with said driven member in either of said rotary directions through said lost-motion coupling means, and

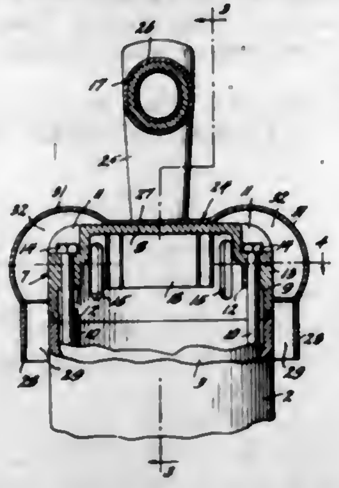
means for arresting said driven member when rotated by said rotor in said first direction whereby said rotor then runs in said second direction and said driven member is delayedly but unimpededly rotated by said rotor in said second direction through said lost-motion coupling means.

3,308,316
SUBMERSIBLE MOTOR WITH A SEALED CONNECTOR PLUG
Kurt F. Pfahl, Whittier, Calif., assignor to Emerson Electric Co., a corporation of Missouri
Filed Feb. 5, 1964, Ser. No. 342,692
20 Claims. (Cl. 310—87)



1. In a submersible motor structure: means forming an interiorly sealed space; a stator structure in said space; a plurality of phase windings for the stator structure having separate insulated terminal wires for conducting current to the windings; means forming an access opening to said space, said access opening having peripheral tapered walls; a connector plug made of flexible electrical insulation material and having one end in the access opening; said connector plug having a series of through apertures, each of said apertures having enlarged outer ends accessible exteriorly of said space and having restricted inner ends accessible in said space; said terminal wires extending into the restricted ends of said apertures and into the enlarged outer ends thereof; leads having electrical insulation jackets extending into and fitting into the enlarged ends of at least some of said apertures, said leads being electrically and mechanically spliced to said terminal wires at the corresponding apertures; there being more terminal wires than jacketed leads; and clamping means for wedging the plug into the access opening for sealing engagement with said access opening, said peripheral tapered walls tapering inwardly of said clamping means, said clamping means constricting said plug tightly about said jacketed leads to establish a seal; said phase windings being connected togther in a selected configuration by connection of said terminal wires to said leads and to each other at said connector plug.

3,308,317
PORTABLE ELECTRIC HAND TOOL WITH A MOISTURE REPELLANT COVER
Ralph Allenbaugh, 717 Maple St., Mansfield, Ohio 44906
Filed Mar. 11, 1964, Ser. No. 351,186
1 Claim. (Cl. 310—88)

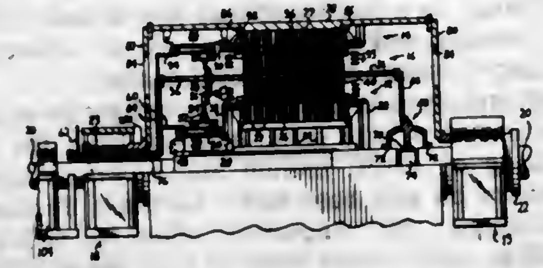


A portable electric power unit of the character described comprising an elongated casing open at the upper end thereof, an electric motor secured within said casing, a cup shaped cap which is removably secured to the open upper end of said casing; said cap comprising a top wall and an integral downwardly extending annular side wall having a plurality of annularly spaced breather slots therein, and a hand-grip which is disposed above said top wall in vertically spaced relation thereto and is connected to said top wall by a pair of laterally spaced upwardly extending arms between the upper ends of which said hand-grip is connected; a thin flexible moisture repellant plastic cover which is applied to said cap and comprises a flat mid-section which is molded to said top wall in adhering contact therewith, an upper section which is integral with said mid-section and is integrally molded to and about said upwardly extending arms and said hand grip, and an annular skirt section which is integral with said mid-section and extends downwardly therefrom about the said side wall of said cap, the lower portion of said skirt being spaced from the said side wall thereby providing an annular space between said side wall and the said lower portion of said skirt, the upper portion of said skirt being provided with diametrically opposed sections which are disposed in adhering contact with said side wall and are connected together by a pair of similar intermediate sections which curve outwardly and upwardly from the said lower portion of said skirt into the said mid-section of said cover and define a pair of diametrically opposed chambers with which both said annular space and said breather slots communicate, said skirt section being operative to prevent the entrance of moisture into said casing through said breather slots while permitting the free flow of air into and out of said casing through said annular space, said chamber and said breather slots.

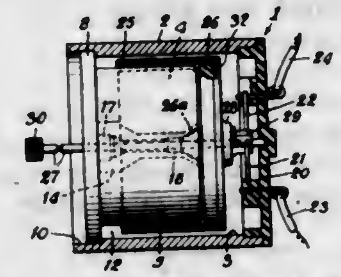
3,308,318
DYNAMOELECTRIC MACHINE HAVING CONCENTRIC ROTORS WITH AN INTERMEDIATE STATOR
Raymond M. Dunaiski, Scotia, and Howard D. Snively, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Original application Dec. 27, 1961, Ser. No. 162,395, now Patent No. 3,252,744. Divided and this application Aug. 3, 1965, Ser. No. 491,067
12 Claims. (Cl. 310—114)

1. A contra-rotating motor comprising a frame enclosing a shaft supporting a first armature having a winding therein, a second shaft supported armature concentrically disposed with respect to said first armature and equipped with a winding, separate means respectively connected

with said windings for furnishing electric power thereto, and a stationary field structure between said armatures including a multiplicity of field poles having windings thereon, positioned for electrodynamic cooperation with said armature windings so that when said armature and field windings are energized, electromagnetic fields are established which cooperate with each other to cause rotation of said first and second armatures and their connected shafts in opposite directions.



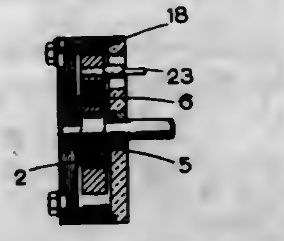
3,308,319
MINIATURE ELECTRIC MOTOR
Fritz Faulhaber, Wurttemberg, Germany, and Hans W. Hefter, Wilmette, Ill., assignors, by direct and mesne assignments, to Hans Stussi, Cassarate, near Lugano, Ticino, Switzerland
Filed July 7, 1964, Ser. No. 380,868
9 Claims. (Cl. 310—154)



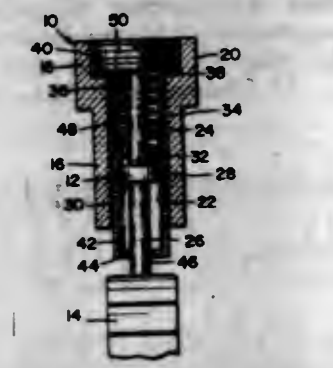
1. An electric motor comprising a housing provided with a cylindrical inner wall, a cylindrical permanent magnet arranged in said housing concentrically with respect to said cylindrical inner wall so as to form an annular sleeve air gap, annular means in which said permanent magnet is mounted for supporting the latter in said concentric position with respect to said inner wall; said sleeve means being supported in said housing at one end thereof, a rotor comprising a hollow cylindrical armature winding, a disc attached to one end of said hollow cylindrical winding, and a rotor shaft to which said disc is fixedly attached; said hollow cylindrical armature winding extending with its other end into said annular air gap to surround the entire permanent magnet and said rotor shaft extending axially completely through said permanent magnet, said permanent magnet being provided with a central opening with bearing means mounted within said opening for rotatably supporting said rotor shaft, said bearing means being the sole support of said rotor, said permanent magnet and sleeve means forming a first subsassembly and said rotor and shaft forming a second subassembly adapted to be easily assembled to form an electric motor by simply inserting each subassembly into opposite ends of said housing with the shaft inserted in said magnet.

3,308,320
COMMUTATORS
Dennis Lincoln Spencer, Earley, Reading, England, assignor to I.D.M. Electronics Ltd., Berkshire, England, a British company
Filed Feb. 28, 1964, Ser. No. 348,139
Claims priority, application Great Britain, Mar. 22, 1963, 11,510/63
9 Claims. (Cl. 310—219)

1. An electrical commutator device comprising a stationary member formed with a plurality of spaced commutator segments and an eccentrically mounted revolvable contact member mounted on a driven shaft and biased into contact with and arranged to wipe over the commutator segments, means for constraining the rotation of the revolvable contact member about its own axis and the relative dimensions of the circumferences of the revolvable and stationary members being such as to reduce the wiping speed to a predetermined ratio of the speed of revolution of the shaft of the revolvable contact member.



3,308,321
REVERSIBLE BRUSH AND BRUSH HOLDER ARRANGEMENT
John R. Provost, Jr., Turners Falls, Mass., assignor to Miller Falls Company, Greenfield, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 365,727, May 7, 1964. This application Oct. 12, 1966, Ser. No. 586,305
8 Claims. (Cl. 310—239)



1. A brush and brush holder therefore for holding the brush in contact with a commutator comprising:

a retainer;

stop means disposed on said retainer;

brush means insertable in said retainer for contacting said commutator;

abutment means on said brush cooperating with said stop means for limiting the amount of wear of said brush means;

resilient means urging said brush means toward said commutator; and

means for holding said resilient means within said retainer;

said brush means having upper and lower parts on the opposite sides of said abutment means and being reversibly insertable in said retainer so that either part may contact said commutator.

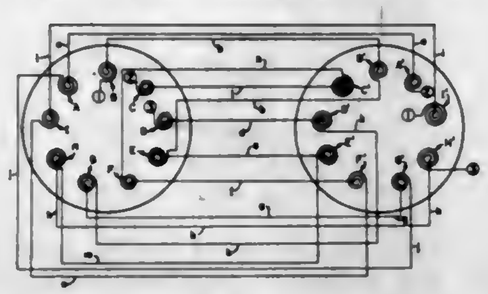
3,308,322
PRINTED DISC ELECTRICAL MACHINERY
James H. Hahn, Glenview, Ill., assignor to Basic Motor Developments, Inc:, Tallahassee, Fla., a corporation of Florida
Filed Apr. 11, 1963, Ser. No. 272,463
16 Claims. (Cl. 310—268)

1. A conductive rotor assembly for an electro-mechanical energy converter comprising:

an insulating member having a circular cross-section and having a first conductive winding pattern and a second conductive commutator pattern thereon,

said first pattern comprising a conductive winding located between the center and the circumference of

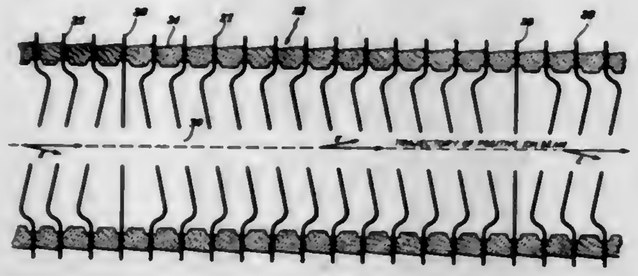
the insulating member to define nine pole centers on one surface of the said member,
each pole center having the same polarity as the third pole center adjacent thereto,
each one of said nine pole centers being spaced from its next adjacent pole center neighbor at 40°, and



said second pattern comprising nine circular wedge segments, each adjacent segment being mutually insulated, each third segment being electrically connected, and each of the said segments being symmetrically positioned at 40°; and
means electrically connecting said first and said second patterns.

3,308,323
INCLINED-FIELD HIGH-VOLTAGE VACUUM TUBES

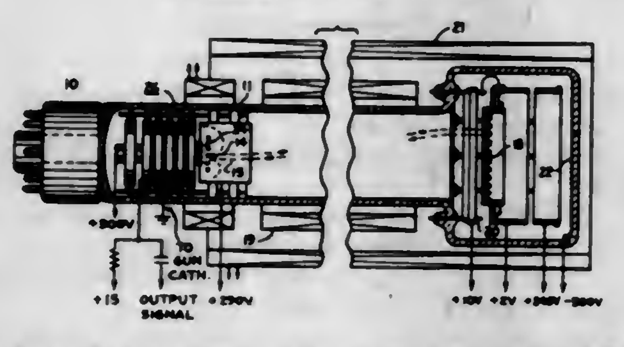
Robert J. Van de Graaff, Lexington, Mass., assignor to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
Filed May 25, 1961, Ser. No. 112,674
14 Claims. (Cl. 313—63)



2. An elongated high-voltage vacuum tube having a longitudinal passageway therethrough and comprising a multiplicity of alternating insulating rings and electrode disks having apertures so as to define said passageway each of said electrode disks being bounded by flat conducting material and having lateral surfaces which are generally inclined with respect to a plane perpendicular to said passageway.

3,308,324
ELECTRON MULTIPLIER AND METHOD OF MANUFACTURING DYNODES

Robert L. Van Asselt, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 30, 1962, Ser. No. 183,802
3 Claims. (Cl. 313—65)



1. In a photosensitive pickup tube comprising a flat target adapted to operate at a relatively low voltage with respect to ground, a heat radiating electron gun for directing electrons to one face of said target, a portion of said electrons returning towards said gun, an electron multiplier having a first dynode adjacent to said electron gun and in the path of said returning electrons, said multiplier being adapted to operate at a relatively high voltage with respect to ground, whereby said returning electrons directly impinge on a surface of said first dynode with appreciable velocity and are deflected to an adjacent dynode, the improvement characterized in that:

(a) said first dynode comprises a composite structure consisting of a base metal selected from the group consisting of silver, indium and nickel, a layer of chromium on said base metal having a thickness of from about 100 Angstrom units to about 200 Angstrom units, and a layer of magnesium oxide on said layer of chromium, said magnesium oxide layer being directly exposed to said returning electrons,

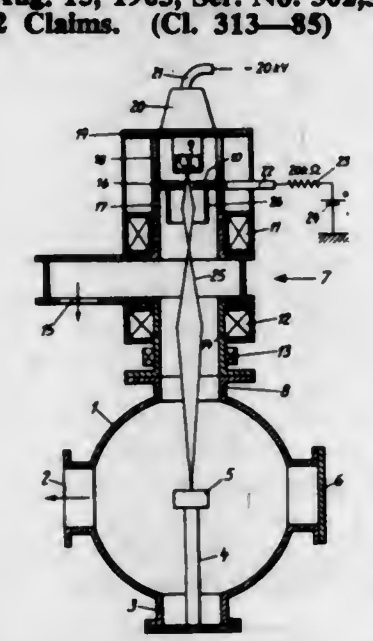
(b) said magnesium oxide layer having a thickness related to the voltage difference between said target and said multiplier within the range of from 300 volts to 600 volts, said thickness of said magnesium oxide layer being about 75 Angstrom units when said voltage difference is about 300 volts and increasing substantially linearly with increase in voltage to a value of about 150 Angstrom units when said voltage difference is about 600 volts,

(c) whereby said first dynode is characterized by optimum gain and is free from adverse effects from the heat of said electron gun.

2. The method of manufacturing a dynode electrode for use in an electron tube having a photocathode including cesium, comprising the steps of depositing in a vacuum a layer of material on a substrate by evaporation, depositing magnesium only, on said layer by evaporation while maintaining said vacuum, oxidizing said magnesium, and hydrogen firing said dynode for eliminating cesium attracting contaminants from said dynode.

3,308,325
ELECTRON BEAM TUBE WITH ION SHIELD

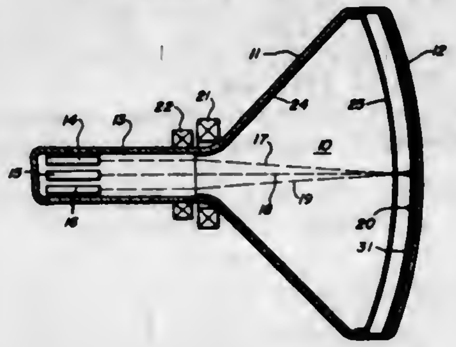
Francois Gaydou, Balzers, Liechtenstein, assignor to Bendix-Balzers Vacuum, Inc., Rochester, N.Y., a corporation of Delaware
Filed Aug. 15, 1963, Ser. No. 302,349
2 Claims. (Cl. 313—85)



1. In an electron beam apparatus for melting, vaporizing or machining material in an evacuable work chamber having a conductive wall, a cathode:
means for connecting said cathode with a potential which is highly negative with respect to the walls of the work chamber;
an apertured acceleration electrode comprising a flat plate spaced from said cathode;
a cylindrical shaped ion screen electrode integrally and electrically connected to said acceleration electrode about said aperture on a side away from said cathode with the axis of said ion screen electrode parallel to the electron beam;
insulating means for mounting integral connected assembly consisting of said acceleration electrode and said ion screen electrode;
means for connecting said acceleration and ion screen electrodes with a potential which is positive with respect to the walls of the work chamber.

3,308,326
COLOR IMAGE REPRODUCER HAVING RED PHOSPHOR COMBINED WITH RED-PASS FILTER ELEMENT

Sam H. Kaplan, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 412,595, Nov. 16, 1964, which is a continuation of application Ser. No. 200,230, June 5, 1962. This application May 19, 1966, Ser. No. 551,470
7 Claims. (Cl. 313—92)

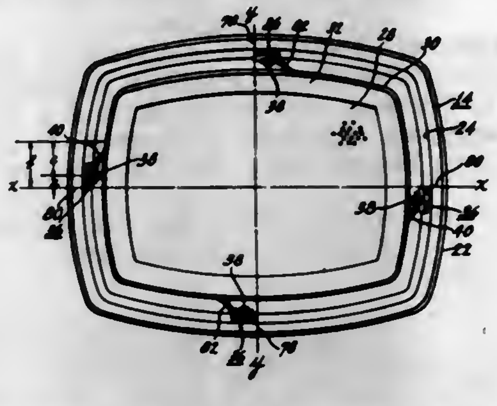


1. A tri-color cathode-ray tube for producing an image in simulated natural color comprising: means for producing and projecting cathode-ray electrons; and an image screen disposed to be impinged upon by said electrons and formed of three related and interlaced patterns of color target elements each of which emits light of a respective one of red, blue and green colors in response to energization by said electrons, those of said target elements which emit said red color including a phosphor composition which consists essentially of a phosphor material having a desired radiation in response to energization by said electrons in the red portion of the visible spectrum within the range of 6000 to 7000 Angstroms with a peak output occurring at approximately 6300 Angstroms and further having an undesired radiation extending from approximately 6000 Angstroms into the shorter wavelength region, said red-color target elements further including a filter material which is absorptive of radiations having a wavelength extending from approximately 6000 Angstroms into said shorter wavelength region, which is highly transmissive of radiations within the range from 6000 to 7000 Angstroms, and which has a low reflectance at wavelengths of light corresponding to the radiation from those of said target elements which emit said blue and green colors to enhance the image contrast-ambient light characteristic of said image screen.

3,308,327
CATHODE RAY TUBE

Terry M. Shrader, Leacock, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 12, 1964, Ser. No. 374,755
2 Claims. (Cl. 313—64)

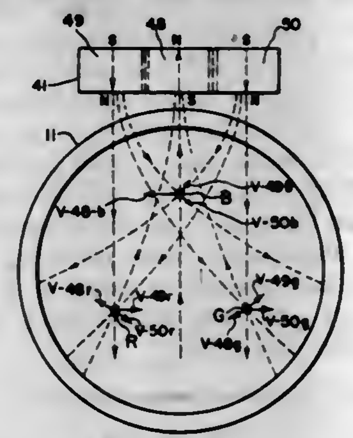
1. A cathode ray tube comprising:
(a) an envelope including a faceplate panel having a generally rectangular faceplate portion and a peripheral side wall portion, said faceplate portion being disposed perpendicular to a central axis and having major and minor surface-bisecting axes,
(b) a plurality of electrode support studs attached to said panel side wall and extending inwardly from the interior surface thereof,
(c) an electrode disposed adjacent to and substantially co-extensive with said faceplate portion and including a generally rectangular frame, and
(d) a plurality of leaf spring support straps attached at their one ends to said electrode frame, said straps having apertures near their free ends into which



said studs are received for supporting said electrode within said envelope,
(e) a pair of said studs and their associated support straps near the opposite ends of one of said bisecting axes being off-set therefrom to so compensate for differential expansions of said side wall, said electrode frame, and said support strap that those portions of said electrode lying adjacent to said one bisecting axis undergo no substantial tangential shift relative to said faceplate due to the heating of said tube during operation thereof.

3,308,328
MAGNETIC APPARATUS FOR CONVERGING THE BEAMS OF A PLURAL GUN CATHODE RAY TUBE

John L. Rennick, Elmwood Park, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 2, 1964, Ser. No. 401,043
9 Claims. (Cl. 313—77)



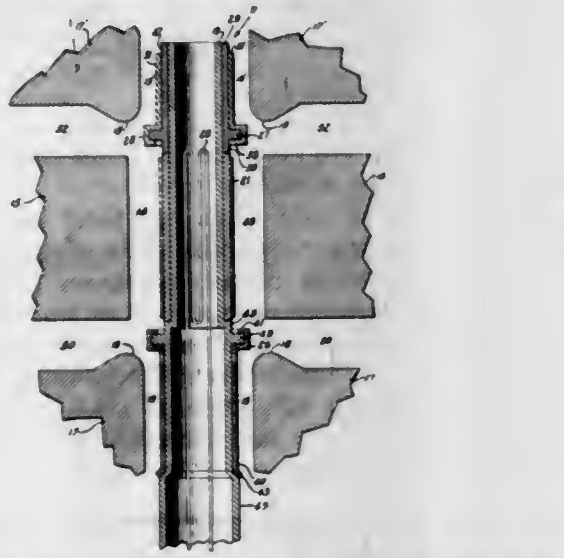
1. In an electron beam convergence apparatus for a cathode-ray tube, which includes means for developing a plurality of electron beams, a magnetic arrangement for controlling the lateral position of a particular one of said beams, comprising:
means, including a first magnet polarized in a first orientation relative to the principal axis of said tube to have a magnetic field component transverse to the path of said one of said beams, for predominantly effecting a desired lateral displacement of said one beam relative to its undisplaced path while secondarily effecting undesired displacements of others of said beams;
and means, including a pair of additional magnets disposed in juxtaposition to butt on opposite sides of

said first magnet and polarized in a different orientation relative to said principal axis to have magnetic field components transverse to the paths of said other beams, for predominantly effecting compensating displacements of said other beams to substantially neutralize the undesired displacements thereof due to the field of said first magnet without effecting substantial displacement of said one beam.

3,308,329
THERMIONIC EMISSIVE CATHODE WITH END STRUCTURE FOR EMISSIVE SUPPRESSION

Robert J. Foreman and Joseph A. Smith, Williamsport, Pa., assignors, by mesne assignments, to Litton Industries, Inc., Beverly Hills, Calif., a corporation of Delaware

Filed Nov. 23, 1962, Ser. No. 239,453
2 Claims. (Cl. 313—107)

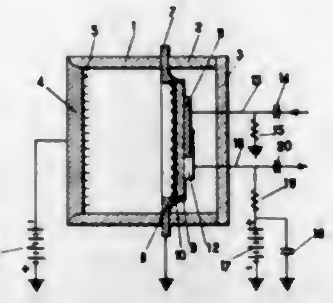


1. A cathode assembly structure adapted for use in an evacuated high temperature thermionic electron emissive device having an anode and oppositely spaced pole pieces with axially aligned longitudinal bores comprising:
a tubular spindle axially positioned and spaced to extend through said anode and into the longitudinal bores of said pole pieces,
a thermionic cathode, employing barium compounds capable of providing electron emission, mounted on said spindle in spaced relationship with said anode,
transversely outstanding annular flanges functioning as emission end shields mounted on said spindle and spaced from each end of said cathode and adjacent the openings of said longitudinal bores, and
a continuous layer of a zirconium-nickel alloy having emission suppression and gettering properties integral with and extending along at least a portion of said flanges and said spindle to a position substantially within said bores.

3,308,330
COLD EMISSION ELECTRON DISCHARGE DEVICE

Daniel Charles, 79 Blvd. Haussmann, Paris, France
Filed Mar. 13, 1963, Ser. No. 264,859
Claims priority, application France, Mar. 30, 1962, 892,827
12 Claims. (Cl. 313—310)

1. A triode, comprising:
a cold emission cathode providing an unmodulated stream of electrons;
a target having induced conductivity properties and facing said cathode with one face thereof receiving said unmodulated stream of electrons;
a first metallization located on the other face of said target;
and a second metallization located on said other face and galvanically separated from said first metallization,

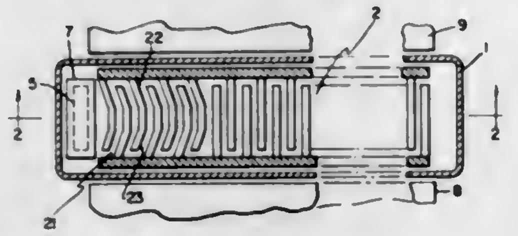


means applying input signals to one of said metalizations and means extracting an output signal from said other metalization.

3,308,331
ELECTRON DISCHARGE DEVICE WHEREIN ELECTROMAGNETIC WAVES ALONG THE SLOW WAVE STRUCTURE HAVE COMPONENTS TRANSVERSE TO THE ELECTRON BEAM AND DEFLECT OUT-OF-PHASE ELECTRONS FROM THE BEAM

John M. Osepchuk, Lexington, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed May 27, 1963, Ser. No. 283,443
6 Claims. (Cl. 315—3.6)



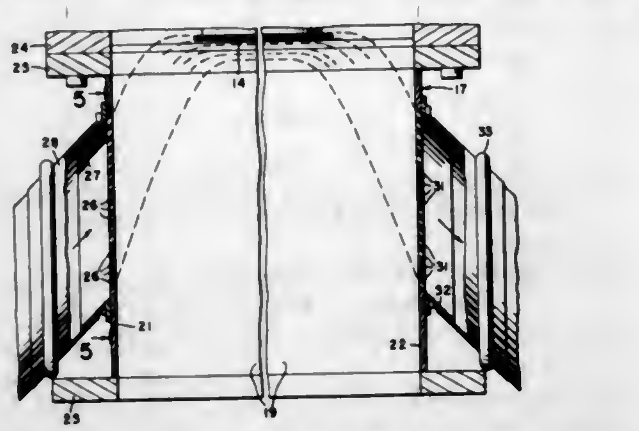
1. An electron discharge device comprising:
a source of electrons;
means producing mutually perpendicular D.C. electric and magnetic fields for compelling said electrons to move as a beam through an interaction space;
and a slow wave structure for conducting electromagnetic waves adjacent said interaction space so that the electric fields of said waves along opposing edges of said interaction space form oblique angles with and have a component transverse to the direction of said beam and parallel to said magnetic field;
whereby favorably phased electrons along the edges of the interaction space are caused to move toward the center of the beam and unfavorably phased electrons are caused to move away from the center of said beam.

3,308,332
RADIO FREQUENCY WINDOW COOLING STRUCTURE AND TRANSMISSION DEVICES USING SAME

Richard H. L. Bibb, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed July 16, 1963, Ser. No. 295,481
12 Claims. (Cl. 315—5)

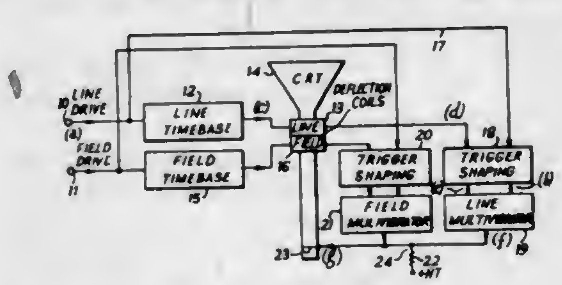
1. A microwave transmission structure for transmitting high power electromagnetic waves comprising:
wall means defining a waveguide for the electromagnetic waves and having a longitudinal axis taken in the direction of power flow along said waveguide,
an electromagnetic wave permeable window,
means for supporting said wave permeable window within said waveguide,
said waveguide wall means provided with an array of apertures on a first side of said waveguide for passing gas into said waveguide toward said window and an array of apertures on a second side of said waveguide substantially opposite said first side for passing gas out of said waveguide, the axes of said apertures being directed toward said window,
and said array of apertures having a center spaced from said window along the longitudinal axis of said waveguide from said window, whereby gas directed into said waveguide through said apertures on the first side of said waveguide causes the gas to flow across said window and out of said waveguide through said apertures on the second side to cool said window that is heated by electromagnetic wave energy dissipated therein.



3,308,333
MONOSTABLE CIRCUITS FOR SUPPRESSION OF CATHODE RAY BEAM WHEN DEFLECTION VOLTAGES OR CURRENTS FAIL

Stuart James Lent, Lower Kingswood, Surrey, England, assignor to The Marconi Company Limited, London, England, and Standard Telephones & Cables Limited, London, England, both British companies

Filed May 8, 1964, Ser. No. 366,046
Claims priority, application Great Britain, May 14, 1963, 19,136/63
12 Claims. (Cl. 315—20)

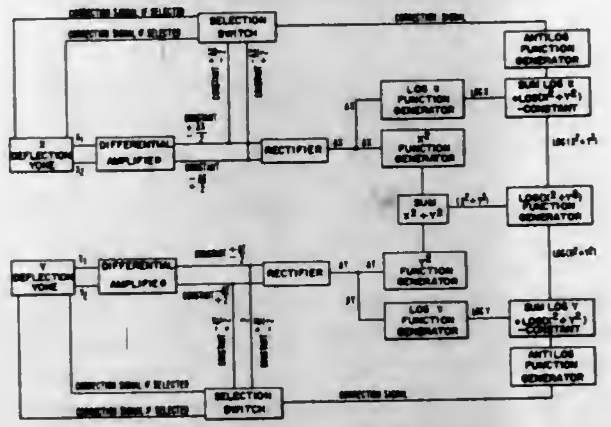


1. A circuit arrangement including,
a cathode ray tube, a control means for said tube, means for deflecting the cathode ray beam of said tube,
a saw-tooth wave generator generating a saw-tooth wave having a deflection portion and a fly-back portion,
means coupling said saw-tooth wave generator to said beam deflecting means,
a monostable circuit having a period longer than that of said saw-tooth wave and producing a beam-control voltage when in its stable condition, means coupling said monostable circuit to said control means and thus applying said control voltage to said control means to render the cathode ray beam innocuous to the screen of the said cathode ray tube,
a generating means for generating first and second triggering pulses occurring substantially at the beginning and end respectively of said fly-back portion of said saw-tooth wave,
means for applying said second triggering pulses to said monostable circuit to trigger it from its stable condition to a quasi-stable condition, and for applying said first triggering pulses to said monostable circuit to trigger it from its quasi-stable condition to its stable condition.

3,308,334
TRACE DISTORTION CORRECTION

Bobby L. Bryson, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 28, 1963, Ser. No. 291,508
12 Claims. (Cl. 315—24)

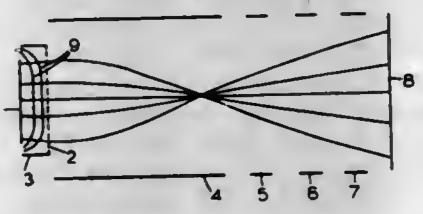


1. In a system to correct trace distortion of a cathode ray tube comprising plural means to generate an intermediate logarithmic function in a final correction formula, including means to reduce said intermediate function by a constant amount, plural antilogarithmic function generating means responsive to relatively large values of said reduced intermediate logarithmic function to generate a final correction function, and plural means to modify deflection in said cathode ray tube in accordance with said final correction function.

3,308,335
ELECTROSTATICALLY FOCUSSED ELECTRON IMAGE TUBES

Bernard Joseph Mayo, Beaconsfield, England, assignor to Electric & Musical Industries Limited, Hayes, England, a British company

Filed Mar. 28, 1963, Ser. No. 268,741
Claims priority, application Great Britain, Mar. 29, 1962, 12,005/62
4 Claims. (Cl. 315—31)



1. An electron discharge tube comprising
(a) an evacuated envelope,
(b) a substantially flat image electron-emissive surface,
(c) a substantially flat target for electrons emitted from said emissive surface, said surface and target between spaced one from the other,
(d) a converging electrostatic focusing means for focusing pencils of electrons emitted from said surface to form an inverted image on said target, said focusing means comprising a plurality of annular electrodes around the electron optical path from said emissive surface to said target,
(e) and auxiliary focusing means including a mesh parallel to said emissive surface, said mesh having at least 500 filaments in a distance equal to the diameter or larger dimension of said emissive surface,
(f) said mesh being spaced from said emissive sur-

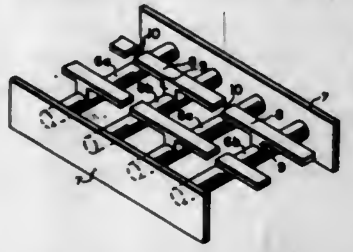
face by a distance not exceeding one half said diameter or larger dimension.

3,308,336

PERIODIC SLOW WAVE CIRCUIT HAVING CAPACITIVE COUPLING BETWEEN ALTERNATE PERIODIC ELEMENTS

Hunter L. McDowell, Springfield, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey

Filed Jan. 3, 1962, Ser. No. 164,008
1 Claim. (Cl. 315—39.69)



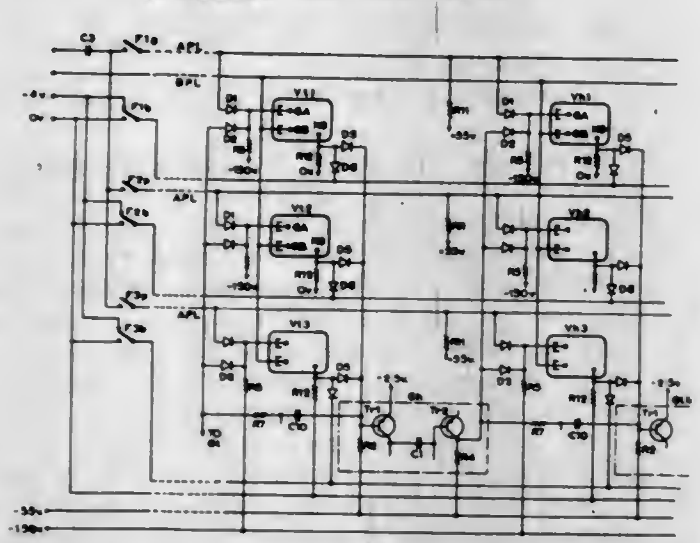
A slow wave structure comprising an arcuate array of parallel directed resonant rods having an axis of revolution for defining an arcuate path of wave propagation around said axis of revolution, means for capacitively coupling together alternate rods in the capacitive regions thereof, said means for capacitively coupling together alternate rods comprising essentially only a pair of elongated arcuate conductive strap members extending along said array of resonant rods with each strap being connected to alternate rods, each of said strap members being segmented intermediate their points of connection to alternate rods to provide said means for capacitively coupling together alternate rods of said array, said segmented strap members being coaxial with the axis of revolution and axially spaced apart in the direction of the axis of revolution, and including means extending around and interconnecting the common ends of said array of rods for shorting together the ends of said rods to define an array of half wavelength slot resonators in the spaces between adjacent shorted rods, whereby said slow wave structure is caused to have a fundamental forward wave dispersion characteristic.

3,308,337

STEPPING-TUBE MULTIPLE-STORE CIRCUIT EMPLOYING PLURAL COUNTER CHAINS SELECTIVELY GATED THROUGH SINGLE INTERSTAGE GATING CHAIN

Gerald Offley Crowther and Graham Frank Jeynes, Cheam, Surrey, England, assignors to North American Philips Company, Inc., New York, N.Y.

Filed Dec. 19, 1963, Ser. No. 331,678
6 Claims. (Cl. 315—84.5)



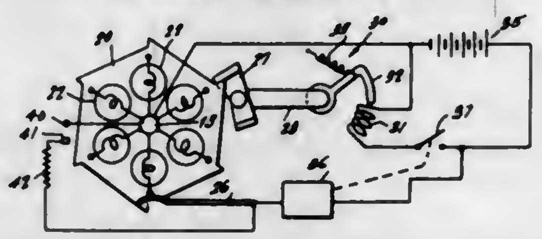
1. An electronic counting-arrangement comprising a common pulse-line for supplying counting pulses, a plurality of counting chains each comprising a chain of cold-cathode stepping-tube stages of successively higher order, a chain of interstage gating-circuits, means for connecting the chain of gating circuits into a selected counting-chain to provide a gating-circuit between each pair of successive stepping-tube stages of the selected counting chain, and means for causing only the stepping-tubes of the selected chain to respond to counting-pulses supplied to all the counting-chains from the said common pulse-line.

3,308,338

DEVICE FOR AUTOMATICALLY REPLACING AN OPEN CIRCUITED LAMP WITH A NEW LAMP

Robert Seidler, 356 Mountain Ave., Summit, N.J. 07901

Filed July 6, 1964, Ser. No. 380,423
3 Claims. (Cl. 315—89)



1. A lamp changing device for replacing a burned out lamp with an operable lamp comprising;

a base for supporting all the lamps and associated equipment;
a rotatable lamp support on the base;
a plurality of flat conductive lamp terminals on the support for holding an operable lamp in a desired position and a plurality of reserve lamps in reserve positions;
a plurality of resilient metal conductors, one for each lamp, also secured to the support for holding the lamps in position and for connecting one terminal of each lamp to a power supply terminal;
a spiral spring coupled between a portion of the base and said rotatable lamp support for turning an operable lamp into position;
an escapement means mounted on the base and coupled to said rotatable support for releasing the support for rotation by said spring;
an electrical transducer for operating the escapement means when a control current pulse is applied thereto;
and electrical contact means mounted on the base disposed for making contact with one of the conductive lamp terminals for lighting the operable lamp when rotated into the desired position and an additional contact means mounted on the rotational support adapted to make contact with a terminal on the base only when all of the lamps have been burned out, said terminal on the base connected to said electrical contact means in series with a resistor for maintaining a current to prevent the operation of the electrical transducer and the escapement means.

3,308,339

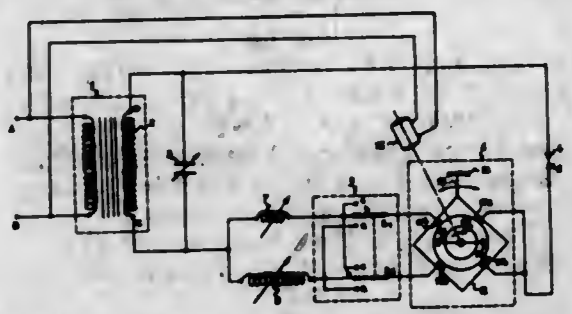
METHOD AND APPARATUS FOR PRODUCING RADIATION FOR SPECTROMETRIC ANALYSIS

Roger Berneron, Saint-Germain-en-Laye, France, assignor to Institut de Recherches de la Siderurgie Francaise, Saint-Germain-en-Laye, France

Filed July 9, 1963, Ser. No. 293,798
Claims priority, application France, Aug. 6, 1962, 906,179, Patent 1,337,846
4 Claims. (Cl. 315—172)

1. In an apparatus for producing radiation for spectrometric analysis of a material by means of electric discharges between electrodes, in combination, input means for applying to the electrodes an alternating voltage of

predetermined frequency and adapted to produce discharges between said electrodes; circuit means arranged between said input means and said electrodes and comprising a plurality of impedance means of respectively different impedance values, and control means for sequentially and in periodic repetition connecting in circuit with said electrodes different valued ones of said impedance means; and actuating means for actuating said control means in synchronism with said predetermined frequency of said alternating voltage, so that the different types of said electric discharges corresponding to different impedances form a sequence which is periodically repeated.

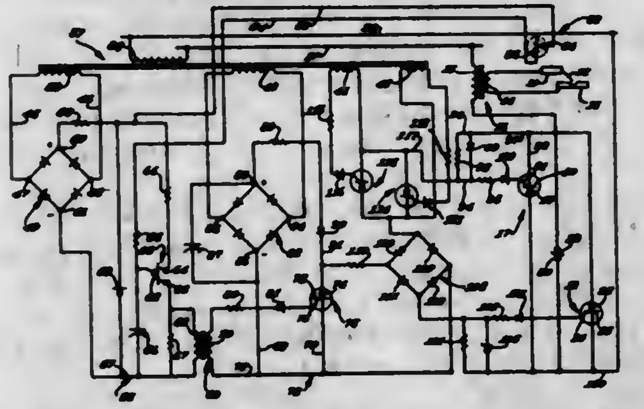


3,308,340

CURRENT CONTROL APPARATUS HAVING PHASE CONTROLLED MEANS FOR VARIABLY CONTROLLING THE PERIOD OF CONDUCTION

Willis H. Gille, St. Paul, and Ralph I. Anderson, Minneapolis, Minn., assignors to Marquette Corporation, Minneapolis, Minn., a corporation of Delaware

Filed May 4, 1964, Ser. No. 364,625
13 Claims. (Cl. 315—205)



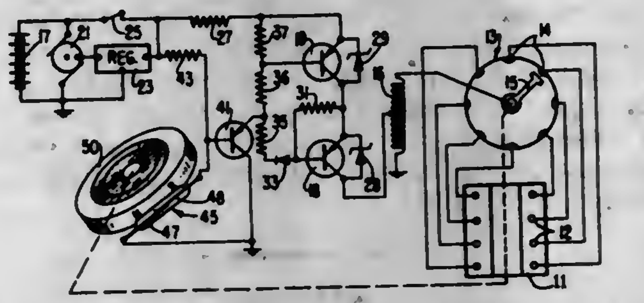
9. In combination, a first silicon controlled rectifier having an anode, a cathode, and a gate electrode; means for connecting the anode and cathode of said rectifier to a load and to a source of alternating power to control the current flow through the load; an impedance so connected between the gate electrode and cathode that when a voltage drop of a predetermined polarity appears across said impedance said first rectifier is rendered conductive; a further silicon controlled rectifier connected to a source of power in series with said impedance and in parallel with the anode and cathode of said first rectifier, said further silicon controlled rectifier having a gate electrode; adjustable control means for applying to said gate electrode of said further rectifier a voltage whose phase position is adjustably variable and which is of a magnitude and polarity to initiate condnction of said further rectifier to cause current flow through said impedance, said further rectifier being connected to said impedance in such a direction that the resulting voltage drop across said impedance due to said further rectifier being conductive causes a voltage drop of said predetermined polarity across said impedance to cause said first rectifier to become conductive, said parallel connection of said further rectifier with the anode and cathode of said first rectifier being effective upon said first rectifier becoming conductive to result in the removal of the voltage across said further rectifier to cause it to cease conduction; and means for energizing said adjustable control means from a source of power independent of the voltage drop across said first rectifier.

3,308,341

TRANSISTORIZED IGNITION SYSTEM UTILIZING A MAGNETICALLY ACTUATED REED SWITCH

Robert C. McLaughlin, Bloomingdale, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Feb. 10, 1964, Ser. No. 343,652
2 Claims. (Cl. 315—219)



1. In an ignition system having an ignition coil for providing firing pulses for an internal combustion engine, apparatus for interrupting current through the coil to produce firing pulses therein including in combination, transistor switching means having input, output and control portions, means adapted to connect said input and output portions of said transistor switching means in series with at least a portion of the ignition coil across a source of potential, and a control circuit connected to said control portion of said transistor switching means for controlling the conduction thereof, said control circuit including an encapsulated magnetic reed switch and a disc-like annular rotary magnetic member for operating said magnetic switch, means coupling said magnetic member to the internal combustion engine for rotating said member in synchronism with the engine, said magnetic member having north and south poles alternately positioned at regular intervals on the periphery thereof, said magnetic reed switch having two magnetic reed members adapted to engage each other to close circuit means through said reed switch, said reed members being positioned adjacent the periphery of said annular magnetic member, tangent thereto and in the same plane therewith, so that during rotation of said annular magnetic member opposite magnetic poles thereof are aligned with said reed members and polarize the same to opposite polarities so that said reed members attract each other and engage to close the circuit therethrough, and then like magnetic poles of said magnetic members are aligned with said reed members and polarize said reed members to the same polarity so that said reed members repel each other and separate to open the circuit therethrough, said magnetic reed switch alternately closing and opening said circuit means therethrough as said magnetic member rotates, said circuit means operating to alternately change the conduction of said control circuit means, said control circuit means causing intermittent operation of said transistor switching means to interrupt current in said ignition coil and producing firing pulses.

3,308,342

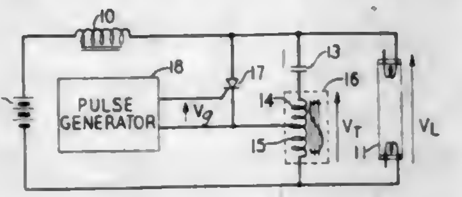
POWER SUPPLY FOR NEGATIVE-RESISTANCE ARC-DISCHARGE LAMPS

Richard A. Coradeschi, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 24, 1963, Ser. No. 311,132
6 Claims. (Cl. 315—242)

1. An inverter for supplying at least one fluorescent lamp from a low impedance source of direct current

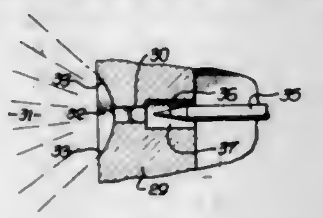
potential comprising an inductor, a first direct current circuit path connecting said inductor and said lamp in series across said sources, a saturable autotransformer having primary and secondary windings, a semiconductor switch having a transconductive path and a control electrode, a second direct current circuit path connecting said



transconductive path and said secondary winding in series across said lamp, a capacitor, a circuit path connecting said capacitor and said primary winding in series across said transconductive path, and a pulse generator for supplying a periodic control signal to said control electrode to control the conductivity state of said transconductive path.

3,308,343
ANTISTATIC TREATMENT AND APPARATUS

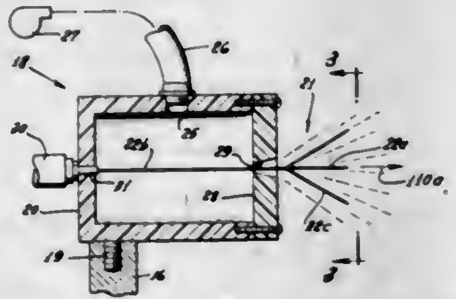
Harold W. Smith, San Marino, and George A. Korkos, Los Angeles, Calif., assignors to Ener-Jet Corporation, Phoenix, Ariz., a corporation of California
Filed Nov. 12, 1964, Ser. No. 410,651
11 Claims. (Cl. 317—2)



1. Ion generation and dispensing apparatus for altering the static charge of work comprising a chamber having a gas inlet and a sonic orifice outlet at the chamber front, the orifice minimum cross dimensions having less than ¼ inch first means presenting a pointed tip in the chamber upstream of and toward the orifice outlet in close proximity thereto and to supply sufficiently high voltage to effect production of ions in a corona at the tip, and second means to supply a stream of pressurized gas to flow into said chamber and adjacent said tip to carry the bulk of the ions at high velocity through the orifice, said orifice being angled to jet the gas stream and ions forwardly in a wide angle discharge pattern.

3,308,344
HIGH VOLTAGE ANTISTATIC APPARATUS

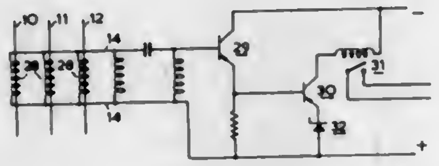
Harold W. Smith, San Marino, and George A. Korkos, Los Angeles, Calif., assignors to Ener-Jet Corporation, Phoenix, Ariz., a corporation of California
Filed Mar. 4, 1965, Ser. No. 437,028



1. Ion generation and dispensing apparatus for altering the static charge of work, comprising electrically conductive means having multiple pointed tips, and means to supply high voltage of the same polarity to said first means, the tips including a first tip and other tips spaced about said first tip with all tips directed generally forwardly to generate ions acting with electrical repulsion effect in said space to establish an ion stream moving forwardly and away from the tips for application to said work.

3,308,345
ELECTRICAL-FAULT DETECTOR FOR DETECTING FAULT CURRENTS HAVING AN APPRECIABLE HARMONIC CONTENT

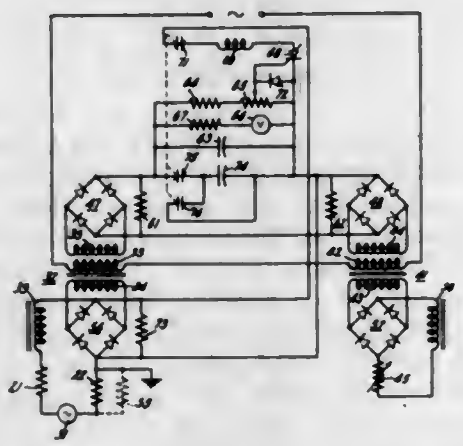
Albert Russell van Cortlandt Warrington, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Sept. 2, 1964, Ser. No. 393,839
Claims priority, application Great Britain, Sept. 12, 1963, 35,984/63
9 Claims. (Cl. 317—18)



1. An electrical-fault detector comprising
a power supply line,
sensing means coupled to said power supply line for developing a signal dependent on the line current, said sensing means comprising
  a transactor having a non-linear frequency response whereby to accentuate the magnitude of the high frequency components relative to the low frequency components of said signal,
filter means for separating the fundamental and low harmonic frequency components from said signal,
control means responsive to the remaining part of said signal and operable to derive a control signal therefrom, and
detector means operable in response to said control signal upon the magnitude thereof exceeding a predetermined value whereby to detect only such faults as produce a distorted line current having an appreciable content of harmonics of higher order than said low frequency component.

3,308,346
GROUND CABLE CONTINUITY CHECK CIRCUIT

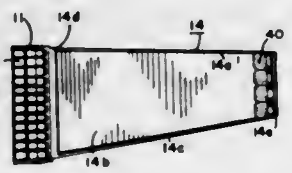
Francois D. Martzloff, Schenectady, and Burnice D. Bedford, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
Filed May 10, 1965, Ser. No. 454,479
17 Claims. (Cl. 317—18)



8. In a ground cable continuity check circuit for a power supply cable having a grounding conductor and an additional pilot conductor for use in establishing the continuity of the grounding conductor and having the ends of the grounding conductoor and the additional pilot conductor remote from the power supply electrically interconnected so as to form a closed conductive loop, the combination comprising circuit breaker means connected in circuit relationship with the power supply cable for interrupting current flow therethrough, means for impressing a circulating direct current through the grounding conductor loop, bridge circuit means for comparing the value of the circulating direct curent in the ground conductor loop to a reference value and for deriving an output error signal indicative of any decrease in the ground conductor loop, and means for coupling the error signal thus derived back to the circuit breaker means for interrupting power flow through the power supply cable in response to a decrease in the value of the direct current circulating through the ground conductor loop.

3,308,347
COMPUTER PATCH BAY FORMED OF A PLURALITY OF BASE BLOCKS

Gerhart Klaiber, Monmouth County, N.J., assignor to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey
Filed Oct. 22, 1965, Ser. No. 501,835
8 Claims. (Cl. 317—99)

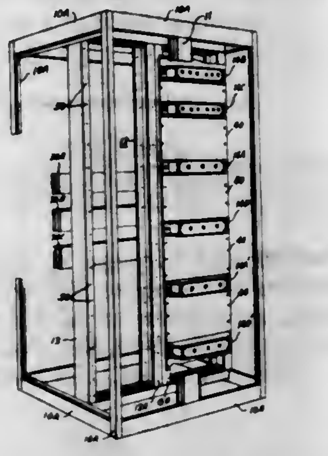


1. A computer tray arrangement having secured to its front end a base block including a plurality of contact members comprising
  at least one computing circuit means disposed within said tray and connected to a selected one of said contact members,
  at least one longitudinal wall formed across a longitudinal edge of said base block,
  at least one longitudinal divider formed between the longitudinal edges of said base block,
  a transverse wall formed across each of the transverse edges of said base block,
  at least one transverse divider substantially equally spaced and formed between said transverse walls thereby forming a plurality of recesses in said base block, said dividers and walls being electrically conductive, and
  means for fixedly mounting a respective one of said contact members within each of said recesses thereby to provide for the alignment of the contact members one with the other and for the mechanical and electrical shielding of said contact members within said recesses.

3,308,348
SWITCHBOARD WITH SEPARATE LINE AND LOAD MOUNTING BLOCKS

William F. Olashaw, New Britain, and Norbert J. Wasileski, Farmington, Conn., assignors to General Electric Company, a corporation of New York
Filed Apr. 12, 1965, Ser. No. 447,336
6 Claims. (Cl. 317—119)

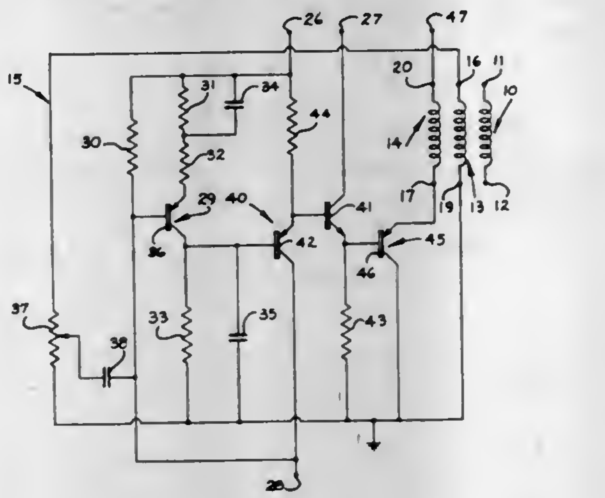
1. An electrical switchboard construction comprising:
(a) a structural framework including a pair of elongated structural support members, means supporting said structural support members in generally parallel spaced relation;
(b) a plurality of elongated generally rectangular insulating mounting blocks having front and back surfaces, each of said mounting blocks having one end thereof supported on one of said support members and the other end thereof supported on the other of said support members, said mounting blocks being mounted in spaced relation lengthwise of said support members;
(c) a plurality of power supply busbars extending parallel to and between said support members, said power supply busbars being connected to at least some of said mounting blocks, said mounting blocks including integral formations at said back surface thereof positioning said power supply busbars against movement in a direction transverse to their length;



(d) said mounting blocks including means at said front surfaces thereof for supporting and connecting electrical control devices, and
(e) at least some of said mounting blocks including conductor means extending from the back thereof to a point substantially removed from said power supply busbars and having means at the front thereof for connecting said conductor means to electrical control devices mounted on said blocks.

3,308,349
MAGNETIC FIELD STABILIZATION

Thomas I. Kirkpatrick, Santa Cruz County, Calif., assignor to The Regents of the University of California, Berkeley, Calif.
Filed Mar. 13, 1964, Ser. No. 351,769
13 Claims. (Cl. 317—123)



1. In a magnetic field stabilizer, the combination of:
means for producing a primary magnetic field;
a sensing winding;
means coupling the sensing winding and the primary magnetic field so that a change in the magnitude of the primary magnetic field induces an error signal in the sensing winding;
a bucking winding;
means coupling the bucking winding and the primary magnetic field, whereby a current flow through the

bucking winding produces a bucking magnetic field, and the magnetic field stabilizer has a total magnetic field which is the algebraic sum of the primary field and bucking field;

means for controlling the flow of current through the bucking winding in response to the error signal so that, upon a change in the magnitude of the primary magnetic field, a complementary change in the bucking magnetic field is induced by current flowing in the bucking winding; and

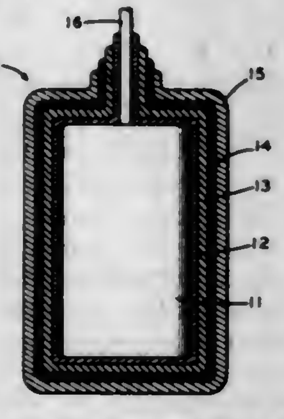
means coupling the bucking winding and the sensing winding so that a change in the current flow through the bucking winding induces a feedback signal in the sensing winding which opposes the error signal.

3,308,350
CAPACITOR WITH DIELECTRIC FILM HAVING PHOSPHORUS - CONTAINING COMPONENT THEREIN

Donald M. Smyth and George A. Shirn, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed June 17, 1964, Ser. No. 375,859

10 Claims. (Cl. 317—230)



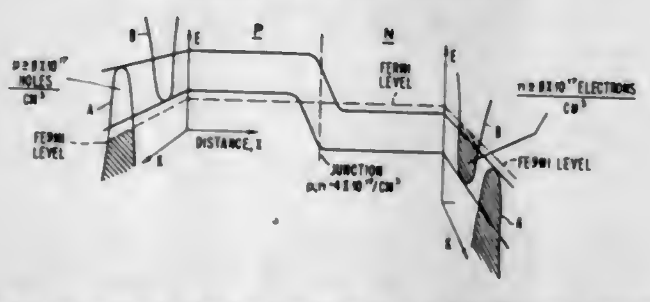
1. An electrical capacitor comprising an anode having an anodic dielectric oxide layer formed on the surface thereof and including a phosphorus-containing component distributed throughout said layer, a cathode disposed on said dielectric layer, said phosphorus-containing component within said dielectric layer ranging from a concentration not substantially greater in the region remote from the anode than in the region adjacent to the anode, to a distribution substantially more concentrated in the region adjacent to the anode than in the region remote from the anode.

3,308,351
SEMIMETAL PN JUNCTION DEVICES

Leo Esaki, Chappaqua, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 14, 1963, Ser. No. 315,835

11 Claims. (Cl. 317—234)



1. An electronic device comprising a semimetal crystalline body having a first portion which serves as the active part of said device, said first portion being constituted of contiguous regions of opposite conductivity types defining a pn junction,

second and third portions joined to opposite ends of said first portion as monocrystalline extensions thereof for providing ohmic contacts to said contiguous regions.

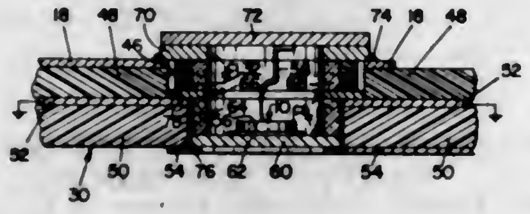
2. The invention as defined in claim 1 wherein the first region of said first portion is doped with selenium and the second region of said first portion is doped with tin to define said pn junction.

3,308,352
TRANSMISSION LINE MOUNTING STRUCTURE FOR SEMICONDUCTOR DEVICE

Thomas B. Hutchins IV, Beaverton, Jean F. Delord, Portland, and William C. Myers, Hillsboro, Oreg., assignors to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed June 1, 1964, Ser. No. 371,585

6 Claims. (Cl. 317—234)



4. Diode mount structure, comprising:

a gating diode having an input terminal and an output terminal;

a ground ring of metal supported around said diode positioned approximately midway between said input and output terminals;

a pair of spacer sleeves of ceramic material each having one end secured to said ground ring on the opposite sides of said ground ring;

an input terminal member of metal connected to said input terminal of said diode and attached over the other end of one of said spacer sleeves to insulate said input terminal member from said ground ring;

an annular resistor supported about said one spacer sleeve and connected between said input terminal member and said ground ring, such resistor having a resistance much greater than the forward conductor resistance of said diode; and

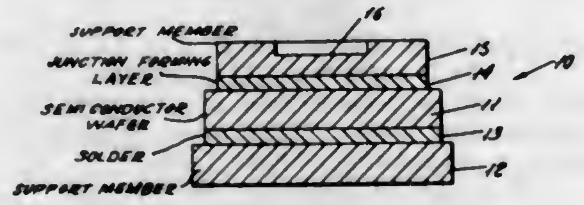
an output terminal member of metal connected to said output terminal of said diode and secured over the other end of the other of said spacer sleeves to insulate said output terminal member from said ground ring and to form a hermetically sealed container for said diode with said spacer sleeves, said ground ring and said input terminal member, said resistor being positioned outside of the diode container.

3,308,353
SEMI-CONDUCTOR DEVICE WITH SPECIFIC SUPPORT MEMBER MATERIAL

Childress B. Gwyn, Jr., Export, Pa., assignor to Talon, Inc., Meadville, Pa., a corporation of Pennsylvania

Filed Sept. 10, 1964, Ser. No. 395,543

5 Claims. (Cl. 317—234)



1. In a semiconductor rectifier device of the P-N junction type, which comprises a wafer of semiconductor material, a support member having a surface closely conforming to and disposed adjacent the surface of said semiconductor wafer, and a thin layer of solder securing said support member to said adjacent surface of the semiconductor wafer, the improvement comprising providing said support member constituted of an alloy of

(a) from 90 to 99.5% of a first component selected from the group consisting of molybdenum, tungsten and alloys thereof, and

(b) from ½ to 10% of a second component selected from the group consisting of

  (1) iron-nickel-cobalt-manganese alloys constituted of from 28 to 30% nickel, from 16 to 18% cobalt, from 0.2 to 0.3% manganese, and the remainder essentially iron, and

  (2) iron-nickel-manganese-carbon alloys constituted of from 35 to 39% nickel, from 0.3 to 0.9% manganese, from 0.15 to 0.2% carbon, and the remainder essentially iron,

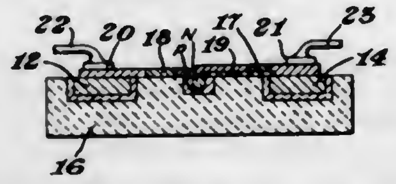
all percentages being given by weight.

3,308,354
INTEGRATED CIRCUIT USING OXIDE INSULATED TERMINAL PADS ON A SIC SUBSTRATE

Thomas N. Tucker, Freeland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed June 28, 1965, Ser. No. 467,359

4 Claims. (Cl. 317—234)



1. A semiconductor electronic integrated circuit comprising:

a base of electrically insulative material having high thermal conductivity,

at least one active semiconductor electronic element imbedded in said base,

a plurality of terminal pads on said base, said terminal pads being spaced from said active semiconductor element and having affixed thereto electrical interconnections with said active element, and

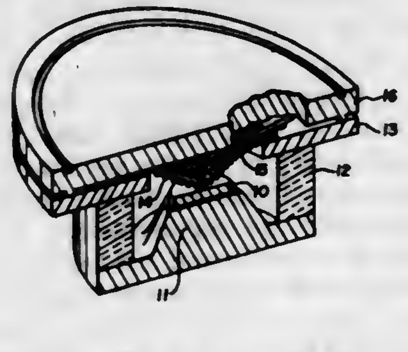
a barrier layer of material having low thermal conductivity interposed between said terminal pads and said base to thermally isolate said terminal pads from said base.

3,308,355
POINT CONTACT DIODE

Charles Freeman Davis, Jr., and Arthur Mitchell Lueck, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed July 30, 1962, Ser. No. 213,269

5 Claims. (Cl. 317—236)



1. A high frequency diode comprising:

(a) a wafer of single crystal semiconductor material,

(b) a conductive plate with said wafer being secured to one side of the plate,

(c) an insulating sleeve surrounding said wafer and secured to said one side of said plate,

(d) a conductive member secured to one end of said insulating sleeve and defining an aperture,

(e) a conductive cone-shaped mesh bonded directly to said conductive member and having its central apex portion extending through said aperture slightly spaced from said wafer, and

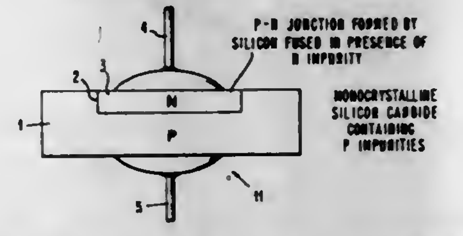
(f) an elongated conductive wire physically connected to the conductive member having an end extending through and physically in contact with said mesh and terminating in engagement with said wafer.

3,308,356
SILICON CARBIDE SEMICONDUCTOR DEVICE

Richard F. Rutz, Cold Spring, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 30, 1964, Ser. No. 379,225

18 Claims. (Cl. 317—237)



4
P-N JUNCTION FORMED BY SILICON FUSED IN PRESENCE OF N IMPURITY
2
3
N
1
P
MONOCRYSTALLINE SILICON CARBIDE CONTAINING P IMPURITIES
11
5

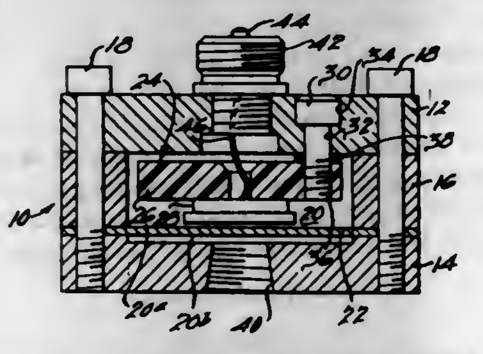
1. A semiconductor connection comprising a body of P conductivity type crystalline silicon carbide containing a p-n junction between a P type region of said crystalline silicon carbide and an N conductivity type region in said body, said latter region being fused into said body and containing a dissolved gas as an N conductivity type determining impurity, said N type region being degenerately doped by said dissolved gas.

3,308,357
HYDRAULIC/PNEUMATIC TO ELECTRIC TRANSDUCER

Charles W. Youngblood, Royal Oak, Mich., assignor to Micromatic Hone Corporation, Detroit, Mich., a corporation of Michigan

Filed Mar. 11, 1964, Ser. No. 351,013

11 Claims. (Cl. 317—246)

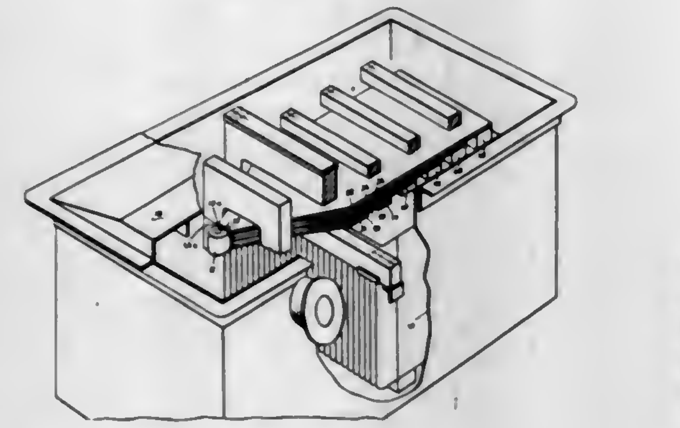


1. A variable capacitance gage assembly for providing a change in the magnitude of its capacitance in accordance with variations in the magnitude of a quantity being measured comprising: a first capacitance plate member, a second capacitance plate member spaced from said first plate member and being deflectable towards and away from said first plate member, means connected with said second plate member for deflecting said second plate member a distance varying in accordance with the variations in the magnitude of the quantity being measured, adjustment means connected to said first plate member and being selectively operable for moving said first plate member towards and away from said second plate member whereby the capacity therebetween can be selectively adjusted, said adjustment means including a threadably mounted screw member and rigid connecting means fixed to said first plate member and connecting said first plate

member and said screw member with said screw member being rotatable relative to said connecting means and being selectively manipuable for moving said first plate member.

3,308,358
ELECTRICAL ENERGY STORAGE APPARATUS

Edward Blank, Sharon, Mass., assignor to Tobe Deutschmann Laboratories, Inc., Canton, Mass., a corporation of Massachusetts
Filed Sept. 7, 1965, Ser. No. 485,488
16 Claims. (Cl. 317—256)

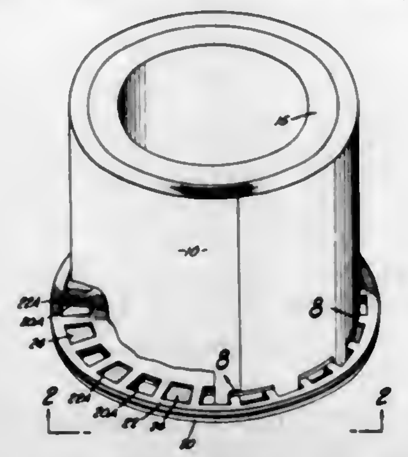


1. Electrical apparatus comprising,
capacitor means coupled between at least one first terminal and at least one second terminal,
at least one first conducting strip coupled to said first terminal and at least one second conducting strip coupled to said second terminal,
means for supporting said first and second conducting strips in closely adjacent insulatedly separated relationship to define at least one substantially parallel plate transmission line therebetween,
first and second closely adjacent opposed insulatedly separated output electrodes each having a length corresponding substantially to the height defined by said at least one transmission line,
each of said first and second conducting strips being formed with a tapered end portion having a broad end corresponding substantially to a width dimension of said conducting strips to a narrow end immediately adjacent to said first and second output electrodes and corresponding substantially to the thickness of said first and second output electrodes and coupling each first conducting strip to said first output electrode and each second conducting strip to said second output electrode to provide a low inductance path between said first and second terminals and said first and second output electrodes.

3,308,359
LOW-INDUCTANCE CAPACITOR

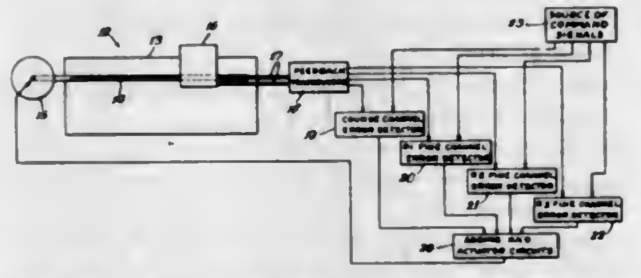
Bruce R. Hayworth, 5401 Via Alcazar, San Diego, Calif. 92111, and Terence J. Gooding, 5583 Del Cerro Blvd., San Diego, Calif. 92120
Filed Mar. 12, 1965, Ser. No. 439,175
6 Claims. (Cl. 317—260)

1. A capacitor construction including a first series of a plurality of loops of concentrically disposed and circumferentially extending conductors; a second series of a plurality of loops of concentrically disposed and circumferentially extending conductors interleaved between said first series and defining therewith a plurality of generally tubular and concentric capacitors; each of said first series of concentrically disposed conductors having a plurality of axially extending conducting portions connected thereto at spaced points along its circumference and at one end of said tubular capacitors; each of said second series of concentrically disposed conductors having a plurality of axially extending conducting portions connected thereto at spaced points along its circumference and at said one end of said tubular capacitors; a first generally annular conducting element connected at spaced points therealong to said conducting portions of said first series of conductors; and a second generally annular conducting element connected at spaced points therealong to said conducting portions of said second series of conductors; said first and second elements being the common terminals for each of said plurality of capacitors.



3,308,360
FINE AND COARSE POSITION SERVO WITH FREQUENCY COMPARATORS

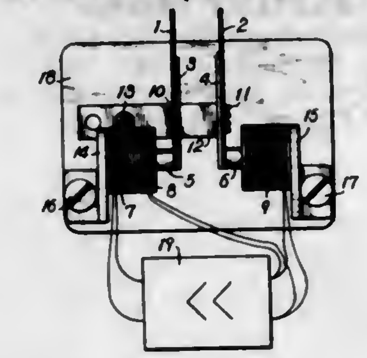
Vern C. Vanderbilt, Hagerstown, Ind., assignor, by mesne assignments, to Dynamic Precision Control Corporation, Hagerstown, Ind., a corporation of Indiana
Filed July 25, 1962, Ser. No. 212,243
16 Claims. (Cl. 318—18)



1. A system for controlling a variable parameter, comprising a coarse feedback transducer, two fine feedback transducers, each transducer being adapted to be responsive to the parameter being controlled and to generate an electrical feedback signal whose frequency varies with changes of the parameter, the frequency of each of said fine feedback transducers varying with change of the parameter throughout the major portion of its variations at a more rapid rate than the frequency of said coarse feedback transducer, a coarse error detector channel connected to the output of said coarse feedback transducer, a fine error detector channel connected to the output of each of said fine feedback transducers, each of said channels also having an input adapted to receive a command signal with a frequency having a predetermined relation to the frequency of the feedback signal for that channel for a desired condition of the parameter, each of said channels being adapted to produce an error signal having characteristics that are representative of the frequency relation between its command and feedback signals, actuator means responsive to said error signals for varying said parameter to cause its actual condition to coincide with said desired condition, said coarse frequency transducer being constructed such that the derivative of its frequency-parameter curve always has the same sign, and each of said fine frequency transducers being constructed such that the sign of the derivative of its frequency-parameter curve changes, the derivatives of the frequency-parameter curves of said fine feedback transducers changing sign at different times; said characteristics of each error signal comprising its phase and magnitude, the phase indicating whether the feedback signal or the command signal has the higher frequency and the magnitude indicating the extent of the frequency difference, and each fine error detector channel including means for reversing the phase of its error signal each time the derivative of its associated frequency-parameter curve changes sign.

3,308,361
ELECTROMAGNETIC VIBRATOR

Akira Nakai, 1246 Matsunaki-cho, Suginami-ku, Tokyo, Hideo Uchida, 1142 Oaza-Fukuoka, Irima-gun, Saitama-ken, and Kei Nakagawa, 54 Kitairiai, Sayama-shi, Saitama-ken, Japan
Filed May 11, 1964, Ser. No. 366,507
Claims priority, application Japan, May 13, 1963, 38/23,916; Oct. 23, 1963, 38/56,898
10 Claims. (Cl. 318—128)

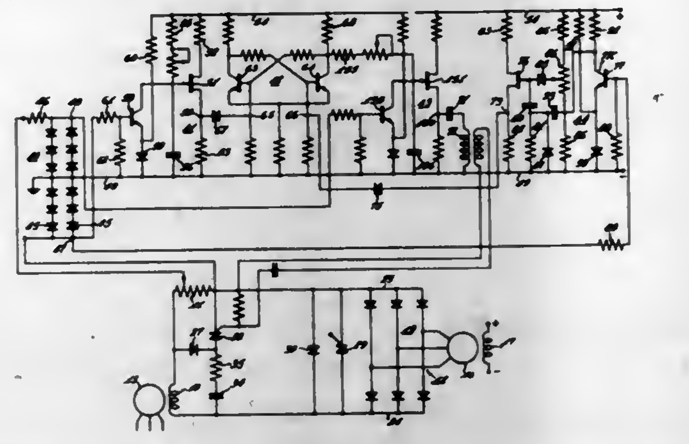


8. An electromagnetic vibrator assembly comprising, in combination, a pair of tuning vibrators positioned in spaced parallel planes and operating in phase opposition to each other with equal amplitudes of vibration; each of said vibrators including an elongated C-shaped strip and an elongated E-shaped strip, the open ends of the two strips being at respective opposite ends of the associated vibrator and the end of at least one leg of each E-shaped strip being fixedly connected to the bight of the associated C-shaped strip; a respective magnetic mass secured to the fixedly interconnected ends of the two strips of each vibrator; a common stationary support for the two vibrators secured to and interconnecting, at the free ends thereof, another leg of each E-shaped strip; and a respective drive coil for each vibrator fixedly mounted on the stationary member mounting said assembly; said drive coil electromagnetically cooperating with the respective magnetic masses; the mass of each vibrator being so distributed that the center of gravity thereof is substantially in coincidence with the oscillation axis of the respective vibrator.

3,308,362
SYNCHRONOUS MOTOR CONTROL CIRCUIT

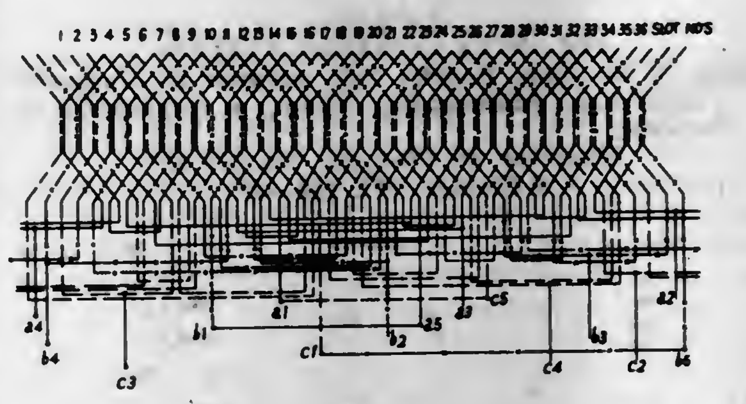
Manfred E. Neumann, New Berlin, Wis., and Bui Chiem Han, Pacific Grove, Calif., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed July 16, 1964, Ser. No. 383,022
10 Claims. (Cl. 318—176)

1. A control for switching the circuit of a synchronous motor field winding and its exciter from a subsynchronous accelerating state to a synchronous operating state when the motor rotor has reached a synchronizing speed and has reached a predetermined angular position with respect to the rotating M.M.F. of the motor armature, comprising,
means for providing an electrical signal alternating in polarity with changes in the position of the field winding with respect to the armature, M.M.F.
an oscillator having a period that is slightly less than the half period of said polarity varying signal when the motor has reached the minimum range of synchronizing speed values,
means connected to receive the polarity varying signal and to control said oscillator to begin a period in response to only a predetermined polarity or zero value of said signal, whereby said oscillator completes a period only when said motor has reached synchronizing speed,
a memory device connected to be set in response to the completion of a period by said oscillator, and
means connected to be responsive to a selected polarity or zero value of said polarity varying signal and to the set condition of said memory device to signal the circuit of the field winding and the exciter to switch to its synchronous operating state.



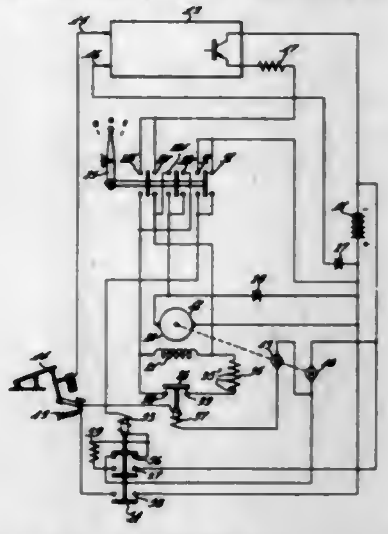
3,308,363
POLE-CHANGING, THREE-PHASE, ALTERNATING CURRENT MOTOR OR GENERATOR FOR THREE POLE-NUMBERS

Gordon Hindle Rawcliffe, Clifton, Bristol, and William Fong, Red'and, Bristol, England, assignors to National Research Development Corporation
Filed Apr. 5, 1963, Ser. No. 271,033
Claims priority, application Great Britain, Apr. 24, 1962, 15,612/62
12 Claims. (Cl. 318—224)


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 SLOT NOS
a4
b4
b1
a1
c1
b2
a5
c5
c4
b3
a2
c2
b6
c3

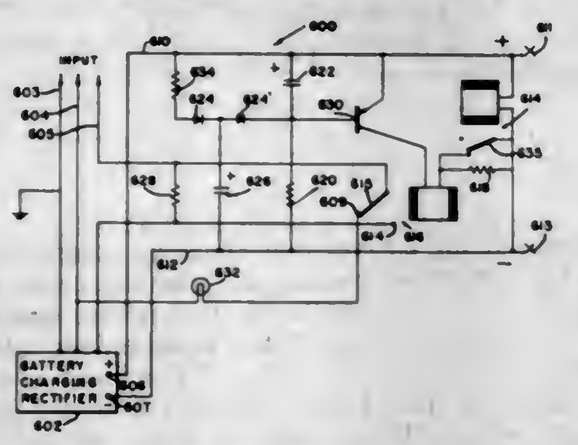
1. An alternating current pole-changing rotary electric machine for three-phase running at three alternative pole-numbers related to one another in that, where one pole-number is X-poles, a second is a pole-number selected from the series: $(X+2)$, $(X+6)$, $(X+10)$ and so forth, and the third is a pole-number selected from the series: $(X+4)$, $(X+8)$, $(X+12)$ and so forth, having three phase-windings comprising coils wound in slots and serially connected together in four winding sections in each phase-winding defined by connecting taps, to provide one of said second and third pole-numbers, being reconnected at said taps as a series-parallel arrangement of two parallel circuits each of two said sections, to provide the other one of said second and third pole-numbers and being reconnected at said taps as a four-parallel arrangement, each of one said section, to provide said pole-number of X-poles.

3,308,364
ELECTRIC MOTOR SPEED CONTROL
Myron J. Boyajian, Chicago, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 7, 1964, Ser. No. 365,576
8 Claims. (Cl. 318—358)



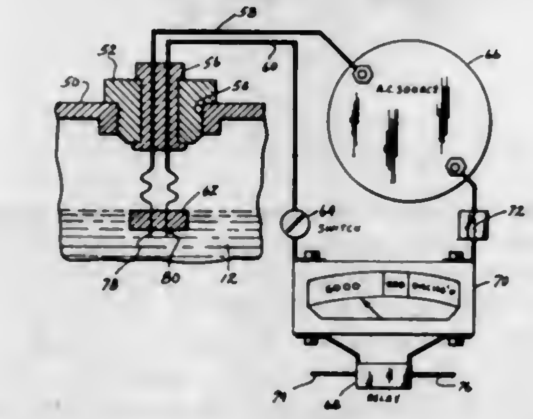
1. A motor system comprising:
- an electric motor having an armature winding and a field winding, the latter being adjustable to operate in at least two ranges of field strength,
- means for selectively operating said motor in either direction of rotation,
- means for adjusting the speed of said motor according to a manual input, and
- means for adjusting the field current independently of the armature current, said last mentioned means including means responsive to manual selection and to motor speed to weaken the motor field only at the coincident selection of the field weakening condition by the motor system operator and operation of said motor above a predetermined speed and means for automatically placing the system in its high field strength operating condition during dynamic braking.

3,308,365
POLARITY CONTROL SYSTEM
John H. St. John, Bogota, N.J., assignor to Marquette Corporation, Minneapolis, Minn., a corporation of Delaware
Filed Apr. 26, 1963, Ser. No. 276,037
5 Claims. (Cl. 320—25)



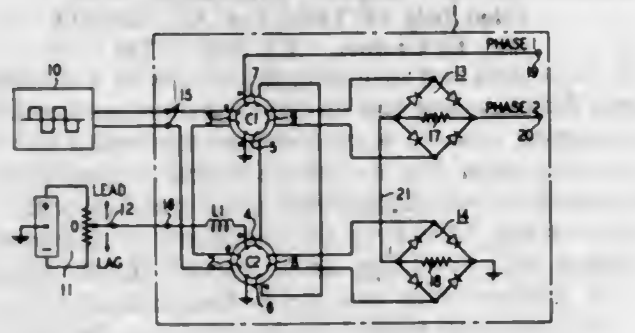
1. In a battery charger having a plurality of input leads adapted to be connected to an alternating power source and having output terminals across which is provided a D.C. output voltage having a ripple component therein, a plurality of battery leads connected to said output terminals and having connectors adapted to be connected to a battery to be serviced, switching means connected to at least some of said leads and effective in a first condition thereof to cause a full charging voltage to be applied through said connectors to said battery and in a second condition thereof to prevent a full charging voltage from being applied to said battery, and controlling means for controlling the operation of said switching means and comprising means connected across said battery leads and responsive to the ripple component of the D.C. output voltage, said controlling means being effective when the battery lead connectors are connected to a battery to be serviced in the correct polarity, so that the ripple component of the voltage is relatively small, to cause said switching means to assume said first condition in which a full charging voltage is applied to said battery and effective when said battery lead connectors are connected to such a battery in the wrong polarity to respond to the ripple voltage present to cause said switching means to assume said second condition in which a full charging voltage is not applied to said battery.

3,308,366
BATTERY TESTER
Julien J. Arpin, 500 SE. 6th St., Fort Lauderdale, Fla. 33301
Filed Apr. 24, 1964, Ser. No. 362,335
9 Claims. (Cl. 320—43)



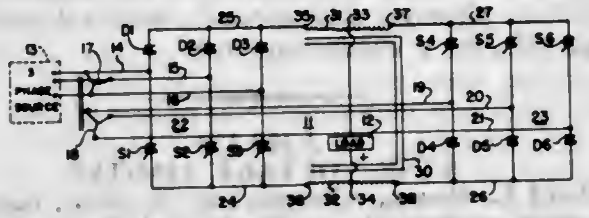
2. A device for auotmatically controlling an electrical connection from a battery in response to the condition of the battery electrolyte comprising an electrically nonconductive float disposed in the electrolyte, a pair of electrodes spaced from one another and extending through and supported by said float in continuous contact with the electrolyte, a source of current connected to one of said electrodes, a relay providing the electrical connection being connected between the source of current and the other of said electrodes.

3,308,367
TWO-PHASE SQUARE WAVE GENERATOR
John M. Eubanks, Greensboro, N.C., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 18, 1964, Ser. No. 345,732
8 Claims. (Cl. 321—3)



1. A two-phase square wave generator having one of its phase voltages controlled in magnitude and in phase sequence, said generator comprising a pair of saturable magnetic cores, each having a substantially rectangular magnetic hysteresis characteristic, an exciting winding on each core and circuit means connecting them in series for connection to an external single-phase square-wave voltage source, a first output winding on each core and circuit means connecting them series aiding to provide the first of the two phase voltages, a second output winding on each core, a fullwave rectifier connected to each of said second output windings to rectify the voltage wave generated therein, a circuit means connecting said rectifiers series opposing so that their rectified outputs will provide the second phase voltage, and a direct current bias circuit including an additional winding on each core to oppositely bias said cores.

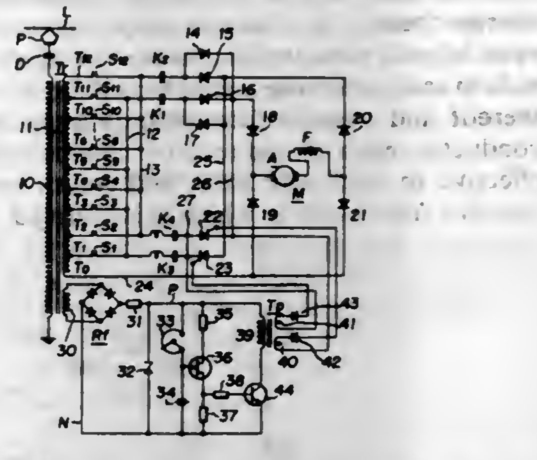
3,308,368
SIX-PHASE RECTIFIER WHEREIN THE INPUT EVEN HARMONICS ARE ELIMINATED
August Schmidt, Jr., Cuba, N.Y., assignor to Acme Electric Corporation, a corporation of New York
Filed June 18, 1963, Ser. No. 288,663
11 Claims. (Cl. 321—9)



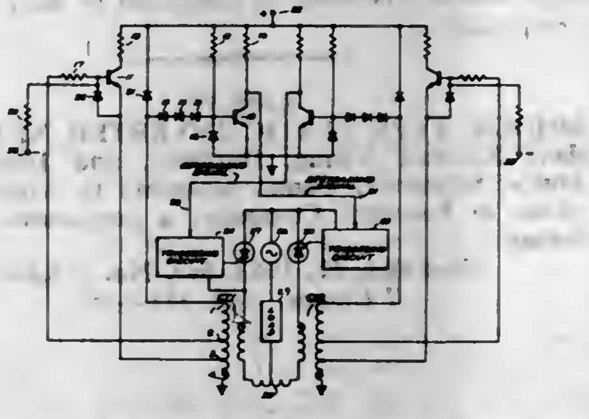
1. A polyphase rectifier system comprising, in combination, terminal means of polyphase source means,
- first and second polyphase bridge rectifier groups each having an equal number of controllable and uncontrolled rectifier means,
- positive and negative D.C. output terminals,
- inductance means having first and second portions,
- means connecting one of said D.C. output terminals to said inductance means,
- first circuit means including said inductance means first portion and connecting the controllable rectifier means in said first group to conduct current from said terminal means to said positive output terminal and connecting the uncontrolled rectifier means in said first group to conduct current from said negative output terminal to said terminal means,
- and second circuit means including said inductance means second portion and connecting the uncontrolled rectifier means in said second group to conduct current from said terminal means to said positive output terminal and connecting the controllable rectifier means in said second group to conduct current from said negative output terminal to said terminal means.

3,308,369
VOLTAGE REGULATING DEVICE
Yasunosuke Torii, Musashino-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Apr. 27, 1964, Ser. No. 362,585
Claims priority, application Japan, Apr. 30, 1963, 38/22,872
5 Claims. (Cl. 321—16)

1. Voltage regulating device comprising a transformer having a plurality of voltage regulating taps, a pair of bus bars, each connected to alternate ones of said taps, a D.C. load connected across output terminals of a rectifier means, at least two oppositely poled controlled rectifier elements connected between one end of said bus bars and the input terminal of said rectifier means, means to control the conduction of said controlled rectifier elements and means including tap selector switches and non-controlled rectifier elements connected in series therewith to connect the other end of said bus bars and said input terminals of said rectifier means.



3,308,370
CURRENT SENSING AND CONTROL CIRCUIT
Harold H. Britten, incompetent, Waynesboro, Va., by J. B. Stombock, committee, Waynesboro, Va., and Lawrence R. Peaslee, Waynesboro, Va., assignors to General Electric Company, a corporation of New York
Filed Apr. 5, 1963, Ser. No. 271,839
6 Claims. (Cl. 321—45)

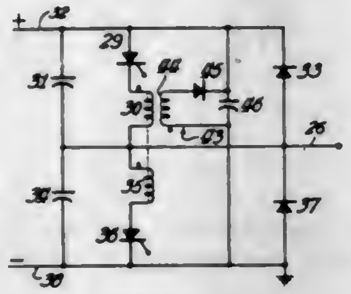


6. A circuit for controlling a pair of oppositely oriented controlled rectifiers comprising, a current transformer having a core with a substantially rectangular hysteresis loop coupled to the output of one of said controlled rectifiers, a first and a second transistor, means for forward-biasing said first transistor, means interconnecting the secondary of said transformer to said first transistor and operative to overcome said forward-bias when at least a predetermined minimum voltage is induced in said secondary, triggering means normally adapted to initiate conduction in the other of said controlled rectifiers and inhibited during nonconduction of said first transistor, means for reverse-biasing said second transistor, and means interconnecting the secondary of said transformer to said second transistor and operative to overcome said reverse-bias when less than said predetermined minimum voltage is induced in said secondary, the current through said second transistor, when conducting, being supplied to said secondary to increase the voltage being generated therein and to reset said core.

3,308,371
STATIC INVERTER SYSTEM WITH ENERGY RETURN CIRCUIT
George H. Studtmann, Jr., Des Plaines, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed May 31, 1963, Ser. No. 284,672
5 Claims. (Cl. 321—45)

1. For use with an energy conversion circuit comprising a pair of sub-circuits, each sub-circuit including switching

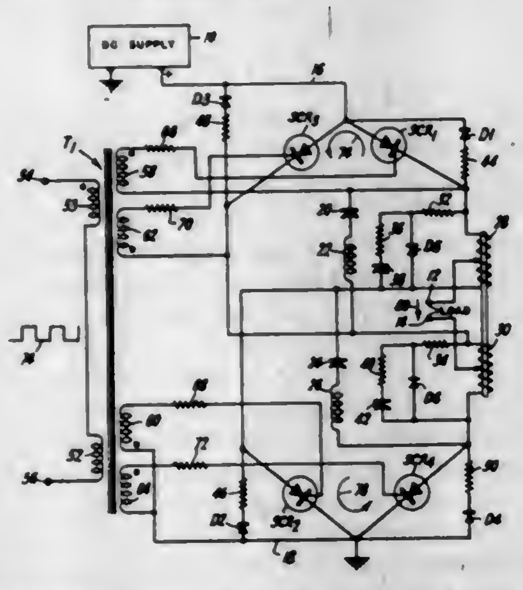
means and reactive commutating means series-coupled with said switching means, input circuit means coupled to said sub-circuits for supplying unidirectional electrical energy thereto, a common output conductor coupled to each of said sub-circuits, means for applying control signals to said switching means to initiate alternate operation thereof and transfer alternating energy over said output conductor, each of said reactive commutating means being effective to cyclically store and return energy to the respective sub-circuit in which it is coupled, the energy thus returned tending to be recirculated and dissipated in the sub-circuit including the associated switching means, and an energy return circuit comprising magnetic coupling means including said reactive commutating means, and rectifier means coupled between said magnetic coupling means and said input means, whereby the energy return circuit is effective to recover the energy stored in the reactive commutating means and returned therefrom, which energy would otherwise be dissipated in each sub-circuit by recirculation.



3,308,372
BRIDGE TYPE STATIC INVERTER NETWORK

Robert Kimball Young, Danbury, and James Joseph Duffy, Stamford, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Oct. 22, 1963, Ser. No. 318,048
7 Claims. (Cl. 321—45)

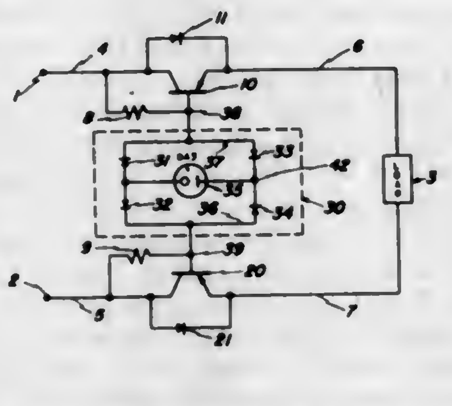


7. An inverter comprising a bridge network having four legs and having first and second power input terminals each defining first and second junction points between a first and second pair of said legs, a source of direct current potential connected to said power input terminals, a plurality of controlled rectifiers each having an anode, a cathode and a control electrode, means connecting said anodes and cathodes of said controlled rectifiers into the legs of said bridge network, said anodes of a first pair of said controlled rectifier being connected to said first input terminal, said cathodes of a second pair of said controlled rectifiers being connected to said second input terminal, a first commutating capacitor connected between the cathodes of said first pair of controlled rectifiers, a second commutating capacitor connected between the anodes of said second pair of controlled rectifiers, a pair of inductors each serially connected between the cathodes of said first pair of controlled rectifiers and the anodes of said second pair of controlled rectifiers to interconnect said first and second pairs of said legs, each of said inductors having an output terminal for connecting a load device therebetween, said inductors being effective to electrically isolate the discharge currents of said first and second commutating capacitors from each other, a first plurality of diodes each connected across a respective anode and cathode of one of said controlled rectifiers and in opposing conductivity relationship therewith, a second plurality of diodes each connected across a respective one of said inductors in serially aiding conductivity relationship with said first plurality of diodes, and transformer means having output windings connecting said control electrodes to a source of triggering signals, said transformer output windings having a phase relationship effective to sequentially trigger into conduction, selected controlled rectifiers from each pair of said rectifiers, said first and second plurality of diodes being operative to provide a by-pass path for the flow of transient, reactive load current around said conducting controlled rectifiers and at least a portion of the windings of said inductors whenever said selected controlled rectifiers are triggered into a conducting state.

3,308,373
LINE VOLTAGE LIMITER

Richard L. Shaum, Albuquerque, N. Mex., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Feb. 18, 1964, Ser. No. 345,816
12 Claims. (Cl. 323—22)

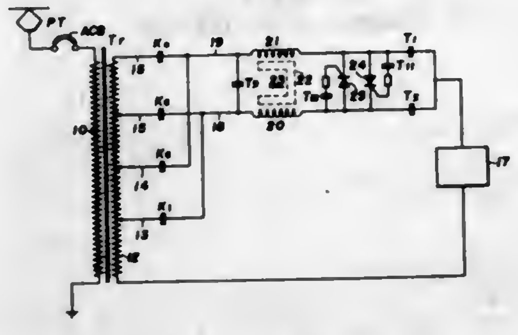


1. A line voltage limiter comprising means including first and second lines for connection to a conventional source of power, first and second output terminal means for connection to a load, first transistor means having its emitter collector circuit connected for conducting current between said first line and first terminal, second transistor means having its emitter collector circuit connected for conducting current between said second line and said second terminal, first impedance means connected between the collector and the base of the first transistor, second impedance means connected between the collector and the base of the second transistor, a source of reference potential connected between the bases of the two transistors, first rectifier means connected in shunt with the emitter collector circuit of said first transistor and being oppositely poled therefrom, second rectifier means in shunt with the emitter collector circuit of said second transistor and oppositely poled therefrom, whereby said transistors are alternately conducting current from the source to the load for input voltages less than the reference voltage and in which current is shunted across the load and through said reference voltage source for input voltages in excess of said reference voltage.

3,308,374
TAP CHANGING APPARATUS FOR A TRANSFORMER

Masaaki Kagawa, Akira Watanabe, and Junichi Watanabe, Tokyo, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Nov. 27, 1963, Ser. No. 326,593
2 Claims. (Cl. 323—43.5)

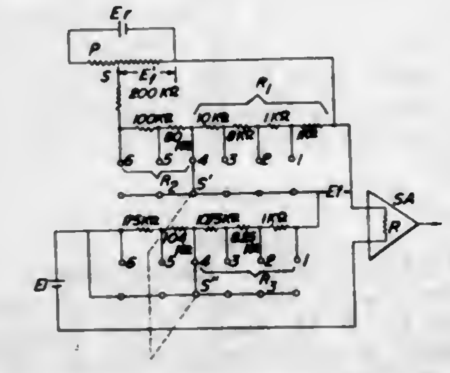


1. Tap changing apparatus comprising a combination of an electric transformer including a winding provided with a plurality of voltage adjusting taps and connected to be energized from a source of alternating current, a load supplied with a variable voltage from said transformer, a plurality of first contactors each associated with one of said taps of said transformer winding to connect said one tap to said load, a pair of branch circuits each including a reactor winding and a second contactor for connecting alternating ones of said first contactors to said load, a third contactor connected across terminals of said reactor windings which are close to said transformer winding, said third contactor being arranged to be closed when one of said taps is selected but opened during tap changing, a pair of semiconductor switches connected in reverse parallel relation across the opposite terminals of said reactor windings to pass positive and negative half cycles, respectively of said alternating current when said second contactors are operated during tap changing operation.

3,308,375
SCALE SPAN CHANGING INPUT CIRCUIT FOR SELF-BALANCING INSTRUMENT

Toshio Numakura, Tokyo, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Nov. 26, 1963, Ser. No. 325,962
Claims priority, application Japan, Nov. 26, 1962, 37/51,968
4 Claims. (Cl. 323—74)

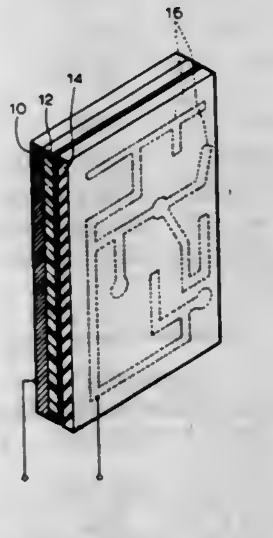


1. In a self-balancing instrument of the type employing a potentiometer having a movable contact for varying the output potential derived therefrom and a servo-amplifier controlling the output of the potentiometer, the improvement comprising a scale span changing input circuit including a first variable impedance connected in series circuit relationship with an input signal source whose magnitude is to be measured across the input to the servo-amplifier, and a second variable impedance connected in series circuit relationship with the output from the potentiometer across the first variable impedance to form a parallel compensation network in a manner such that the input signal source and the parallel compensation network comprised by the first and second variable impedances and the output from the potentiometer are connected in series circuit relationship across the input to the servo amplifier.

3,308,376
AREA MEASUREMENT OF IRREGULAR SHAPES

Matthew Katz, Brooklyn, N.Y., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Oct. 31, 1963, Ser. No. 320,377
1 Claim. (Cl. 324—61)



A method of determining the area of an irregularly-shaped electroconductive surface of a flat printed surface comprising:

laminating a flat sheet of electroconductive material and a flat sheet of dielectric material;

placing in intimate surface contact with the exposed surface of the sheet of dielectric material a conductive plate of known area and measuring the electrical capacitance between the plate and the electroconductive sheet;

removing said plate and placing in intimate contact with said exposed dielectric surface the irregularly-shaped electro-conductive surface to be measured;

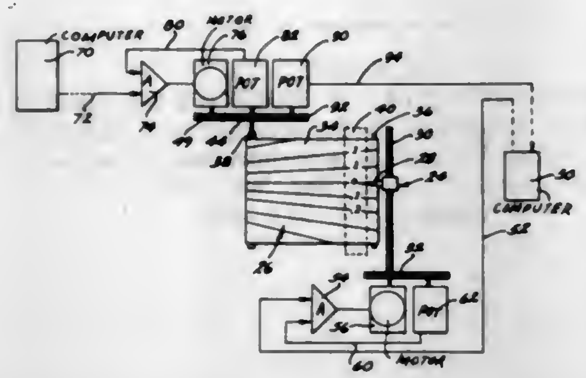
measuring the electrical capacitance between said irregularly-shaped electroconductive surface and the electroconductive sheet, thereby obtaining the area of the irregularly shaped surface in terms of unit capacitance.

3,308,377
VARIABLE GAIN DISPLAY DEVICE HAVING INDICATOR MEANS AND SCALE MEANS RESPONSIVE TO FIRST AND SECOND VARIABLE PARAMETERS RESPECTIVELY

Richard Lukso and Alan B. Ranford, Grand Rapids, Mich., and William Elkins, Canoga Park, Calif., assignors, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware

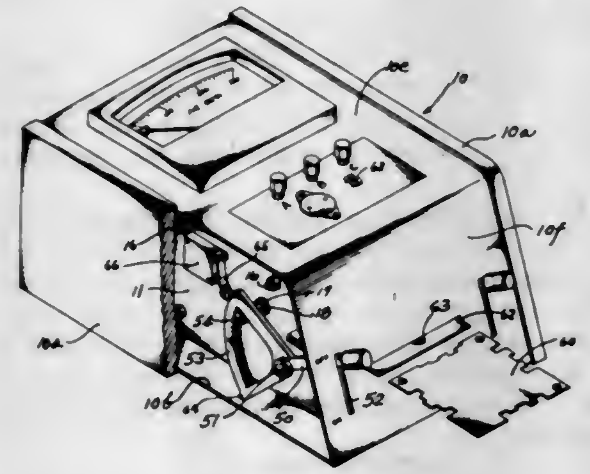
Filed Apr. 27, 1962, Ser. No. 190,596
1 Claim. (Cl. 324—115)

Instrumentation apparatus comprising: pointer means and scale means; said pointer means adapted to move over said scale means; said pointer means being driven by potentiometer means responsive to voltage signals created with changing values of a first parameter; said scale means adapted to move with respect to said pointer means to shift different portions of said scale into operative association with said pointer means; said scale means being driven by potentiometer means responsive to voltage signals created with changing values of a second parameter having an influence on the relative significance of values of said first parameter; said different scale portions having value representations thereon expanded to varying amounts; and electrical connection means between said potentiometer means for said scale means and said potentiometer means for said pointer means, causing feeding of said scale means voltage signals to the potentiometer means of said pointer means to supplement said pointer means voltage signals, thereby causing proportional pointer movement to compensate for the expansion of scale value representations.



3,308,378
PROGRAM CARD CONTROLLED SWITCH APPARATUS FOR TESTING TRANSISTORS AND THE LIKE

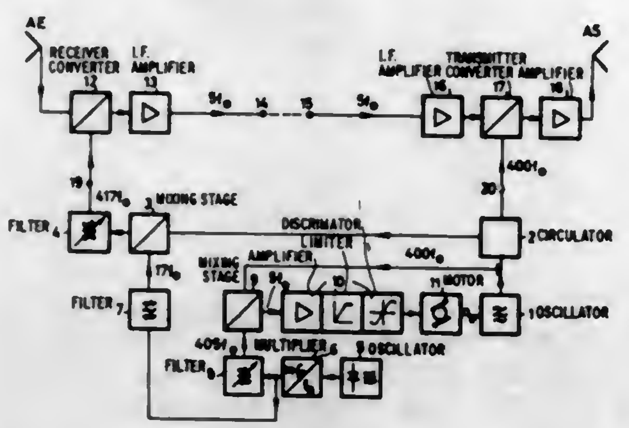
Peter J. Murray, 945 110th NE., Bellevue, Wash. 98004
Filed Oct. 23, 1963, Ser. No. 318,215
5 Claims. (Cl. 324—158)



1. In a means for testing transistors and the like, a frame structure, a bank of plates fixedly mounted in spaced, parallel relationship in said frame structure, a rotatably mounted shaft extended through said bank of plates, means to rotate said shaft, a disc mounted on said shaft in each of the spaces between said plates, means connecting each disc with said shaft for normal rotation therewith and allowing relative rotation therebetween when the disc is positively stopped, a distributor ring mounted on each plate concentric of said shaft, a plurality of test circuits having end contacts associated with each plate, said contacts of each plurality of test circuits being arranged circularly about the distributor ring of the corresponding plate, a brush on each disc adapted, with the turning of the corresponding disc, to establish a test circuit connection between the corresponding contact ring and successively with the contacts of the test circuits associated with the corresponding plate, and programming means adapted to engage and individually stop the turning of said discs to establish desired test circuits.

3,308,379
FREQUENCY STABILIZED FREQUENCY CONVERTING RADIO REPEATER WITH LOCAL FREQUENCY MODULATION

Hans Leysieffer, Munich-Solln, and Egmont Gabler, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed May 23, 1963, Ser. No. 282,779
Claims priority, application Germany, May 25, 1962, S 79,617
2 Claims. (Cl. 325—3)



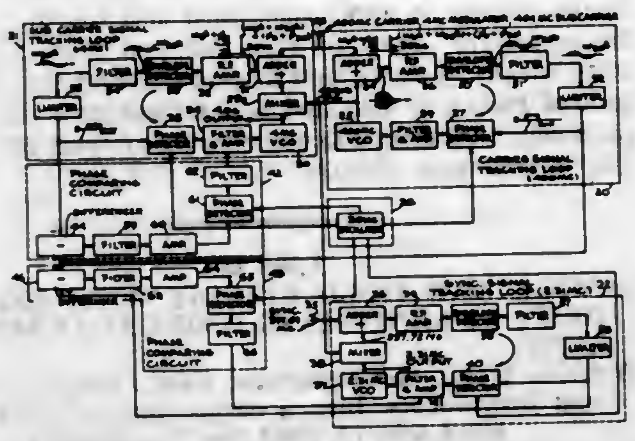
1. A radio link for a plurality of radio frequency channels in which the respective channel frequencies are integral multiples of a substantially lower fundamental frequency, comprising a receiver and a transmitter each including a frequency converter for effecting a frequency conversion to and from an intermediate frequency respectively; means connecting an output of said converter of said receiver to an input of said converter of said transmitter, a controllable oscillator connected to said converter of said transmitter which oscillates freely at a conversion frequency necessary for derivation of the transmitting frequency from the intermediate frequency, a stabilized oscillator generating said fundamental frequency, means connected to receive an output from the frequency-stabilized oscillator for multiplying the same in frequency and having a pair of separate outputs, a mixing stage connected to an output of said controllable oscillator and one output of said multiplying means, with said multiplied frequency of said one output differing from that of the controllable oscillator by the intermediate frequency, an intermediate frequency amplifier connected to an output of said mixing stage and tuned to the intermediate frequency, a frequency discriminator connected to said intermediate frequency amplifier, means for adjusting the frequency of said controllable oscillator to its proper frequency value, means connecting the output of said discriminator to said adjusting means, a second mixer having one input connected to the other output of said multiplying means and another input connected to an output of said controllable oscillator, an output of said second mixer connected to said converter of said receiver.

3,308,380
PHASE-STABLE RECEIVER

Ross E. Graves, Pacific Palisades, Don M. Jacob, Los Angeles, and Jacob M. Sacks, Palos Verdes Estates, Calif., assignors, by mesne assignments, to TRW Inc., a corporation of Ohio
Filed Nov. 13, 1962, Ser. No. 237,229
15 Claims. (Cl. 325—346)

1. In combination,
means having phase varying stages for receiving an input frequency varying carrier signal,
means for adding said carrier signal with an injected reference signal before all of said phase varying stages, said injected reference signal differing from said carrier signal by an audio offset frequency,

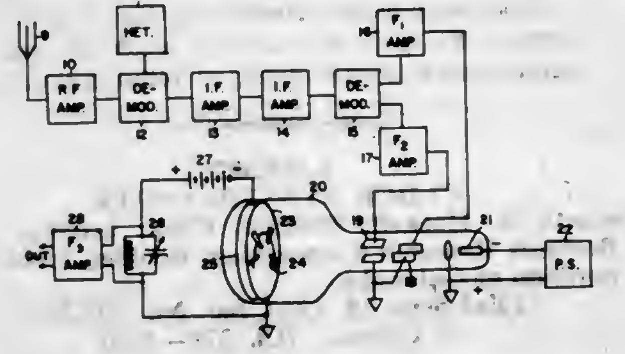
means for amplifying said carrier signal and said injected reference signal,
means for detecting said audio offset frequency from the composite signal comprising said carrier signal and said injected reference signal,



phase comparing means responsive to said audio offset frequency and a reference signal from an oscillator having a frequency equal to said audio offset frequency for generating a substantially D.C. signal, and
voltage controlled oscillator means being controlled by said D.C. signal for generating said injected reference signal at a frequency differing from said carrier signal by said audio offset frequency and thereby containing the same phase information as said frequency varying input signal.

3,308,381
COMMUNICATION SYSTEM UTILIZING SELECTIVE SWEEP PATTERN

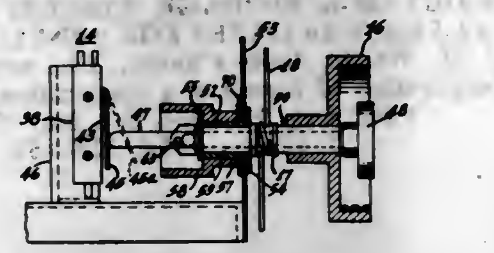
John Hays Hammond, Jr., % Hammond Research Corp., Gloucester, Mass. 01930; Ralph G. Lucas, Nathaniel L. Leek, and The National Shawmut Bank, executors of said John H. Hammond, Jr., deceased
Filed July 3, 1961, Ser. No. 121,586
5 Claims. (Cl. 325—349)



2. A receiver for a radio carrier wave modulated by a pair of signal waves having predetermined frequencies and predetermined phase and amplitude relationships, comprising means to receive said carrier wave, means to demodulate said carrier wave to derive therefrom a pair of signal voltages corresponding to said signal waves, a cathode-ray tube having means producing an electron beam, deflection means, and means supplying said signal voltages to said deflection means to cause said beam to be deflected in a sweep path determined by said signal voltages, a collector plate in said tube in the path of said beam and adapted to be energized thereby, and a screen disposed to intercept said beam in advance of said plate having openings disposed uniformly along a predetermined sweep path of said beam whereby said plate is pulsed at a predetermined rate when said beam sweeps in said predetermined path, and a tuned circuit connected to respond to said pulse rate and having means producing a signal when so pulsed.

3,308,382
TUNING CONTROL SYSTEM FOR RADIO RECEIVERS

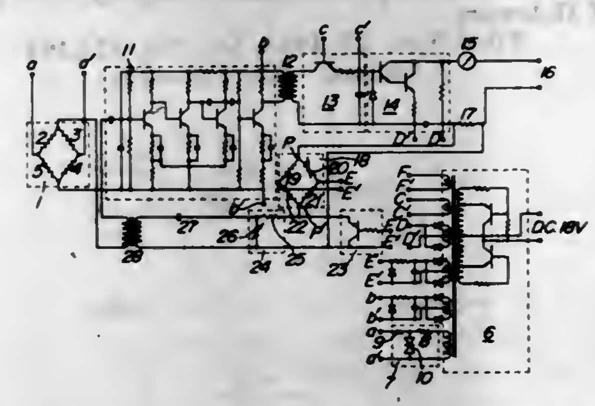
Vo Dinh Hien, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 28, 1963, Ser. No. 319,143
5 Claims. (Cl. 325—417)



5. A manual control system comprising:
a first utilization means responsive to rotary motion,
a second utilization means responsive to linear motion,
a first rotatable mounted shaft coupled with said first utilization means,
a second axially movable shaft coupled with said second utilization means,
stop means on said second shaft,
spring means coupled with said second shaft to bias said second shaft axially in one direction,
movable locking means including a stop portion so that said stop portion is in the path of axial movement of said stop means,
said locking means including a cam surface which is engaged by said stop means when said second shaft is axially moved in the opposite direction to align said stop portion in the path of axial movement of said stop means, to prevent axial movement of said second shaft in said one direction, and
means coupling said first and second shafts for rotation together whereby rotation of said second shaft moves said stop means out of engagement with said stop portion to release said second shaft.

3,308,383
AMPLIFYING MEANS FOR USE WITH TRANSMISSION SYSTEMS WITH FEEDBACK MEANS PROVIDING ERROR SIGNAL FOR AMPLIFIER

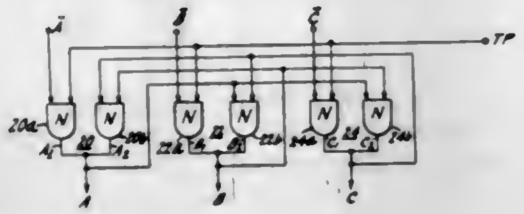
Toshio Kinoshita, Hideo Kondo, and Toshio Takahashi, Katsuta-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Sept. 16, 1964, Ser. No. 396,861
Claims priority, application Japan, Sept. 16, 1963, 38/49,110; Sept. 30, 1963, 38/51,740
16 Claims. (Cl. 328—1)



1. Amplifying means for use with a transmission system comprising a detecting bridge arranged for excitation by a square wave to generate an unbalance square wave voltage output, means including at least an A.C. amplifier and a synchronous rectifier for converting said unbalance square wave voltage into a D.C. output therefrom, means for obtaining a voltage proportional to said D.C. output, a chopper for converting said voltage into a square wave voltage, and means for effecting negative feedback of said square wave voltage to the input side of said A.C.

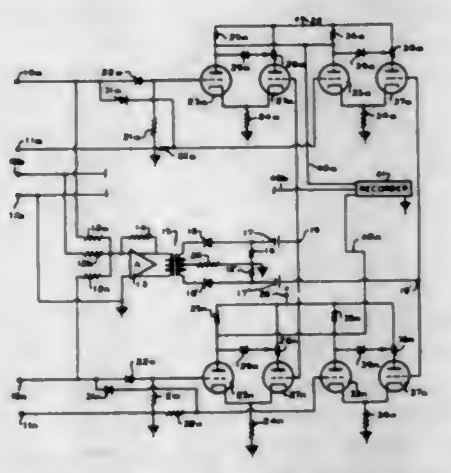
amplifier, the balance between said negative feedback square wave voltage and said unbalance square wave voltage of said detecting bridge being an error signal for said A.C. amplifier.

3,308,384
ONE-OUT-OF-n STORAGE CIRCUIT EMPLOYING AT LEAST 2n GATES FOR n INPUT SIGNALS
Carl M. Wright, Falls Church, Va., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,133
7 Claims. (Cl. 328—51)



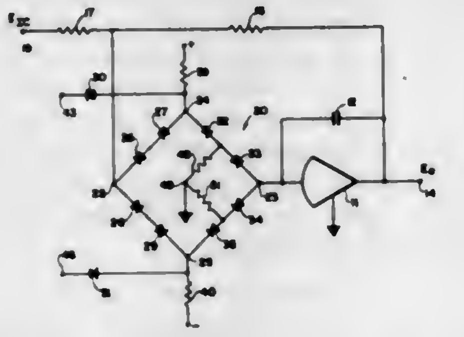
1. In combination,
- *n* pairs of gates, each gate of the type which becomes disabled when one or more input signals to the gate is in a sense to disable the gate, each pair of gates comprising a first gate and a second gate, where *n* is an integer;
- means for applying to each first gate a different one of *n* signals, one of said *n* signals representing a bit of one value and being of a sense to prime the gate to which it is applied, and all other of said *n* signals representing the bit of other value and being of a sense to disable the gates to which they are applied;
- means for applying a timing signal to all first gates for enabling the one of the first gates which receives the signal indicative of said bit of one value;
- means for producing *n* signals indicative of the logical sums of the outputs of said *n* pairs of gates, respectively; and
- means for applying each signal indicative of the logical sum of the outputs of each pair of gates to the second gates of all other pairs of gates, in a sense to enable the second gate associated with the enabled first gate, and in a sense to disable the remaining $n-1$ second gates.

3,308,385
SIGNAL COHERENCE MEASUREMENT
Raymond G. Piety and Dan G. Sterry, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 15, 1963, Ser. No. 324,104
7 Claims. (Cl. 328—137)



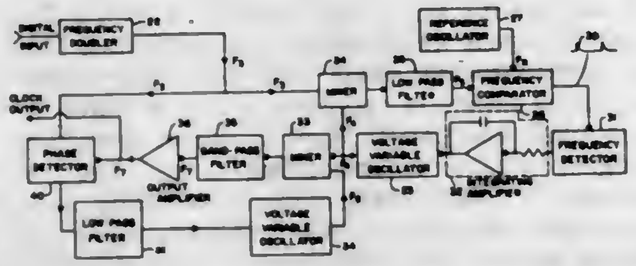
1. Signal coherence measuring apparatus comprising means adapted to sum a plurality of alternating input signals; means responsive to the output of said means to sum to establish first and second output signals which are representative of respective alternate half cycles of the output of said means to sum; means responsive to one of the input signals to establish third and fourth output signals which are representative of alternate half cycles of said one input signal; first and second gate circuits, each having an input, an output and a control means; means to apply said third and fourth signals to the respective inputs of said first and second gate circuits; means to apply said first and second signals to the control means of said first and second gate circuits, respectively; and means to combine the outputs of said first and second gate circuits.

3,308,386
SAMPLE AND HOLD CIRCUIT WITH REDUCED DRIFT BY MINIMIZING DIODE LEAKAGE CURRENT
Wai-Kee Wong, San Francisco, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Apr. 12, 1963, Ser. No. 272,754
9 Claims. (Cl. 328—151)



1. A switching device for a sample and hold system comprising:
- a diode bridge having a pair of input arms connected to form an input junction and a pair of output arms connected to form an output junction, each of said pair of output arms respectively including a pair of diodes;
- a point of substantially constant reference potential;
- and impedance means connecting the respective junctions of the pair of diodes in each of said pair of output arms to said point of reference potential.

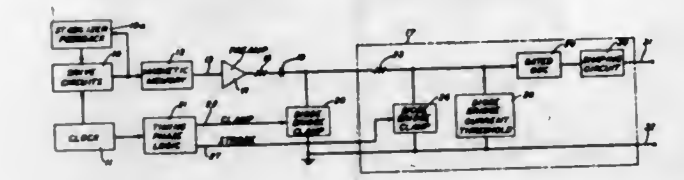
3,308,387
CLOCK SYNCHRONIZER
Kenneth R. Hackett, Boulder, Colo., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado
Filed Sept. 18, 1963, Ser. No. 309,794
7 Claims. (Cl. 328—155)



1. Apparatus for maintaining the phase of a clock signal in a constant phase relationship with an incoming signal over substantial periods of time and during frequency variations of the incoming signal comprising means for generating a first signal, means for maintaining the frequency of said first signal at a fixed differential from the frequency of an incoming signal, means for generating a second signal, means for maintaining the phase of said second signal at a constant phase relationship

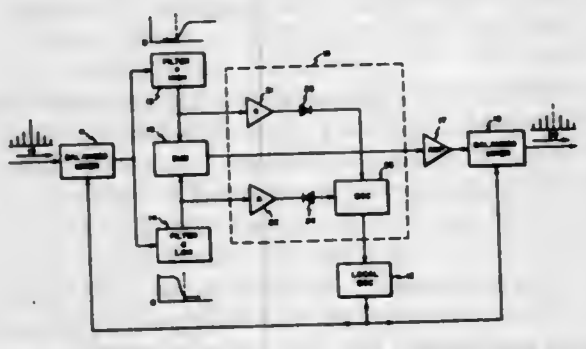
with the phase of the incoming signal, a mixer for mixing said first and second signals, and circuit means arranged for producing a clock signal having a frequency equal to the sum of the frequencies of said first and second signals.

3,308,388
NOISE REDUCTION CIRCUIT FOR A BINARY SIGNAL DISCRIMINATOR
Richard M. Genke, Colts Neck, and Philip A. Harding, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 22, 1963, Ser. No. 253,227
11 Claims. (Cl. 328—164)



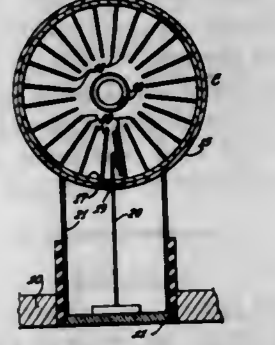
1. In a magnetic memory system which is adapted on appropriate addressing to produce binary ONE and ZERO signals of different configuration in a sensing circuit included in said memory system, each such signal extending over a predetermined bit interval of time,
- an amplifier,
- a source of clock pulse signals controlling the operation of said memory system,
- a resistor and a capacitor connected in a series circuit in the output of said amplifier,
- a normally-conducting clamp circuit connected in series with said resistor and capacitor for connecting said series circuit across the output of said amplifier when said clamp is conducting,
- means applying said clock pulse signals to bias said clamp nonconducting at a time t_1 after the start of each of said bit intervals and for a predetermined time after said time t_1,
- detector means connected across said clamp and adapted to be actuated at a time t_2 by said clock pulses when said clamp is nonconducting, and
- the impedances of said resistor and capacitor being proportioned to have a time constant such that the charge voltage accumulated on said capacitor at time t_1 is substantially equal to the magnitude of a binary ZERO signal at said time t_2.

3,308,389
LEAKAGE ELIMINATION CIRCUIT
Donald J. Toman, Pleasantville, and Gus Stavis, Briarcliff Manor, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,666
7 Claims. (Cl. 328—167)



1. A circuit for eliminating the carrier signal component of a continuous wave multifrequency signal having a carrier signal component and a plurality of sideband signal components including,
- a balanced mixer,
- means for applying the carrier signal component and the sideband components as a complex signal to said mixer,
- a local oscillator for generating a signal the frequency of which may be varied in accordance with the value of a control signal,
- means for applying said generated signal to said mixer, said mixer having an output signal the frequency of which is the difference of the complex signal and the local oscillator signal and having characteristics of the said complex signal,
- means for filtering the output signal of the mixer and for separating said output signal into a first signal and a second signal, the lowest frequency of said second signal being higher than the highest frequency of said first signal, whereby the signal component between said first and second signals corresponds to said carrier signal component,
- means for detecting the bandwith and frequency level between the highest frequency of said first signal and the lowest frequency of said second signal and for providing a control signal, the value of which is representative of said bandwidth and frequency level so detected,
- means for applying said control signal to said local oscillator,
- means for summing said first signal and said second signal and for providing an output corresponding to such summed signals,
- means for amplifying the last mentioned output,
- a second balanced mixer,
- means for applying said last mentioned ouput to said second balanced mixer, and
- means for applying the signal generated by said local oscillator to said second balanced mixer whereby said second balanced mixer provides an output duplicating the said sideband signal components of the said complex signal.

3,308,390
MICROWAVE HEATING APPARATUS AND CIRCUITRY
Paul W. Crapuchettes, Atherton, Calif., assignor to Litton Precision Products, Inc., a corporation of Delaware
Filed May 17, 1962, Ser. No. 195,581
4 Claims. (Cl. 328—216)



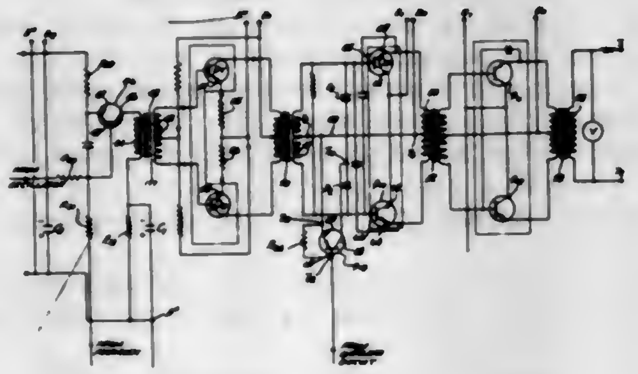
1. A microwave resonant cavity unit for the heating of food and industrial products, said unit comprising:
- a resonant cavity having an aperture in one of the sides thereof;
- a magnetron mounted outside of the cavity and adapted to supply microwave energy of a given frequency through said aperture into said resonant cavity, said magnetron comprising a reentrant anode member including a plurality of resonant cavities adapted to have standing waves induced therein, and a cathode member coaxial with and immediately adjacent said anode member, said given frequency being variable over a range of frequencies in response to variation of the magnetron plate voltage; and

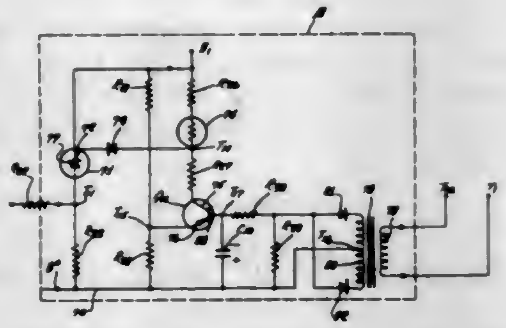
power supply means coupled to said magnetron to provide a varying magnetron plate voltage to said magnetron whereby said resonant cavity becomes resonant in a plurality of discrete resonant modes in response to the varying frequency of the microwave energy introduced therein.

3,308,391
REGULATED VARIABLE FREQUENCY POWER SUPPLY HAVING MEANS FOR OVERLOAD PROTECTION

Bernard F. McNamee, Altadena, Calif., assignor to Dressen-Barnes Electronics Corp., Pasadena, Calif., a corporation of California

Filed Dec. 23, 1963, Ser. No. 332,655
8 Claims. (Cl. 330—40)





1. In an A.C. power supply: an oscillator; an amplifier having a class A amplifier stage coupled to and driven by said oscillator and a power stage; a coupling between said stages; a switching means operable to shunt the coupling for preventing the application of the oscillator signal to said power stage; means including resettable means sensitive to absolute value of load current for operating said switching means; and said resettable means holding the switching means operable to shunt said coupling.

3,308,392
SEISMIC AMPLIFIER HAVING MEANS FOR CHANGING THE AMPLIFICATION OF THE SEISMIC SIGNAL BY DISCRETE STEPS PROPORTIONAL TO A GIVEN POWER OF TWO

Ed R. McCarter, Stillwater, Okla., assignor, by mesne assignments, to Esso Production Company, Houston, Tex., a corporation of Delaware

Filed Feb. 4, 1965, Ser. No. 432,072
12 Claims. (Cl. 330—144)

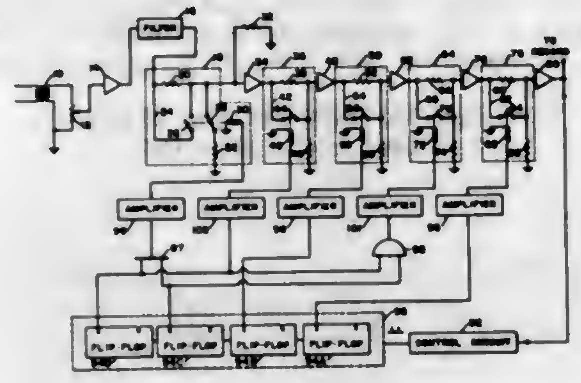
9. Apparatus for controlling the amplitude of an electrical signal which progressively decreases in amplitude with respect to time comprising:

an input circuit;

an output circuit;

signal amplitude varying means connecting said input circuit to said output circuit to provide an electrical signal channel therebetween;

control means connected to said amplitude varying means to progressively increase the amplification thereof responsive to successive electrical pulses received thereby, said control means being operative to increase the amplification of said amplitude varying means by discrete steps proportional to a given power of two responsive to each pulse received thereby; and

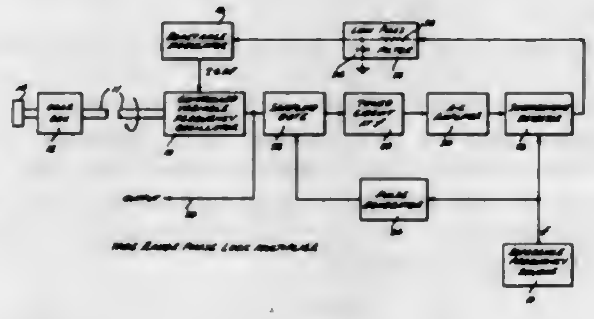


means connected to said output circuit and to said control circuit means for feeding time-spaced electrical pulses to said control circuit means when the amplitude of an electrical signal of said output circuit is less than a predetermined magnitude.

3,308,393
VARIABLE FREQUENCY PHASE LOCKED FREQUENCY MULTIPLIER

Harold V. Lind, Santa Ana, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 18, 1965, Ser. No. 497,067
4 Claims. (Cl. 331—14)

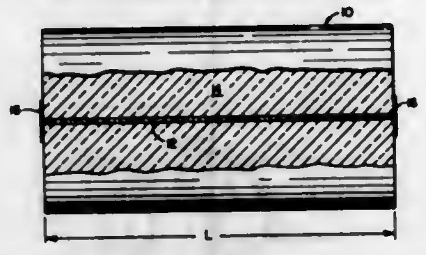


1. A phase lock multiplier apparatus comprising means for providing a reference signal of a predetermined frequency; means including a variable frequency oscillator for providing variable frequency oscillations capable of being controlled physically and electrically; means responsive to direct-current error signals of positive or negative polarity and connected to said variable frequency oscillator for electrically controlling the frequency thereof; means responsive to said reference signal of predetermined frequency for periodically sampling said variable frequency oscillations at a rate equal to said predetermined frequency; means for converting said samples of said variable frequency oscillations into biphase oscillations at said predetermined frequency, said phase being determined by the polarity of said respective samples; means responsive to said reference signal and to said biphase oscillations for converting said biphase oscillations into unidirectional electrical excursions of a polarity determined by the phase thereof relative to that of said reference signal; and means for smoothing said unidirectional electrical excursions thereby to provide said direct-current error signals of positive or negative polarity whereby said variable frequency oscillations are controlled to be at a frequency equal to an integral number of times said predetermined frequency.

3,308,394
OPTICAL RESONANT CAVITIES

Elias Snitzer and Harold Osterberg, Sturbridge, Mass., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed Nov. 2, 1960, Ser. No. 66,815
16 Claims. (Cl. 331—94.5)

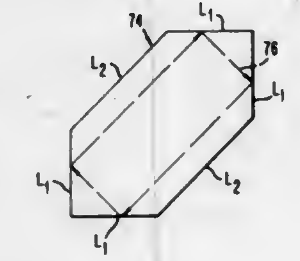


1. A tunable optical resonant cavity comprising, in combination, a thin elongated element of transparent material of predetermined length, said element having a mean diameter which is not greater than 25 times the longest wavelenth of the optical energy to which said cavity is resonant, said element having an index of refraction greater than the index of refraction of the medium surrounding said element, said element and said medium cooperating to define a closed optical waveguide, means forming reflective coatings on the ends of said element, at least one of said coatings partially reflecting and partially transmitting optical energy to which said cavity is resonant, and means for varying a condition affecting the optical length of said cavity to vary its length from said predetermined length.

3,308,395
LASERS

Peter P. Sorokin, Ossining, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 10, 1961, Ser. No. 144,187
6 Claims. (Cl. 331—94.5)



1. A laser comprising an active element having a population inversion characteristic and an index of refraction greater than 1.414,

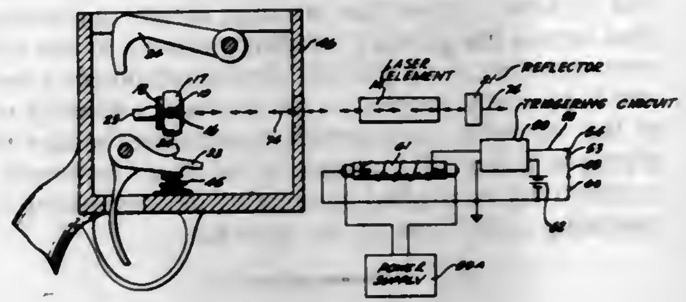
means for exciting said element to produce coherent radiation therein parallel to a given axis of said element, one end of said element having optically smooth sides forming an angle of 90° arranged to reflect said radiation through said element parallel to said given axis by total internal reflection, said element having additional sides arranged substantially parallel to said given axis,

means disposed at the opposite end of said element for reflecting said radiation through said element to form an optical cavity for said radiation with said optically smooth sides, and means for extracting radiation from said cavity.

3,308,396
SPRING ENERGIZED LASER ROTATING TRIGGER

John S. Comstock, Playa Del Rey, and Ronald L. Quandt, Redondo Beach, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 15, 1963, Ser. No. 280,651
3 Claims. (Cl. 331—94.5)



1. A laser switching device comprising:

a laser cavity having a stationary reflector at one end and a rotatable reflector at the other end and having a completed regenerative path along an optic axis therebetween when said rotatable reflector is rotated through said optic axis;

an active laser element disposed in said cavity, said optic axis extending through said laser element;

pump energy means optically coupled to said laser element for pumping said laser element to an excited state;

potential energy storage means connected to said rotatable reflector for storing energy and when released to rotate said rotatable reflector through said optic axis but less than one revolution;

cocking means coupled to said potential energy storage means for storing energy therein;

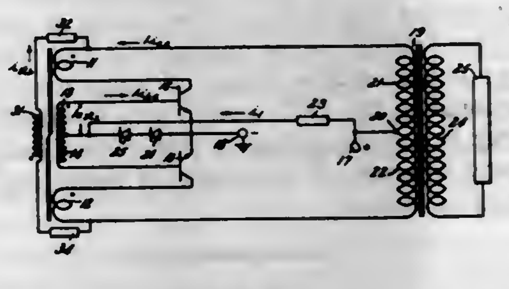
triggering means coupled to said potential energy storage means for releasing energy stored therein; and

timing means coupled to said rotatable reflector and to said pump energy means for initiating the pumping of said laser element a predetermined period of time prior to the time said rotatable reflector rotates through said optic axis.

3,308,397
SATURABLE CURRENT TRANSFORMER-TRANSITOR INVERTER CIRCUIT

Raymond E. Morgan, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 19, 1964, Ser. No. 353,195
10 Claims. (Cl. 331—113)



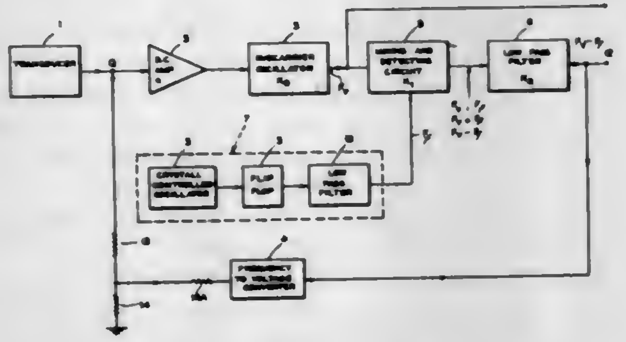
1. A new and improved inverter circuit including in combination saturable core current transformer means having at least two primary winding portions and respective inductively coupled secondary winding portions, a direct current power supply, an output transformer having a center tapped primary winding, and a pair of conductivity controlled conducting devices each having input terminals and output terminals, the output terminals of each of said conductivity controlled conducting devices being operatively connected in series circuit relationship with

the direct current power supply and a respective primary winding portion of the saturable core transformer means across a respective winding half of the primary winding of the output transformer, and the input terminals of each conductivity controlled conducting device being connected to the respective secondary winding portion of the saturable core transformer means that is inductively coupled to the primary winding portion to which the output terminals of the controlled conducting device are connected, and no load current bias winding means operatively coupled across the primary winding portions of the saturable core transformer in parallel circuit relationship therewith and inductively coupled to the secondary winding portions of the saturable core current transformer means for supplying sufficient bias current to the input terminals of the conductivity controlled conducting devices during no load operating conditions of the inverter.

3,308,398
TELEMETERING APPARATUS FOR CONVERTING A DIRECT CURRENT SIGNAL TO A PROPORTIONALLY VARYING FREQUENCY SIGNAL

Edward A. Chilton, Westwood, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Oct. 18, 1963, Ser. No. 317,876
10 Claims. (Cl. 332—18)



1. Apparatus for converting a D.C. signal into an output having a frequency directly proportional to said D.C. signal, comprising a transducer for generating an output signal, a subcarrier oscillator having input and output circuits, a feedback path coupling said input and output circuits, said feedback path including a frequency to voltage converter for generating a feedback signal in opposition to the input signal, a high gain D.C. amplifier for amplifying a control signal formed of said transducer output and said feedback signal, said oscillator being responsive to said amplified control signal to generate a first output having a frequency directly proportional to said amplified control signal, means for generating oscillations of stable frequency, means responsive to the output of said stable frequency generating means and to said first output for generating a second usable output of lower frequency directly proportional to the D.C. signal, said frequency to voltage converter being responsive to said second output of lower frequency whereby it is capable of operating with a high degree of accuracy.

3,308,399
HELIX BUNDLE BANDING SLEEVE WITH INTEGRAL OUTWARDLY PROJECTING SUPPORT FINGERS

Joseph M. Drees and Joseph A. Teresi, Saratoga, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Apr. 30, 1963, Ser. No. 276,881
1 Claim. (Cl. 333—31)

In an electron discharge device of the type described having a barrel, a helix bundle adapted to be inserted into said barrel comprising

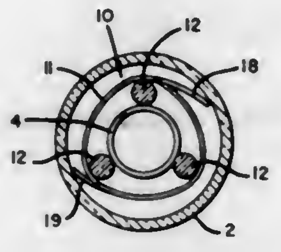
a refractory metal conductor wound into an inner cylindrical helix,

a plurality of rods circumferentially spaced around and engaging said helix and extending parallel to the axis of the helix,

a plurality of axially-spaced sleeves banded about and tightly engaging said rods,

each of said sleeves comprising a wire wound into a closed cylindrical heix and composed of a refractory metal identical to that of the inner helix, and

means for bonding adjacent turns of the sleeve helix together,



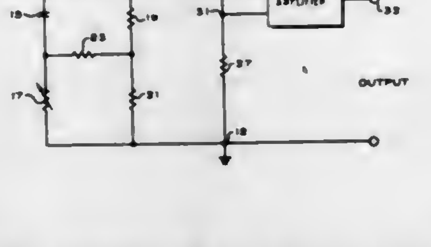
the inside diameter of each sleeve when relaxed being less than the outside diameter of the rod-mounted helical conductor combination whereby the mounted sleeve exerts a radial clamping force on the rods and helical conductor,

each of said sleeves having a radially outwardly extending finger at each end, said fingers on each sleeve being integral with the sleeve wire and projecting equal distances from the sleeve in opposite directions for resiliently engaging the interior of said barrel.

3,308,400
FREQUENCY ADJUSTMENT CIRCUIT

David S. Cochran, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed June 13, 1962, Ser. No. 202,195
4 Claims. (Cl. 333—75)

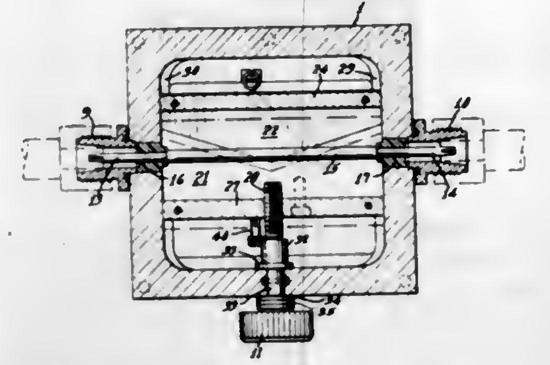


1. A variable frequency-selective circuit comprising a first resistor and first storage element forming a first series circuit, a variable resistor and second storage element forming a second series circuit, a source of reference potential, means serially connecting the first and second series circuits, said variable resistor having one terminal thereof connected to said reference potential, second and third resistors serially connected in shunt with said second series circuit, a fourth resistor connecting the common terminal of said variable resistor and second storage element and the common terminal of said second and third resistors, means to apply signal to the serially connected first and second series circuits at the end thereof remote from said reference potential, and means to derive said output signal from the common terminal of said first and second series circuits.

3,308,401
VARIABLE COAXIAL ATTENUATOR UTILIZING MOVABLE LOSSY DIELECTRIC BLOCK

James E. McFarland, Huntington, N.Y., assignor to The Narda Microwave Corporation, Plainview, N.Y., a corporation of New York

Continuation of application Ser. No. 243,423, Dec. 10, 1962. This application Oct. 21, 1965, Ser. No. 506,437
4 Claims. (Cl. 333—81)

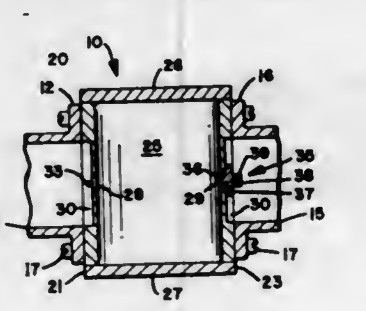


1. An adjustable microwave attenuator comprising an elongated linear conductor, a slide member presenting a flat ground plane surface adjacent and parallel to said conductor, said slide member comprising, in the ground plane, a low-loss conductive region and a high-loss dissipative region comprising a lossy dielectric block affording series loss paths parallel to the ground plane and shunt loss paths perpendicular to the ground plane and extending away from the conductor, and means supporting said slide member for motion transversely of said conductor and at a fixed distance therefrom to vary the ratio between the portions of the length of said conductor that are exposed to said low-loss and high-loss regions respectively.

3,308,402
CAVITY RESONATOR APPARATUS

Vincent J. Grande, Palo Alto, Calif., assignor, by mesne assignments, to Teledyne, Inc., Hawthorne, Calif., a corporation of Delaware

Filed Dec. 30, 1964, Ser. No. 422,265
3 Claims. (Cl. 333—83)

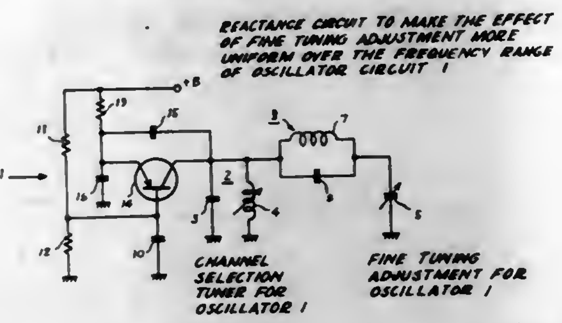


1. A high frequency cavity resonator comprising: a main body member defining a substantially cylindrical bore therein, means for closing the ends of said bore to define a resonant cavity within said main body member, means defining a coupling opening through said body into said bore for coupling electromagnetic energy into or from said body, waveguide means secured to said main body for conducting electromagnetic wave energy to or from said resonant cavity through said coupling opening, a plug of dielectric material rotatably positioned within said coupling opening, and an elongate electrically conductive member embedded within said plug, the orientation of said conductive member within said plug being such that upon rotation of said plug in said coupling opening the position of said conductive member is changed thereby to change the electromagnetic wave coupling between the resonant cavity and said waveguide.

3,308,403
OSCILLATOR CIRCUIT

Yasuharu Kubota, Ichikawa-shi, and Tsuneo Utsunomiya, Tokyo, Japan, assignors to Sony Corporation, Shinagawa-ku, Tokyo, Japan, a corporation of Japan

Filed Apr. 3, 1964, Ser. No. 357,165
Claims priority, application Japan, Apr. 26, 1963, 38/21,842
12 Claims. (Cl. 334—65)

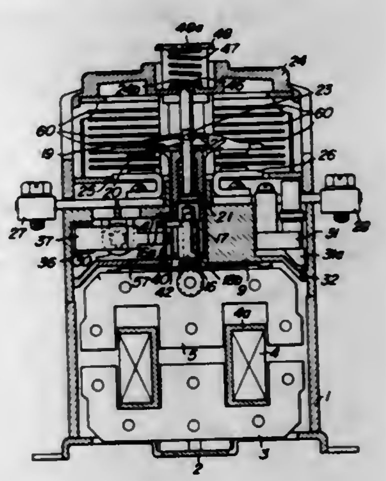

REACTANCE CIRCUIT TO MAKE THE EFFECT OF FINE TUNING ADJUSTMENT MORE UNIFORM OVER THE FREQUENCY RANGE OF OSCILLATOR CIRCUIT 1
+B
11
13
15
3
7
1
2
16
14
3
4
8
5
12
10
CHANNEL SELECTION TUNER FOR OSCILLATOR 1
FINE TUNING ADJUSTMENT FOR OSCILLATOR 1

1. An oscillator circuit comprising a variable tuning element, a fine-tuning device, a parallel resonance circuit, and means for shunting said variable tuning element with said fine-tuning device and said parallel resonance circuit, the frequency variation produced by a given adjustment of said fine-tuning device being substantially constant independent of the oscillating frequency of said circuit.

3,308,404
ELECTRIC SWITCH RESPONSIVE TO PREDETERMINED OR ABNORMAL CURRENT CONDITION

Teizo Fujita, 3—34 Naka Tezukayama, Osaka, Japan

Filed Feb. 10, 1965, Ser. No. 431,527
Claims priority, application Japan, Feb. 10, 1964, 39/6,947
3 Claims. (Cl. 335—18)



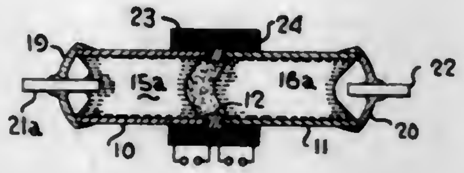
1. An electrical switch comprising cooperating stationary an dmovable contacts, an operating electromagnet having a movable core, supporter means for said movable contact and actuated by said electromagnet, a mechanism for releasably coupling said movable core with said supporter means, and over-current detecting means operative to release the coupling between said movable core and said supporter means upon occurrence of over-current through said contacts, characterized in that at the time of the normal opening and closing operation of said switch said supporter means and said movable core are operated by said operating electromagnet with the supporter and the movable core remaining as coupled by said mechanism, said mechanism releasing said coupling only upon occurrence of over-current in response to the operation of said over-current detecting means enabling the over-current interrupting operation of said switch, the opening distance from said stationary contacts to said movable contacts at the time of the over-current interrupting operation being larger than the open-

ing distance from said stationary contacts to said movable contacts at the time of the normal opening and closing operation.

3,308,405
MAGNETIC PISTON MERCURY SWITCH

Hyman Hurvitz, Washington, D.C., assignor to Fifth Dimension Inc., Princeton, N.J., a corporation of New Jersey

Filed Aug. 30, 1965, Ser. No. 483,707
5 Claims. (Cl. 335—52)

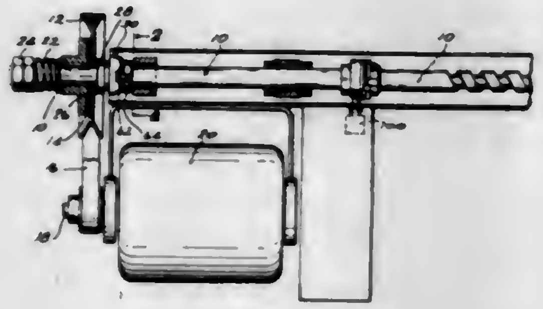


3. A mercury switch comprising a mercury wettable capillary tube, a capillary column of mercury substantially filling said tube, a contact located adjacent one end of said column of mercury and opposed to said column of mercury, a magnetic piston located wholly at the other end of said column of mercury, and means for moving said magnetic piston to distort said column of mercury sufficiently to make and break electrical contact between said column of mercury and said contact.

3,308,406
SAFETY SWITCH FOR DE-ENERGIZING A DRIVING MOTOR IN THE EVENT OF STOPPAGE OF A SHAFT DRIVEN THEREBY

Vilas A. Barnhart, Waupaca, Wis., assignor to A. E. Moore Company, Inc., Waupaca, Wis., a corporation of Wisconsin

Filed June 3, 1964, Ser. No. 372,231
5 Claims. (Cl. 335—74)

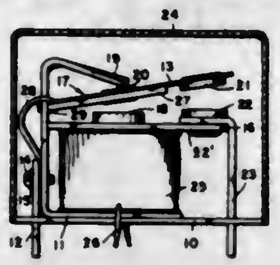


2. The combination of a motor, a driven shaft, a rotor having means for driving it from the motor and having slip clutch connection with the shaft for normally operating the shaft from the motor, an eccentric connected with the rotor, a yoke riding on the eccentric to receive motion therefrom, a switch mounted on the yoke and having normally closed contacts, a motor controlling circuit in which said switch is connected, an arm having friction drive connection with the shaft to receive motion therefrom tending to rotate the arm with the shaft, means for opening one of the contacts of the switch with respect to the other of said normally closed contacts and constituting an actuator comprising means for receiving motion from said arm when such motion is imparted frictionally to the arm from said shaft, whereby the switch tends to be held open during shaft rotation, said eccentric and yoke constituting means effective during continued operation of the eccentric for bringing about the closing of the said switch contacts of said switch when shaft motion is arrested.

3,308,407
COMPACT ELECTROMAGNETIC RELAY

Lelyn D. Lake, Carmel, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed Nov. 17, 1965, Ser. No. 508,214
10 Claims. (Cl. 335—128)

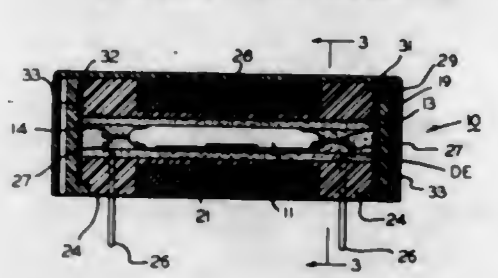


7. A relay comprising: a bobbin wound coil having a magnetic pole piece extending axially therethrough and insulated therefrom; an insulating member secured to one end of said coil carrying a fixed contact member; a terminal member affixed to said fixed contact member; a magnetic frame having a first portion in contact with said pole piece at an end of said coil opposite to said insulating member, a second portion extending substantially parallel to the axis of said coil, and a third portion bent down from said second portion so as to restrain an armature of said relay; said armature being pivotally mounted on said second portion of said magnetic frame so as to extend towards said pole piece; a spring member connected to said armature and to said magnetic frame so as to bias said armature against said third portion of said magnetic frame; a contact member fastened to said spring member so as to contact said fixed contact member when said coil is energized; and a terminal member connected to said spring member so as to be electrically connected to said contact member which is fastened thereto.

3,308,408
ENCAPSULATED SWITCH HAVING STRUCTURE FOR PREVENTING UNWANTED THERMOELECTRIC TRANSIENTS

Gerald W. Plice, Morton Grove, Ill., assignor to James Electronics, Inc., a corporation of Illinois

Filed Oct. 11, 1965, Ser. No. 494,713
6 Claims. (Cl. 335—151)

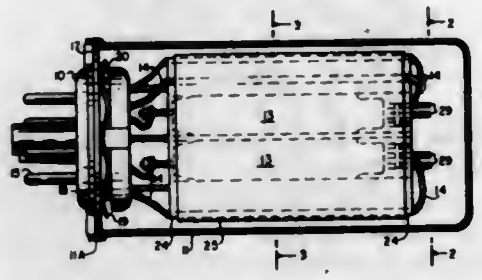


1. In a magnetically operated switch, particularly adapted to minimize the creation of unwanted thermoelectric transients, a hollow bobbin, at least one sealed capsule mounted within said hollow bobbin including means for supporting said sealed capsule therewithin, said sealed capsule having switch elements therein at least one of which is movable in response to a magnetic flux, a coil supported by said hollow bobbin for providing magnetic flux for operation of said one switch element, conductor members extending from said sealed capsule and electrically connected to the switch elements therein, contact members including means for supporting the same, a conductor connecting said conductor member and said contact member, at least one of such connections being at a juncture of dissimilar metals giving rise to the creation of an unwanted electrical transient upon heating of said juncture, said conductor being of small cross section as compared to the cross section of said conductor member and said contact member and substantially incapable of transferring heat from said contact member to said conductor member, and a fluid dielectric totally immersing all of said conductor members, conductors of small cross section and contact members for insuring substantially minimal temperature gradient between the conductors of small cross section and the conductor member and contact member connected thereto whereby any electrical transients created at said junctures will be effectively cancelled.

3,308,409
MERCURY RELAY

James V. Koppensteiner, Chicago, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Dec. 26, 1961, Ser. No. 161,866
3 Claims. (Cl. 335—151)



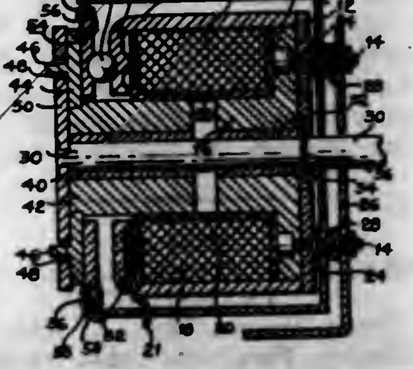
1. An electromagnetic switching device comprising: a switching assembly, a header assembly, a plurality of electrical connectors extending between said switching assembly and said header assembly, and an enclosure can; said switching assembly comprising a bobbin made of molded insulating material having a cylindrical coil and switch supporting portion and two end flanges formed integrally therewith, said coil and switch supporting portion being solid except for at least two apertures of substantially constant diameter extending lengthwise through said coil and switch supporting portion and said flanges, an energizing coil wound on said coil and switch supporting portion between said flanges, sealed switches each having a capsule and contact means contained therein operable in response to energization of said coil, each of said switch capsules individually positioned within one of said apertures and each having a diameter substantially equal to the diameter of said aperture to fix said switch capsules in said coil and switch supporting portion; said header assembly disposed concentrically with said coil and switching assembly and in spaced relationship to one of said flanges; first ones of said connectors connecting said switch capsules with said header assembly and extending in a substantially longitudinal direction across said coil and second ones of said connectors connecting said coil with said header assembly; said enclosure can having an open end which receives said header assembly to complete the enclosure of said device.

3,308,410
ROTARY ACTUATOR HAVING ASSOCIATED CLUTCH MEANS

Roger W. Biser, Troy, Ohio, assignor to Ledex, Inc., Dayton, Ohio, a corporation of Ohio

Filed Jan. 30, 1961, Ser. No. 85,926
23 Claims. (Cl. 335—228)

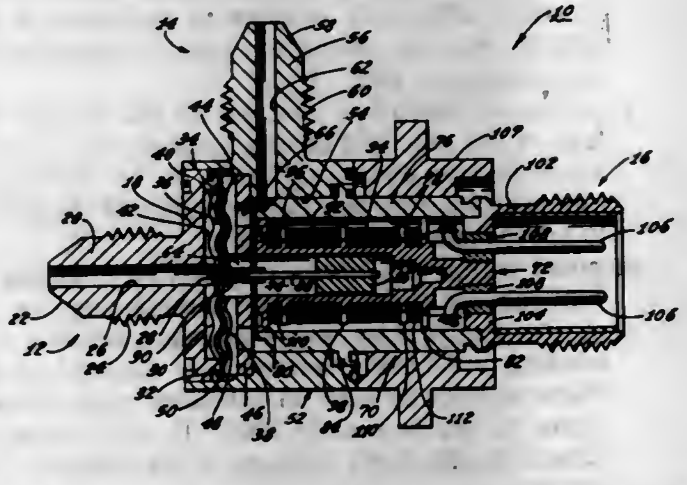
1. In a magnetically operated device, the combination including an electromagnet having a ferromagnetic core, a shaft journalled for rotation in said core and projecting outwardly therefrom, a casing encircling said electromagnet and secured fixedly thereto, said casing supporting an annular flange at one end thereof concentric with said shaft, an armature mounted for rotation and axial movement upon said shaft, a first apertured disc encircling said armature and having one side thereof in parallel opposing relation to said annular flange, said flange and said first disc being provided with a plurality of pairs of opposing inclined recesses, a plurality of anti-friction elements, there being one said element disposed between each pair of opposing inclined recesses, said recesses being so arranged that an axial movement of said first disc toward said flange will impart a rotary movement to said first disc, yielding means engaging said first disc and opposing the aforesaid rotary movement, a second apertured disc mounted upon said armature in parallel relation to said first disc, means coupling said second disc non-rotatably to said shaft, said last named means including means limiting the axial movement of said armature away from said flange upon said shaft, said first and second discs being adapted to engage in friction contact, said armature moving in response to energization of said electromagnet and having means engaging said second disc so as to carry both said discs axially toward said flange portion when the electromagnet is energized.



3,308,411
PRESSURE TRANSDUCER FOR USE IN EXTREME TEMPERATURE AND RADIOACTIVE ENVIRONMENTS

John L. Rochala, Baldwin Park, Calif., assignor to Physical Sciences Corporation, Arcadia, Calif., a corporation of California

Filed Apr. 6, 1964, Ser. No. 357,516
6 Claims. (Cl. 336—30)



1. A pressure transducer for providing an electrical signal proportional to the difference between the pressures of two fluids over an extended temperature range, said transducer including:

a pressure-sensitive diaphragm having an annular periphery and a flexible center portion resiliently deflectable through a distance proportional to the pressure differential across the diaphragm,

a pair of housing disposed on the opposite sides of the diaphragm and hermetically sealed to the periphery of the diaphragm to form first and second compartments, at least one of said housings including a portion that encloses an extension of one of the compartments, means for interconnecting the compartments with said fluids whereby the diaphragm will have a force thereon proportional to the difference between the pressures whereby the center portion of the diaphragm will be displaced relative to said extension proportional to the pressure differential,

a magnetic core disposed in said extension and interconnected with said diaphragm so as to move therewith,

a pair of differential windings on said extension, said windings being inductively coupled to the core so as to be responsive to the position of the core,

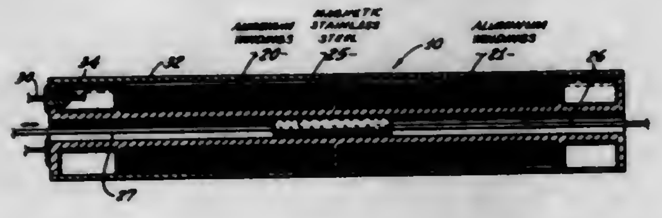
and means connected to the pair of differential windings for compensating for any changes in the characteristics of the windings and the diaphragm and the core through the extended temperature range.

3,308,412
TEMPERATURE COMPENSATED MAGNETIC TRANSDUCER

Gerald R. Curtis, Duarte, James C. Kyle, Glendora, and Glen Robinson, Pasadena, Calif., assignors, by mesne assignments, to Physical Sciences Corporation, a corporation of California

Original application Apr. 19, 1960, Ser. No. 23,267, now Patent No. 3,183,126, dated May 11, 1965. Divided and this application June 13, 1963, Ser. No. 300,950

8 Claims. (Cl. 336—136)



1. An electromagnetic transducer having stable characteristics when exposed to variable radioactive and fluctuating high temperature environments, the transducer comprising:

a tube made of non-magnetic material;

at least one winding formed from an elongated material coated with a boron-free ceramic disposed on the tube and having a temperature-resistance characteristic effectively immune to variations in radioactivity over an extended range of temperatures to approximately 1000° F.;

a coating of boron-free ceramic on the peripheral surface of the tube and having a temperature-resistance characteristic effectively immune to variations in radioactivity over an extended range of temperatures to approximately 1000° F.; and

disposed within the tube, a core having a temperature-permeability characteristic counteracting the effect of the temperature-resistance characteristic of the winding and having substantially constant magnetic characteristics through an extended range of temperatures to approximately 1000° F. and having characteristics effectively immune to variations in radioactivity.

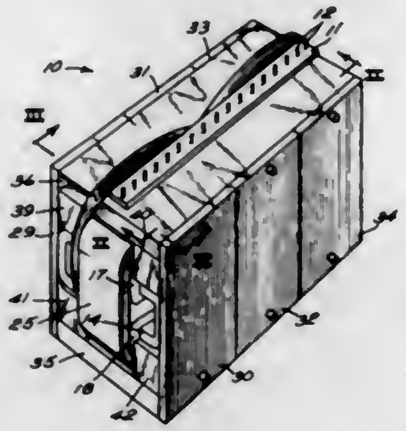
3,308,413
SATURABLE REACTOR HAVING D.C. FLUX PATHS OF SOLID FERROMAGNETIC MATERIAL

Kenneth W. Schroeder, Arlington Heights, and Bruce G. Isaacson, Chicago, Ill., assignors to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware

Filed Aug. 3, 1964, Ser. No. 386,924

6 Claims. (Cl. 336—155)

1. In a saturable reactor, a pair of A.C. winding means, D.C. winding means, first core means of laminated ferromagnetic material defining a closed magnetic flux path and having a pair of spaced parallel opposed portions with said pair of A.C. winding means being on said pair of spaced parallel opposed portions for generating A.C. flux lines in said first core means, and second core means of solid ferromagnetic material including a pair of spaced portions on opposite sides of said first core means with a pair of surface areas on said spaced portions of said second core means being in firm engagement with a pair of surface areas of said first core means between which said pair of spaced parallel portions extend, said second core means cooperating with said first core means to define continuous D.C. flux paths having said D.C. winding means thereon for generating D.C. flux lines therein and for inductively linking said A.C. and D.C. winding means whereby said A.C. flux lines and said D.C. flux lines are generally parallel in said spaced parallel opposed portions of said first core means and whereby the degree of saturation of said laminated ferromagnetic material and the impedances of said pair of A.C. winding means are controlled by the current through said D.C. winding means, said first core means having a generally O-shaped configuration, and said second core means having a generally rectangular configuration.

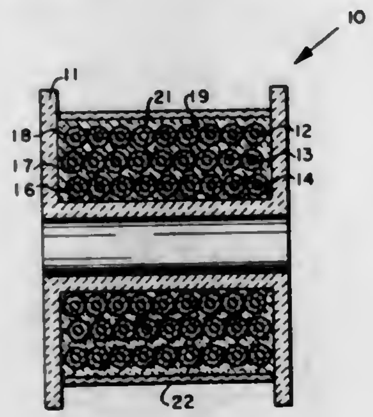


3,308,414
POROUS-REFRACTORY ENCAPSULANT FOR COILS AND COIL ENCAPSULATED THEREWITH

George W. Ostrander, Muskegon Heights, and Wesley W. Pendleton, Muskegon, Mich., assignors to Anaconda Wire and Cable Company, a corporation of Delaware

Filed Jan. 14, 1964, Ser. No. 337,552

8 Claims. (Cl. 336—205)



1. An electrical apparatus comprising,

(A) a plurality of turns of wire coated with inorganic, high-temperature insulation, and

(B) a porous refractory encapsulant surrounding said turns, comprising, by weight,

(a) 80–93 parts Al_2O_3,

(b) 2–3.5 parts Cr_2O_3,

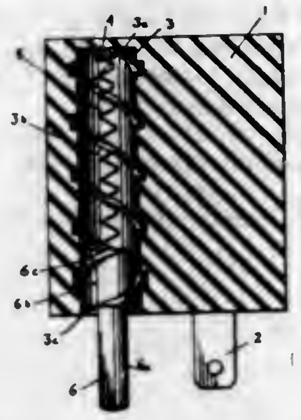
(c) 0–6 parts ZnO, and

(d) 3–10 parts sodium silicate.

3,308,415
SELF-ADJUSTING THREE-PRONG ELECTRIC PLUG ADAPTABLE FOR EITHER TWO OR THREE PRONG ELECTRIC SOCKETS

Milton L. Cramer, Wolcott St., Litchfield, Conn. 06759, and Dov Z. Glucksman, Torrington, Conn. (26 Chase Ave., West Newton, Mass. 02165)

Filed Nov. 17, 1964, Ser. No. 411,748



1. An electrical plug comprising in combination:

(a) a plug body of insulating material defining an internal passageway;

(b) a pair of blade contacts extending generally parallel to said passageway and projecting outwardly from a surface of said plug body;

(c) a ground pin non-circular in cross-section extending generally parallel to said pair of blade contacts and projecting outwardly from said surface of said plug body, said ground pin having an axial cylindrical extension inserted into said passageway of said plug body;

(d) spring means inside said passageway biasing said axial cylindrical extension and said ground pin in a direction longitudinally thereof; and

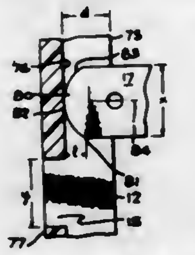
(e) cooperating guide means on said plug body and said axial cylindrical extension for causing a combined rotary and linear motion of said ground pin into said passageway defined by said plug body in response to axial pressure upon said ground pin opposed to the bias of said spring means.

3,308,416
DEEP GROOVED CONTINUOUS ELECTRICAL OUTLET RECEPTACLE

Dean M. Boyd, 615 S. Virgil, Los Angeles, Calif. 90005

Filed Oct. 22, 1965, Ser. No. 500,606

7 Claims. (Cl. 339—22)



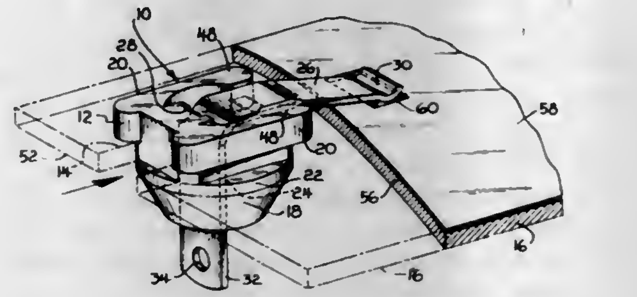
1. An electrical outlet adapted to form an electrical connection with a connector plug at any of numerous locations along the length of the outlet, said plug having two essentially parallel prongs with short tapering end portions at their outer extremities, said outlet comprising an elongated body structure having a generally vertical front wall structure and electrical contacts at the rear side of said front wall and engageable by the prongs of the plug, said front wall structure containing two generally horizontal parallel grooves in its forward side spaced to partially receive said two prongs of the plug and each defined at its back by a forwardly facing inwardly recessed surface containing spaced apertures for receiving said prongs, each groove having a depth in a direction normal to the plane of said forwardly facing inwardly recessed surface which is greater than the length of said short tapering portion of said prongs, said front wall structure having forwardly facing surface areas defining the major portion of the forward side of said front wall structure and offset vertically from said grooves, and each of said grooves having a surface area therein whose light reflecting characteristics are less specular than those of said forwardly facing surface areas offset vertically from said grooves.

3,308,417
TERMINAL UNITS FOR CIRCUIT PANELS

Kemper M. Hammell, Harrisburg, and Herman Rueger, Lancaster, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Original application June 19, 1959, Ser. No. 821,481, now Patent No. 3,138,419, dated June 23, 1964. Divided and this application Nov. 7, 1963, Ser. No. 329,934

2 Claims. (Cl. 339—59)



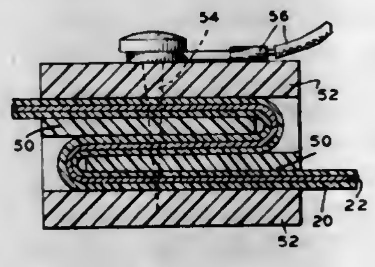
1. An electrical plug member having at least one contact inserted therein adapted to be attached to a support panel by being inserted into an aperture in such panel comprising a body of insulating material having a head portion extending radially outwardly of said aperture to engage one side of said panel, said body having a right circular cylindrical portion appended to said head portion and spaced from the underside thereof by a distance approximating the thickness of said support panel, the top of said cylindrical portion forming a plurality of shoulders to engage the other side of the panel, a frusto-conical portion appended to said cylindrical portion, said body further including at least one slot located entirely within said body radially inwardly of and spaced from said shoulders to permit inward movement of said shoulders to facilitate insertion of the plug into the aperture of said panel.

3,308,418
CONNECTING ELECTRICAL CONDUCTORS

Lars Hedström, West Orange, N.J., assignor, by mesne assignments, to The Thomas & Betts Co., a corporation of New Jersey

Original application Aug. 1, 1961, Ser. No. 128,497, now Patent No. 3,213,404, dated Oct. 19, 1965. Divided and this application Oct. 18, 1965, Ser. No. 497,161

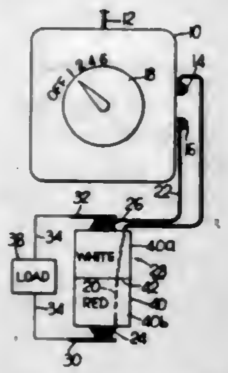
30 Claims. (Cl. 339—97)



1. An electrical connection comprising a plurality of terminal members of conductive metal, and a plastic laminate comprising a plurality of relatively thick, yieldable plastic members enclosing a folded end portion of an insulated flat conductor cable in fixed abutting relation wherein said plastic laminate is impaled on said terminal members in imbedded, frictionally held relation therewith.

3,308,419
POWER SUPPLY MEANS

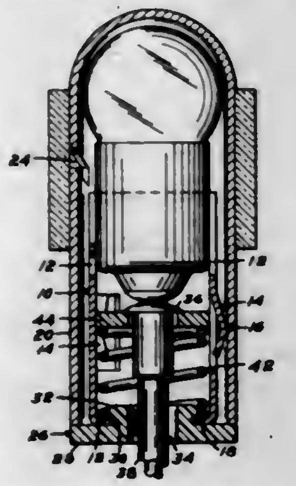
Stanley E. Robowetz, Elm Grove, and Cyril V. Shallow, West Allis, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Apr. 27, 1964, Ser. No. 362,874
11 Claims. (Cl. 339—147)



3. In a contactor for substitution for a dry cell battery in a battery holder of a device which is to be energized from a power supply source, in combination, a hollow insulating case, said case having a wire receiving opening through at least one side thereof communicating with the hollow interior of said case, a pair of contacts mounted on said case, at least one of said contacts being mounted on a side of said case other than said one side thereof and having a portion extending into the hollow interior of said case, and a wire lead extending through said wire receiving opening into said case and electrically and mechanically connected to said portion of said one contact.

3,308,420
LAMP SOCKET SHELL WITH INTEGRAL TANGS

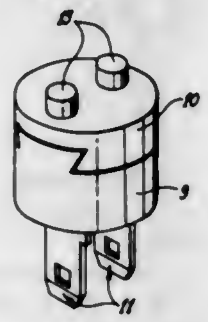
Robert E. Fitz Gerald, Quincy, Mass., assignor to United-Carr Incorporated, Cambridge, Mass., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,800
1 Claim. (Cl. 339—176)



A lamp socket assembly comprising a tubular shell, an outer casing, said shell being formed of an electrically conductive material and having open ends and having a series of resilient fingers formed around the circumference thereof and extending therefrom, one open end being bent inwardly to provide an internal shoulder, and an insulating external stop means comprising a base portion and a stud portion extending from said base portion, said base portion and said stud portion having an aperture formed therethrough an insulating collar having a hole formed therethrough lying within said tubular shell with the cap of a contact member lying on the surface of said collar, facing away from said stop means and said contact member extending through the hole in said collar and having at least one lead extending through the aperture in said external stop means, said collar and said internal shoulder having a spring means therebetween, said spring means circumscribing said lead, said stud portion being in engagement with said internal shoulder and said fingers of said shell being in sliding engagement with the inner surface of said outer casing.

3,308,421
ELECTRIC TERMINAL BLOCKS

Aubrey Joseph Richmond White, Fulham Gardens, South Australia, Australia, assignor to Carr Fastener Pty. Ltd., a corporation of Australia
Filed Feb. 19, 1965, Ser. No. 433,939
Claims priority, application Australia, Feb. 26, 1964, 41,336/64
2 Claims. (Cl. 339—196)



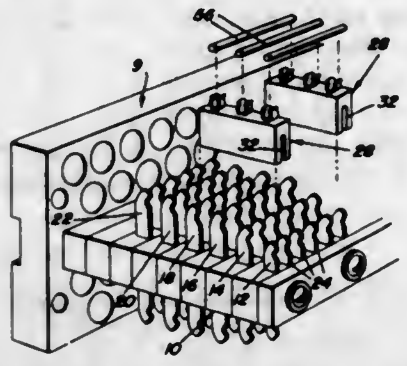
1. An electric terminal block of the kind indicated characterized in that the terminal elements consist of a pair of tabs of substantially planar formation mounted in and projecting forwardly from a first part of said insulating body, said tabs being substantially parallel and symmetrically disposed on either side of an axial plane of the terminal block, said first body part being of resilient material and defining a pair of rearwardly opening parallel cylindrical cavities having their axes substantially parallel to and symmetrically disposed on either side of the axial plane, said tabs having tail portions protruding into the forward end parts of the respective cavities, said insulating body further comprising a second part likewise of resilient material and defining a pair of apertures substantially circular in cross-section and having their axes parallel to and symmetrically disposed on either side of an axis of said second part, the block further comprising a pair of helical springs, one located in each said cavity and engaged at a forward end with the tail portion of the relevant tab, the other end of each spring being accommodated within a conductive cap, each cap being capable of being passed through one of said apertures and having a flange adapted to abut against a forward marginal edge of the relevant aperture, said first and second body parts being formed in a complementary dove-tailed configuration whereby the parts can be manually snapped into coaxial engagement in a relative axial direction and when thus engaged, cannot readily or accidentally be separated in an axial direction, sideways relation movement between the engaged parts being restrained by said caps within their respective apertures.

3,308,422
BRIDGING CONNECTOR FOR TELEPHONE TERMINAL BLOCKS

Donald C. Boysen, Hills, Minn. 56138
Filed Aug. 19, 1965, Ser. No. 480,976
6 Claims. (Cl. 339—198)

1. In combination with a terminal block of the type including a plurality of electrical terminal means supported and projecting upwardly from said block and arranged in spaced side-by-side rows of terminal means with the terminal means of each row spaced front to rear relative to each other, a pair of connecting blocks each comprising an upstanding panel-like body of dielectric material and defining an upstanding center plane, said

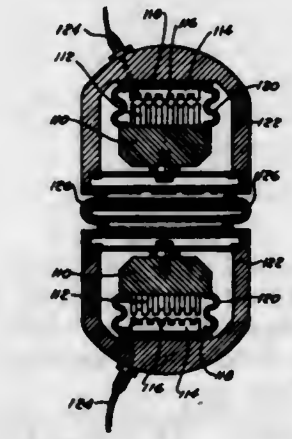
panel-like bodies including means defining downwardly opening recess means removably telescoped downwardly over at least one pair of elongated terminal means disposed in different rows of terminal means, said connecting blocks including contact means having lower end portions disposed in and on opposite sides of said recess means and frictionally gripping and defining an electrical connection with the corresponding terminal means, said



contact means also including integral upper portions projecting upwardly through the upper portions of said bodies and including upper terminal ends defining upper contact means, and a bridging element removably bridging and electrically connected with said upper contact means of said blocks thereby electrically connecting the terminal means of said different rows of terminal means with which said contact means are engaged.

3,308,423
ELECTROACOUSTIC TRANSDUCER

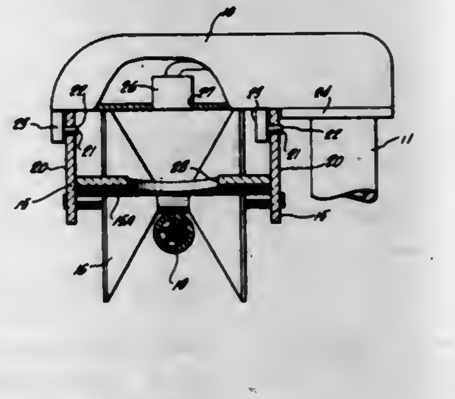
Frank Massa, Jr., Cohasset, Mass., assignor, by mesne assignments, to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Dec. 30, 1963, Ser. No. 334,203
8 Claims. (Cl. 340—8)

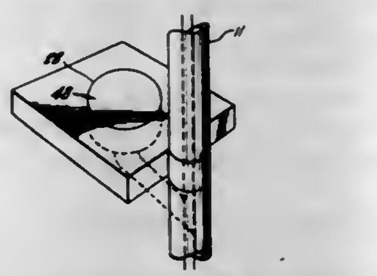


1. The improvement of an alternating electroacoustic transducer comprising a sealed housing structure, including two vibratile end portions separated by a compliant member, a massive first magnetic means adapted to be spaced from said first end portion for translatory vibration relative thereto, a massive second magnetic means adapted to be spaced from said second end portion for translatory vibration relative thereto, a third magnetic means rigidly secured to said first end portion and positioned in operable relation to said first magnetic means, a fourth magnetic means secured to said second end portion and positioned in operable relation to said second magnetic means, alternating current coil generating means attached to each of said third and said fourth magnetic means and operatively associated with each of said magnetic means, terminal means for supplying alternating electrical current to said coil means, frequency determining spring elements attached between said first and third magnetic means and frequency determining spring elements attached between said second and said fourth magnetic means to hold said attached pairs of magnetic means in operable relationship to each other whereby translatory vibration of said first and said second end portion of said sealed housing structure will be of the same phase whenever alternating current is applied to the current coils.

3,308,424
VIBRATION DETECTION

Alan B. Simpkins, Los Altos, and Robert H. Hamilton, Menlo Park, Calif., assignors, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Dec. 16, 1963, Ser. No. 330,820
7 Claims. (Cl. 340—16)

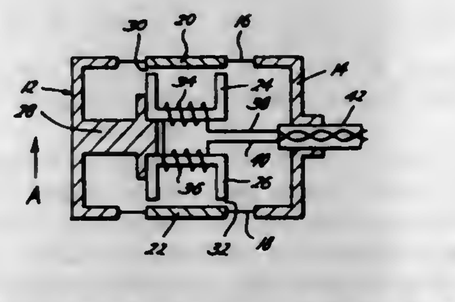




1. Apparatus for locating the source of ultrasonic vibrations from a member which generates them, the apparatus comprising a pole adapted to be supported by the member, and a pair of spaced-apart ultrasonic transducers mounted on the pole for receiving the vibrations and converting them into an electric signal, the transducers being positioned to face each other whereby they receive vibrations directly from opposite sides of the member when the member is disposed between the transducers.

3,308,425
DEPTH SENSITIVE TRANSDUCER

Kenneth W. McLoad, Houston, Tex., assignor to Vector Cable Company, Houston, Tex., a corporation of Texas
Filed Sept. 3, 1965, Ser. No. 484,876
10 Claims. (Cl. 340—17)

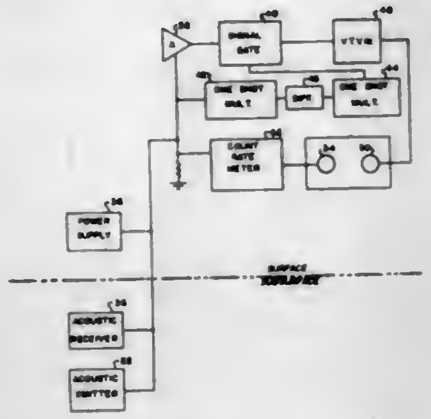


1. A pressure transducer comprising: a housing, pressure responsive means in said housing for providing an electrical signal indicative of hydrostatic pressure in the medium surrounding said housing, and electrical circuit means for correcting said signal to cancel out the effects of motion of said housing in said medium.

3,308,426

METHOD AND APPARATUS FOR ACOUSTICAL LOGGING WHEREIN THE AMPLITUDE AND FREQUENCY OF THE IMPULSE ARE DETERMINED

John C. Wilson, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Nov. 1, 1963, Ser. No. 320,790
6 Claims. (Cl. 340—18)



1. Apparatus for logging a formation pierced by a borehole containing a well casing and a cement sheath between the casing and formation to determine the effectiveness of the bond between the casing and cement sheath and between the cement sheath and the formation, said apparatus comprising:

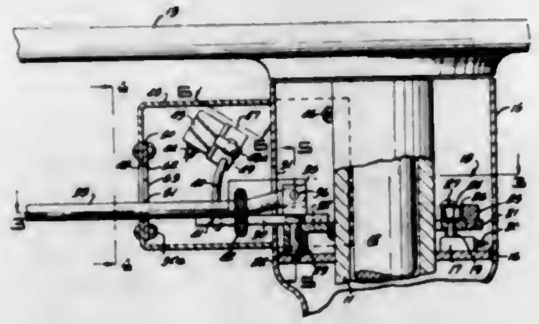
- a subsurface instrument;
- surface equipment and a cable, said cable supporting said instrument and electrically connecting said instrument and said surface equipment; said instrument including:
  - transmitter means for generating an acoustic shock wave,
  - receiver means for detecting an acoustic echo pulse train resulting from said shock wave and converting said acoustic echo train into corresponding electrical signals; and
- means for applying said signals to said cable for transmission to said surface equipment; said surface equipment including:
  - means connected to receive said signals from said cable for determining the amplitude of the first arrival of said signals and providing an indication of said amplitude,
  - means connected to receive said signals from said cable for counting the number of pulses per unit time occurring in said echo train and providing an indication of said number, and
  - means for recording said indications in correlation as a function of depth whereby irregularities in bonding of the cement sheath may be determined.

3,308,427

PASSING SIGNAL SYSTEM FOR MOTOR VEHICLES

Emerson E. Hess, Powell, Ohio 43065
Filed Dec. 2, 1963, Ser. No. 327,468
3 Claims. (Cl. 340—78)

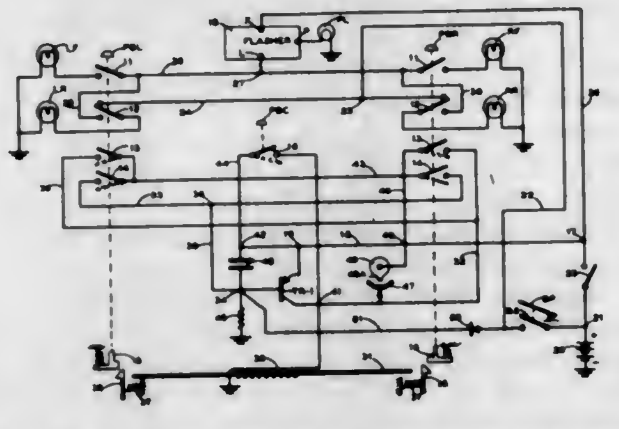
1. In combination with an automotive vehicle having an electrical power source and plural signal lights in a turn and stop signaling system including a turn signal switch having a selectively operable movable contact for connecting said turn and stop signaling system with said power source when displaced to either of selected positions at opposite sides of a center position and having an actuating member operatively coupled with said movable contact and pivotally supported for swinging movement to effect displacement of said movable contact, a cyclic circuit interrupting means connected in circuit with said turn signal switch and said power source, and a brake responsive switch connected in circuit with said turn signal switch and said power source for control of said stop signaling system when said turn signal switch is in a nonoperable position, at least one stop signal being disabled when said turn signal is in a right or left signaling position; a passing signal system including front direction indicating means, rear direction indicating means, a passing signal switch connected in circuit with said front and rear direction indicating means and said power source through said cyclic circuit interrupting means, said passing signal switch having a selectively operable movable contact for completing a circuit to said front and rear indicating means for indicating the direction of passing when displaced to either of selected positions at opposite sides of a center position, and a lever arm pivotally supported by guide interlock means for swinging movement and having means for alternately mechanically coupling said lever arm with either said passing signal switch movable contact or said turn signal switch actuating member, said lever arm being movable from a center position of said guide interlock means for selective independent operation of either said turn signaling system or said passing signal system, said guide interlock means preventing simultaneous mechanical coupling to said turn signal switch actuating member and said passing signal switch movable contact, said brake responsive switch operable independently of said passing signal switch when said lever arm is coupled with said movable contact of said passing signal switch and when said lever arm is in said center position of said guide interlock means.



3,308,428

AUTOMATIC TIMING ARRANGEMENT FOR AUTOMOTIVE TURN SIGNALLING SYSTEM

Raymond B. Grontkowski, Bronx, N.Y., assignor to Lehigh Valley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 10, 1963, Ser. No. 307,944
13 Claims. (Cl. 340—81)

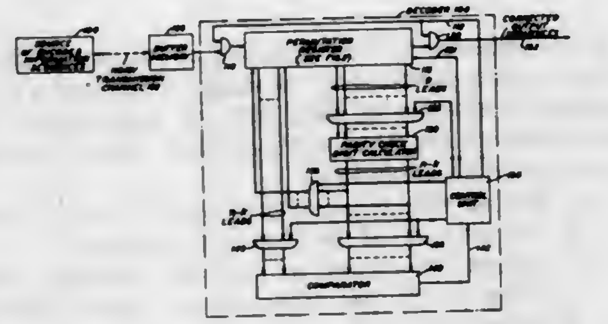


1. An automotive vehicle turn signalling system comprising, in combination, a source of D.C. potential; left and right turn signal lamps each having one terminal connected to one terminal of said source; a cyclically operable circuit interrupter having an input terminal connected to the opposite terminal of said source; a turn signal switch selectively operable between a neutral position and either of a pair of operated positions to connect the other terminals of either the left or right signal lamps to an output terminal of said circuit interrupter to selectively flash the thus connected signal lamps; electric current responsive time determining means operable to signal the termination of a predetermined signalling time interval; a transistor electrically connected to said source and said time determining means and controlling current flow to the latter; timing means connected to said source and said transistor and controlling the bias of the latter, said timing means being effective, after a predetermined period of activation, to adjust the bias applied to said transistor to a value such that the current flow to said time determining means will effect operation thereof to signal the termination of the predetermined signalling time interval; means operatively interconnecting said turn signal switch, said source and said timing means and operable, upon operation of said turn signal switch to either of its operated positions, to initiate activity of said timing means; and override means connected to said source and to said timing means and operable, responsive to a selected operated position of an instrumentality controlling the motion of the vehicle, to render ineffective the control of said timing means on said transistor.

3,308,429

CYCLIC AND MULTIPLICATION BY 2 MOD *n* PERMUTATION DECODER FOR SYSTEMATIC CODES

Florence J. MacWilliams, Holmdel, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 15, 1963, Ser. No. 324,004
7 Claims. (Cl. 340—146.1)



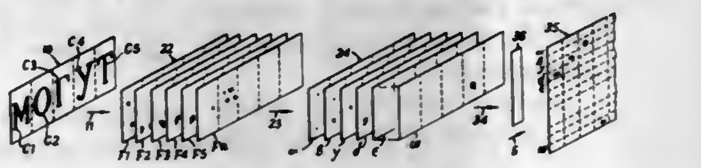
1. In combination, means for storing a digital sequence which is a member of a systematic code, and means connected to said storing means for rearranging the positions of the constituent digits of said stored sequence by cyclic and multiplication by 2 mod *n* permutations, where *n* is the number of digits in the sequence and is an odd integer, and for registering said rearranged sequence in said storing means.

3,308,430

CHARACTER RECOGNITION SYSTEMS AND APPARATUS

Maxwell Bernard Clowes, Oxford, and John Ronald Parks and David Oswald Clayden, Teddington, Middlesex, England, assignors to National Research Development Corporation, London, England, a British corporation
Filed Nov. 27, 1964, Ser. No. 414,247
Claims priority, application Great Britain, Nov. 29, 1963, 47,289/63
14 Claims. (Cl. 340—146.3)

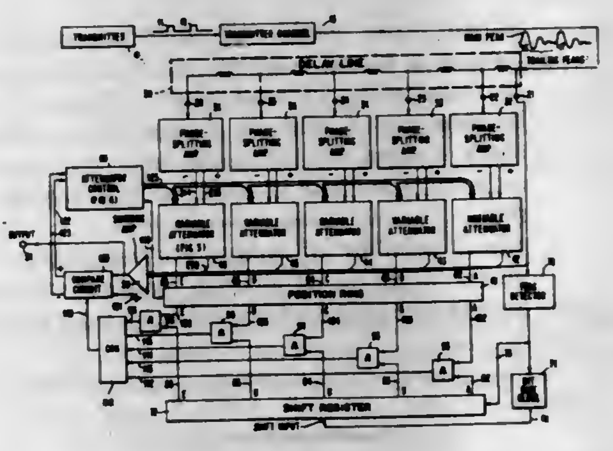
1. Apparatus for recognising printed or hand written characters or groups of characters which comprises means for effecting a series of self-matching operations on each character or group of characters using identical images of said character or said group of characters as examining character images with different forms of relative displacement of the examining character images with respect to the said character or group of characters in each operation to determine the presence or absence of different specific character features in said character or in each of the characters of said group of characters, means for separately registering the results of each of said separate feature-determining operations and means for effecting a series of matching operations between different combinations of said feature determining result registrations to determine the presence or absence of different specific feature combinations each unique to a different one of the range of characters capable of being recognised.



3,308,431

DISTORTION CORRECTION CIRCUITRY FOR DATA TRANSMISSION SYSTEMS

Emil Hopner, Los Gatos, Calif., Howard L. Funk, Yorktown Heights, N.Y., and Dale L. Critchlow, St.-Laurent-du-Var, France, assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 30, 1963, Ser. No. 312,725
9 Claims. (Cl. 340—147)



1. In a data transmission system including transmitter means for producing a test pulse, and transmission means connected to said transmitter means for transmitting and distorting said pulse so that a waveform is provided having the shape of a main peak and trailing peaks of lesser amplitude, the combination therewith of a receiver connected to receive the waveform provided by said transmission means, said receiver comprising:

- sampling means for sampling said main peak and at least one point in the trailing portion of said waveform; and
- canceling means for adding a selected quantity of the sample of said main peak to the sample of said trailing portion of said waveform, said quantity being selected so that the result of said addition approaches zero.

3,308,432

ELECTRICAL COMBINATION SELECTOR

Martin E. Gerry, Bellevue, Wash.
(13452 Winthrope St., Santa Ana, Calif. 92705)
Filed Jan. 29, 1963, Ser. No. 254,615
2 Claims. (Cl. 340—164)

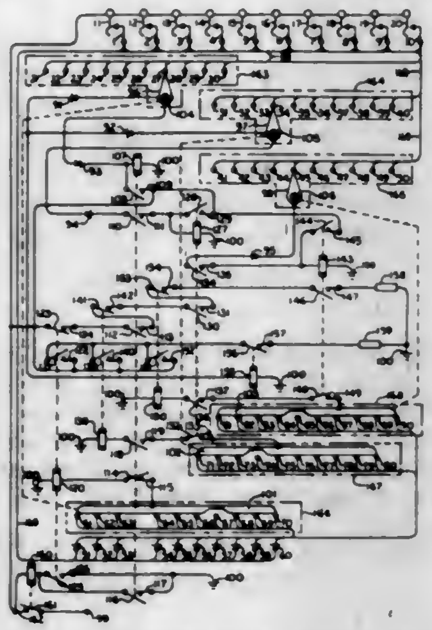
1. In an electrical combination selector, the combination of

- a first coding means, responsive to a plural number of push buttons and a power means, comprising

- a plural number of coding switches, presettable to a predetermined code, each with a selector arm and a plural number of stationary contacts corresponding to the said plural number of push buttons,
- a plural number of relays corresponding to the said plural number of coding switches,

a second coding means, responsive to said plural number of push buttons and the said power means, comprising

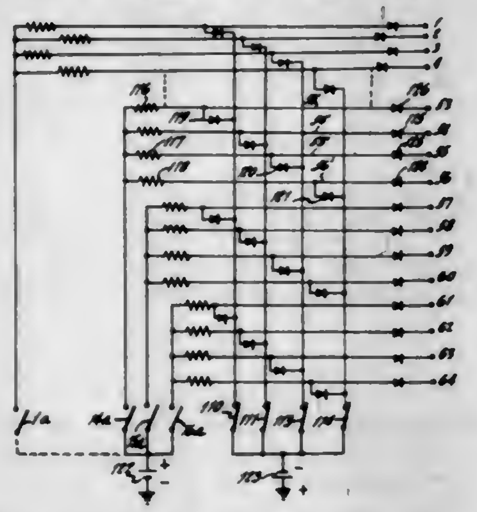
- a plural number of inverse coding switches, presettable to all codes excepting the said predetermined code, each said inverse coding switch having a plural number of stationary contacts corresponding to said plural number of push buttons and a selector means which simultaneously cooperates with all said stationary contacts of the said inverse coding switch except one,
- a plural number of relays corresponding to said plural number of inverse coding switches,



a code acceptance means responsive to said first coding means, and

an alarm means responsive to said second coding means.

3,308,433
SWITCHING MATRIX
Rolf B. Lochinger, Plainsboro, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 10, 1963, Ser. No. 250,645
13 Claims. (Cl. 340—166)



1. In a decoder matrix,

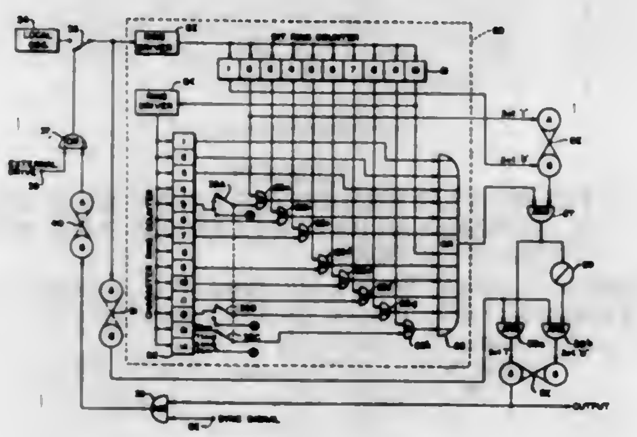
$n \times m$ output lines arranged in n first groups of m lines each, where m is an integer greater than 1 and not greater than 10 and n is an integer greater than 1;

n first switching means, one per first group of lines, each switching means, when closed, applying a drive current to all lines in its group;

$m \times n$ unidirectionally conducting elements; and

m second switching means, each connected to a different group of n lines through n of said elements, respectively, and each line in a group of n lines being in a different first group, each second switching means, when closed, providing a low impedance path via the unidirectionally conducting elements coupled thereto for drive current appearing on lines to which it is connected.

3,308,434
SYNCHRONIZATION CIRCUIT FOR SIGNAL GENERATORS USING COMPARISON OF A SPECIFIC DATA MESSAGE
Jerry M. Glasson, Chicago, and Walter B. McClelland, Park Ridge, Ill., assignors to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Jan. 9, 1963, Ser. No. 250,374
7 Claims. (Cl. 340—167)



1. A message synchronization circuit for a signal generator which generates a message comprised of a predetermined sequence of data bits for comparison with the same message obtained from another source, the synchronization circuit including

(a) first driving means for driving the signal generator at the bit rate of the received message;

(b) means responsive to said first driving means for causing the output signal of the signal generator to be sampled and regenerated in synchronism with the bit rate of the received message;

(c) means for comparing the simultaneous data bits in the received message and the regenerated output of the signal generator and having an output signal whenever a predetermined relationship between the compared data bits exists; and

(d) second driving means responsive to the output of the comparing means for applying an additional driving signal to the signal generator each time an output signal is obtained from the comparing means to cause the signal generator output to advance an extra bit for each additional driving signal.

3,308,435
CONTROL FOR COUNTING MECHANISM
Lambert Haner, Rocky River, and Leonard H. Brown, University Heights, Ohio, assignors to Avtron Manufacturing Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 5, 1962, Ser. No. 164,505
4 Claims. (Cl. 340—168)

1. Counting mechanism comprising

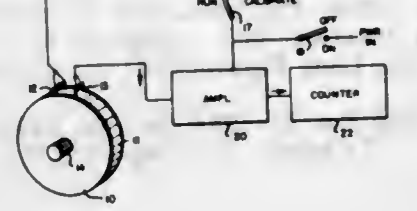
a mechanically driven member,

a recording medium carried by said member,

signal recording means cooperable with said medium for recording signals thereon,

a periodic signal source arranged for energizing said recording means,

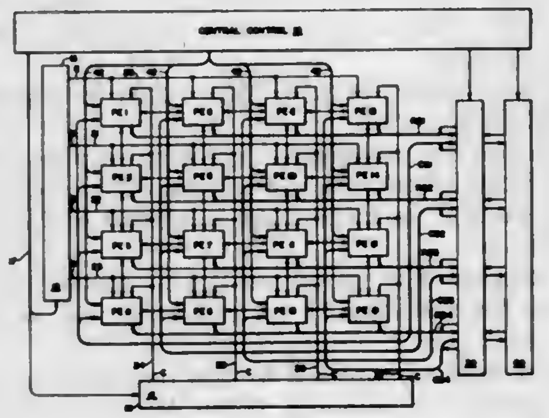
a pickup means arranged to reproduce recorded signals by cooperation with said medium,



a counting means arranged to be energized from said pickup means and afford a readout,

and means for adjusting the frequency of the signal from the source.

3,308,436
PARALLEL COMPUTER SYSTEM CONTROL
Walter C. Borck, Jr., Baltimore, and David K. Sloper, Severna Park, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 5, 1963, Ser. No. 299,956
15 Claims. (Cl. 340—172.5)



1. A computer comprising:

(1) central control means;

(2) an array of processing elements for receiving control signals from said central control means to carry out commands specified by said control signals;

(3) each said processing element including,

  (a) memory means for storing data,

  (b) means for carrying out predetermined operations on said data,

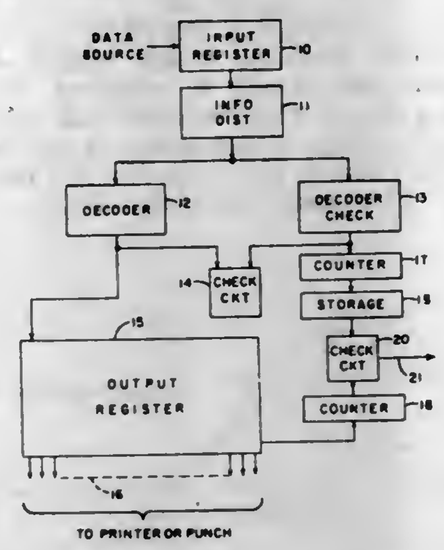
  (c) routing means for transferring said data to other selected processing elements of said array, and

  (d) internal control means operable in response to predetermined signals for providing an enabling signal;

(4) external control means for supplying first and second selection signals to each processing element of said array and

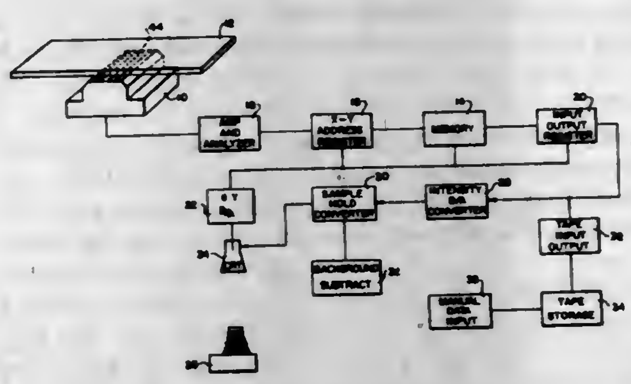
(5) said internal control means responsive to said first and second selection signals so that when present, said enabling signal will be provided.

3,308,437
DIGITAL DATA PROCESSING CONVERSION AND CHECKING APPARATUS
Charles J. Barbagallo, Needham, and Edward S. Fabiszewski, Lexington, Mass., assignors to Honeywell Inc., a corporation of Delaware
Original application Jan. 27, 1958, Ser. No. 711,512, now Patent No. 3,130,386, dated Apr. 21, 1964. Divided and this application July 19, 1963, Ser. No. 301,228
8 Claims. (Cl. 340—172.5)



1. In a data processing apparatus the combination comprising a first register adapted to store digital data in a first code, a second register adapted to store digital data in a second code, code converting means connected between said first and second registers, and means including a shift register connected to the input of said second register, said shift register adapted to have digital data moved therein in one or the other of two directions to thereby control the direction of movement of the digital data into said second register.

3,308,438
AUTOFLUOROSCOPE
Philip Spergel, Lexington, and Donald A. Gordon, Cambridge, Mass., assignors to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 1, 1963, Ser. No. 320,709
11 Claims. (Cl. 340—172.5)



9. A radiation monitoring system, comprising a plurality of individual scintillators arranged in intersecting rows and columns, a photomultiplying device associated with each of said rows and columns, light conducting pipes optically coupling each of said scintillators to a unique pair of said photomultiplying devices, the output of said photomultiplying devices providing digital information relative to the position of a monitored radiation event, coincident current core memory means for receiving and storing said digital information, a cathode ray tube for visually displaying information accumulated in said memory means, digital-to-analog converting means whereby the digital output of said memory means

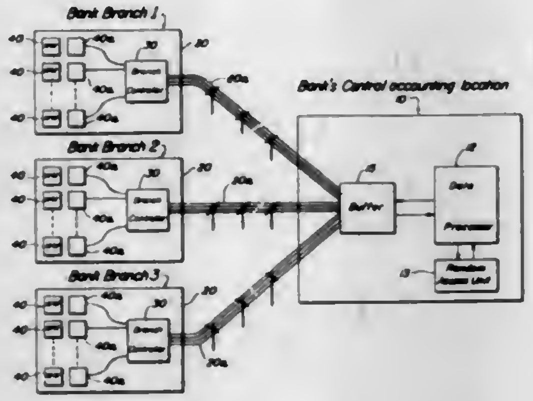
provides positional control over said cathode ray tube, a memory storage register associated with said memory means for storing repetitive events and digital-to-analog converting means connecting said memory storage register to said cathode ray tube whereby the digital output of said memory storage register provides intensity control over said cathode ray tube.

3,308,439
ON-LINE SYSTEM

Robert M. Tink, Redondo Beach, Robert A. Melnick, Los Angeles, and Frank B. Andrews, Jr., Gardena, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Jan. 2, 1964, Ser. No. 335,184

13 Claims. (Cl. 340—172.5)



1. In an on-line banking system, a central accounting location and a plurality of branches cooperating therewith, said central accounting location having a data processor, a random access unit providing a high capacity rapid access store for said processor, and at least one buffer provided to control the flow of information between said data processor and a predetermined plurality of said branches, each of said branches including a plurality of multi-row keyboard window machines, an associated unit for each window machine, and a branch controller provided to control the flow of information between said window machines via their respective associated units and said central accounting location, each branch controller including means for sequentially scanning said window machines until one is found which is ready to have a keyboard entry read out therefrom in response to which the branch controller signals the central accounting location that it is ready to transmit a message segment thereto, a message segment corresponding to a single window machine keyboard entry, said buffer including means for sequentially scanning said predetermined plurality of branches until one is found which is ready to transmit a message segment in response to which the buffer sends a signal to the selected branch which causes the branch controller to read out the keyboard entry from the selected window machine and transmit it without intermediate storage to the buffer at the central accounting location, said buffer including a buffer register for storing the received message segment until the data processor is ready to accept the message segment therefrom.

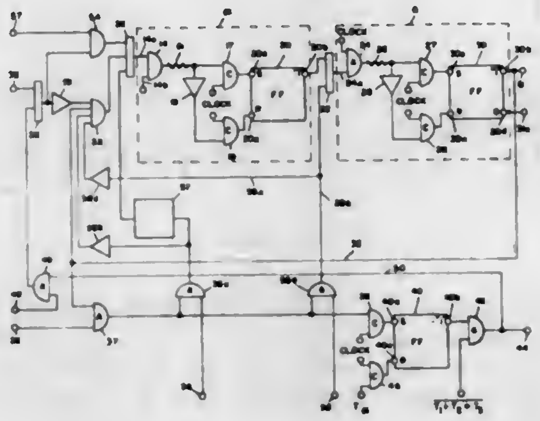
5. In an on-line system, a central location and a plurality of remote input-output devices cooperating therewith, said central location having a data processor, a high capacity random access unit cooperating with said processor, receiving means for receiving an input message from an input-output device for feeding to said processor, transmitting means for serially transmitting a multi-digit output message from said processor to one of said remote input-output devices, each input-output device including components responsive to respective digits of an output message with significantly different response times, said transmitting means including means responsive to the digits of the output message for providing an automatically changeable time interval between the transmission of the digits of said output message in dependence upon the response times of the components of the input-output device to which the digits of the output message are sent.

3,308,440
MEMORY SYSTEM

Thomas D. Truitt, Princeton, and Donald F. Fraipont, Princeton Junction, N.J., assignors to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey

Filed Jan. 21, 1964, Ser. No. 339,232

7 Claims. (Cl. 340—172.5)



1. A dynamic memory system for serially recirculating digital words arranged sequentially in time, each word being formed of a plurality of bits arranged sequentially in time, certain of said bits being flag bits, said system comprising:

means for delaying each of said words by a predetermined delay period,

input means for selectively applying words and for selectively introducing predetermined flag bits at desired word times to an input circuit of said delaying means,

means connected to an output circuit of said delaying means for sequentially recirculating said words to said input circuit,

flag select means connected to said recirculating means and operable in response to the flag bits included in said words appearing at said output circuit for selecting for read out any word which includes a predetermined flag bit,

said flag select means including means responsive to the correspondence in bit time of a flag bit included in a word and said bit applied to said flag select means for producing an output signal indicating that said word appearing at said output circuit is a selected word, and

advance flag means connected to said flag select means and responsive to said output signal for advancing a flag bit from its bit position in a word to a corresponding bit position in the next succeeding word.

3,308,441
INFORMATION PROCESSING APPARATUS

George J. Dusheck, Jr., Riverton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Sept. 6, 1963, Ser. No. 307,185

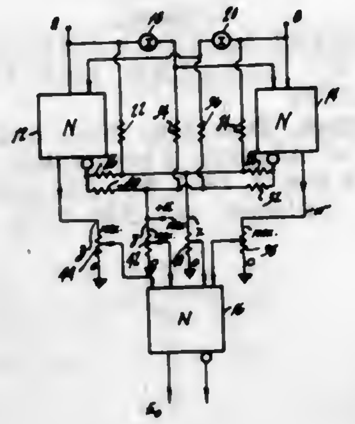
16 Claims. (Cl. 340—172.5)

1. In a neural network, the combination comprising

(a) at least three circuit neurons,

each for producing one output having a value which is a function of the amount by which the input or inputs to that neuron exceed the threshold of that neuron and

for producing also a second output of an opposite sense to said one output, and



(b) means responsive to

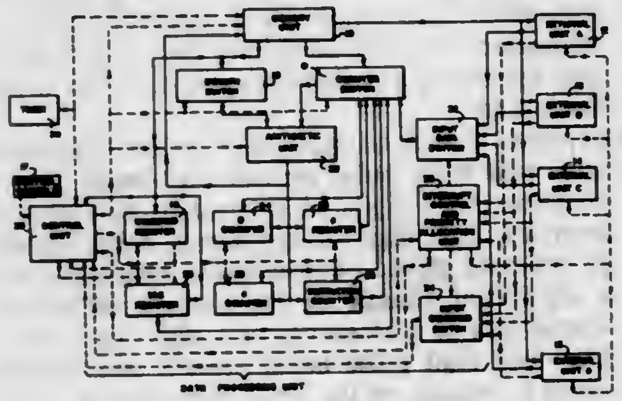
(1) inputs to two of said neurons,
(2) signals of opposite sense to said inputs, and
(3) the outputs of said two neurons for applying inputs to the third neuron.

3,308,442
DATA PROCESSING UNIT FOR PROVIDING DATA SHIFT UNDER SELECTIVE CONTROL OF EXTERNAL APPARATUS

John F. Couleur, Philip F. Gudenschwager, and William A. Shelly, all of Phoenix, Ariz., assignor to General Electric Company, a corporation of New York

Filed May 4, 1964, Ser. No. 364,693

10 Claims. (Cl. 340—172.5)



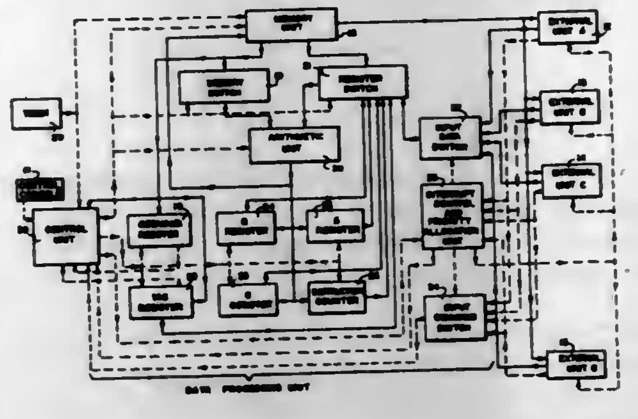
1. In a data processing system, the combination comprising: a data processing unit comprising command executing means for executing a plurality of different operations on data items received by said system, each of said data items comprising a plurality of data elements, each of said operations being executed in response to a respective command signal group received by said means, and controllable means for supplying command signal groups in sequence to said command executing means; a data handling unit disposed externally to said data processing unit, said data handling unit being adapted to provide a set of control signals, each state of said control signal set representing a respective amount of data shift, said data handling unit supplying said signal set when said data handling unit must employ said data processing unit to effect an operation on a data item; said data processing unit further comprising means responsive to the state of said signal set for shifting the data elements of a data item a corresponding amount.

3,308,443
DATA PROCESSING UNIT FOR PROVIDING SERIAL OR PARALLEL DATA TRANSFER UNDER SELECTIVE CONTROL OF EXTERNAL APPARATUS

John F. Couleur, Philip F. Gudenschwager, and William A. Shelly, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York

Filed May 4, 1964, Ser. No. 364,738

9 Claims. (Cl. 340—172.5)



1. In a data processing system, the combination comprising: a data processing unit comprising command executing means for executing a plurality of different operations on data items received by said system, each of said data items comprising a plurality of data elements, each of said operations being executed in response to a respective command signal group received by said means, and controllable means for supplying command signal groups in sequence to said command executing means; a data handling unit disposed externally to said data processing unit, said data handling unit being adapted to provide first and second control signals, said first control signal representing a simultaneous transfer of a plurality of the elements of a data item and said second control signal representing a sequential transfer of the elements of a data item, said data handling unit supplying one of said control signals when said data handling unit must employ said data processing unit to effect a transfer of data elements between said data handling unit and said data processing unit; said data processing unit further comprising means responsive to said first control signal for providing for the parallel transfer of said plurality of data elements between said data handling unit and said data processing unit, and means responsive to said second control signal for providing for the serial transfer of data elements between said data handling unit and said data processing unit.

3,308,444
THERMOPLASTIC RECORDING SYSTEM

Chiu Hsian Ting, Stanford, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 27, 1964, Ser. No. 362,614

10 Claims. (Cl. 340—173)

5. An information storage system wherein information is stored in the form of a deformation pattern comprising:

a layer of conductive material;

a thermoplastic layer disposed on said layer of conductive material;

a thin coating of material having variable resistivity disposed on said thermoplastic layer, said coating having a high resistance state and a low resistance state;

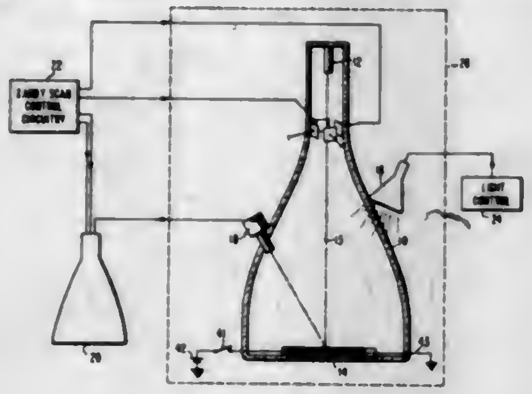
means for depositing an electrostatic charge pattern on said thin coating while said thin coating is in the high resistance state;

heating means for heating said thermoplastic layer and said thin coating whereby said thin coating and said thermoplastic layer deform in accordance with the electrostatic charge pattern on said thin coating, and an electrical connection to said thin coating of variable resistivity material for draining charge therefrom when said coating is in the low resistance state;

readout means including means for reducing the resistance of said thin coating and means for directing a first electron beam at said thin coating;

means for controlling the position of said first electron beam on said thin coating;

detecting means for generating a signal indicative of the number of electrons backscattered from said thin coating;



a cathode ray scope having an electron beam;

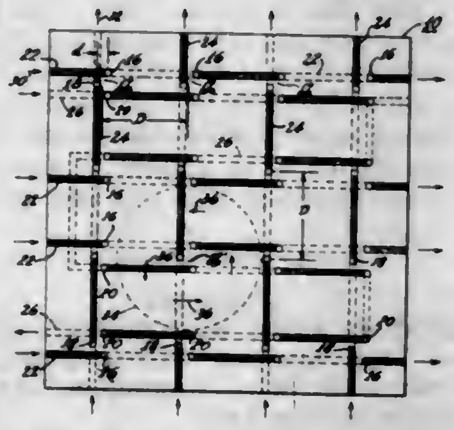
means for moving the electron beam in said cathode ray scope in synchronization with said first electron beam; and

means for modulating the electron beam in said cathode ray scope in accordance with the signal generated by said detecting means;

whereby an image is generated on the face of said cathode ray scope which indicates the deformation of said thin coating and thereby indicates the stored information.

3,308,445
MAGNETIC STORAGE DEVICES

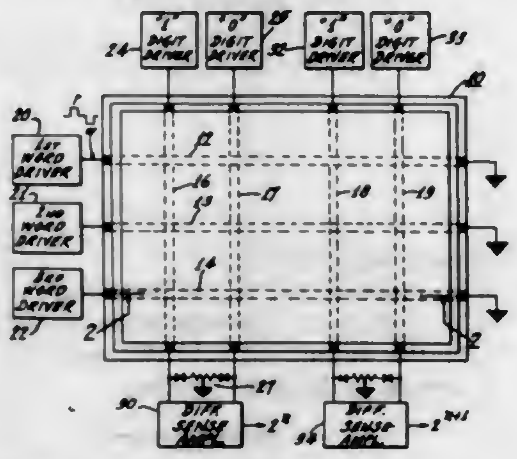
Jan A. Rajchman, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 22, 1958, Ser. No. 762,452
11 Claims. (Cl. 340—174)



1. A magnetic device comprising a plate of substantially rectangular hysteresis loop material, said plate having first and second groups of clusters of apertures therein, the respective apertures of a cluster having a relatively small center-to-center spacing so that the cluster effectively provides a single magnetic element defined by the portion of material around all of said apertures, said element having two remanent states, the first of said states corresponding to flux established by application of currents of one polarity through one or more of the apertures of the cluster and the other remanent state corresponding to that established by current flow of opposite polarity through one or more of the apertures, each of said currents being above a selected minimum value, any one said cluster being common to one said first and one said second group, a first set of selecting windings each linked through one aperture of each cluster of a different said first group, a second set of selecting windings each linked through another aperture of a different said second group, and a further winding linked through a third aperture all of said clusters.

3,308,446
FERRITE SHEET MEMORY WITH READ AND WRITE BY ANGULAR DEFLECTION OF FLUX LOOPS

Jan A. Rajchman, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 4, 1962, Ser. No. 228,432
4 Claims. (Cl. 340—174)



1. A memory comprising

a ferrite magnetic sheet having a plurality of parallel word lines imbedded therein in a first plane and having a plurality of parallel digit-sense lines imbedded at right angles to said word lines in a second, closely spaced plane,

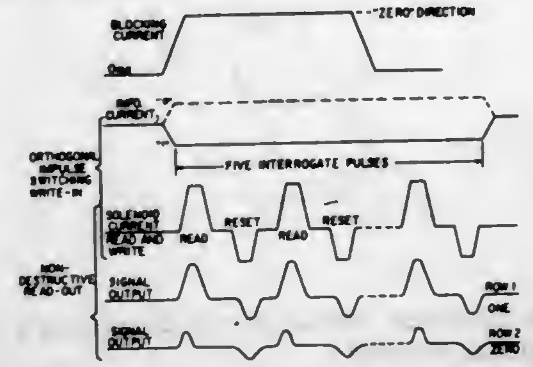
word driver means to apply sequential read and write pulses of opposite polarities to any selected one of said word lines, said word driver means being constructed to generate read and write pulses having a sufficiently high amplitude to cause a region of flux saturation coaxially encircling the selected word line and extending out therefrom beyond the digit-sense lines, and

digit driver means to apply digit pulses simultaneously with said write pulse to said digit-sense lines in accordance with digits of a word to be stored in the memory, said digit driver means being constructed to generate pulses of insufficient amplitude to cause a significant change in the amount of already-saturated flux at a crossover of a digit line and a word line, said digit pulse being present and operative to cause a rotation of the write pulse flux to a resultant diagonal angular direction when the flux is switched to saturation in the region of a crossover of a digit line and a word line energized by a write pulse, whereby a subsequently applied read pulse on said selected word line causes a rotation of the diagonally-directed flux to a direction coaxial with the word line and the consequent inducing of sensed information signals on said digit-sense lines.

3,308,447
ELECTRICALLY ALTERABLE SEMI-PERMANENT MAGNETIC MEMORY

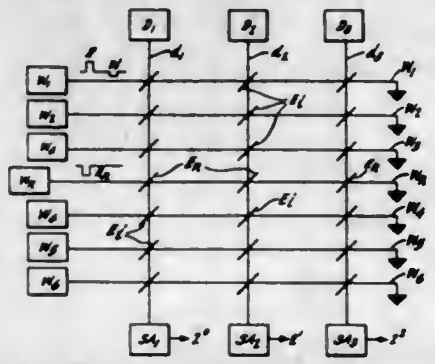
John G. Valassis, Chicago, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Nov. 23, 1962, Ser. No. 239,555
5 Claims. (Cl. 340—174)

1. An electrically alterable magnetic memory comprising elongated bistable magnetic storage means including a non-magnetic conductor and including a magnetic conductor helically disposed about said non-magnetic conductor and having a substantially rectangular hysteresis characteristic, and also comprising electrical conductor means extending adjacent and perpendicular to said storage means, a data bit location along said storage means substantially defined by the width of said electrical conductor means, first and second pulse sources, the pulses of said second source being short with respect to the pulses of said first source, and control means for coincidently applying a pulse from said first source and a series of pulses from said second source to said non-magnetic conductor and to said electrical conductor means respectively, to establish for each coincidence of said short second-source pulses with one of said first-source pulses a pair of orthogonal magnetic fields at segments of said magnetic storage device that are adjacent to and lie beyond the ends of said data bit location so that the magnetic states of said segments are progressively reversed in a direction outwardly of said data bit location for each occurrence of a second-source pulse thereby to increase the effective storage length of said data bit location..



3,308,448
MAGNETIC MEMORY MATRIX HAVING NOISE CANCELLATION WORD CONDUCTOR

Rabah Shahbender, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 19, 1964, Ser. No. 353,134
6 Claims. (Cl. 340—174)



1. A magnetic memory comprising

a plurality of information word conductors and a noise cancellation word conductor,

a plurality of digit-sense conductors crossing said word conductors,

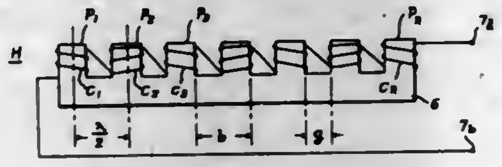
magnetic memory elements at crossovers of said word and digit-sense conductors,

means to apply a write pulse to any selected one of said information word conductors concurrently with the application of digit pulses to any selected ones of said digit-sense conductors, and

means to apply a read pulse to any selected one of said information word conductors concurrently with the application of a read pulse to said noise cancellation word conductor to induce on each digit-sense conductor a signal due to flux switching in a memory element along the noise cancellation conductor which substantially cancels a signal due to undesired flux switching in a memory element along an information word conductor.

3,308,449
MULTI-GAP MAGNETIC HEAD

Saburo Uemura, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Nov. 13, 1962, Ser. No. 237,202
Claims priority, application Japan, Nov. 15, 1961, 36/41,547
31 Claims. (Cl. 340—174.1)



1. A transducer system comprising

(a) a record medium having a signal track extending in a longitudinal direction therealong and having a periodically recurring signal recorded along said track of recorded wavelength λ,

(b) transducer head means coupled to said signal track for scanning of said recorded signal and comprising a series of poles successively spaced along said signal track and defining a series of gaps for coupling of the head means to a series of longitudinally spaced regions of said signal track simultaneously, said gaps having a spacing therebetween equal to $m\lambda/2$ where m is an integer,

(c) means coupled to said transducer head means and simultaneously responsive to the signal fluxes from the record medium at each of said gaps for producing an electric output in accordance with the signal fluxes from the regions of said signal track instantaneously coupled to said head means.

3,308,450
MAGNETIC TRANSDUCER HEAD ASSEMBLY WITH SPRING BIASING HEAD ASSEMBLY AWAY FROM DRUM

Joseph J. Bourdon, Birmingham, Alex Nameth, Dearborn, Donn F. Moore, Detroit, Merton L. Ripley, Milford, John Stencel, Jr., Bloomfield Hills, and Lloyd S. Quick, Pontiac, Mich., assignors to Ex-Cell-O Corporation, Detroit, Mich.
Filed Sept. 30, 1963, Ser. No. 312,583
10 Claims. (Cl. 340—174.1)

1. Apparatus for resiliently supporting at least one electromagnetic transducer head a predetermined distance away from a moving magnetizable record surface by utilizing the fluid bearing produced by the gas or air set in motion by the movement of said record surface, said apparatus comprising in combination:

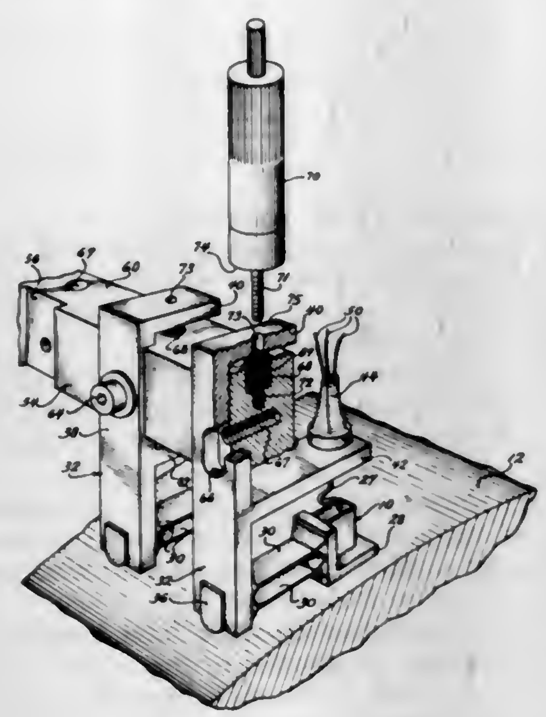
said electromagnetic transducer head enclosed in a magnetic shield and having a magnetic gap disposed so as to confront the record surface with the axis of said magnetic gap substantially orthogonal to said record surface;

a molded shoe member having a bearing surface adapted to be supported by the fluid bearing, said shoe member at least partly encasing the electromagnetic transducer head with the ends of the pole pieces defining its magnetic gap disposed substantially flush with said bearing surface;

a pair of parallel flat resilient reed members disposed in spatial relationship one above the other along planes normally substantially perpendicular to the axis of the electromagnetic transducer head magnetic gap, each of said members having one end imbedded in the molded shoe member;

a fixed mounting bar provided with mounting cut-out slots disposed on one side thereof;

a generally F-shaped mounting bracket supporting the other end of the flat resilient reed members, said mounting bracket having a body portion adapted to be snugly disposed in one of the mounting slots of the fixed mounting bar so as to be adjustable by sliding only in a direction parallel to the axis of the electromagnetic transducer head magnetic gap and a flange portion disposed at right angle to the body portion so as to confront the side of the mounting bar farthest away from the record surface;



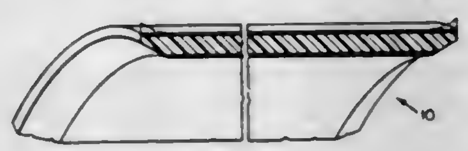
a mounting screw passing through an elongated hole in the mounting bracket and engaging a threaded hole in the mounting bar for clamping of said bracket upon said bar; and

a coil spring disposed between the mounting bar and the flange portion of the mounting bracket for urging said mounting bracket and consequently the bearing surface of the shoe member in a direction away from the record surface in the event that the mounting screw becomes loose.

3,308,451
WEB RECORD MEMBERS

Charles L. Blackley, Los Gatos, and Herbert E. Thompson, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 19, 1963, Ser. No. 331,774
14 Claims. (Cl. 340—174.1)

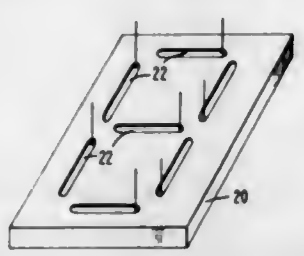


1. An improved record member for a random access memory, said member comprising a web having a substrate and a recording layer disposed on and adhering to one surface of said substrate, said substrate having a relieved profile of diminishing cross-sectional area on the surface opposite that carrying said record coating in the side edges, whereby the volume of said substrate in that area is reduced sufficiently to reduce compressive stress in said substrate and substantially eliminate anticlastic curvature of said web during movement of the web in a selected curvilinear path.

3,308,452
HIGH SPEED ELECTRO-OPTICAL SEMICONDUCTOR DISPLAY APPARATUS

Alwin E. Michel, Yorktown Heights, and Edward J. Walker, Ossining, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 24, 1962, Ser. No. 246,826
6 Claims. (Cl. 340—324)



1. An electro-optical display device comprising a body of semiconductor material

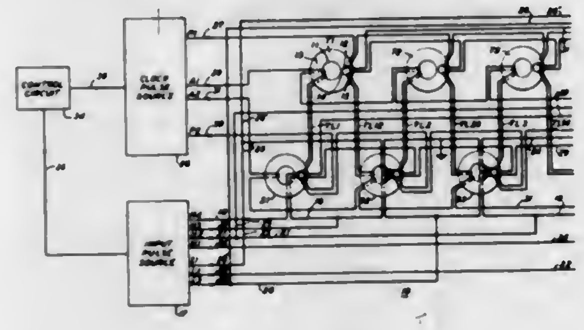
(a) having at least one substantial planar surface and
(b) having at least one light emissive "p–n" junction therein, said junction being shaped in a form capable of alpha-numeric representation and

means for viewing said planar surface in a direction substantially perpendicular thereto to enable detection of shaped forms when the junction is energized.

3,308,453
ELECTRICAL PULSE GENERATOR

Umberto F. Gianola, Florham Park, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 24, 1963, Ser. No. 333,137
5 Claims. (Cl. 340—347)

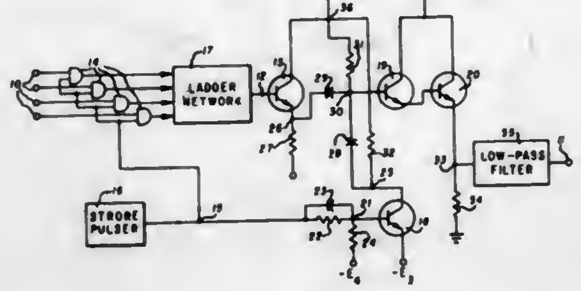


1. An electrical circuit comprising a plurality of first elements, a second element, and a third element, said elements being arranged consecutively and each having a clear and an information state, a first input circuit means coupled to said first elements for selectively setting $n/2$ of said first elements to said information state in response to a coded signal corresponding to an even number n of a number sequence, a second input circuit means coupled to said first elements and said second element for selectively setting $n/2$ of said first elements and said second element to said information state in response to a coded signal corresponding to an odd number $n+1$ unequal to a selected one of the remaining numbers of said number sequence, a third input circuit means coupled to said first elements and said third element for selectively setting $n/2$ of said first elements and said third element to said information state in response to a coded signal corresponding to an odd number $n+1$ equal to the one remaining number of said number sequence, and a signal means connected to each of said input circuit means for applying coded signals thereto.

3,308,454
SYNCHRONOUS DIGITAL TO ANALOG CONVERTER

Stanley Eugene Lehnhardt, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 27, 1964, Ser. No. 355,508
1 Claim. (Cl. 340—347)

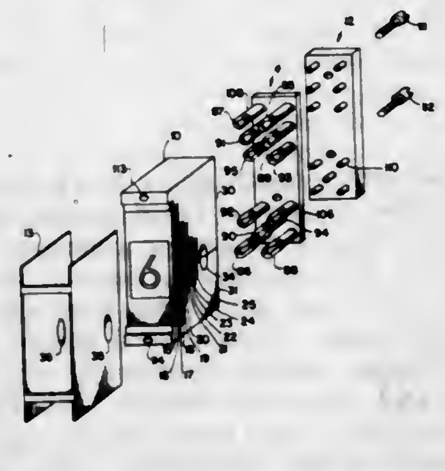


A digital-to-analog converter responsive to electrical signals including analog sample pulses comprising, a source of other pulses coincident with said analog sample pulses, switch means responsive to be closed by said other pulses, first and second sources of fixed potential, a capacitor connected by one terminal through said switch means to said first source of fixed potential, a diode connected from an input terminal of said electrical signals to the other terminal of said capacitor, and a resistance path connected between the terminals of said capacitor and having said second source of potential connected in said path, whereby said diode is rendered conductive only when one of said analog pulses and one of said other pulses in synchronous timed relation therewith are present.

3,308,455
READOUT DEVICE

Carl L. Isborn, San Pablo, and Elbert L. Warren, Richmond, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed Jan. 15, 1965, Ser. No. 425,805
11 Claims. (Cl. 340—380)



1. A multi-symbol visual indicator comprising member means for supporting a plurality of stacked plates of transparent material for internally reflecting light within said plates, each plate having a symbol thereon, an individual source of light located adjacent an edge thereof, said plates being superimposed one behind the other thereby substantially superimposing said symbols such that as each symbol is illuminated it may be observed from substantially the same area at the front of said indicator, the improvement comprising

each of said plates being substantially flat and including a viewable portion upon which a symbol is located, and each having a tab portion extending from the edge thereof beyond the plates superimposed behind it,

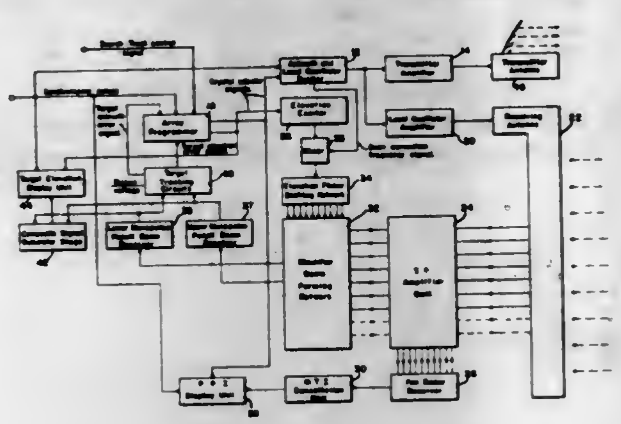
said member means having a plurality of slots for receiving the respective tab portions of said plates and maintaining said plates in a stacked relationship, and

said member means having a plurality of cavities extending nominally at right angles to the planes of the plates, each of the cavities being at a depth sufficient to communicate with a single respective tab portion, said cavities serving to receive the individual sources of light.

3,308,456
ELECTRONIC SCANNING RADAR SYSTEM

Berl D. Levenson, Los Angeles, and William R. Welty, Fullerton, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Jan. 3, 1958, Ser. No. 707,068
14 Claims. (Cl. 343—5)



1. An electronic scanning radar system including apparatus for producing a synthesized fan-shaped receiving beam, said apparatus comprising a linear array of elements; a mixer corresponding to each one of said elements of said linear array, each of said mixers having first and second input circuits and an output circuit, said first input circuit of each mixer being coupled to its corresponding element; means interconnected between the output circuits of each two mixers which mixers correspond to adjacent pairs of elements of said linear array for introducing a predetermined phase delay in a signal propagated therebetween; delay line means having periodically spaced points therealong, successive ones of which correspond to successive elements of said linear array; means coupling the second input circuit of each of said mixers to said delay line means at the spaced point therealong corresponding thereto; and means for energizing said delay line means at a selected point therealong with electromagnetic energy of a predetermined frequency whereby the signal appearing on the output circuit of the mixer associated with the element which corresponds to said selected point along said delay line means constitutes the output signal from said apparatus.

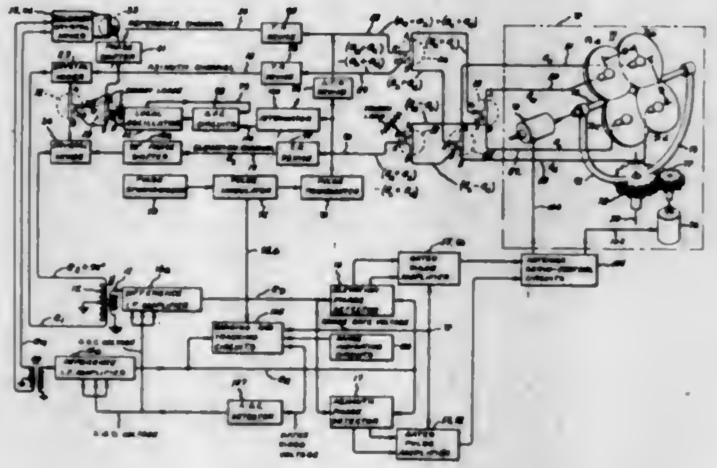
3,308,457
RADAR TRACKING AMPLIFYING SYSTEM

Oliver H. Winn, Camillus, N.Y., assignor to General Electric Company, a corporation of New York

Filed July 23, 1951, Ser. No. 238,112
7 Claims. (Cl. 343—7.4)

6. In a monopulse radar tracking system comprising an antenna array having an axis of directivity capable of being oriented in azimuth and elevation with respect to a remote reflecting object, means for radiating high-frequency pulses toward said object, means for deriving from

each echo pulse received at said array a high-frequency reference pulse voltage and a pair of high-frequency signal pulse voltages whose relative amplitudes and phases with respect to said reference voltage are functions of the azimuth and elevation angles of said object with respect to said axis, means for shifting the phase of one of said signal voltages by ninety electrical degrees, means for algebraically combining said other signal voltage with said shifted voltage to produce a resultant alternating voltage, a pair of phase-stable amplifiers for separately amplifying said reference voltage and said resultant voltage, a pair of phase detectors for separately detecting the in-phase and quadrature-phase components of said amplified resultant voltage with respect to said amplified reference voltage and for producing two unidirectional control potentials respectively proportional thereto, and servo-mechanisms controlled by said control potentials for moving said antenna in azimuth and in elevation in directions tending to reduce said potentials to zero, thereby automatically to orient said axis toward said object.



7. An arrangement for simultaneously processing a first and second signal having a predetermined phase and amplitude relationship with respect to a third signal, comprising means for displacing the relative phases of one of said first and second signals with respect to said third signals, by an integral odd multiple of 90 degrees, means for simultaneously amplifying said first and second signals in a common amplifying channel, means for separating said first and second amplified signals comprising a phase detector responsive to the in-phase component of said first and third signals, a phase detector responsive to the quadrature phase components of said first and third signals, and means for utilizing said output signals.

3,308,458
METHOD OF ELIMINATING THE SUSCEPTIBILITY TO INTERFERENCE OF RADAR DEVICES

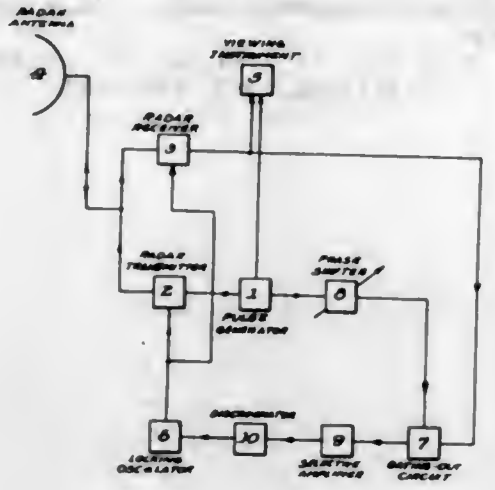
Ernst Schulze, Koblenz, Germany, assignor to Siemens & Halske Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed May 16, 1955, Ser. No. 509,041

Claims priority, application Germany, May 18, 1954, Sch 15,360

2 Claims. (Cl. 343—8)

1. Radar apparatus for observing air-borne targets comprising a transmitter for transmitting impulses, a locking oscillator for impressing upon transmitted pulses a frequency to secure coherence of the transmitted pulses, a receiver for receiving oscillations reflected from a selected target, said reflected oscillations being affected by the Doppler effect of said impressed pulses, means in said receiver for filtering from said received oscillations the Doppler frequency, means for automatically regulating said locking oscillator so as to obtain from said received oscillations a fixed Doppler frequency regardless of alterations in the flight speed of said selected target, and means for evaluating the frequency difference between transmitted and received oscillations.



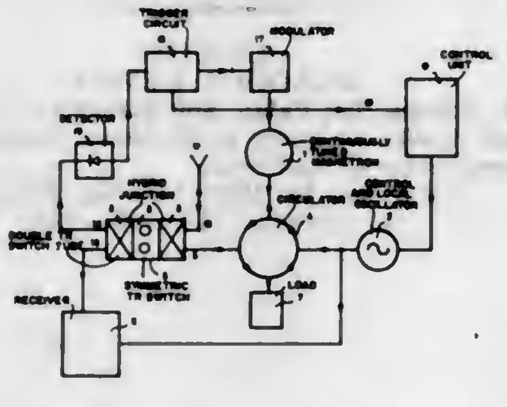
3,308,459
DEVICE FOR TRANSMITTING HIGH FREQUENCY PULSES, PREFERABLY ADAPTED FOR A RADAR EQUIPMENT

Nils Rune Carlsson, Bandhagen, and Jan Malmros, Farsta, Sweden, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 9, 1963, Ser. No. 271,654

Claims priority, application Sweden, Apr. 11, 1962, 4,060/62

13 Claims. (Cl. 343—13)



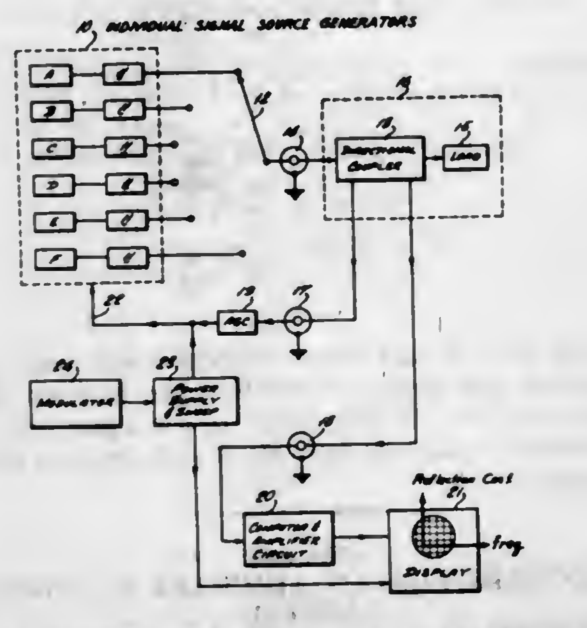
1. A radar system comprising a source of first high frequency oscillations having tuned oscillation frequency determining means, a modulator connected to energize said source of first oscillations, the said source of first oscillations comprising means for continuously varying the tuning frequency of said tuned means, a source of second oscillations, means connected to compare the frequency of said second oscillations with the unexcited resonant frequency of said tuned means to derive a signal when a predetermined relationship exists between said unexcited resonant frequency and the frequency of said second oscillations, means for applying said signal to said modulator to momentarily energize said source of first oscillations, means for transmitting said first oscillations, means for receiving said first oscillations reflected from a target and for mixing said reflected oscillations with said second oscillations, means responsive to said signal for holding the frequency of said second oscillations substantially constant for a predetermined time subsequent the occurrence of said signal and for continuously varying the frequency of said second oscillator at a rate faster than the variation of tuning frequency of said tuned means between the termination of said predetermined time and the next occurrence of said signal.

3,308,460
MEASURING REFLECTION CHARACTERISTICS OF R.F. COMPONENTS

Thomas H. O'Brien, Brooklyn, N.Y., assignor to PRD Electronics, Inc., Westbury, N.Y., a corporation of New York

Filed June 27, 1963, Ser. No. 292,198

2 Claims. (Cl. 343—17.7)



1. Apparatus for automatically measuring and displaying the reflection characteristics of an RF component under test comprising: a signal source of RF energy having an output, a switch coupled to the output of said signal source for selecting various frequency bands for test measurement of said component, a high directivity reflectometer directional coupler, said reflectometer being portable for positioning same adjacent the RF component under test, coaxial line means coupling the output of the selector switch to the input of the reflectometer, said reflectometer providing two individual output signals, one signal being proportional to incident power fed to said reflectometer from said source and the second signal being proportional to reflected power fed to said reflectometer by said component under test, automatic gain control means for sensing said incident power signal from said reflectometer for regulating said signal source to maintain said signal source at a given power level, means for sensing said reflected power signal from said reflectometer, a calibrated display oscilloscope responsive to said last-mentioned means wherein the output of said last-mentioned means being applied to one pair of plates of said oscilloscope, saw-tooth generating means for sweeping said signal source over the individual frequencies of its operative frequency band, said saw-tooth sweep also being applied to the other pair of plates of said display oscilloscope, wherein the display on said oscilloscope is a synchronized display of the reflection characteristic of the component under test against frequency.

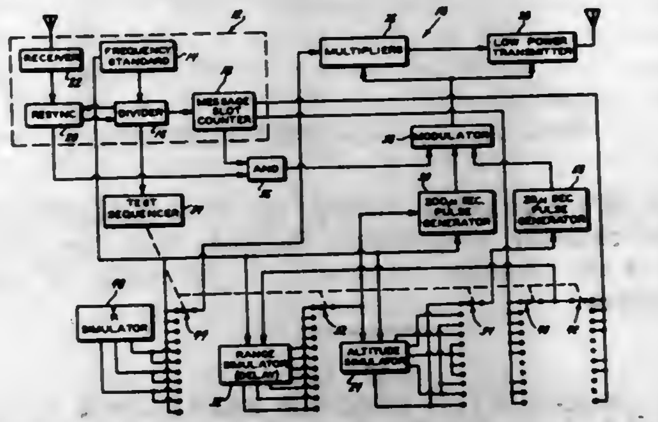
3,308,461
TEST MEANS FOR ANTI-COLLISION EQUIPMENT AND THE LIKE

Wilbur H. Von Fange, Kirkwood, Mo., assignor to McDonnell Aircraft Corporation, St. Louis, Mo., a corporation of Maryland

Filed Feb. 1, 1965, Ser. No. 429,478

14 Claims. (Cl. 343—17.7)

1. Means for producing simulated signals corresponding to preselected conditions comprising means for producing and transmitting signals having predetermined frequency, means for modulating said signals to correspond to predetermined conditions, means for controlling the transmission of the modulated signals at preselected times and for changing the modulation of the transmitted signals to produce a preselected pattern of transmitted simulated conditions.

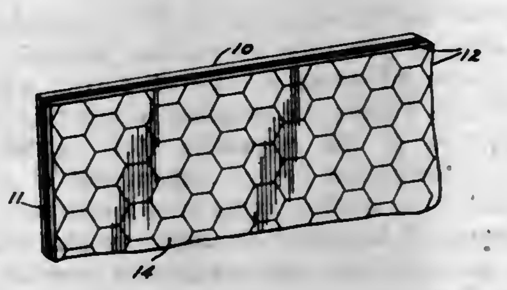


3,308,462
MAGNETIC LAMINATE

Jeremy V. Gluck, Ann Arbor, Mich., assignor to Conductron Corporation, Ann Arbor, Mich., a corporation of Delaware

Filed Oct. 2, 1962, Ser. No. 227,908

10 Claims. (Cl. 343—18)



1. A laminate article of manufacture to facilitate the use of the radiation absorbing properties of ferrite tiles which comprises:

(a) a reticulated sheet of flexible backing material,

(b) a layer of closely arrayed ferrite tiles on said backing material formed of a sintered mixture of powdered material shaped in flat polygons, and

(c) an embedding plastic material impregnated into said reticulated sheet and enveloping and surrounding said tiles, said plastic material being cured to a flexible stable condition.

3,308,463
ANECHOIC CHAMBER

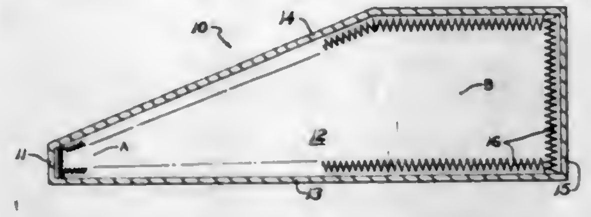
William H. Emerson, Huntington, Conn., assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed Aug. 4, 1964, Ser. No. 387,366

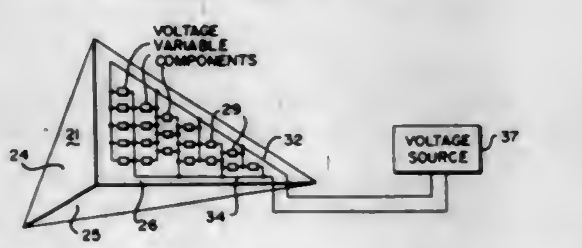
6 Claims. (Cl. 343—18)

1. An anechoic chamber for providing an environment simulating that of outer space in which electronic devices can be evaluated and studied, said chamber comprising a back wall toward which microwave energy is directed from the front of the chamber during the evaluation and study of electronic devices in said chamber, a front wall and longitudinally disposed walls connecting said front wall with said back wall and comprised of a ceiling, a floor and opposed side walls, the interior wall surfaces of said chamber being lined with microwave energy absorbing material for absorbing microwave energy impinged thereagainst, said ceiling of said cham-

ber diverging from the floor of the chamber at a constant rate beginning at the front wall of the chamber and extending rearwardly a preponderance of the longitudinal length of the chamber whereby the cross-sectional area of the chamber progressively increases from the front wall of the chamber rearwardly in the region of said divergence.



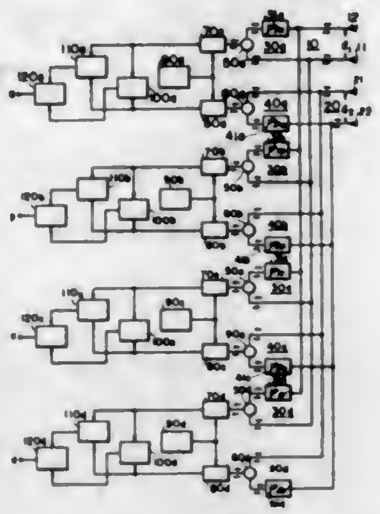
3,308,464
MODULATED CORNER REFLECTOR
Bernard L. Lewis, Satellite Beach, Fla., assignor to Radiation Incorporated, Melbourne, Fla., a corporation of Florida
Filed Mar. 31, 1966, Ser. No. 539,078
8 Claims. (Cl. 343—18)



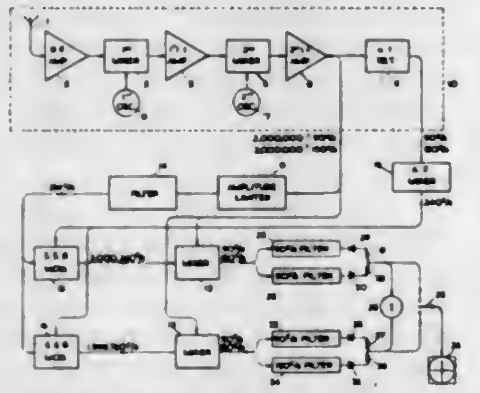
7. A modulatable relay system for a communications system having a plurality of stations adapted to transmit and receive information via R–F carrier waves, each of said stations having an assigned sub-carrier frequency for modulation of the respective R–F carrier and on which the information to be transmitted is to be impressed, said relay system comprising a receiver; a broadband antenna for feeding R–F carrier waves transmitted by one or more of said stations to said receiver, said receiver including means for detecting said sub-carrier from the R–F carrier wave applied thereto; an array of retrodirective corner reflectors arranged to be illuminated by the R–F carrier waves transmitted by said plurality of stations and for reflecting the respective R–F carrier wave back to the transmitting station, each of said corner reflectors comprising a polyhedron composed of dielectric material having a preselected dielectric constant greater than that of air, each polyhedron having a plurality of intersecting faces forming the corner from which incident R–F waves are to be reflected, and means disposed on at least one of said intersecting faces of each of said polyhedrons for varying the R–F reflection coefficient of the respective face in response to the application of electrical signal thereto; and means for applying sub-carrier detected by said receiver to said means for varying reflection coefficient, whereby to modulate R–F carrier waves reflected by said array of corner reflectors with the applied sub-carrier and, thereby, with any information impressed on the last-named sub-carrier.

3,308,465
ANTENNA SYSTEM
Tetsuo Tamama, Amagasaki, Hyogo Prefecture, Japan, assignor to Mitsubishi Denki Kabushiki-Kaisha, Tokyo, Japan
Filed May 27, 1963, Ser. No. 283,287
Claims priority, application Japan, May 28, 1962, 37/21,910
8 Claims. (Cl. 343—100)

1. An antenna system comprising two or more radiator arrays disposed in parallel with a single plane and each having inter-element spacings much larger than one-half of the employed wavelength and multi-lobe array directivity of different angular spacing of lobes; means independently to displace angularly the directivity of each of said arrays by introducing suitable amounts of inter-element phase differences in a manner that one and only one lobe from each of said arrays coincides with each other in direction; and means to combine the received signal outputs from each of said arrays in a manner that only such signal as is received from all of said arrays is yielded as its output.



3,308,466
RECEIVERS FOR AN AIRCRAFT LANDING SYSTEM
John Benjamin, Farnborough, England, assignor to the Minister of Aviation in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Sept. 1, 1964, Ser. No. 393,588
Claims priority, application Great Britain, Sept. 13, 1963, 36,164/63; Sept. 23, 1963, 37,237/63
19 Claims. (Cl. 343—108)



1. A receiver for use in an aircraft landing system of the type which yields two double sideband guidance signals the relative amplitudes of which are intended to be a measure of the position of a receiver relative to a preferred approach path, and comprising:

a superheterodyne radio receiver for receiving an ILS guidance signal;

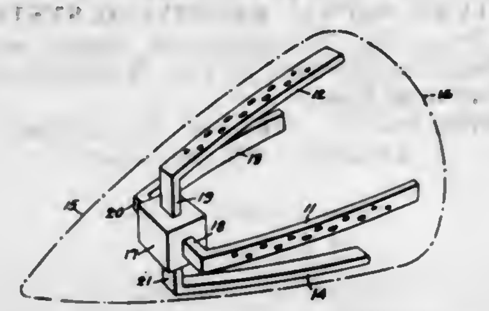
resolving means connected to the superheterodyne radio receiver for deriving two upper sideband signals of amplitudes respectively related to the amplitudes of the two upper sideband components of two double sideband guidance signals and for deriving two lower sideband signals of amplitudes respectively related to the amplitudes of the two lower sideband components of the two double sideband guidance signals;

first measuring means connected to the resolving means for deriving from the said two upper sideband signals a first difference signal indicating the difference in the amplitudes of the said two upper sideband components of the two double sideband guidance signals;

second measuring means connected to the resolving means for deriving from the said two lower sideband signals a second difference signal indicating the difference in the amplitudes of the said two lower sideband components of the two double sideband guidance signals; and

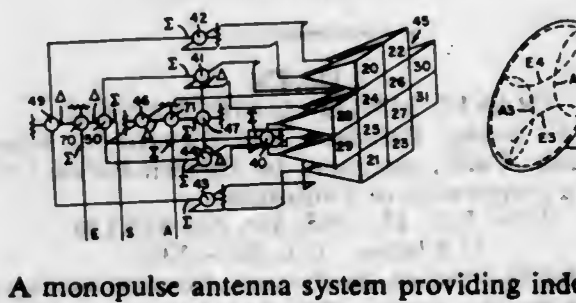
indicating means connected to the first measuring means and to the second measuring means, for indicating a discrepancy between the first difference signal and the second difference signal.

3,308,467
WAVEGUIDE ANTENNA WITH NON-RESONANT SLOTS
Robert F. Morrison, Jr., Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 28, 1951, Ser. No. 218,059
1 Claim. (Cl. 343—705)



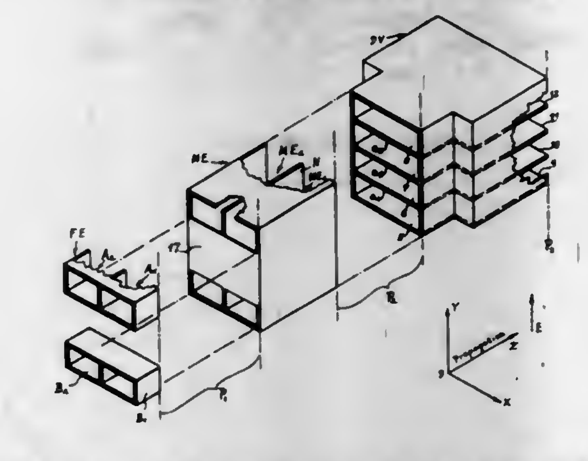
In an explosive missile having an aerodynamic surface, a microwave antenna array conforming to said aerodynamic surface and producing an omnidirectional radiation pattern in azimuth about the longitudinal axis of said missile and inclined in elevation as desired in respect to the direction of flight of said missile, said array comprising a multiple of waveguide radiators fixed in spaced relationship in the peripheral surface of the nose of said missile, microwave generating means fixed within the said nose, each of said waveguide radiators connected to said generating means by waveguide feeders, each of said waveguide radiators having formed in one wall thereof two rows of microwave radiating means in staggered relation to each other and equidistantly spaced from the longitudinal axis of said wall, said microwave radiating means comprising resonant slots in said wall intermediate the end of said guide and progressively non-resonant slots on each side of said resonant slots towards the ends of said guide to form a microwave radiation beam having its major lobe intermediate said ends, the said beam of each waveguide contributing to form said omnidirectional radiation pattern.

3,308,468
MONOPULSE ANTENNA SYSTEM PROVIDING INDEPENDENT CONTROL IN A PLURALITY OF MODES OF OPERATION
Peter W. Hannan, Northport, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois
Filed May 22, 1961, Ser. No. 111,542
3 Claims. (Cl. 343—777)



1. A monopulse antenna system providing independent control in a sum and two difference modes of operation comprising: a central group of four antennas arranged to simultaneously form upper and lower pairs of antennas and left and right pairs of antennas; an outer group of antennas including antennas above, below, right, and left of said four central antennas; a first group of hybrid junctions combining signals from the four central antennas to form a final sum mode signal, a preliminary elevation difference mode signal, and a preliminary azimuth difference mode signal; a second group of hybrid junctions combining signals from the upper and lower outer antennas with said preliminary elevation difference mode signal to form a final elevation difference mode signal; and a third group of hybrid junctions combining signals from the right and left outer antennas with said preliminary azimuth difference mode signal to form a final azimuth difference mode signal.

3,308,469
MULTI-MODE ANTENNA SYSTEM
Serge V. Drabowitch, Chatenay-Malabry, Seine, France, assignor to Compagnie Francaise Thomson-Houston, Paris, France, a corporation of France
Filed Oct. 14, 1963, Ser. No. 315,949
Claims priority, application France, Oct. 19, 1962, 912,799, Patent 82,483
7 Claims. (Cl. 343—778)

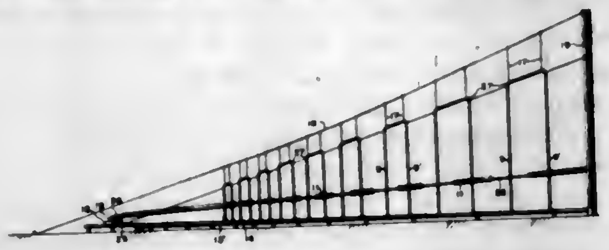


7. An antenna system comprising waveguide means having an output end defining radiating aperture means, a plurality of exciters connected with an input end of said waveguide means for feeding thereto input wave energy of separately selectable mode, phase and amplitude characteristics for propagation to said radiating aperture means, said waveguide means being dimensioned for simultaneous propagation of different modes of radiation from said exciters to said aperture means, wave-absorption means within said waveguide means positioned and arranged for receiving and absorbing stray energy fed back into the waveguide means from said radiating aperture means, and a plurality of parallel propagation channels at said output end having inputs longitudinally spaced from and respectively confronting said exciters and said wave-absorption means.

3,308,470
TAPERED LADDER LOG PERIODIC ANTENNA
Ross Leon Bell, Dallas, Tex., assignor to Granger Associates, Palo Alto, Calif., a corporation of California
Original application Jan. 27, 1961, Ser. No. 85,233, now Patent No. 3,134,979, dated May 26, 1964. Divided and this application Apr. 2, 1964, Ser. No. 356,751
4 Claims. (Cl. 343—792.5)

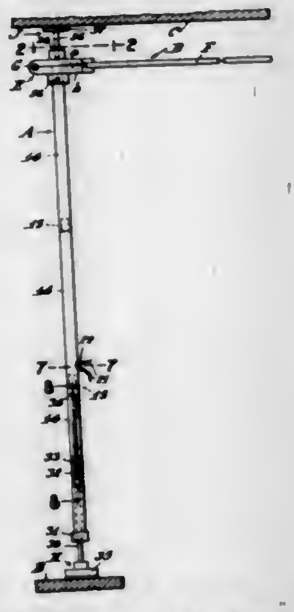
1. A broadband antenna comprising an antenna structure extending outwardly and upwardly from a vertex and having a plurality of mutually spaced, vertically disposed similar folded monopole radiators, each such radiator consisting of a pair of spaced parallel antenna wires with a connecting loop portion at their upper ends, said radiating antenna wires having their lower ends grounded, the said radiators being successively arranged in a plane such that the physical dimensions of the radiators and their spacings increase uniformly and proportionally with increase in

distance from the vertex, a feed line, capacity coupling members interconnecting one antenna wire only of each of said folded radiators to one side of said feed line, the other side of said feed line being grounded such that, in use, alternating currents flow from said one side of said feed line through said coupling members around said folded radiators, and through ground to the other side of said line, whereby in operation a ground image of said antenna is established so that the output of the same is similar to that of a symmetrical folded dipole array.



3,308,471
INDOOR AERIAL MOUNTED ON FLOOR-TO-CEILING STANDARD

David C. Weston, 3003 W. 48th St.,
Los Angeles, Calif. 90043
Filed Mar. 18, 1963, Ser. No. 265,883
3 Claims. (Cl. 343—882)

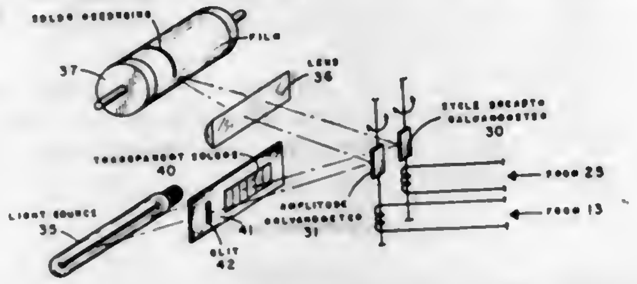


1. In an indoor aerial, a hollow standard having an open upper end, a header fixed on said upper end, an overhead bearing element on said header adapted to abut an overhead support in axial alignment with said standard, said header and bearing element being pivotally interconnected for rotary movement of the header relative to said bearing element, antenna elements carried on said header, transmission lines extending longitudinally of said standard interiorly thereof and means within said header conductively interconnecting said transmission lines to said antenna elements.

3,308,472
METHOD OF RECORDING SEISMIC DATA

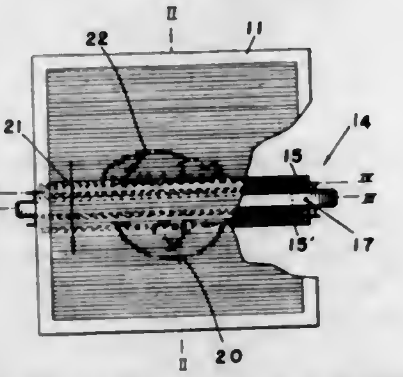
Charles W. Bogs, Houston, Tex., and Robert F. Gregory, Denver, Colo., assignors to Esso Production Research Company
Original application Dec. 16, 1963, Ser. No. 331,027, now Patent No. 3,241,150, dated Mar. 15, 1966. Divided and this application June 1, 1965, Ser. No. 473,260
2 Claims. (Cl. 346—1)

2. A method for recording seismic signals as photographic traces comprising projecting onto a light-sensitive medium, light in colors which vary in response to variations in the cycle breadth of seismic signals and simultaneously overlaying said color image with white light by projecting white light onto said light-sensitive medium which white light decreases in intensity in response to increases in amplitude of the seismic signals whereby the area occupied by said color is increased and decreased in response to variations in amplitude of said seismic signals.



3,308,473
PICTURE SIGNAL RECEIVING SYSTEM

Norikazu Sawazaki, Yokohama-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Mar. 21, 1963, Ser. No. 266,861
2 Claims. (Cl. 346—74)



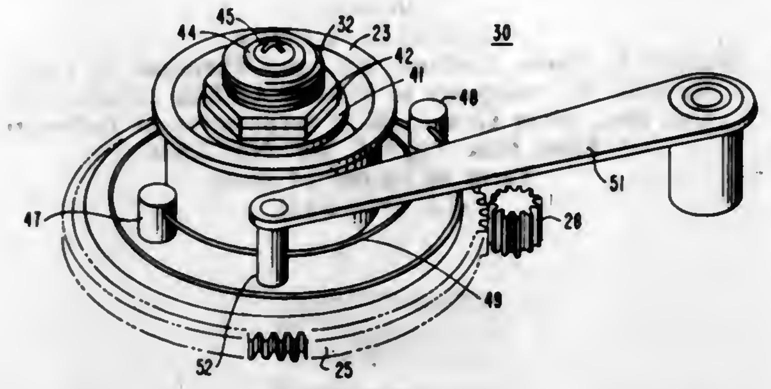
1. A picture signal receiving device comprising
(a) a transparent picture receiving plate including a transparent base plate,
and an insulating layer attached thereto,
(b) a charger mounted for relative movement in a plane parallel to said transparent picture receiving plate including
an endless belt mounted in a plane of rotation perpendicular to said base plate,
at least two recording needle electrodes mounted on said endless belt and positioned so as to make electrical contact with the surface of said receiving plate,
means to apply picture signal voltages to said needle electrodes for producing an electrostatic latent image on said receiving plate in accordance with said picture signal voltages,
a pair of magnetic brushes disposed on opposite sides of said charger and rotatively journalled in a box,
one of said pair of magnetic brushes positioned to erase prior existing developed powder,
and developing powder positioned for pickup by the other of said pair of magnetic brushes whereby said latent electrostatic image is developed.

3,308,474
TRAVEL LIMITING MECHANISM

Edward E. Austin, Pasadena, and Richard M. Kemplin, Altadena, Calif., assignors to Hewlett-Packard Company, a corporation of California
Filed Feb. 25, 1965, Ser. No. 435,136
11 Claims. (Cl. 346—139)

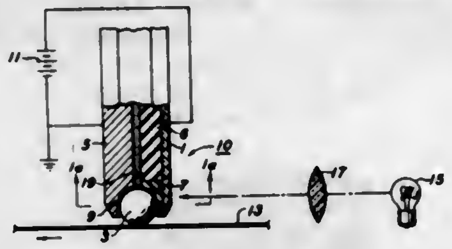
1. A travel limiting mechanism for a strip chart recorder or the like comprising a first driven rotating member, a second rotating member mechanically coupled to said first member to rotate therewith, a guide mechanism

comprising a pair of guide stops affixed to the second rotating member and a spiral guide mounted between the stops, a guide follower constrained to move in only a radial direction relative to said first and second rotating members, said guide follower engaging said spiral guide, and means for driving the first rotating member, whereby continued rotation of the second rotating member is arrested by contact between a guide stop and the guide follower.



3,308,475
ELECTROVISCOUSLY CONTROLLED RECORDER

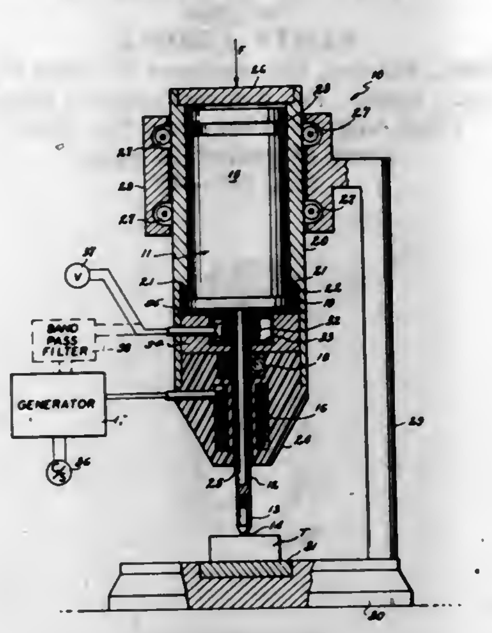
Lloyd F. Bean, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 21, 1964, Ser. No. 419,701
14 Claims. (Cl. 346—140)



1. An electroviscously controlled recording instrument comprising: liquid containing means for electroviscous liquid having an opening at one end thereof from which said liquid may flow, said opening being defined by surfaces formed for frictionally holding at least one rotatable writing body mounted therein; at least one pair of electrodes positioned at the formed surfaces; and, circuit means connected to said electrodes to establish an electric field across said opening, said circuit means including means to selectively control the establishment of said electric field.

3,308,476
RESONANT SENSING DEVICES

Claus Kleesattel, 9841 64th St.,
Forest Hills, N.Y. 11959
Filed Jan. 21, 1964, Ser. No. 339,176
15 Claims. (Cl. 73—67.1)

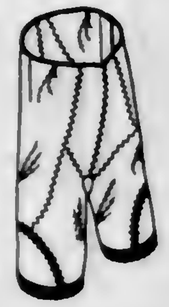


1. A resonant sensing device comprising an elongated metal rod having a tip at one end with a rounded contact surface adapted to engage a solid member so that the resonance frequency of said rod is dependent upon the compliance at the area of contact of said tip with the solid member, electrically energized means for longitudinally vibrating said rod at said resonance frequency of the latter, said rod having a length equal to $\lambda/4+(n-1)\lambda/2$, in which λ is the wavelength of the standing wave on the rod at the resonance frequency of the latter for infinite compliance at said tip and n is a whole integer, a body joined to the other end of said rod and having a mechanical impedance substantially greater than the mechanical impedance of said rod so that the resonance frequency of said rod is subject to relatively large changes in response to changes in said compliance at the area of contact of said tip and said body has small amplitudes of vibration therealong as compared with the amplitude of vibration at said tip, and means for applying an axial force to said rod at said other end in the direction toward said one end so that the compliance at the area of contact of the tip with the solid member is determined by the surface characteristics of said member and the magnitude of said force.

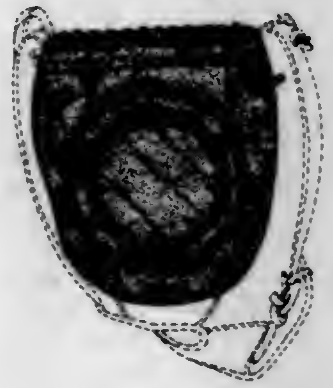
DESIGNS

MARCH 7, 1967

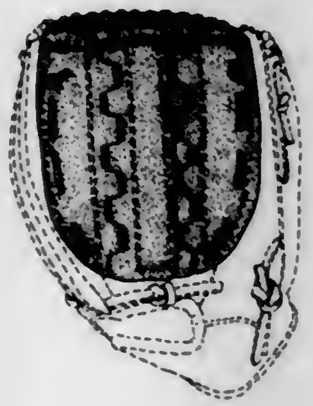
207,084
PANTY GIRDLE
Herbert Barg, Merion, Pa., assignor to True Form Foundation, Inc., Darby, Pa., a corporation of Pennsylvania
Filed Aug. 25, 1966, Ser. No. 3,592
Term of patent 14 years
(Cl. D2—4)



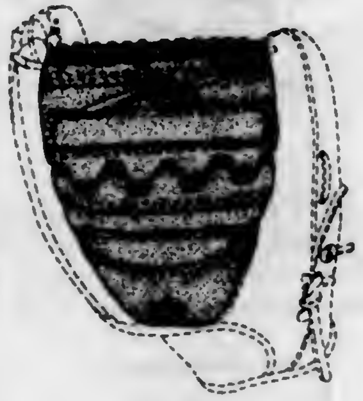
207,085
BASEBALL GLOVE
Richard E. Bates, Ashland, Ky., and Theodore E. Javor, Roselle, Ill., assignors to Wilson Athletic Goods Mfg. Co., Inc., River Grove, Ill., a corporation of Delaware
Filed June 3, 1966, Ser. No. 2,544
Term of patent 14 years
(Cl. D2—361)



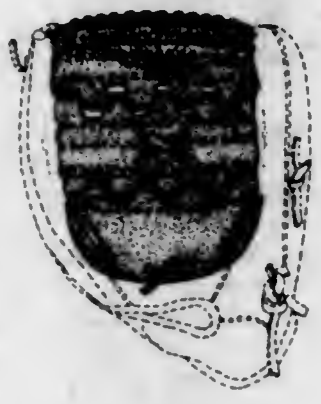
207,086
BASEBALL GLOVE
Richard E. Bates, Ashland, Ky., and Theodore E. Javor, Roselle, Ill., assignors to Wilson Athletic Goods Mfg. Co., Inc., River Grove, Ill., a corporation of Delaware
Filed June 3, 1966, Ser. No. 2,545
Term of patent 14 years
(Cl. D2—361)



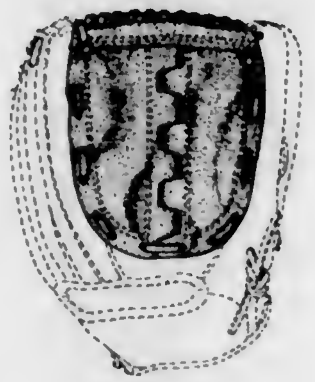
207,087
BASEBALL GLOVE
Richard E. Bates, Ashland, Ky., and Theodore E. Javor, Roselle, Ill., assignors to Wilson Athletic Goods Mfg. Co., Inc., River Grove, Ill., a corporation of Delaware
Filed June 3, 1966, Ser. No. 2,546
Term of patent 14 years
(Cl. D2—361)



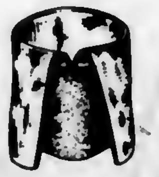
207,088
BASEBALL GLOVE
Richard E. Bates, Ashland, Ky., and Theodore E. Javor, Roselle, Ill., assignors to Wilson Athletic Goods Mfg. Co., Inc., River Grove, Ill., a corporation of Delaware
Filed June 3, 1966, Ser. No. 2,549
Term of patent 14 years
(Cl. D2—361)



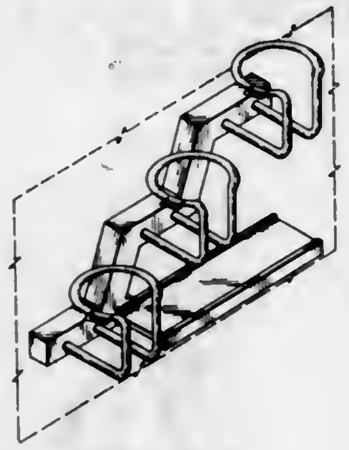
207,089
BASEBALL GLOVE
Richard E. Bates, Ashland, Ky., and Theodore E. Javor, Roselle, Ill., assignors to Wilson Athletic Goods Mfg. Co., Inc., River Grove, Ill., a corporation of Delaware
Filed June 3, 1966, Ser. No. 2,550
Term of patent 14 years
(Cl. D2—361)



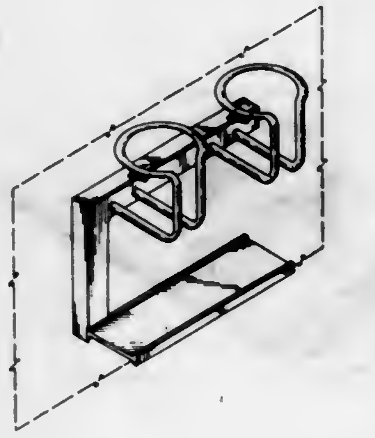
207,090
SHIRT CUFF
Robert V. Kay, 1246 S. 51st Court, Cicero, Ill. 60650
Original design application Nov. 12, 1964, Ser. No. 82,559. Divided and this application Apr. 1, 1965, Ser. No. 84,682
Term of patent 14 years
(Cl. D2—379)



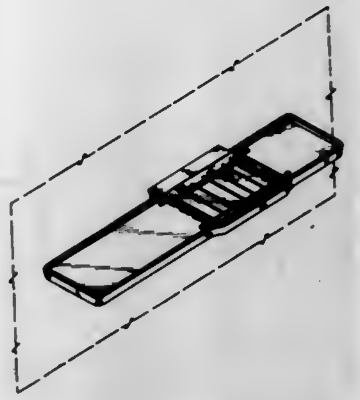
207,091
COMBINED DRINKING GLASS AND BRUSH HOLDER AND SHELF
Hans J. Kunz, 257 Village Lane, Grand Junction, Colo. 81501
Filed Aug. 5, 1966, Ser. No. 3,361
Term of patent 14 years
(Cl. D4—3)



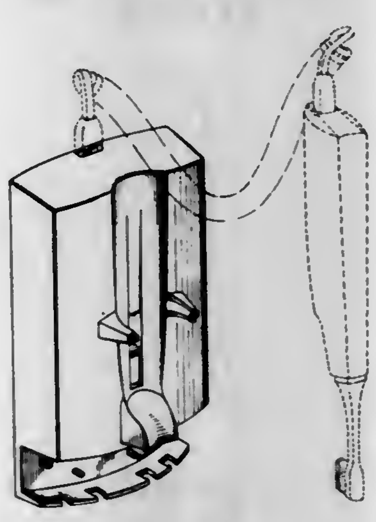
207,092
COMBINED DRINKING GLASS AND BRUSH HOLDER AND SHELF
Hans J. Kunz, 257 Village Lane, Grand Junction, Colo. 81501
Filed Aug. 5, 1966, Ser. No. 3,363
Term of patent 14 years
(Cl. D4—3)



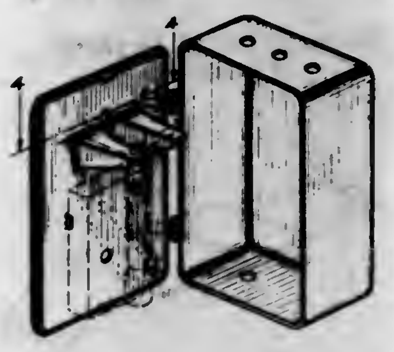
207,093
COMBINED SOAP DISH AND SHELF
Hans J. Kunz, 257 Village Lane, Grand Junction, Colo. 81501
Filed Aug. 5, 1966, Ser. No. 3,364
Term of patent 14 years
(Cl. D4—3)



207,094
COMBINED POWER PACK AND TOOTHBRUSH HOLDER
William J. Rakocy, Clifton, N.J., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Sept. 10, 1965, Ser. No. 86,945
Term of patent 14 years
(Cl. D4—3)

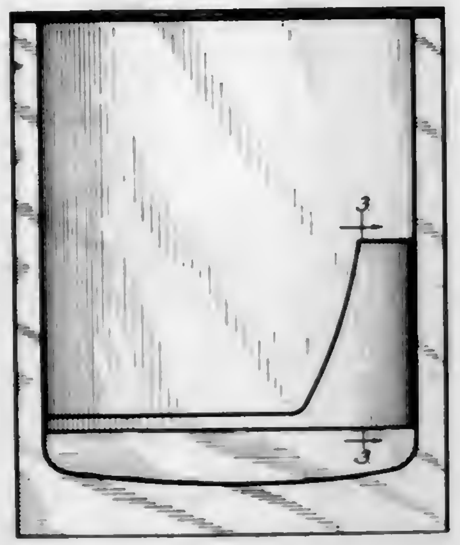


207,095
COMBINED MOUNTING CASE AND HOLDER FOR SAFETY RAZOR
Abram W. Smith, 1826 Virginia Road, Los Angeles, Calif. 90019
Filed Oct. 18, 1965, Ser. No. 87,559
Term of patent 14 years
(Cl. D4—3)



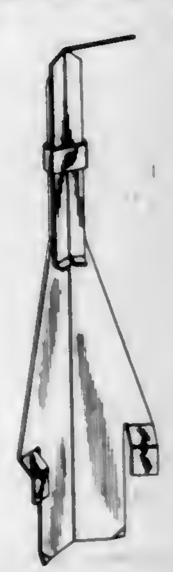
207,096
COMBINATION BATHTUB AND SHOWER STALL

James A. Osika, Urbana, Ill., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Apr. 11, 1966, Ser. No. 1,830
Term of patent 14 years
(Cl. D4—4)



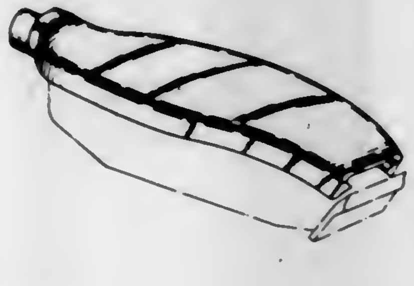
207,097
COMBINATION BRUSH HOLDER AND ATTACHMENT FOR A PAINT CAN

Gerhard F. Uhlig, 1206 Stratford Court,
Del Mar, Calif. 92014
Filed Feb. 25, 1966, Ser. No. 1,181
Term of patent 3½ years
(Cl. D9—2)



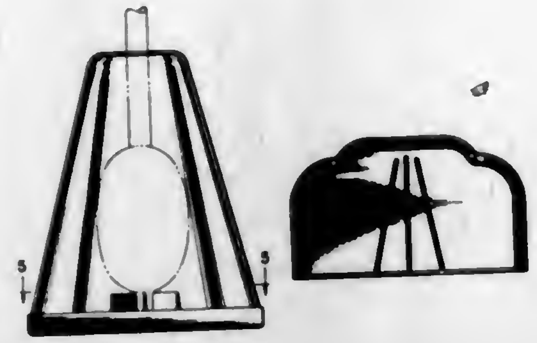
207,098
VACUUM CLEANER ATTACHMENT FOR A HAIR CLIPPER

Mathew Andis, Racine, Wis., assignor to Andis Clipper Co., Racine, Wis., a corporation of Wisconsin
Continuation of design application Ser. No. 87,168, Sept. 27, 1965. This application May 10, 1966, Ser. No. 2,244
Term of patent 14 years
(Cl. D9—2)



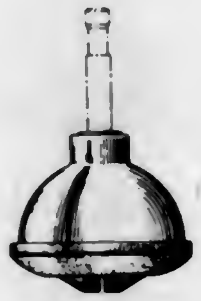
207,099
BOWL BRUSH HOUSING

Alvin O. Johnson and Herbert D. Rice, both of Westfield, Mass., assignors to Stanley Home Products, Inc., Westfield, Mass.
Filed July 25, 1966, Ser. No. 3,202
Term of patent 14 years
(Cl. D9—2)



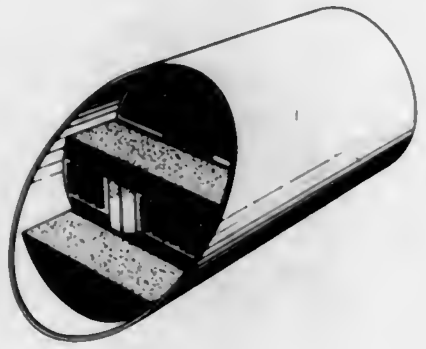
207,100
FURNITURE CASTER

Raymond S. Haydock, Chicago, Ill., assignor of one-half to Raymond Haydock, Jr., and Sandra Lynn Haydock, both of Chicago, Ill.
Filed Jan. 27, 1966, Ser. No. 793
Term of patent 14 years
(Cl. D10—6)



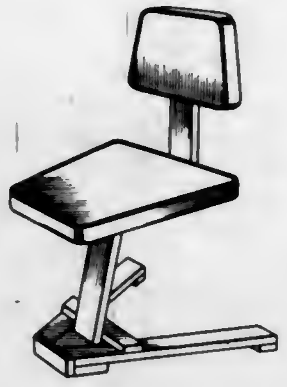
207,101
CYLINDRICAL BUILDING

Guy Dessauges, 2224 Puntacherstrasse, Stafa, Zurich, Switzerland
Filed Oct. 4, 1965, Ser. No. 87,315
Term of patent 14 years
(Cl. D13—1)



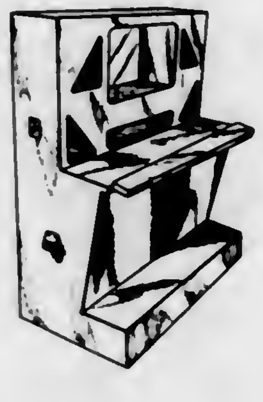
207,102
CHAIR

Lyle C. Hennessey, Longmont, Colo.
(5032 Kearsarge, Los Alamitos, Calif. 90720)
Filed Mar. 4, 1966, Ser. No. 1,294
Term of patent 14 years
(Cl. D15—1)



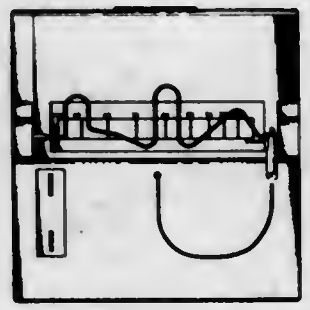
207,103
BAR OR SIMILAR ARTICLE

Gregory Muniz, 2280 E. 90th Ave.,
Thornton, Colo. 80229
Filed Oct. 24, 1965, Ser. No. 87,894
Term of patent 14 years
(Cl. D33—19)



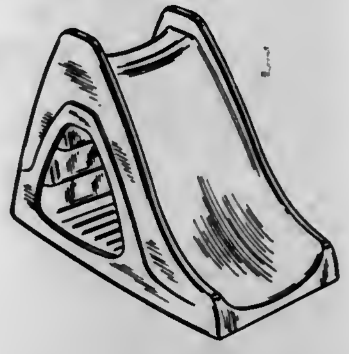
207,104
GAME APPARATUS TO TEST DEXTERITY

Max Tiarks, Herford, Germany, assignor to Patterson International Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 6, 1966, Ser. No. 497
Term of patent 14 years
(Cl. D34—5)



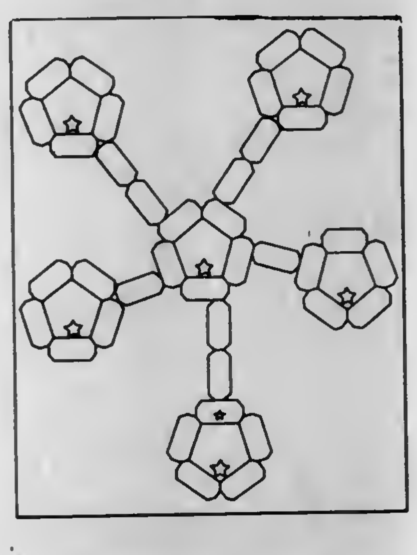
207,105
CHILD'S SLIDE

John A. Gale, Minneapolis, Minn., assignor to John Gale Company, Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 4, 1966, Ser. No. 927
Term of patent 14 years
(Cl. D34—5)



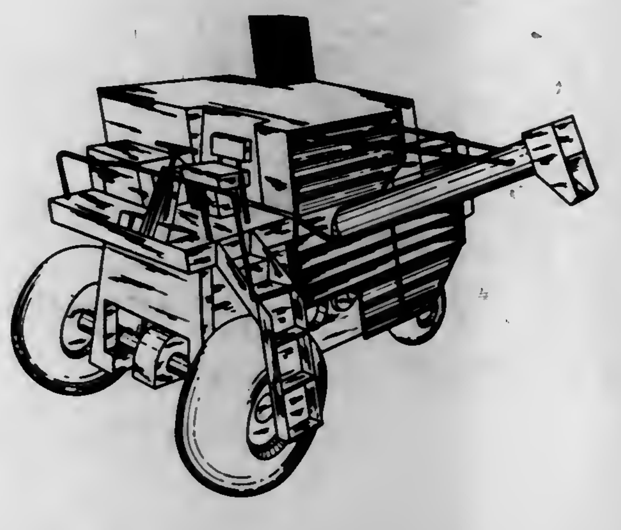
207,106
GAME BOARD

Leon D. Hoffman, Jr., 400 Northwest Drive,
Silver Spring, Md. 20901
Filed May 2, 1966, Ser. No. 2,117
Term of patent 14 years
(Cl. D34—5)



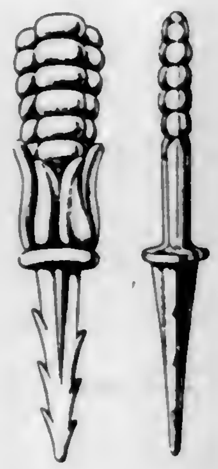
207,107
SELF-PROPELLED COMBINE

Shelly A. Bulin, Davenport, Iowa, assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Sept. 13, 1966, Ser. No. 4,589
Term of patent 7 years
(Cl. D40—1)



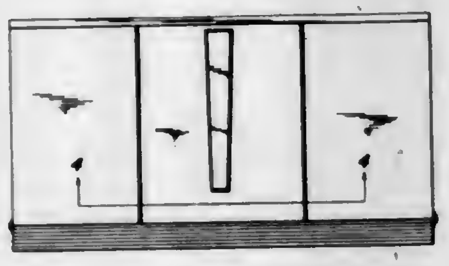
207,108
FOOD HOLDER

Hubert W. Heuck, 4823 Industrial Court,
Cincinnati, Ohio 45217
Filed Mar. 31, 1966, Ser. No. 1,709
Term of patent 14 years
(Cl. D44—4)



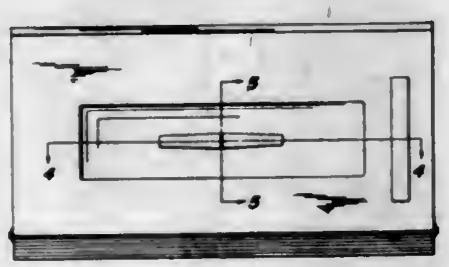
207,109
BREAD BOX

Harold O. Wagner, Sheffield Lake, and Manuel S. Ziskin, Mayfield Heights, Ohio, assignors to American Trading and Production Corporation, Baltimore, Md., a corporation of Maryland
Filed Apr. 27, 1966, Ser. No. 2,044
Term of patent 14 years
(Cl. D44—6)



207,110
BREAD BOX

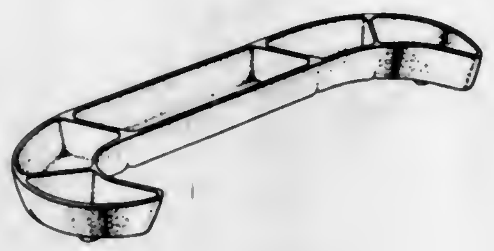
Harold O. Wagner, Sheffield Lake, and Manuel S. Ziskin, Mayfield Heights, Ohio, assignors to American Trading and Production Corporation, Baltimore, Md., a corporation of Maryland
Filed Apr. 29, 1966, Ser. No. 2,073
Term of patent 14 years
(Cl. D44—6)



207,111
DISH

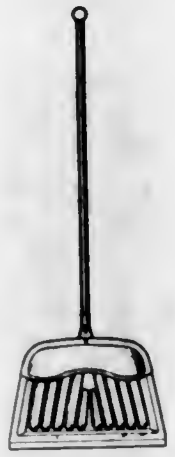
Victor J. Bergeron, Hillsborough, Calif.
(20 Cosmo Place, San Francisco, Calif. 94109)
Original design application Feb. 23, 1965, Ser. No. 83,943. Divided and this application Mar. 2, 1966, Ser. No. 1,243

Term of patent 14 years
(Cl. D44—10)



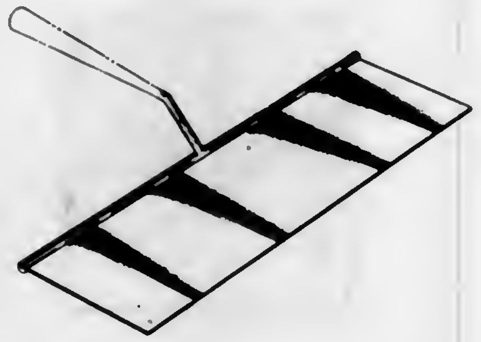
207,112
FOLDING DUST PAN

Ruben G. Fernandez, 335 W. 47th St.,
Miami Beach, Fla. 33140
Filed June 9, 1966, Ser. No. 2,634
Term of patent 14 years
(Cl. D44—18)



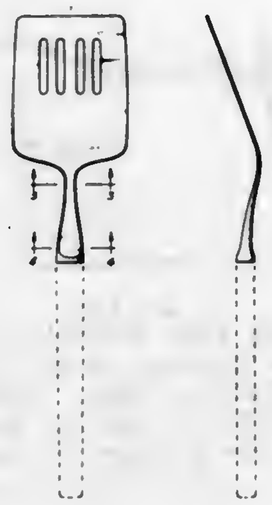
207,113
BAKER'S PEEL

Macrina D. Daily, 283 Towson Drive,
Warren, Ohio 44483
Filed Dec. 8, 1965, Ser. No. 111
Term of patent 3½ years
(Cl. D44—29)



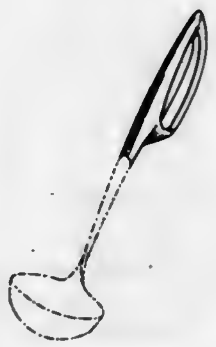
207,114
TURNER OR THE LIKE

Richard S. Latham, Chicago, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 22, 1966, Ser. No. 1,588
Term of patent 14 years
(Cl. D44—29)



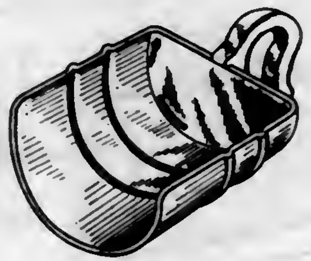
207,115
HANDLE FOR CULINARY UTENSIL

Clifford R. Keeslar, Springfield, Va., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed May 9, 1966, Ser. No. 2,219
Term of patent 7 years
(Cl. D44—29)



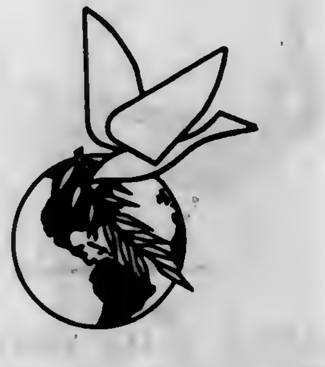
207,116
MEASURING SCOOP

Ethel M. Phillips, 134 Ramona Drive,
San Luis Obispo, Calif. 93401
Filed June 20, 1966, Ser. No. 2,732
Term of patent 3½ years
(Cl. D44—29)



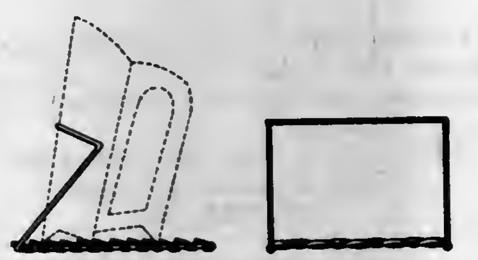
207,117
LAPEL PIN OR SIMILAR ARTICLE

Charles W. Lapham, Los Angeles County, Calif.
(2743 W. 15th St., Los Angeles, Calif. 90006)
Filed July 21, 1965, Ser. No. 86,239
Term of patent 14 years
(Cl. D45—19)



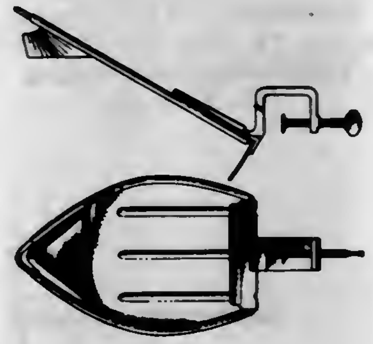
207,118
COMBINATION SUPPORT AND REST FOR AN ELECTRIC IRON

Edna M. Linscheid, 3701 E. Funston,
Wichita, Kans. 67211
Filed Apr. 11, 1966, Ser. No. 1,837
Term of patent 14 years
(Cl. D49—6)



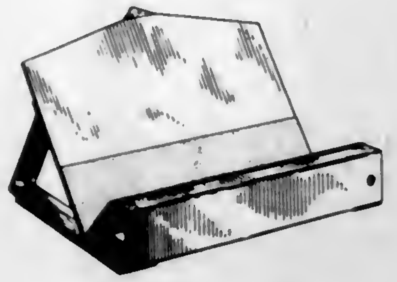
207,119
FLAT IRON SUPPORT AND HOLDER COMBINATION

Harold B. Avery, Philadelphia, Pa., assignor to I. R. Associates, Inc., New Orleans, La., a corporation of Louisiana
Filed Oct. 18, 1965, Ser. No. 87,534
Term of patent 14 years
(Cl. D49—6)



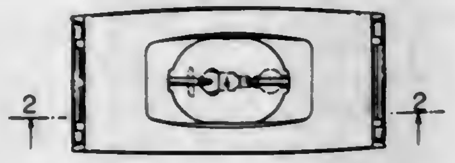
207,120
DISPENSER FOR WRAPPING MATERIAL

Bernard Robinson, 708 Tomahawk,
Prairie Village, Kans. 66208
Filed Dec. 13, 1965, Ser. No. 153
Term of patent 3½ years
(Cl. D52—2)



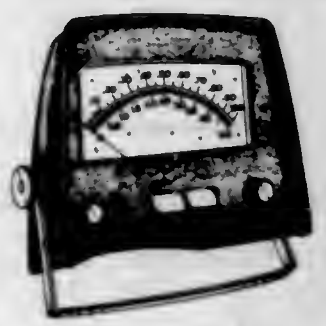
207,121
SHAVING BLADE DISPENSER

Paul A. Braginetz, Staunton, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed Aug. 31, 1965, Ser. No. 86,779
Term of patent 14 years
(Cl. D52—2)



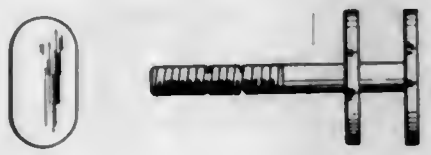
207,122
ULTRASONIC TEST INSTRUMENT

Carl R. Yurdin, Port Washington, N.Y., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware
Filed July 8, 1966, Ser. No. 2,987
Term of patent 14 years
(Cl. D52—6)



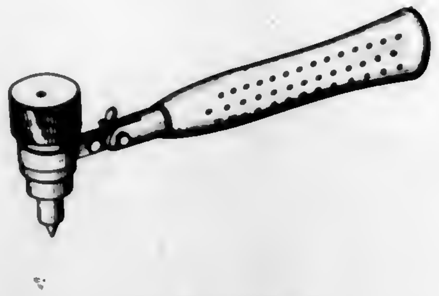
207,123
BOLT

Thomas D. Flood, 3616 Ordway St. NW.,
Washington, D.C. 20016
Filed Oct. 28, 1965, Ser. No. 87,948
Term of patent 14 years
(Cl. D54—9)



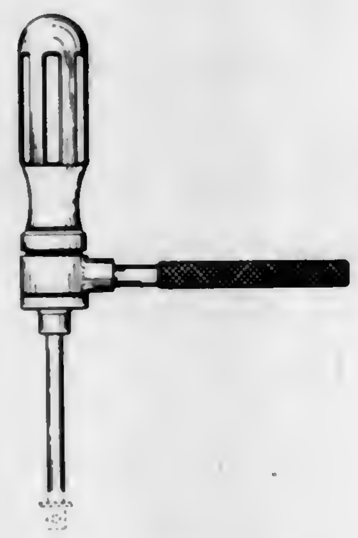
207,124
POWER ACTUATED PUNCH

Julian W. McManus, 3733 Delmas Terrace,
Los Angeles, Calif. 90034
Filed June 8, 1966, Ser. No. 2,599
Term of patent 3½ years
(Cl. D54—10)



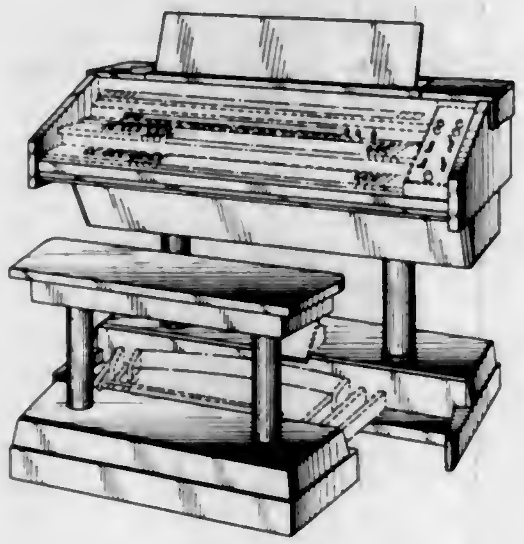
207,125
RATCHET TOOL FOR ROTARY ATTACHMENTS

Arden B. MacNeill, 63 Riverview Ave.,
Waltham, Mass. 02154
Filed Feb. 21, 1966, Ser. No. 1,140
Term of patent 14 years
(Cl. D54—16)



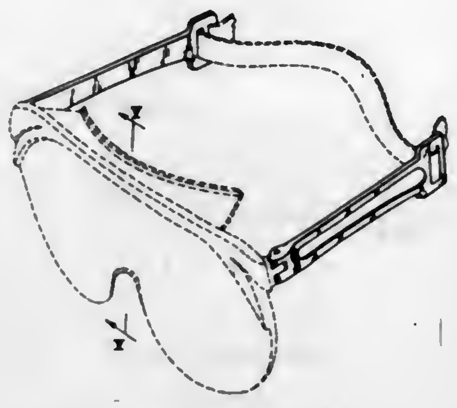
207,126
ORGAN OR SIMILAR ARTICLE

Joseph Palma, Jr., Wheaton, Ill., assignor to Hammond Organ Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 2,020
Term of patent 14 years
(Cl. 56—2)



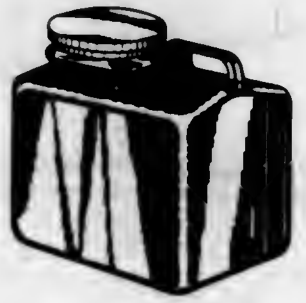
207,127
PAIR OF SAFETY SPECTACLES AND HEADBAND COMBINATION

Jack N. Simpson, Reading, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa.
Filed Nov. 22, 1965, Ser. No. 88,166
Term of patent 14 years
(Cl. D57—1)



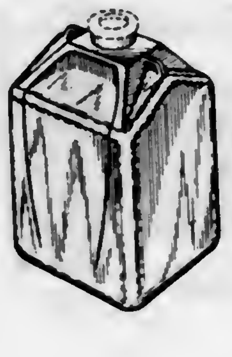
207,128
PLASTIC JUG

Norman A. Kelly, Wayne Township, Kosciusko County, Ind., assignor to Crystal Preforming and Packaging, Inc., Warsaw, Ind., a corporation of Indiana
Filed July 5, 1966, Ser. No. 2,915
Term of patent 14 years
(Cl. D58—5)



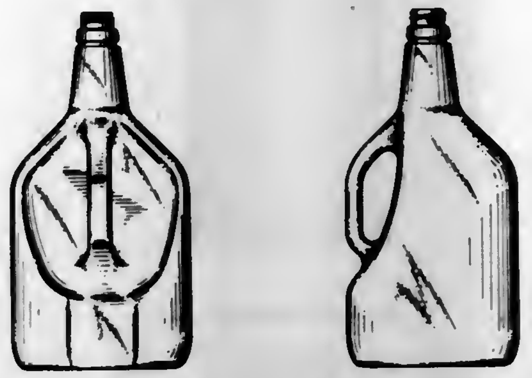
207,129
PLASTIC JUG

Norman A. Kelly, Wayne Township, Kosciusko County, Ind., assignor to Crystal Preforming and Packaging, Inc., Warsaw, Ind., a corporation of Indiana
Filed July 5, 1966, Ser. No. 2,933
Term of patent 14 years
(Cl. D58—5)



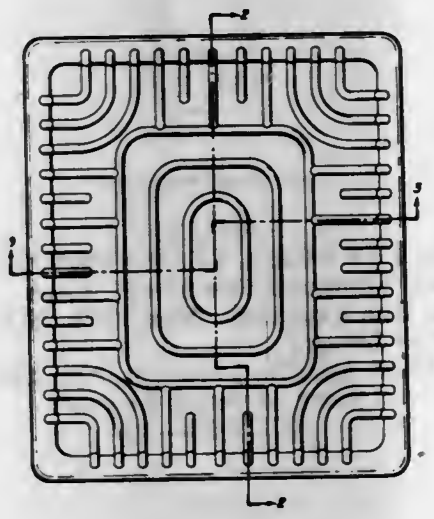
207,130
JUG

Ned Drucker, Scarsdale, N.Y., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 16, 1965, Ser. No. 88,116
Term of patent 14 years
(Cl. D58—5)



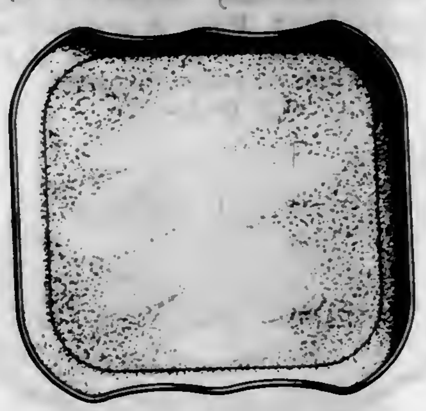
207,131
FOOD PACKAGING TRAY

Robert G. Peace, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 1, 1966, Ser. No. 856
Term of patent 7 years
(Cl. D58—12.6)



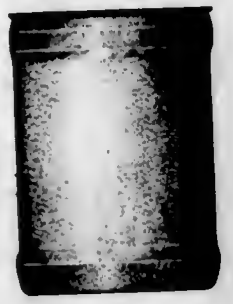
207,132
PACKAGING TRAY

Richard E. Reny, Westport, Conn., assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine
Filed July 22, 1966, Ser. No. 3,179
Term of patent 14 years
(Cl. D58—12.6)



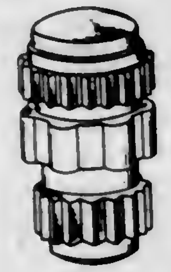
207,133
PLASTIC CAN OR SIMILAR ARTICLE

Hans G. Stenger, Warren Township, N.J., assignor to Celanese Corporation, a corporation of Delaware
Filed Feb. 24, 1965, Ser. No. 83,962
Term of patent 14 years
(Cl. D58—17)



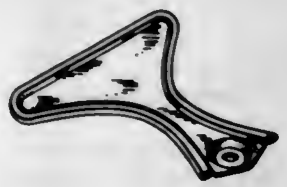
207,134
CONTAINER FOR DENTAL RESTORATIVE MATERIALS

Gerald Kobernick, San Diego, Calif., assignor to Koberloy, Inc., a corporation of California
Filed Nov. 1, 1965, Ser. No. 87,964
Term of patent 14 years
(Cl. D58—17)



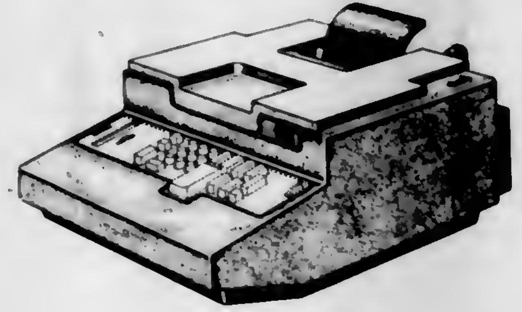
207,135
PULL TAB FOR A TEAR STRIP OPENER

Harley Earl Simmons, Stamford, Conn., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 28, 1966, Ser. No. 2,056
Term of patent 14 years
(Cl. D58—26)



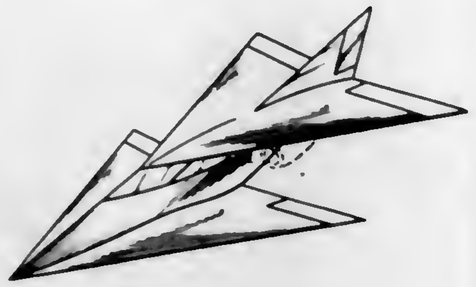
207,136
CALCULATING MACHINE

Ettore Sottsass, Milan, Italy, assignor to Ing. C. Olivetti & Co., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Nov. 22, 1965, Ser. No. 88,172
Term of patent 14 years
(Cl. D64—11)



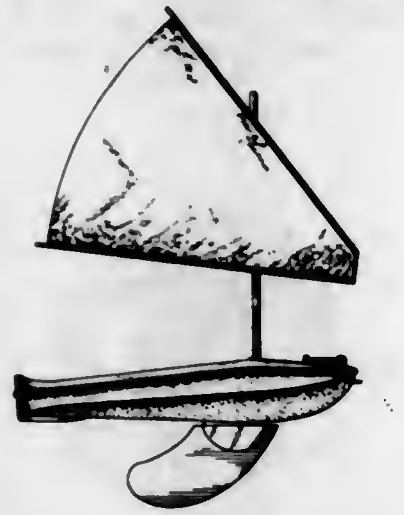
207,137
AIRCRAFT

Antonio Cernuda, 5112 Navarro Lane, Apt. A, Houston, Tex. 77027
Filed Dec. 27, 1965, Ser. No. 335
Term of patent 14 years
(Cl. D71—1)



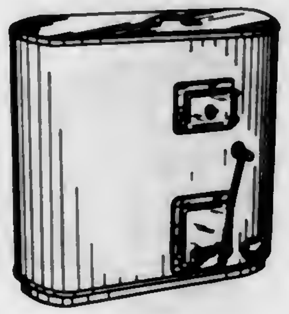
207,138
SAILING WATER CRAFT

Walter Andersen, 1443 W. Birchlawn Place, Ottawa, Ill. 61350
Filed May 19, 1966, Ser. No. 2,359
Term of patent 14 years
(Cl. D71—1)



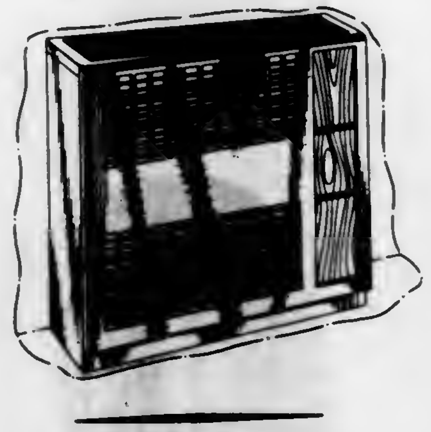
207,139
HEATING BOILER

Stig Vilhelm Jakobsson, Askim, Sweden, assignor to Goteborgs Verkstadsindustri a.-b., Goteborg, Sweden, a corporation of Sweden
Filed June 13, 1966, Ser. No. 2,662
Term of patent 14 years
(Cl. D81—2)



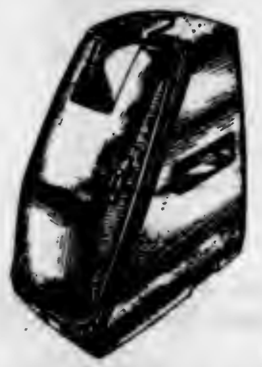
207,140
WALL HEATER

Anthony M. Castello, Robert R. Cooper, and Charles N. Fellnagel, Wichita, Kans., assignors to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Apr. 4, 1966, Ser. No. 1,751
Term of patent 14 years
(Cl. D81—10)



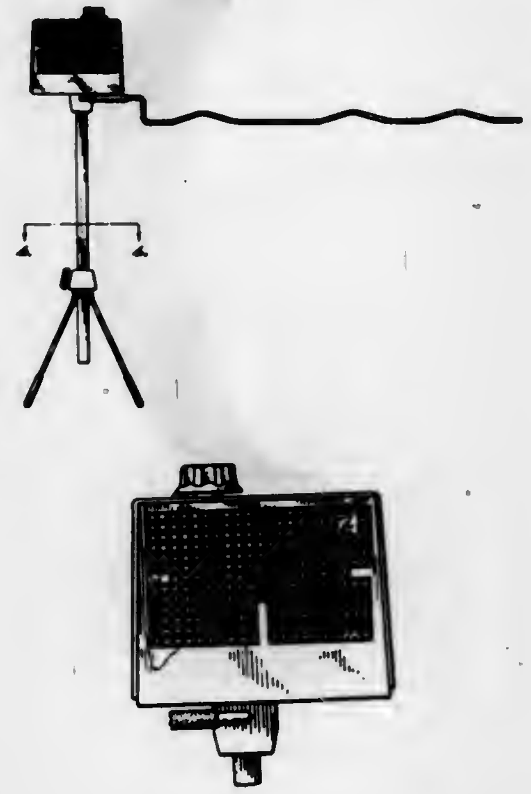
207,141
STEAM BATH CABINET

Dale L. Cosper, 710 N. Brookfield St., South Bend, Ind. 46628
Filed Dec. 1, 1965, Ser. No. 16
Term of patent 14 years
(Cl. D83—1)



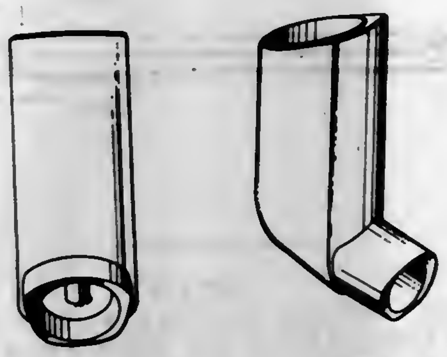
207,142
MATTRESS AND CUSHION VIBRATOR

Samuel L. McNair, Overland Park, Kans., assignor to The Songrand Corporation, a corporation of Missouri
Filed Feb. 21, 1966, Ser. No. 1,132
Term of patent 14 years
(Cl. D83—1)



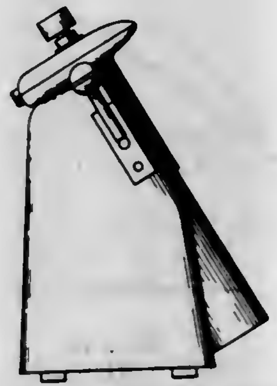
207,143
COMBINED AEROSOL ACTUATOR AND DISPENSER FOR MEDICAMENTS

Herbert A. Goodwin, Sileby, England, assignor to Vantorex Limited, Loughborough, England, a British company
Filed Mar. 17, 1966, Ser. No. 1,511
Term of patent 14 years
(Cl. D83—1)



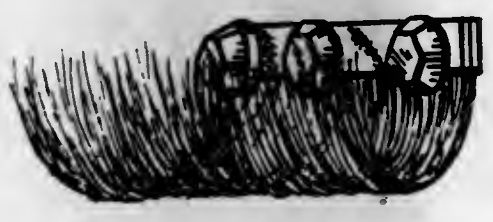
207,144
HAIR SPRAYER

Murry Abbott, 1572 Commonwealth Ave., West Newton, Mass. 02165
Filed Nov. 12, 1965, Ser. No. 88,064
Term of patent 14 years
(Cl. D86—1)

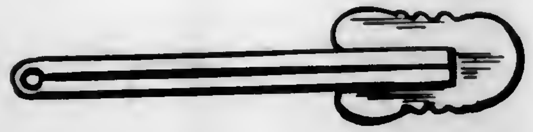


207,145
EYELASH

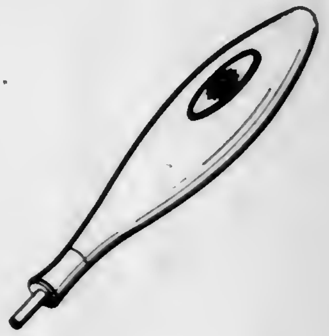
Eric V. Aylott, Knebworth, England, assignor to Eylure Limited, Welwyn Garden City, England, a British corporation
Filed Jan. 10, 1966, Ser. No. 553
Claims priority, application Great Britain Dec. 14, 1965
Term of patent 14 years
(Cl. D86—10)



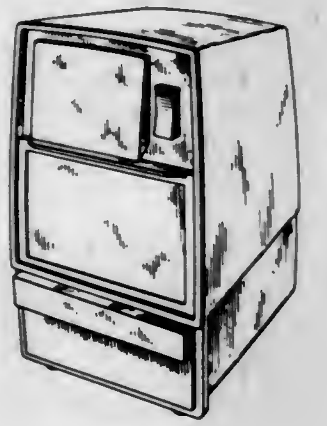
207,146
HAIR STRAIGHTENING CLAMP
Franco Bulbarelli, Via Bullona 22, and Onofrio Mastrorilli, 40 Via Principe Eugenio, both of Milan, Italy
Filed Apr. 5, 1966, Ser. No. 1,789
Term of patent 14 years
(Cl. D86—10)



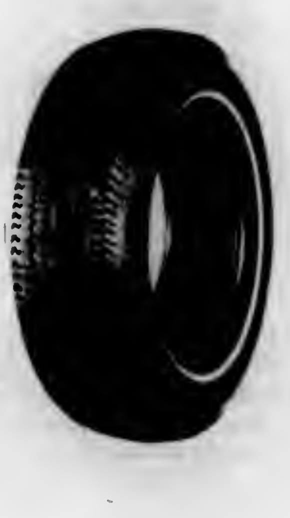
207,147
ELECTRIC POWER HANDLE FOR A MANICURING IMPLEMENT OR SIMILAR ARTICLE
Theodore G. Daher, Stratford, Conn., assignor to General Electric Company, a corporation of New York
Filed May 12, 1966, Ser. No. 2,272
Term of patent 14 years
(Cl. D86—10)



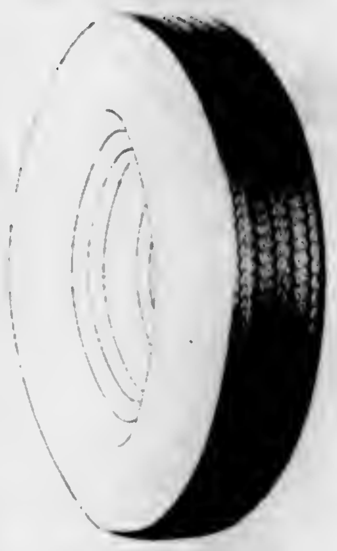
207,148
ICE CRUSHER
Thomas W. Kellogg, Newport Beach, Calif., and Henry J. Talge, Kansas City, Mo., assignors to Dazey Products Company, Kansas City Mo., a corporation of Missouri
Filed Apr. 21, 1966, Ser. No. 1,961
Term of patent 14 years
(Cl. D89—1)



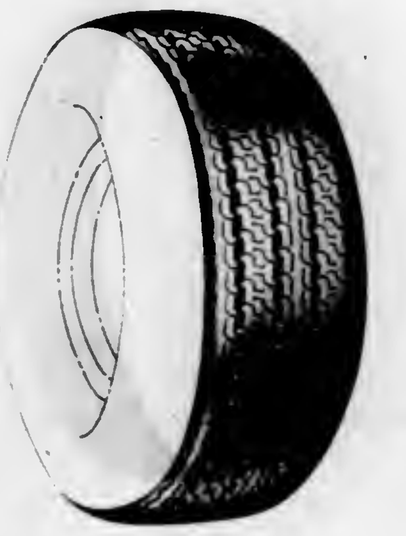
207,149
TIRE
John O. Antonson, Tallmadge, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Dec. 27, 1965, Ser. No. 339
Term of patent 14 years
(Cl. D90—20)



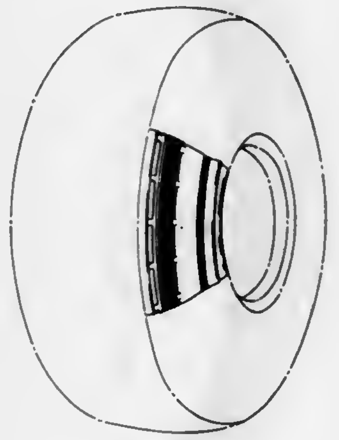
207,150
TIRE
Glen L. Wittenmyer, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed July 8, 1966, Ser. No. 2,985
Term of patent 14 years
(Cl. D90—20)



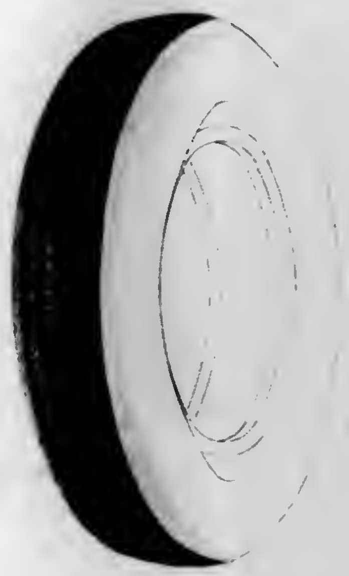
207,151
TIRE
Glen L. Wittenmyer, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed July 8, 1966, Ser. No. 2,986
Term of patent 14 years
(Cl. D90—20)



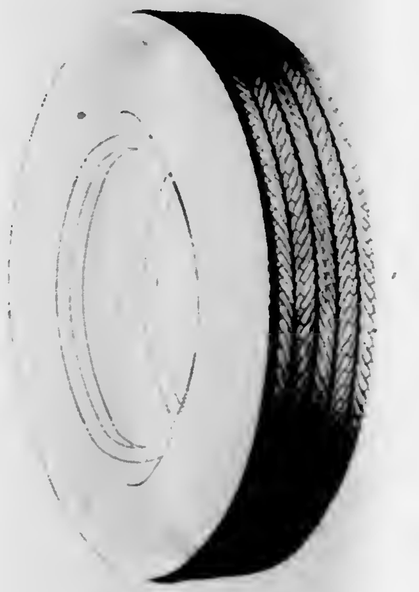
207,152
TIRE
Aristides Makris, Plainfield, N.J., assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed July 20, 1966, Ser. No. 3,145
Term of patent 14 years
(Cl. D90—20)



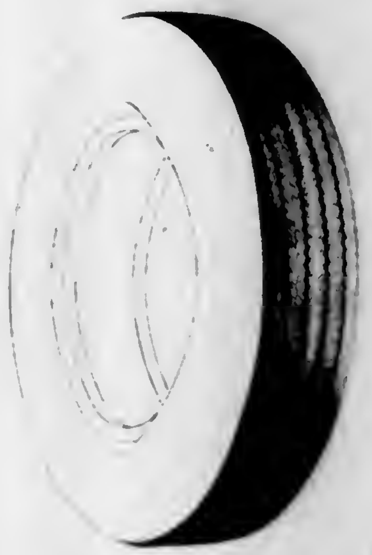
207,153
TIRE
Glen L. Wittenmyer, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Sept. 6, 1966, Ser. No. 3,731
Term of patent 14 years
(Cl. D90—20)



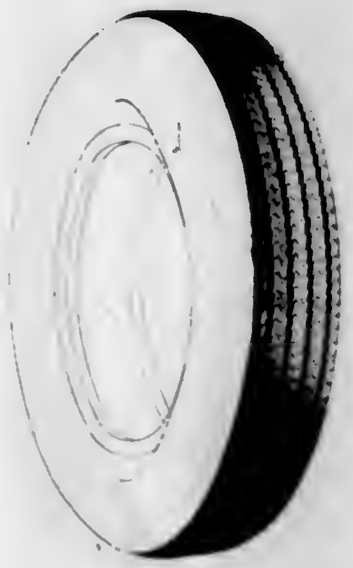
207,154
TIRE
Glen L. Wittenmyer, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Sept. 6, 1966, Ser. No. 3,732
Term of patent 14 years
(Cl. D90—20)



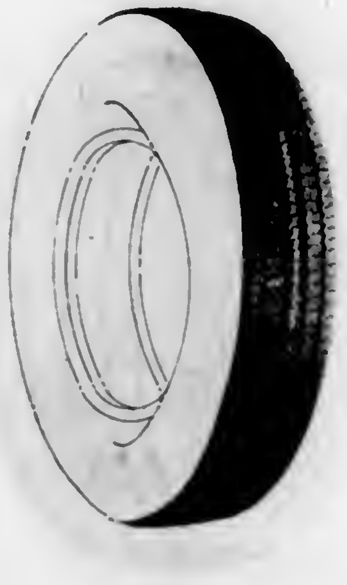
207,155
TIRE
Glen L. Wittenmyer, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Sept. 6, 1966, Ser. No. 3,733
Term of patent 14 years
(Cl. D90—20)



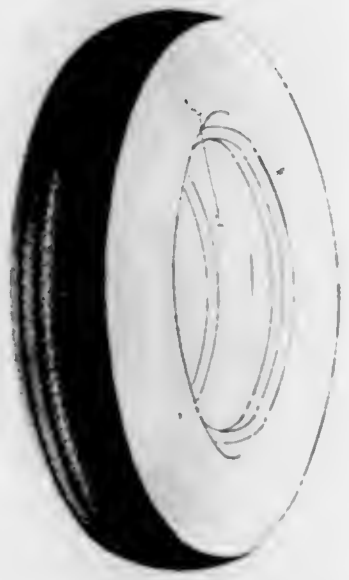
207,156
TIRE
Glen L. Wittenmyer, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Sept. 6, 1966, Ser. No. 3,735
Term of patent 14 years
(Cl. D90—20)



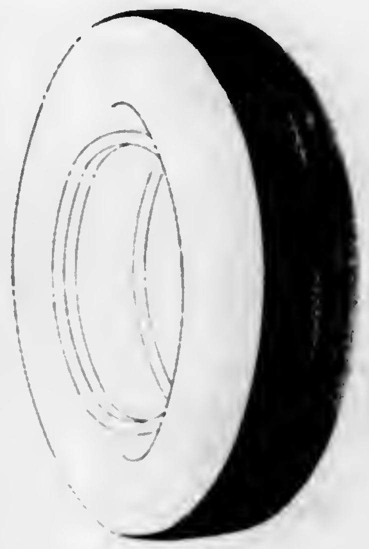
207,157
TIRE
Glen L. Wittenmyer, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Sept. 6, 1966, Ser. No. 3,745
Term of patent 14 years
(Cl. D90—20)



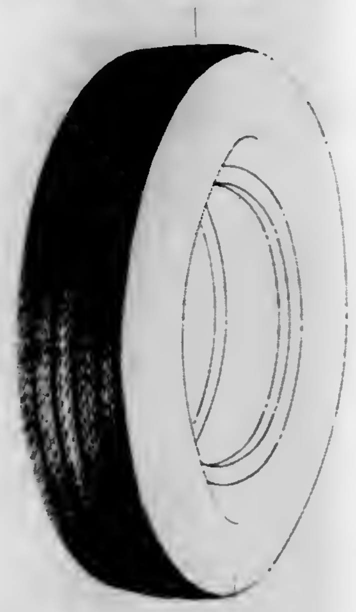
207,158
TIRE
Glen L. Wittenmyer, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Sept. 6, 1966, Ser. No. 3,746
Term of patent 14 years
(Cl. D90—20)



207,159
TIRE
Glen L. Wittenmyer, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Sept. 6, 1966 Ser. No. 3,747
Term of patent 14 years
(Cl. D90—20)



207,160
TIRE
Glen L. Wittenmyer, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Sept. 6, 1966, Ser. No. 3,748
Term of patent 14 years
(Cl. D90—20)



LIST OF REISSUE PATENTEES

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PATENTS WERE ISSUED ON THE 7TH DAY OF MARCH, 1967

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- Caracristi, Virginius Z.: *See*—
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- Combustion Engineering Inc.: *See*—
  - Schuss, Jack A., and Caracristi. Re. 26,167.
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- Harris, Thomas J., to International Business Machines Corp. High speed electro-optic printer or display. Re. 26,170, 3–7–67, Cl. 346—107.
- Inhofer, Harold G. Weed spraying device. Re. 26,166, 3–7–67, Cl. 47—1.7.
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- Kamada, Benjamin Y. Pomegranate tree. 2,723, 3–7–67, Cl. 33.
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- Bates, Richard E., and T. E. Javor, to Wilson Athletic Goods Mfg. Co., Inc. Baseball glove. 207,086, 3–7–67, Cl. D2—361.
- Bates, Richard E., and T. E. Javor, to Wilson Athletic Goods Mfg. Co., Inc. Baseball glove. 207,087, 3–7–67, Cl. D2—361.
- Bates, Richard E., and T. E. Javor, to Wilson Athletic Goods Mfg. Co., Inc. Baseball glove. 207,088, 3–7–67, Cl. D2—361.
- Bates, Richard E., and T. E. Javor, to Wilson Athletic Goods Mfg. Co., Inc. Baseball glove. 207,089, 3–7–67, Cl. D2—361.
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  - Kelly, Norman A. 207,129.
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  Bates, Richard E., and Javor. 207,089.
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  Wagner, Harold O., and Ziskin. 207,109.
  Wagner, Harold O., and Ziskin. 207,110.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 7TH DAY OF MARCH, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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- Bloxsom, Dan E. Fireproof skylight assembly. 3,307,303, 3-7-67, Cl. 52—80.
- Bloxsom, Dan E. Snap lock construction for locking domes in skylight frames. 3,307,309, 3-7-67, Cl. 52—200.
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- Bodine, Albert G., Jr. Sonic dredging process and apparatus. 3,307,278, 3-7-67, Cl. 37—195.
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- Bogar, Earl M., Jr. Adjustable stand for instruments. 3,307,814, 3-7-67, Cl. 248—188.5.
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- Bohanon, Hoy R., to Acme Engineering and Mfg. Corp. Ventilating and circulating air system. 3,307,469, 3-7-67, Cl. 98—33.
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- Boicey, James H., to Libbey-Owens-Ford Glass Co. Apparatus for producing a laminated assembly. 3,307,999, 3-7-67, Cl. 156—382.

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  - White, Peter T. 3,308,071.
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  - Brown, James R. 3,307,611.
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- Bryant, Benjamin S., to Weyerhaeuser Co. Compressible mat of whole wood fibers and uncured resin as overlay for wood product and process of making same. 3,308,013, 3–7–67, Cl. 162—103.
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- Bugel, Thomas E., to Union Carbide Corp. Thermoplastic polyhydroxyether with nitrile rubber, and laminates thereof. 3,308,205, 3–7–67, Cl. 260—837.
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Dunlop Rubber Co. Ltd.: *See*—
Bulgin, Douglas, Hubbard, and Madge. 3,307,605.

Dunn, Albert, and L. Russell, to Fiber Industries, Inc. Annular spinning apparatus. 3,307,216, 3–7–67, Cl. 18—8.

Dunn, George H., Jr., to Rexall Drug and Chemical Co. Apparatus for feeding flowable solid materials to a delivery device. 3,307,748, 3–7–67, Cl. 222—227.

Du Pont de Nemours, E. I., and Co.: *See*—
Appelbaum, Arthur. 3,307,950.
Bousquet, Euclid W. 3,308,130.
Collier, Herman E., Jr. 3,308,061.
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Hardy, Henry B., Jr. 3,307,962.
Harriss, Andrew J., Jr., and Larsen. 3,307,320.
Helart, Robert B. 3,307,943.
Ikeda, Carol K. 3,308,101.
Jacobson, Howard W. 3,307,925.
Jacobson, Howard W. 3,307,964.
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Shoaf, Charles J. 3,307,966.
Simpson, Donald L. 3,307,271.
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Tobar, Ramon U. 3,308,012.
Zapp, John A., Jr. 3,308,091.

Duralast Containers Ltd.: *See*—
Davidson, John L. 3,307,730.

Dusheck, George J., Jr., to Radio Corp. of America. Information processing apparatus. 3,308,441, 3–7–67, Cl. 340—172.5.

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Waddington, Rogor S., and Duval. 3,308,224.

Dymo Industries, Inc.: *See*—
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Massen, Armand, and Pace. 3,307,674.

Dynamic Precision Control Corp.: *See*—
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Dynamics Corp. of America: *See*—
Massa, Frank, Jr. 3,308,423.

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Stadler, Hans, Gawlick, Stahlmann, and Umbach. 3,307,445.

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EVG Entwicklungs- u. Verwertungsgesellschaft m.b.H.: *See*—
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Earl, John A., to Physical Sciences Corp. Ceramic material. 3,307,958, 3–7–67, Cl. 106—49.

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Eckerle, Otto, and E. Putschky; said Putschky assor. to said Eckerle. Gear machine. 3,307,489, 3–7–67, Cl. 103—126.

Eckstein, Karl-Albert, to Industriewerk Schaeffler. Cage for cylindrical rollers. 3,307,892, 3–7–67, Cl. 308—217.

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Edwards, John W., S. Sherratt, and P. A. Small, to Imperial Chemical Industries Ltd. Production of tetrafluoroethylene. 3,308,174, 3–7–67, Cl. 260—653.5.

Ehrenberg, Gustave, to Engineering Co. Linear induction motor. 3,308,312, 3–7–67, Cl. 310—13.

Ehret, Kenneth H.: *See*—
Gilmore, Merwin W., and Ehret. 3,307,684.

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Ellis, John T., Jr., to Ellis Fluid Dynamics Corp. Shock absorber. 3,307,842, 3–7–67, Cl. 267—1.

Elmer, Augustus, Jr., and R. S. Edmunds, Jr., to International Foods, Inc. Method and apparatus for extruding candy bars. 3,307,503, 3–7–67, Cl. 107—69.

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Luenberger, Frederick O. 3,307,663.
Pfahl, Karl F. 3,308,316.

Emerson, William H., to The B. F. Goodrich Co. Anechoic chamber. 3,308,463, 3–7–67, Cl. 343—18.

Emrick, Donald D., to The Standard Oil Co. Preparation of primary alcohols from glycols by telomerizing-olefin with glycol borate, hydrolysing to obtain telomer glycol, dehydrating the glycol to obtain alkenol and then hydrogenating. 3,308,173, 3–7–67, Cl. 260—642.

Endo, Kichiso: *See*—
Ohara, Masao, Yamamato, DeGuchi, and Endo. 3,308,132.

Ener-Jet Corp.: *See*—
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Smith, Harold W., and Korkos. 3,308,344.

Engelhardt, Hermann, and A. M. Nelson, to The Magnavox Co. Cryogenic and thermal seal for electrical members. 3,308,010, 3–7–67, Cl. 161—231.

Engineering Co.: *See*—
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Engleman, Joseph H. Multiple compartment scow. 3,307,513, 3–7–67, Cl. 114—74.

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Warrington, Albert R. V. C. 3,308,345.

Entwistle Mfg. Corp.: *See*—
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Epstein, Joshua, to Acme Process Equipment Co. Flushing means for a grain discharge valve. 3,307,573, 3–7–67, Cl. 137—240.

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Erkers, Nils A.: *See*—
Brunosson, Bengt B., and Erkers. 3,307,756.

Ertessek, Olga, to Olga Co. Slip-type undergarment. 3,307,200, 3–7–67, Cl. 2—73.

Erwin, Edson L., to Bell Telephone Laboratories, Inc. Switching system minimizing traffic between switch frames. 3,308,242, 3–7–67, Cl. 179—18.

Esaki, Leo, to International Business Machines Corp. Semimetal PN junction devices. 3,308,351, 3–7–67, Cl. 317—234.

Esso Production Research Co.: *See*—
Ball, John D., Feagin, and Terry. 3,307,649.
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Bogs, Charles W., and Gregory. 3,308,472.
Hildebrandt, Alexander B. 3,307,645.
Masterson, Horace T. 3,307,648.
McCarter, Ed. R. 3,308,392.
Wiggins, John H., Jr. 3,307,641.

Esso Research and Engineering Co.: *See*—
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Douros, John D., Jr. 3,308,035.
Guyot, Hubert M. 3,307,932.
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Eubanks, John M., to Bell Telephone Laboratories, Inc. Two-phase square wave generator. 3,308,367, 3–7–67, Cl. 321—3.

Eue, Ludwig: *See*—
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European Atomic Energy Community: *See*—
Alfille, Lucien, Charrault, and LaFontaine. 3,308,033.

Evans, Ernest C.: *See*—
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Evans, Joseph R., and J. H. Blackburn, to Draper Corp. Loom shedding mechanism. 3,307,592, 3–7–67, Cl. 139—79.

Evans Products Co.: *See*—
Chapman, Harvey W., and Oakley. 3,307,495.
Chapman, Harvey W., and Rolfe. 3,307,497.

Evans & Son (Portsmouth) Ltd.: *See*—
Parker, Russell H. R. 3,307,881.

Ex-Cell-O Corp.: *See*—
Bourdon, Joseph J., Nameth, Moore, Ripley, Stencel, and Quick. 3,308,450.

Exon, John J., to Honeywell, Inc. Condition responsive bridge balancing circuit. 3,307,898, 3–7–67, Cl. 73—304.

FMC Corp.: *See*—
Benning, Bennie L. 3,307,907.

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Fabenfabriken Bayer Aktiengesellschaft: *See*—
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Faber, Karl, to Brown Boveri & Cie Aktiengesellschaft. Drive for tape transport. 3,307,796, 3–7–67, Cl. 242—67.4.

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Fabriques Movado and Manufacture des Montres Universal: *See*—
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Faggiano, Giuseppe, to AMF Electrica S.p.A. Ambient thermal protector with abutment contact reengagement means mounted on its case. 3,308,255, 3–7–67, Cl. 200—113.

Fahlstrom, Per A. H. H., and O. Oyasater, to Bolidens Gruvaktiebolag. Apparatus for froth flotation. 3,307,697, 3–7–67, Cl. 209—169.

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Falcone, Luigi, and L. Torti, to Montecatini Edison S.p.A. Process for the preparation of vulcanizates from mixes of olefinic coplymers, mineral fillers and a dispersion promoter, and vulcanized articles thereof. 3,308,090, 3–7–67, Cl. 260—41.

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Fant, Charles H. Sheet dispenser having means to vary the position of cover upon depletion of the sheet therein. 3,307,740, 3–7–67, Cl. 221—45.

Far, Hilario. Device for supporting fount receptacles and for controlling the supply of liquid to such receptacles. 3,307,522, 3–7–67, Cl. 119—81.

Farbenfabriken Bayer Aktiengesellschaft: *See*—
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Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
Bestian, Herbert, Korbanka, and Lange. 3,308,084.
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Fauber, Eugene M., to Sinclair Research, Inc. Fuel containing a solvent extract pour point depressant. 3,308,051, 3–7–67, Cl. 208—15.

Faulhaber, Fritz, and H. W. Hefter, to H. Stussi. Miniature electric motor. 3,308,319, 3–7–67, Cl. 310—154.

Favre, Robert, to Fabriques Movado and Manufacture des Montres Universal. Torsion oscillator. 3,308,313, 3–7–67, Cl. 310—36.

Feagin, Frank J.: *See*—
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Fein, Martin L., E. H. Harris, Jr., and R. R. Calhoun, Jr., to United States of America, Agriculture. Apparatus for determination of shrink-temperature of leather. 3,307,815, 3–7–67, Cl. 248—316.

Feldhoff, Manfred, A. G. M. Gumboldt, and J. Helberg, to Hercules Powder Co. Crystalline copolymers of an alpha-olefin and aromatic alkenyl thioether. 3,308,104, 3–7–67, Cl. 260—79.7

Feldhoff, Manfred, A. G. M. Gumboldt, and J. Helberg, to Hercules Inc. Process for copolymerizing a-olefins with tertiary n-alkylene-arylamines. 3,308,108, 3–7–67, Cl. 260—88.1.

Fell, William F. Method of loading and unloading storage tanks in vessels. 3,307,512, 3–7–67, Cl. 114—74.

Felt Products Mfg. Co.: *See*—
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Fener, Alfred. Anti-clogging packaging machine. 3,307,323, 3–7–67, Cl. 53—180.

Fenstermaker, Donald E., to The De Vilbiss Co. Vaporizer. 3,308,267, 3–7–67, Cl. 219—290.

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Fernseh G.m.b.H.: *See*—
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Ferri, Romolo. Apparatus for the removal of tree stumps. 3,307,643, 3–7–67, Cl. 175—161.

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Whisnant, John K., and Dysart. 3,307,621.

Field, Albert. Abrasive disk unit. 3,307,300, 3–7–67, Cl. 51—389.

Field, Nathaniel L., III, and J. F. Ritchey, to Bell Telephone Laboratories, Inc. Slide selector switch. 3,308,250, 3–7–67, Cl. 200—16.

Fifth Dimension Inc.: *See*—
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Fisher, Simon, H. E. Bach, T. V. De Agostino, and C. E. Roth, to National Electric Welding Machines Co. Adjusting device for welding head. 3,308,262, 3–7–67, Cl. 219—78.

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Fordemwalt, Frederick, to American Cynamid Co. Cationic-dyeable amine-aldehyde modified polypropylene. 3,308,206, 3–7–67, Cl. 260—854.

Foreman, Robert J., and J. A. Smith, to Litton Industries, Inc. Thermionic emissive cathode with end structure for emissive suppression. 3,308,329, 3–7–67, Cl. 313—107.

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Freitas, John A., Jr. and D. M. Spark arrestor. 3,307,337, 3–7–67, Cl. 55—500.

Friedman, Bernard H. Method of elevating a load and lift apparatus therefor. 3,307,831, 3–7–67, Cl. 254—150.

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Fuhrmann, Wold-Dieter, and J. Zocher., to The Singer Co. Apparatus for determining shaft curvature including rotating shaft and plural photocells. 3,308,202, 3–7–67, Cl. 250—219.
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Furst, Stefan, to Walter Reuners. Automatic yarn-package winding machine with take-up spool exchanging device. 3,307,794, 3–7–67, Cl. 242—35.5.
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Gacioch, Michael T., to Carrier Corp. Heating apparatus enclosure. 3,307,471, 3–7–67, Cl. 98—62.
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Gander, Robert J., and H. P. Brown, to Johnson & Johnson and The B. F. Goodrich, Co. Surgical pressure-sensitive adhesive sheet with N-tert-butylacrylamide copolymer adhesive. 3,307,544, 3–7–67, Cl. 128—156.
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Garrett, Howard R., and C. G. Austin, Jr., to The Pre-O-Form Corp. Carton forming and filling machine. 3,307,325, 3–7–67, Cl. 53—186.
Garrett, Robert R., to E. I. du Pont de Nemours, and Co. Non-settling chloroprene copolymer modified phenolic resin adhesive solution. 3,308,087, 3–7–67, Cl. 260—31.2.
Garrod, Norman J. Gramophone record sleeves. 3,307,772, 3–7–67, Cl. 229—68.
Gartner, Berthold, to Bronzavia. Hydraulic pressure regulator. 3,307,568., 3–7–67, Cl. 137—115.
Gaska Remigius A.: *See*—
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Gatos, Jimmy M. and J. W. Watters. Binocular carrier. 3,307,575, 3–7–67, Cl. 224—5.
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  Gold, Nicholas, and Sable. 3,307,467.
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Proud, Ralph A., Jr., and R. C. O'Brien, to Harris-Intertype Corp. Spacer control for phototypesetting system. 3,307,459, 3-7-67, Cl. 95—4.5.
Provost, John R., Jr., to Miller Falls Co. Reversible brush and brush holder arrangement. 3,308,321, 3-7-67, Cl. 310—239.
Pugin, André: *See*—
  Bindler, Jakob, and Pugin. 3,307,901.
Pullman Inc.: *See*—
  Smith, Clifford E. P. 3,307,366.
Purdy, Eugene R. Wedge. 3,307,887, 3-7-67, Cl. 308—55.
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  Niemer, Arthur W., and Putnam. 3,307,550.
Putnam, Robert E.: *See*—
  Niedzielski, Edmund L., and Putnam. 3,307,330.
Putschky, Ernst: *See*—
  Eckerle, Otto, and Putschky. 3,307,489.
Quandt, Ronald L.: *See*—
  Constock, John S., and Quandt. 3,308,396.
Quick, Lloyd S.: *See*—
  Bourdon, Joseph J., Nameth, Moore, Ripley, Stencel, and Quick. 3,308,450.
Quinn, Robert G., to Johns-Manville Corp. Friction material. 3,307,969, 3-7-67, Cl. 117—126.
Rabinow, Jacob. Light sensitive adjustable rear view mirror. 3,307,899, 3-7-67, Cl. 350—281.
Radio Corp. of America: *See*—
  Bagwell, Richard S., Jr. 3,307,852.
  Dusheck, George J., Jr. 3,308,441.
  Hien, Vo D. 3,308,382.
  Lichowsky, Abraham. 3,307,810.
  Lochinger, Rolf B. 3,308,433.
  Rajchman, Jan A. 3,308,445.
  Rajchman, Jan A. 3,308,446.
Radiation Inc.: *See*—
  Lewis, Bernard L. 3,308,464.
Radio Corp. of America: *See*—
  Shahbender, Rabah. 3.308,448.
  Shrader, Terry M. 3,308,327.
  Tourtellot, John A. 3,307,851.
  Van Assel, Robert L. 3,308,324.
  Winder, Robert O. 3,308.285.
  Wright, Carl M. 3,308,384.
Rajchman, Jan A., to Radio Corp. of America. Magnetic storage devices. 3,308,445, 3-7-67, Cl. 340—174.
Rajchman, Jan A., to Radio Corp. of America. Ferrite sheet memory with read and write by angular deflection of flux loops. 3,308,446, 3-7-67, Cl. 340—174.
Ralph, Russell G.: *See*—
  Coberly, Clarence J. and C., Jr., and Ralph. 3,307,631.
Ramello, Piero: *See*—
  Costabello, Dino, Forni, and Ramello. 3,308,167.
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  Machold, Alfred O. K., Nehring, and Ramm. 3,307,623.
Ramsey Engineering Co.: *See*—
  Vosika, Eugene A., and Schaaf. 3,307,670.

Ranford, Alan B.: *See*—
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Rank Organisation Ltd., The: *See*—
Barr, John D., Reason, and Stillwell. 3,307,267.
Rank Radio and Television Ltd.: *See*—
Davis, Edwin J. 3,307,974.
Ransom, Robert B. Drag mechanism for fishing reel. 3,307,799, 3–7–67, Cl. 242—84.44.
Rasimenoks, Pavels, T. L. Angelucci, and F. W. Kulicke, Jr., to Kulicke and Soffa Mfg. Co. Thermocompression wire bonding apparatus with scissors cut-off. 3,307,763, 3–7–67, Cl. 28—3.
Rasmusson, Ben E., and L. W. Busch, Jr., said Busch assor., to said Rasmusson. Dry coater for confections and the like, and valve mechanism used therein. 3,307,517, 3–7–67, Cl. 118—421.
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Rawcliffe, Gordon H., and W. Fong, to National Research Development Corp. Pole-changing, three-phase, alternating current motor or generator for three pole-numbers. 3,308,363, 3–7–67, Cl. 318—224.
Rawls, Frederick, M. T. Krivak, and S. Dardarian, to The Bendix Corp. Electromechanical disc oscillation means for a photoelectric sun sensor device. 3,308,298, 3–7–67, Cl. 250—203.
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Reason, Richard E.: *See*—
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De Coye de Castelet, Gaetan. 3,307,364.
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Regina, Ruth. Partial wig with generally elliptical foundation frame. 3,307,563, 3–7–67, Cl. 132—53.
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Reifenhauser, Fritz. 3,307,218.
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Renner, Frank J., M., and G. 3,307,895.
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Renner, Frank J., W. M., and G. B. 3,307,895.
Rennick, John L., to Zenith Radio Corp. Magnetic apparatus for converging the beams of a plural gun cathode ray tube. 3,308,328, 3–7–67, Cl. 313—77.
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Owen, Charles A., and Isaacson. 3,307,392.
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Fannon, John J., Jr., and Resek. 3,307,529.
Rethwish, William F.: *See*—
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Reuners, Walter: *See*—
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Rexer, Edward F., to Honeywell Inc. Control apparatus. 3,307,613, 3–7–67, Cl. 158—123.
Rhodes, Robert A., G. R. Hrubant, and M. S. Roth, to United States of America, Agriculture. Process of making spore-containing cultures of Japanese beetle milky disease bacteria. 3,308,038, 3–7–67, Cl. 195—96.
Richardson, Donald V., to United Aircraft Corp. Compensated tapped thermocouple system. 3,307,402, 3–7–67, Cl. 73—361.
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Fuge, Ferdinand T. 3,307,600.
Harwood, Paul D., and Burkhart. 3,308,015.
Richter, Willy: *See*—
Meissner, Hans-Urich, and Richter. 3,307,560.
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Rietmuller, Heinz: *See*—
Henss, Heinrich, and Rietmuller. 3,307,782.
Rink, Harold J., and M. P. Smith. Farrowing crate. 3,307,519, 3–7–67, Cl. 119—20.
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Bourdon, Joseph J., Nameth, Moore, Ripley, Stencel, and Quick. 3,308,450.
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Field, Nathaniel L., and Ritchey. 3,308,250.
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Roberts, Joseph M., Sr., and C. M. Mellan, to De Best Mfg. Co., Inc. Removable plug for a passage. 3,307,732, 3–7–67, Cl. 220—24.5.
Robertson, Jerry E., and J. A. Skorcz, to Colgate-Palmolive Co. N-(benzocyclobutene-1-loweralkyl)-carboxylic acid amides. 3,308,157, 3–7–67, Cl. 260—562.
Robertson, Jesse E. Ball hitch construction. 3,307,857, 3–7–67, Cl. 280—511.
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Curtis, Gerald R., Kyle, and Robinson. 3,308,412.
Robinson, Richard A., to G. D. Searle & Co. Tetrahydro-2-isoquinolylalkyl dithiocarbamates. 3,308,128, 3–7–67, Cl. 260—288.
Robinson, Travillis B., to Voss Engineering Co. Apparatus for shearing, welding and planishing metal strips. 3,307,764, 3–7–67, Cl. 228—5.
Roe, Edward T., D. A. Konen, and D. Swern, to United States of America, Agriculture. Chain substituted higher fatty acids. 3,308,140, 3–7–67, Cl. 260—404.
Roehm, William A., to Millen Industries, Inc. Wrapping machine. 3,307,324, 3–7–67, Cl. 53—181.
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Idelson, Elbert M., and Rogers. 3,307,947.
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Rohm & Haas Co.: *See*—
Seifer, Maurice I., and Lo. 3,307,965.
Unger, Victor H., and Wolfrom. 3,307,931.
Rohowetz, Stanley E., and C. V. Shallow, to Allis-Chalmers Mfg. Co. Power supply means. 3,308,419, 3–7–67, Cl. 339—147.
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Rolfe, Herbert E., Jr.: *See*—
Chapman, Harvey W., and Rolfe. 3,307,497.
Rollin, Carl G. Anti-sag means for doors and the like. 3,307,295, 3–7–67, Cl. 49—396.
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Petrie, James A. 3,307,775.
Romanowski, Albert F., to Bowser, Inc. Price setting device. 3,308,274, 3–7–67, Cl. 235—61.11.
Ronay, Thomas E., to Dow Corning Corp. Metallic laminate bonded by an adhesive composition containing a polyvinyl butyral, a phenolic novolak and a polymeric nitrogen silane compound. 3,308,008, 3–7–67, Cl. 161—207.
Ronzio, Richard A., W. C. Hazen, E. L. Coltrinari, and R. E. Cuthbertson, to American Metal Climax, Inc. Process for extracting metal values. 3,307,938, 3–7–67, Cl. 75—103.
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Roscoe, Lawrence C. J., to Bell Telephone Laboratories, Inc. Establishing intraconcentrator connections in a remote line concentrator system. 3,308,243, 3–7–67, Cl. 179—18.
Rose, Frank L., and T. A. Brennan, to Tracor Inc. Surgical instrument. 3,307,389, 3–7–67, Cl. 72—410.
Rose, Jack E. Fire starting device. 3,307,506, 3–7–67, Cl. 110—1.
Rosen, Norman J., to Giannini Controls Corp. Data input station for punched cards. 3,308,252, 3–7–67, Cl. 200—46.
Rosenblad, Axel E. Falling film type evaporators and method. 3,307,614, 3–7–67, Cl. 159—13.
Rosenzweig, William. Loop bows and method. 3,307,864, 3–7–67, Cl. 289—1.2.
Roshala, John L., to Physical Sciences Corp. Pressure transducer for use in extreme temperature and radioactive environments 3,308,411, 3–7–67, Cl. 336—30.
Rosinski, Edward J.: *See*—
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Ross, Charles W Magnetic stacking device. 3,307,716, 3–7–67, Cl. 214—6.
Ross, James H., to Beloit Corp. Steam digestion of impregnated chips. 3,308,011, 3–7–67, Cl. 162—68.
Ross, Martha L., to Atlantic Research Corp. Process of making propellant supports. 3,308,210, 3–7–67, Cl. 264—3.
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Roth, Margaret S.: *See*—
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Roth, Robert I., and H. Fleisher, to International Business Machines Corp. Serial cryogenic binary multiplier system. 3,308,282, 3–7–67, Cl. 235—164.
Rothman, Edward S., to United States of America, Agriculture. Preparation of novel polymers. 3,308,100, 3–7–67, Cl. 260—78.
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Rottmann, Hans R., to Owens-Illinois Glass Co. Gauging wall thickness of glass tubing. 3,307,446, 3–7–67, Cl. 88—14.
Rouault, Paul, to Societe des Usines Chimiques. Translucent panels having selective transmission and their manufacture. 3,308,004, 3–7–67, Cl. 161—1.
Rouberol, Jean M., and M. T. Y. Tong, to C.A.M.E.C.A.-Compagnie d'Applications Mecaniques a l'Electronique, Au Cinema et a l'Ato-Mistigue. X-ray spectrometer with means to maintain the distance between the crystal analyzer and detector fixed. 3,308,295, 3–7–67, Cl. 250—49.5.
Roussel-Uclaf, S.A.: *See*—
Destouches, Pierre. 3,308,025.

Rowekamp, Edward F., to The Lodge & Shipley Co. Air cushioned elevator for case packers. 3,307,328, 3–7–67, Cl. 53—247.
Royal Business Funds Corp.: *See*—
Waldman, Herbert, Lamson, and Merl. 3,308,239.
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Rudelick, John, to Bruner Corp. Control valve for water softeners. 3,307,581, 3–7–67, Cl. 137—625.29.
Rudner, Bernard, and R. A. Bafford, to Koppers Co., Inc. Asymmetric synthesis of alcohols. 3,308,172, 3–7–67, Cl. 260—638.
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Hammell, Kemper M., and Rueger. 3,308,417.
Rupp, Karl, to North American Philips Co., Inc. Transistorized amplifying device fed on alternating current. 3,308,246, 3–7–67, Cl. 179—100.1.
Russell, Carl D., to International Harvester Co. Earth working implement. 3,307,508, 3–7–67, Cl. 111—86.
Russell, James C., to Landmark Engineering, Inc. Continuous digging apparatus. 3,307,276, 3–7–67, Cl. 37—90.
Russell, John S., and K. L. Cianchette, to Cianbro Mfg. Corp. Toggle device for lifting heavy objects. 3,307,871, 3–7–67, Cl. 294—86.
Russell, Luther: *See*—
Dunn, Albert, and Russell. 3,307,216.
Russell, Peter B., to American Home Products Corp. Therapeutic compositions for alleviation of intestinal infections containing 6-[(2-amino-phenylacetamido)-2-phenylacetamido] penicillanic acid. 3,308,023, 3–7–67, Cl. 167—65.
Rutz, Richard F., to International Business Machines Corp. Silicon carbide semiconductor device. 3,308, 356, 3–7–67, Cl. 317—237.
Ryckaert, Andre, C. Domen, deceased (by L. J. H. Domen, nee Depauw, heir), to Solvay & Cie. Process for stabilizing aqueous solutions of hydrogen peroxide. 3,307,910, 3–7–67, Cl. 23—207.5.
Rylatt, John A., to Hawker Siddeley Canada Ltd. Scroll intake for rotary power conversion machines. 3,307,587, 3–7–67, Cl. 138—39.
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S & S Corrugated Paper Machinery Co., Inc.: *See*—
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Gold, Nicholas, and Sable. 3,307,464.
Gold, Nicholas, and Sable. 3,307,467.
Sacks, Jacob M.: *See*—
Graves, Ross E., Jacob, and Sacks. 3,308,380.
Sager, James R., to Owens-Illinois, Inc. Inspecting hypodermic syringe cartridges and the like. 3,307,696, 3–7–67, Cl. 209—111.5.
St. John, John H., to Marquette Corp. Polarity control system. 3,308,365, 3–7–67, Cl. 320—25.
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Salerno, Paul G., to Vapor Corp. Modulating inline valve. 3,307,786, 3–7–67, Cl. 236—80.
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Salzgitter Maschinen Aktiengesellschaft: *See*—
Keller, Heinrich, and Bretz. 3,307,493.
Samitz, Erwin, to Motorenfabrik Hatz G.m.b.H. Draw implement, particularly a ski lift device, for transportation of individuals. 3,307,494, 3–7–67, Cl. 104—173.
Sampson, Herman J., Jr., and R. D. Tomey, to E. I. du Pont de Nemours and Co. Process for recovering unpolymerized monomer. 3,308,109, 3–7–67, Cl. 260—88.7.
Sanden, Stig, to S. Sanden Aktiebolag. Block of lottery tickets. 3,307,858, 3–7–67, Cl. 283—8.
Sanden, Stig, Aktiebolag: *See*—
Sanden, Stig. 3,307,858.
Sanders, Grady H.: *See*—
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Sandoz Ltd. (also known as Sandoz A.G.): *See*—
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Santoni, Ermenegildo. Photogrammetric plotting apparatus. 3,307,450, 3–7–67, Cl. 33—1.
Sarah, Thomas F., to Pflueger Corp. Drag operating mechanism for fishing reels. 3,307,798, 3–7–67, Cl. 242—84.2.
Sasse, Klaus, R. Wegler, L. Eue, and H. Hack, to Farbenfabriken Bayer Aktiengesellschaft. Compositions and method for controlling plant growth. 3,307,933, 3–7–67, Cl. 71—2.3.
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Saunders, Lawrence J., A. Krolick, and J. A. W. Burch, to S & S Corrugated Paper Machinery Co., Inc. Machine for slitting and transversely cutting corrugated board. 3,307,441, 3–7–67, Cl. 83—302.
Sawazaki, Norikazu, to Tokyo Shibaura Electric Co., Ltd. Picture signal receiving system. 3,308,473, 3–7–67, Cl. 346—74.
Scariano, Anthony: *See*—
O'Neill, Robert J., and Tesdahl. 3,308,168.
Schaaf, Gunther: *See*—
Vosika, Eugene A., and Schaaf. 3,307,670.
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Schallenberg, Elmer E.: *See*—
Schlight, Raymond C., Schallenberg, and Moroz. 3,308,064.
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Scheindel, Christian T., to American Can Co. Laminated collapsible tube. 3,307,738, 3–7–67, Cl. 220—83.
Schenck, Leslie M., L. G. Nunn, Jr., and R. E. Leary, to General Aniline & Film Corp. Organic polyalkyleneoxy silicates. 3,308,149, 3–7–67, Cl. 260—448.8.
Schibbye, Lauritz B.: *See*—
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Schibbye, Lauritz B., to Svenska Rotor Maskiner Aktiebolag. Screw rotor machine with an elastic working fluid. 3,307,777, 3–7–67, Cl. 230—143.
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Schilling Electric Co.: *See*—
Schilling, Lorell J., and Oanes. 3,307,585.
Schilling, Lorell J., and O. Oanes, to Schilling Electric Co. Pulsator for milker. 3,307,585, 3–7–67, Cl. 137—625.66.
Schimmels, Thomas J.: *See*—
Krieger, Alvin W., and Schimmels. 3,308,260.
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Schleich, Fritz, to United Aircraft Corp. Arrangement for welding, cuting or working materials by means of an electron beam. 3,308,263, 3–7–67, Cl. 219—121.
Schlein, Seymour N., to The Fanner Mfg. Co. Line spacer, damper and corona eliminating means. 3,308,228, 3–7–67, Cl. 174—42.
Schlesinger, Heinz: *See*—
Hoegl, Helmut, and Schlesinger. 3,307,940.
Schlesinger, Heinz, and J. Munder, to Keuffel & Esser Co. Diazo-type intermediate comprising a layer containing a tri-substituted phenol coupler. 3,307,949, 3–7–67, Cl. 96—75.
Schlight, Raymond C., E. E. Schallenberg, and E. Moroz, to Texaco Inc. Derivatives of cyclic ketals. 3,308,064, 3–7–67, Cl. 252—46.6.
Schmalfeld, Paul, and W. John, to Metallgesellschaft Aktiengesellschaft. Method for making briquettes containing coal. 3,308,219, 3–7–67, Cl. 264—122.
Schmaus, Siegfried H. A., to Ametek, Inc. Sequence switch with plate type switch actuator. 3,308,251, 3–7–67, Cl. 200—38.
Schmid, Franz. Cover plate for liquid manure channels in cow stalls. 3,307,520, 3–7–67, Cl. 119—28.
Schmidt, August, Jr., to Acme Electric Corp. Six-phase rectifier wherein the input even harmonics are eliminated. 3,308,368, 3–7–67, Cl. 321—9.
Schmidt, Gerhard, to Gesellschaft fuer Kernforschung m.b.H. Fuel element for nuclear reactors. 3,308,034, 3–7–67, Cl. 176—78.
Schmidt, Matthias. Method of fractionating starch. 3,307,975, 3–7–67, Cl. 127—71.
Schnedler, Paul E., to Armco Steel Corp. Method and apparatus for controlling the alloying of zinc coatings. 3,307,968 3–7–67, Cl. 117—114.
Schneider, Karl, to Harnischfeger Corp. Spring loaded whip arrester for boom suspension cables. 3,307,721, 3–7–67, Cl. 214—135.
Schneller, Joseph W., to National Gypsum Co. Structural connector clip. 3,307,315, 3–7–67, Cl. 52—490.
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Thies, Louis W., Jr., Fisher, De Vore, and Schnoor. 3,307,555.
Schofield, Arthur T., to The Manufacturers Brush Co. Rotary brush. 3,307,213, 3–7–67, Cl. 15—179.
Scholaert, Albert C. Metallic rotary teazles for textile machines. 3,307,237, 3–7–67, Cl. 26—31.
Schollauf, Franz, to Shell Oil Co. Method of the simultaneous manufacture of two or more bodies connected by at least one connecting element. 3,308,214, 3–7–67, Cl. 264—94.
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Schroeder, Kenneth W., and B. G. Isaacson, to Magnaflux Corp. Saturable reactor having D.C. flux paths of solid ferromagnetic material. 3,308,413, 3–7–67, Cl. 336—155.
Schubert, Bernhard, and G. Wahle, to Hauni-Werke Koerber & Co., K.G. Apparatus for assembling components of tobacco-containing products. 3,307,561, 3–7–67, Cl. 131—94.
Schuessler, Walter E. Faceband equipped headwear. 3,307,202, 3–7–67, Cl. 2—173.
Schultz, Fritz, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production and recovery of the kallikrein-inactivator from proteinaceous hormone wastes. 3,308,026, 3–7–67, Cl. 167—74.
Schultz, John A., to The Dow Chemical Co. Use of nitrogen oxides to inhibit coke formation in hydrocarbon thermal cracking processes. 3,308,056, 3–7–67, Cl. 208—128.
Schulze, Ernst, to Halske Aktiengesellschaft. Method of eliminating the susceptibility to interference of radar devices. 3,308,458, 3–7–67, Cl. 343—8.
Schumann, Edward L., to The Upjohn Co. Phenyl N-alkylcarbamyloxy-benzhydryl ketones. 3,308,154, 3–7–67, Cl. 260—479.
Schwartz, Jacob L., to Shell Oil Co. Container having gear-like corners. 3,307,729, 3–7–67, Cl. 220—1.
Scott, Drummond L.: *See*—
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DESIGN PATENTS

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PLANT PATENTS

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
March 7, 1967 Volume 836 Number 1

TRADEMARKS

NOTICES

Powers of Attorney in Registered Trademark Files

On and after February 1, 1967, communications advising of changes in the powers of attorney for registered trademarks will be placed in the registration files, but will not be acknowledged by the Patent Office. The information will thus be available to those who inspect the files, but since these powers of attorney do not directly concern the Patent Office, acknowledgments are not believed to be necessary.

C. M. WENDT,
Director.

Jan. 30, 1967.

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	17,077
Date of oldest new application	Jan. 4, 1966
Date of oldest amended application (filing date)	Oct. 8, 1963

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	1-4-66	5-4-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-17-66	10-8-63
Renewals (All Classes)	1-3-67	----------
Sec. 12(c) Publications (All Classes)	1-9-67	----------

Applications filed during the month of January 1967—2,054

Registrations Issued ---------- 414—No. 825,124 to No. 825,537
Renewals Issued ---------- 80

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

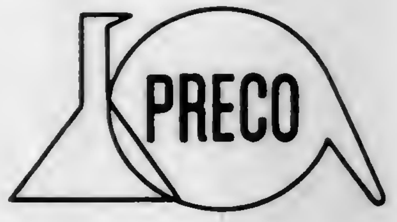
SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 210,812. Preco Chemical Corporation, Westbury, N.Y. Filed Jan. 27, 1965.



Class 6—Chemicals and Chemical Compositions

For Adhesive Reinforcement Additive for Concrete, Plaster, Mortar and the Like and Cement Paint; Abrasion Resistant Retarder for Exposed Aggregate Panels; Concrete and Mortar Anti-Freeze Additive; and Concrete and Mortar Additive Having Waterproofing, Accelerating and Hardening Properties.

Class 12—Construction Materials

For Exposed Aggregated Compound Comprising a Surface Retardant for Textured Concrete; Liquid and Powder Mix for Resurfacing and Patching Concrete; Epoxy Resin Chemical and Abrasion Resistant Compositions for Concrete, Wood, or Metals; Rubber Base Floor Coating Composition; Resinous Sealer for Sealing, Dustproofing, and Hardening Concrete and Wood; Epoxy Resin Tile-Hard Glaze Coating; Silicone Formulation for Waterproofing Masonry; Textured Insulating Acoustical Coating; Elastic Caulking and Expansion Joint Compound.

Class 16—Protective and Decorative Coatings

For Pigmented and Clear Coatings in the Nature of Paints for Swimming Pools, Brick, Masonry, Stucco, and the Like; Two Component Interface, Adhesive Coating for Bonding Wet Concrete to Any Surface.

First use August 1957.

SN 220,506. Independent Parts Warehouse, Inc., Jacksonville, Fla. Filed June 7, 1965.

IPJ

Class 19—Vehicles

For Automobile, Truck, Tractor, and Engine Parts—Namely, New and Rebuilt Brake Shoes and Power Brake Units.
First use Apr. 21, 1965.

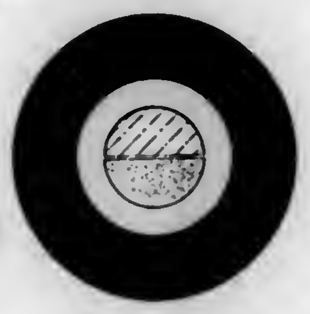
Class 21—Electrical Apparatus, Machines, and Supplies

For Automobile, Truck, Tractor, and Engine Parts—Namely, New and Rebuilt Voltage Regulators, and Solenoids.
First use Jan. 20, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automobile, Truck, Tractor, and Engine Parts—Namely, New and Rebuilt Water Pumps, Fuel Pumps, and Carburetors.
First use Dec. 21, 1964.

SN 227,492. Federal-Mogul Corporation, Detroit, Mich. Filed Sept. 9, 1965.



The stippled and hatched portions are intended to show contrasting color, shade or hue, but no claim is made to any particular color.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Sleeve Bearings, Ball Bearings, Reconditioned Connecting Rods, Roller Bearings, Pistons, Engine and Compressor Valves, Bushings, Valve Rotor Assemblies, Valve Springs, Thrust Washers, Valve Guides, Valve Tappets, Wear Plates, and Spacer Tubes.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Oil Seals, O-Rings, and Valve Stem Seals.

First use July 8, 1965.

SN 227,981. R. Sanford Wilson, d.b.a. Basket World, Weirs Beach, N.H. Filed Sept. 16, 1965.

BASKET WORLD

The word "Basket" is disclaimed apart from the mark as shown.

Class 2—Receptacles

For Baskets, Totes, Hampers, and Planters.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Suitcases, Pocketbooks, Satchels, Dog and Cat Baskets.

Class 32—Furniture and Upholstery

For Chairs and Settees.

Class 50—Merchandise Not Otherwise Classified

For Mats and Wall Plaques.

First use June 19, 1959.

SN 228,268. National Aeronautical Corporation, Fort Washington, Pa. Filed Sept. 21, 1965.

NARCO

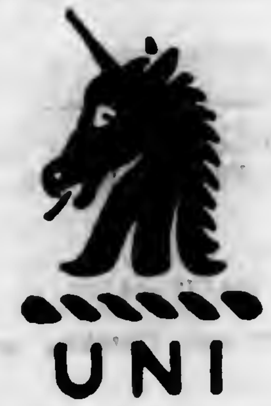
Class 21—Electrical Apparatus, Machines, and Supplies

For Electronic, Radio and Navigational Equipment—Namely, Radio Transmitters, Radio Receivers, Radio Transceivers, Unicom Transceivers, VHF Receivers, VOR Receivers, ADF Receivers, Glide Slope Receivers, Marker Beacon Receivers and Indicators, Omni Converters and Indicators, Localiser and Localizer-Glide Slope Converters and Indicators, VHF, Broad Band, NAV, Marker Beacon, Glide Slope and ADF Sense Antennas, Electronic Couplers, Electrical Switching Apparatus and Tone Filters.
First use Sept. 25, 1947.

Class 26—Measuring and Scientific Appliances

For Left-Right Indicators, Ambiguity Indicators, Omni-Range Measuring and Testing Equipment, Distance Measuring and Testing Equipment (DME), Ground Speed Indicators (GSI), Automatic Direction Finders (ADF), and Transponder Testing and Measuring Equipment.
First use December 1948.

SN 229,613. Universal Grinding Wheel Co., Limited, Stafford, England. Filed Oct. 7, 1965.



Class 4—Abrasives and Polishing Materials

For Abrasive Products and Polishing and Grinding Preparations and Substances—Namely, Abrasive, Grinding and Polishing Wheels, Discs, Stones, Blocks, Segments, Sticks, and Parts Thereof.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Cutting, Grinding and Sanding Machines and Parts Thereof, Dressing Tools, Rasps, Files, and Reamers.

First use 1926.

SN 230,533. The B. F. Goodrich Company, Akron, Ohio. Filed Oct. 19, 1965.

QUIK-LOCK

Class 1—Raw or Partly Prepared Materials

For Rubber Cover Stock.

Class 5—Adhesives

For Adhesive Rubber Cements, Rubber Putty, Rubber Tie Gum, and Rubber Patches.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Rubber Replacement Cleats and Repair Materials Kits Comprising Adhesive Cements, Rubber Patches and Rubber Cover Stock, All of Which Goods Are Used for Repairing or Splicing Together Rubber Articles Such as Conveyor Belting.

First use Apr. 15, 1953.

SN 230,703. Relaco Mfg. Co., Inc., Brooklyn, N.Y. Filed Oct. 20, 1965.

RELACO

Class 6—Chemicals and Chemical Compositions

For Chemical Fungicides and Insecticides Having Water Repelling Properties, Water Repellents.

Class 16—Protective and Decorative Coatings

For Paints, Varnishes, Enamels, Lacquers, Thinners, Floor Finishes, and Aluminum Roof Coatings.

First use 1940.

SN 230,991. The American Automobile Association (Incorporated), Washington, D.C. Filed Oct. 22, 1965.

AAA

Owner of Reg. Nos. 547,321 and 703,556.

Class 100—Miscellaneous

For Automobile Association Services Rendered to Motor Vehicle Owners, Motorists and Travelers Generally—Namely, Obtaining Motor Vehicle License Plates and Title Certificates; Sponsoring School Safety Patrols; Advocating Legislation Favorable to Safe and Economical Motor Vehicle Travel, Operation and Maintenance; Conducting Motor Vehicle Tests and Making Tests of Automotive and Related Products; and Rating Tourist Accommodations.
First use 1903.

Class 101—Advertising and Business

For Arranging for Discount Purchases, Collecting Damage Claims; Offering Rewards for Information Leading to Arrest and Conviction of Persons Stealing Members' Automobiles; and Placing Insurance With Underwriters.
First use 1916.

Class 102—Insurance and Financial

For Providing Bail Bond.
First use 1916.

Class 103—Construction and Repair

For Providing Emergency Road Service.
First use 1916.

Class 105—Transportation and Storage

For Disseminating Travel Information and Making Travel Arrangements.
First use 1902.

Class 107—Education and Entertainment

For Teaching Motor Vehicle Operation; Conducting Traffic and Pedestrian Safety Campaigns, and Giving Traffic Safety Lessons.
First use 1924.

SN 232,111. Alvin Metals Co., Los Angeles, Calif. Filed Nov. 4, 1965.

COR-RESIST

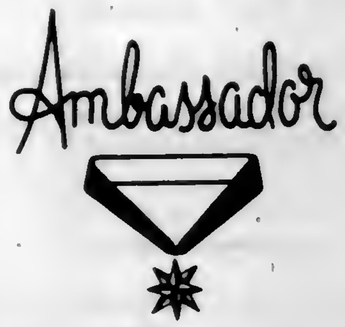
Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Metal Pipe and Metal Tubing.

Class 14—Metals and Metal Castings and Forgings

For Metal Bars.
First use Oct. 7, 1965.

SN 232,257. Hallmark Cards, Incorporated, Kansas City, Mo. Filed Nov. 8, 1965.



Owner of Reg. Nos. 689,926 and 739,384.

Class 2—Receptacles

For Decorative Paper Plates and Coasters.
First use June 1965.

Class 7—Cordage

For Ribbon Cut in Lengths Used for Decorative Purposes.
First use May 1960.

Class 37—Paper and Stationery

For Decorative Gift Wrapping Paper, Decorative Note Paper and Stationery—Namely, Writing Paper and Envelopes, Date Books, Napkins, Gift Tags, Party Invitations, Birth Announcements, Tallies, Place Cards, Decorative Centerpieces, Silhouettes, and Party Home Decorations Made of Paper.
First use May 1960.

Class 38—Prints and Publications

For Christmas Seals, Decorative Seals, Gift Seals, and Sympathy Acknowledgments.
First use May 1960.

SN 232,395. Evan Williams Beauty Aids Limited, London, England. Filed Nov. 9, 1965.

EVAN WILLIAMS

The name "Evan Williams" is fictitious. Owner of British Reg. No. 650,954, dated Aug. 22, 1946.

Class 51—Cosmetics and Toilet Preparations

For Lotions and Dyes, All for the Hair, and Brilliantines.

Class 52—Detergents and Soaps

For Hair Shampoos.

SN 232,804. Tuloma Gas Products Company, Tulsa, Okla. Filed Nov. 17, 1965.

TULOMA

Owner of Reg. No. 610,192.

Class 2—Receptacles

For Storage Tanks.
First use June 1, 1954.

Class 6—Chemicals and Chemical Compositions

For Ammonia, Anhydrous Ammonia, Aqua Ammonia, Ammonia Nitrate Solution, Nitric Acid, Nitrogen Solution, Propylene, Sulphur, Butane, Ethane, Propane, Benzene, and Liquified Petroleum Gas.
First use June 1, 1954.

Class 10—Fertilizers

For Fertilizer.
First use Oct. 1, 1961.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Fertilizer Applicators, and Parts Thereof.
First use Jan. 30, 1964.

SN 233,730. Nivarox SA, St. Imier, Switzerland. Filed Dec. 1, 1965.

NIVAROX

Owner of Swiss Reg. No. 210,859, dated Aug. 17, 1945.

Class 14—Metals and Metal Castings and Forgings

For Alloys for the Preparation of Hair Springs, Tuning Forks, and Torsion Wires.

Class 26—Measuring and Scientific Appliances

For Hair Springs, Tuning Forks, and Torsion Wires for Measuring Instruments and Control Apparatus.

Class 27—Horological Instruments

For Watch Parts—Namely, Hair Springs, Tuning Forks, and Torsion Wires.

First use 1933; in commerce 1933.

SN 236,433. The Youngstown Sheet and Tube Company, Youngstown, Ohio. Filed Jan. 13, 1966.

D+B

Owner of Reg. Nos. 204,079 and 502,749.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Oilfield Equipment—Namely, Bottom Discharge Valves, Pressure Control Valves, and Seating Nipples.
First use at least as early as 1950.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Polished Rods, Polished Rod Stuffing Boxes, Polished Rod Clamps, Polished Rod Liners, and Valve Pullers.
First use at least as early as 1954.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Polished Rod Stuffing Box Packing.
First use at least as early as 1925.

SN 236,579. Etablissement Dentaire Ivoclar, Schaan, Liechtenstein. Filed Jan. 17, 1966.

SILICAP

Priority claimed under Sec. 44(d) on Liechtenstein Reg. No. 1,997, dated Oct. 6, 1965.

Class 18—Medicines and Pharmaceutical Preparations

For Tooth Pulp Treating Pharmaceuticals, Calcium Hydroxide in Mixture With a Hardener, Eugenol, Dental Pharmaceuticals for the Treatment of Paradentosis, Dental Medicaments for Desensitizing, and Capsules Filled With a Medicament.

Class 44—Dental, Medical, and Surgical Appliances

For Dentures, Dental Cavity Liners, Dental Cavity Varnish, Eugenol-Zinc Oxide Cement, Dental Filling for Roots, Molding Materials for Dental Purposes; Dental Filling Materials for the Preparation of Dental Fillings in Frontal Teeth and Molar Teeth, Bottom Fillings, Cements for Fastening Dental Crowns, Bridges and Inlays; Cements for Fastening Orthodontic Appliances; Dental Porcelains; Dental Parting Materials, Dental Colorants, Dental Lubricants.

Class 51—Cosmetics and Toilet Preparations

For Toothpaste and Mouthwash.

SN 237,524. Underwriters Service Agency, Inc., d.b.a. Underwriters Service Agency, Hartford, Conn. Filed Jan. 28, 1966.

"SERVICE IS OUR MIDDLE NAME"

Class 100—Miscellaneous

For Advice and Consultation Services to Insurance Agents and Brokers.

Class 102—Insurance and Financial

For Underwriting Life, Accident, Health, Pension and Group Insurance.

First use spring of 1963.

SN 238,909. Abelardo Vera Martinez, Barcelona, Spain. Filed Feb. 16, 1966.

SIGLO DE ORO

The English translation of the mark is "century of gold."

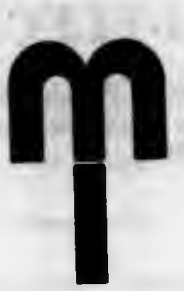
Class 51—Cosmetics and Toilet Preparations

For Cologne Water.
First use Sept. 1954; in commerce May 8, 1964.

Class 52—Detergents and Soaps

For Bath Soap.
First use July 30, 1958; in commerce May 8, 1964.

SN 241,117. Montclair Imports Inc., Westbury, N.Y. Filed Mar. 16, 1966.



Class 29—Brooms, Brushes, and Dusters

For Brushes for the Hair.
First use on or about Nov. 30, 1963.

Class 40—Fancy Goods, Furnishings, and Notions

For Combs for the Hair.
First use on or about Aug. 20, 1962.

SN 243,374. Standard Pyroxoloid Corporation, Leominster, Mass. Filed Apr. 14, 1966.

LITTLE FLAPPER

Class 22—Games, Toys, and Sporting Goods

For Toy Dresser Sets Comprising Combs and Mirrors, and Brushes and Mirrors.

Class 40—Fancy Goods, Furnishings, and Notions

For Dressed Sets Comprising Combs and Mirrors, and Brushes and Mirrors.

First use Mar. 1, 1966.

SN 247,861. Sekisui Chemical Company Ltd. of Japan, Osaka, Japan. Filed June 13, 1966.

'S'-lon

Class 12—Construction Materials

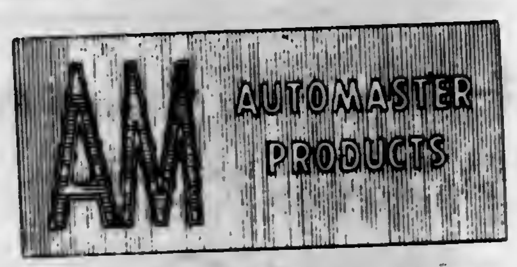
For Rain Gutters.

Class 50—Merchandise Not Otherwise Classified

For Poultry Feeders.

First use October 1961; in commerce May 1964.

SN 250,144. Sidney M. Fields, d.b.a. Fields International, Chicago, Ill. Filed July 13, 1966.



No exclusive rights are claimed in the word "Products" apart from the mark as shown. The drawing is lined for the colors red and blue.

Class 19—Vehicles

For Front Wheel Bearings for Automobiles, Buses and Trucks, Brake Parts Consisting of Wheel Cylinders and Master Cylinders, Tie Rods and Drag Links; King Bolt Sets; and Front End Suspension Parts.

Class 21—Electrical Apparatus, Machines, and Supplies Thereof

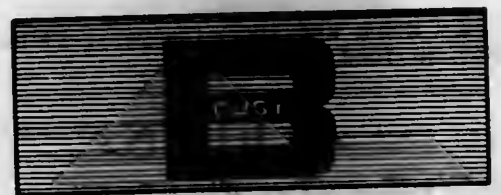
For Ignition Parts for Internal Combustion Engines.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Engine and Clutch Release Bearings and Fuel Pumps for Internal Combustion Engines.

First use Apr. 1, 1955.

SN 253,815. Balboa Supply Co., El Cajon, Calif. Filed Sept. 6, 1966.



The drawing is not lined for color.

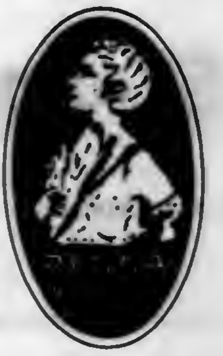
Class 6—Chemicals and Chemical Compositions

For Room Deodorant, Industrial Bactericide Deodorant, Pool Algaecide, and Powdered Bleach.
First use Apr. 16, 1965.

Class 52—Detergents and Soaps

For Rug Shampoo, Glass Cleaner Concentrate, Heavy Duty Cleaner, Hard Surface Cleaner, and Detergents.
First use Apr. 2, 1965.

SN 255,564. George H. Campbell, d.b.a. Renna of New York, Los Angeles, Calif. Filed Oct. 3, 1966.



The right to the exclusive use of the geographical words "New York" and "Paris" is disclaimed apart from the mark as shown.

Class 51—Cosmetics and Toilet Preparations

For Facial Creams and Oils.
First use 1921.

Class 100—Miscellaneous

For Beauty Parlor Services.
First use 1937.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1 — Raw or Partly Prepared Materials

SN 237,174. Therm-O-Lux International, Inc., Cambridge, Mass. Filed Jan. 24, 1966.

THERM-O-LUX

For Laminated Aluminum and Plastic Heat Reflective, Light Transparent Film for Glass Surfaces.
First use on or about July 27, 1959.
Subj. to Intf. with SN 234,264.

SN 255,169. Jacklin Seed Co., Inc., Dishman, Wash. Filed Sept. 27, 1966.

0217

For Grass Seed.
First use Aug. 5, 1966.

SN 259,380. Stauffer Hoechst Polymer Corporation, Delaware City, Del. Filed Nov. 25, 1966.

SH STAUFFER HOECHST

For Plastic Film and Sheeting.
First use April 1965.

SN 259,762. Rohm and Haas Company, Philadelphia, Pa. Filed Nov. 30, 1966.

AYRLYN

For Nylon Fibers and Continuous Filaments for Various Uses in the Industrial Arts.
First use on or about Nov. 18, 1966.

SN 259,763. Rohm and Haas Company, Philadelphia, Pa. Filed Nov. 30, 1966.

AYRLON

For Nylon Fibers and Continuous Filaments for Various Uses in the Industrial Arts.
First use on or about Nov. 18, 1966.

Class 2 — Receptacles

SN 213,650. Brewmaster California Corporation, La Habra, Calif. Filed Mar. 9, 1965.

PORT-A-KEG

For Self-Contained, Carbonated Beverage Dispenser.
First use in or about September 1963.

SN 227,565. Creative Packaging, Inc., Indianapolis, Ind. Filed Sept. 10, 1965.

DRI-ELECTRIC

For Package Inserts of Foamed Polystyrene for Cardboard Containers Containing Frangible Items.
First use June 28, 1965.

SN 235,673. International Paper Company, New York, N.Y. Filed Jan. 3, 1966.

Q
D

For Ice Cream Cartons.
First use Nov. 18, 1965.

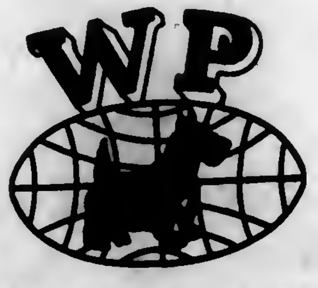
SN 254,927. Gessner Products Company, Inc., Ambler, Pa. Filed Sept. 22, 1966.

ROYALE FLAIR

For Canape Sets Comprising Serving Trays and Matching Coasters.
First use Sept. 1, 1966.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 237,408. Warren Products, Ltd., Flushing, N.Y. Filed Jan. 26, 1966.



No claim is made to the pictorial representation of the dog apart from the mark as shown.
For Pet Supplies—Namely, Leashes, Chains, Rawhide Chew Bones, Runner Reels, and Toys.
First use May 15, 1964.

SN 248,834. Brother International Corporation, New York, N.Y. Filed Apr. 20, 1966.

TOTE-SEW

For Sewing Machine Carrying Case.
First use on or about Jan. 5, 1966.

Class 4 — Abrasives and Polishing Materials

SN 259,694. Huntington Laboratories, Inc. Huntington, Ind. Filed Nov. 30, 1966.

FLOOR RICH

For Detergent-Resistant Floor Polish.
First use Sept. 28, 1966.

Class 6 — Chemicals and Chemical Compositions

SN 227,418. Geigy Chemical Corporation, Ardsley, N.Y. Filed Sept. 8, 1965.

MOUSE-TOX

Owner of Reg. Nos. 164,491, 213,664, and others.
For Chemical Ingredient Used in the Manufacture of Rodenticides.
First use Aug. 26, 1965.

SN 235,140. Triple-X Chemical Laboratories, Incorporated, Chicago, Ill. Filed Dec. 22, 1965.

KLEENOL

For Lye and Disinfectant-Deodorant.
First use March 1958.

SN 244,764. Standard International Corporation, Andover, Mass. Filed May 2, 1966.

LESTAIN

Owner of Reg. Nos. 348,957, 711,399, and others.
For Brightening Preparation for Use on Surgical and Other Stainless Steel Instruments.
First use June 8, 1965.

SN 247,145. The Ontario Paper Company Limited, Thorold, Ontario, Canada. Filed June 2, 1966.

OPCOLIG

For Lignosulphonic Acid Compounds and Partially or Substantially Desulphonated Derivatives or Modifications of the Same, Including Compositions of Matter Containing a Substantial Proporation of the Above Materials for Use in the Fields of Dispersants, Emulsifiers, Deflocculants, Flotation Agents, Extenders, Grinding Aids, Drilling Muds, and Adhesives.
First use Feb. 1, 1966; in commerce Feb. 1, 1966.

SN 248,436. Frank D. Davis Company, Los Angeles, Calif. Filed June 20, 1966.

HYDROTINT

For Aqueous Pigment Dispersions for Use in Making Water Emulsion Paints.
First use February 1966.

SN 248,438. Frank D. Davis Company, Los Angeles, Calif. Filed June 20, 1966.

SUPRA INSTANT

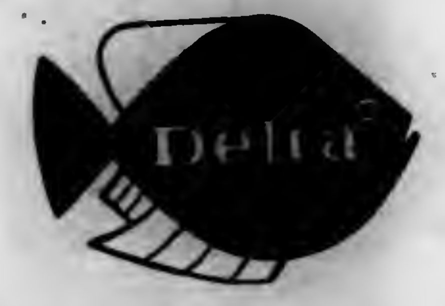
For Carbon Blacks Used in Concrete.
First use October 1965.

SN 249,506. Coulter Electronics, Inc., Hialeah, Fla. Filed July 5, 1966.

ZAPonin

For Lysing Reagent for White Blood Cell Counts for Laboratory Use.
First use Mar. 31, 1966.

SN 249,592. Sternco Industries, Inc., Allendale, N.J. Filed July 5, 1966.



Owner of Reg. No. 781,660.
For Aquarium Tank Accessories—Namely, Preparations for Removing Chlorine From Aquarium Water and for Preventing Fish Diseases; and Mineral Additive Water Conditioners.
First use Sept. 4, 1962.

SN 250,869. Union Carbide Corporation, New York, N.Y. Filed July 22, 1966.

LINDE

For Silicon Monoxide for General Use in the Industrial Arts.
First use on or about Apr. 29, 1965.

SN 251,124. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories, Stamford, Conn. Filed July 27, 1966.

NUCOTEST

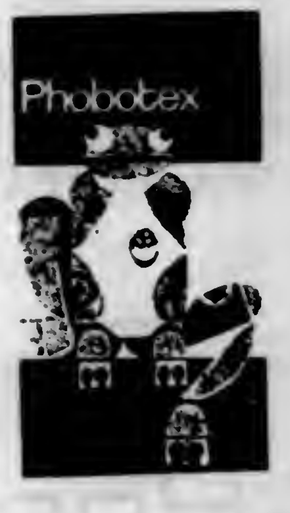
For Diagnostic Reagent for Laboratory Use.
First use June 29, 1966.

SN 251,280. Ciba Limited, Basel, Switzerland. Filed July 29, 1966.

GALECRON

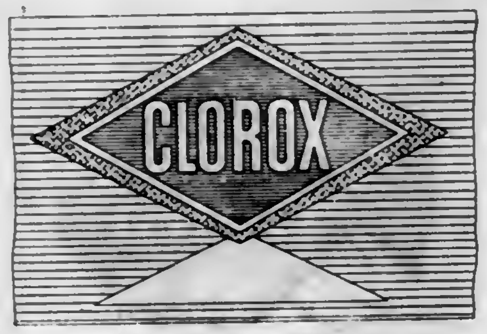
Owner of Swiss Reg. No. 207,986, dated Jan. 12, 1965.
For Chemical Preparations for Killing Weeds and Destroying Vermin; Preparations for Combating Plant Pests.

SN 251,282. Ciba Limited, Basel, Switzerland. Filed July 29, 1966.



Owner of Swiss Reg. No. 212,254, dated Aug. 27, 1965.
For Water Repellent Finishing Agents.

SN 253,197. The Clorox Company, Oakland, Calif. Filed Aug. 26, 1966.



The drawing is lined for vermilion, blue, and dark blue.
Owner of Reg. Nos. 102,650, 723,197, and others.
For Liquid Bleach-Disinfectant With Incidental Cleaning Properties.
First use June 19, 1964; 1915 as to the diamond design; July 15, 1914 as to the word "Clorox."

SN 254,574. Huntington Laboratories, Inc., Huntington, Ind. Filed Sept. 16, 1966.

COMPASS

For Germicide-Fungicide Deodorant Packed in Aerosol Containers for Institutional Use.
First use July 21, 1966.

Class 7 — Cordage

SN 244,016. Norcross, Inc., New York, N.Y. Filed Apr. 21, 1966.

LUSTRE-PACK

Owner of Reg. Nos. 628,086 and 740,463.
For Ribbons and Twines.
First use Apr. 8, 1966.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 260,218. Tagliabue Manifattura Pipe S.p.A., Gallarate, Varese, Italy. Filed Dec. 7, 1966.

OLD VIC

For Pipes.
First use July 30, 1958; in commerce Jan. 18, 1961.
Subj. to Intf. with SN 243,565.

Class 10 — Fertilizers

SN 244,446. Martinsburg Forest Products, Inc., Martinsburg, W. Va. Filed Apr. 27, 1966.

MASTER GARDENER

For Mulch.
First use Sept. 17, 1965.

Class 11 — Inks and Inking Materials

SN 251,641. Mason Marking Systems Corporation, Norfolk, Va. Filed Aug. 3, 1966.

FELTMARK

For Ink Pads.
First use on or about June 14, 1962.

SN 253,152. Mason Marking Systems Corporation, Norfolk, Va. Filed Aug. 25, 1966.

SOFTMARK

For Ink Pads.
First use on or about Aug. 1, 1966.

Class 12 — Construction Materials

SN 235,621. Buckley Construction Industries, Wichita, Kans. Filed Jan. 3, 1966.

"CURE SEAL"

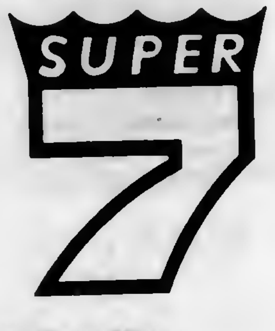
For Blanket Having Outer Layers of Impervious Plastic Material Sealed Around the Edges and Having Glass Fiber Batting Insulation Therebetween, Placed Over Concrete During the Curing of Same.
First use on or about Dec. 1, 1965.

SN 236,840. A. Ottavino Corp., Ozone Park, N.Y. Filed Jan. 13, 1966.

GRANIZEAL

For Metal Surface Plate Bonded to a Recapped Granite Plate.
First use Dec. 1, 1965.

SN 238,778. Herman W. Patterson, d.b.a. Ti-Not Company, Overland Park, Kans. Filed Feb. 14, 1966.



For Cellulose Fiber Wood Filler.
First use Feb. 10, 1966.

SN 243,473. Panelcraft Corp., Phoenix, Ariz. Filed Apr. 14, 1966.

Panelcraft

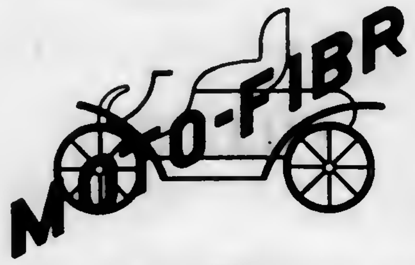
For Decorative Masonry Materials Integrally Bonded in Precast Concrete Wall Panels.
First use Jan. 26, 1966.

SN 244,391. The Burns & Russell Company of Baltimore City, Baltimore, Md. Filed Apr. 27, 1966.

SPECTRA-PANEL

Owner of Reg. Nos. 584,145, 776,029, and others.
For Glazing Compounds for Use in Molding or Casting Building Blocks, Panels, and the Like.
First use Apr. 13, 1966.

SN 244,570. Colonial Board Company, Manchester, Conn. Filed Apr. 29, 1966.



Without relinquishing any of its common law rights, applicant disclaims the design of the automotive vehicle apart from the mark as shown.
For Fiberboard, Particularly for Automotive Use.
First use Apr. 1, 1966.

SN 244,859. U-Neek Aluminum Products Co., d.b.a. U-Neek Products Company, Pasadena, Calif. Filed May 3, 1966.

U-NEEK-O

For Aluminum Structural Products—Namely, Buildings, Trailer Skirts, Awnings, and the Like.
First use Nov. 5, 1959.

SN 244,964. Otto Buehner and Company, Salt Lake City, Utah. Filed May 5, 1966.

TRAVERCON

For Pre-Cast Architectural Building Panels.
First use in or about 1956.

SN 247,322. Brunspile Corporation, New Orleans, La. Filed June 6, 1966.

BRUNSPILE

For Prestressed Sectional Concrete Piling.
First use Nov. 26, 1962.

SN 247,423. United States Concrete Pipe Company, Cleveland, Ohio. Filed June 6, 1966.

UNICON

For Precast Concrete Pipe and Manholes.
First use May 5, 1966.

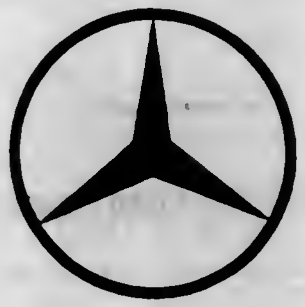
SN 247,720. Plycraft, Inc., Lawrence, Mass. Filed June 9, 1966.

PLYTUBE

For Plywood Tubing.
First use 1944.

Class 14 — Metals and Metal Castings and Forgings

SN 234,805. Daimler-Benz Aktiengesellschaft, Stuttgart-Untertuerkheim, Germany. Filed Dec. 17, 1965.



Owner of German Reg. No. 685,072, dated Dec. 2, 1955; and U.S. Reg. Nos. 389,338, 389,340, and others.
For Steel Balls; and Metal Castings and Forgings.
First use 1933; in commerce 1938.

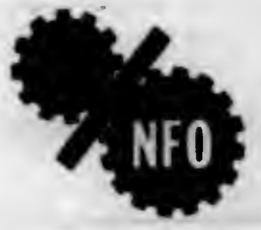
Class 15 — Oils and Greases

SN 232,213. Lamplight Oil Products, Inc., Milwaukee, Wis. Filed Nov. 5, 1965.

LAMPLIGHT

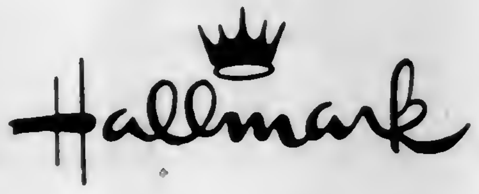
For Combustible Oils, More Particularly, Treated Combustible Oils for Use in Oil Lamps or Lanterns.
First use Sept. 26, 1964.

SN 245,091. Non-Fluid Oil Corporation, New York, N.Y. Filed May 6, 1966.



Owner of Reg. No. 356,401.
For Lubricating Oils and Greases.
First use Apr. 7, 1966.

SN 245,445. Hallmark Cards, Incorporated, Kansas City, Mo. Filed May 9, 1966.



Owner of Reg. Nos. 107,653, 712,525, and others.
For Candles.
First use Apr. 18, 1966.

SN 256,269. The Clark Oil & Chemical Company, Cleveland, Ohio. Filed Oct. 12, 1966.

COCHEM

For Metal Working Lubricants, Emulsifiable Oils, and Lubricating Oils.
First use March 1965.

Class 16 — Protective and Decorative Coatings

SN 235,315. Macnaughton-Brooks, Limited, Weston, Ontario, Canada. Filed Dec. 27, 1965.

CHIPKOTE

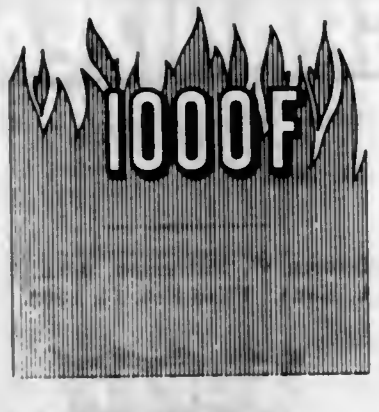
For Protective and Decorative Coating With Exposed Marble Chips for Use on Walls.
First use Nov. 2, 1964; in commerce Nov. 2, 1964.

SN 236,497. Lunex Company, Pleasant Valley, Iowa. Filed Jan. 14, 1966.

LUNEX

For Paints for Cement Floors, Foundations, Walls and Other Masonry Surfaces, Wood and Metal, and for Resistance to Corrosive Chemicals and Abrasion.
First use 1932.

SN 236,693. Zynolyte Products Company, Compton, Calif. Filed Jan. 17, 1966.



The drawing is lined for red.
For Protective Spray Color Coating for Application to Metal Surfaces Subjected to High Temperatures, Such as, Broilers, Heaters, Barbecues, Automobile Tailpipes, and the Like.
First use Dec. 21, 1965.

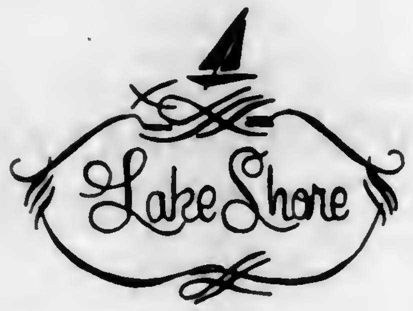
SN 240,730. The Glidden Company, Cleveland, Ohio. Filed Mar. 11, 1966.

SSC

For Paint.
First use at least by Feb. 22, 1966.

Class 17 — Tobacco Products

SN 237,560. Anita Howard, d.b.a. Howard House Tobaccos, Chicago, Ill. Filed Jan. 28, 1966.



For Pipe Tobacco and Cigars.
First use June 9, 1962.

SN 242,077. Villiger Sohne GmbH., Tiengen (Upper Rhine), Germany. Filed Mar. 28, 1966.

VILLETTE

Owner of German Reg. No. 794,978, dated Sept. 10, 1964.
For Miniature Cigars.

Class 18 — Medicines and Pharmaceutical Preparations

SN 233,678. Big Bear, Inc., St. Cloud, Minn. Filed Dec. 1, 1965.

DAIRY DEW

Applicant disclaims the word "Dairy" except as used as part of the mark. Owner of Reg. No. 819,278.
For Medicated Animal Food Supplements.
First use July 18, 1965.

SN 237,055. The Upjohn Company, Kalamazoo, Mich. Filed Jan. 21, 1966.

VOLAR

For Medicinal Substance for the Promotion of Epithelization.
First use Oct. 21, 1965.

SN 237,059. Wallace & Tiernan Inc., East Orange, N.J. Filed Jan. 21, 1966.

CRUEX

For Antiseptic Anti-Fungal Preparation.
First use Sept. 10, 1963.

SN 237,499. The Upjohn Company, Kalamazoo, Mich. Filed Jan. 27, 1966.

VOLARE

For Medicinal Substance for the Promotion of Epithelization.
First use Oct. 21, 1965.

SN 237,852. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Feb. 2, 1966.

PASALATE

Owner of Reg. No. 668,610.
For Sodium Aminosalicylate Preparations in Dosage Form.
First use 1951.

SN 245,457. Baxter Laboratories, Inc., Morton Grove, Ill. Filed May 12, 1966.

OSMORIN

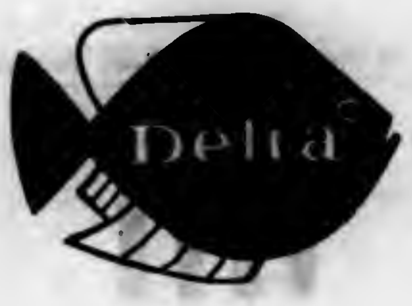
For Diuretic.
First use Nov. 23, 1965.

SN 246,290. Dermik Laboratories, Inc., Syosset, N.Y. Filed May 23, 1966.

BENRUS

For Pharmaceutical Preparation for the Treatment of Various Diseases of the Skin.
First use Dec. 7, 1965.

SN 249,593. Sternco Industries, Inc., Allendale, N.J. Filed July 5, 1966.



Owner of Reg. No. 781,660.
For Medical Preparations for Aquarium Fish.
First use Sept. 4, 1962.

SN 252,688. Sandoz, Inc., Hanover, N.J. Filed Aug. 18, 1966.

RAPORE

For Tranquilizer.
First use June 21, 1966.

SN 253,059. Tarmac Products, Inc., New York, N.Y. Filed Aug. 24, 1966.

NEOREU

For Pharmaceutical Preparation for the Treatment of the Gout, Arthritis, Rheumatism, Muscular Ache, Lumbago, and Sciatica.
First use February 1964.

SN 253,061. Tarmac Products, Inc., New York, N.Y. Filed Aug. 24, 1966.

ADELGADINA

For Aneroxiant for the Treatment of Obesity, With Multivitamins as Nutritional Supplement and Choline as Lipotropic Agent.
First use December 1961.

SN 253,062. Tarmac Products, Inc., New York, N.Y. Filed Aug. 24, 1966.

ULKAN

For Pharmaceutical Preparation for Temporary Relief of Gastric Discomfort Due to Gastric Hyperacidity Caused by Overeating and Other Dietary Indiscretions.
First use February 1960.

SN 253,063. Tarmac Products, Inc., New York, N.Y. Filed Aug. 24, 1966.

KRONOX

For Pharmaceutical Preparation for Use in the Treatment of Dysmenorrhea.
First use February 1960.

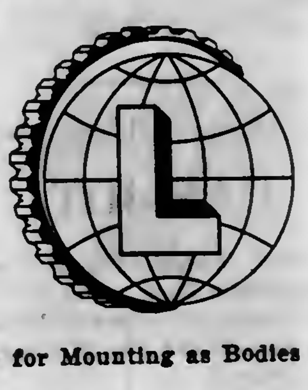
Class 19 — Vehicles

SN 233,352. The Hydrocraft Corporation, Rumson, N.J. Filed Nov. 26, 1965.

HYDROCRAFT

For Boats.
First use Nov. 5, 1965.

SN 236,104. Sellon, Inc., Toledo, Ohio, assignee of Lockwood Grader Corporation, Gering, Nebr. Filed Jan. 10, 1966.
Owner of Reg. No. 781,302.



For Bulk Boxes for Mounting as Bodies for Trucks or the Like.
First use Apr. 23, 1963.

SN 237,691. General Motors Corporation, Detroit, Mich. Filed Feb. 1, 1966.

MASCOT

For Light Trucks.
First use Jan. 21, 1966.

SN 238,495. Clipper Craft, Inc., Cadillac, Mich. Filed Feb. 10, 1966.

SAF-T-MATE

Owner of Reg. No. 684,374.
For Pleasure Boating Craft.
First use Oct. 7, 1965.

SN 244,235. Molded Fiber Glass Body Company, Union City, Pa. Filed Apr. 25, 1966.

REDHEAD

For Small Boats for Cruising and Sailing.
First use Oct. 5, 1965.

SN 244,349. Outboard Marine Corporation, Waukegan, Ill. Filed Apr. 26, 1966.

GULL WING

For Boats.
First use about Feb. 15, 1966.

SN 244,357. Richardson Homes Corporation, Elkhart, Ind. Filed Apr. 26, 1966.

ARDMORE

For Mobile Homes.
First use Aug. 3, 1959.

SN 244,444. Westinghouse Electric Corporation, Redlands, Calif. Filed Apr. 27, 1966.

MARKETEER

For Electric Vehicles—Namely, Golf Carts, Industrial Trucks, and Personnel Carriers.
First use on or about Nov. 21, 1951.

SN 244,719. Midas-International Corporation, Chicago, Ill. Filed May 2, 1966.

FROLIC

For Travel Trailers.
First use on or about May 25, 1962.

SN 244,884. Cobar, Roselle, Ill. Filed May 4, 1966.

CAR-JOT

For Car Desk-Table, Which Is a Device Which Can be Mounted in an Automobile Such as on the Back Rest of the Front Seat and Includes an Element Forming a Table or Ledge Which Can Be Utilized for Writing Thereon, or for Supporting Various Objects.
First use Apr. 10, 1961.

Class 20 — Linoleum and Oiled Cloth

SN 247,111. De Soto Chemical Coatings, Inc., Des Plaines, Ill. Filed June 2, 1966.

FEMINIQUE

For Prepasted Wallcloth With Synthetic Resin Coating.
First use on or about Mar. 22, 1966.

SN 247,307. Armstrong Cork Company, Lancaster, Pa. Filed June 6, 1966.

CUSHIONCORD

For Backing for Resilient Hard Surface Type Covering for Floors, Walls, and Other Surfaces.
First use Dec. 29, 1965.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 226,950. Skiatron Electronics & Television Corporation, New York, N.Y. Filed Sept. 1, 1965.

SKIATRON

Owner of Reg. Nos. 585,420 and 707,526.
For Television Broadcasting and Receiving Apparatus.
First use in or about November 1950.

SN 234,289. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Dec. 9, 1965.

IVI-SPRAY

Owner of Reg. Nos. 405,222, 514,797, and others.
For Electrical Sealer.
First use at least as early as Dec. 31, 1959.

SN 234,570. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Dec. 14, 1965.

3M

Owner of Reg. No. 752,417, and others.
For Electrical Sealer of the Spray Type.
First use at least as early as Dec. 31, 1959.

SN 240,011. Mattes Electronics, Inc., Chicago, Ill. Filed Mar. 2, 1966.

MATTES

For Audio Amplifiers.
First use June 1, 1965.

Class 22 — Games, Toys, and Sporting Goods

SN 217,624. Glendinning Enterprises, Inc., Westport, Conn. Filed Apr. 29, 1965.

MATCH & WIN

For Promotional Game Materials—Namely, Equipment Sold as Units, and Parts of Such Units, for Playing Promotional or Contest Games.
First use Dec. 17, 1964.

SN 227,897. Washington Technical Enterprises, Inc., Seattle, Wash. Filed Sept. 15, 1965.

Pifty

For Free-Falling Autorotating Game Disks.
First use June 29, 1965.

SN 230,418. Lee Roy Mudgett, Bigfork, Mont. Filed Oct. 18, 1965.

The 2 LEAN

For Fly Hooks.
First use Apr. 15, 1963.

SN 232,591. Plas-Steel Products, Inc., Walkerton, Ind. Filed Nov. 12, 1965.

PLAS/STEEL

For Rod Blanks Made of Glass Reinforced Plastic, and Sporting Goods—Namely, Fishing Poles, Arrows, Ski Poles, Pool Cues, and Golf Clubs.
First use 1950, on rod blanks made of glass reinforced plastic.

SN 234,193. Gapen Manufacturing Company, Inc., Coon Rapids, Minn. Filed Dec. 8, 1965.

GAPEN Original

The word "Original" is disclaimed apart from the mark as shown.
For Muddler Fly, a Type of Artificial Fishing Lure.
First use Aug. 1, 1960.

SN 235,579. Old Pal, Inc., Lititz, Pa. Filed Dec. 30, 1965.

FAMOUS FISH

For Tackle Boxes.
First use Aug. 4, 1965.

SN 235,747. James W. Watkins, d.b.a. Aero Products, St. Charles, Ill. Filed Jan. 3, 1966.

Jotniks

For Writing Devices in the Nature of Toys and Puzzles and/or for Playing Games.
First use Nov. 5, 1965.

SN 238,182. The Denver Tent & Awning Company, Denver, Colo. Filed Feb. 7, 1966.

DENTENCO

For Gym Mats, Gym Mat Covers, and Tents.
First use July 5, 1961.

SN 238,615. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 11, 1966.

Brenda Brush

For Dolls.
First use Dec. 6, 1965.

SN 238,617. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 11, 1966.

the GO-GO'S

For Dolls.
First use Dec. 6, 1965.

SN 238,618. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 11, 1966.

BIG EARS

For Dolls.
First use Jan. 28, 1966.

SN 238,620. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 11, 1966.

MACHINE GUN MIKE

No claim of exclusive right is made to "Machine Gun," for a Doll.
For Dolls.
First use Jan. 28, 1966.

SN 238,621. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 11, 1966.

Yeah Yeah

For Dolls.
First use Dec. 6, 1965.

SN 238,623. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 11, 1966.

private ida

For Dolls.
First use Dec. 6, 1965.

SN 238,625. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 11, 1966.

SLICK CHICK

For Dolls.
First use Dec. 6, 1965.

SN 238,848. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 15, 1966.

Hot Canary

For Dolls.
First use Dec. 6, 1965; Oct. 8, 1965, as to "Canary."

SN 238,849. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 15, 1966.

Silly Safari

For Equipment for Playing a Board Game.
First use Jan. 28, 1966.

SN 238,850. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 15, 1966.

Combat Kid

For Dolls.
First use Jan. 28, 1966.

SN 238,851. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 15, 1966.

BUGLE BEN

No claim of exclusive right is made to "Bugle," for a doll.
For Dolls.
First use Feb. 4, 1966.

SN 238,852. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 15, 1966.

the ROCK

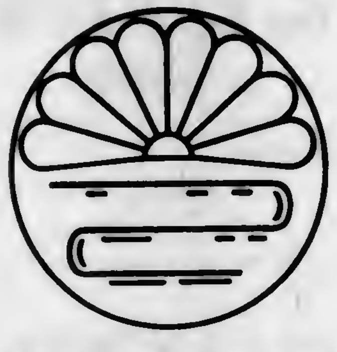
For Dolls.
First use Jan. 28, 1966.

SN 239,008. Brunswick Corporation, Chicago, Ill. Filed Feb. 17, 1966.

THUNDERBALL

For Bowling Balls.
First use Feb. 2, 1966.

SN 241,504. Jack Tetsuta Numata, Minneapolis, Minn. Filed Mar. 21, 1966.



For Snow Skis, Parts Therefor, and Associated Equipment, Exclusive of Wearing Apparel.
First use Feb. 1, 1963.

SN 243,538. Milton Bradley Company, Springfield, Mass. Filed Apr. 15, 1966.

Devon

For Octagonal Jigsaw Puzzles.
First use Jan. 1, 1966.

SN 243,539. Milton Bradley Company, Springfield, Mass. Filed Apr. 15, 1966.

DORSET

For Round Jigsaw Puzzles.
First use Jan. 1, 1966.

SN 246,354. Pedigo Pork Rind Company, Inc., Bowling Green, Ky. Filed May 28, 1966.

PEDIGO'S

For Fish Bait and Fish Lures.
First use on or about Nov. 1, 1957.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 217,207. Plaza Industries, Inc., Greenville, S.C. Filed Apr. 28, 1965.

FAN-JET

For Car Wash Equipment, Parts and Accessories.
First use Apr. 19, 1965.

SN 226,569. The Patent Button Company, Waterbury, Conn. Filed Aug. 26, 1965.

PATWIN

Owner of Reg. Nos. 570,319, 805,259, and others.
For Machinery for Attaching Fasteners Such as Buttons, Rivets, and Burrs.
First use on or before July 29, 1965.

SN 239,877. Brother International Corporation, New York, N.Y. Filed Mar. 1, 1966.

SISTER

For Typewriters and Sewing Machines.
First use Jan. 4, 1965.

SN 241,559. Western Bye-Hoe, Incorporated, San Martin, Calif. Filed Mar. 21, 1966.

INCORPORATOR

For Rotary Ground Tillage Machines, Power Operated in Association With a Tractor for the Purpose of Pulverizing and Mixing Soil and Soil Additives Therewith.
First use June 1964.

SN 242,035. McNeil Corporation, Akron, Ohio. Filed Mar. 28, 1966.

PILEDRIVER

Owner of Reg. No. 396,853.
For Pumps for Lubricants, Putty-Like Materials Such as Mastics, Caulking Compounds, and the Like.
First use Apr. 18, 1941.

SN 242,497. Rivet-Eze, Inc., Gregory, S. Dak. Filed Apr. 1, 1966.

RIVET-EZE

For Tool for Removing and Replacing the Rivets on Sickle-Bars.
First use Oct. 20, 1963.

SN 242,628. Herbert Milstein, Harrisburg, Pa. Filed Apr. 4, 1966.

LYNLEE

For Sewing Machines and Related Accessories and Equipment.
First use Feb. 1, 1966.

SN 242,677. Super-Cut, Inc., Chicago, Ill. Filed Apr. 4, 1966.

SUPER-SET

Owner of Reg. No. 424,554.
For Diamond Carrying Tools for Dressing Abrasive Wheels.
First use June 4, 1945.

SN 243,109. Erickson Tool Company, Solon, Ohio. Filed Apr. 11, 1966.

TENTHSET

For Boring Heads.
First use on or about Sept. 30, 1963.

SN 245,638. The Weatherhead Company, Cleveland, Ohio. Filed May 13, 1966.

WEATHERHEAD

For Hydraulic Pumps, Motors, Compressors, Swivel Joints, and Service Tools and Machines for Use With Pipe, Tube and Hose Couplings, Such as Tube Cutters, Flaring and Bending Tools, Wrenches, Mandrels, Crimping Tools, Ring Pre-Set Tools and Machines, and the Like.
First use at least as early as 1934.

SN 248,373. Stampak Corporation, New York, N.Y. Filed June 17, 1966.

MIKINI

For Stainless Steel Flatware, i.e., Knives, Forks, and Spoons.
First use Mar. 10, 1966.

Class 26 — Measuring and Scientific Appliances

SN 229,343. General Precision, Inc., Little Falls, N.J. Filed Oct. 5, 1965.

GYROFLEX

For Gyroscopes.
First use Aug. 20, 1959.

SN 230,380. Henry A. Giesecke, Dayton, Ohio. Filed Oct. 18, 1965.

REOLITH

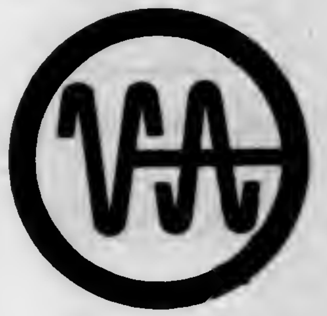
For Reversing Lens Unit for Lithographic Cameras.
First use Oct. 5, 1965.

SN 238,309. Signaltron Corporation, East Elmhurst, N.Y. Filed Feb. 7, 1966.

TELTRON

For Electromechanical Instruments—Namely, Digital Readout Clocks and Alpha Nmerical Readouts of the Following Types: Alpha Numeric Digital Indicators, Telecommunication Indicator Boards, Score Boards for Sport and Industry, Timetable Boards for Transportation Industry—Namely, Bus, Rail, and Airport Terminals, Stock Quotation Boards, Paging Boards, Flight Production and Statistical Boards.
First use Nov. 22, 1965.

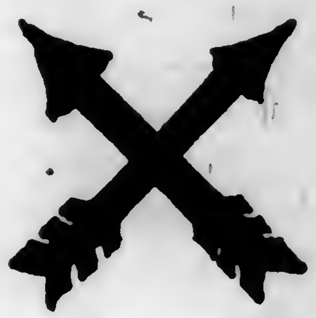
SN 258,763. Varian Associates, Palo Alto, Calif. Filed Nov. 16, 1966.



Owner of Reg. Nos. 582,256, 750,058, and others.
For Time and Frequency Standards.
First use Mar. 18, 1965.

Class 27 — Horological Instruments

SN 186,007. Gebruder Junghans, A.G., Schramberg, Wurttemberg, Germany. Filed Feb. 4, 1964.



Owner of German Reg. No. 23,893, dated Jan. 11, 1897.
For Clocks, Clock-Cases, Clock-Movements, and Parts Thereof, Excluding Pocket Watches and Parts Thereof.

SN 237,180. Ulysse Nardin, Societe Anonyme, Manufacture de Montres et de Chronometres, Le Locle, Switzerland. Filed Jan. 24, 1966.

"Ulysse Nardin" is not a name of a living individual.
Owner of Swiss Reg. No. 163,045, dated Oct. 10, 1956.
For Wrist Watches, Pocket Watches of All Types, Chronographs, Including Adjustable Stop Watches, Chronometers, Including Navigational and Marine Chronometers of Different Sizes, and Quars Chronometers, and Calendar Watches.

Class 28 — Jewelry and Precious-Metal Ware

SN 234,288. K. Mikimoto & Co., Ltd., New York, N.Y. Filed Dec. 9, 1965.

MIKIMOTO

Owner of Reg. No. 645,389.
For Jewelry Containing Cultured Pearls.
First use Sept. 12, 1957.

SN 255,308. Fashion Tress, Inc., Miami Beach, Fla. Filed Sept. 28, 1966.

HAIRRINGS

For Earrings Made of Hair.
First use on or about July 1, 1966.

SN 259,289. Uncas Manufacturing Company, Providence, R.I. Filed Nov. 23, 1966.

VINCENZO

The Italian word "Vincenzo," when translated into English, means "Vincent."
For Women's Jewelry for Personal Wear and Adornment.
First use Nov. 4, 1966.

Class 29 — Brooms, Brushes, and Dusters

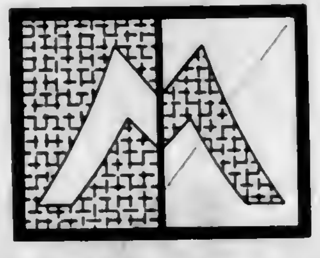
SN 240,090. Gant Brushes, Inc., Port Chester, N.Y. Filed Mar. 3, 1966.

ZIP TIP

For Brooms.
First use Jan. 9, 1966.

Class 30 — Crockery, Earthenware, and Porcelain

SN 232,409. Mayer China Company, Beaver Falls, Pa. Filed Nov. 9, 1965.



The drawing is lined for the color yellow or gold; however, applicant does not make any claim as to any particular color. The lining is for the purpose of showing contrasting backgrounds for the contrasting portions of the letter "M."
For China Dinnerware.
First use July 1, 1965.

SN 241,540. Syracuse China Corporation, Syracuse, N.Y. Filed Mar. 21, 1966.

CHAMPAGNE

For Dinnerware and Tableware Made of China.
First use Feb. 18, 1966.

Class 31 — Filters and Refrigerators

SN 241,899. Ignis U.S.A. Corp., New York, N.Y. Filed Mar. 25, 1966.

XILOSTEEL

For Refrigerators, Refrigerator-Freezers, Freezers, Ice-Cube Makers, and Ice-Cube Maker/Refrigerators.
First use June 1965.

Class 32 — Furniture and Upholstery

SN 281,097. Formco, Inc., Cincinnati, Ohio. Filed Oct. 22, 1965.

Flair II

For Laminated Plastic or Wood Vanity.
First use Sept. 1, 1965.

SN 233,046. Alma Desk Company, High Point, N.C. Filed Nov. 22, 1965.

MANAGEMENT

For Office Furniture and Particularly Office Desks, Tables, Chairs, Bookcases, Cabinets, and Sofas.
First use at least on Oct. 15, 1965.

SN 241,860. Canadian Hardwoods Ltd., Thurso, Quebec, Canada. Filed Mar. 25, 1966.

The Manuscript

Priority claimed under Sec. 44(d) on Canadian application filed Jan. 4, 1966; Reg. No. 146,904, dated Sept. 2, 1966.
For Bedroom Furniture, Dining Room Furniture, Living Room Furniture, Coffee Tables, End-Tables, Credenzas, Desks and Stackable Bookcases and Drawer Units.

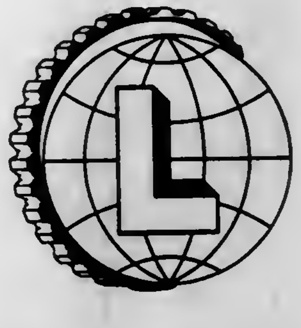
SN 245,200. Hezzie Tot Mattress Co., Alexandria, Va. Filed May 9, 1966.

HEZZIE TOT MATTRESS

Applicant disclaims the name of the goods "Tot Mattress" apart from the mark as shown.
For Crib Mattress.
First use May 7, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 236,105. Sellon, Inc., Toledo, Ohio, assignee of Lockwood Grader Corporation, Gering Nebr. Filed Jan. 10, 1966.



Owner of Reg. No. 781,302.
For Heaters—Namely, Vegetable Washer-Dryers, Peach Washer-Dryers, and Dryers for Eliminating Moisture from Potatoes and Onions.
First use on or about Sept. 1, 1965.

SN 238,464. Tranter Manufacturing, Inc., Lansing, Mich. Filed Feb. 9, 1966.

PLATECOIL

Owner of Reg. No. 591,168.
For Heat Transfer Units Consisting of Plates so Embossed as To Contain Internal Passes, and Used in Industrial Processes.
First use July 28, 1947.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

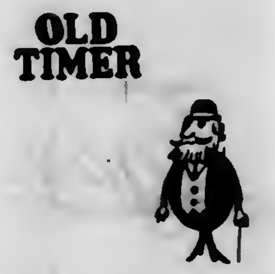
SN 240,614. Industrial Tectonics, Inc., Ann Arbor, Mich. Filed Mar. 10, 1966.

DYNA-STAT

For Seals for Limiting or Preventing the Flow of Liquid Through Clearance Openings Around a Shaft, Such as From Bearings.
First use Sept. 27, 1964.

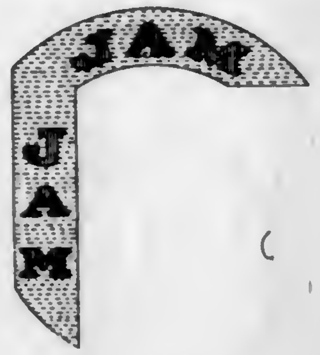
Class 36 — Musical Instruments and Supplies

SN 222,956. Old Timer Records, New York, N.Y. Filed July 8, 1965.



For Phonograph Records.
First use Oct. 31, 1964.

SN 227,164. John A. Masters, d.b.a. Masters for Music Recording Co., Miami, Fla. Filed Sept. 3, 1965.



The drawing is lined for the colors red and silver.
For Phonograph Records.
First use June 7, 1965.

SN 231,509. Transcriber Company, Inc., Attleboro, Mass. Filed Oct. 23, 1965.

Transcriber

"Makes it" sound Better"

The words "Makes It Sound Better," together with the representation of musical notes, are disclaimed apart from the mark as shown. Owner of Reg. Nos. 715,083 and 809,271.
For Audio Components—Namely, High Fidelity Cartridges, Phonograph Styli, and Phonograph Needles.
First use Mar. 25, 1965.

SN 231,846. Thomas W. Pedigo, d.b.a. Ana Records, McMinnville, Tenn. Filed Oct. 29, 1965.

ANA

For Phonograph Records.
First use Oct. 14, 1965.

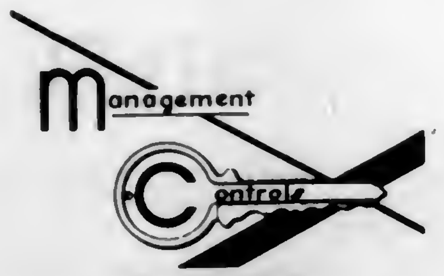
SN 235,965. Emenee Industries, Inc., New York, N.Y. Filed Jan. 7, 1966.

Tiger

For Guitars.
First use Dec. 7, 1964.

Class 37 — Paper and Stationery

SN 236,571. Data Management, Incorporated, Farmington, Conn. Filed Jan. 17, 1966.



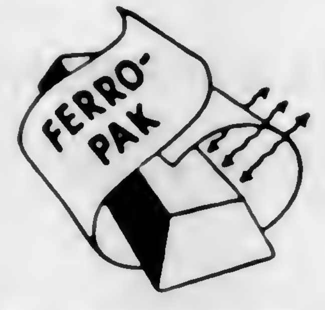
For Accounting and Office Records—Namely, Binders, Ledger Sheets, Account Sheets, Payroll Sheets and Charts, Capital and Loan Control Sheets, Balance Sheets, Sheets for Recording Personal Deductions, Stock Dividends, and Various Other Items of Information, Instruction Sheets and Other Sheets for Recording and Deriving Information of Interest to Financial Operations.
First use on or before Aug. 3, 1962.

SN 236,814. Goodren Products Corp., Englewood, N.J. Filed Jan. 19, 1966.

GOODLAM

For Laminated Plastic Sheeting for Packaging.
First use Jan. 13, 1966.

SN 248,898. The Cromwell Paper Company, Chicago, Ill. Filed June 24, 1966.



Owner of Reg. Nos. 544,064 and 665,253.
For Corrosion Inhibiting Wrapping and Packaging Material Made of Paper.
First use May 1952.

SN 249,529. Gulf States Paper Corporation, Tuscaloosa, Ala. Filed July 5, 1966.

E-Z SERVICE

Owner of Reg. No. 736,214.
For Toilet Tissue.
First use Nov. 5, 1965.

SN 249,718. Beckley-Cardy Company, Chicago, Ill. Filed July 7, 1966.

ZENITH

For Felt Eraser Used to Erase Chalkmarks and Other Marks From Chalkboards and Related Surfaces.
First use Dec. 31, 1947.

SN 250,886. White Cross Stores, Inc., Monroeville, Pa. Filed July 22, 1966.

HEALTH CROSS

Owner of Reg. Nos. 725,249 and 773,374.
For Stationery—Namely, Writing Paper, Envelopes, and Tablets.
First use Apr. 28, 1965.

SN 253,577. Uforma, Inc., Roseville, Mich. Filed Aug. 31, 1966.

UFORMA

For Multiple Business Forms.
First use July 15, 1966.

SN 255,541. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 30, 1966.

3M

For Water Color Paper and Drawing Paper.
First use July 21, 1965.

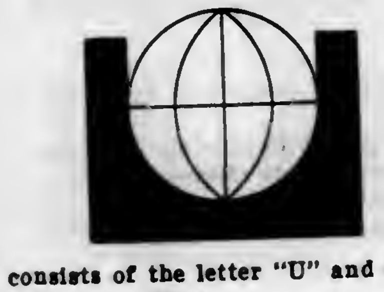
Class 38 — Prints and Publications

SN 218,883. Magic Tin Crafters, Kenmore, Wash. Filed May 14, 1965.

MAGIC TIN CRAFTERS

Applicant disclaims "Tin Crafters" separate and apart from the mark as shown.
For Booklets and Newsletters Published From Time to Time.
First use Apr. 7, 1960.

SN 229,829. MCA Inc., Universal City, Calif. Filed Oct. 11, 1965.



The mark consists of the letter "U" and design.
For Pictorial Tourist Maps.
First use Sept. 3, 1965.

SN 234,198. Hendrickson Manufacturing Company, Lyons, Ill. Filed Dec. 8, 1965.

BALANCE

For Bulletin Devoted Essentially to Applicant's Products Put Out Periodically But Not Necessarily at Regular Intervals During the Year.
First use October 1964.

SN 242,438. Deseret News Publishing Company, Salt Lake City, Utah. Filed Apr. 1, 1966.

DESERET NEWS

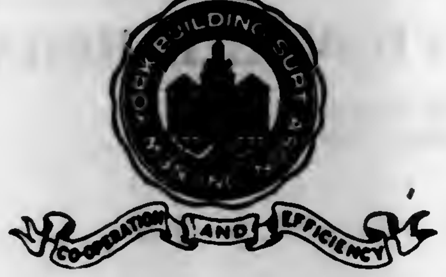
For Daily Newspaper.
First use June 15, 1850.

SN 243,325. Laminated Shim Company, Inc., Glenbrook, Conn. Filed Apr. 13, 1966.

LAMINOTES

For Weekly Newsletter Distributed to Applicant's Employees and Other Interested Persons.
First use Feb. 3, 1966.

SN 243,704. New York Building Superintendents' Association, Inc., New York, N.Y. Filed Apr. 18, 1966.



For Periodical Published From Time to Time.
First use June 1, 1923.

SN 243,930. Vending Times, Inc., New York, N.Y. Filed Apr. 20, 1966.

VENDING TIMES

The National Newspaper of Vending

The descriptive wording "The National Newspaper of Vending" is disclaimed.
For Trade Newspaper.
First use September 1961.

SN 244,025. Psychiatric Research Foundation, Beverly Hills, Calif. Filed Apr. 21, 1966.

THE PSYCHOANALYTIC FORUM

For Periodic Medical Journal.
First use Apr. 1, 1965.

SN 244,127. Michael & Ginsberg Publishing Company, Wilmette, Ill. Filed Apr. 22, 1966.

For Periodically Issued Trade Magazine.
First use in or about September 1962.

SN 244,245. The Plastic Contact Lens Company, Chicago, Ill. Filed Apr. 25, 1966.

CONTIQUE

For Magazine.
First use during March 1966.

SN 245,270. The National Thespian Society for High Schools, Cincinnati, Ohio. Filed May 6, 1966.

DRAMATICS

Owner of Reg. No. 421,094.
For Educational Magazine Devoted to Educational Theatre and Dramatics in High School.
First use on or about July 1, 1944.

SN 246,227. The Hearst Corporation, New York, N.Y. Filed May 23, 1966.

ASSIGNMENT AMERICA

Applicant disclaims any exclusive rights to the geographical word "America" apart from its use in the mark herein.
For Syndicated Newspaper Section.
First use Nov. 29, 1945.

SN 253,910. Review and Herald Publishing Association, Washington, D.C. Filed Sept. 6, 1966.

REVIEW AND HERALD

For Weekly Magazine.
First use May 4, 1961.

SN 255,750. McGraw-Hill, Inc., New York, N.Y. Filed Oct. 5, 1966.

LABORATORY OF ADVERTISING PERFORMANCE

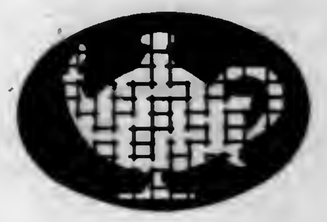
For Reports Issued Periodically Consisting of Studies of Advertising and Its Effect on Selling and Marketing.
First use September 1947.

SN 256,293. Maco Publishing Co. Inc., New York, N.Y. Filed Oct. 12, 1966.

TEEN SCOOP

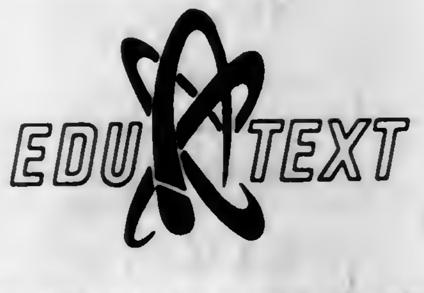
For Magazine.
First use Sept. 13, 1966.

SN 256,504. Spot-O-Gold Corporation, Philadelphia, Pa. Filed Oct. 14, 1966.



The drawing is lined for gold. Owner of Reg. No. 801,355.
For Business Bonus Card.
First use Sept. 14, 1964.

SN 258,196. International Textbook Company, Scranton, Pa. Filed Nov. 8, 1966.



No registration rights are claimed in the word "Text" apart from the mark as shown.
For Printed Educational Material—Namely, Study Courses.
First use Mar. 1, 1966.

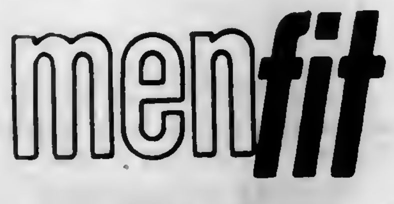
Class 39 — Clothing

SN 206,541. The Thomas Holmes Corporation, New York, N.Y. Filed Nov. 19, 1964.

JODI

For Hair Nets.
First use July 15, 1964.

SN 215,473. Muller-Renner AG, Kreuzlingen, Switzerland. Filed Feb. 23, 1965.



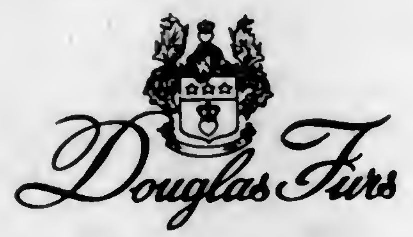
For Men's Underwear—Namely, Briefs, Shorts, Pants, Vests, and Girdles; and Men's Hosiery.
First use Apr. 17, 1964; in commerce Jan. 21, 1965.

SN 229,022. Reldan Limited, London, England, by change of name from Michael Nadler Limited, London, England. Filed Sept. 30, 1965.

RELDAN

Priority claimed under Sec. 44(d) on British Reg. No. 883,066, dated Aug. 13, 1965. Owner of U.S. Reg. No. 708,436.
For Articles of Clothing for Women and Girls—Namely, Coats, Jackets, Suits, Shirts, Blouses, Shorts, Slacks, Skirts, Swimsuits, Sunsuits, Hats, Boots, Shoes, Slippers and Sandals.

SN 229,507. Douglas Furs, Charlotte, N.C. Filed Oct. 7, 1965.



The word "Furs" is disclaimed apart from the mark as shown.
For Wearing Apparel Consisting Essentially of or Ornamented With Synthetic or Natural Furs—Namely, Coats, Jackets, Capes, Stoles, Capelets, Scarves, and Boas.
First use January 1963; July 1948 as to the word portion of the mark.

SN 229,508. Douglas Furs, Charlotte, N.C. Filed Oct. 7, 1965.

DOUGLAS FURS

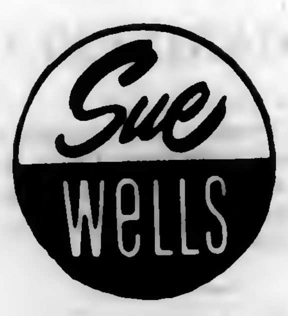
The word "Furs" is disclaimed apart from the mark as shown.
For Wearing Apparel Consisting Essentially of or Ornamented With Synthetic or Natural Furs—Namely, Coats, Jackets, Capes, Stoles, Capelets, Scarves, and Boas.
First use July 1948.

SN 230,405. Florence Lustig, New York, N.Y. Filed Oct. 18, 1965.

TY TY

For Women's and Girls' Dresses, Blouses and Vestees, Lounging Pajamas and Robes, and Bathing Suits.
First use May 10, 1944.

SN 231,483. J. C. Penney Company, New York, N.Y. Filed Oct. 23, 1965.



The name "Sue Wells" is fictitious.
For Girls' Shoes, Hosiery, and Underwear.
First use June 6, 1964.

SN 232,025. W. S. Peebles & Company, Incorporated, Lawrenceville, Va. Filed Nov. 2, 1965.

STATUS SYMBOL

For Ladies' Hosiery.
First use Aug. 19, 1965.

SN 232,251. Venice Knitting Mills, Inc., New York, N.Y. Filed Nov. 5, 1965.

MISS PERNILLA

For Ladies' Knitted Suits and Sweaters.
First use Feb. 1, 1965.

SN 232,400. Globe Superior, Inc., Greensboro, N.C. Filed Nov. 9, 1965.

GLOBE SUPERIOR

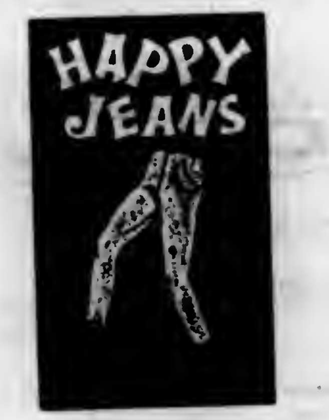
For Men's Work Pants and Work Shirts.
First use Nov. 3, 1965.

SN 236,110. Earl J. Maixner, d.b.a. The Chinchilla Guild of America, Bakersfield, Calif. Filed Jan. 10, 1966.

BREATH O'HEAVEN

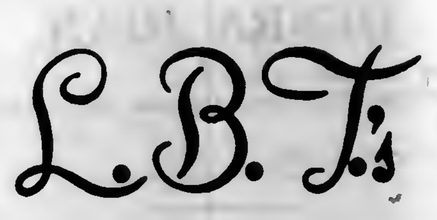
For Chinchilla Wraps, Coats, Stoles, Jackets, and Headwear.
First use Nov. 17, 1965.

SN 236,835. Stadium Manufacturing Co., Inc., New York, N.Y. Filed Dec. 2, 1965.



Applicant disclaims the word "Jeans" and the representation of the pants apart from the mark as a whole, while reserving all common law rights therein.
For Pants and Belts.
First use Oct. 18, 1965.

SN 236,897. Lane Bryant, Inc., New York, N.Y. Filed Jan. 20, 1966.



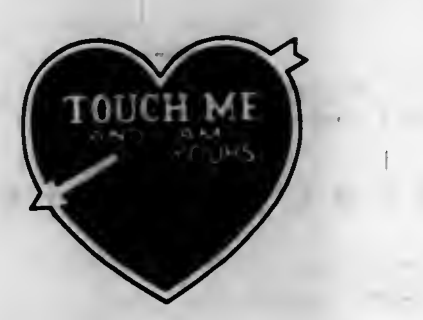
For Women's and Children's Clothes and Accessories—Namely, Coats, Suits, Dresses, Skirts, Waists, Waistbands, Blouses, Underwear, Sweaters, Hats, Hosiery, Shoes, Belts, Scarves, Shawls, Pajamas, Nightgowns, Gloves, Robes, Shirts, and Jackets.
First use Sept. 15, 1964.

SN 238,300. S. Rudofker's Sons, Inc., Philadelphia, Pa. Filed Feb. 7, 1966.

AVANT GARDE

Owner of Reg. Nos. 362,116, 642,974, and others.
For Men's and Boys' Shoes.
First use Sept. 1, 1965.

SN 238,504. Dolly Hosiery Mills, Inc., Valdese, N.C. Filed Feb. 10, 1966.



For Infants' and Children's Hosiery and Booties.
First use Jan. 15, 1961.

SN 240,315. Lily Lynn, Inc., New York, N.Y. Filed Mar. 7, 1966.

DRU FASHIONS

The word "Fashions" is disclaimed apart from the mark as shown.
For Dresses.
First use Jan. 21, 1966.

SN 240,352. P. K. Sorren Export Company, Inc., New York, N.Y. Filed Mar. 7, 1966.

ESTELA ORIGINALS

The word "Originals" is disclaimed apart from the mark as filed.
For Lingerie—Namely, Underwear, Panties, Slips, and Gowns.
First use Feb. 15, 1966.

SN 240,757. Maidenform, Inc., New York, N.Y. Filed Mar. 11, 1966.

UNDER-SHEATH

Owner of Reg. Nos. 585,845, 799,189, and others.
For Foundation Garments.
First use Jan. 10, 1966.

SN 240,918. Debra Joan, Inc., New York, N.Y. Filed Mar. 14, 1966.

DEBRA JOAN

The name of the mark is fanciful.
For Ladies' and Children's Dresses, Skirts, Blouses, Slips, and Lingerie.
First use on or about Nov. 1, 1965.

SN 242,711. Capezio Inc., New York, N.Y. Filed Apr. 5, 1966.

STAGE THONG

The word "Thong" is disclaimed apart from the mark as shown. Owner of Reg. No. 440,161.
For Shoes.
First use Mar. 10, 1966.

SN 242,774. Macshore Classics, Inc., Greenville, S.C. Filed Mar. 30, 1966.

Shore★nufs

For Ladies' Sportswear — Namely, Ladies' Shirts and Dresses, Pants, Shorts, Skirts, Blouses, and Jackets.
First use Feb. 9, 1966.

SN 244,670. Burlington Industries, Inc., New York, N.Y. Filed May 2, 1966.

COSMETIC CIRCLE

For Women's Hosiery.
First use June 28, 1956.

SN 244,672. Burlington Industries, Inc., New York, N.Y. Filed May 2, 1966.

BRIGHT DAY

For Women's Hosiery.
First use Oct. 4, 1961.

SN 244,782. Wembley, Inc., New Orleans, La. Filed May 2, 1966.

Harrow Collection

For Men's Neckwear.
First use Feb. 1, 1966.

SN 244,830. Kayser-Roth Corporation, New York, N.Y. Filed May 3, 1966.

CREW-CHIEF

Owner of Reg. No. 761,380.
For Men's and Boys' Hosiery.
First use Sept. 1, 1964.

SN 244,925. The Safety Clothing and Equipment Company, Cleveland, Ohio. Filed May 4, 1966.

CARDWELL

Owner of Reg. No. 431,528.
For Protective Garments and Apparel for Wear by Industrial Workers—Namely, Helmets, Coats, Sleeves, Gloves, Mittens, Hand Pads, Leggings, Knee Pads, Spats, Shoes, Aprons, Overalls, and Jumper Suits.
First use Oct. 1, 1945.

SN 245,381. Blair Fashions, Inc., Chicago, Ill. Filed May 11, 1966.

LITTLE PLEASURES

For Panties and Brassieres.
First use May 2, 1966.

SN 245,673. Bland Terry Shoe Corporation, Atlanta, Ga. Filed May 16, 1966.

AUDACIA

The word "Audacia" is an Italian word Meaning "audacity" or "audaciousness."
For Shoes—Namely, Ladies' Sandals and Play Shoes.
First use on or about Jan. 11, 1966.

SN 245,842. Moulinage et Retorderie de Chavanoz, Chavanoz, Isere, France. Filed May 17, 1966.

CHAVANOZ

Priority claimed under Sec. 44(d) on French Reg. No. 704,167, dated Dec. 14, 1965. Owner of U.S. Reg. No. 794,145 and others.
For Clothing for Men, Women, and Children—Namely, Dresses, Robes, Two-Piece Suits, Coats, Underwear and Lingerie, Cardigans and Pullovers, Vests and Waist Coats, Layette Articles, Shirts, Slacks, Scarfs, Ties, Blouses, Boots, Shoes, Slippers, and Hosiery.

SN 246,254. A. S. Beck Shoe Corporation, New York, N.Y. Filed May 23, 1966.

Coquettes

Owner of Reg. No. 628,182.
For Hosiery.
First use Feb. 8, 1966.

SN 246,671. France Neckwear Co., Inc., New York, N.Y. Filed May 26, 1966.

REDI-SNAP

For Men's and Boys' Clip-On Neckties.
First use Nov. 5, 1965.

SN 247,052. Peck Manufacturing Company, Inc., New York, N.Y. Filed June 1, 1966.

SNOKI-CAP

For Caps and Hats.
First use Mar. 30, 1966.

SN 247,338. H. Daroff & Sons, Inc., Philadelphia, Pa. Filed June 6, 1966.

THERMOSTAT

Owner of Reg. No. 709,377.
For Suits and Topcoats.
First use on or about Sept. 2, 1958.

SN 248,918. Kinney Shoe Corporation, New York, N.Y. Filed June 24, 1966.

SISMAN COOLS

For Shoes.
First use June 16, 1966.

SN 249,155. Frank Gallant, Inc., New York, N.Y. Filed June 28, 1966.

GALLAVANTER

For Misses' and Ladies' Coats and Suits.
First use June 22, 1966.

SN 249,438. Nusbaum, Knitters, Inc. New York, N.Y. Filed July 1, 1966.

212

For Women's Sweaters, Suits, and Skirts.
First use June 17, 1966.

SN 249,670. Phil Rose of California, Inc., Los Angeles, Calif. Filed July 6, 1966.

PRESTEASE

For Women's Orlon and Nylon Stretch Pants.
First use Oct. 31, 1965.

SN 250,007. Maro Industries, Inc., New York, N.Y. Filed July 11, 1966.

TEMPTATION

Owner of Reg. Nos. 548,125 and 791,468.
For Foundation Garments and Brassieres.
First use Apr. 30, 1966.

SN 258,990. Farah Manufacturing Company, Inc., El Paso, Tex. Filed Nov. 18, 1966.

Fara Stripe

For Men's Slacks and Jeans, and Fabrics Sold Exclusively in the Form of Such Garments.
First use Oct. 26, 1966.

SN 260,205. Myron M. Fuerstman, d.b.a. M. M. Fuerstman, New York, N.Y. Filed Dec. 7, 1966.

the FUER$TMAN look

For Detachable Collars and Ready Made Matching Ties.
First use Nov. 17, 1966.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 234,901. Hero Manufacturing Co., Inc., Middleboro, Mass. Filed Dec. 20, 1965.

HERO

Owner of Reg. Nos. 420,239, 806,018, and others.
For Knitting and Crocheting Equipment—Namely, Needles, Pins, Stitch Counters, Markers, Hoops, Spools, Stitch Holders, Needle Purses, Hooks, Bobbins, and Rings.
First use May 1939.

SN 239,331. Solo Products Corporation, New York, N.Y. Filed Feb. 21, 1966.

GRIP-TITE

Owner of Reg. No. 442,642.
For Bobby Pins, Barrettes, and Combs.
First use 1931.

SN 242,920. Pharmaceutical Laboratories, Inc., Plainfield, N.J. Filed Apr. 7, 1966.

DELPHY

For Bobby Pins.
First use on or about Feb. 8, 1966.

SN 245,595. Kleer-Vu Industries, Inc., New York, N.Y. Filed May 13, 1966.

EYE BRELLAS

The word "Eye" is disclaimed apart from the mark as shown.
For Artificial Eyelashes.
First use Jan. 15, 1966.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 217,188. Regal Rugs, Inc., North Vernon, Ind. Filed Apr. 22, 1965.

REGAL

For Rugs.
First use October 1941.

SN 224,901. Aldan Plastics Company, Philadelphia, Pa. Filed Aug. 4, 1965.

BUFSKIN

For Fabric for Work Gloves.
First use Oct. 20, 1964.

SN 239,977. Deering Milliken, Inc., New York, N.Y. Filed Mar. 2, 1966.

CLINGSTERS

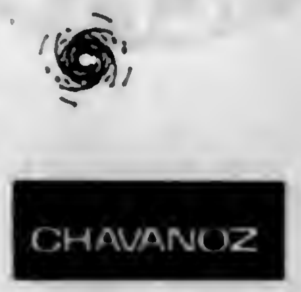
For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about Feb. 21, 1966.

SN 240,198. Puritan Fashions Corporation, New York, N.Y. Filed Mar. 4, 1966.

TINGLE

For Fabrics Used in Making Dresses, Suits, Slacks, Blouses, and Sports Clothes.
First use Jan. 9, 1966.

SN 245,841. Moulinage et Retorderie de Chavanoz, Chavanoz, Isere, France. Filed May 17, 1966.



Priority claimed under Sec. 44(d) on French Reg. No. 704,167, dated Dec. 14, 1965. Owner of U.S. Reg. No. 794,145 and others.
For Textile Fabrics for Making Into Dresses, Robes, Suits, Coats, Cardigans, Blouses, Lingerie, Layette Articles and the Like; and Bed and Table Covers.

SN 250,792. H. Warshow & Sons, Inc., New York, N.Y. Filed July 21, 1966.

CARESS CONTROL

For Stretchable Textile Fabrics To Be Incorporated in Lingerie Articles Such as Brassieres, Girdles, and Panty Girdles.
First use on or about Jan. 2, 1964.

SN 254,015. Guilford Mills, Inc., Greensboro, N.C. Filed Sept. 8, 1966.

ULTRILURE

For Tricot Knit Fabric for Upholstering Furniture.
First use Apr. 1, 1966.

SN 254,159. Hilton Clothes, Inc., New York, N.Y. Filed Sept. 9, 1966.

ESTORIL

For Fabrics for Use in Making Suits, Jackets, Slacks, and Topcoats.
First use at least as early as March 1965.

SN 254,163. Hilton Clothes, Inc., New York, N.Y. Filed Sept. 9, 1966.

DOUBLOON

For Fabrics for Use in Making Suits, Jackets, Slacks, and Topcoats.
First use at least as early as August 1965.

SN 254,164. Hilton Clothes, Inc., New York, N.Y. Filed Sept. 9, 1966.

BROUGHAM

For Fabrics for Use in Making Suits, Jackets, Slacks, and Topcoats.
First use at least as early as August 1964.

SN 254,165. Hilton Clothes, Inc., New York, N.Y. Filed Sept. 9, 1966.

WHITE LABEL

For Fabrics for Use in Making Suits, Jackets, Slacks, and Topcoats.
First use at least as early as August 1964.

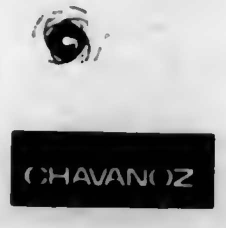
Class 43 — Thread and Yarn

SN 245,521. Spinnerin Yarn Co., Inc., South Hackensack, N.J. Filed May 12, 1966.

LINETTE

For Yarns of Natural Fibers for Hand Knitting.
First use Jan. 3, 1966.

SN 245,840. Moulinage et Retorderie de Chavanoz, Chavanoz, Isere, France. Filed May 17, 1966.



Priority claimed under Sec. 44(d) on French Reg. No. 704,167, dated Dec. 14, 1965. Owner of U.S. Reg. No. 794,145 and others.
For Threads and Yarns of Synthetic Fibers.

Class 44 — Dental, Medical, and Surgical Appliances

SN 244,006. Medical Plastics Corporation of America, Greensboro, N.C. Filed Apr. 21, 1966.

MEDI-GARD

For Dental, Medical and Surgical Appliances—Namely, Emesis Basins, Tubing, Storage Bags, Bassinets, Pillow Covers, Mattress Covers, Hospital Bed Draw Sheets, and Waste Receptacle Liners, All Made with Bacteriostatic Plastic.
First use Aug. 2, 1965.

SN 246,302. Fidelity Electronics, Ltd., Inc., Chicago, Ill. Filed May 23, 1966.

LOGOTRON

For Devices for Producing Sound for Use in the Treatment of Stuttering, and Parts Thereof.
First use Mar. 1, 1966.

SN 246,498. Surel, Inc., Pasadena, Calif. Filed May 24, 1966.

SUREL

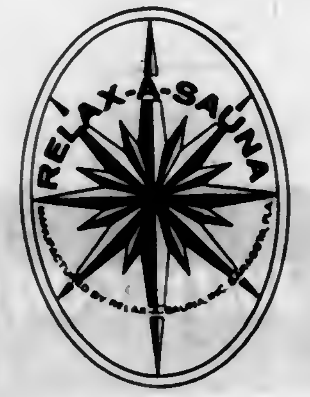
For Surgical Ligature and Suture Products.
First use Sept. 12, 1955.

SN 246,950. Roberts Dental Manufacturing Co., Inc., Buffalo, N.Y. Filed May 31, 1966.

TITAN

For Protective Mouth Guards for All Contact Sports.
First use on or about Feb. 21, 1966.

SN 257,309. Relax-A-Sauna, Inc., Sarasota, Fla. Filed Oct. 26, 1966.



For Enclosed Portable Steam Bath.
First use Mar. 30, 1965.

Class 45 — Soft Drinks and Carbonated Waters

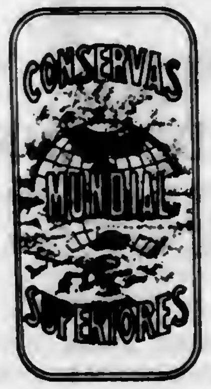
SN 249,881. The Southland Corporation, Dallas, Tex. Filed July 8, 1966.

SLURPEE

Owner of Reg. No. 646,180.
For Fruit Flavored, Semi-Frozen Soft Drinks.
First use at least as early as July 2, 1966.

Class 46 — Foods and Ingredients of Foods

SN 209,363. Masso Hermanos, S.A., Vigo, Pontevedra, Spain. Filed Jan. 5, 1965.



"Conservas" means "preserves" and "Superiores" means "superior." No claim is made to the exclusive use of the words "Superiores" or "Conservas," apart from the mark as a whole. Owner of Spanish Reg. No. 26,978, dated Sept. 30, 1916.
For Canned Fish.

SN 214,041. Union Starch & Refining Co., Inc., Columbus, Ind. Filed Mar. 12, 1965.

Owner of Reg. Nos. 537,915, 669,979, and others.
For Marshmallow and Marshmallow Creams.
First use February 1960; May 3, 1911, in a different form.

SN 215,267. The Quaker Oats Company, Chicago, Ill. Filed Mar. 29, 1965.

GOLDEN GRITS

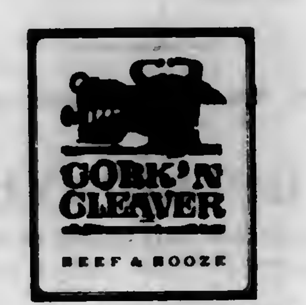
Applicant disclaims any exclusive rights in the word "Grits" apart from the mark as shown. Owner of Reg. No. 415,461.
For Prepared Corn Product—Namely, Hominy Grits.
First use Jan. 25, 1965.

SN 225,285. Cork 'N Cleaver, Inc., Scottsdale, Ariz. Filed Aug. 9, 1965.

CORK 'N CLEAVER

For Fresh and Frozen Beef Steaks of Various Cuts; and Fresh Cheese Cake.
First use Nov. 25, 1964.

SN 225,287. Cork 'N Cleaver, Inc., Scottsdale, Ariz. Filed Aug. 9, 1965.



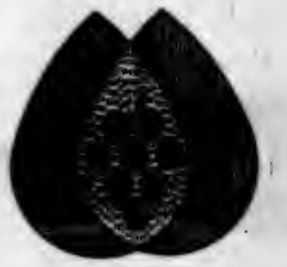
Applicant disclaims the wording "Beef & Booze" apart from the mark as shown.
For Fresh and Frozen Beef Steak of Various Cuts; and Fresh Cheese Cake.
First use Nov. 25, 1964.

SN 229,270. National Biscuit Company, New York, N.Y. Filed Oct. 4, 1965.

SUGAR MAMA

Owner of Reg. No. 544,252.
For Candy.
First use Sept. 2, 1965.

SN 230,071. Paw Paw Grape Juice Company, Paw Paw, Mich. Filed Oct. 18, 1965.



The drawing is lined for blue, purple, and magenta (the latter being a purplish shade of red), and color is claimed.
For Bottled and Canned Grape Juice and Grape-Flavored Food Drink.
First use July 13, 1964.

SN 234,788. U.S. Health Club, Inc., Yonkers, N.Y. Filed Dec. 16, 1965.

HEALTHWISE

For Peanut Butter.
First use Dec. 7, 1965.

SN 234,982. Heino Wührmann, d.b.a. Vitakraft-Werk, Bremen-Mahndorf, Germany. Filed Dec. 20, 1965.

VITAWIL

For Food for Fish.
First use Aug. 1, 1950; in commerce Mar. 10, 1956.

SN 236,099. Lamb-Weston, Inc., Portland, Oreg. Filed Jan. 10, 1966.

LAMB'S

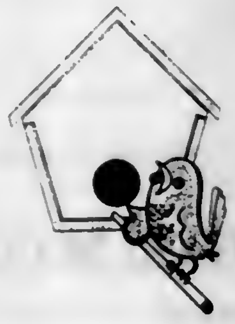
Owner of Reg. No. 519,987.
For Fresh, Dehydrated, and Frozen Fruits and Vegetables.
First use Oct. 20, 1965.

SN 236,474. Doc Holliday, Inc., Valdosta, Ga. Filed Jan. 14, 1966.

DOC HOLLIDAYHOUSE

The name used in this mark refers to that historical character of the West, now deceased.
For Pecans.
First use on or about Dec. 31, 1964.

SN 237,283. Agway, Inc., Syracuse, N.Y. Filed Jan. 26, 1966.



For Wild Bird Food.
First use Nov. 5, 1962.

SN 237,285. Agway, Inc., Syracuse, N.Y. Filed Jan. 26, 1966.

STRIKE

For Fish Food.
First use July 16, 1962.

SN 237,286. Agway, Inc., Syracuse, N.Y. Filed Jan. 26, 1966.

FIRST LADY

For Flour and Cereal Breakfast Food.
First use May 8, 1963.

SN 237,287. Agway, Inc., Syracuse, N.Y. Filed Jan. 26, 1966.

CHIRP

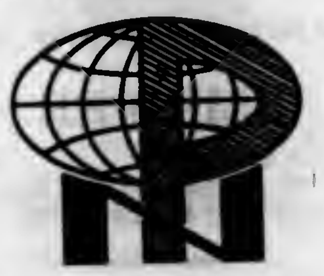
For Wild Bird Food.
First use Nov. 5, 1962.

SN 237,463. Maplecrest Sausage Co., Inc., Rochester, N.Y. Filed Jan. 27, 1966.

JUMBLE·ONI

The rectangular design is used for background purpose only and is not claimed as a feature of the mark.
For Frozen Meat Sauce, Macaroni and Beef Sausage in a Tray.
First use October 1965.

SN 239,649. National Pectin Products Company, Chicago, Ill. Filed Feb. 25, 1966.



The lines on the drawing are a feature of the mark.
For Stabilizers for Sherbets, Ices, Ice Cream, Ice Milk, Egg Nog, Milk Shakes, Cottage Cheese, Sour Cream and Whipping Cream; and Chocolate, Butterscotch, Marshmallow and Variegated Fruit Flavoring Syrups for Food.
First use Sept. 1, 1965.

SN 240,191. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 4, 1966.

REDDI-CURE

For Compound Useful in Aiding Processing and Developing Color-Cure in Meats.
First use Aug. 31, 1965.

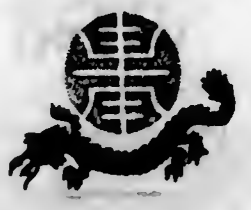
SN 240,708. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, Englewood, N.J. Filed Mar. 11, 1966.

RAPIDO

The English translation of the Spanish word "Rapido" is "rapid, fast, or quick."
For Prepared Yeast Raised Donut Flour.
First use July 27, 1940.

SN 241,146. Japan Food Corporation, San Francisco, Calif. Filed Mar. 16, 1966.

DYNASTY



For Preserved Fruits, Canned Lychee Nuts, Dried Lychee Nuts, Tea, Canned Water Chestnuts, Canned Bamboo Shoots; Saifun—Namely, Bean Threads; and Maifun—Namely, Rice Sticks.
First use December 1962.

SN 241,225. Armour and Company, Chicago, Ill. Filed Mar. 17, 1966.

STARMAR

For Vegetable Shortening.
First use on or prior to Jan. 10, 1966.

SN 241,226. Armour and Company, Chicago, Ill. Filed Mar. 17, 1966.

ARMAR

Owner of Reg. No. 23,292.
For Vegetable Shortening.
First use on or prior to Jan. 10, 1966.

SN 241,227. Armour and Company, Chicago, Ill. Filed Mar. 17, 1966.

HY-STAR

For Vegetable Shortening.
First use on or prior to Jan. 20, 1966.

SN 241,286. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Mar. 17, 1966.

topps

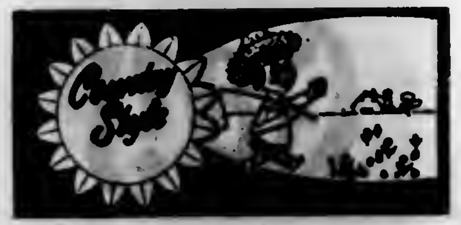
Owner of Reg. No. 506,803.
For Chewing Gum and Candy.
First use Nov. 1, 1965; Dec. 13, 1938 as to "Topps" in a different form.

SN 241,291. United Fruit Company, Boston, Mass. Filed Mar. 17, 1966.

BANAVAC

For Fresh Bananas.
First use Mar. 6, 1966.

SN 241,643. Country Style Donuts, Irvington, N.J. Filed Mar. 23, 1966.



The lines shown in the drawing are a feature of the mark and do not represent color lining. The words "Country Style" are disclaimed apart from the mark as shown.
For Prepared Flour Mixes, Jelly and Custard Fillings, and Vegetable Shortenings, Sold in Bulk Quantities and Used in the Making of Doughnuts and Crullers.
First use Feb. 16, 1958.

SN 242,418. Modern Bakery, Inc., Harlan, Ky. Filed Mar. 28, 1966.

Dixie Maid

For Coffee Cake, Sweet Rolls, Cake, Pies, and Doughnuts.
First use Mar. 24, 1965.

SN 243,026. Safeway Stores, Incorporated, Oakland, Calif. Filed Apr. 8, 1966.

CHUK-O-LUCK

For Ice Cream.
First use Mar. 21, 1966.

SN 245,410. Marela Limited, London, England. Filed May 11, 1966.

MARELA

Owner of British Reg. Nos. 563,622, dated Oct. 16, 1935; 786,052 and 786,053, dated Jan. 18, 1957; and 865,181, dated June 4, 1964.
For Canned, Preserved, Dried, Pickled, and Packaged Foods—Namely, Meat, Fish, Poultry, Game, Meat Extracts, Preserved and Dehydrated Fruits and Vegetables, Jellies, Jams, Eggs, Milk, Oils, Fats, Pickles, Green and Black Olives, Gherkins, Horse Radish, Condiments, Coffee, Tea, Cocoa, Sugar, Rice, Tapioca, Sago, Coffee Substitutes, Flour, Bread, Biscuits, Cakes, Pastry, Non-Chocolate Confectionary, Ices, Honey, Treacle, Yeast, Baking Powder, Salt, Mustard, Pepper, Vinegar, Sauces, and Spices.

SN 246,159. The Citrapak Corporation, Orlando, Fla. Filed May 20, 1966.

CITRA PAK

For Fresh Citrus Fruits, Canned and Bottled Citrus Fruit Juices for Food Purposes.
First use Oct. 20, 1939.

SN 246,335. Le-Branch Products Corp., New York, N.Y. Filed May 23, 1966.

KO-KEE-LA

For Powdered Additive for Milk, To Make a Coconut-Milk Drink.
First use Apr. 20, 1966.

SN 246,339. Fred Meyer, Inc., d.b.a. Eve's Kitchens, Portland, Oreg. Filed May 23, 1966.

Gay

For Candy.
First use Feb. 22, 1966.

SN 246,488. Beatrice Foods Co., Chicago, Ill. Filed May 24, 1966.

CALORIE COUNT

For Nuts.
First use Apr. 15, 1966.

SN 252,790. Milk Research, Inc., Fond Du Lac, Wis. Filed Aug. 22, 1966.

MIL-KA-MAC

For Macaroni Made With Non-Fat Milk.
First use Aug. 9, 1966.

SN 257,231. Mead Johnson & Company, Evansville, Ind. Filed Oct. 26, 1966.

LIPOLAC

Owner of Reg. Nos. 219,116, 512,833, and others.
For Nutritionally Complete Dietary Food Containing Medium Chain Triglycerides.
First use on or prior to Oct. 13, 1966.

SN 257,232. Mead Johnson & Company, Evansville, Ind. Filed Oct. 26, 1966.

PORTALAC

Owner of Reg. Nos. 219,116, 502,254, and others.
For Nutritionally Complete Dietary Food Containing Medium Chain Triglycerides.
First use on or prior to Oct. 13, 1966.

SN 259,986. Admiral Packing Company, Salinas, Calif. Filed Dec. 5, 1966.

CARRIER

For Fresh Vegetables.
First use July 20, 1966.

SN 259,988. J-B Distributing Co., Los Angeles, Calif. Filed Dec. 5, 1966.

JB

Owner of Reg. No. 628,813.
For Fresh Vegetables.
First use Nov. 10, 1966.

Class 47 — Wines

SN 230,444. Societa per Azioni Fratelli Folonari, Brescia, Italy. Filed Oct. 18, 1965.

VALPO

For Wines.
First use July 9, 1965; in commerce July 9, 1965.

SN 230,445. Societa per Azioni Fratelli Folonari, Brescia, Italy. Filed Oct. 18, 1965.

BARDO

For Wines.
First use July 9, 1965; in commerce July 9, 1965.

SN 238,393. Bodegas Rioja Santiago, S.A., d.b.a. Rioja Santiago S.A., Haro, Logrono, Spain. Filed Feb. 9, 1966.

YAGO

For Wines.
First use June 5, 1950; in commerce June 5, 1950.

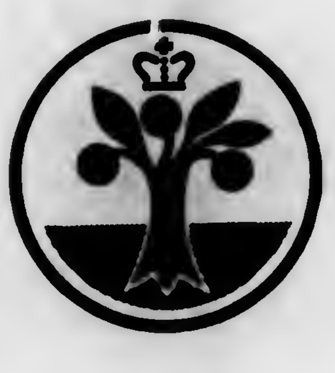
SN 257,560. E. & J. Gallo Winery, Modesto, Calif. Filed Oct. 31, 1966.

RUBINET NOIR

The word "Noir" means "black" in French.
For Wines.
First use Oct. 14, 1966.

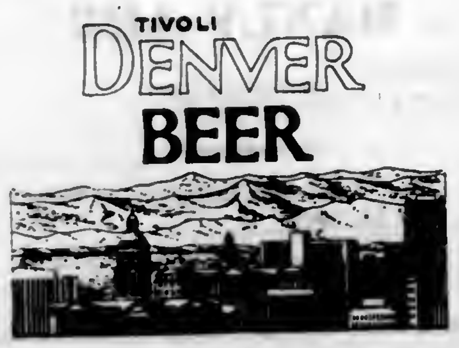
Class 48 — Malt Beverages and Liquors

SN 234,261. Verenigde Nederlandse Brouwerijen d'Oranjeboom N.V., d.b.a. D'Oranjeboom Breweries, Rotterdam, Netherlands. Filed Dec. 8, 1965.



Owner of Dutch Reg. No. 154,653, dated Feb. 4, 1965; and U.S. Reg. Nos. 524,673, 524,674, and 618,753.
For Beer.

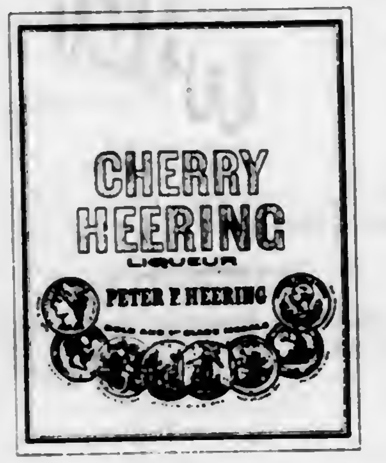
SN 236,936. The Tivoli Brewing Company, Denver, Colo. Filed Jan. 20, 1966.



Applicant, without waiving its common law rights, disclaims the words "Denver" and "Beer" apart from the mark as shown. Owner of Reg. No. 444,690.
For Beer.
First use Sept. 1, 1965.

Class 49 — Distilled Alcoholic Liquors

SN 209,346. Peter Frederik Suhm Heering, d.b.a. Peter F. Herring, Copenhagen, Denmark. Filed Jan. 5, 1965.



The drawing is lined for the color red. Applicant disclaims all words except "Heering" and "Peter F. Heering." Owner of Danish Reg. No. 58–1960, dated Jan. 9, 1960; and U.S. Reg. Nos. 322,836, 732,823, and others.
For Cherry Liqueur.
First use June 1, 1958; in commerce July 1, 1958.

SN 227,650. Cooper Liquors, Inc., d.b.a. Wagner's Liquor Shop, and Wagner's, Washington, D.C. Filed Sept. 13, 1965.

OLD GEORGETOWN'S

For Whiskey.
First use April 1955.

SN 244,995. H. C. Macpherson, d.b.a. Macpherson & Company, and A. & B. Mackay, Ltd., San Francisco, Calif. Filed May 5, 1966.

Poet's Dream

For Scotch Whisky.
First use 1935.

Class 50 — Merchandise Not Otherwise Classified

SN 237,585. The Osborne Coinage Co., Cincinnati, Ohio. Filed Jan. 28, 1966.

GOLDINE

For Coins and Like Medallions Having a Gold-Like Finish or Surface, the Same Being Used as Souvenirs, Novelties, and Advertisements.
First use 1921.

SN 238,651. Mico/Tape, Inc., Los Angeles, Calif. Filed Feb. 11, 1966.

FITS-ALL

For Plastic Embossing Tapes Adapted To Be Embossed With Letters or Symbols in a Hand-Embossing Machine.
First use Oct. 30, 1965.

SN 246,429. Aimcee Wholesale Corporation, New York, N.Y. Filed May 24, 1966.

AMCREST

For Hangers, Vinyl Plastic Covers for Indoor and Outdoor Furniture, Flexible Plastic Film Storage Units for Various Accessory Items and Clothing.
First use March 1965.

SN 246,695. L'Aluminium Francais (SA), Paris, France. Filed May 26, 1966.

VIC

Owner of French Reg. No. 533,405, dated June 23, 1965 (Seine); Natl. Inst. No. 253,180.
For Stoppers, Lids With or Without Packing and Attached or Not, and Closures for Any Kind of Receptacles.

SN 248,618. John W. Haslett, Darien, Conn. Filed June 21, 1966.

MINI-ZIBIT

For Philatelic Supplies—Namely, Containers, Racks, Stamp Hinges, Folders, and Exhibition and Album-Type Pages Including Philatelic Exhibits in Miniature Consisting of Postage Stamps and Related Items.
First use Apr. 23, 1966.

SN 249,067. Poly-Dec Co., Inc., Bayonne, N.J. Filed June 27, 1966.

DEC-ETS

For Heat Fusible Colored and Uncolored Transparent Plastic Pellets for Making Panels, Pictures, Ornaments, Jewelry, and Similar Objects.
First use May 2, 1966.

SN 253,055. A. & H. Shillman Co., Inc., Baltimore, Md. Filed Aug. 24, 1966.

SHILLCRAFT

Owner of Reg. Nos. 432,693, 604,305, and 750,611.
For Kits for Making Rugs, Including a Mat, and Precut Lengths of Yarn for Hooking, Knotting, or Inserting Into the Mat.
First use October 1949.

SN 254,282. Hogart Manufacturing Company, Wyandotte, Mich. Filed Sept. 12, 1966.

HALT

For Parking Guide Which Provides a Device To Signal a Driver of the Movement of His Vehicle Toward a Stationary Object Such as the End Wall of a Garage, Thereby Enabling Him to Avoid Impact With Such Object.

First use June 28, 1966.

Class 51 — Cosmetics and Toilet Preparations

SN 238,353. Institut Jeanne Gatineau S.A., Paris, France. Filed Feb. 8, 1966.

Jeanne Gatineau

The name "Jeanne Gatineau" is that of a deceased individual. Owner of French Reg. No. 459,964, dated Sept. 27, 1956 (Paris); Natl. Inst. No. 79,304.

For Perfumery Preparations, Cosmetic Creams, Cosmetic Lotions, Rouge, and Dentifrices.

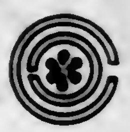
SN 238,424. The Gillette Company, Boston, Mass. Filed Feb. 9, 1966.

TREK

For Foot Spray and Foot Powder.

First use Nov. 23, 1965.

SN 240,409. Catalina Cosmetics Corporation, Salt Lake City, Utah. Filed Mar. 8, 1966.



catalina

For Cosmetics—Namely, Skin Lotions and Creams, and Bath Oil.

First use Nov. 12, 1965.

SN 242,444. Eugene-Gallia S.A., Paris, France. Filed Apr. 1, 1966.

setAgene

Owner of French Reg. No. 521,391, dated Apr. 17, 1964 (Seine); Natl. Inst. No. 224,034.

For Preparations in Liquid and Solid Form To Be Used in Permanent Waving of Hair.

SN 242,921. Pharmaceutical Laboratories, Inc., Plainfield, N.J. Filed Apr. 7, 1966.

DELPHY

For Men's Shaving Preparations, Women's Hair Spray, Skin Lotions, Creams and Powders, Bath Oils, Mouthwashes, Mouthwashes and Antiseptic.

First use on or about Feb. 8, 1966.

SN 245,113. The Stephan Co., Fort Lauderdale, Fla. Filed May 6, 1966.

REBELLION

For Men's Colognes and Aftershave Lotions.

First use Feb. 8, 1966.

SN 249,791. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 7, 1966.

MANLY ART

For Hair Coloring.

First use June 21, 1966.

SN 250,394. The Noxema Chemical Company, Baltimore, Md. Filed July 15, 1966.

NOXELL

Owner of Reg. Nos. 112,638, 561,845, and others.

For Skin Cream.

First use Apr. 13, 1966.

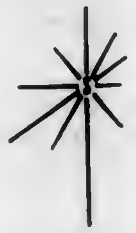
SN 254,492. Bobbie Brooks Incorporated, Cleveland, Ohio. Filed Sept. 15, 1966.

C'est
wild

For Cologne.

First use Aug. 5, 1966.

SN 257,443. Taro-Vit Chemical Industries, Ltd., Haifa, Israel. Filed Oct. 28, 1966.



Sabrina

For Cologne, Perfume, After Bath Cologne, and Eau de Parfum.

First use Sept. 12, 1966; in commerce Sept. 12, 1966.

SN 257,862. Hermes, Paris, France. Filed Nov. 3, 1966.

ITS ALL A WOMAN NEEDS TO WEAR

For Perfume, Cologne, Toilet Water, and Bath Oil.

First use October 1963; in commerce October 1963.

SN 259,880. American Home Products Corporation, New York, N.Y. Filed Dec. 2, 1966.

DENAFAST

Owner of Reg. No. 769,290.

For Denture Adhesive.

First use Nov. 7, 1966.

Class 52 — Detergents and Soaps

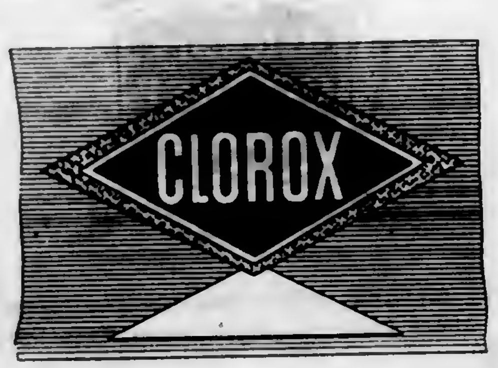
SN 203,186. C-Z Chemical Co., Inc., Beloit, Wis. Filed Oct. 2, 1964.

BITE

For Industrial Cleaners.

First use Aug. 29, 1960.

SN 227,480. The Clorox Company, Oakland, Calif. Filed Sept. 9, 1965.



The drawing is lined for vermilion and blue. Owner of Reg. Nos. 102,650, 728,197, and others.

For Stain Remover With Disinfectant and Bleaching Properties.

First use on or about June 1, 1964.

SN 227,768. Philip Morris Incorporated, New York, N.Y. Filed Sept. 14, 1965.

RUF-CUT

For Toilet Soap.

First use at least Apr. 24, 1942.

SN 229,206. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 4, 1965.

BEN HUR

Owner of Reg. No. 101,108.

For All-Purpose Synthetic Detergent Cleaner.

First use November 1949; July 1, 1902 in a different form.

SN 235,189. Triple-X Chemical Laboratories, Incorporated, Chicago, Ill. Filed Dec. 22, 1965.

BLUE MAGIC

For Drain Pipe Solvent.

First use April 1956.

SN 240,025. Rendering Corporation of America, Brooklyn, N.Y. Filed Mar. 2, 1966.

RENCOA

For Toilet and Bath Soap.

First use Dec. 24, 1965.

SN 245,294. Richard S. Cowen, d.b.a. R. S. Cowen Company, New York, N.Y. Filed May 10, 1966.

YOU DON'T HAVE TO SELL
Janie
PEOPLE JUST BUY IT

Owner of Reg. No. 417,817.

For Spot Removing Compound in Compressed Stick Form.

First use December 1965.

SN 257,987. Sampson Industrial Chemical Company, Chicago, Ill. Filed Nov. 4, 1966.

MAJESTIC

For Bars of Toilet Soap.

First use Sept. 12, 1966.

SN 258,750. C. J. Webb, Inc., d.b.a. Corrosion Reaction Consultants, and Corrosion Reaction Consultants, Inc., Jenkintown, Pa. Filed Nov. 16, 1966.

LECTRA-MOTIVE

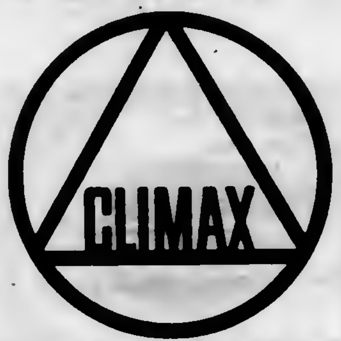
For Cleaner for Electric Motors, Electric Systems, and Electric Equipment.

First use Feb. 4, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

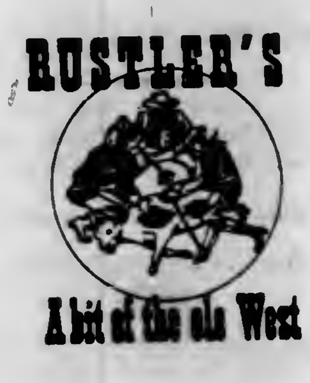
SN 206,008. Climax Dental Supply Company, Inc., Philadelphia, Pa. Filed Nov. 12, 1964.



For Design of Dental Offices and Laboratory Facilities, Consultant Services to Dentists in Connection With the Construction and Funding of Dental Facilities, Dental Office Management, and Dentist-Patient Relationships.

First use on or about Oct. 14, 1964.

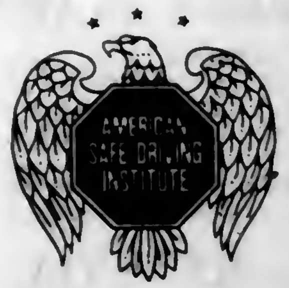
SN 212,846. Palace Enterprises, Inc., d.b.a. Rustler's Steak House, Washington, D.C. Filed Feb. 18, 1965.


RUSTLER'S
A bit of the old West

For Restaurant Services.

First use Feb. 9, 1965.

SN 217,691. American Safe Driving Institute, Dayton, Ohio. Filed Apr. 30, 1965.



For Promoting Driving Safety Through Lectures, and Issuance of Informative Materials to Civic Associations, Schools, and Similar Organizations.
First use Mar. 24, 1965.

SN 226,951. Skiatron Electronics & Television Corporation, New York, N.Y. Filed Sept. 1, 1965.

SKIATRON

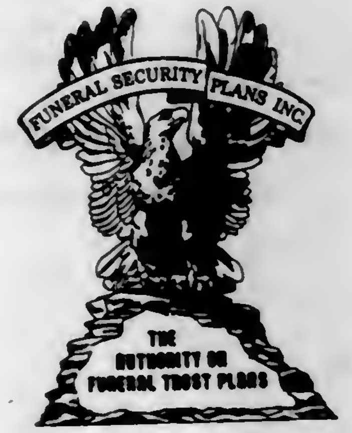
Owner of Reg. Nos. 585,420 and 707,526.
For Engineering, Research and Development, Consultation and Design Services in the Electronic and Video Fields.
First use at least as early as April 1952.

SN 226,970. Advanced Instruments, Inc., Newton Highlands, Mass. Filed Sept. 2, 1965.

HOT-LINE

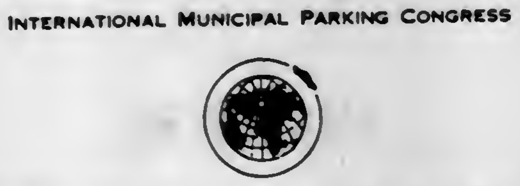
For Technical Advisory and Consultation Services Relating to the Operation, Maintenance, and Repair of Specialized Instruments, Such as Osmometers.
First use Dec. 1, 1963.

SN 227,411. Funeral Security Plans, Inc., Kansas City, Mo. Filed Sept. 8, 1965.



Without waiving any of its common law rights, applicant disclaims the words "The Authority on Funeral Trust Plans" apart from the mark as shown. Owner of Reg. No. 773,365.
For Arranging Future Funeral Services Between Morticians and Other Persons.
First use June 17, 1965.

SN 229,529. International Municipal Parking Congress, Tampa, Fla. Filed Oct. 7, 1965.



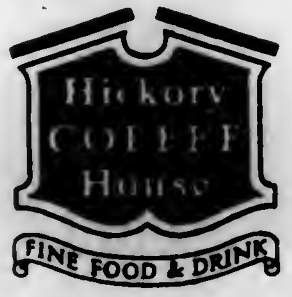
For Advisory Services Rendered to Participating Members With Regard to All Aspects of the Problems of Public Parking.
First use April 1961.

SN 230,528. Four H Bros. Corp., Boise, Idaho. Filed Oct. 19, 1965.

RED STEER

For Restaurant Services.
First use Sept. 1, 1962.

SN 240,297. Hickory House Motel Enterprises, Inc., Poplar Bluff, Mo. Filed Mar. 7, 1966.



Applicant disclaims all of the wording except the word "Hickory" apart from the mark as shown. Owner of Reg. No. 774,280.
For Restaurant Services.
First use on or about Dec. 1, 1965.

SN 241,543. Tel-Plan, Inc., El Monte, Calif. Filed Mar. 21, 1966.

TEL-PLAN

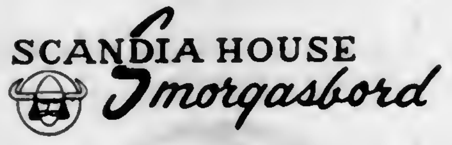
For Auditing Telephone Systems and Engineering Replacements Therefor.
First use December 1963.

SN 242,479. Pennsylvania Computer Systems Institute, Inc., Pittsburgh, Pa. Filed Apr. 1, 1966.

NEW HORIZONS FOR WOMEN

The wording "For Women" is disclaimed apart from the mark as shown.
For Career Counseling, Personal Development and Special Education for the Enterprising Woman.
First use Mar. 1, 1966.

SN 243,888. Northwest Systems Corporation, Minneapolis, Minn. Filed Apr. 20, 1966.



The words "House" and "Smorgasbord" are disclaimed apart from the mark as shown.
For Restaurant Services.
First use Sept. 14, 1965.

SN 258,645. Fred Harvey, Chicago, Ill. Filed Nov. 15, 1966.

HARVEY GIRL

Owner of Reg. Nos. 635,311, 775,925, and others.
For Restaurant Services.
First use no later than April 1966.

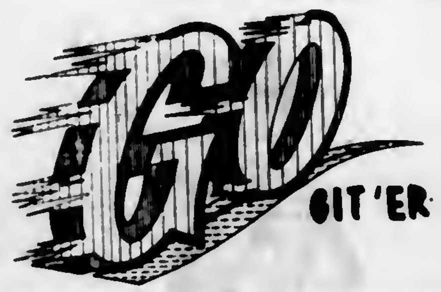
Class 101 — Advertising and Business

SN 216,269. The Coachmen, Inc., Tiverton, R.I. Filed Apr. 12, 1965.

THE COACHMEN

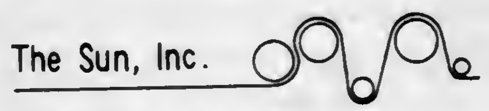
For Restaurant Services.
First use on or about Nov. 6, 1964.

SN 226,840. Go Promotions, Inc., Wayne, Mich. Filed Aug. 31, 1965.



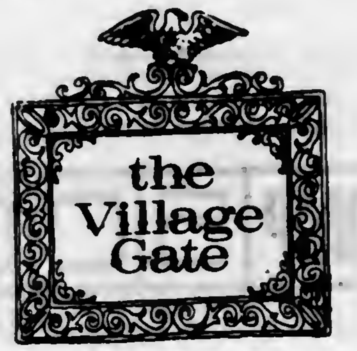
The drawing is lined for the colors red and gray, but colors are not an integral part of the mark.
For Retail Purchasing Club Services—Namely, Securing Discounts for Its Members on Merchandise and Services.
First use Oct. 9, 1964.

SN 227,622. The Sun, Inc., Hartwell, Ga. Filed Sept. 10, 1965.



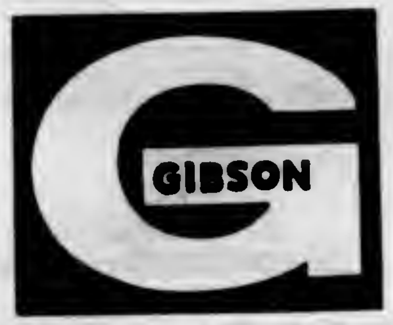
The notation "Inc." is disclaimed.
For Custom Printing.
First use on or about Aug. 25, 1962.

SN 228,853. The Village Gate, Inc., Silver Spring, Md. Filed Sept. 28, 1965.



For Retail Clothing Store Services.
First use Aug. 16, 1965.

SN 229,233. H. R. Gibson, Sr., d.b.a. Gibson Products Co., Seagoville, Tex. Filed Oct. 4, 1965.



For Retail Department Store Services.
First use Oct. 20, 1960.

SN 230,589. Universal Publicizers, Inc., Chicago, Ill. Filed Oct. 19, 1965.

UNIVERSAL

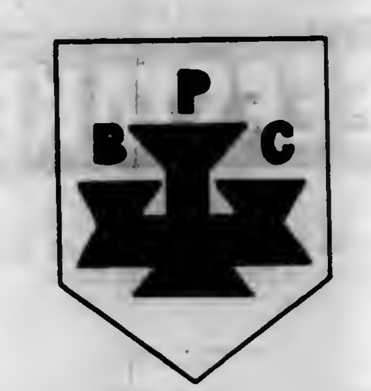
For Radio Listener Survey Service.
First use Oct. 12, 1965.

SN 236,786. Silo Discounts Centers, Inc., Philadelphia, Pa. Filed Jan. 18, 1966.

SILO

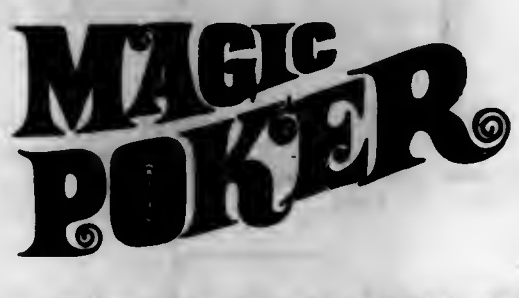
For Retail Store Services Directed to Household Goods Made by Others.
First use March 1954.

SN 237,077. Business Personnel Consultants, Inc., Philadelphia, Pa. Filed Jan. 24, 1966.



For Employment Agency Services.
First use June 15, 1956.

SN 238,890. Radcliffe Advertising, Inc., Jacksonville, Fla. Filed Feb. 15, 1966.



For Promoting the Sale of Goods and Services of Others by Means of a Game Utilizing Cards Obtained by the Public at Participating Stores.
First use Sept. 1, 1965.

SN 239,249. Fleming-Potter Company, Inc., Peoria, Ill. Filed Feb. 21, 1966.

COLORBOSS

For Lithographing and Embossing Foil and Paper for Others.
First use Dec. 6, 1965.

SN 239,961. Bradfute Corporation, Eastchester, N.Y. Filed Mar. 2, 1966.

RACE TO RICHES

For Promoting the Sale of Goods and Services of Others by Means of a Game.
First use Dec. 30, 1965.

SN 239,963. Bradfute Corporation, Eastchester, N.Y. Filed Mar. 2, 1966.

FOUR OF A KIND

For Promoting the Sale of Goods and Services of Others by Means of a Game.
First use Dec. 30, 1965.

SN 239,964. Bradfute Corporation, Eastchester, N.Y. Filed Mar. 2, 1966.

FOUR IN A ROW

For Promoting the Sale of Goods and Services of Others by Means of a Game.
First use Dec. 30, 1965.

SN 240,452. Brian & Associates, Inc., Spokane, Wash., assignee of L.B. Inc., Spokane, Wash. Filed Mar. 8, 1966.

BEEFSTAKES

For Promoting the Sale of the Goods and Services of Others by Means of a Customer Participation Game.
First use Dec. 3, 1964.

SN 241,187. Search, Inc., Washington, D.C. Filed Mar. 16, 1966.

Search, inc.

For Personnel Placement Services.
First use Oct. 23, 1964.

SN 249,304. Comress, Inc., Washington, D.C. Filed June 30, 1966.

TRANSIM

For Translating Computer Programs Between Different Computers Using Simulation Techniques.
First use Dec. 12, 1962.

Class 102 — Insurance and Financial

SN 230,879. Old Republic Life Insurance Company of New York, New York, N.Y. Filed Oct. 21, 1965.
Owner of Reg. No. 660,439.

Old Republic
LIFE INSURANCE COMPANY
OF NEW YORK

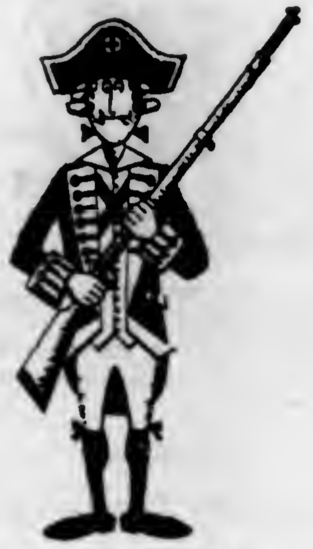
For Underwriting of All Lines of Life, Accident, and Health Insurance.
First use July 7, 1964.

SN 230,880. Old Republic Assurance Company, Chicago, Ill. Filed Oct. 21, 1965.

Old Republic
ASSURANCE COMPANY

Owner of Reg. No. 660,439.
For Underwriting of All Forms of Life Insurance.
First use July 7, 1964.

SN 233,206. Clayton Federal Savings and Loan Association, Clayton, Mo. Filed Nov. 23, 1965.



For Banking Services—Namely, Savings and Loan Banking Services.
First use Aug. 1, 1965.
Subj. to Intf. with SN 254,916.

SN 233,891. Feldman Group Associates, Inc., New York, N.Y. Filed Dec. 3, 1965.

PERMAGROUP

For Administering and Servicing of Group Insurance Plans.
First use Nov. 26, 1965.

SN 234,752. Industrial Indemnity Company, San Francisco, Calif. Filed Dec. 16, 1965.

COMP 500

The Term "Comp" is disclaimed apart from the mark as a whole.
For Writing and Issuance of Policies of Insurance for Workmen's Compensation and Employers' Liability.
First use Apr. 1, 1965.

SN 241,389. 20th Century Investors, Inc., Kansas City, Mo. Filed Mar. 18, 1966.

For Operation of an Open End Diversified Investment Fund for Others.
First use Oct. 31, 1958.

SN 242,565. Continental Casualty Company, Chicago, Ill. Filed Apr. 4, 1966.

abc

Owner of Reg. No. 773,378.
For Administering Group Insurance.
First use Oct. 1, 1965.

SN 244,338. Monumental Life Insurance Company, Baltimore, Md. Filed Apr. 26, 1966.

MONUMENTAL
LIFE INSURANCE COMPANY

For Underwriting Life, Accident, Health, and Sickness Insurance.
First use Mar. 4, 1966.

Class 103 — Construction and Repair

SN 222,472. Cleanex Machinery Corp., Bronx, N.Y. Filed July 1, 1965.

JIFFY CLEANERS

Applicant disclaims the word "Cleaners" apart from the mark as a whole.
For Dry Cleaning Supply Services.
First use Apr. 5, 1965.

SN 242,483. Plantkeepers, Inc., Atlanta, Ga. Filed Apr. 1, 1966.

PLANTKEEPERS

For Contract Cleaning Services for the Maintenance and Upkeep of Buildings and Their Grounds, Rendered to Government Agencies, Property Owners, and the General Business and Professional Public.
First use on or about May 17, 1965.

SN 243,658. Fox International Corp., Chicago, Ill. Filed Apr. 18, 1966.

FOX INTERNATIONAL

For Installation and Construction of Telecommunication Systems.
First use May 1963.

SN 243,851. Degree Corporation, Kansas City, Kans. Filed Apr. 20, 1966.

degree

For Automotive Repair and Maintenance Services.
First use Mar. 28, 1966.

SN 243,900. Royal Services, Inc., Jacksonville, Fla. Filed Apr. 20, 1966.

Royal Services

The word "Services" is disclaimed apart from the mark as shown.
For Cleaning, Deodorizing, Custodial, Janitorial, Maintenance, and Elevator Operation Services in Buildings Owned by Others.
First use January 1963.

SN 257,740. Method Master, Inc., Lincolnwood, Ill. Filed Nov. 2, 1966.

medi·car

The drawing is lined for the color red, but exclusive rights are claimed regardless of color.
For Automotive Diagnostic Services and Repairs.
First use Oct. 17, 1966.

Class 105 — Transportation and Storage

SN 231,104. Camino Tours, Inc., New York, N.Y. Filed Oct. 22, 1965.

EUROTRIP

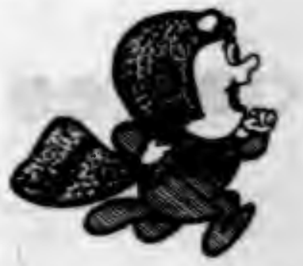
For Tour, Travel and Tour Packages.
First use Nov. 1, 1964.

SN 236,435. Lyon Leasing System, Inc., Springfield, Mass. Filed Jan. 4, 1966.

LYON

For Leasing and Renting of Motor Vehicles.
First use May 1962.

SN 239,095. Wings and Wheels Express, Inc., Flushing, N.Y. Filed Feb. 17, 1966.



The drawing is lined for the colors green and gold. Owner of Reg. No. 778,319.
For Air Freight Forwarder Service.
First use Sept. 26, 1965.

SN 240,797. Signature Transportation Inc., San Francisco, Calif. Filed Mar. 11, 1966.

SIGNATURE

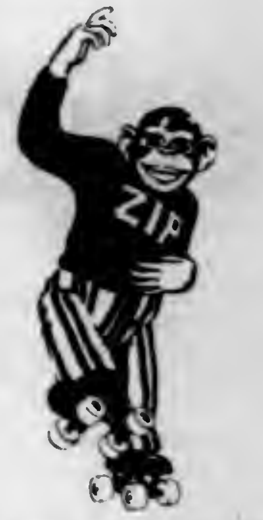
For Transportation Services — Namely, Transporting Freight by Means of Truck.
First use July 1, 1964.

SN 243,371. Zippy Car Rental, Inc., Freeport, N.Y. Filed Apr. 13, 1966.

ZIPPY

For Vehicle Rental Service for the Rental of Cars, Trucks, and Motorcycles.
First use March 1963.

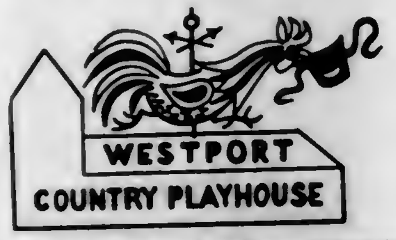
SN 244,284. Zippy Car Rental, Inc., Freeport, N.Y. Filed Apr. 25, 1966.



For Vehicle Rental Service for the Rental of Cars, Trucks, and Motorcycles.
First use March 1963.

Class 107 — Education and Entertainment

SN 180,981. Westport Country Playhouse, Inc., Westport, Conn. Filed Nov. 12, 1963.



Applicant disclaims the wording "Country Playhouse" apart from the mark as shown.
For Staging Theatrical Performances.
First use June 1, 1950.

SN 236,230. Caterers of Cape Cod, Inc., South Yarmouth, Mass. Filed Jan. 12, 1966.

FUNTASTICS

For Presentation of Oral Entertainment.
First use in the summer of 1963.

SN 236,361. Famous Writers School, Inc., Westport, Conn. Filed Jan. 13, 1966.

FAMOUS WRITERS COURSE

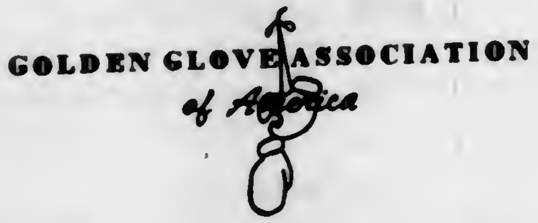
Owner of Reg. Nos. 743,190 and 798,666.
For Correspondence Courses in Writing.
First use Oct. 1, 1960.

SN 239,766. Golden Gate College, San Francisco, Calif. Filed Feb. 28, 1966.

GOLDEN GATE COLLEGE

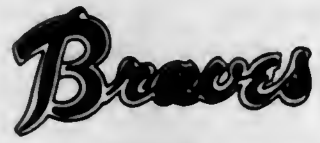
The word "College" is disclaimed apart from the mark as shown.
For Providing College Educational Services.
First use May 19, 1923.

SN 239,989. Golden Glove Association of America, Roswell, N. Mex. Filed Mar. 2, 1966.



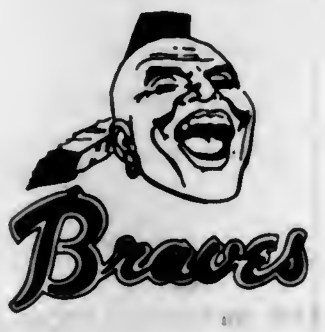
For Promoting Amateur Boxing by Organizing, Promoting, and Conducting Boxing Tournaments.
First use March 1963.

SN 240,838. Atlanta Braves, Inc., Atlanta, Ga. Filed Mar. 14, 1966.



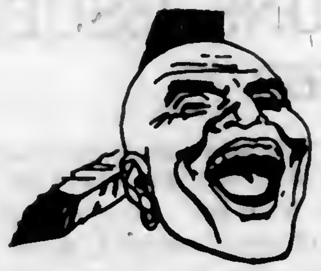
For Entertainment in the Form of Professional Baseball Games.
First use April 1941.

SN 240,839. Atlanta Braves, Inc., Atlanta, Ga. Filed Mar. 14, 1966.



For Entertainment in the Form of Professional Baseball Games.
First use Sept. 1, 1957.

SN 240,840. Atlanta Braves, Inc., Atlanta, Ga. Filed Mar. 14, 1966.



For Entertainment in the Form of Professional Baseball Games.
First use Sept. 1, 1957.

SN 246,104. Scooby Productions, Inc., Winthrop, Mass. Filed May 19, 1966.

PANDORAS

For Musical Entertainment Services Rendered by a Vocal and Instrumental Group.
First use about July 1964.

SN 257,340. Screen Gems, Inc., New York, N.Y. Filed Oct. 27, 1966.

THE MONKEES

For Entertainment Services—Namely, Musical Entertainment Services Rendered by a Vocal and Instrumental Group.
First use Jan. 13, 1966.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 235,699. Optimist International, St. Louis, Mo. Filed Jan. 3, 1966.

OPTIMIST OCTAGON CLUB

Owner of Reg. Nos. 426,074, 639,134, and others.
For Indicating Membership in a Civic Service Organization for Young Men—Namely, the "Optimist Octagon Club" Sponsored and Controlled by the Applicant Association.
First use Nov. 17, 1964.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

825,124. DYNASHEET. National Distillers and Chemical Corporation. SN 208,483. Pub. 6–22–65. Filed 12–18–64.

825,125. TECNOFLON. Montecatini, Societá Generale per l'Industria Mineraria e Chimica. SN 218,712. Pub. 1–4–66. Filed 5–13–65.

825,126. WEB PLASTICS CO. AND DESIGN. Web Plastics Company. SN 231,514. Pub. 12–20–66. Filed 10–28–65.

825,127. CROFON. E. I. du Pont de Nemours and Company. SN 232,063. Pub. 12–20–66. Filed 11–3–65.

825,128. DU PONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 232,064. Pub. 12–20–66. Filed 11–3–65.

825,129. WESTFELT. Western Felt Works. MULTIPLE CLASS (Classes 1 and 42). SN 232,261. Pub. 12–20–66. Filed 11–8–65.

825,130. RESISTOFLEX R. Resistoflex Corporation. MULTIPLE CLASS (Classes 1, 13, 23, and 35). SN 236,337. Pub. 12–20–66. Filed 1–13–66.

825,131. POLLY BEE. William B. Gunther. SN 237,342. Pub. 10–11–66. Filed 1–26–66.

825,132. VIBRIN-MIX. United States Rubber Company. SN 240,988. Pub. 12–20–66. Filed 3–14–66.

825,133. VIBRIN-MAT. United States Rubber Company. SN 240,989. Pub. 12–20–66. Filed 3–14–66.

825,134. BELL ETC. AND DESIGN. Bell Clay Company. SN 241,737. Pub. 12–20–66. Filed 3–24–66.

825,135. ALOHA. Georgia-Pacific Corporation. SN 244,100. Pub. 10–25–66. Filed 4–22–66.

Class 2 — Receptacles

825,136. TWIN-TOTE. Aladdin Industries, Incorporated. SN 220,063. Pub. 12–20–66. Filed 6–1–65.

825,137. COMBO BIN AND DESIGN. Owens-Illinois, Inc. SN 231,934. Pub. 12–20–66. Filed 11–1–65.

825,138. FLEXI-TUBE. The Procter & Gamble Company. SN 232,090. Pub. 12–20–66. Filed 11–3–65.

825,139. NEST-N-SAVE AND DESIGN. Bennett Industries, Inc. SN 237,650. Pub. 12–20–66. Filed 2–1–66.

825,140. EMBER. The Mid-Continent Wholesale Co. SN 239,289. Pub. 12–20–66. Filed 2–21–66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

825,141. LITE-RIDER. Julius V. Le Laurin and Julius V. Le Laurin, Jr. (partnership), d.b.a. Rawhide. SN 226,541. Pub. 12–20–66. Filed 8–26–65.

Class 4 — Abrasives and Polishing Materials

825,142. DAB. Robert Hatcher. SN 237,837. Pub. 12–20–66. Filed 2–2–66.

825,143. FORMALOY. Precision Diamond Tool Company. SN 238,663. Pub. 12–20–66. Filed 2–11–66.

825,144. DHP. Precision Diamond Tool Company. SN 238,664. Pub. 12–20–66. Filed 2–11–66.

825,145. SCUFF ARMOR. Corn Products Company. SN 238,838. Pub. 12–20–66. Filed 2–15–66.

825,146. CHECKMATE. The Butcher Polish Company. SN 239,220. Pub. 12–20–66. Filed 2–21–66.

Class 5 — Adhesives

825,147. PLYACIEN. Reichhold Chemicals, Inc. SN 235,231. Pub. 12–20–66. Filed 12–28–65.

Class 6 — Chemicals and Chemical Compositions

825,148. PEGOSPERSE. Glyco Chemicals, Inc. SN 190,606. Pub. 12–20–66. Filed 4–8–64.

825,149. SHIELD. Puritan Chemical Company. SN 192,628. Pub. 5–4–65. Filed 5–4–64.

825,150. BIG VALUE. B. Green & Company, Inc. MULTIPLE CLASS (Classes 6, 29, and 46). SN 203,086. Pub. 12–20–66. Filed 10–1–64.

825,151. MEDURA. Manuel Lesmes. SN 218,331. Pub. 12–20–66. Filed 3–4–65.

825,152. DE-ODO RINSE. H.G. Enterprises. SN 225,414. Pub. 12–20–66. Filed 8–10–65.

825,153. MIRA-SHELL. K. J. Quinn & Co., Inc. SN 227,443. Pub. 12–20–66. Filed 9–8–65.

825,154. GAZ-TEC. American Gas & Chemicals, Inc. SN 227,807. Pub. 12–20–66. Filed 9–15–65.

825,155. JUNE IN JANUARY. Avon Products, Inc. SN 227,992. Pub. 12–20–66. Filed 9–17–65.

825,156. MALIX. Tenneco Chemicals, Inc. SN 228,206. Pub. 12–20–66. Filed 9–20–65.

825,157. SOLWYTE. Tenneco Chemicals, Inc. SN 228,210. Pub. 12–20–66. Filed 9–20–65.

825,158. TEMPOL. Archer-Daniels-Midland Company. SN 228,317. Pub. 12–20–66. Filed 9–22–65.

825,159. MAXATASE. Koninklijke Nederlandsche Gist- en Spiritusfabriek N.V., d.b.a. Royal Netherlands Distilleries Ltd. SN 234,906. Pub. 12–20–66. Filed 12–20–65.

825,160. DIPANOL. Crowley Hydrocarbon Chemicals, Inc. SN 235,031. Pub. 9–27–66. Filed 12–16–65.

825,161. DRIMAFON. Sandoz, Inc. SN 239,662. Pub. 12–20–66. Filed 2–25–66.

825,162. VISCOFIL. Sandoz, Inc. SN 239,663. Pub. 12–20–66. Filed 2–25–66.

825,163. SPECIAL AGENT AND DESIGN. Woodhill Chemical Sales Corporation. MULTIPLE CLASS (Classes 6, 15, 16, and 52). SN 243,054. Pub. 12–20–66. Filed 4–8–66.

825,164. ATAKON. American Textile Arts, Inc. MULTIPLE CLASS (Classes 6, 42, and 43). SN 243,288. Pub. 12–20–66. Filed 4–13–66.

825,165. MH-200. Ventron Corporation. SN 244,941. Pub. 10–25–66. Filed 5–4–66.

825,166. HOSP-I-SEPTIC AND DESIGN. Chemical Packaging Corporation. SN 245,291. Pub. 12–20–66. Filed 5–10–66.

825,167. POLYHYDROME-D. Dermik Pharmacal Co., Inc. SN 246,286. Pub. 12–20–66. Filed 5–23–66.

825,168. ISONOL. The Upjohn Company. SN 247,166. Pub. 12–20–66. Filed 6–2–66.

825,169. BACTURTEST. The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories. SN 247,203. Pub. 12–20–66. Filed 6–3–66.

825,170. LADLETOP. M. A. Bell Company. SN 250,444. Pub. 12–20–66. Filed 7–18–66.

825,171. SALTUS. Leslie Salt Co. MULTIPLE CLASS (Classes 6 and 46). SN 251,678. Pub. 12–20–66. Filed 8–4–66.

825,172. TEMIK. Union Carbide Corporation. SN 252,320. Pub. 11–15–66. Filed 8–15–66.

825,173. 340 - TEST. Roselawn Laboratories, Inc. SN 252,792. Pub. 12–20–66. Filed 8–22–66.

825,174. 3M. Minnesota Mining and Manufacturing Company. SN 254,216. Pub. 12–20–66. Filed 9–12–66.

825,175. ALBAGLOS. Chas. Pfizer & Co., Inc. SN 254,317. Pub. 12–20–66. Filed 9–12–66.

Class 8 — Smokers' Articles, Not Including Tobacco Products

825,176. SPARKWOOD. Brisco Mountain Woodcrafters, Inc. MULTIPLE CLASS (Classes 8 and 28). SN 255,945. Pub. 12–20–66. Filed 10–7–66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

825,177. LEADER AND DESIGN. Acme Specialties Corporation. SN 181,201. Pub. 12–20–66. Filed 11–15–63.

Class 10 — Fertilizers

825,178. PREMIUM PLUS. Kerr-McGee Chemical Corp., by change of name from The Baugh Chemical Company. SN 219,663. Pub. 6–28–66. Filed 5–25–65.

Class 11 — Inks and Inking Materials

825,179. LITHO-SKETCH. Anthony Ensink & Co. SN 235,767. Pub. 12–20–66. Filed 1–4–66.

Class 12 — Construction Materials

825,180. MISCELLANEOUS DESIGN. Joe Hoots Construction, Inc., d.b.a. Joe Hoots Cabinet Shop. SN 226,742. Pub. 12–20–66. Filed 8–30–65.

825,181. TOKSTRIP. Denso-Chemie G.m.b.H. SN 227,014. Pub. 12–20–66. Filed 9–2–65.

825,182. VINL-HESIVE. Contractors Chemical & Supply Co. SN 240,261. Pub. 12–20–66. Filed 3–7–66.

825,183. GLOBE AND DESIGN. The Globe Brick Company. SN 243,661. Pub. 12–20–66. Filed 4–18–66.

825,184. SPIFFY. Newberry Equipment Co., Inc. SN 243,887. Pub. 12–20–66. Filed 4–20–66.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

825,130. (See Class 1 for this trademark.)

825,185. MANOR AND DESIGN. Crane Co. SN 230,515. Pub. 12–20–66. Filed 10–19–65.

825,186. SUPER-FLOW. White Manufacturing Company of Missouri. SN 233,426. Pub. 12–20–66. Filed 11–26–65.

825,187. SABER-TOOTH. Markwell Manufacturing Company, Inc. SN 233,720. Pub. 12–20–66. Filed 12–1–65.

825,188. RESISTOFLEX. Resistoflex Corporation. MULTIPLE CLASS (Classes 13, 23, and 35). SN 236,338. Pub. 12–20–66. Filed 1–13–66.

825,189. TUBRACORD. Societá Metallurgica Italiana. SN 236,929. Pub. 12–20–66. Filed 1–20–66.

825,190. INSTANT HANGING SPACE. APL Corporation. SN 245,872. Pub. 12–20–66. Filed 5–11–66.

Class 14 — Metals and Metal Castings and Forgings

825,191. SCR. Southwire Company. SN 237,492. Pub. 12–20–66. Filed 1–27–66.

Class 15 — Oils and Greases

825,163. (See Class 6 for this trademark.)

825,192. SAAB AND DESIGN. Saab Aktiebolag, d.b.a. Saab Motors, Inc. SN 237,039. Pub. 12–20–66. Filed 1–21–66.

825,193. LETTERS TM (DESIGN). Tune Masters. SN 241,289. Pub. 12–20–66. Filed 3–17–66.

825,194. TUNE MASTERS. Tune Masters. SN 241,290. Pub. 12–20–66. Filed 3–17–66.

Class 16 — Protective and Decorative Coatings

825,163. (See Class 6 for this trademark.)

825,195. KELZAN. Kelco Company. SN 242,613. Pub. 12–20–66. Filed 4–4–66.

825,196. MOORWOOD. Benjamin Moore & Co. SN 242,834. Pub. 12–20–66. Filed 4–6–66.

825,197. NU-TREND. D. H. Cutler's Paint Industries, Inc. SN 242,882. Pub. 12–20–66. Filed 4–7–66.

Class 17 — Tobacco Products

825,198. L&M AND DESIGN. Liggett & Myers Tobacco Company. SN 233,805. Pub. 12–20–66. Filed 12–2–65.

Class 18 — Medicines and Pharmaceutical Preparations

825,199. KENDALL. The Kendall Company. SN 185,908. Pub. 12–20–66. Filed 2–3–64.

825,200. CETAPRED. Alcon Laboratories, Inc. SN 217,519. Pub. 9–21–65. Filed 4–28–65.

825,201. SUPER M 39 AND DESIGN. Vicain, Inc., d.b.a. Labco. SN 225,082. Pub. 8-2-66. Filed 8-5-65.

825,202. ICEBERG. Southwestern Drug Corporation, d.b.a. Tru-Lab Products. SN 231,300. Pub. 12-20-66. Filed 10-22-65.

825,203. NEODECAGEL. Merck & Co., Inc. SN 236,398. Pub. 12-20-66. Filed 1-13-66.

825,204. PREMPAK. American Home Products Corporation. SN 237,291. Pub. 12-20-66. Filed 1-26-66.

825,205. S AND DESIGN. Salsbury Laboratories. SN 237,488. Pub. 12-20-66. Filed 1-27-66.

825,206. CAVADOL. Geigy Chemical Corporation. SN 238,860. Pub. 12-20-66. Filed 2-15-66.

825,207. SOOVAC. American Cyanamid Company. SN 241,222. Pub. 12-20-66. Filed 3-17-66.

825,208. HAMATOPAN. Dr. August Wolff Chemische-Pharmazeutische Fabrik Kommanditgesellschaft. SN 241,437. Pub. 12-20-66. Filed 3-21-66.

825,209. COPPER AID. Armour Pharmaceutical Company. SN 242,198. Pub. 12-20-66. Filed 3-30-66.

825,210. VITA PLUS AND DESIGN. Vita Plus Corporation. SN 242,302. Pub. 12-20-66. Filed 3-30-66.

825,211. MISCELLANEOUS DESIGN. Acme Cotton Products Co., Inc. SN 243,517. Pub. 12-20-66. Filed 4-15-66.

825,212. BABY-EASE. Commerce Drug Co., Inc. SN 244,571. Pub. 12-20-66. Filed 4-29-66.

825,213. SANI-VESS. Betan Company, Inc. SN 246,867. Pub. 9-27-66. Filed 5-31-66.

825,214. INSERTORY. Masti-Kure Products Co. SN 248,350. Pub. 12-20-66. Filed 6-17-66.

825,215. SINEQUAN. Chas. Pfizer & Co., Inc. SN 254,095. Pub. 12-20-66. Filed 9-9-66.

825,216. AMPHICOL. McKesson & Robbins, Incorporated, d.b.a. McKesson Laboratories. SN 254,213. Pub. 12-20-66. Filed 9-12-66.

Class 19 — Vehicles

825,217. DONZI MARINE. Teleflex Incorporated. SN 220,331. Pub. 12-20-66. Filed 6-3-65.

825,218. TEDDY AND DESIGN. Theodore Equipment Corporation. SN 235,538. Pub. 12-20-66. Filed 12-29-65.

825,219. SURFER. Outboard Marine Corporation. SN 237,375. Pub. 12-20-66. Filed 1-26-66.

Class 20 — Linoleum and Oiled Cloth

825,220. TERRALON. Flexon Chemical Corporation. SN 239,034. Pub. 12-20-66. Filed 2-17-66.

825,221. ARTWOOD. Armstrong Cork Company. SN 243,528. Pub. 12-20-66. Filed 4-15-66.

825,222. SABRIL. Armstrong Cork Company. SN 243,529. Pub. 12-20-66. Filed 4-15-66.

Class 21 — Electrical Apparatus, Machines, and Supplies

825,223. TRUE THAW. C. Wayne True, d.b.a. True Service & Supply. SN 206,313. Pub. 12-20-66. Filed 11-16-64.

825,224. T AND DESIGN. Benedict Productions, Incorporated. SN 207,704. Pub. 12-20-66. Filed 12-8-64.

825,225. TRIPLEX. Triplex S.p.A. MULTIPLE CLASS (Classes 21, 24, and 34). SN 207,758. Pub. 12-20-66. Filed 12-8-64.

825,226. ROCKCOTE. Cerro Corporation. SN 216,049. Pub. 12-20-66. Filed 4-8-65.

825,227. MICAPACT. Allmanna Svenska Elektriska Aktiebolaget. SN 227,464. Pub. 6-14-66. Filed 9-9-65.

825,228. SUNBEAM. Sunbeam Corporation. SN 229,595. Pub. 12-20-66. Filed 10-7-65.

825,229. NORBASINK. Norbatrol Electronics Corporation. SN 232,416. Pub. 12-20-66. Filed 11-9-65.

825,230. DEI DEFENSE ELECTRONICS, INC. AND DESIGN. Defense Electronics, Inc. SN 232,533. Pub. 12-20-66. Filed 11-12-65.

825,231. JENSEN ALARM-KING AND DESIGN. Jensen Industries, Inc. SN 233,217. Pub. 12-20-66. Filed 11-22-65.

825,232. SEAL KING. The Electric Storage Battery Company. SN 236,184. Pub. 12-20-66. Filed 1-11-66.

825,233. CAPELLA. Thomas Industries, Inc. SN 236,301. Pub. 12-20-66. Filed 1-12-66.

825,234. MICRO-MEG. Fedtro, Inc. SN 238,944. Pub. 12-20-66. Filed 2-16-66.

825,235. NELAM. New England Laminates Company, Inc. SN 242,744. Pub. 12-20-66. Filed 4-5-66.

Class 22 — Games, Toys, and Sporting Goods

825.236. PICTURE PUZZLE IN THE ROUND. Jaymar Specialty Company. SN 213,982. Pub. 10-12-65. Filed 3-12-65.

825,237. DERBY DICE. Dale E. Steffey, d.b.a. Chula Vista Novelty Co. SN 225,364. Pub. 12-20-66. Filed 8-9-65.

825,238. BONUS BINGO. Strategic Merchandising Corp. SN 226,685. Pub. 12-20-66. Filed 8-27-65.

825,239. MISCELLANEOUS DESIGN. Milton Bradley Company. SN 229,054. Pub. 12-20-66. Filed 10-1-65.

825,240. WIFFLE. The Wiffle Ball, Inc. SN 229,619. Pub. 12-20-66. Filed 10-7-65.

825,241. MISCELLANEOUS DESIGN. Ateliers Michal. SN 233,166. Pub. 12-20-66. Filed 11-23-65.

825,242. MISCELLANEOUS DESIGN. Veneko Corporation. SN 237,057. Pub. 12-20-66. Filed 1-21-66.

825,243. VENTURE AND DESIGN. Veneko Corporation. SN 237,058. Pub. 12-20-66. Filed 1-21-66.

825,244. OBUT. La Boule Obut. SN 237,229. Pub. 12-20-66. Filed 1-25-66.

825,245. LA BOULE DOG AND DESIGN. La Boule Obut. SN 237,231. Pub. 12-20-66. Filed 1-25-66.

825,246. MIKE HAZARD DOUBLE AGENT. Louis Marx & Co., Inc. SN 237,464. Pub. 12-20-66. Filed 1-27-66.

825,247. APPLE PIE. Lisbeth Whiting Company, Inc. SN 239,915. Pub. 12-20-66. Filed 3-1-66.

825,248. ARMOR FRAME. Brunswick Corporation. SN 249,911. Pub. 12-20-66. Filed 7-11-66.

825,249. MCTAVISH MASTERS. James H. Dye, d.b.a. Dye-Matic Enterprises. SN 250,895. Pub. 12-20-66. Filed 7-25-66.

825,250. FREEZY SLIDDLE. Mattel, Inc. SN 255,565. Pub. 12-20-66. Filed 10-3-66.

825,251. LIZ LOCKET. Mattel, Inc. SN 255,569. Pub. 12-20-66. Filed 10-3-66.

825,252. LORNA LOCKET. Mattel, Inc. SN 255,570. Pub. 12-20-66. Filed 10-3-66.

825,253. LILAC LOCKET. Mattel, Inc. SN 255,571. Pub. 12-20-66. Filed 10-3-66.

825,254. LOU LOCKET. Mattel, Inc. SN 255,572. Pub. 12-20-66. Filed 10-3-66.

825,255. SURFY SKIDDLE. Mattel, Inc. SN 255,573. Pub. 12-20-66. Filed 10-3-66.

825,256. SNIFFY-MINT. Mattel, Inc. SN 255,574. Pub. 12-20-66. Filed 10-3-66.

825,257. LOIS LOCKET. Mattel, Inc. SN 255,577. Pub. 12-20-66. Filed 10-3-66.

825,258. LARKY LOCKET. Mattel, Inc. SN 255,578. Pub. 12-20-66. Filed 10-3-66.

825,259. LOLA LOCKET. Mattel, Inc. SN 255,579. Pub. 12-20-66. Filed 10-3-66.

825,260. SAN MARINO. Federal Employees' Distributing Company, d.b.a. Fedco, Inc. SN 255,951. Pub. 12-20-66. Filed 10-7-66.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

825,130. (See Class 1 for this trademark.)

825,176. (See Class 8 for this trademark.)

825,188. (See Class 13 for this trademark.)

825,261. DN AND DESIGN. Dyna-Nuclear Corporation. SN 216,946. Pub. 12-20-66. Filed 4-20-65.

825,262. DYNA NUCLEAR AND DESIGN. Dyna-Nuclear Corporation. SN 216,947. Pub. 12-20-66. Filed 4-20-65.

825,263. OLD FILE. Wheel Estate, Inc., d.b.a. Old File Cutlery Company. SN 219,491. Pub. 12-20-66. Filed 5-21-65.

825,264. VEND-A-VAC. Weben Industries, Inc. SN 225,083. Pub. 12-20-66. Filed 8-5-65.

825,265. TWIN GRIP. The Cincinnati Milling Machine Co. SN 227,006. Pub. 12-20-66. Filed 9-2-65.

825,266. SILENT-FLO. Crane Co. SN 227,564. Pub. 12-20-66. Filed 9-10-65.

825,267. POWER-SCREW. Chicago Pneumatic Tool Company. SN 229,635. Pub. 12-20-66. Filed 10-8-65.

825,268. GLIDING CONVEX EDGE. Eversharp, Inc. SN 232,774. Pub. 12-20-66. Filed 11-16-65.

825,269. PERFORMANCE COUNTS. Mack Trucks, Inc. MULTIPLE CLASS (Classes 23 and 35). SN 235,807. Pub. 12-20-66. Filed 1-5-66.

825,270. POWERTRACE. Powertrace Corporation. SN 236,136. Pub. 12-20-66. Filed 1-10-66.

825,271. KINGSBURY. Kingsbury Machine Tool Corporation. SN 243,324. Pub. 12-20-66. Filed 4-13-66.

825,272. FWI AND DESIGN. Frank Wheatley Industries, Inc. SN 243,741. Pub. 12-20-66. Filed 4-18-66.

825,273. FC AND DESIGN. New Castle Products, Inc. SN 247,293. Pub. 12-20-66. Filed 6-6-66.

825,274. UNION SPECIAL. Union Special Machine Company. SN 249,363. Pub. 12-20-66. Filed 6-30-66.

Class 24 — Laundry Appliances and Machines

825,225. (See Class 21 for this trademark.)

Class 26 — Measuring and Scientific Appliances

825,275. ME AND DESIGN. Maintenance Engineering Company Incorporated. SN 179,643. Pub. 12-20-66. Filed 10-23-63.

825,276. INTRANSIT AND DESIGN. Intransit Motion Pictures, Inc. SN 221,183. Pub. 12-20-66. Filed 6-15-65.

825,277. STAN. Fairchild Camera and Instrument Corporation. SN 234,552. Pub. 12-20-66. Filed 12-14-65.

825,278. PEX-O-MATIC. Peck's Products Company. SN 237,476. Pub. 12-20-66. Filed 1-27-66.

825,279. DYNATUNE. American Bosch Arma Corp. SN 239,205. Pub. 12-20-66. Filed 2-21-66.

825,280. LUMBER GUARD. Laucks Laboratories, Inc. SN 239,526. Pub. 12-20-66. Filed 2-24-66.

825,281. AQUA-TECTOR. Driaire Incorporated. SN 240,081. Pub. 12-20-66. Filed 3-3-66.

825,282. VIDIMATIC. Alina Corp. SN 244,451. Pub. 12-20-66. Filed 4-28-66.

Class 27 — Horological Instruments

825,283. WILDCAT. Croton Watch Co., Inc. SN 286,806. Pub. 12-20-66. Filed 1-19-66.

825,284. JEWELAMATIC. Lucien Piccard Watch Corp. SN 237,235. Pub. 12-20-66. Filed 1-25-66.

825,285. JEWELTRONIC. Lucien Piccard Watch Corp. SN 237,236. Pub. 12-20-66. Filed 1-25-66.

825,286. LUBRIMATIC. Lucien Piccard Watch Corp. SN 237,237. Pub. 12-20-66. Filed 1-25-66.

Class 28 — Jewelry and Precious-Metal Ware

825,287. G AND DESIGN. Gemtone, Inc. SN 234,277. Pub. 12-20-66. Filed 12-9-65.

825,288. SPRUCE AND DESIGN. Walter A. Dunn, d.b.a. Dunn Brothers. SN 234,888. Pub. 12-20-66. Filed 12-20-65.

825,289. TENS-A-MATIC. Axam, Inc. SN 237,075. Pub. 12-20-66. Filed 1-24-66.

825,290. K.D.C. Kallman Diamond Corp. SN 288,234. Pub. 12-20-66. Filed 2-7-66.

Class 29 — Brooms, Brushes, and Dusters

825,150. (See Class 6 for this trademark.)

825,291. STA-SOFT. Simoniz Company. SN 249,279. Pub. 12-20-66. Filed 6-30-66.

Class 30 — Crockery, Earthenware, and Porcelain

825,292. MERIDIAN. Noritake Co., Inc. SN 235,697. Pub. 12-20-66. Filed 1-3-66.

825,293. PROGRESSION. Noritake Co., Inc. SN 236,505. Pub. 12-20-66. Filed 1-14-66.

Class 31 — Filters and Refrigerators

825,294. GROTESQUE HUMAN (DESIGN). American Dairy Queen Corporation. SN 176,768. Pub. 12-20-66. Filed 9-12-63.

825,295. ULTRACEL. Envirco, Inc., by change of name from Comfort Air Service Company, Inc. SN 205,165. Pub. 12-20-66. Filed 10-30-64.

825,296. DEEPSAFE. Fluid Dynamics, Incorporated. SN 231,091. Pub. 12-20-66. Filed 10-22-65.

825,297. FILT-O-CITE. Shamokin Filler Co., Inc. SN 245,023. Pub. 12-20-66. Filed 5-5-66.

825,298. PERMASEP. E. I. du Pont de Nemours and Company. SN 248,652. Pub. 12-20-66. Filed 6-22-66.

825,299. CI AND DESIGN. Union Tank Car Company. SN 250,541. Pub. 12-20-66. Filed 7-18-66.

825,300. ROTO-SCOUR. Union Tank Car Company. SN 251,022. Pub. 12-20-66. Filed 7-25-66.

Class 32 — Furniture and Upholstery

825,301. HIGHLANDER. Slick Industrial Company, d.b.a. Illinois Shade Division of Slick Industrial Company. SN 240,210. Pub. 12–20–66. Filed 3–4–66.

825,302. MARBL-MAGIC. Cook Paint & Varnish Company. SN 240,507. Pub. 12–20–66. Filed 3–9–66.

825,303. CONESTOGA HOMESTEAD. Quaker Maid Kitchens, Inc. SN 240,650. Pub. 12–20–66. Filed 3–10–66.

825,304. CONESTOGA MISSION. Quaker Maid Kitchens, Inc. SN 240,651. Pub. 12–20–66. Filed 3–10–66.

825,305. INTIMATE ISLAND. Deco House, Inc. SN 240,864. Pub. 12–20–66. Filed 3–14–66.

825,306. STATUS. Williams Mod-U-Plant Office Furniture Corporation. SN 241,717. Pub. 12–20–66. Filed 3–23–66.

Class 33 — Glassware

825,307. ZWIESEL AND DESIGN. Vereinigte Farbenglaswerke A.G. SN 234,260. Pub. 12–20–66. Filed 12–8–65.

Class 34 — Heating, Lighting, and Ventilating Apparatus

825,225. (See Class 21 for this trademark.)

825,308. REMCO "OZONE AIRE" AND DESIGN. Remco Manufacturing Company, Inc. SN 194,518. Pub. 12–20–66. Filed 5–28–64.

825,309. LENNOX DURAGLASS. Lennox Industries Inc. SN 205,303. Pub. 12–20–66. Filed 11–2–64.

825,310. AGITAIR MARK II. Air Devices, Inc. SN 216,120. Pub. 12–20–66. Filed 4–8–65.

825,311. PILGRIM. Pilgrim Tool & Die Co. SN 222,199. Pub. 12–20–66. Filed 6–28–65.

825,312. MANOR AND DESIGN. Crane Co. SN 230,516. Pub. 12–20–66. Filed 10–19–65.

825,313. CONSEL. Ramco, Inc., d.b.a. Ramco Manufacturing & Engineering. SN 235,715. Pub. 12–20–66. Filed 1–3–66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

825,130. (See Class 1 for this trademark.)

825,188. (See Class 13 for this trademark.)

825,269. (See Class 23 for this trademark.)

825,314. SUPER KING., United Equipment Sales, Inc. SN 231,607. Pub. 12–20–66. Filed 10–24–65.

825,315. POLYBAND. Dodge Manufacturing Corporation. SN 235,635. Pub. 12–20–66. Filed 1–3–66.

825,316. COSMOPOLITAN MAXPLY. Dunlop Tire and Rubber Corporation. SN 236,479. Pub. 12–20–66. Filed 1–14–66.

825,317. 707. Jetzon Tire and Rubber Corporation. SN 236,761. Pub. 12–20–66. Filed 1–18–66.

Class 36 — Musical Instruments and Supplies

825,318. WOLLENSAK. Minnesota Mining and Manufacturing Company. SN 238,551. Pub. 12–20–66. Filed 2–10–66.

Class 37 — Paper and Stationery

825,319. SCRIP-TAG. Conal Pharmaceuticals, Inc. SN 201,665. Pub. 4–13–65. Filed 9–11–64.

825,320. SUN-SETS. The Sun, Inc. SN 227,623. Pub. 12–20–66. Filed 9–10–65.

825,321. JACKSPUN. The Jackmeyer Corporation. MULTIPLE CLASS (Classes 37 and 38). SN 236,267. Pub. 12–20–66. Filed 1–12–66.

Class 38 — Prints and Publications

825,321. (See Class 37 for this trademark.)

825,322. AGRICULTURAL OBSERVATIONS AND DESIGN. Harris Trust and Savings Bank. SN 210,307. Pub. 12–20–66. Filed 1–21–65.

825,323. JIM DANDY. Michael Senich and Dorothee Senich (joint owners). SN 219,918. Pub. 12–20–66. Filed 5–27–65.

825,324. ABEX. Abex Corporation, by change of name from American Brake Shoe Company. SN 220,064. Pub. 12–20–66. Filed 6–1–65.

825,325. COMPUTREND. Computrend, Inc. SN 232,634. Pub. 12–20–66. Filed 11–4–65.

825,326. TENT AND TRAIL. National Campers and Hikers Association, Inc. SN 234,055. Pub. 12–20–66. Filed 12–6–65.

825,327. MILITARY POLICE JOURNAL. Military Police Association, Inc. SN 235,605. Pub. 12–20–66. Filed 12–10–65.

825,328. INTRINSICS. Freeman & Gossage, Inc. SN 236,082. Pub. 12–20–66. Filed 1–10–66.

825,329. CRUX OF THE NEWS. Clarity Publishing, Inc. SN 237,660. Pub. 12–20–66. Filed 2–1–66.

825,330. BENTARA ILMUPENGETAHUAN KRISTEN. The Christian Science Publishing Society. SN 239,124. Pub. 12–20–66. Filed 2–18–66.

825,331. JAPANESE CHARACTERS (DESIGN). The Christian Science Publishing Society. SN 239,229. Pub. 12–20–66. Filed 2–21–66.

825,332. CUSTOM CALS. Kenmore Supply Company. SN 241,476. Pub. 12–20–66. Filed 3–21–66.

825,333. PEEK'SIZE. Ernest W. Peek, d.b.a. E. W. Peek & Company. SN 242,279. Pub. 12–20–66. Filed 3–30–66.

825,334. GREAT RETAIL INSTITUTIONS SERIES GRI AND DESIGN. Lebhar-Friedman Publications, Inc. SN 250,331. Pub. 12–20–66. Filed 7–15–66.

825,335. JOURNAL OF OCCUPATIONAL MEDICINE. Industrial Medical Association, Inc. SN 250,809. Pub. 12–20–66. Filed 7–22–66.

825,336. KING COMICS AND DESIGN. The Hearst Corporation. SN 251,358. Pub. 12–20–66. Filed 8–1–66.

825,337. BRITANNICA BOOK OF THE YEAR. Encyclopaedia Britannica, Inc. SN 252,323. Pub. 12–20–66. Filed 8–15–66.

825,338. WORLD ORDER. National Spiritual Assembly of the Baha'is of The United States. SN 253,818. Pub. 12–20–66. Filed 9–6–66.

Class 39 — Clothing

825,339. RANDALL'S. Randall's, Inc. MULTIPLE CLASS (Classes 39 and 100). SN 167,820. Pub. 12–20–66. Filed 4–22–63.

825,340. EXECUTEEN. M. Wile & Company, Inc. SN 177,394. Pub. 5–5–64. Filed 9–19–63.

825,341. BELLE BUOYS. Dino Boutiques, Inc. SN 225,298. Pub. 12–20–66. Filed 8–9–65.

825,342. SWAMP COATS. Whyson Distributors. SN 228,425. Pub. 12–20–66. Filed 9–22–65.

825,343. POLY-KNIT. Beltx Corporation. SN 232,967. Pub. 12–20–66. Filed 11–19–65.

825,344. THE SAMPLE TRUNK. Earle M. Turow. SN 233,288. Pub. 12–20–66. Filed 11–24–65.

825,345. JUSTIN CHARLES. Justin Charles Company, Inc. SN 234,511. Pub. 12–20–66. Filed 12–13–65.

825,346. L'OR. Lor Limited. SN 235,205. Pub. 12–20–66. Filed 12–23–65.

825,347. TSC 100. Tyson Shirt Company. SN 236,432. Pub. 12–20–66. Filed 1–13–66.

825,348. LORD MONTCLAIR. Louis Barasch, Inc. SN 237,648. Pub. 12–20–66. Filed 2–1–66.

825,349. GEPNER. Foremost Knitting Mills, Inc. SN 238,071. Pub. 12–20–66. Filed 2–4–66.

825,350. PHIL ROSE. Phil Rose of California, Inc. SN 238,114. Pub. 12–20–66. Filed 2–4–66.

825,351. SIR TEEN. Stahl-Urban Company. SN 240,552. Pub. 12–20–66. Filed 3–9–66.

825,352. THE LADY IN RED. Chadbourn Gotham, Inc. SN 243,843. Pub. 12–20–66. Filed 4–19–66.

825,353. TRAVEL TALK AND DESIGN. Berkshire Apparel Corporation. SN 243,949. Pub. 12–20–66. Filed 4–21–66.

825,354. AMERICAN HERO. Ben Cooper Inc. SN 250,215. Pub. 12–20–66. Filed 7–14–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

825,129. (See Class 1 for this trademark.)

825,164. (See Class 6 for this trademark.)

825,355. BIBB THE FIRST NAME IN TEXTILES AND DESIGN. Bibb Manufacturing Company. SN 224,292. Pub. 12–20–66. Filed 7–27–65.

825,356. MISCELLANEOUS DESIGN. Charles Bloom Inc. SN 239,003. Pub. 12–20–66. Filed 2–17–66.

825,357. BON VIVANT. Burlington Industries, Inc. SN 240,150. Pub. 12–20–66. Filed 3–4–66.

825,358. SHAPE-FLEX. Stacy Fabrics Corp. SN 245,987. Pub. 12–20–66. Filed 5–18–66.

Class 43 — Thread and Yarn

825,164. (See Class 6 for this trademark.)

Class 44 — Dental, Medical, and Surgical Appliances

825,359. PETITE BATH. Madge Romberger. SN 208,770. Pub. 12–20–66. Filed 12–23–64.

825,360. ANAKIT. Hollister-Stier Laboratories, Inc. SN 237,125. Pub. 12–20–66. Filed 1–24–66.

825,361. CRYSTAL. Rexall Drug and Chemical Company, d.b.a. The Absorbent Cotton Company. SN 238,111. Pub. 12–20–66. Filed 2–4–66.

825,362. VARSILITE. Gustav Schumacher, Jr., d.b.a. Varsity Dental Mfg. & Supply Co. SN 240,349. Pub. 12–20–66. Filed 3–7–66.

825,363. SAUNDA. Health Products, Inc. SN 240,516. Pub. 12–20–66. Filed 3–9–66.

825,364. PYROSTAIN. Williams Gold Refining Co., Inc. SN 240,998. Pub. 12–20–66. Filed 3–14–66.

825,365. PYROLIQUID. Williams Gold Refining Co., Inc. SN 240,999. Pub. 12–20–66. Filed 3–14–66.

825,366. SOW-JET. Harold B. Lloyd, d.b.a. Sow Jet Company. SN 241,154. Pub. 12–20–66. Filed 3–16–66.

825,367. EBA. Opotow Dental Manufacturing Corp. SN 241,269. Pub. 12–20–66. Filed 3–17–66.

825,368. MAGNA-CLAVE. The Pelton & Crane Company. SN 241,271. Pub. 12–20–66. Filed 3–17–66.

825,369. JL PORC-ALLOY AND DESIGN. John Luft Prescription Alloys, Inc. SN 241,595. Pub. 12–20–66. Filed 3–22–66.

825,370. EKOLINE 10. Smith Kline & French Laboratories. SN 241,691. Pub. 12–20–66. Filed 3–23–66.

825,371. DUCOR. Cordis Corporation. SN 241,982. Pub. 12–20–66. Filed 3–28–66.

825,372. P-PAKIT. Deseret Pharmaceutical Company, Inc. SN 241,991. Pub. 12–20–66. Filed 3–28–66.

825,373. FLEXIFIBRE. Johnson & Johnson. SN 242,258. Pub. 12–20–66. Filed 3–30–66.

825,374. TEEVA. Johnson & Johnson, d.b.a. Personal Products Company. SN 242,261. Pub. 12–20–66. Filed 3–30–66.

825,375. TAMPOSITORY. Ortho Pharmaceutical Corporation. SN 242,883. Pub. 12–20–66. Filed 3–31–66.

825,376. BEAUTERNA. Kompac Industries, Inc. SN 251,359. Pub. 12–20–66. Filed 8–1–66.

Class 45 — Soft Drinks and Carbonated Waters

825,377. PASO DE LOS TOROS AND DESIGN. PepsiCo, Inc. SN 254,649. Pub. 12–20–66. Filed 9–19–66.

Class 46 — Foods and Ingredients of Foods

825,150. (See Class 6 for this trademark.)

825,171. (See Class 6 for this trademark.)

825,378. CRUSTY. Crusty Pie Company, Inc. SN 184,609. Pub. 12–20–66. Filed 1–15–64.

825,379. CRUSTY. Crusty Pie Company, Inc. SN 184,610. Pub. 12–20–66. Filed 1–15–64.

825,380. WHEE CHIPS. Allen E. Bond. SN 191,499. Pub. 11–8–66. Filed 4–20–64.

825,381. WASA. Wasabröd Aktiebolag. SN 195,846. Pub. 12–20–66. Filed 6–10–64.

825,382. NURAGHE ETC. AND DESIGN. Giovanna Teresa Melchiorre, d.b.a. M. Di Trani. SN 214,307. Pub. 12–20–66. Filed 3–2–65.

825,383. DELMARK QUICK. The Dietene Company. SN 225,739. Pub. 12–20–66. Filed 8–16–65.

825,384. PEPPER POPS! Sunline, Inc. SN 227,351. Pub. 12–20–66. Filed 9–7–65.

825,385. EUPHRATES. Euphrates Bakery, Inc. SN 227,834. Pub. 12–20–66. Filed 9–15–65.

825,386. CATAPLEX. Vitamin Products Company. SN 228,775. Pub. 12–20–66. Filed 9–27–65.

825,387. DSERTWHIP AND DESIGN. R.G.B. Laboratories, Inc. SN 230,289. Pub. 12–20–66. Filed 10–15–65.

825,388. BRIGHAM'S. Brigham's, Inc. SN 233,990. Pub. 12–20–66. Filed 12–6–65.

825,389. IT'S FUN TO EAT A BUN. Wayne Candies, Inc. SN 234,318. Pub. 12–20–66. Filed 12–9–65.

825,390. BELL (DESIGN). Agway, Inc. SN 234,864. Pub. 12–20–66. Filed 12–20–65.

825,391. COUNTRY BEST. Agway, Inc. SN 234,865. Pub. 12–20–66. Filed 12–20–65.

825,392. FANCIFUL BOY (DESIGN). Country Kitchen Incorporated, of Middletown, Ohio. SN 234,883. Pub. 12–20–66. Filed 12–20–65.

825,393. SHAPE. Mead Johnson & Company. SN 234,921. Pub. 12–20–66. Filed 12–20–65.

825,394. YAMBALAYA. Bruce's Foods Corporation. SN 235,090. Pub. 12–20–66. Filed 12–22–65.

825,395. ROSE CROIX. Michigan Fruit Canners, Inc. SN 235,693. Pub. 12-20-66. Filed 1-3-66.

825,396. POTATO TANGLES. General Mills, Inc. SN 236,811. Pub. 12-20-66. Filed 1-19-66.

825,397. APPROVED AYRSHIRE MILK ETC. AND DESIGN. Ayrshire Breeders' Association. SN 236,955. Pub. 12-20-66. Filed 1-21-66.

825,398. WIKI WAKI. United Vintners, Inc. SN 238,904. Pub. 12-20-66. Filed 2-15-66.

825,399. SOW-38. Cargill, Incorporated. SN 238,924. Pub. 12-20-66. Filed 2-16-66.

825,400. AUNT JEAN'S. Jean's Jells. SN 238,979. Pub. 12-20-66. Filed 2-16-66.

825,401. KEL-QUICK. Kellogg Company. SN 240,921. Pub. 12-20-66. Filed 3-14-66.

825,402. SUNNY BROOK. Witsell Bros.-Dean Lilly Company, d.b.a. Weathersby Brunner Company. SN 241,212. Pub. 12-20-66. Filed 3-17-66.

825,403. EVERY DAY. The Nestlé Company, Inc. SN 241,794. Pub. 12-20-66. Filed 3-24-66.

825,404. VITA-C-SLIM. David Freedman & Co., Inc. SN 247,656. Pub. 9-27-66. Filed 6-9-66.

825,405. VIKCO LEFSE CHIPS AND DESIGN. Eric's Kitchens, Inc. SN 250,652. Pub. 12-20-66. Filed 7-20-66.

825,406. EDGEMAR. Santa Monica Dairy Company, d.b.a. Edgemar Farms. SN 250,915. Pub. 12-20-66. Filed 7-25-66.

825,407. CSP ETC. AND DESIGN. Central Sands Produce, Inc. SN 251,890. Pub. 12-20-66. Filed 8-8-66.

825,408. LENORA. Los Angeles Importing Co. SN 253,828. Pub. 12-20-66. Filed 9-6-66.

Class 47 — Wines

825,409. HEREDEROS DEL MARQUES DE RISCAL AND DESIGN. Vinos de los Herederos del Marques de Riscal, S.A. SN 184,189. Pub. 12-20-66. Filed 1-7-64.

825,410. RICCADONNA. Ottavio Riccadonna S.p.A. SN 234,062. Pub. 12-20-66. Filed 12-6-65.

825,411. LA GRATITUDE AND DESIGN. The Stellenbosch Farmers' Winery Limited. SN 234,948. Pub. 12-20-66. Filed 12-20-65.

825,412. RUBION. Paul Masson, Inc., d.b.a. Paul Masson, and Paul Masson Vineyards. SN 238,880. Pub. 12-20-66. Filed 2-15-66.

Class 49 — Distilled Alcoholic Liquors

825,413. APHRODITE. The Cathay Corporation. SN 213,202. Pub. 12-20-66. Filed 3-3-65.

825,414. APHRODITE (DESIGN). The Cathay Corporation. SN 213,203. Pub. 12-20-66. Filed 3-3-65.

825,415. CORDEY. Schieffelin & Co. SN 239,450. Pub. 12-20-66. Filed 2-23-66.

825,416. HINT O' GIN. Haas Brothers, d.b.a. Marlboro Company. SN 241,458. Pub. 12-20-66. Filed 3-21-66.

Class 50 — Merchandise Not Otherwise Classified

825,417. POULT MASTER AND DESIGN. Chick Master Incubator Corporation. SN 235,818. Pub. 12-20-66. Filed 1-5-66.

825,418. LIQUID TOOL BOX. Calfonex, Inc. SN 238,046. Pub. 12-20-66. Filed 2-4-66.

825,419. LADY SYROCO. Rexall Drug and Chemical Company, d.b.a. Syroco. SN 241,804. Pub. 12-20-66. Filed 3-24-66.

825,420. CRESTYLE. Rexall Drug and Chemical Company, d.b.a. Crestyle Accessories. SN 241,806. Pub. 12-20-66. Filed 3-24-66.

825,421. FLAMENCO FLORALS. Continental Imports Inc. SN 244,171. Pub. 12-20-66. Filed 4-22-66.

825,422. ENAMELITOS. Jane J. Fullerton, d.b.a. Juan Jose. SN 244,697. Pub. 12-20-66. Filed 5-2-66.

Class 51 — Cosmetics and Toilet Preparations

825,423. INFUSON. Samuel Bonat & Bro., Inc. SN 226,124. Pub. 12-20-66. Filed 8-20-65.

825,424. VITACOLOR. Sales Affiliates, Inc. SN 229,133. Pub. 12-20-66. Filed 10-1-65.

825,425. LESTER'S AND DESIGN. McLester McKee, d.b.a. W. & M. Products Co. SN 229,840. Pub. 12-20-66. Filed 10-11-65.

825,426. TRILOGY. Merchandising Corporation of America. SN 229,844. Pub. 12-20-66. Filed 10-11-65.

825,427. SCENE. Merchandising Corporation of America. SN 229,845. Pub. 12-20-66. Filed 10-11-65.

825,428. MESQUITE. John D. Keys, d.b.a. The Yarnell Company. SN 230,842. Pub. 12-20-66. Filed 10-21-65.

825,429. WILD SURF. Sea & Ski Corporation, d.b.a. Avalon Products Company. SN 231,855. Pub. 12-20-66. Filed 10-29-65.

825,430. LONGCILS BONCZA. Les Parfums Robert Piquet, Societe Anonyme. SN 232,324. Pub. 12-20-66. Filed 11-8-65.

825,431. BEAUTY QUICK. Wilco Company. SN 241,109. Pub. 11-1-66. Filed 3-15-66.

825,432. ROYAL SILVER. Cosmetics Manufacturing Company, d.b.a. Cosmetco. SN 241,642. Pub. 12-20-66. Filed 3-23-66.

825,433. DU-PARC. The House of Wrisley, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 242,243. Pub. 12-20-66. Filed 3-30-66.

825,434. THAT LOOK. Bristol-Myers Company. MULTIPLE CLASS (Classes 51 and 52). SN 245,040. Pub. 12-20-66. Filed 5-6-66.

825,435. A CUP OF KINDNESS. Clairol Incorporated. SN 246,450. Pub. 12-20-66. Filed 5-24-66.

825,436. SHAZAAM. Clairol Incorporated. SN 246,660. Pub. 12-20-66. Filed 5-26-66.

825,437. GREAT DAY. Clairol Incorporated. SN 246,751. Pub. 12-20-66. Filed 5-27-66.

825,438. LUSTRE COAT. Hudson National, Inc., d.b.a. Hudson Vitamin Products. SN 249,199. Pub. 12-20-66. Filed 6-29-66.

825,439. AT YOUR BEST. Johnson & Johnson. SN 252,996. Pub. 12-20-66. Filed 8-24-66.

825,440. SPRING AGAIN. The Fleetwood Company. SN 253,867. Pub. 12-20-66. Filed 9-6-66.

825,441. MARTINIQUE. The Andrew Jergens Company. MULTIPLE CLASS (Classes 51 and 52). SN 254,085. Pub. 12-20-66. Filed 9-9-66.

825,442. HI-UP. Alberto-Culver Company. SN 254,903. Pub. 12-20-66. Filed 9-22-66.

825,443. BRIFFAULT. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 255,042. Pub. 12-20-66. Filed 9-26-66.

825,444. ZULETE. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 255,043. Pub. 12-20-66. Filed 9-26-66.

825,445. FELICIA. The Mitchum Company, d.b.a. Mitchum Distributors. SN 255,170. Pub. 12-20-66. Filed 9-27-66.

825,446. MEMORIES OF PARIS. The Andrew Jergens Company. SN 255,684. Pub. 12-20-66. Filed 10-4-66.

Class 52 — Detergents and Soaps

825,163. (See Class 6 for this trademark.)
825,433. (See Class 51 for this trademark.)
825,434. (See Class 51 for this trademark.)
825,441. (See Class 51 for this trademark.)

825,447. ODORCON. Handi-Clean Products, Inc. SN 214,112. Pub. 12-20-66. Filed 3-15-65.

825,448. HANDI-CLEAN PRODUCTS AND DESIGN. Handi-Clean Products, Inc. SN 227,288. Pub. 12-20-66. Filed 9-7-65.

825,449. DANDRATEX. Pure Pharmacal Company. SN 239,798. Pub. 12-20-66. Filed 2-28-66.

825,450. WALGREENS. Walgreen Co. SN 243,049. Pub. 12-20-66. Filed 4-8-66.

825,451. AZUREX. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 252,517. Pub. 12-20-66. Filed 8-17-66.

825,452. BRIXEL. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 252,522. Pub. 12-20-66. Filed 8-17-66.

825,453. TALIXE. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 253,707. Pub. 12-20-66. Filed 9-2-66.

825,454. FIRME. Buty-Wave Products Co. Inc. SN 255,683. Pub. 12-20-66. Filed 10-4-66.

Service Marks

Class 100 — Miscellaneous

825,339. (See Class 39 for this trademark.)

825,455. TACO TOWNE ETC. AND DESIGN. Taco Towne Franchises, Inc., assignee of Taco Towne, Inc. SN 173,794. Pub. 12-20-66. Filed 7-25-63.

825,456. NUS AND DESIGN. NUS Corporation, by change of name from Nuclear Utility Services, Inc. SN 203,423. Pub. 12-20-66. Filed 10-6-64.

825,457. DEDECO. Development Designers Company, Inc. MULTIPLE CLASS (Classes 100 and 101). SN 208,052. Pub. 12-20-66. Filed 12-14-64.

825,458. HI-FOG AND DESIGN. James C. Price, d.b.a. The Hi-Fog Company. MULTIPLE CLASS (Classes 100 and 103). SN 221,517. Pub. 12-20-66. Filed 6-18-65.

825,459. NICAP. National Investigations Committee on Aerial Phenomena. SN 235,456. Pub. 12-20-66. Filed 11-26-65.

825,460. HOMEMAKERS. Homemakers, Inc. SN 236,257. Pub. 12-20-66. Filed 1-12-66.

825,461. PIZZA CHEF. Pizza Chef of America, Inc. SN 238,782. Pub. 12-20-66. Filed 2-14-66.

825,462. NATIONAL FLUID POWER ASSOCIATION ETC. AND DESIGN. National Fluid Power Association. SN 242,476. Pub. 12-20-66. Filed 4-1-66.

Class 101 — Advertising and Business

825,457. (See Class 100 for this trademark.)

825,463. SHED-PAK. Weyerhaeuser Company. SN 190,584. Pub. 12-20-66. Filed 4-7-64.

825,464. THE AMERICAN FACE AND DESIGN. Warren Kirk Braun, d.b.a. The American Face. SN 193,844. Pub. 12-20-66. Filed 5-20-64.

825,465. GRANDPA PIDGEON AND DESIGN. Grandpa Pidgeon's of Missouri, Inc., by change of name from Pidgeon Vitrified China Company. SN 194,218. Pub. 12-20-66. Filed 5-25-64.

825,466. CREATIVITY UNLIMITED IDEA CENTER. International Automotive Service Industries Show. SN 216,236. Pub. 12-20-66. Filed 4-12-65.

825,467. CHAPMAN ASSOCIATES ETC. AND DESIGN. Chapman Company, Inc., d.b.a. Chapman Associates. SN 234,695. Pub. 12-20-66. Filed 12-14-65.

825,468. THE FORWARD LINE. Progress Heat Sealing Co., Inc. SN 238,108. Pub. 12-20-66. Filed 2-4-66.

Class 102 — Insurance and Financial

825,469. C AND DESIGN. Consumers Life Insurance Company. SN 229,948. Pub. 12-20-66. Filed 10-12-65.

825,470. CAREER EXPANDER. Old Republic Life Insurance Company. SN 230,877. Pub. 12-20-66. Filed 10-21-65.

825,471. "ELDER-CARE." Union Fidelity Life Insurance Company. SN 234,091. Pub. 12-20-66. Filed 12-6-65.

825,472. FM AND CIRCLE (DESIGN). Farmers and Merchants Bank and Trust Company of Tulsa. SN 237,549. Pub. 12-20-66. Filed 1-28-66.

825,473. MISCELLANEOUS DESIGN. The Exchange National Bank of Chicago. SN 239,396. Pub. 12-20-66. Filed 2-23-66.

825,474. SSF AND DESIGN. South Suburban Federal Savings and Loan Association. SN 240,799. Pub. 12-20-66. Filed 3-11-66.

Class 103 — Construction and Repair

825,458. (See Class 100 for this trademark.)

825,475. ABMI. American Building Maintenance Industries. SN 219,503. Pub. 12-20-66. Filed 5-24-65.

825,476. MEMBER ACWA AND DESIGN. Automatic Car Wash Association, International. SN 222,645. COLLECTIVE MARK. Pub. 10-25-66. Filed 7-6-65.

825,477. MCDERMOTT. J. Ray McDermott & Co., Inc. SN 225,047. Pub. 12-20-66. Filed 8-5-65.

825,478. FLYING A SERVICE AND DESIGN. Tidewater Oil Company. SN 229,891. Pub. 12-20-66. Filed 10-11-65.

825,479. DORM/CARE AND DESIGN. F. W. Means & Company. SN 232,331. Pub. 12-20-66. Filed 11-8-65.

825,480. GYM/CARE AND DESIGN. F. W. Means & Company. SN 232,332. Pub. 12-20-66. Filed 11-8-65.

825,481. WOLVERINE ETC. AND DESIGN. Clarence Schoonveld, d.b.a. Wolverine Damp-Proofing Service. SN 236,291. Pub. 12-20-66. Filed 1-12-66.

825,482. HALLMARK HOMES AND DESIGN. Hallmark Homes, Inc. SN 288,526. Pub. 12-20-66. Filed 2-10-66.

Class 104 — Communication

825,483. DOLLYGRAM ETC. AND DESIGN. The Western Union Telegraph Company. SN 208,793. Pub. 12-20-66. Filed 12-23-64.

Class 105 — Transportation and Storage

825,484. CHESAPEAKE BAY BRIDGE-TUNNEL AND DESIGN. Chesapeake Bay Bridge-Tunnel Commission. SN 197,820. Pub. 12-20-66. Filed 7-14-64.

825,485. LEASE-A-PLANE ETC. AND DESIGN. Fidelity Properties, Inc. SN 232,068. Pub. 12-20-66. Filed 11-3-65.

825,486. MA MOV-ALL AND DESIGN. Interstate Trailer Corporation. SN 236,892. Pub. 12-20-66. Filed 1-20-66.

Class 106 — Material Treatment

825,487. NORTHWESTERN. Northwestern Refining Co. SN 238,932. Pub. 12-20-66. Filed 12-3-65.

Class 107 — Education and Entertainment

825,488. WEEKEND. Ritter Productions. SN 191,797. Pub. 12-20-66. Filed 4-22-64.

825,489. YOUTHPOWER. National Food Conference Association. SN 238,884. Pub. 12-20-66. Filed 2-15-66.

Collective Membership Marks

Class 200

825,490. MPA ETC. AND DESIGN. Military Police Association, Inc. SN 235,606. Pub. 12-20-66. Filed 12-10-65.

825,491. NATIONAL FLUID POWER ASSOCIATION ETC. AND DESIGN. National Fluid Power Association. SN 243,008. Pub. 12-20-66. Filed 4-8-66.

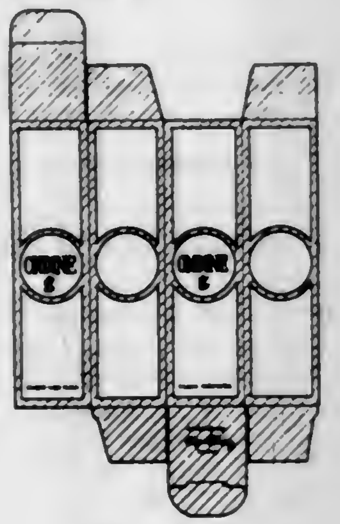
SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

825,529. Susanne Thierry Parfums, Inc., Miami, Fla. SN 226,197. Filed 8-20-65.



The name "Susanne Thierry" is the name of a living individual whose consent is of record. Owner of Reg. Nos. 623,674, 789,462, 774,808, and 790,115.

Class 51—Cosmetics and Toilet Preparations

For Perfumes, Toilet Waters, Aerosol Toilet Waters, and Dusting Powders.

Class 52—Detergents and Soaps

For Hand Soaps.

First use Nov. 7, 1962.

SECTION 2

Class 1 — Raw or Partly Prepared Materials

825,492. Medicated Products Co., Chicago, Ill. SN 237,988. Filed P.R. 2-3-66; Am. S.R. 1-6-67.

STATLER

Owner of Reg. No. 424,574.

For Synthetic Plastics in Granular, Sheet, Tube, and Rod Form for Various Purposes in the Industrial Arts.

First use Aug. 10, 1944.

Class 6 — Chemicals and Chemical Compositions

825,493. Champion Textile Finishing Co., Chicago, Ill. SN 199,790. Filed P.R. 8-13-64; Am. S.R. 1-9-67.

NO FRAY

For Liquid Composition for the Sealing of Tape, Webbing and Twine Ends To Check Fraying.

First use September 1958.

825,494. Nutrine Ltd., Brooklyn, N.Y. SN 246,930. Filed P.R. 5-31-66; Am. S.R. 1-6-67.

FADE PROOF

For Liquid Anti-Bleaching Preparation Used on Natural Hair and Wigs.

First use Nov. 23, 1965.

Class 10 — Fertilizers

825,495. The Chesapeake Corporation of Virginia, West Point, Va. SN 239,967. Filed P.R. 8-2-66; Am. S.R. 1-10-67.

FIBE-R-GREEN

For Fibrous Soil Mulch, Specifically a Covering Material for Erosion Control, Soil Stabilization, Transport of Nutrients, and Moisture Retention.

First use Nov. 11, 1965.

Class 12 — Construction Materials

825,496. The Bailey Company, Inc., Amesbury, Mass. SN 215,821. Filed P.R. 8-30-65; Am. S.R. 12-27-66.

TWIN-FIN

For Fabric Weather Seals.

First use Dec. 4, 1964.

Class 14 — Metals and Metal Castings and Forgings

825,497. Medicated Products Co., Chicago, Ill. SN 237,987. Filed P.R. 2-3-66; Am. S.R. 1-6-67.

STATLER

For Metal Stampings.

First use Aug. 10, 1944.

Class 16 — Protective and Decorative Coatings

825,498. Connoisseur Studio, Inc., Middletown, Ky. SN 238,408. Filed P.R. 2-9-66; Am. S.R. 12-21-66.

LIQUID LEAF

For Liquid Gilding Material.

First use June 1, 1965.

825,499. R. B. Harwood Products, Inc., Chicago, Ill. SN 244,558. Filed P.R. 4-29-66; Am. S.R. 12-28-66.

COLOR BLEND

For Liquid Paints in a Variety of Individual Colors for Decorative Finishing, Such as for Effecting Simulated Wood Finishes.

First use Nov. 19, 1965.

Class 18 — Medicines and Pharmaceutical Preparations

825,500. American Pharmaceutical Company, New York, N.Y. SN 286,703. Filed P.R. 1-18-66; Am. S.R. 12-29-66.

EVRY-CHANGE

For Medicated Skin Preparations for Diaper Rash.

First use on or about Dec. 20, 1965.

Class 21 — Electrical Apparatus, Machines, and Supplies

825,501. Champion Spark Plug Company, Toledo, Ohio. SN 223,638. Filed P.R. 7-19-65; Am. S.R. 11-17-66.

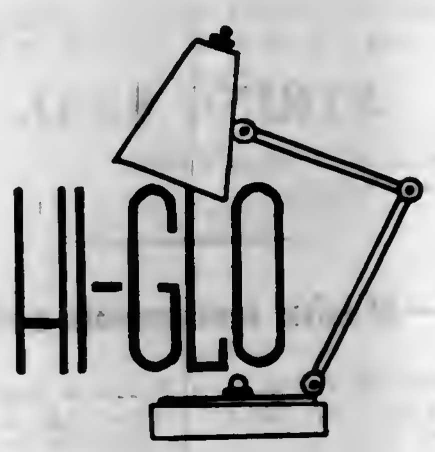
BOOSTER GAP

No claim is made to the word "Gap" apart from the mark as shown.

For Center Electrodes for Spark Plugs Arranged To Form a Gap Between the Firing End and the Terminal Thereof.

First use June 29, 1965.

825,502. Morris Greenspan, Inc. of Penna., Philadelphia, Pa. SN 232,075. Filed P.R. 10-28-65; Am. S.R. 12-13-66.



For High Intensity Desk Lamp.

First use Oct. 18, 1965.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

825,503. The Union Fork and Hoe Company, Columbus, Ohio. SN 210,825. Filed P.R. 1-27-65; Am. S.R. 12-16-66.

AMERICAS BEST

For Hand-Operated Lawn and Garden Tools—Namely, Grass Trimmers, Shovels, Rakes, Forks, Hooks and Hoe-Type Cultivators.

First use Jan. 5, 1965.

825,504. The Cincinnati Shaper Co., Cincinnati, Ohio. SN 218,409. Filed P.R. 3-5-65; Am. S.R. 1-3-67.

CUSHION CLAMP

For Power Operated Metal Shears.

First use Nov. 18, 1964.

Class 26 — Measuring and Scientific Appliances

825,505. Kollmorgen Corporation, Northampton, Mass. SN 228,918. Filed P.R. 9-29-65; Am. S.R. 8-5-66.

SIGNATURE MODEL

For Photo-Electric Optical Instruments for Analyzing and Matching Colors.

First use Jan. 29, 1965.

Class 34 — Heating, Lighting, and Ventilating Apparatus

825,506. Max Weishaupt G.m.b.H., Schwendi/Wurtemberg, Germany. SN 232,629. Filed P.R. 11-12-65; Am. S.R. 12-12-66.

WEISHAUPT

Owner of German Reg. No. 809,332, dated May 14, 1965.
For Oil Burners and Gas Burners.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

825,507. Friesland Plastics Company, Friesland, Wis. SN 229,646. Filed P.R. 10-8-65; Am. S.R. 12-21-66.

STRING SEAL

For Gasketing and Packing Material.
First use Apr. 7, 1965.

Class 36 — Musical Instruments and Supplies

825,508. Frank M. Curtin, d.b.a. Frank M. Curtin Company, Whittier, Calif. SN 226,727. Filed P.R. 8-30-65; Am. S.R. 1-3-67.

CURTIN

For Magnetic Tape Duplicator.
First use Apr. 3, 1962.

Class 37 — Paper and Stationery

825,509. National Business Systems Association, Inc., Chicago, Ill. SN 213,794. Filed P.R. 3-10-65; Am. S.R. 11-16-66.

3 TO 1

For Printed Business and Accounting Forms.
First use on or about Nov. 1, 1964.

Class 38 — Prints and Publications

825,510. McGraw-Hill, Inc., New York, N.Y. SN 236,768. Filed P.R. 1-18-66; Am. S.R. 1-6-67.

SCIENTIFIC RESEARCH

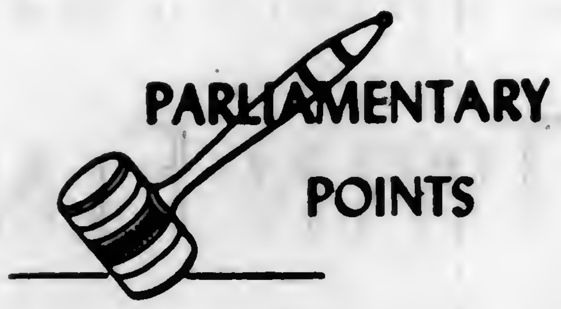
For Magazine.
First use Dec. 28, 1965.

825,511. Kalmbach Publishing Co., Milwaukee, Wis. SN 239,418. Filed P.R. 2-23-66; Am. S.R. 1-3-67.

[redacted]

For Magazine Column.
First use Dec. 18, 1965.

825,512. Kathryn E. Bowers, Washington, D.C. SN 251,606. Filed P.R. 8-3-66; Am. S.R. 1-3-67.



Owner of Reg. No. 703,405.
For Column Published Periodically and Pamphlets Published at Irregular Intervals.
First use Sept 15, 1965.

Class 39 — Clothing

825,513. Solitaire Inc., New York, N.Y. SN 184,403. Filed P.R. 1-10-64; Am. S.R. 11-8-66.

THE FOUR SEASONS BY SOLITAIRE

For Boys' and Children's All-Weather Coats.
First use Dec. 3, 1963.

825,514. Sportswear Corporation of America, St. Louis, Mo. SN 231,267. Filed P.R. 10-22-65; Am. S.R. 12-23-66.

HI SCHOOLER

For Men's and Boys' Slacks.
First use Oct. 16, 1965.

825,515. Pandora Knitwear, Inc., New York, N.Y. SN 234,294. Filed P.R. 12-9-65; Am. S.R. 12-8-66.

snazzi

For Women's Sweaters.
First use Sept. 2, 1965.

Class 40 — Fancy Goods, Furnishings, and Notions

825,516. Cournoyer Industries, Inc., Miami, Fla. SN 243,964. Filed 4-21-66.

HAIR LIFT

For Multi-Pronged, Non-Electrical, Hand Tool for Arranging and Styling Hair.
First use September 1963.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

825,517. Greenwood Mills, Inc., New York, N.Y. SN 243,935. Filed 12-28-65.

Murdock

For Piece Goods of Cotton or of Other Fibers and/or Blends Thereof.
First use Apr. 20, 1964.

Class 44 — Dental, Medical, and Surgical Appliances

825,518. Nichols & Clark, Inc., Hathorne, Mass. SN 230,459. Filed P.R. 10-18-65; Am. S.R. 12-1-66.

ADJUSTONE

For Hearing Aids.
First use Mar. 9, 1965.

825,519. Southwestern Drug Corporation, Dallas, Tex. SN 233,197. Filed P.R. 11-23-65; Am. S.R. 12-28-66.

Druggist's
SPECIAL

For Fever Thermometers, Electric Vaporizers and Electric Heating Pads for Therapeutic Use.
First use Oct. 26, 1959.

825,520. Diana Manufacturing Company, Green Bay, Wis. SN 234,809. Filed P.R. 12-17-65; Am. S.R. 12-23-66.

NURSING HOME

For Bed Protective Underpads and Disposable Diapers.
First use on or about Nov. 29, 1965.

825,521. Extracorporeal and Medical Specialties Company, Inc., Medford, N.J. SN 235,399. Filed P.R. 12-28-65; Am. S.R. 12-19-66.

SAF-T-SHUNT

For Component Parts and Accessories for a Cannulation System To Be Used During Hemodialysis.
First use Dec. 8, 1965.

Class 45 — Soft Drinks and Carbonated Waters

825,522. Riva Distributing Company, San Francisco, Calif. SN 234,367. Filed P.R. 12-10-65; Am. S.R. 1-11-67.

MAI TAI D'HAWAII

For Concentrated Non-Alcoholic Mix for Making Alcoholic Drinks.
First use on or about Nov. 1, 1965.

Class 46 — Foods and Ingredients of Foods

825,523. General Foods Corporation, White Plains, N.Y. SN 224,529. Filed P.R. 7-29-65; Am. S.R. 12-22-66.

CRISPY TWISTS

For Cereal Breakfast Food.
First use July 9, 1965.

825,524. Moorman Manufacturing Company, Quincy, Ill., assignee of Moorman Manufacturing Company of California, San Gabriel, Calif. SN 227,431. Filed P.R. 9-8-65; Am. S.R. 12-20-66.

COW POWER PREMIX

For High Protein Food Concentrate for Cattle Feed.
First use Apr. 5, 1965.

825,525. Sam Andrews' Sons, Bakersfield, Calif. SN 243,074. Filed P.R. 4-11-66; Am. S.R. 12-27-66.

ANDREWS

For Fresh Vegetables; Fresh Melons.
First use June 1, 1964.

Class 47 — Wines

825,526. Zonin S.p.A., Gambellara, Vicenza, Italy. SN 241,115. Filed P.R. 3-15-66; Am. S.R. 1-11-67.

ZONIN

Owner of Italian Reg. No. 173,648, dated Aug. 1, 1964.
For Wines.

Class 49 — Distilled Alcoholic Liquors

825,527. Schenley Distillers, Inc., d.b.a. Royal Star Imports Co., and Robert Morris Distilling Company, New York, N.Y. SN 230,298. Filed P.R. 10-15-65; Am. S.R. 1-11-67.

ST. ALBANS

For Scotch Whisky.
First use Nov. 8, 1963.

825,528. Schenley Distillers, Inc., d.b.a. Scotch House Imports Co., and Robert Morris Distilling Company, New York, N.Y. SN 230,300. Filed P.R. 10-15-65; Am. S.R. 1-10-67.

McROBB'S
VAT

For Scotch Whisky.
First use Mar. 21, 1963.

Class 51 — Cosmetics and Toilet Preparations

825,529. See Section 1 (Combined Certificate).

825,530. Helene Curtis Industries, Inc., d.b.a. Sue Cory, Chicago, Ill. SN 230,362. Filed P.R. 10–18–65; Am. S.R. 11–28–66.

BEAUTIFUL BODY

For Cold Permanent Waving Lotion Suitable Only for Professional Use in Beauty Parlors, Neutralizer Therefor, and End Papers Generally Sold as a Unitary Package.
First use on or about Dec. 20, 1962.

825,531. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 287,990. Filed P.R. 2–3–66; Am. S.R. 12–19–66.

LIME AID

For Lipstick.
First use May 18, 1965.

Class 52 — Detergents and Soaps

825,529. See Section 1 (Combined Certificate).

825,532. Blue Cross Laboratories, Inc., North Hollywood, Calif. SN 233,065. Filed P.R. 11–22–65; Am. S.R. 10–21–66.

jonny
brite

For Toilet Bowl Cleaner.
First use Oct. 4, 1965.

Class 100 — Miscellaneous

Service Marks

825,533. National Foundation for Consumer Credit, Washington, D.C. SN 191,584. Filed P.R. 4–20–64; Am. S.R. 12–29–66.

CONSUMER
CREDIT
COUNSELING
SERVICE

For Debt Counseling.
First use Sept. 1, 1963.

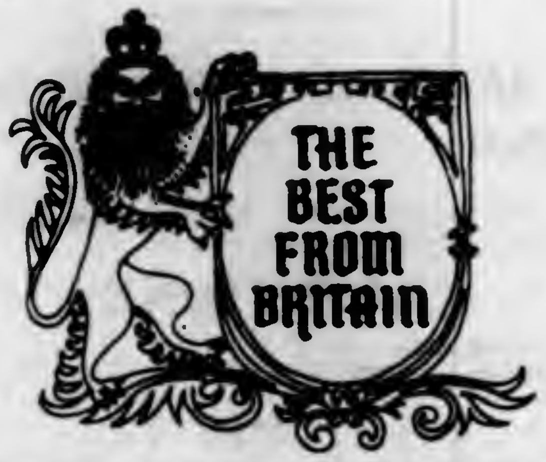
Class 101 — Advertising and Business

825,534. Accounting & Data Processing Company, Denver, Colo. SN 205,484. Filed P.R. 11–4–64; Am. S.R. 12–12–66.

TRAFFACCOUNTING

For Installation and Maintenance of Traffic and Accounting Systems for Others, Particularly, for Use by Radio and Television Stations.
First use on or about Sept. 1, 1962.

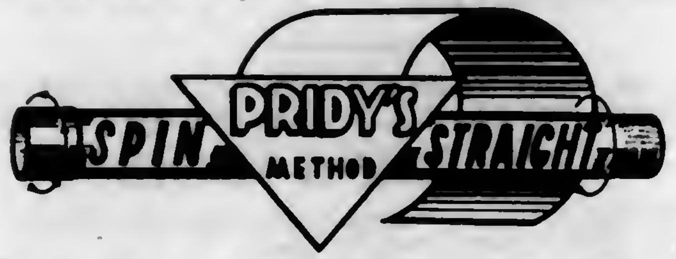
825,535. Manufacturers' Marketing Co., U.S.A. Inc., New York, N.Y. SN 218,784. Filed P.R. 5–13–65; Am. S.R. 11–2–66.



For Manufacturers' Representative for Imported English Merchandise.
First use June 15, 1960.

Class 103 — Construction and Repair

825,536. Whetstine B. Pridy, d.b.a. Buck's Straightening & Refacing, Long Beach, Calif. SN 212,371. Filed P.R. 2–12–65; Am. S.R. 11–18–66.



For Services for the Straightening of Tubing, Pipe, and Rod in the Field.
First use Oct. 18, 1962.

Class 105 — Transportation and Storage

825,537. Discount Rent-A-Car Corp., New York, N.Y. SN 222,134. Filed P.R. 6–28–65; Am. S.R. 1–3–67.

DISCOUNT
RENT-A-CAR

For Car Rental Services.
First use Apr. 6, 1962.

TRADEMARK REGISTRATIONS RENEWED

59,047. MISCELLANEOUS DESIGN. Cl. 52. 1–1–07.
59,183. PYRAMID AND DESIGN. Cl. 52. 1–1–07.
59,348. ALPHA. Cl. 28. 1–8–07.
59,691. NILE. Cl. 48. 1–15–07.
60,395. STEARNS. Cl. 6. 2–5–07.
60,396. ELECTRIC. Cl. 6. 2–5–07.
60,447. ERNUTIN. Cl. 18. 2–5–07.
61,051. 57 VARIETIES. Cl. 46. 3–5–07.
62,565. AIR-CUSHION FINISH. Cl. 22. 5–14–07.
63,052. DOUBLE ARROW (DESIGN). Cl. 28. 6–4–07.
63,370. WEATHER BIRD. Cl. 39. 6–18–07.
218,489. QUAIL AND DESIGN. Cl. 46. 9–28–26.
218,647. ATLANTIC. Cl. 15. 9–28–26.
218,680. THE ATLANTIC REFINING CO. Cl. 15. 9–28–26.
218,681. F WITHIN A CIRCLE. Cl. 21. 9–28–26.
220,449. WIZARD. Cl. 42. 11–9–26.
221,789. HALO. Cl. 39. 12–14–26.
222,195. CAMEO AND DESIGN. Cl. 42. 12–28–26.
222,259. BLATZ. Cl. 45. 12–28–26.
222,481. DALCROSE. Cl. 51. 1–4–27.
222,555. PRINCESS. Cl. 42. 1–4–27.
222,559. UNITED. Cl. 15. 1–4–27.
222,708. ASKIT. Cl. 18. 1–4–27.
222,809. TRAVELUXE. Cl. 51. 1–11–27.
222,838. ZEMACOL. Cl. 18. 1–11–27.
222,882. INTENSI-FIRE. Cl. 34. 1–11–27.
222,918. KINGSBURY AND DESIGN. Cl. 28. 1–11–27.
222,925. GUN-FIL. Cl. 28. 1–11–27.
222,990. GULF HIGH PRESSURE GREASE. Cl. 15. 1–11–27.
223,256. VICEROY. Cl. 27. 1–25–27.
223,397. MISCELLANEOUS DESIGN. Cl. 28. 2–1–27.
223,579. SHADOWATE. Cl. 39. 2–8–27.
223,696. CHERACOL. Cl. 18. 2–8–27.
223,725. SIMULATED OILCLOTH LABEL. Cl. 39. 2–8–27.
223,930. WHEELING CORRUGATING CO. AND DESIGN. Cl. 2. 2–15–27.
225,896. CFJ AND DESIGN. Cl. 46. 3–29–27.
226,268. PREMIUM. Cl. 46. 4–5–27.
226,510. PAROIDIN. Cl. 18. 4–12–27.
227,512. GRAND DUKE AND DESIGN. Cl. 46. 5–10–27.
227,678. ZONITE. Cl. 6. 5–10–27.
228,282. BLUE RIBBON AND DESIGN. Cl. 48. 5–31–27.
228,472. SUB-DEB. Cl. 39. 5–31–27.
228,845. Y AND DESIGN. Cl. 19. 6–14–27.
229,068. "HIS MASTER'S VOICE" AND DESIGN. Cl. 36. 6–21–27.
229,105. DEFIANCE. Cl. 35. 6–21–27.
229,175. PERKO. Cl. 21. 6–21–27.
421,499. CIRCLED H (DESIGN). Cl. 21. 6–4–46.
422,189. LUMBER HARVESTER. Cl. 28. 7–9–46.
422,589. HYDERGINE. Cl. 18. 7–30–46.
423,017. FORTICEL. Cl. 1. 8–20–46.
423,267. FORTICEL. Cl. 37. 8–27–46.
424,161. LIAISON AND DESIGN. Cl. 51. 9–24–46.
424,162. TIME AND TIDE AND DESIGN. Cl. 51. 9–24–46.
424,488. FORTICEL. Cl. 1. 10–8–46.
426,261. PEAU D'OR. Cl. 51. 12–24–46.
426,429. SULFA-MASTOL. Cl. 18. 12–24–46.
426,655. DREFFA WATCH AND DESIGN. Cl. 27. 1–7–47.
426,672. TRUAX-TRAER BURNING STAR AND DESIGN. Cl. 1. 1–7–47.
426,839. CHALLENGE. Cl. 28. 1–14–47.
426,841. MISCELLANEOUS DESIGN. Cl. 38. 1–14–47.
426,898. EPITONE. Cl. 51. 1–21–47.
426,916. CARDINAL. Cl. 51. 1–21–47.
426,921. D–54. Cl. 21. 1–21–47.
426,935. SUNBLAZE. Cl. 51. 1–21–47.
427,464. LUBRIZOL. Cl. 15. 2–11–47.
427,956. ALL THAT THE NAME IMPLIES ROYALENE. Cl. 15. 3–4–47.
427,957. ALL THAT THE NAME IMPLIES ROYAL HEAT. Cl. 15. 3–4–47.
428,097. SCHLITZ AND DESIGN. Cl. 48. 3–11–47.
428,124. SHERBITS. Cl. 46. 3–11–47.
428,698. WYLON. Cl. 51. 4–1–47.
429,024. HYPREZ. Cl. 4. 4–15–47.
429,266. PLASKON. Cl. 1. 4–29–47.
429,456. KD–2. Cl. 12. 4–29–47.
429,567. ROTBART AND DESIGN. Cl. 23. 5–6–47.
430,109. PENETREME. Cl. 51. 6–10–47.
430,416. TRITON BRAND AND DESIGN. Cl. 7. 6–10–47.
430,570. DESIGN OF TWIN BABIES. Cl. 46. 6–17–47.
430,624. KNITRON. Cl. 39. 6–17–47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Jan. 17, 1961

709,791. ENSLITE. Cl. 1.
709,797. SB AND DESIGN. Cl. 2.
709,800. JO-O-KAY. Cl. 3.
709,805. PUNCTURE GARD. Cl. 5.
709,808. COMET. Cl. 6.
709,811. V-P BUILT! Cl. 6.
709,814. MOON AND STARS DESIGN. Cl. 6.
709,815. DOZONE. Cl. 6.
709,816. TNT-FILTER. Cl. 8.
709,821. TRILON. Cl. 11.
709,822. DUALPLY. Cl. 11.
709,823. BUFFALO. Cl. 11.
709,825. WELTONE AND DESIGN. Cl. 12.
709,837. PATIO PETE. Cl. 15.
709,841. SQUIRT N' BRUSH. Cl. 16.
709,842. BLIX. Cl. 16.
709,847. TEX-JOY. Cl. 18.
709,848. MICHAEL J. WALSH ETC. Cl. 18.
709,849. ACELS. Cl. 18.
709,852. MICROLES. Cl. 18.
709,862. SERENATRAN. Cl. 18.
709,863. MECHLORAL. Cl. 18.
709,870. CANDID. Cl. 18.
709,872. CHOICEMAKER. Cl. 18.
709,876. MODIRAYD. Cl. 18.
709,885. CENTURY SPEED CART. Cl. 19.
709,886. RUNWELL. Cl. 19.
709,890. MOZART. Cl. 21.
709,891. RADIANT QUEEN. Cl. 21.
709,898. JACK BUILT TOYS AND DESIGN. Cl. 22.
709,901. FLASH-SPOT. Cl. 22.
709,902. MAGINE-LITE. Cl. 22.
709,906. FORM-A-SKI AND DESIGN. Cl. 22.
709,907. BUTSKI. Cl. 22.
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709,909. DO NUT DANDEE. Cl. 23.
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709,985. COBART. Cl. 39.
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710,065. INSUREPAY PLAN. Cl. 102.
710,066. GRAMCO AND DESIGN. Cl. 102.
710,069. REPRESENTATION OF A CAR AND DESIGN. Cl. 105.
710,070. VIGNOR. Cl. 106.
710,074. SPMA APPROVED. Cl. A.
710,076. A RECORD GREETING AND DESIGN. Cl. 37.
710,077. PANEL PAK AND DESIGN. Cl. 37.
710,079. KARO AND DESIGN. Cl. 46.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

56,118. ANTELOPE. Cl. 37. 8-28-06. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended to appear:

ANTELOPE

56,119. BEAR. Cl. 37. 8-28-06. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended to appear:

BEAR

56,120. BUFFALO. Cl. 37. 8-28-06. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended to appear:

BUFFALO

56,121. WOLF. Cl. 37. 8-28-06. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended to appear:

WOLF

56,122. ZEBRA. Cl. 37. 8-28-06. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended as follows:

ZEBRA

56,126. ANCHOR. Cl. 37. 8-28-06. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended to appear:

ANCHOR

56,189. ELK. Cl. 37. 8-28-06. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended to appear:

ELK

56,190. LION. Cl. 37. 8-28-06. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended to appear:

LION

56,191. MOOSE. Cl. 37. 8-28-06. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended to appear:

MOOSE

56,192. TIGER. Cl. 37. 8-28-06. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended to appear:

TIGER

56,195. TRADE. Cl. 37. 8-28-06. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended to appear:

TRADE

56,196. PANTHER. Cl. 37. 8-28-06. The Union Bag & Paper Company. Union Camp Corporation, New York, N.Y. Amended to appear:

PANTHER

59,029. TICONDEROGA. Cl. 1. 1-1-07. The Joseph Dixon Crucible Company. Corrected: In the certificate, lines 3 and 17, in the heading, signature and in the statement, column 1, line 1 before "Joseph" *The* should be inserted.

310,863. DEPENDABLE ETC. AND DESIGN. Cl. 46. 3-13-34. Fremont Fruit Association, doing business as Exeter Emperor Association. W. F. Cosart Packing Co., Exeter, Calif. Amended to appear:

DEPENDABLE

501,769. JENSEN. Cl. 21. 8-24-48. Jensen Manufacturing Company. The Muter Company, Chicago, Ill. Amended to appear:

jensen

503,285. VEND. Cl. 38. 10-19-48. The Bill Board Publishing Co., Cincinnati, Ohio and New York, N.Y. Corrected: In the certificate, lines 4 and 16, in the heading, signature and in the statement, column 1, line 1 "Billboard" should be deleted and *Bill Board* should be inserted, and in the certificate, lines 5 and 16, in the heading, signature and in the statement, column 1, line 1, "Co." should be deleted and *Company* should be inserted.

648,954. TODAY'S TOP TUNES. Cl. 38. 7-23-57. The Bill Board Publishing Company, Cincinnati, Ohio. Corrected: In the statement, column 1, line 1, "Billboard" should be deleted and *Bill Board* should be inserted.

663,836. FUNSPOT. Cl. 38. 7-1-58. The Bill Board Publishing Company, Cincinnati, Ohio. Corrected: In the statement, column 1, line 1, "Billboard" should be deleted and *Bill Board* should be inserted.

668,074. NURSING HOME ADMINISTRATOR, ETC. Cl. 38. 10-7-58. Nursing Home Administrator, Inc. McGraw-Hill, Inc., New York, N.Y. Amended: In the amendment dated February 9, 1965, the disclaimer is deleted, and the drawing is amended to appear as follows:

MODERN NURSING HOME ADMINISTRATOR

685,582. SPORTS ALL STARS. Cl. 38. 9-22-59. Maco Magazine Corporation. Maco Publishing Co. Inc., New York, N.Y. Amended: In the statement, column 1 after line 1, , *now by change of name Maco Publishing Co. Inc., 757 Third Ave., New York, N.Y. 10017* is inserted.

694,261. ARENA AUDITORIUM STADIUM GUIDE. Cl. 38. 3-8-60. The Bill Board Publishing Company, Cincinnati, Ohio. Corrected: In the statement, column 1, line 1, "Billboard" should be deleted and *Bill Board* should be inserted.

697,141. GUNS AND HUNTING. Cl. 38. 5-3-60. Maco Magazine Corporation. Maco Publishing Co. Inc., New York, N.Y. Amended: In the statement, column 1 after line 1, , *now by change of name Maco Publishing Co. Inc., 757 Third Ave., New York, N.Y. 10017* is inserted.

704,992. B♯ SHARP. Cl. 39. 9-27-60. Singing Needles, Inc. Singing Needles, Incorporated, Leola, Pa. Amended: In the statement, column 2, lines 1 through 6, the description of goods is deleted and *slips* is inserted.

717,198. FTR. Cl. 37. 6-20-61. The Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the statement, column 1, line 1, before "Joseph" *The* should be inserted.

718,242. SCHENUIT. Cl. 35. 7-11-61. The Frank G. Schenuit Rubber Company. Schenuit Industries, Inc., Baltimore, Md. Amended: In the statement, column 1, after line 2, , *now by change of name Schenuit Industries, Inc.* is inserted.

719,885. RING-FREE. Cl. 15. 8-15-61. MacMillan Petroleum Corporation, Los Angeles, Calif. Corrected: In the statement, column 2, line 1, "power" should be deleted and *automatic* should be inserted.

725,364. BILLBOARD MUSIC WEEK. Cl. 38. 12-19-61. The Bill Board Publishing Company, Cincinnati, Ohio. Corrected: In the statement, column 1, line 1, "Billboard" should be deleted and *Bill Board* should be inserted.

728,686. THE MAGAZINE FOR MUSIC LISTENERS. Cl. 38. 3-13-62. The Bill Board Publishing Company, Cincinnati, Ohio. Corrected: In the statement, column 1, line 1, "Billboard" should be deleted and *Bill Board* should be inserted.

734,198. AMUSEMENT BUSINESS. Cl. 38. 7-10-62. The Bill Board Publishing Company, Cincinnati, Ohio. Corrected: In the statement, column 1, line 1, "Billboard" should be deleted and *Bill Board* should be inserted.

759,007. GLORION. Cl. 2. 10-29-63. Harleyarts, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, after "Harleyarts" *, Inc.* should be inserted.

778,778. COIN COMMISSARY. Cl. 38. 10-20-64. The Bill Board Publishing Company, Cincinnati, Ohio. Corrected: In the statement, column 1, line 1, "Billboard" should be deleted and *Bill Board* should be inserted.

778,779. AUTOMATIC LETTERBOX. Cl. 38. 10-20-64. The Bill Board Publishing Company, Cincinnati, Ohio. Corrected: In the statement, column 1, line 1, "Billboard" should be deleted and *Bill Board* should be inserted.

778,780. PAGE ONE. Cl. 38. 10-20-64. The Bill Board Publishing Company, Cincinnati, Ohio. Corrected: In the statement, column 1, line 1, "Billboard" should be deleted and *Bill Board* should be inserted.

782,956. LEILANI. Cl. 49. 1-5-65. Joseph E. Seagram & Sons, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "Delaware" should be deleted and *Indiana* should be inserted.

793,675. MACO. Cl. 38. 8-3-65. Maco Magazine Corporation. Maco Publishing Co. Inc., New York, N.Y. Amended: In the statement, column 1, after line 1, , *now by change of name Maco Publishing Co. Inc.* is inserted.

797,504. GA AND DESIGN. Cl. 38. 10-12-65. Guidance Associates of Pleasantville, New York, Inc., Pleasantville, N.Y. Corrected: In the statement, column 1, line 2, "New Jersey" should be deleted and *New York* should be inserted.

814,204. WINDSOR. Cl. 17. 8-30-66. W. H. Snyder and Sons Incorporated. House of Windsor, Inc., Windsor, Pa. Corrected: In the statement, column 1, before line 1, *House of Windsor, Inc. (Pennsylvania corporation), 91-99 West Main St., Windsor, Pa., assignee of* should be inserted.

817,274. WALGREEN. Cl. 18. 10-25-66. Walgreen Laboratories, Inc. Walgreen Co., Chicago, Ill. Corrected: In the statement, column 2, line 30, "1962" should be deleted and *1926* should be inserted.

819,763. NYLA BUSH. Cl. 18. 12-6-66. Frank Doerner & Sons Limited. Doerner Products Co. Limited, Waterloo, Ontario, Canada. Corrected: In the statement, column 1, before line 1, *Doerner Products Co. Limited, by change of name from* should be inserted.

820,788. SISTER JESSIE. Cl. 38. 12-20-66. Norcross, Inc., New York, N.Y. Corrected: In the statement, column 2, line 1, "Comic strip" should be deleted and *Greeting cards* should be inserted.

821,616. SPEEDY-MITE. Cl. 34. 1-3-67. Ametek, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "Amtek" should be deleted and *Ametek* should be inserted.

821,659. DEMI-TALL. Cl. 39. 1-3-67. Tall Apparel N.Y. Corp., New York, N.Y. Corrected: In the statement, column 1, line 1, after "Apparel" *New York corporation* should be inserted.

822,196. SONIC FLYTE. Cl. 3. 1-17-67. Antosek & Sons, Salisbury, N.C. Corrected: In the heading, "238,922" should be deleted and *238,992* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 1 — Raw or Partly Prepared Materials

225,720. Mar. 22, 1927. Cold Spring Granite Company, Cold Spring, Minn. Pub. by registrant.

RAINBOW

For Uncut Granite.

429,017. April 15, 1947. United States Rubber Company, New York, N.Y. Pub. by registrant.

Vibrin

For Thermosetting Synthetic Resins in Liquid Form for Saturation, etc.

Class 5 — Adhesives

87,436. July 16, 1912. The M. W. Dunton Company, Providence, R.I. Pub. by registrant.

BLACK DIAMOND

For Friction Tape.

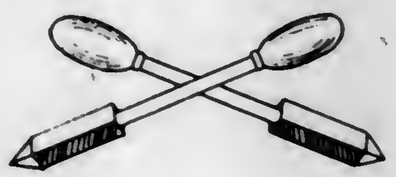
Class 6 — Chemicals and Chemical Compositions

59,736. Jan. 15, 1907. Sam' Cabot, Boston, Mass. Pub. by Samuel Cabot, Inc., Boston, Mass.

CONSERVO

For Chemical Compound for Preserving Wood.

139,269. Feb. 1, 1921. Frank Chapman, Providence, R.I. Pub. by The M. W. Dunton Company, Providence, R.I.



For Soldering Flux.

227,749. May 17, 1927. E. I. du Pont de Nemours and Company, Wilmington, Del. Pub. by registrant.

SULFANTHRENE

For Dyestuffs.

426,441. Dec. 24, 1946. Airkem, Inc., Carlstadt, N.J. Pub. by registrant.

OSMIX

For Preparations for Freshening or Deodorizing the Air.

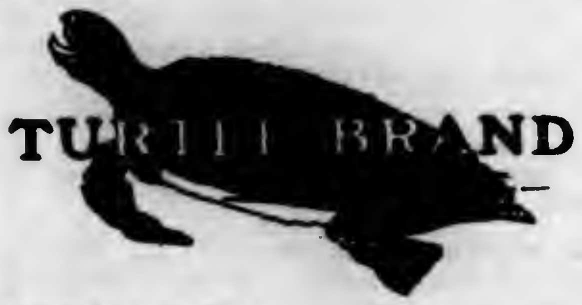
429,336. Apr. 29, 1947. United States Rubber Company, New York, N.Y. Pub. by registrant.

TUFOR

For Weed Killer.

Class 12 — Construction Materials

224,165. Feb. 22, 1927. Samuel Cabot, Inc., Boston, Mass. Pub. by registrant.



For Roofing Felt and Pitch.

Class 18 — Medicines and Pharmaceutical Preparations

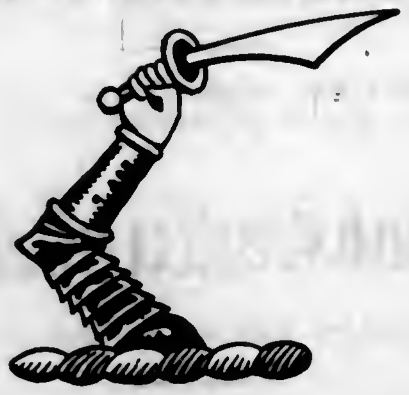
230,279. July 19, 1927. Sal-Phenine Laboratories Inc., Dayton, Ohio. Pub. by The Kenton Pharmacal Company, Covington, Ky.

SAL-FAYNE

For Medicines for the Relief of Pain.

Class 22 — Games, Toys, and Sporting Goods

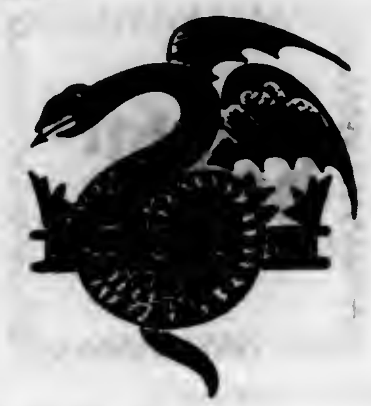
221,738. Dec. 7, 1926. Henry Milward & Sons, Limited, Redditch, England. Pub. by Milwards Fishing Tackle Limited, Redditch, England.



For Fishhooks, Artificial Flies, etc.

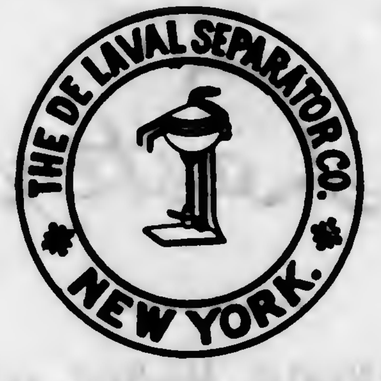
Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

57,412. Nov. 13, 1906. John James & Sons, Limited, Redditch, England. Pub. by Needle Industries Limited, Birmingham, England.



For Hand Sewing Needles, etc.

58,943. Dec. 25, 1906. The De Laval Separator Company, Poughkeepsie, N.Y. Pub. by registrant.


THE DE LAVAL SEPARATOR CO.
NEW YORK.

For Centrifugal Separators in Which a Liquid Is One of the Component Parts of the Material Treated.

226,702. Apr. 19, 1927. Central Automatic Sprinkler Company, Lansdale, Pa. Pub. by registrant.

CENTRAL

For Sprinklers and Valves in Automatic Fire Extinguishing Systems.

226,703. Apr. 19, 1927. Central Automatic Sprinkler Company, Lansdale, Pa. Pub. by registrant.

CNT'L

For Sprinklers and Valves in Automatic Fire Extinguishing Systems.

426,457. Dec. 24, 1946. The De Laval Separator Company, Poughkeepsie, N.Y. Pub. by registrant.

UNI-MATIC

For Industrial Centrifuges.

Class 32 — Furniture and Upholstery

223,873. Feb. 1, 1927. The Aeroshade Company, Waukesha, Wis. Pub. by The Aeroshade Company, Inc., Waukesha, Wis.

SUNTITE

For Porch and Window Shades.

Class 34 — Heating, Lighting, and Ventilating Apparatus

444,234. Sept. 19, 1950. Keco Industries, Inc., Cincinnati, Ohio. Pub. by registrant.

KECo

For Self-Contained Air Conditioning Units of the Refrigeration Type.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

29,579. Feb. 23, 1897. Eureka Fire Hose Company, New York, N.Y. Pub. by United States Rubber Company, New York, N.Y.

RED CROSS

For Hydraulic or Fire Hose.

61,847. Apr. 9, 1907. Revere Rubber Company, Boston, Mass. Pub. by United States Rubber Company, New York, N.Y.

SAMSON

For Hose and Machinery Packings.

62,574. May 14, 1907. The Fisk Rubber Co., Chicopee Falls, Mass. Pub. by United States Rubber Company, New York, N.Y.

VICTOR

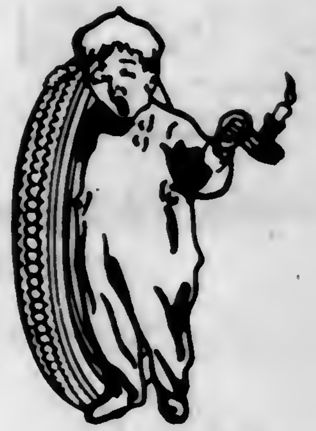
For Pneumatic Bicycle Tires.

227,907. May 17, 1927. The Fisk Rubber Company, Chicopee Falls, Mass., and Cudahy, Wis. Pub. by United States Rubber Company, New York, N.Y.

TRANSPORTATION

For Vehicle Tires Composed Wholly or in Part of Rubber.

227,953. May 17, 1927. The Fisk Rubber Company, Chicopee Falls, Mass., and Cudahy, Wis. Pub. by United States Rubber Company, New York, N.Y.



For Rubber Inner Tubes for Pneumatic Tires, etc.

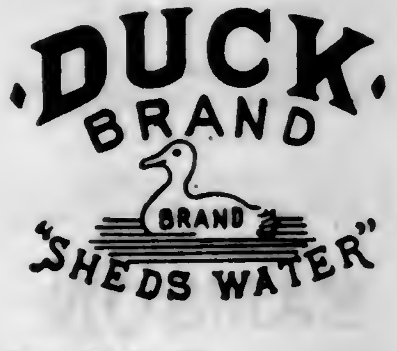
Class 39 — Clothing

30,031. May 18, 1897. Boston Rubber Shoe Co., Boston, Mass. Pub. by United States Rubber Company, New York, N.Y.

NORWOOD

For Rubber Boots and Shoes.

61,602. Mar. 26, 1907. Lawton & Hall, Chicago, Ill. Pub. by United States Rubber Company, New York, N.Y.



For Rubber Coats, Pants, etc.

211,267. Apr. 6, 1926. Murphy-Gorman Company, Danbury, Conn. Pub. by John B. Stetson Company, Philadelphia, Pa.

RIDGEWOOD

For Men's Soft Felt Hats, Stiff Felt Hats, and Velour Hats.

212,535. May 4, 1926. Murphy-Gorman Company, Danbury, Conn. Pub. by John B. Stetson Company, Philadelphia, Pa.

university club

For Men's Soft Felt Hats, Stiff Felt Hats, and Velour Hats.

223,569. Feb. 8, 1927. Albert Steiger, Inc., Springfield, Mass. Pub. by registrant.

Hilbridge

For Men's Suits, Negligee Shirts of Textile Fabric, etc.

226,261. Apr. 5, 1927. Selber Bros., Inc., Shreveport, La. Pub. by registrant.

Selshire

For Men's Suits and Overcoats.

Class 43 — Thread and Yarn

428,267. Mar. 18, 1947. United States Rubber Company, New York, N.Y. Pub. by registrant.

Lastex

For Yarns.

Class 44 — Dental, Medical, and Surgical Appliances

227,890. May 17, 1927. The Paper Novelty Company, Green Bay, Wis. Pub. by Diana Manufacturing Company, Green Bay, Wis.

Downies

For Sanitary Napkins.

Class 45 — Soft Drinks and Carbonated Waters

424,017. Sept. 17, 1946. H. W. Carter & Co., Limited, Bristol, England. Pub. by Beecham Group Limited, d.b.a. Beecham Food & Drink Division, Brentford, England.

RIBENA

For Black Currant Syrups for Making Beverages in the Nature of Soft Drinks.

Class 46 — Foods and Ingredients of Foods

61,601. Mar. 26, 1907. Kirschbraun & Sons, Omaha, Nebr. Pub. by Acme Markets, Inc., Philadelphia, Pa.

CREAMERY
Ideal
BUTTER

For Creamery-Butter.

INDEX OF REGISTRANTS

MARCH 7, 1967

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

APL Corp., Brooklyn, N.Y. 825,190, pub. 12-20-66. Cl. 18.

Abex Corp., from American Brake Shoe Co., New York, N.Y. 825,324, pub. 12-20-66. Cl. 38.

Abfreed Export-Import Corp., New York, N.Y. 709,980, canc. Cl. 28.

Accounting & Data Processing Co., Denver, Colo. 825,534. Cl. 101.

Acme Cotton Products Co., Inc., Valley Stream, N.Y. 825,211, pub. 12-20-66. Cl. 18.

Acme Enterprises, Inc., Manchester, Ky. 709,960, canc. Cl. 36.

Acme Markets, Inc.: *See*—

Kirschbraun & Sons.

Acme Specialties Corp., River Grove, Ill. 825,177, pub. 12-20-66. Cl. 9.

Aero-Bocker Knitting Mills, Inc., New York, N.Y. 709,998, canc. Cl. 42.

Aeroshade Co., Inc., The: *See*—

Aeroshade Co., The.

Aeroshade Co., The, by The Aeroshade Co., Inc., Waukesha, Wis. 223,873, 12(c) pub. 3-7-67. Cl. 32.

Agway, Inc., Syracuse, N.Y. 825,390, pub. 12-20-66. Cl. 46.

Agway, Inc., Syracuse, N.Y. 825,391, pub. 12-20-66. Cl. 46.

Air Devices, Inc., New York, N.Y. 825,310, pub. 12-20-66. Cl. 34.

Airkem, Inc., Carlstadt, N.J. 426,441, 12(c) pub. 3-7-67. Cl. 6.

Aktiebolag, Wasabrod, Filipstad, Varmland, Sweden. 825,381, pub. 12-20-66. Cl. 46.

Aladdin Industries, Inc., Chicago, Ill. 825,136, pub. 12-20-66. Cl. 2.

Alberto-Culver Co., Melrose Park, Ill. 825,442, pub. 12-20-66. Cl. 51.

Albin Enterprises, Inc., d.b.a. Jack Built Toy Mfg. Co., Burbank, Calif. 709,898, canc. Cl. 22.

Alcon Laboratories, Inc., Fort Worth, Tex. 825,200, pub. 9-21-65. Cl. 18.

Alina Corp., Plainview, N.Y. 825,282, pub. 12-20-66. Cl. 26.

Allied Chemical Corp.: *See*—

Libbey-Owens-Ford Glass Co.

Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden. 825,227, pub. 6-14-66. Cl. 21.

American Bosch Arma Corp., Garden City, N.Y. 825,279, pub. 12-20-66. Cl. 26.

American Brake Shoe Co.: *See*—

Abex Corp.

American Building Maintenance Industries, San Francisco, Calif. 825,475, pub. 12-20-66. Cl. 103.

American Cyanamid Co., Wayne, N.J. 825,207, pub. 12-20-66. Cl. 18.

American Dairy Queen Corp., Minneapolis, Minn. 825,294, pub. 12-20-66. Cl. 31.

American Electronics, Inc., Los Angeles, Calif. 709,955, canc. Cl. 36.

American Face, The: *See*—

Braun, Warren K.

American Gas & Chemicals, Inc., New York, N.Y. 825,154, pub. 12-20-66. Cl. 6.

American Home Products Corp., d.b.a. Fort Dodge Laboratories, New York, N.Y. 709,876, canc. Cl. 18.

American Home Products Corp., New York, N.Y. 825,204, pub. 12-20-66. Cl. 18.

American Pharmaceutical Co., New York, N.Y. 825,500. Cl. 18.

American Textile Arts, Inc., Wilmington, Del. 825,164, pub. 12-20-66. Multiple Class (Classes 6, 42, and 43).

American Thread Co., The, New York, N.Y. 59,691, ren. 3-7-67. Cl. 43.

Andrews', Sam, Sons, Bakersfield, Calif. 825,525. Cl. 46.

Archer-Daniels-Midland Co., Minneapolis, Minn. 710,016, canc. Cl. 46.

Archer-Daniels-Midland Co., Minneapolis, Minn. 825,158, pub. 12-20-66. Cl. 6.

Armour Pharmaceutical Co., Chicago, Ill. 825,209, pub. 12-20-66. Cl. 18.

Armstrong Cork Co., Lancaster, Pa. 825,221, pub. 12-20-66. Cl. 20.

Armstrong Cork Co., Lancaster, Pa. 825,222, pub. 12-20-66. Cl. 20.

Askit Ltd., Glasgow, Scotland. 222,708, ren. 3-7-67. Cl. 18.

Associated Products, Inc., Chicago, Ill., to Richard Hudnut, Morris Plains, N.J. 426,935, ren. 3-7-67. Cl. 51.

Atlantic Refining Co., The, to Atlantic Richfield Co., Philadelphia, Pa. 218,647, ren. 3-7-67. Cl. 15.

Atlantic Refining Co., The, to Atlantic Richfield Co., Philadelphia, Pa. 218,680, ren. 3-7-67. Cl. 15.

Atlantic Richfield Co.: *See*—

Atlantic Refining Co., The.

Auto Union G.m.b.H., Ingolstadt, Germany. 709,951, canc. Cl. 35.

Automatic Car Wash Association, Coyocan, Mexico. 825,476, pub. 10-25-66. Cl. 103.

Avalon Products Co.: *See*—

Sea & Ski Corp.

Avon Products, Inc., New York, N.Y. 825,155, pub. 12-20-66. Cl. 6.

Axam, Inc., Brooklyn, N.Y. 825,289, pub. 12-20-66. Cl. 28.

Ayrshire Breeders' Association, Braddon, Vt. 825,397, pub. 12-20-66. Cl. 46.

Bailey Co., Inc., The, Amesbury, Mass. 825,496. Cl. 12.

Barasch, Louis, Inc., Lindenhurst, N.Y. 825,348, pub. 12-20-66. Cl. 39.

Barney & Barney, San Diego, Calif. 710,065, canc. Cl. 102.

Battle, John R., d.b.a. Industrial Oil Equipment Co., Philadelphia, Pa., to Lube Devices, Inc., Manitowoc, Wis. 222,925, ren. 3-7-67. Cl. 23.

Baug Chemical Co., The: *See*—

Kerr-McGee Chemical Corp.

Beacon Cycle and Supply Co., Milwaukee, Wis. 709,886, canc. Cl. 19.

Beecham Food & Drink Division: *See*—

Carter, H. W., & Co., Ltd.

Beecham Group Ltd.: *See*—

Carter, H. W., & Co., Ltd.

Bell Clay Co., Gleason, Tenn. 825,134, pub. 12-20-66. Cl. 1.

Bell, M. A., Co., St. Louis, Mo. 825,170, pub. 12-20-66. Cl. 6.

Beltx Corp., St. Louis, Mo. 825,343, pub. 12-20-66. Cl. 39.

Bemis Bro. Bag Co., St. Louis, Mo. 710,077, canc. Cl. 37.

Benedict Production, Inc., Schenectady, N.Y. 825,224, pub. 12-20-66. Cl. 21.

Bennett Industries, Inc., Peotone, Ill. 825,139, pub. 12-20-66. Cl. 2.

Berkshire Apparel Corp., Boston, Mass. 825,353, pub. 12-20-66. Cl. 39.

Berry, J. Chester, Durham, N.C. 709,968, canc. Cl. 37.

Betan Co., Inc., Knoxville, Tenn. 825,213, pub. 9-27-66. Cl. 18.

Bialac, Marian, to Marian Bialac, Inc., New York, N.Y. 426,698, ren. 3-7-67. Cl. 51.

Bialac, Marian, Inc.: *See*—

Bialac, Marian.

Bibb Mfg. Co., Macon, Ga. 825,355, pub. 12-20-66. Cl. 42.

Bloom, Charles, Inc., New York, N.Y. 825,356, pub. 12-20-66. Cl. 42.

Blue Cross Laboratories, Inc., North Hollywood, Calif. 825,532. Cl. 52.

Bonat, Samuel, & Bro., Inc., West Paterson, N.J. 825,423, pub. 12-20-66. Cl. 51.

Bond, Allen E., Brockway, Mont. 825,380, pub. 12-20-66. Cl. 46.

Boston Rubber Shoe Co., Boston, Mass., by United States Rubber Co., New York, N.Y. 30,081, 12(c) pub. 3-7-67, Cl. 39.

Bowers, Kathryn E., Washington, D.C. 825,512. Cl. 38.

Bradley, Milton, Co., Springfield, Mass. 825,239, pub. 12-20-66. Cl. 22.

Braun, Warren K., d.b.a. The American Face, Kenwood, Calif. 825,464, pub. 12-20-66. Cl. 101.

Brigham's Inc., Cambridge, Mass. 825,388, pub. 12-20-66. Cl. 46.

Brisco Mountain Woodcrafters, Inc., Dingmans Ferry, Pa. 825,176, pub. 12-20-66. Multiple Class (Classes 8 and 28).

Bristol-Myers Co., New York, N.Y. 825,434, pub. 12-20-66. Multiple Class (Classes 51 and 52).

Bruce's Foods Corp., New Iberia, La. 825,394, pub. 12-20-66. Cl. 46.

Brunswick Corp., Chicago, Ill. 825,248, pub. 12-20-66. Cl. 22.

Buck Straightening & Refacing: *See*—

Pridy, Whetstine B.

Burlington Industries, Inc., New York, N.Y. 825,357, pub. 12-20-66. Cl. 42.

Burroughs Wellcome & Co. (U.S.A.) Inc.: *See*—

Wellcome, Henry S.

Butcher Polish Co., The, Malden, Mass. 825,146, pub. 12-20-66. Cl. 4.

Buty-Wave Products Co., Inc., Los Angeles, Calif. 825,454, pub. 12-20-66. Cl. 52.

Byard Mfg. Co. Ltd.: *See*—

Byard Mfg. Co., Ltd., The.

Byard Mfg. Co., Ltd., The, to Byard Mfg. Co. Ltd., Nottingham, England. 221,789, ren. 3-7-67. Cl. 39.

Cabin Crafts Inc., Dalton, Ga. 710,000, canc. Cl. 42.

Cabot, Samuel, Inc.: *See*—

Cabot, Sam.

Cabot, Sam, by Samuel Cabot, Inc., Boston, Mass. 59,736, 12(c) pub. 3-7-67. Cl. 6.

Cabot, Samuel, Inc., Boston, Mass. 224,165, 12(c) pub. 3-7-67. Cl. 12.

Caleb's Country Store Cheese Co.: *See*—

Wallach, Stanley.

Calfonex, Inc., Englewood, N.J. 825,418, pub. 12-20-66. Cl. 50.

Campbell, Fred C., St. Paul, from North Central Marine Association, Minneapolis, Minn. 709,975, canc. Cl. 38.

Cargill, Inc., Minneapolis, Minn. 825,399, pub. 12-20-66. Cl. 46.

Carter, H. W., & Co., Ltd., Bristol, by Beecham Group Ltd., d.b.a. Beecham Food & Drink Division, Brentford, England. 424,017, 12(c) pub. 3-7-67. Cl. 45.

Cathay Corp., The, Jersey City, N.J. 825,413, pub. 12-20-66. Cl. 49.
Cathay Corp., The, Jersey City, N.J. 825,414, pub. 12-20-66. Cl. 49.
Celanese Corp.: *See*—
  Celanese Corp. of America.
Celanese Corp. of America, to Celanese Corp., New York, N.Y. 423,017, ren. 3-7-67. Cl. 1.
Celanese Corp. of America, to Celanese Corp., New York, N.Y. 423,267, ren. 3-7-67. Cl. 37.
Celanese Corp. of America, New York, N.Y. 424,483, ren. 3-7-67. Cl. 1.
Central Automatic Sprinkler Co., Lansdale, Pa. 226,702, 12(c) pub. 3-7-67. Cl. 23.
Central Automatic Sprinkler Co., Lansdale, Pa. 226,703, 12(c) pub. 3-7-67. Cl. 23.
Central Sands Produce, Inc., Bancroft, Wis. 825,407, pub. 12-20-66. Cl. 46.
Century Speed Kart Co., Inc., Galion, Ohio. 709,885, canc. Cl. 19.
Cerro Corp., New York, N.Y. 825,226, pub. 12-20-66. Cl. 21.
Chadbourn Gotham, Inc., Charlotte, N.C. 825,352, pub. 12-20-66. Cl. 39.
Champion Spark Plug Co., Toledo, Ohio. 825,501. Cl. 21.
Champion Textile Finishing Co., Chicago, Ill. 825,493. Cl. 6.
Chapman Associates: *See*—
  Chapman Co., Inc.
Chapman Co., Inc., d.b.a. Chapman Associates, Atlanta, Ga. 825,467, pub. 12-20-66. Cl. 101.
Chapman, Frank, by The M. W. Dunton Co., Providence, R.I. 139,269, 12(c) pub. 3-7-67. Cl. 6.
Check Records: *See*—
  Plummer, Howard.
Chemical Packaging Corp., Fort Launderdale, Fla. 825,166, pub. 12-20-66. Cl. 6.
Chemway Corp.: *See*—
  Zonite Products Co.
Chesapeake Corp. of Virginia, The, West Point, Va. 825,495. Cl. 10.
Chesapeake Bay Bridge-Tunnel Commission, Norfolk, Va. 825,484, pub. 12-20-66. Cl. 105.
Chicago Pneumatic Tool Co., New York, N.Y. 825,267, pub. 12-20-66. Cl. 23.
Chick Master Incubator Corp., Cleveland, Ohio. 825,417, pub. 12-20-66. Cl. 50.
Christian Science Publishing Society, The, Boston, Mass. 825,330, pub. 12-20-66. Cl. 38.
Christian Science Publishing Society, The, Boston, Mass. 825,331, pub. 12-20-66. Cl. 38.
Cincinnati Milling Machine Co., The, Cincinnati, Ohio. 825,265, pub. 12-20-66. Cl. 23.
Cincinnati Shaper Co., The, Cincinnati, Ohio. 825,504. Cl. 23.
Circle F Industries, Inc.: *See*—
  Freeman, E. H., Electric Co.
Clairol Inc., New York, N.Y. 825,435, pub. 12-20-66. Cl. 51.
Clairol Inc., New York, N.Y. 825,436, pub. 12-20-66. Cl. 51.
Clairol Inc., New York, N.Y. 825,437, pub. 12-20-66. Cl. 51.
Clarity Publishing, Inc., Albany, N.Y. 825,329, pub. 12-20-66. Cl. 38.
Cleveland Fruit and Flavor Co., The: *See*—
  Cleveland Fruit Juice Co., The.
Cleveland Fruit Juice Co., The, Cleveland, Ohio, to The Cleveland Fruit and Flavor Co., Victor, N.Y. 225,896, ren. 3-7-67. Cl. 46.
Cold Spring Granite Co., Cold Spring, Minn. 225,720, 12(c) pub. 3-7-67. Cl. 1.
Colgate & Co., to Colgate-Palmolive Co., New York, N.Y. 59,047, ren. 3-7-67. Cl. 52.
Colgate-Palmolive Co.: *See*—
  Colgate & Co.
Comet Rice Mills, Houston, Tex. 709,808. Cl. 6.
Comfort Air Service Co., Inc.: *See*—
  Envirco, Inc.
Commerce Drug Co., Inc., Farmingdale, N.Y. 825,212, pub. 12-20-66. Cl. 18.
Computrend, Inc., Copper Station, New York, N.Y. 825,325, pub. 12-20-66. Cl. 38.
Conal Pharmaceuticals, Inc., Chicago, Ill. 825,319, pub. 4-13-65. Cl. 37.
Connoisseur Studio, Inc., Middletown, Ky. 825,498. Cl. 16.
Consolidation Coal Co.: *See*—
  Truax-Traer Coal Co.
Consumers Life Insurance Co., Camden, N.J. 825,469, pub. 12-20-66. Cl. 102.
Continental Imports Inc., Alexandria, Va. 825,421, pub. 12-20-66. Cl. 50.
Continental Ribbon and Carbon Co., Houston, Tex. 709,823, canc. Cl. 11.
Contractors Chemical & Supply Co., San Leandro, Calif. 825,182, pub. 12-20-66. Cl. 12.
Cook Paint & Varnish Co., Kansas City, Mo. 825,302, pub. 12-20-66. Cl. 32.
Cooper, Ben, Inc., Brooklyn, N.Y. 825,354, pub. 12-20-66. Cl. 39.
Cooperative Marketing, Inc., Beverly Hills, Calif. 709,923, canc. Cl. 23.
Cordis Corp., Miami, Fla. 825,371, pub. 12-20-66. Cl. 44.
Corn Products Co., New York, N.Y. 710,079, canc. Cl. 46.
Corn Products Co., New York, N.Y. 825,145, pub. 12-20-66. Cl. 4.
Cory, Sue: *See*—
  Curtis, Helene, Industries, Inc.
Cosmetco: *See*—
  Cosmetics Mfg. Co.
Cosmetics Mfg. Co., d.b.a. Cosmetco, Long Beach, Calif. 825,432, pub. 12-20-66. Cl. 51.
Country Kitchen Inc. of Middletown, Ohio, Cincinnati, Ohio. 825,392, pub. 12-20-66. Cl. 46.
Cournoyer Industries, Inc., Miami, Fla. 825,516. Cl. 40.
Crane Co., New York, N.Y. 825,185, pub. 12-20-66. Cl. 13.
Crane Co., New York, N.Y. 825,266, pub. 12-20-66. Cl. 23.
Crane Co., New York, N.Y. 825,312, pub. 12-20-66. Cl. 34.
Crestyle Accessories: *See*—
  Rexall Drug and Chemical Co.
Croton Watch Co., Inc., Croton-On-Hudson, N.Y. 825,283, pub. 12-20-66. Cl. 27.
Crowley Hydrocarbon Chemicals, Inc., New York, N.Y. 825,160, pub. 9-27-66. Cl. 6.
Crusty Pie Co., Inc., Washington, D.C. 825,378, pub. 12-20-66. Cl. 46.
Crusty Pie Co., Inc., Washington, D.C. 825,379, pub. 12-20-66. Cl. 46.
Cudahy Packing Co., The, Chicago, Ill., to Purex Corp., Ltd., Lakewood, Calif. 59,183, ren. 3-7-67. Cl. 52.
Curtin, Frank M., d.b.a. Frank M. Curtin Co., Whittier, Calif. 825,508. Cl. 36.
Curtin, Frank M., Co.: *See*—
  Curtin, Frank M.
Curtis, Helene, Industries, Inc., d.b.a. Sue Cory, Chicago, Ill. 825,530. Cl. 51.
Curtis, Joseph A., d.b.a. Curtis Products Co., Burbank, Calif. 709,816, canc. Cl. 8.
Cuticura Laboratories: *See*—
  Potter Drug & Chemical Corp.
Cutler's, D. H., Paint Industries, Inc., Philadelphia, Pa. 825,197, pub. 12-20-66. Cl. 16.
Deco House, Inc., Birmingham, Ala. 825,305, pub. 12-20-66. Cl. 32.
Defense Electronics, Inc., Rockville, Md. 825,230, pub. 12-20-66. Cl. 21.
De Laval Separator Co., The, Poughkeepsie, N.Y. 58,943, 12(c) pub. 3-7-67. Cl. 23.
De Laval Separator Co., The, Poughkeepsie, N.Y. 58,848, ren. 3-7-67. Cl. 23.
De Laval Separator Co., The, Poughkeepsie, N.Y. 426,457, 12(c) pub. 3-7-67. Cl. 23.
Dell Publishing Co., Inc., New York, N.Y. 709,976, canc. Cl. 38.
De Martel, Madeleine, Cosmetics: *See*—
  Sherman, Robert M.
Denso-Chemie G.m.b.H., Leverkusen-Rheindorf, Germany. 825,181, pub. 12-20-66. Cl. 12.
Denver Chemical Mfg. Co., The, d.b.a. Wampole Laboratories, Stamford, Conn. 825,169, pub. 12-20-66. Cl. 6.
Dermik Pharmacal Co., Inc., Syosset, N.Y. 825,167, pub. 12-20-66. Cl. 6.
Deseret Pharmaceutical Co., Inc., Salt Lake City, Utah. 825,372, pub. 12-20-66. Cl. 44.
Development Designers Co., Inc., Norristown, Pa. 825,457, pub. 12-20-66. Multiple Class (Classes 100 and 101).
Diana Mfg. Co.: *See*—
  Paper Novelty Co., The.
Diana Mfg. Co., Green Bay, Wis. 825,520. Cl. 44.
Dietene Co., The, Minneapolis, Minn. 825,383, pub. 12-20-66. Cl. 46.
Dino Boutiques, Inc., Miami, Fla. 825,341, pub. 12-20-66. Cl. 39.
Discount Rent-A-Car Corp., New York, N.Y. 825,537. Cl. 105.
Di Trani, M.: *See*—
  Melchiorre, Giovanna Teresa.
Dodge Mfg. Corp., Mishawaka, Ind. 825,315, pub. 12-20-66. Cl. 35.
Double Envelope Corp., Roanoke, Va. 710,076, canc. Cl. 37.
Driaire Inc., East Norwalk, Conn. 825,281, pub. 12-20-66. Cl. 26.
Dubarry Perfumery Co., Ltd., The, Hove, England, to Richard Hudnut, Morris Plains, N.J. 222,481, ren. 3-7-67. Cl. 51.
Dunlop Tire and Rubber Corp., Buffalo, N.Y. 825,316, pub. 12-20-66. Cl. 35.
Dunn Bros.: *See*—
  Dunn, Walter A.
Dunn, Walter A., d.b.a. Dunn Bros., Providence, R.I. 825,288, pub. 12-20-66. Cl. 28.
Dunton, M. W., Co., The: *See*—
  Chapman, Frank.
Dunton, M. W., Co., The, Providence, R.I. 87,436, 12(c) pub. 3-7-67. Cl. 5.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 227,749, 12(c) pub. 3-7-67. Cl. 6.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 825,127, pub. 12-20-66. Cl. 1.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 825,128, pub. 12-20-66. Cl. 1.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 825,298, pub. 12-20-66. Cl. 31.
Dye, James H., d.b.a. Dye-Matic Enterprises, Woodland Hills, Calif. 825,249, pub. 12-20-66. Cl. 22.
Dyna-Nuclear Corp., Atlantic Highlands, N.J. 825,261, pub. 12-20-66. Cl. 23.
Dyna-Nuclear Corp., Atlantic Highlands, N.J. 825,262, pub. 12-20-66. Cl. 28.
Eastern States Farmers' Exchange, Inc., West Springfield, Mass. 709,872, canc. Cl. 18.
Edgemar Farms: *See*—
  Santa Monica Dairy Co.
Electric Storage Battery Co., The, Philadelphia, Pa. 825,232, pub. 12-20-66. Cl. 21.
El Reno Mill & Elevator Co., El Reno, Okla., from General Mills, Inc., Minneapolis, Minn. 95,894, canc. Cl. 46.
El Reno Mill & Elevator Co., El Reno, Okla., from General Mills, Inc., Minneapolis, Minn. 143,687, canc. Cl. 46.
Empire Twine & Yarn Co., Inc., New York, N.Y. 430,416, ren. 3-7-67. Cl. 7.
Encyclopaedia Britannica, Inc., Chicago, Ill. 825,337, pub. 12-20-66. Cl. 38.

Engis Equipment Co., Morton Grove, Ill. 429,024, ren. 3-7-67. Cl. 4.
Englander Co., Inc., The, Chicago, Ill. 709,947, canc. Cl. 32.
Ensink, Anthony, & Co., Chicago, Ill. 825,179, pub. 12-20-66. Cl. 11.
Envirco, Inc., from Comfort Air Service Co., Inc., Albuquerque, N. Mex. 825,295, pub. 12-20-66. Cl. 31.
Eric's Kitchens, Inc., Billings, Mont. 825,405, pub. 12-20-66. Cl. 46.
Erste Badische Wein und Edelbranntweinbrennerei, Klosterbrennerei A.G., Marktplatz, Germany. 710,013, canc. Cl. 45.
Erste Badische Wein und Edelbranntweinbrennerei, Klosterbrennerei A.G., Marktplatz, Germany. 710,014, canc. Cl. 45.
Estate Stove Co., The, Hamilton, Ohio, to Whirlpool Corp., Benton Harbor, Mich. 222,882, ren. 3-7-67. Cl. 34.
Etablissements Chevallier, d.b.a. Societe des Ancines Etablissements Chevallier Pere, Maine et Loire, France. 710,043, canc. Cl. 51.
Euphrates Bakery, Inc., Watertown, Mass. 825,385, pub. 12-20-66. Cl. 46.
Eureka Fire Hose Co., by United States Rubber Co., New York, N.Y. 29,579, 12(c) pub. 3-7-67. Cl. 35.
Evdel Industries, Inc., New York, N.Y. 709,919, canc. Cl. 23.
Eversharp, Inc., Milford, Conn. 825,208, pub. 12-20-66. Cl. 23.
Exchange National Bank of Chicago, The, Chicago, Ill. 825,478, pub. 12-20-66. Cl. 102.
Extracorporeal and Medical Specialties Co., Inc., Medford, N.J. 825,521. Cl. 44.
F & F Laboratories, Inc., Chicago, Ill. 428,124, ren. 3-7-67. Cl. 46.
Fairchild Camera and Instrument Corp., Syosset, N.Y. 825,277, pub. 12-20-66. Cl. 26.
Farmers and Merchants Bank and Trust Co. of Tulsa, Tulsa, Okla. 825,472, pub. 12-20-66. Cl. 102.
Fashion Park, Inc., Rochester, N.Y. 709,988, canc. Cl. 39.
Federal Employees' Distributing Co., d.b.a. Fedco, Inc., Los Angeles, Calif. 825,260, pub. 12-20-66. Cl. 22.
Fedtro, Inc., Rockville, Centre, N.Y. 825,234, pub. 12-20-66. Cl. 21.
Fidelity Properties, Inc., Chicago, Ill. 825,485, pub. 12-20-66. Cl. 105.
Fisk Rubber Co., The, Chicopee Falls, Mass., by United States Rubber Co., New York, N.Y. 62,574, 12(c) pub. 3-7-67. Cl. 35.
Fisk Rubber Co., The, Chicopee Falls, Mass., and Cudahy, Wis., by United States Rubber Co., New York, N.Y. 227,907, 12(c) pub. 3-7-67. Cl. 35.
Fisk Rubber Co., The, Chicopee Falls, Mass., and Cudahy, Wis., by United States Rubber Co., New York, N.Y. 227,953, 12(c) pub. 3-7-67. Cl. 35.
Fleetwood Co., The, Chicago, Ill. 825,440, pub. 12-20-66. Cl. 51.
Flexon Chemical Corp., Trenton, N.J. 825,220, pub. 12-20-66. Cl. 20.
Fluid Dynamics, Inc., New York, N.Y. 825,296, pub. 12-20-66. Cl. 31.
Foremost Knitting Mills, Inc., Atlanta, Ga. 825,349, pub. 12-20-66. Cl. 39.
Form-A-Ski Mfg. Co., Inc., Newark, Tex. 709,906, canc. Cl. 22.
Form-A-Ski Mfg. Co., Inc., Newark, Tex. 709,907, canc. Cl. 22.
Fort Dodge Laboratories: *See*—
  American Home Products Corp.
Foy Paint Co., Inc., The, Cincinnati, Ohio. 709,842, canc. Cl. 16.
Freedman, David, & Co., Inc., Thermal, Calif. 825,404, pub. 9-27-66. Cl. 46.
Freeman, E. H., Electric Co., assor. to Circle F Corp. of N.J., to Circle F Industries, Inc., Trenton, N.J. 218,681, ren. 3-7-67. Cl. 21.
Freeman & Gossage, Inc., San Francisco, Calif. 825,328, pub. 12-20-66. Cl. 38.
Friesland Plastics Co., Friesland, Wis. 825,507. Cl. 35.
Fruit of the Loom, Inc.: *See*—
  Knight, B. B. & R., Inc.
Fullerton, Jane J., d.b.a. Juan Jose, Hilo, Hawaii. 825,422, pub. 12-20-66. Cl. 50.
Geigy Chemical Corp., Ardsley, N.Y. 825,206, pub. 12-20-66. Cl. 18.
Gemtone, Inc., New York, N.Y. 825,287, pub. 12-20-66. Cl. 28.
General Features Corp., New York, N.Y. 709,979, canc. Cl. 38.
General Foods Corp., White Plains, N.Y. 825,523. Cl. 46.
General Mills, Inc.: *See*—
  El Reno Mill & Elevator Co.
General Mills, Inc., Minneapolis, Minn. 825,396, pub. 12-20-66. Cl. 46.
Georgia-Pacific Corp., Portland, Oreg. 825,135, pub. 10-25-66. Cl. 1.
Gift Originals, Inc., Grand Rapids, Mich. 709,965, canc. Cl. 36.
Gillette Co., The: *See*—
  Gillette Safety Razor Co.
Gillette Safety Razor Co., to The Gillette Co., Boston, Mass. 429,567, ren. 3-7-67. Cl. 23.
Glassenberg, Marvin, d.b.a. Marv-o-lus Mfg. Co., Chicago, Ill. 710,039, canc. Cl. 50.
Globe Brick Co., The, Newell, Va. 825,183, pub. 12-20-66. Cl. 12.
Globe Laboratories, Fort Worth, Tex., to Chas. Pfizer & Co., Inc., New York, N.Y. 426,429, ren. 3-7-67. Cl. 18.
Glyco Chemicals, Inc., New York, N.Y. 825,148, pub. 12-20-66. Cl. 6.
Goodrich, B. F., Co., The, Akron, Ohio. 229,105, ren. 3-7-67. Cl. 35.
Green, A. P., Fire Brick Co., to A. P. Green Refractories Co., Mexico, Mo. 429,456, ren. 3-7-67. Cl. 12.
Green, A. P., Refractories Co.: *See*—
  Green, A. P., Fire Brick Co.
Green, B., & Co., Inc., Baltimore, Md. 825,150, pub. 12-20-66. Multiple Class (Classes 6, 29, and 46).
Greenspan, Morris, Inc. of Penna, Philadelphia, Pa. 825,502. Cl. 21.
Greenwood Mills, Inc., New York, N.Y. 825,517. Cl. 42.
Gramatan Co., Inc., of Bronxville, N.Y., Bronxville, N.Y. 710,066, canc. Cl. 102.
Grandpa Pidgeon's of Missouri, Inc., from Pidgeon Vitrified China Co., Bridgeton, Mo. 825,465, pub. 12-20-66. Cl. 101.
Gulf Oil Corp.: *See*—
  Gulf Refining Co.
Gulf Refining Co., Port Arthur, Tex., and Pittsburgh, Pa., to Gulf Oil Corp., Pittsburgh, Pa. 222,990, ren. 3-7-67. Cl. 15.
Gunther, William B., New York, N.Y. 825,131, pub. 10-11-66. Cl. 1.
H.G. Enterprises, Kansas City, Mo. 825,152, pub. 12-20-66. Cl. 6.
Haas Brothers, d.b.a. Marlboro Co., San Francisco, Calif. 825,416, pub. 12-20-66. Cl. 49.
Hallmark Homes, Inc., Augusta, Ga. 825,482, pub. 12-20-66. Cl. 103.
Handi-Clean Products, Inc., Greensboro, N.C. 825,447, pub. 12-20-66. Cl. 52.
Handi-Clean Products, Inc., Greensboro, N.C. 825,448, pub. 12-20-66. Cl. 52.
Hardwick-Hindle, Inc., Newark, N.J., to Memcor, Inc., Huntington, Ind. 421,499, ren. 3-7-67. Cl. 21.
Harris Trust and Savings Bank, Chicago, Ill. 825,322, pub. 12-20-66. Cl. 38.
Harwood, R. B., Products, Inc., Chicago, Ill. 825,499. Cl. 16.
Hatcher, Robert, Tampa, Fla. 825,142, pub. 12-20-66. Cl. 4.
Health Products, Inc., Chicago, Ill. 825,363, pub. 12-20-66. Cl. 44.
Hearst Corp., The, Wilmington, Del. 709,974, canc. Cl. 38.
Hearst Corp., The, New York, N.Y. 825,336, pub. 12-20-66. Cl. 38.
Heinz, H. J., Co., Allegheny, Pa. 61,051, ren. 3-7-67. Cl. 46.
Hi-Fog Co., The: *See*—
  Price, James C.
Hollister-Stier Laboratories, Inc., Spokane, Wash. 825,360, pub. 12-20-66. Cl. 44.
Homemakers, Inc., Joliet, Ill. 825,460, pub. 12-20-66. Cl. 100.
Hoots, Joe, Construction, Inc., d.b.a. Joe Hoots Cabinet Shop, Gig Harbor, Wash. 825,180, pub. 12-20-66. Cl. 12.
Hoots, Joe, Cabinet Shop.: *See*—
  Hoots, Joe, Construction, Inc.
House of Wrisley, Inc., The, Paris, Tenn. 825,483, pub. 12-20-66. Multiple Class (Classes 51 and 52).
Hudnut, Richard: *See*—
  Dubarry Perfumery Co., Ltd., The.
Hudnut, Richard, Morris Plains, N.J. 222,809, ren. 3-7-67. Cl. 51.
Hudnut, Richard, Morris Plains, N.J. 426,916, ren. 3-7-67. Cl. 51.
Hudnut, Richard: *See*—
  Associated Products, Inc.
Hudson National, Inc., d.b.a. Hudson Vitamin Products, New York, N.Y. 825,438, pub. 12-20-66. Cl. 51.
Hudson Vitamin Products: *See*—
  Hudson National, Inc.
Hupp Corp., Cleveland, Ohio. 709,943, canc. Cl. 31.
Hutchingson, Ann, New York, N.Y. 709,977, canc. Cl. 38.
Illinois Shade Division of Slick Industrial Co.: *See*—
  Slick Industrial Co.
Imported Car Rentals Inc., New York, N.Y. 710,069, canc. Cl. 105.
Industrial Medical Association, Inc., Chicago, Ill. 825,335, pub. 12-20-66. Cl. 38.
Industrial Oil Equipment Co.: *See*—
  Battle, John R.
Ingraham Co., The: *See*—
  Ingraham E., Co., The.
Ingraham, E., Co., The, to The Ingraham Co., Bristol, Conn. 223.256, ren. 3-7-67. Cl. 27.
Interco Inc.: *See*—
  Peters Shoe Co.
International Automotive Service Industries Show, Chicago, Ill. 825,466, pub. 12-20-66. Cl. 101.
Interstate Trailer Corp., Westfield, Mass. 825,486, pub. 12-20-66. Cl. 105.
Intransit Motion Pictures, Inc., New York, N.Y. 825,276, pub. 12-20-66. Cl. 26.
Irwin, Neisler & Co., Decatur, Ill. 709,862, canc. Cl. 18.
Jack Built Toy Mfg. Co.: *See*—
  Albin Enterprises, Inc.
Jackmeyer Corp., The, New York, N.Y. 825,321, pub. 12-20-66. Multiple Class (Classes 37 and 38).
Jackson Lumber Harvester Co., Inc.: *See*—
  Jackson Lumber Harvester, Inc.
Jackson Lumber Harvester, Inc., Eau Claire, to Jackson Lumber Harvester Co., Inc., Mondovi, Wis. 422,189, ren. 3-7-67. Cl. 23.
James, John, & Sons, Ltd., Redditch, by Needle Industries Ltd., Birmingham, England. 57,412, 12(c) pub. 3-7-67. Cl. 23.
Jaymar Specialty Co., Brooklyn, N.Y. 825,236, pub. 10-12-65. Cl. 22.
Jean's Jells, Alton, N.Y. 825,400, pub. 12-20-66. Cl. 46.
Jean of California, Los Angeles, Calif. 709,980, canc. Cl. 39.

Jensen Industries, Inc., Estherville, Iowa. 825,231, pub. 12–20–66. Cl. 21.
Jergens, Andrew, Co., The, Cincinnati, Ohio. 825,441, pub. 12–20–66. Multiple Class (Classes 51 and 52).
Jergens, Andrew, Co., The, Cincinnati, Ohio. 825,446, pub. 12–20–66. Cl. 51.
Jetson Tire and Rubber Corp., Bridgeport, Conn. 825,317, pub. 12–20–66. Cl. 35.
Johann G. W. Opferman & Sohn, Bergisch Gladbach, Germany. 710,050, canc. Cl. 51.
Johnson & Johnson, New Brunswick, N.J. 825,439, pub. 12–20–66. Cl. 51.
Johnson & Johnson, New Brunswick, N.J. 825,373, pub. 12–20–66. Cl. 44.
Johnson & Johnson, d.b.a. Personal Products Co., New Brunswick, N.J. 825,374, pub. 12–20–66. Cl. 44.
Juan, Jose: *See—*
  Fullerton, Jane J.
Justin Charles Co., Inc., New York, N.Y. 825,345, pub. 12–20–66. Cl. 39.
Kallman Diamond Corp., New York, N.Y. 825,290, pub. 12–20–66. Cl. 28.
Kalmbach Publishing Co., Milwaukee, Wis. 825,511. Cl. 38.
Kaufman, Wynne, Co.: *See—*
  Kaufman, Wynne.
Kaufman, Wynne, d.b.a. Wynne Kaufman Co., New York, N.Y. 709,909, canc. Cl. 23.
Keco Industries, Inc., Cincinnati, Ohio. 444,234, 12(c) pub. 3–7–67. Cl. 35.
Kelco Co., San Diego, Calif. 825,195, pub. 12–20–66. Cl. 16.
Kellogg Co., Battle Creek, Mich. 825,401, pub. 12–20–66. Cl. 46.
Kendall Co., The, Walpole, Mass. 825,199, pub. 12–20–66. Cl. 18.
Kenmore Supply Co., Chicago, Ill. 825,332, pub. 12–20–66. Cl. 38.
Kenton Pharmacal Co., The: *See—*
  Sal-Phenine Laboratories, Inc.
Kerr-McGee Chemical Corp., from The Baugh Chemical Co., Baltimore, Md. 825,178, pub. 6–28–66. Cl. 10.
Keys, John D., d.b.a. The Yarnell Co., San Francisco, Calif. 825,428, pub. 12–20–66. Cl. 51.
Kingsbury, Albert, to Kingsbury Machine Works, Inc. of Frankford, to Kingsbury Machine Works, Inc., Philadelphia, Pa. 222,918, ren. 3–7–67. Cl. 23.
Kingsbury Machine Tool Corp., Kenne, N.H. 825,271, pub. 12–20–66. Cl. 23.
Kingsbury Machine Works, Inc., Frankford, Philadelphia, Pa. 223,397, ren. 3–7–67. Cl. 23.
Kingsbury Machine Works, Inc.: *See—*
  Kingsbury, Albert.
Kirschbraun & Sons, Omaha, Nebr., by Acme Markets, Inc., Philadelphia, Pa. 61,601, 12(c) pub. 3–7–67. Cl. 46.
Kline, Smith & French Laboratories, Philadelphia, Pa. 825,370, pub. 12–20–66. Cl. 44.
Klosterbrennerei A.G., Erste Badische Wein- und Edelbranntweinbrennerei, Marktplats, Germany. 710,036, canc. Cl. 47.
Klosterbrennerei A.G., Erste Badische Wein- und Edelbranntweinbrennerei, Marktplats, Germany. 710,037, canc. Cl. 47.
Knight, B. B. & R., Inc., Providence, R.I., and New York, N.Y., to Fruit of the Loom, Inc., Providence, R.I. 222,195, ren. 3–7–67. Cl. 42.
Koester, E. H., Bakery Co., The, Baltimore, Md. 430,570, ren. 3–7–67. Cl. 46.
Kollmorgen Corp., Northampton, Mass. 825,505. Cl. 26.
Kompac Industries, Inc., Canoga Park, Calif. 825,376, pub. 12–20–66. Cl. 44.
Koninklijke Nederlandsche Gist-en Spiritusfabriek N.V., d.b.a. Royal Netherlands Distilleries Ltd., Delft, Netherlands. 825,159, pub. 12–20–66. Cl. 6.
Labco: *See—*
  Vicain, Inc.
La Boule Obut, Saint-Etienne, Loire, France. 825,244, pub. 12–20–66. Cl. 22.
La Boule Obut, Saint-Etienne, Loire, France. 825,245, pub. 12–20–66. Cl. 22.
Lawton & Hall, Chicago, Ill., by United States Rubber Co., New York, N.Y. 61,602, 12(c) pub. 3–7–67. Cl. 39.
Laucks Laboratories, Inc., Bellevue, Wash. 825,280, pub. 12–20–66. Cl. 26.
Lebhar-Friedman Publications, Inc., New York, N.Y. 825,334, pub. 12–20–66. Cl. 38.
Lennox Industries, Inc., Marshalltown, Iowa. 825,309, pub. 12–20–66. Cl. 34.
Le Laurin, Julius V., and Julius V. Le Laurin, Jr., d.b.a. Rawhide, El Cajon, Calif. 825,141, pub. 12–20–66. Cl. 3.
Leslie Salt Co., San Francisco, Calif. 825,171, pub. 12–20–66. Multiple Class (Classes 6 and 46).
Lesmes, Manuel, New York, N.Y. 825,151, pub. 12–20–66. Cl. 6.
Les Parfums Robert Piguet, Paris, France. 825,430, pub. 12–20–66. Cl. 51.
Libbey-Owens-Ford Glass Co., Toledo, Ohio, to Allied Chemical Corp., New York, N.Y. 429,266, ren. 3–7–67. Cl. 1.
Liggett & Myers Tobacco Co., New York, N.Y. 825,198, pub. 12–20–66. Cl. 17.
Link-Belt Co., Chicago, Ill. 63,052, ren. 3–7–67. Cl. 23.
Little, H. C., Inc.: *See—*
  Little, H. C., Burner Co., Inc.
Little, H. C., Burner Co., Inc., d.b.a. H. C. Little, Inc., San Rafael, Calif. 709,949, canc. Cl. 34.
Lloyd, Harold B., d.b.a. Sow Jet Co., Sioux City, Iowa. 825,366, pub. 12–20–66. Cl. 44.
Lor Ltd., Mansfield, England. 825,346, pub. 12–20–66. Cl. 39.
Los Anteles Importing Co., Monterey Park, Calif. 825,408, pub. 12–20–66. Cl. 46.
Lube Devices, Inc.: *See—*
  Battle, John R.
Lubrisol Corp., The, Wickliffe, Ohio. 427,464, ren. 3–7–67. Cl. 15.
Luft, John, Prescription Alloys, Inc., New York, N.Y. 825,369. Cl. 44.
Lyn-Maid Lingerie Inc., Lyndhurst, N.J. 709,993, canc. Cl. 39.
Mac's Super Gloss Co., Inc., Los Angeles, Calif. 709,837, canc. Cl. 15.
Mack Trucks, Inc., Allentown, Pa. 825,269, pub. 12–20–66. Multiple Class (Classes 23 and 35).
Maintenance Engineering Co., Inc., Claymont, Del. 825,275, pub. 12–20–66. Cl. 26.
Mallory, P. R., & Co., Inc., Indianapolis, Ind. 426,921, ren. 3–7–67. Cl. 21.
Manufacturers' Marketing Co., U.S.A., Inc., New York, N.Y. 825,535. Cl. 101.
Markwell Mfg. Co., Inc., New York, N.Y. 825,187, pub. 12–20–66. Cl. 13.
Marlboro Co.: *See—*
  Haas Brothers.
Marv-o-Lus Mfg. Co.: *See—*
  Glassenberg, Marvin.
Marx, Louis, & Co., Inc., New York, N.Y. 825,246, pub. 12–20–66. Cl. 22.
Masson, Paul, and Paul Masson Vineyards: *See—*
  Masson, Paul, Inc.
Masson, Paul, Inc., d.b.a. Paul Masson, and Paul Masson Vineyards, San Francisco, Calif. 825,412, pub. 12–20–66. Cl. 47.
Masti-Kure Products Co., Norwich, Conn. 825,214, pub. 12–20–66. Cl. 18.
Mattel, Inc., Hawthorne, Calif. 825,250, pub. 12–20–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 825,251, pub. 12–20–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 825,252, pub. 12–20–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 825,253, pub. 12–20–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 825,254, pub. 12–20–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 825,255, pub. 12–20–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 825,256, pub. 12–20–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 825,257, pub. 12–20–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 825,258, pub. 12–20–66. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 825,259, pub. 12–20–66. Cl. 22.
Mead Johnson & Co., Evansville, Ind. 710,007, canc. Cl. 44.
Mead Johnson & Co., Evansville, Ind. 710,008, canc. Cl. 44.
Mead Johnson & Co., Evansville, Ind. 825,393, pub. 12–20–66. Cl. 46.
Means, F. W., & Co., Chicago, Ill. 825,479, pub. 12–20–66. Cl. 103.
Means, F. W., & Co., Chicago, Ill. 825,480, pub. 12–20–66. Cl. 103.
Medicated Products Co., Chicago, Ill. 825,492. Cl. 1.
Mecos, Inc., New Orleans, La. 428,698, ren. 3–7–67. Cl. 51.
Medicated Products Co., Chicago, Ill. 825,497. Cl. 14.
Melchiorre, Giovanna T., d.b.a. M. Di Trani, Macomer, Nuoro, Italy. 825,382, pub. 12–20–66. Cl. 46.
Memcor, Inc.: *See—*
  Hardwick-Hindle, Inc.
Merchandising Corp. of America, Universal City, Calif. 825,426, pub. 12–20–66. Cl. 51.
Merchandising Corp. of America, Universal City, Calif. 825,427, pub. 12–20–66. Cl. 51.
Merck & Co., Inc., Rahway, N.J. 825,203, pub. 12–20–66. Cl. 18.
Metro-Atlantic, Inc., Centredale, R.I. 709,815, canc. Cl. 6.
Meyer & Lange, Inc., New York, N.Y., to Reese Finer Foods, Inc., Chicago, Ill. 227,512, ren. 3–7–67. Cl. 46.
Michaels, Stern & Co., Inc.: *See—*
  Michaels, Stern & Co.
Michaels, Stern & Co., to Michaels, Stern & Co., Inc., Rochester, N.Y. 223,579, ren. 3–7–67. Cl. 39.
Michal, Ateliers, Sillans (Isere), France. 825,241, pub. 12–20–66. Cl. 22.
Michigan Fruit Canners, Inc., Benton Harbor, Mich. 825,395, pub. 12–20–66. Cl. 46.
Mid-Continent Wholesale Co., The, Denver, Colo. 825,140, pub. 12–20–66. Cl. 2.
Military Police Association, Inc., Augusta, Ga. 825,327, pub. 12–20–66. Cl. 38.
Military Police Association, Inc., Augusta, Ga. 825,490, pub. 12–20–66. Cl. 200.
Milwards Fishing Tackle Ltd.: *See—*
  Milward, Henry, & Sons, Ltd.
Milward, Henry, & Sons, Ltd., by Milwards Fishing Tackle Ltd., Redditch, England. 221,788, 12(c) pub. 3–7–67. Cl. 22.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 825,174, pub. 12–20–66. Cl. 6.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 825,318, pub. 12–20–66. Cl. 36.
Mitchum Co., The, d.b.a. Mitchum Distributors, Paris, Tenn. 825,445, pub. 12–20–66. Cl. 51.
Mitchum Distributors: *See—*
  Mitchum Co., The.
Modern Coatings, Inc., Chicago, Ill. 710,038, canc. Cl. 50.
Montecatini, Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy. 825,125, pub. 1–4–66. Cl. 1.

Montres Dreffa S.A., Geneva, Switzerland. 426,655, ren. 3–7–67. Cl. 27.
Moore, Benjamin, & Co., New York, N.Y. 825,196, pub. 12–20–66. Cl. 16.
Moorman Mfg. Co. of Calif.: *See—*
  Moorman Mfg. Co.
Moorman Mfg. Co., Quincy, Ill., from Moorman Mfg. Co. of Calif., San Gabriel, Calif. 825,524. Cl. 46.
Morgan-Jones, Inc., New York, N.Y. 710,003, canc. Cl. 42.
Morris, Robert, Distilling Co.: *See—*
  Schenley Distillers, Inc.
Mountain Empire Mfg. Co., Murray, Utah. 709,926, canc. Cl. 23.
Murphy-Gorman Co., Danbury, Conn., by John B. Stetson Co., Philadelphia, Pa. 211,267, 12(c) pub. 3–7–67. Cl. 39.
Murphy-Gorman Co., Danbury, Conn., by John B. Stetson Co., Philadelphia, Pa. 212,535, 12(c) pub. 3–7–67. Cl. 39.
McDermott, J. Ray, & Co., Inc., New Orleans, La. 825,477, pub. 12–20–66. Cl. 103.
McGraw-Hill, Inc., New York, N.Y. 825,510. Cl. 38.
McKee, McLester, d.b.a. W. & M. Products Co., Jersey City, N.J. 825,425, pub. 12–20–66. Cl. 51.
McKesson Laboratories: *See—*
  McKesson & Robbins, Inc.
McKesson & Robbins, Inc., d.b.a. McKesson Laboratories, New York, N.Y. 825,216, pub. 12–20–66. Cl. 18.
NUS Corp., from Nuclear Utility Services, Inc., Washington, D.C. 825,456, pub. 12–20–66. Cl. 100.
National Business Systems Association, Inc., Chicago, Ill. 825,509. Cl. 37.
National Campers and Hikers Association, Buffalo, N.Y. 824,326, pub. 12–20–66. Cl. 38.
National Distillers and Chemical Corp., New York, N.Y. 825,124, pub. 6–22–65. Cl. 1.
National Food Conference Association, Chicago, Ill. 825,489, pub. 12–20–66. Cl. 107.
National Foundation For Consumer Credit, Washington, D.C. 825,538. Cl. 100.
National Fluid Power Association, Thiensville, Wis. 825,462, pub. 12–20–66. Cl. 100.
National Fluid Power Association, Thiensville, Wis. 825,491, pub. 12–20–66. Cl. 200.
National Investigations Committee on Aerial Phenomena, Washington, D.C. 825,459, pub. 12–20–66. Cl. 100.
National Spiritual Assembly of the Baha'is of the United States, Wilmette, Ill. 825,338, pub. 12–20–66. Cl. 38.
Naturipe Berry Growers, San Jose, Calif. 710,032, canc. Cl. 46.
Needle Industries Ltd.: *See—*
  James, John, & Sons, Ltd.
Nestle Co., Inc., The, White Plains, N.Y. 825,403, pub. 12–20–66. Cl. 46.
Newberry Equipment Co., Inc., Memphis, Tenn. 825,184, pub. 12–20–66. Cl. 12.
New Castle Products, Inc., New Castle, Ind. 825,273, pub. 12–20–66. Cl. 23.
New England Laminates Co., Inc., Stamford, Conn. 825,235, pub. 12–20–66. Cl. 21.
Nichols & Clark, Inc., Hathrone, Mass. 825,518. Cl. 44.
Norbatrol Electronics Corp., Pittsburgh, Pa. 825,229, pub. 12–20–66. Cl. 21.
Noritake Co., Inc., New York, N.Y. 825,292, pub. 12–20–66. Cl. 30.
Noritake Co., Inc., New York, N.Y. 825,293, pub. 12–20–66. Cl. 30.
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 825,531. Cl. 51.
North Central Marine Association: *See—*
  Campbell, Fred C.
Northwestern Refining Co., St. Paul Park, Minn. 825,487, pub. 12–20–66. Cl. 106.
Norwich Pharmacal Co., The, Norwich, N.Y. 222,838, ren. 3–7–67. Cl. 18.
Nuclear Utility Services, Inc.: *See—*
  Nus Corp.
Nutrine Ltd., Brooklyn, N.Y. 825,494. Cl. 6.
Old Republic Life Insurance Co., Chicago, Ill. 825,470, pub. 12–20–66. Cl. 102.
Olympus Co., New York, N.Y. 710,045, canc. Cl. 51.
Opotow Dental Mfg. Corp., Brooklyn, N.Y. 825,367, pub. 12–20–66. Cl. 44.
Orbay & Cerrato Furniture Inc., West New York, N.J. 798,846, canc. Cl. 32.
Ortho Pharmaceutical Corp., Raritan, N.J. 825,375, pub. 12–20–66. Cl. 44.
Ottavio Riccadonna S.p.A., Turin, Italy. 825,410, pub. 12–20–66. Cl. 47.
Outboard Marine Corp., Waukegan, Ill. 825,219, pub. 12–20–66. Cl. 19.
Ovaltine Food Products: *See—*
  Wander Co., The.
Owens-Illinois, Inc., Toledo, Ohio. 825,137, pub. 12–20–66. Cl. 2.
Pabst Brewing Co.: *See—*
  Valentin Blats Brewing Co.
  Pabst Corp.
Pabst Corp., to Pabst Brewing Co., Milwaukee, Wis. 228,282, ren. 3–7–67. Cl. 48.
Pandora Knitwear, Inc., New York, N.Y. 825,515. Cl. 39.
Paper Novelty Co. The, by Diana Mfg. Co., Green Bay, Wis. 227,890, 12(c) pub. 3–7–67. Cl. 44.
Parke, Davis & Co., Detroit, Mich. 226,510, ren. 3–7–67. Cl. 18.
Parks Co., The, Somerset, Mass. 709,841, canc. Cl. 16.
Peau D'or Sales Corp., Miama, Fla., to Plough, Inc., Memphis, Tenn. 426,261, ren. 3–7–67. Cl. 51.
Peck's Products Co., St. Louis, Mo. 825,278, pub. 12–20–66. Cl. 26.
Peek, Ernest W., d.b.a. E. W. Peek & Co., Knoxville, Tenn. 825,333, pub. 12–20–66. Cl. 38.
Pelton & Crane Co., The, Charlotte, N.C. 825,368, pub. 12–20–66. Cl. 44.
Penney, J. C., Co., New York, N.Y. 220,449, ren. 3–7–67. Cl. 42.
PepsiCo, Inc., New York, N.Y. 825,377, pub. 12–20–66. Cl. 45.
Perkins Marine Lamp and Hardware Corp.: *See—*
  Perkins Marine Lamp Corp.
Perkins Marine Lamp Corp., Brooklyn, N.Y., to Perkins Marine Lamp and Hardware Corp., Miami, Fla. 229,175, ren. 3–7–67. Cl. 21.
Personal Products Co.: *See—*
  Johnson & Johnson.
Peters Shoe Co., to Interco Inc., St. Louis, Mo. 63,370, ren. 3–7–67. Cl. 39.
Pfizer, Chas., & Co., Inc.: *See—*
  Globe Laboratories.
Pfizer, Chas., & Co., Inc., New York, N.Y. 825,175, pub. 12–20–66. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 825,215, pub. 12–20–66. Cl. 18.
Piccard, Lucien, Watch Corp., New York, N.Y. 825,284, pub. 12–20–66. Cl. 27.
Piccard, Lucien, Watch Corp., New York, N.Y. 825,285, pub. 12–20–66. Cl. 27.
Piccard, Lucien, Watch Corp., New York, N.Y. 825,286, pub. 12–20–66. Cl. 27.
Pidgeon Vitrified China Co.: *See—*
  Grandpa Pidgeon's of Missouri, Inc.
Pierre, Jon, Cosmetics, Inc., New York, N.Y. 710,041, canc. Cl. 51.
Pike, Carl A., d.b.a. Voice of Scripture, Hawthorne, Calif. 709,957, canc. Cl. 36.
Pilgrim Tool & Die Co., Gardena, Calif. 825,311, pub. 12–20–66. Cl. 34.
Pizza Chef of America, Inc., Norfolk, Va. 825,461, pub. 12–20–66. Cl. 100.
Plochman, Inc.: *See—*
  Plochman & Harrison.
Plochman & Harrison, to Plochman, Inc., Chicago, Ill. 226,268, ren. 3–7–67. Cl. 46.
Plough, Inc.: *See—*
  Peau D'or Sales Corp.
Plummer, Howard, d.b.a. Check Records, New York, N.Y. 709,962, canc. Cl. 36.
Potter Drug & Chemical Corp., d.b.a. Cuticuta Laboratories, Malden, Mass. 709,870, canc. Cl. 18.
Powertrace Corp., Chicago, Ill. 825,270, pub. 12–20–66. Cl. 23.
Precision Diamond Tool Co., Elgin, Ill. 825,143, pub. 12–20–66. Cl. 4.
Precision Diamond Tool Co., Elgin, Ill. 825,144, pub. 12–20–66. Cl. 4.
Price, James C., d.b.a. The Hi-Fog Co., Montebello, Calif. 825,458, pub. 12–20–66. Multiple Class (Classes 100 and 103).
Pridy, Whetstine B., d.b.a. Buck's Straightening & Refacing, Long Beach, Calif. 825,536. Cl. 103.
Procter & Gamble Co., The, Cincinnati, Ohio. 709,814, canc. Cl. 6.
Procter & Gamble Co., The, Cincinnati, Ohio. 825,138, pub. 12–20–66. Cl. 2.
Progress Heat Sealing Co., Inc., New York, N.Y. 825,468, pub. 12–20–66. Cl. 101.
Purdue Frederick Co., The, New York, N.Y. 709,863, canc. Cl. 18.
Pure Pharmacal Co., Houston, Tex. 825,449, pub. 12–20–66. Cl. 52.
Purex Corp., Ltd.: *See—*
  Cudahy Packing Co., The.
Puritan Chemical Co., Atlanta, Ga. 825,149, pub. 5–4–65. Cl. 6.
Pye Ltd., Cambridge, England. 709,890, canc. Cl. 21.
Quaker Maid Kitchens, Inc., Leesport, Pa. 825,303, pub. 12–20–66. Cl. 32.
Quaker Maid Kitchens, Inc., Leesport, Pa. 825,304, pub. 12–20–66. Cl. 32.
Quinn, K. J., & Co., Inc., Malden, Mass. 825,153, pub. 12–20–66. Cl. 6.
R.G.B. Laboratories, Inc., Kansas City, Mo. 825,387, pub. 12–20–66. Cl. 46.
Radiant Queen Corp., Bergenfield, N.J. 709,891, canc. Cl. 21.
Radio Corp. of America: *See—*
  Victor Talking Machine Co.
Ramco, Inc., d.b.a. Ramco Mfg. & Engineering, Portland, Oreg. 825,318, pub. 12–20–66. Cl. 34.
Ramco Mfg. & Engineering: *See—*
  Ramco, Inc.
Randall's, Inc., Denver, Colo. 825,339, pub. 12–20–66. Multiple Class (Classes 39 and 100).
Rawhide: *See—*
  LeLaurin, Julius V.
Rayette-Faberge, Inc.: *See—*
  Raymond Laboratories, Inc.
Raymond Laboratories, Inc., St. Paul, Minn., to Rayette-Faberge, Inc., New York, N.Y. 430,109, ren. 3–7–67. Cl. 51.
Reese Finer Foods, Inc.: *See—*
  Meyer & Lange, Inc.
Reichhold Chemicals, Inc., White Plains, N.Y. 825,147, pub. 12–20–66. Cl. 5.
Rejuvia Beauty Laboratories, Inc., New York, N.Y. 710,051, canc. Cl. 51.
Relon, Inc., New York, N.Y. 710,055, canc. Cl. 51.
Remco Mfg. Co., Inc., Macon, Ga. 825,308, pub. 12–20–66. Cl. 34.
Resistoflex Corp., Roseland, N.J. 825,130, pub. 12–20–66. Multiple Class (Classes 1, 13, 23, and 35).

Resistoflex Corp., Roseland, N.J. 825,188, pub. 12-20-66. Multiple Class (Classes 13, 23, and 35).

Revere Rubber Co., Boston, Mass., by United States Rubber Co., New York, N.Y. 61,847, 12(c) pub. 3-7-67. Cl. 35.

Rexall Drug and Chemical Co., Los Angeles, Calif. 825,301, pub. 12-20-66. Cl. 44.

Rexall Drug and Chemical Co., d.b.a. Syroco, Los Angeles, Calif. 825,419, pub. 12-20-66. Cl. 50.

Rexall Drug and Chemical Co., d.b.a. Crestyle Accessories, Los Angeles, Calif. 825,420, pub. 12-20-66. Cl. 50.

Reynolds Metals Co., Richmond, Va. 709,797, canc. Cl. 2.

Rich's Inc.: *See*— Rich, M., & Bros. Co.

Rich-Lacaille, New York, N.Y. 710,063, canc. Cl. 101.

Rich, M., & Bros. Co., to Rich's Inc., Atlanta, Ga. 228,472, ren. 3-7-67. Cl. 39.

Ridenour-Baker Mercantile Co., to Scrivner-Boogaart, Inc., Oklahoma City, Okla. 218,489, ren. 3-7-67. Cl. 46.

Ritter Productions, Detroit, Mich. 825,488, pub. 12-20-66. Cl. 107.

Riva Distributing Co., San Francisco, Calif. 825,522. Cl. 45.

Romberger, Madge, Indianapolis, Ind. 825,359, pub. 12-20-66. Cl. 44.

Rose, Phil, of California, Inc., Los Angeles, Calif. 825,350, pub. 12-20-66. Cl. 39.

Roselawn Laboratories, Inc., Miami, Fla. 825,173, pub. 12-20-66. Cl. 6.

Royal Knitting Mills, Inc., Chicago, Ill. 430,624, ren. 3-7-67. Cl. 39.

Royal Netherlands Distilleries Ltd.: *See*— Koninklijke Nederlandsche Gist- en Spiritusfabriek N.V.

Royal Petroleum Corp., New York, N.Y. 427,956, ren. 3-7-67. Cl. 15.

Royal Petroleum Corp., New York, N.Y. 427,957, ren. 3-7-67. Cl. 15.

Saab Aktiebolag, d.b.a. Saab Motors, Inc., New Haven, Conn. 825,192, pub. 12-20-66. Cl. 15.

Saab Motors, Inc.: *See*— Saab Aktiebolag.

Sal-Phenine Laboratories Inc., Dayton, Ohio, by The Kenton Pharmacal Co., Covington, Ky. 230,279, 12(c) pub. 3-7-67. Cl. 18.

Sales Affiliates, Inc., New York, N.Y. 825,424, pub. 12-20-66. Cl. 51.

Salsbury Laboratories, Charles City, Iowa. 825,205, pub. 12-20-66. Cl. 18.

Sandoz Chemical Works, Inc., New York, N.Y., to Sandoz, Inc., Hanover, N.J. 422,589, ren. 3-7-67. Cl. 18.

Sandoz, Inc.: *See*— Sandoz Chemical Works, Inc.

Sondoz, Inc., Hanover, N.J. 825,161, pub. 12-20-66. Cl. 6.

Sandoz, Inc., Hanover, N.J. 825,162, pub. 12-20-66. Cl. 6.

Schenley Distillers, Inc., d.b.a. Royal Star Imports Co., and Robert Morris Distilling Co., New York, N.Y. 825,527. Cl. 49.

Schenley Distillers, Inc., d.b.a. Scotch House Imports Co., and Robert Morris Distilling Co., New York, N.Y. 825,528. Cl. 49.

Scherl & Roth, Inc., Cleveland, Ohio. 709,956, canc. Cl. 36.

Schieffelin & Co., New York, N.Y. 825,415, pub. 12-20-66. Cl. 49.

Schlitz, Jos., Brewing Co., Milwaukee, Wis. 428,097, ren. 3-7-67. Cl. 48.

Schoonveld, Clarence, d.b.a. Wolverine Damp-Proofing Service, Wyoming, Mich. 825,481, pub. 12-20-66. Cl. 103.

Schumacher, Gustav, Jr., d.b.a. Varsity Dental Mfg. & Supply Co., Lambertville, N.J. 825,362, pub. 12-20-66. Cl. 44.

Scotch House Imports Co.: *See*— Schenley Distillers, Inc.

Scrivner-Boogaart, Inc.: *See*— Ridenour-Baker Mercantile Co.

Sea & Ski Corp., d.b.a. Avalon Products Co., Millbrae, Calif. 825,429, pub. 12-20-66. Cl. 51.

Sears, Roebuck and Co., Chicago, Ill. 709,995, canc. Cl. 40.

Seiber Bros., Inc., Shreveport, La. 226,261, 12(c) pub. 3-7-67. Cl. 39.

Senich, Michael, and Dorothee Senich, Franklin, N.J. 825,323, pub. 12-20-66. Cl. 38.

Shamokin Filler Co., Inc., Shamokin, Pa. 825,297, pub. 12-20-66. Cl. 31.

Sherman Mills, Inc., Boston, Mass. 710,001, canc. Cl. 42.

Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 825,443, pub. 12-20-66. Cl. 51.

Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 825,444, pub. 12-20-66. Cl. 51.

Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 825,451, pub. 12-20-66. Cl. 52.

Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 825,452, pub. 12-20-66. Cl. 52.

Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 825,453, pub. 12-20-66. Cl. 52.

Sibley, Edward L., Mfg. Co., Inc., Bennington, Vt. 426,839, ren. 3-7-67. Cl. 23.

Simoniz Co., Chicago, Ill. 825,291, pub. 12-20-66. Cl. 29.

Simpler, John H., d.b.a. Corral Sportswear Co., Ardmore, Okla. 709,800, canc. Cl. 3.

Slick Industrial Co., d.b.a. Illinois Shade Division of Slick Industrial Co., Chicago Heights, Ill. 825,301, pub. 12-20-66. Cl. 32.

Santa Monica Dairy Co., d.b.a. Edgemar, Venice, Calif. 825,406, pub. 12-20-66. Cl. 46.

Societá Metallurgica Italiana, Florence, Italy. 825,189. pub. 12-20-66. Cl. 13.

Societe de Recherches Scientifiques et d'Exploitation de Marques "Resex" S.A., Geneva, Switzerland. 710,012, canc. Cl. 44.

Societe des Anciens Etablissements Chevallier Pere: *See*— Etablissements, Chevallier.

Societe Technique de Parfumerie, F. Millot, Paris, France. 710,044, canc. Cl. 51.

Solitaire Inc., New York, N.Y. 825,513. Cl. 39.

South Suburban Federal Savings and Loan Association, Harvey, Ill. 825,474, pub. 12-20-66. Cl. 102.

Southwestern Drug Corp., d.b.a. Tru-Lab & Products, Dallas, Tex. 825,202, pub. 12-20-66. Cl. 18.

Southwestern Drug Corp., Dallas, Tex. 825,519. Cl. 44.

Southwire Co., Carrollton, Ga. 825,191, pub. 12-20-66. Cl. 14.

Sow Jet: *See*— Lloyd, Harold B.

Spartan Mills, Spartanburg, S.C. 222,555, ren. 3-7-67. Cl. 42.

Sportswear Corp. of America, St. Louis, Mo. 825,514. Cl. 39.

Stacy Fabrics Corp., New York, N.Y. 825,358, pub. 12-20-66. Cl. 42.

Stahl-Urban Co., Brookhaven, Miss. 825,351, pub. 12-20-66. Cl. 39.

Standard Products Corp., New York, N.Y. 709,821, canc. Cl. 11.

Standard Products Corp., New York, N.Y. 709,822, canc. Cl. 11.

Starlight Trading, Inc., Jersey City, N.J. 709,985, canc. Cl. 39.

Stearns' Electric Paste Co., Buffalo, N.Y., to Stearns' Electric Paste Co., Chicago, Ill. 60,395, ren. 3-7-67. Cl. 6.

Stearns' Electric Paste Co., Buffalo, N.Y., to Stearns' Electric Paste Co., Chicago, Ill. 60,396, ren. 3-7-67. Cl. 6.

Steffey, Dale E., d.b.a. Chula Vista Novelty Co., Chula Vista, Calif. 825,237, pub. 12-20-66. Cl. 22.

Steiger, Albert, Inc., Springfield, Mass. 223,569, 12(c) pub. 3-7-67. Cl. 39.

Steiner, Donald P., d.b.a. Steiner Ranches, Brawley, Calif. 710,033, canc. Cl. 46.

Steiner Ranches: *See*— Steiner, Donald P.

Stellenbosch Farmers' Winery Ltd., The South African Ltd., Co., Cape Province, Republic of South Africa. 825,411, pub. 12-20-66. Cl. 47.

Stetson, John B., Co.: *See*— Gorman, Murphy, Co.

Strategic Merchandising Corp., New York, N.Y. 825,238, pub. 12-20-66. Cl. 22.

Strauss, Levi, & Co., to Levi Strauss & Co., San Francisco, Calif. 223,725, ren. 3-7-67. Cl. 39.

Sump Pump Mfg. Association, Inc., Washington, D.C. 710,074, canc. Cl. A.

Sun, Inc., The, Hartwell, Ga. 825,320, pub. 12-20-66. Cl. 37.

Sunbeam Corp., Chicago, Ill. 825,228, pub. 12-20-66. Cl. 21.

Sunline, Inc., St. Louis, Mo. 825,384, pub. 12-20-66. Cl. 46.

Suzanne Thierry Parfums, Inc., Miami, Fla. 825,529. Multiple Class (Classes 51 and 52).

Syroco: *See*— Rexall Drug and Chemical Co.

Taco Towne, Inc.: *See*— Taco Towne Franchises, Inc.

Taco Towne Franchises, Inc., from Taco Towne, Inc., Sioux Falls, S. Dak. 825,455, pub. 12-20-66. Cl. 100.

Teleflex Inc., North Wales, Pa. 825,217, pub. 12-20-66. Cl. 19.

Tenneco Chemicals, Inc., New York, N.Y. 825,156, pub. 12-20-66. Cl. 6.

Tenneco Chemicals, Inc., New York, N.Y. 825,157, pub. 12-20-66. Cl. 6.

Theodore Equipment Corp., Woodridge, N.J. 825,218, pub. 12-20-66. Cl. 19.

Thomas Industries Inc., Louisville, Ky. 825,233, pub. 12-20-66. Cl. 21.

Tidewater Oil Co., Los Angeles, Calif. 825,478, pub. 12-20-66. Cl. 103.

Toy Distributors, Inc., Framingham, Mass. 709,908, canc. Cl. 22.

Triplex S.p.A., Milan, Italy. 825,225, pub. 12-20-66. Cl. 21.

Truax-Traer Coal Co., to Consolidation Coal Co., Chicago, Ill. 426,672, ren 3-7-67. Cl. 1.

True Service & Supply: *See*— Wayne, True C.

True, Wayne C., d.b.a. True Service & Supply, Watertown, S. Dak. 825,223, pub. 12-20-66. Cl. 21.

Tru-Lab & Products: *See*— Southwestern Drug Corp.

Tune Masters, Gardena, Calif. 825,193, pub. 12-20-66. Cl. 15.

Tune Masters, Gardena, Calif. 825,194, pub. 12-20-66. Cl. 15.

Turow, Earle M., San Francisco, Calif. 825,344, pub. 12-20-66. Cl. 39.

Tyson Shirt Co., Norristown, Pa. 825,347, pub. 12-20-66. Cl. 39.

Upjohn Co., The, Kalamazoo, Mich. 709,849, canc. Cl. 18.

Upjohn Co., The, Kalamazoo, Mich. 709,852, canc. Cl. 18.

Upjohn Co., The, Kalamazoo, Mich. 223,696, ren. 3-7-67. Cl. 18.

Union Carbide Corp., New York, N.Y. 825,172, pub. 11-15-66. Cl. 6.

Union Fidelity Life Insurance Co., Philadelphia, Pa. 825,471, pub. 12-20-66. Cl. 102.

Union Fork and Hoe Co., The, Columbus, Ohio. 825,503. Cl. 23.

Union Special Machine Co., Chicago, Ill. 825,274, pub. 12-20-66. Cl. 23.

Union Tank Car Co., Chicago, Ill. 825,299, pub. 12-20-66. Cl. 31.

Union Tank Car Co., Chicago, Ill. 825,300, pub. 12-20-66. Cl. 31.

United Equipment Sales, Inc., Atlanta, Ga. 825,314, pub. 12-20-66. Cl. 35.

United Oil Co., Pittsburgh, Pa. 222,559, ren. 3-7-67. Cl. 15.

United States Playing Card Co., The, East Norwood, to The United States Playing Card Co., Cincinnati, Ohio. 62,565, ren. 3-7-67. Cl. 22.

United States Plywood Corp., New York, N.Y., from Welsh Panel Co., Longview, Wash. 709,825, canc. Cl. 12.

United States Plywood Corp.: *See*— Welsh Panel Co.

United States Rubber Co.: *See*—
Boston Rubber Shoe Co.
Eureka Fire Hose Co.
Fisk Rubber Co., The.
Lawton & Hall.
Revere Rubber Co.

United States Rubber Co., New York, N.Y. 429,336, 12(c) pub. 3-7-67. Cl. 6.

United States Rubber Co., New York, N.Y. 428,267, 12(c) pub. 3-7-67. Cl. 43.

United States Rubber Co., New York, N.Y. 429,017, 12(c) pub. 3-7-67. Cl. 1.

United States Rubber Co., New York, N.Y. 825,132, pub. 12-20-66. Cl. 1.

United States Rubber Co., New York, N.Y. 825,133, pub. 12-20-66. Cl. 1.

United Vintners, Inc., San Francisco, Calif. 825,398, pub. 12-20-66. Cl. 46.

Upjohn Co., The, Kalamazoo, Mich. 825,168, pub. 12-20-66. Cl. 6.

Valentin Blatz Brewing Co., to Pabst Brewing Co., Milwaukee, Wis. 222,259, ren. 3-7-67. Cl. 45.

Varsity Dental Mfg. & Supply Co.: *See*— Schumacher, Gustav, Jr.

Veatch Industries: *See*— Veatch, Franklin.

Veatch Industries, d.b.a. Franklin Veatch, Cleveland, Ohio. 709,901, canc. Cl. 22.

Veneko Corp., Dunkirk, N.Y. 825,242, pub. 12-20-66. Cl. 22.

Veneko Corp., Dunkirk, N.Y. 825,243, pub. 12-20-66. Cl. 22.

Venn, Louey, of London, Inc., Washington, D.C. 424,161, ren. 3-7-67. Cl. 51.

Venn, Louey, of London, Inc., Washington, D.C. 424,162, ren. 3-7-67. Cl. 51.

Ventron Corp., Beverly, Mass. 825,165, pub. 10-25-66. Cl. 6.

Vereinigte Farbenglaswerke A.G., Zwiesel (Lower Bavaria), Germany. 825,307, pub. 12-20-66. Cl. 33.

Vesta Foods Inc., New York, N.Y. 710 031, canc. Cl. 46.

Vicain, Inc., d.b.a. Labco, Los Angeles, Calif. 825,201, pub. 8-2-66. Cl. 18.

Victor Talking Machine Co., Camden, N.J., to Radio Corp. of America, New York, N.Y. 229,068, ren. 3-7-67. Cl. 36.

Vinos de los Herederos del Marques de Riscal, S.A., Madrid, Spain. 825,409, pub. 12-20-66. Cl. 47.

Vitamin Distributors, Inc., Paris, Tex. 709,847, canc. Cl. 18.

Vitamin Products Co., Milwaukee, Wis. 825,386, pub. 12-20-66. Cl. 46.

Vita Plus Corp., Madison, Wis. 709,811, canc. Cl. 6.

Vita Plus Corp., Madison, Wis. 825,210, pub. 12-20-66. Cl. 18.

Voice of Scripture: *See*— Pike, Carl A.

Vulcan Materials Co., Mountain Brook, Ala. 709,791. canc. Cl. 1.

W. & M. Products Co.: *See*— McKee, McLester.

Waldrop-Joses, Inc., Dallas, Tex. 709.902. canc. Cl. 22.

Walgreen Co., Chicago, Ill. 825,450, pub. 12-20-66. Cl. 52.

Wallach, Stanley, d.b.a. Caleb's Country Store Cheese Co., Chestnut Hill, Mass. 710,019, canc. Cl. 46.

Walsh, Michael J., Beverly Hills, Calif. 709,848, canc. Cl. 18.

Wampole Laboratories: *See*— Denver Chemical Mfg. Co., The.

Wander Co., The, d.b.a. Ovaltine Food Products, Chicago, Ill. 710,035, canc. Cl. 46.

Warshawsky and Co., Inc., Chicago, Ill. 709,805, canc. Cl. 5.

Wayne Candies, Inc., Fort Wayne, Ind. 825,389, pub. 12-20-66. Cl. 46.

Weathersby Brunner Co.: *See*— Witsell Bros.-Dean Lilly Co.

Web Plastics Co., Richwood, Ohio. 825,126, pub. 12-20-66. Cl. 1.

Weben Industries, Inc., Dallas, Tex. 825,264, pub. 12-20-66. Cl. 23.

Weishaupt, Max, G.m.b.H., Schwendi/Wurttemberg, Germany. 825,506. Cl. 34.

Weldon Pajamas, Inc., New York, N.Y. 709,983. canc. Cl. 39.

Wellcome, Henry S., London, England, to Burroughs Wellcome & Co., (U.S.A.) Inc., Tuckahoe, N.Y. 60,447, ren. 3-7-67. Cl. 18.

Western Felt Works, Chicago, Ill. 825,129, pub. 12-20-66. Multiple Class (Classes 1 and 42).

Western Tablet & Stationery Corp., Dayton, Ohio. 709,972, canc. Cl. 37.

Western Union Telegraph Co., The, New York, N.Y. 825,483, pub. 12-20-66. Cl. 104.

Weyerhaeuser Co., Tacoma, Wash. 825,463, pub. 12-20-66. Cl. 101.

Wheatley, Frank, Industries, Inc., Tulsa, Okla. 825,272, pub. 12-20-66. Cl. 23.

Wheel Estate, Inc., Memphis, Tenn. 825,263, pub. 12-20-66. Cl. 23.

Wheeling Corrugating Co., to Wheeling Steel Corp., d.b.a. Wheeling Corrugating Co., Wheeling, W. Va. 223,930, ren. 3-7-67. Cl. 2.

Wheeling Steel Corp.: *See*— Wheeling Corrugating Co.

Whirlpool Corp.: *See*— Estate Stove Co., The.

Whitaker, Fred, Co., Philadelphia, Pa. 710,070, canc. Cl. 106.

White Mfg. Co. of Missouri, Houston, Tex. 825,186, pub. 12-20-66. Cl. 13.

Whiting, Lisbeth Co., Inc., Jamaica, N.Y. 825,247, pub. 12-20-66. Cl. 22.

Wickes Corp., The: *See*— United States Graphite Co., The.

Wiffle Ball Inc., The, Shelton, Conn. 825,240, pub. 12-20-66. Cl. 22.

Wilco Co., Los Angeles, Calif. 825,431, pub. 11-1-66. Cl. 51.

Wile, M., & Co., Inc., Buffalo, N.Y. 825,340, pub. 5-5-64. Cl. 39.

Williams Gold Refining Co., Inc., Buffalo, N.Y. 825,364, pub. 12-20-66. Cl. 44.

Williams Gold Refining Co., Inc., Buffalo, N.Y. 825,365, pub. 12-20-66. Cl. 44.

Williams Mod-U-Plant Office Furniture, New York, N.Y. 825,306, pub. 12-20-66. Cl. 32.

Williams, Walden R., d.b.a. The Health Builders, Los Angeles, Calif. 426,841, ren. 3-7-67. Cl. 38.

Witsell Bros.-Dean Lilly Co., d.b.a. Weathersby Brunner Co., Memphis, Tenn. 825,402, pub. 12-20-66. Cl. 46.

Wolff, Dr. August, Chemische-Pharmazeutische Fabrik Kommanditgesellschaft, Bielefeld, Germany. 825,208, pub. 12-20-66. Cl. 18.

Wolverine Damp-Proofing Service: *See*— Schoonveld, Clarence.

Woodhill Chemical Sales Corp., Cleveland, Ohio. 825,163, pub. 12-20-66. Multiple Class (Classes 6, 15, 16, and 52).

Woodside Engineering Co., Franklin Park, Ill. 709,948, canc. Cl. 34.

Whyson Distributors, Franklin, Ky. 825,342, pub. 12-20-66. Cl. 39.
Kaufman, Wynne.

Yarnell Co., The: *See*— Keys, John D.

Youngstown Steel Door Co., The, Cleveland, Ohio. 228,845, ren. 3-7-67. Cl. 19.

Zonin S.p.A., Gambellara (Vicenza), Italy. 825,526. Cl. 47.

Zonite Products Co., New York, N.Y., to Chemway Corp., Wayne, N.J. 227,673, ren. 3-7-67. Cl. 6.

U.S. GOVERNMENT PRINTING OFFICE: O——1967

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

March 14, 1967 Volume 836 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of January 1967

Examiner affirmed	259
Examiner affirmed in part	39
Examiner reversed	74
Total	372

Disclaimer

2,973,508.—*Frank Chadurjian*, Peekskill, N.Y. COMPARATOR. Patent dated Feb. 28, 1961. Disclaimer filed Oct. 13, 1966, by the assignee, *International Business Machines Corporation.*

Hereby enters this disclaimer to claim 2 of said patent.

Patent Reform Act of 1967

President Johnson, on February 21, 1967, transmitted to the Speaker of the House and the President of the Senate "The Patent Reform Act of 1967." This bill is based upon and incorporates many of the recommendations of the President's Commission on the Patent System established by Executive Order No. 11215 on April 8, 1965 (814 O.G. 3).

The Senate bill (S. 1042) was introduced by Senator McClellan, and the House bill (H.R. 5924) was introduced by Representative Kastenmeier. Requests for copies of these bills may be addressed to the respective Senate and House Document Rooms, U.S. Capitol, Washington, D.C. (Senate Zip Code: 20510; House Zip Code: 20515). A sectional analysis of the bill appears in House Document No. 59, 90th Congress.

Copies of the Commission's report "'To Promote the Progress of . . . Useful Arts' in an Age of Exploding Technology" may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, for 65¢. There have been several printings of this report, including publication by Congress as Senate Document No. 5, 90th Congress.

EDWARD J. BRENNER,
Commissioner of Patents.

Feb. 28, 1967.

The President's transmittal letter follows:

THE WHITE HOUSE

THE WHITE HOUSE MADE PUBLIC TODAY THE FOLLOWING LETTER FROM THE PRESIDENT TO THE PRESIDENT OF THE SENATE AND THE SPEAKER OF THE HOUSE OF REPRESENTATIVES

DEAR MR. PRESIDENT: (DEAR MR. SPEAKER:)

I have the honor to transmit the Patent Reform Act of 1967. This important measure is designed to aid America's economic growth by strengthening the U.S. Patent System.

From the earliest days of our Republic, the patent system has played an indispensable role in stimulating the Nation's progress and prosperity. It has spurred the creative work of inventors and scientists. It has fostered the most far-reaching technological advances in the history of civilization. It has helped American businesses to translate "the fire of genius" into the products and processes that have enriched the lives of all of us.

But we have learned that institutions must change to meet the demands of the times.

Modernization of the patent system is long overdue. This Nation which has reached unparalleled industrial and technological heights is still operating under a patent system that has remained unchanged for the past 130 years.

That system is not equipped to deal with today's problems and tomorrow's challenges. Consider the following:

> It sometimes takes an inventor 2½ years and more often much longer to receive a patent.
>
> The inventor is often faced with time consuming, costly and unnecessary legal action to enforce his rights.
>
> The expense of securing a patent is needlessly high, particularly when there are competing claims to the same invention.
>
> New technological advances take far too long before they benefit the public.
>
> International trade is hindered by inconsistent patent practices from one country to another which increase costs to American businessmen.

America's patent system must be strengthened so that it can serve the technological advances it was designed to foster. I recommend the Patent Reform Act of 1967. Its purposes are threefold:

1. To raise the quality and reliability of U.S. patents.
2. To reduce the time and expense of obtaining and protecting a patent.
3. To speed public disclosure of scientific and technological information.

These changes will accomplish another important objective—they will bring the U.S. patent system more closely into harmony with those of other nations.

This Act was shaped from the recommendations of the Commission on the Patent System. I appointed this Commission of leading American citizens in July 1965 to study ways "to insure that the patent system will be more effective in serving the public interest." When I received the Commission's report last December, I directed the Commerce Department, the Justice Department and my Science Advisor to consider it carefully and, if necessary, to develop legislative proposals to carry out its objectives. The Patent Reform Act of 1967 is the result of that intensive review.

New Applications Received During January 1967

Patents	6606
Designs	386
Plant Patents	7
Reissues	11
Total	7010

Issue—March 14, 1967

Patents	1236	—No. 3,308,477 to No. 3,309,712, incl.
Designs	35	—No. 207,161 to No. 207,195, incl.
Total	1271	

To Improve the Quality and Reliability of U.S. Patents

Today, inventors and businessmen alike are faced with uncertain and conflicting standards in obtaining and enforcing a patent. Under the Patent Reform Act the standards would be clarified and in every case the inventor would be required to show that his invention is really new.

In addition, we should take action to reduce the likelihood of issuing patents which are later declared invalid by the courts. This would eliminate needless expense by the public, the business community, and the inventor. For the first time, under the Act, third parties will be permitted to argue—before a patent is issued—that an invention does not meet the required standards.

But more must be done. The Patent Office's information and retrieval systems are at the heart of the patent examination process. They supply the vital technical background against which inventions must be judged before a patent can be issued. As the world's library of scientific and engineering information increases and as inventions become more complex, conventional information retrieval systems are becoming roadblocks to rapid and effective patent searches. These roadblocks must be eliminated through expanded research and development and increased international cooperation.

To Reduce the Time and Expense of Obtaining and Protecting a Patent

One of the most burdensome aspects of the present patent system lies in resolving the dispute between two persons who claim that they have invented the same product or process. These disputes are costly and protracted. They are judged against standards that are often vague and sometimes unfair.

Most nations resolve those disputes by a simple and clear standard: "the first to file." Under this standard the inventor who first recognizes the worth of the invention and files a patent application is awarded a patent. It is now time to apply the "first to file" rule to the U.S. patent system.

To help make this work, an inventor could file an informal disclosure of his invention to establish an early legal filing date. This new "preliminary application" will help the small inventor and will give him time to test and perfect his idea.

To Speed Public Disclosure of Scientific and Technological Information

Patent applications are now kept secret until the patent is granted. This may take up to five years or more.

As a result:

> Public disclosure of new technology is delayed.
>
> Businessmen are unaware of new inventions and may invest substantial sums in developing a product that has already been patented by a competitor.

The legislation I am proposing provides that most pending patent applications must be published no later than 24 months after they are filed, regardless of how long it takes to issue the patent.

* * * * * * *

The Patent Reform Act contains a series of far-reaching and fundamental proposals. They will benefit businessmen, scientists and inventors. They will bring our patent system into harmony with those of other nations. But more important, they will serve the interests of all Americans, as the Constitution mandates, by promoting "the progress of science and the useful arts" in the decades ahead.

The Congress, I believe, will want to give favorable and prompt consideration to this important and long overdue legislation.

Sincerely,

LYNDON B. JOHNSON.

HONORABLE HUBERT H. HUMPHREY
President of the Senate
Washington, D.C.

HONORABLE JOHN W. MCCORMACK
Speaker of the House of Representatives
Washington, D.C.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JANUARY 30, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	8-6-63	11-30-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	7-25-63	9-12-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	11-18-63	12-18-61
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	10-4-63	3-2-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-2-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-15-63	8-30-62
SECURITY, GROUP 220—S. BOYD, Manager Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	9-14-64	5-24-63
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	7-26-63	7-3-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-15-63	11-3-61
PHYSICS, GROUP 280—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager Industrial Arts; Household, Personal and Fine Arts.	10-18-65	3-12-65

Total number of pending applications (excluding Designs)	192, 187
Total number of Design applications pending	4,068
Total number of applications awaiting action (excluding Designs)	140, 112
Total number of Design applications awaiting action	2,409
Date of oldest new application awaiting action	May 15, 1963
Date of oldest amended application awaiting action	July 3, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during March 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1953.*

Patents	Numbers 2,499,345 to 2,502,407, inclusive
Plant Patents	Numbers 926 to 929, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	4-2-65	7-18-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	12-28-64	10-2-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	9-2-64	7-16-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	5-24-65	2-18-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	3-8-65	4-26-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2-1-65	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

In re Hector W. Griswold and George W. Pearce

In re Hector W. Griswold

Nos. 7644, 7645. Decided September 15, 1966

[53 CCPA —; 365 F.2d 834; 150 USPQ 804]

1. Patentability—Double Patenting—Words and Phrases—"Yarn-Like" Fiber Groups.

"* * * we find no differences in substance between the invention defined in appealed claims 23 and 40 and the invention defined in the patent claims. The expression 'yarn-*like*' and others similar to it [appearing in the patent claims but not on the otherwise similar application claims] adds little, if any, delimiting definition to the patent claims as to the shape of the cross-section of the fiber groups involved or to the tightness of packing of the fibers in that cross-section. We think the expression yarn-*like* is sufficiently broad to describe a multitude of fiber bundle structures, whether they be ribbon, rectangular, circular, square, triangular or elliptical in cross-section, as well as structures in which the groups appear tightly consolidated, as in yarns, or relatively loose and fluffy. We are of the opinion that there is nothing defined in the appealed claims that is not as broadly defined in the patent claims. The inventions defined by the respective claims are, in our view, the same."

2. Same—Same—Terminal Disclaimer.

"Appellants have filed terminal disclaimers in their applications but do not argue that they should be given effect if we find the inventions claimed in the respective applications and patents to be the same. Under the circumstances and in view of our finding, we give the disclaimers no effect. *In re Bridgeford*, 53 CCPA —, — F.2d —, 149 USPQ 55; *In re Siu*, 42 CCPA 864, 222 F.2d 267, 105 USPQ 428."

3. Same—Same—Same.

"The terminal disclaimers which have been filed are ingenious. The pertinent portion of the disclaimer in the Griswold application file reads: '* * * Johnson & Johnson hereby disclaims the terminal part of any patent granted on the above identified application, which would extend beyond the expiration date of said Patent 3,081,514, and hereby convenants that any patent so granted on the above identified application, together with any right to recover for its violation shall be enforceable only for and during such period that the legal title to said patent and to such right to recover shall be the same, respectively as the legal title to United States Patent 3,081,514 and to any corresponding right to recover for its violation, this covenant to run with any patent granted on the above identified application and to be binding upon the grantee, its successors, or assigns.' The above language includes an imaginative solution to one of the more theoretical objections to double patenting, split ownership of two patents and potential harassment."

Appeal from the Patent Office. Serial Nos. 437,038 and 437,119.

AFFIRMED.

Max Dressler, *Alexander T. Larder* (*James W. Clement*, *Arnold S. Worfolk*, *Alexander T. Kardos* of counsel) for appellants.

Joseph Schimmel (*S. William Cochran* of counsel) for the Commissioner of Patents.

Before Rich, *Acting Chief Judge*, and Martin, Smith, and Almond, Jr., *Associate Judges*, and Judge William H. Kirkpatrick, *United States Senior District Judge for the Eastern District of Pennsylvania*

Rich, *Acting Chief Judge*, delivered the opinion of the court.

These two appeals are from unanimous decisions of the Patent

Office Board of Appeals,[1] petition for reconsideration in each denied, affirming the Examiner's rejection of product claim 23 in application Serial No. 437,038, filed June 16, 1954, by Griswold and Pearce, and of product claim 40 in application Serial No. 437,119, filed June 16, 1954, by Griswold. Both applications are entitled "Nonwoven Fabric and Method of Producing Same." While separate records and briefs were filed in each appeal, the dispositive issues are so closely related that they will be treated in a single opinion.

The sole ground of rejection before us in Serial No. 437,038 (Appeal No. 7644) is double patenting. The Examiner made an additional rejection on prior art which was reversed by the Board. The double patenting rejection is based on appellants' own patent, issued on an application filed April 26, 1955, as a continuation-in-part of Serial Nos. 437,037 and 437,038:

> Griswold and Pearce, 3,081,515, March 19, 1963.

The appeal in Serial No. 437,119 (Appeal No. 7645), involves the following reference:

> "Handmade Papers of Japan," T. K. and H. R. Tindale, Charles E. Tuttle Co., Rutland, Vt., and Tokyo, Japan. Printed in Tokyo in 1952.

and presents several issues, only the last of which do we find it necessary to decide: (1) whether the entire Tindale publication, including the *specimens* of "handmade papers" bound therein, is a "*printed* publication" within a proper interpretation of 35 U.S.C. 102(b); (2) whether the Tindale publication specimens are properly considered evidence under 35 U.S.C. 102(a) that "the invention was known * * * by others in this country * * * before the invention thereof" by Griswold; (3) whether, in any event, the Tindale specimens serve as an enabling disclosure so that the public is placed in possession of Griswold's invention; (4) whether the Board made a new ground of rejection as to the question presented by issue (2), and subsequently abused discretion in refusing to consider affidavits said to show invention of the subject matter of claim 40 by Griswold prior to the effective date of Tindale; and (5) double patenting in view of Griswold's own patent, application for which was filed April 26, 1955, as a continuation-in-part of Serial No. 437,119:

> Griswold, 3,081,514, March 19, 1963.

We shall deal first with the double patenting rejection in each appeal. To place the cases in proper perspective in relation to the many other double patenting rejections which have come here of late, it would appear from the letters of the Examiner, the decisions of the Board and the Solicitor's briefs that the issue the Patent Office believes is presented by each appeal represents, in the words of the Examiner, "a matter of preventing two patents from issuing on but a single invention." Appellants, on the other hand, are of the view that each of the two claims on appeal is "generic to" the claims in the patents on which the double patenting rejections are founded and "patentably distinct therefrom." At the very least, appellants state, each claim on appeal is "for an invention different from" the respective patent claims and, in view of a terminal disclaimer filed in each application by their assignee, Johnson and Johnson, the double patenting rejections should be reversed.

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[1] Consisting of Examiners-in-Chief Bailey and Manian and Acting Examiner-in-Chief Angel, the latter writing the opinion in each appeal.

With that background information, we turn to a discussion of the respective applications and patents, and the rejections and arguments made.

The Inventions

The inventions described in the applications, as well as in the patents, have to do generally with "nonwoven" fabrics, i.e. fabrics produced directly from fiber lengths without the usual spinning, weaving, or knitting operations.

As an introduction to their inventions, appellants note that conventional manufacture of woven or knitted fabrics involves the spinning or twisting together of the fibers or filaments of the material making up the fabric into tight mechanical and frictional engagement to form yarns or threads of generally circular cross-section. The yarns or threads in turn are woven or knitted to form a fabric comprising, in general, reticular structures of intersecting, intertwining yarns which define a pattern of interstices and provide strength to the fabric.

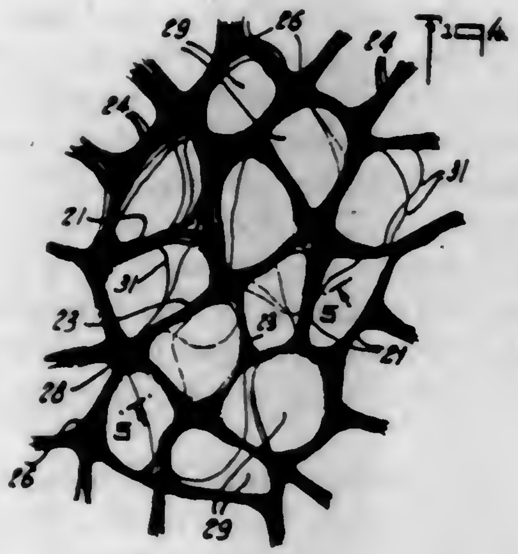
On the other hand, it appears that nonwoven fabrics have been of two main types—"felts" and "bonded webs." Hat felt is a common example of the former material, and consists of an assemblage of highly interlocked, densely packed fiber lengths. A "bonded web" consists of a loosely assembled layer of individual fiber lengths, arranged in either an oriented or random (isotropic) manner, which are held together by various adhesive bonding materials and, to a lesser extent, by interlocking of the fibers. The fibers in an oriented or "card" web are arranged more or less in one direction by a card machine, and impart strength to the web primarily in that "machine" direction. The fibers in an isotropic web are arranged in a random, helter-skelter manner by air lay or water lay processes, and impart strength to the web in all directions.

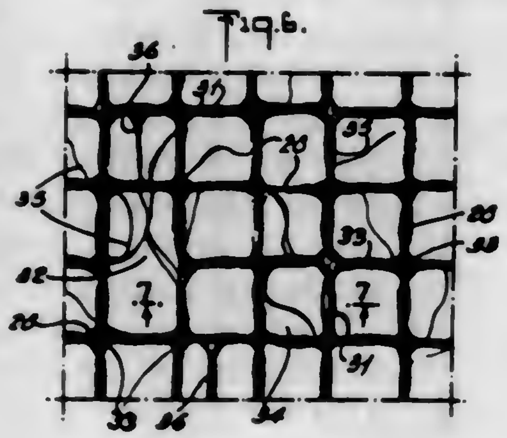
Appellants' object is to produce a nonwoven fabric which has the general appearance and strength characteristics bestowed on a woven or knitted fabric by the yarns employed to make those fabrics. To produce the nonwoven fabrics described in the present application and patents, appellants apply an external force to either a card web or a random web of the type hereinbefore described in order to cause fibers in the web to bend and form into interconnected groups or bundles.

In his application, Griswold discloses that the external force may be applied, for example, by resilient belts placed on each side of a moistened card web or random web. The belts are oscillated in such a manner that the fibers of the starting web are pushed or rolled away from certain areas (which become apertures in the fabric) and bunched or consolidated in other areas to yield interconnected fiber groups which define the apertures and give the fabric a woven or knitted appearance. The moisture contained in the starting web serves to assist in parallelizing the fiber segments and bringing them into close association.

As disclosed by the application of Griswold and Pearce, the external force may be applied to the starting web by a grooved molding means and a resilient member. Oscillation of the resilient member causes the fibers to be pushed away from the projections on the mold, thus defining holes, and into the interconnected grooves of the mold, where the fibers are parallelized and consolidated into interconnected bundles or groups. The fiber groups in the fabric produced in the latter fashion define a predetermined pattern corresponding to the pattern of grooves in the mold. In either case, it is the interconnected bundles of groups of substantially parallel and consolidated fibers which impart the strength and appearance to the fabrics appellants produce. Further strength may be attained by employing the bonding techniques applied to conventional nonwoven materials.

In the Griswold application, the holes or interstices defined by the parallel, consolidated fibers are distributed *randomly* throughout the fabric, i.e., in no particular pattern. The joint invention of Griswold and Pearce, as described in their application, appears to reside in the discovery of myriad techniques by which the substantially parallel, consolidated fibers could be arranged into interconnected bundles or groups defining a variety of *predetermined* patterns of holes or interstices. Reproduced below are FIGURE 4, appearing in the Griswold application and patent, and FIGURE 6, appearing in the Griswold and Pearce application and patent, which diagrammatically illustrate the inventions of each.





The Griswold 3,081,514 patent as well as the Griswold and Pearce 3,081,515 patent contain much disclosure which substantially duplicates that present in the respective parent applications on appeal here. In addition, the Griswold and Pearce patent contains further description of types of fabric having a predetermined pattern of holes, and methods and apparatus by which those fabrics may be manufactured. The Griswold patent incorporates substantially the same additional disclosure of fabrics having a predetermined pattern of holes, attributing the invention of that subject matter to Griswold and Pearce by appropriate cross reference to their application which issued into the '515 patent. Both patents also added description of apparatus for making the present fabrics, detailed disclosure of which is found in the Kalwaites Patent 2,862,251, referred to in '515.

Opinion

We turn now to see what inventions are defined in the application and patent claims. The Board regarded claim 1 of Griswold '514 to be representative of the patent claims which it compared with claim 40 in Appeal No. 7645. The two claims are reproduced below, with common verbiage in the first column and differing verbiage in the other two columns:

Common	*Claim 40 (appli.)*	*Claim 1 (patent)*
A foraminous self-sustaining non-woven textile fabric	having the characteristic hand and drape of a textile fabric,	
comprising	non-feltable fiber groups	a multiplicity of *yarn-like* fiber groups having an *oval* cross-section
interconnected at junctures by fibers common to a plurality of said groups to define holes	between them,	
the fibers at said junctures being oriented in a plurality of diverse directions	generally	
in the lay of the fabric, and the fibers in the		yarn-like
groups between the junctures being	substantially parallel to	
and	consolidated	in substantial parallelism
		and in overlapping relationship
with one another with individual interconnecting fibers at each juncture having substantial segments thereof in mechanical engagement with other fiber segments in various of the	fiber	yarn-like
groups, the fibers in said fabric being in mechanical equilibrium, and said		yarn-like
fiber groups in areas of fabric containing the same being located between spaced generally parallel planes generally defining the opposed surfaces of the fabric in said areas		and said yarn-like fiber groups predominantly constituting the body of the fabric in said area.

It is self-evident that the primary difference between the above two claims is the omission from the application claim of any reference to the yarn-like fiber groups having an oval cross-section which are defined in the patent claim. Other of the patent claims, notably claims 4 and 10, define nonwoven fabrics comprising, in claim 4 (emphasis ours)

> * * * interconnected *groups* of fiber segments *closely associated* and *substantially parallelized* about the longitudinal axes of the groups *to the extent that the groups are yarn-like*, said interconnected groups extending longitudinally and transversely of the fabric and defining holes between them, said groups being interconnected by fibers common to a plurality of groups * * *

and in claim 10

> * * * fibers arranged to form interconnected bundles of fiber segments possessing *yarn-like thickness in two dimensions*, individual segments in each of said bundles being substantially parallel to the other segments in the bundle and consolidated with the same segments with which they are substantially parallel, said bundles being interconnected by fibers common to a plurality of bundles and defining holes between the bundles * * *

Appellants contend that the above-mentioned differences in language between the patent claims and the application claims lead inescapably to the conclusion that the respective claims define two different inventions.[2] We do not agree.

The view of the Examiner as expressed in his answer before the Board was that:

> * * * the basic difference resides in defining the fiber groups as of "oval-cross-section" and/or "yarn-like" in the patent and omitting such limitation(s) from the claim under consideration. Appellant concurs with the above and further admits that the instant application and the patent have the same disclosure with respect to but a single embodiment of the fabric. It is the Examiner's position that the above restrictions are encompassed by and apparently inherent in the fabric of this application; that the claims are but different definitions of the same disclosed subject matter merely varying in breadth or scope or mode of definition. It is to be noted that throughout the specification of the instant application and all the original claims to the fabric, the bundles are referred to as "yarn-like," "yarn-like in cross-section," "possess yarn-like thickness," etc. There is nothing to indicate they (the bundles) could be otherwise. It appears from a comparison of the instant application and the patent, their respective specifications and drawings that the objects and fabric thereof are identical. It therefore appears that the fiber bundles of the instant application would not be but "yarn-like" and/or of "oval cross-section" when read with the specification and disclosure.

Griswold relies on the same arguments to establish that the application claim and patent claims are "patentably distinct" so as to establish that the claims define "different inventions." Contrary to the Examiner, Griswold contends that the fiber bundles or groups of claim 40 "are not necessarily 'yarn-like' or of 'oval cross-section,' " and that the Examiner erroneously concluded that the embodiments of the inventions in the fabrics disclosed in the appealed application and the '514 patent must be identical. As support for his position, Griswold states:

> FIG. 21 * * * [of Griswold '514] illustrates an embodiment of a nonwoven fabric having hole-defining bundles of parallelized and consolidated fibers such as is called for by appealed claim 40. It may be argued that the bundles of fibers in the fabric depicted there are *not* of "oval cross-section"; and that the cross-section of these bundles might best be described as substantially rectangular. In addition, it might well be argued that the bundles of FIG. 21 are *not* "yarn-like" in structure, but are "ribbon-like" instead. Hence it might be argued that the fabric of FIG. 21 does not come within the ambit of claims of Patent No. 3,081,514. It will, however, clearly come within generic claim 40, and appellant is entitled to the broader protection afforded by this claim.

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[2] It is unnecessary in this opinion to set forth appealed claim 23 in the Griswold and Pearce application or any of the claims of Patent 3,081,515 on which it was rejected for double patenting. The claims in the Griswold and Pearce application and patent differ from those set forth above primarily in additionally requiring that the fiber groups define a "predetermined pattern" of holes.

At oral argument, appellants' counsel stated that, "since double patenting is one issue common to both [appeals], we'll argue only one case [which was Appeal No. 7645 of Griswold], with the understanding that whatever happens there will apply to the other."

> As another example, it might be argued that the fabric of FIG. 9[3] of Patent No. 3,081,515 * * * does not come within the claims of [that patent or] Patent No. 3,081,514. While we believe the fabric would come within those claims, we also believe that appellant is entitled to receive patent protection which will clearly and beyond any doubt cover the embodiment of FIG. 9 referred to, as well as other embodiments the exact structure of which appellant cannot now foresee, so long as they embody the gist of appealed claim 40, i.e., bundles of parallelized and consolidated fibers which help define holes in the nonwoven fabric, without limitation as to the third dimension of the bundles.

He further argues:

> Appellant is entitled to claim his invention as broadly as the prior art permits, and it is appellant's position that the prior art permits claiming the apertured nonwoven fabric broadly with respect to the bundles, i.e., reciting only that the bundles are made up of fibers which are substantially parallel and consolidated, without regard to the third dimension of the bundles. It is the bundles' third dimension which is the basis for the additional "oval cross-section" and "yarn-like" limitations which are present in the claims of Patent No. 3,081,514. It is these limitations to the structure of the bundles which distinguish the patent claims patentably from claim 40 of the instant application.
>
> In the absence of a claim like claim 40, a *nonwoven* fabric which has the general appearance to the casual observer of a *woven* or *knitted* fabric, but which does not have fiber bundles with an "oval cross-section" or bundles of a "yarn-like" appearance, may be made without infringement of the claims in Patent No. 3,081,514. Yet such a fabric would embody the important novel feature—the *hallmark*—of applicant's invention, i.e. the bundle structure of claim 40.

No doubt the fiber groups defined by appealed claims 23 and 40 could have cross-sections other than oval, e.g., roughly square, rectangular, circular, and the like. In that sense at least, the invention defined by the present claims *encompasses* fabric structures *different* from the structures defined in some of the patent claims, whether or not those different cross-sections of the groups involve what may be nebulously termed a "patentable distinction." Not all of the patent claims, however, require that the fiber groups have an oval cross-section, plainly contemplating other types of cross-section, as unspecific as in the appealed claims. Hence the question still remains whether there is a detectable difference between the expressions "yarn-*like* fiber groups," "interconnected groups of fiber segments closely associated and substantially parallelized * * * to the extent that the groups are yarn-*like*," and "bundles of fiber segments possessing *yarn-like thickness* in two dimensions" employed in the patent claims, and the expressions employed in the application claims which omit the italicized limitations.

As the Solicitor points out, no definition is supplied by appellants in their briefs or specifications as to what is meant by "yarn-*like*." We understand from the specifications and patents that a *yarn* generally has a circular cross-section and is comprised of filaments or fibers which are twisted into tight mechanical engagement. But it is quite apparent that neither Griswold nor Griswold and Pearce contemplate fiber groups having a twist applied to them like a yarn, apart from any purely accidental twisting of the fiber lengths which might occur during application of the external-deforming forces to the card web or random web. Griswold's application states:

> * * * The fibers in the bundles are not as closely grouped as the fibers in yarns and, while there may be some twisting or intertwining among them, they are not twisted in the same way that the fibers in yarns are twisted. * * *

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[3] FIGURE 9 mentioned is a photomicrograph illustrating a nonwoven fabric having a predetermined pattern of holes defined by what appears to be very loosely consolidated or assembled fibers arranged in bundles or groups of indeterminate cross-section.

> The nature and appearance of the yarn-like bundles may be varied with the materials and methods used to prepare the fabric of this invention. For instance, the bundles may appear relatively tight or relatively loose and fluffy and the fabric may resemble a gauze, a fluffy knitted fabric, etc. * * *

[1] Under the circumstances, we find no differences in substance between the invention defined in appealed claims 23 and 40 and the invention defined in the patent claims. The expression "yarn-*like*" and others similar to it adds little, if any, delimiting definition to the patent claims as to the shape of the cross-section of the fiber groups involved or to the tightness of packing of the fibers in that cross-section. We think the expression yarn-*like* is sufficiently broad to describe a multitude of fiber bundle structures, whether they be ribbon, rectangular, circular, square, triangular or elliptical in cross-section,[4] as well as structures in which the groups appear tightly consolidated, as in yarns, or relatively loose and fluffy. We are of the opinion that there is nothing defined in the appealed claims that is not as broadly defined in the patent claims. The inventions defined by the respective claims are, in our view, the same.

[2] Appellants have filed terminal disclaimers[5] in their applications but do not argue that they should be given effect if we find the inventions claimed in the respective applications and patents to be the same. Under the circumstances and in view of our finding, we give the disclaimers no effect. *In re Bridgeford*, 53 CCPA —, — F.2d —, 149 USPQ 55; *In re Siu*, 42 CCPA 864, 222 F.2d 267, 105 USPQ 428.

The view we take renders it unnecessary to express any opinion on the other issues presented by Appeal No. 7645. In both appeals the decisions of the Board are affirmed.

AFFIRMED.

MARTIN, *J.*, concurs in the result.

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[4] The cross-sectional figures of the fiber groups in the patents show a great variety of cross-sectional shapes.

[3] [5] The terminal disclaimers which have been filed are ingenious. The pertinent portion of the disclaimer in the Griswold application file reads:

> * * * Johnson & Johnson hereby disclaims the terminal part of any patent granted on the above identified application, which would extend beyond the expiration date of said Patent 3,081,514, and hereby covenants that any patent so granted on the above identified application, together with any right to recover for its violation shall be enforceable only for and during such period that the legal title to said patent and to such right to recover shall be the same respectively as the legal title to United States Patent 3,081,514 and to any corresponding right to recover for its violation, this covenant to run with any patent granted on the above identified application and to be binding upon the grantee, its successors, or assigns.

The above language includes an imaginative solution to one of the more theoretical objections to double patenting, split ownership of two patents and potential harassment. Cf. *In re Sarett*, 51 CCPA 1180, 1190, 327 F.2d 1005, 1011, 140 USPQ 474, 480; *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485.

U.S. Court of Customs and Patent Appeals

IN RE JAMES H. WILSON

No. 7663. Decided November 17, 1966

[54 CCPA —; 368 F.2d 269; 151 USPQ 573]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"SOAP COMPOSITIONS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Soap Compositions" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 31,279.

AFFIRMED.

Brumbaugh, Free, Graves & Donohue (*Eben M. Graves, John F. Neary, Jr., William E. Eberle*, of counsel) for appellant.

J. Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the Patent Office Board of Appeals, which held claims 1 to 5 of application Serial No. 31,279, filed May 24, 1960, entitled "Soap Compositions," to define only obvious subject matter which was unpatentable over the prior art under 35 U.S.C. 103.

The invention relates to a solution for the lime soap problem. When water-soluble soaps are used in hard water, especially at rinsing dilutions, the calcium and magnesium hardness ions in the water react with the dissolved soap to form insoluble lime soaps, which precipitate out of solution. The undesirable lime soap scum then adheres to skin, fabrics, and washing containers. Appellant's solution to this problem consists of adding alkyl sulfoxides to the water-soluble soaps. The sulfoxides function either to inhibit the formation of lime soaps or to disperse the precipitates once they are formed.

Claim 1 is illustrative of the invention and reads as follows:

> 1. A detergent soap composition consisting essentially of a water-soluble soap and an alkyl sulfoxide of the formula
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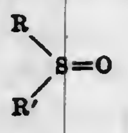
> 
>
> wherein R is an alkyl radical having from 8 to 20 carbon atoms and R′ is a short chain aliphatic group having from 1 to 5 carbon atoms, the ratio of soap to alkyl sulfoxide being from about 1:1 to about 1:0.01.

Claim 2 recites the use of a mixture of alkyl sulfoxides. Claim 4 is directed to a preferred subclass of sulfoxides wherein R is alkyl of 8 to 18 carbon atoms, and claims 3 and 5 are limited to the preferred dodecyl methyl sulfoxide.

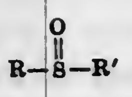
The references relied upon are:

Flett, 2,390,295, December 4, 1945.
Goodhue et al. (Goodhue), 2,654,667, October 6, 1953.
Webb, 2,787,595, April 2, 1957.

Flett discloses soap compositions adapted for general detergent use in hard water to overcome the lime soap problem. These compositions consist of water-soluble soaps together with mixtures of alkyl aromatic sulfonates. The sulfonate mixtures are said to be "themselves effective detergents and washing agents in hard water * * *."

Goodhue discloses the use of organic sulfoxides and disulfoxides as defoliating agents for plants. This reference teaches that soap and alkyl sulfoxides are compatible, since soap is useful as a wetting or emulsifying agent to stabilize aqueous emulsions of the alkyl sulfoxides.

Webb, the more pertinent secondary reference, is acknowledged in appellant's specification and discloses the use as detergents of alkyl sulfoxides of the formula



$$R-\overset{\overset{\large O}{\|}}{S}-R'$$

wherein R represents a methyl or ethyl group and R′ represents an alkyl group containing at least 6, preferably 9–22, carbon atoms.

Webb states that his "long chain alkyl monosulfoxides possess a high degree of surface activity and have even greater detergent properties" than the disulfoxides, and that his compounds "are unaffected by alkaline earth and heavy metal ions and hence are adapted to use in hard water." Appellant's preferred methyl dodecyl sulfoxide is disclosed in Example 2 of the reference.

In affirming the Examiner's rejection of appellant's claims 1 to 5 as unpatentable under 35 U.S.C. 103 over Flett in view of the combined teachings of Webb and Goodhue, the Board commented:

> * * * we consider that the primary reference [Flett] would lead one skilled in the art to combine water-soluble soap *with various detergents* to overcome the lime soap problem. Webb shows appellant's sulfoxides as detergents which are unaffected by alkaline earth and heavy metal ions and hence are adapted to use in hard water. Accordingly, there would be nothing unobvious for one skilled in this art in the substitution of the detergent sulfoxide of Webb for the detergent in the composition of Flett. * * * [Emphasis ours.]

Although the Board apparently believed the substitution of any known detergent for the alkyl aromatic sulfonate detergents in the Flett soap compositions would be obvious, we do not agree with this broad proposition, absent any given reason for making the substitution of detergents. The water-soluble soaps themselves are "well-known detergents," as disclosed by Flett, and the patentee added mixtures of alkyl aromatic sulfonates to water-soluble soap not because of the fact that the sulfonates are themselves effective detergents, which is merely incidental, but rather because of their "advantageous properties of preventing 'lime soap' curds and related insoluble fatty acids and salts from depositing from aqueous suspensions thereof." The problem which confronted Flett was the formation of flocculated lime soaps when water-soluble soaps are used in hard water. If Flett merely desired a good "detergent," he could have used any one of a number of then known detergents in pure form, including the water-soluble soaps.

While the Board's position is unduly broad as stated, we do not regard the rejection as unfounded on the facts of this case for the following reasons. No mention has been made of the fact by the Examiner, Board, or Solicitor, but the Webb patent contains a comparison of his alkyl sulfoxides with various other detergent compositions, including an alkyl aryl sulfonate commercially manufactured by Lever Brothers, assignee of the application here on appeal. Since the reflectometer value of 58 indicates that a cleaner, brighter wash was obtained with Webb's sulfoxides than with the sulfonate detergent of appellant's assignee, it would indeed be obvious to substitute the alkyl sulfoxides for the alkyl aryl sulfonates in the earlier soap compositions of Flett, which consisted of water-soluble soaps incorporated with a class of nonsoap synthetic detergents, namely, mixtures of the alkyl aromatic sulfonates.

Appellant contends that knowledge of surface active properties and compatibility with hard water is an insufficient basis upon which to predict lime soap dispersant properties of compounds, since Flett discloses that the aromatic sulfonic acids, a class of compounds possessing these properties, "do not adequately disperse the soap precipitates." Since neither of the secondary references mentions the lime soap problem, we do not doubt that a skilled chemist could not predict with absolute certainty whether or not the alkyl sulfoxides of Webb and Goodhue would possess adequate lime soap dispersing properties. But obviousness does not require absolute predictability, *In re Moreton*, 48 CCPA 928, 288 F.2d 940, 129 USPQ 288; and we are persuaded that the many advantageous characteristics disclosed by Webb for his alkyl sulfoxides, especially their high degree of surface activity, adaptation to use in hard water, and greater detergent properties than the alkyl aryl sulfonate commercially manufactured by appellant's assignee, renders obvious the substitution of the sulfoxides for the alkyl aromatic sulfonate mixtures in the earlier detergent soap compositions of Flett. In this regard the Rudy affidavit of record merely proves that which is already asserted by Webb, namely, the superiority of detergent soap compositions containing alkyl sulfoxides to those containing equal amounts of an alkyl aryl sulfonate. This superiority is not unexpected, since Webb discloses that his sulfoxides are not merely equivalent, but actually superior to the sulfonate detergent of Lever Brothers and to four other commercially manufactured detergent compositions as well.

[1] The decision of the Board is affirmed.

AFFIRMED.

WORLEY, *Chief Judge*, concurs in the result.

Judge Martin participated in the hearing of this case, but died before a decision was reached.

SMITH, *J.*, dissenting.

In view of the admissions in the majority as to the defects in the prior art teachings, I am amazed to find that despite these defects it would affirm the Board. First, only the principal reference, Flett, discusses the lime soap problem, the secondary references being silent. Second, Flett discloses that aromatic sulfonic acids, a class of compounds known to posses the properties of surface activity and compatability with hard water, do not solve the lime soap problem.

Yet the majority finds it would be obvious because of the presence of these *same* properties in appellant's sulfoxides to substitute them for the alkyl aromatic sulfonate mixtures in Flett. The defects in the Board's reasoning is readily admitted by the majority. However, instead of reversing the Board's decision, the majority on its own motion injects the teaching in Webb that an alkyl sulfoxide composition when tested, showed a reflectometer value of 58. This is, sua sponte, equated with a "cleaner, brighter wash."

Appellant never has had the opportunity to answer such a rejection. It is only by reliance on this new reasoning and combining it with the known properties of sulfoxides—which admittedly did not cure the lime soap problem for Flett—that the majority can support its finding that the invention is obvious.

The *invention* here in general terms sets forth a solution to the lime soap problem which persisted at the time of appellant's invention despite the prior art teachings relied on by the majority. The majority chooses not to discuss this fact. Rather, it views the invention as but a combination of the sulfoxides and a detergent soap composition, and nothing more.

In view of the admitted defects in the Board's reasoning and considering the claimed *invention*, I would reverse the decision of the Board. It is contrary to my concepts of the judicial process that a rejection should be sustained for untested reasons first advanced by this court.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,595,935, J. H. Daniel, Jr., et al., WET STRENGTH PAPER AND PROCESS FOR THE PRODUCTION THEREOF, **filed** Sept. 6, 1960, D.C. Del. (Wilmington), Doc. 2248, *American Cyanamid Company* v. *Hercules Powder Company*. Order dismissing complaint with prejudice Dec. 6, 1966.

2,720,244, L. E. Zerlaut, WRAPPING MACHINE, **filed** June 24, 1966, D.C., S.D. Calif. (San Diego), Doc. 3583–SD–K, *The Conolon Corporation* v. *R. J. Basso et al.* Consent judgment, Feb. 1, 1967.

2,742,462, G. Gever, NEW N-(5-NITRO-2-FURFURYLIDENE)-3-AMINO-2-OXAZOLIDONES, **filed** Jan. 16, 1967, D.C., E.D. Calif. (Sacramento), Doc. S–176, *The Norwich Pharmacal Company* v. *Veterinary Service, Inc.*

2,750,055, J. D. Huffines, REFUSE COMPRESSOR MECHANISM FOR VEHICLES, **filed** Dec. 21, 1966, D.C., N.D. Tex. (Fort Worth), Doc. 4–765, *J. D. Huffines* v. *Fruehauf Corporation.*

2,988,848, J. H. Lemelson, NOISEMAKING TOYS, **filed** Feb. 6, 1967, D.C. Conn. (New Haven), Doc. 11804, *J. H. Lemelson* v. *W. T. Grant Company et al.*

2,996,609, B. A. Wilson, SHEET PANEL, **filed** Jan. 11, 1967, D.C. Mass. (Boston), Doc. 67–37–W, *Wilson Research Corporation* v. *Sonolite Corporation.*

2,997,196, R. L. Emery, DE-NESTABLE MOLDED PULP TRAYS, **filed** Apr. 8, 1963, D.C. Del. (Wilmington), Doc. 2649, *Keyes Fibre Company* v. *Packaging Corp. of America.* Patent held invalid Dec. 16, 1966.

3,021,871, F. J. Rodgers, HOSE FOR PORTABLE PNEUMATIC EQUIPMENT, **filed** Jan. 20, 1967, D.C., S.D.N.Y., Doc. 67/259, *Metropolitan Staple Corp.* v. *Samuel Moore & Co.*

3,035,372, K. F. Mayers, METHOD FOR MAKING A GLASS TO METAL SEAL, **filed** Jan. 10, 1967, D.C. Mass. (Boston), Doc. 67–28–W, *Philips Electronic and Pharmaceutical Industries Corp.* v. *Hermetite Corporation.*

3,042,978, C. Eames et al., STORAGE, **filed** Jan. 18, 1967, D.C., W.D. Wash. (Tacoma), Doc. 3523, *Herman Miller, Inc.* v. *Tech-Craft, Inc.*

3,055,014, H. W. Dozier, FULL FRONT SLIP, **filed** Feb. 6, 1967, D.C., S.D.N.Y., Doc. 67/508, *Fancee Free Manufacturing Company et ano* v. *Leon-Roth Inc. et ano.*

3,095,890, J. Y. Cousteau et al., DEMAND REGULATOR FOR BREATHING APPARATUS, **filed** Jan. 13, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–62–S, *U.S. Divers Co.* v. *American Machine & Foundry Co.*

3,104,663, M. H. Laws, PRESSURIZED MEANS FOR BODY CAVITY TREATMENT, **filed** Dec. 18, 1966, D.C.N.J. (Newark), Doc. 1250–66, *H. M. Birch et al.* v. *Schering Corporation.*

3,112,151, M. S. Buros, METHOD OF IMPLEMENTING MAGNETIC INK CHARACTER RECOGNITION CORRECTIONS, **filed** Jan. 5, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C–13, *Micr-Shield Co.* v. *Spectrum Mir Ltd.*

3,118,151, H. Fredman, ONE-PIECE BELT-TYPE BEDDING CARRIER, **filed** Feb. 8, 1967, D.C., Md. (Baltimore), Doc. 18035, *H. Fredman* v. *Knickerbocker Bed Spring Co. et al.*

3,161,051, J. A. Perry, Jr., LEVEL INDICATING DEVICE AND SYSTEM, **filed** Jan. 5, 1967, D.C., W.D. Mich. (Grand Rapids), Doc. 5518, *O. A. Cooper* v. *Cherry-Burrell Corporation et al.*

3,236,390, H. F. J. Sprengel, SHIP'S CARGO BOOM WITH PENDULUM PURCHASE BLOCK FITTING, **filed** Jan. 9, 1967, D.C., Md. (Baltimore), Doc. 17959, *Blohm & Voss AG* v. *Grace Line, Inc.*

3,243,914, D. B. Poynter, ELECTRICALLY OPERATED COIN BOX DEVICE, **filed** Oct. 6, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1793, *Poynter Products, Inc.* v. *Jewel Companies, Inc.*

3,254,845, P. W. Schlosser, FLUID POWER TRANSFER APPARATUS, **filed** Feb. 6, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c201, *Panther Pumps & Equipment Company, Inc.* v. *Hydrocraft, Inc., et al.*

3,257,541, N. C. Jorgensen, APPARATUS FOR HEATING AND SETTING HAIR, **filed** Feb. 9, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–193–AAH, *A. B. Pederson* v. *Shane Engineering Co., Inc. et al.*

3,274,906, L. Worson et al., JOINT INSTALLATION APPARATUS, **filed** Jan. 4, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–10–WPG, *Edoco Technical Products, Inc.* v. *Peter Kiewit Sons' Co.*

3,277,881, A. G. Bruns, COMBINED TABLE FOR COOKING AND EATING, **filed** Feb. 10, 1967, D.C., N.D. Ga. (Atlanta), Doc. 10738, *A. G. Bruns* v. *Trader Eng's Hibachi Steak House, Inc.*

3,287,193, M. Klein, METHOD OF REPRODUCING A TEXTURED SURFACE PAINTING, **filed** Jan. 23, 1967, D.C., E.D. Mich. (Detroit), Doc. 29502, *Max Klein, Inc.* v. *L. N. Slaes et al.*

3,289,471, L. R. Maxwell, DYNAMOMETER, **filed** Jan. 9, 1967, D.C. Ariz. (Phoenix), Doc. 6232Phx., *Maxwell International Corporation* v. *Automotive Lectronics, Inc.*

3,300,805, L. D. Rizzo, DISPOSABLE ROTARY BRUSH SPACER RING, **filed** Feb. 6, 1967, D.C., E.D. Mich. (Detroit), Doc. 29536, *Newark Brush Company* v. *Jenkins Equipment Co., Inc. et al.*

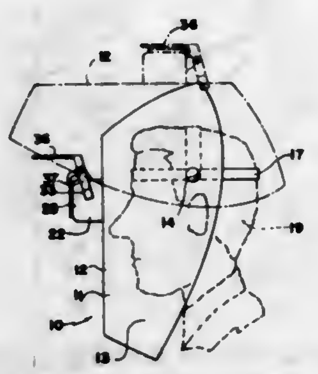
PATENTS

GRANTED MARCH 14, 1967

GENERAL AND MECHANICAL

3,308,477
SHIELD FOR WELDERS' HELMETS

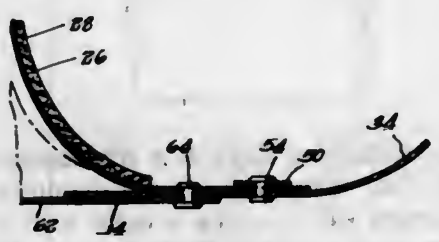
Wayne T. Boyd, Garibaldi Way, Squamish,
British Columbia, Canada
Filed July 12, 1965, Ser. No. 471,360
3 Claims. (Cl. 2—8)



1. The combination of a welder's helmet having a head band and a hood pivotally connected thereto for movement between positions in front of a wearer's face and above his head, said hood having a window; a shield pivotally mounted on the hood and being disposed in a horizontally extending position extending from the hood over the window when the hood is arranged in front of the wearer's face and extending across the window covering the latter when the hood is arranged over the wearer's head; and counterweight means connected to the shield balancing and maintaining the latter in said horizontally extending position.

3,308,478
HEAD PIECE

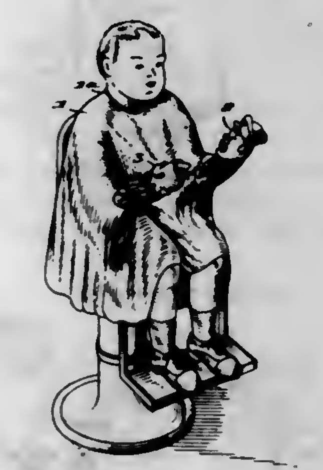
James R. Tate, Chicago, Ill.
(P.O. Box 62, Normal, Ala. 35762)
Filed Aug. 26, 1965, Ser. No. 482,690
1 Claim. (Cl. 2—12)



A head piece comprising, in combination, an elongated anterior band, an interior posterior section connected to one end of the anterior band, said interior posterior section including a first shield stop adjacent to the anterior band and an elongated strip formed integral with the shield stop, a plurality of studs fixed to the elongated strip, an exterior posterior section connected to the other end of the anterior band, said exterior posterior section including a second shield stop adjacent to the anterior band and a second elongated strip formed integral with the second shield stop and partially overlapping the first mentioned elongated strip, said second elongated strip having a plurality of keyhole shaped slots for receiving the studs to lock the elongated strips together, a sweat band fixed to the interior surface of the anterior band, an interior elongated crown strip having one end frictionally pivotally connected to one of said sections, a plurality of second studs mounted on said crown strip, an exterior elongated crown strip frictionally pivotally mounted on the other of said sections and partially overlapping the interior elongated crown strip, said exterior elongated crown strip having a plurality of keyhole shaped slots receiving the studs on the interior elongated crown strip to lock the exterior elongated crown strip to the interior elongated crown strip, a first lateral vertical panel frictionally pivotally connected to the first shield stop and to the anterior band, a second lateral vertical panel substantially parallel to the first mentioned panel frictionally pivotally connected to the second shield stop and the anterior band, and a horizontal plate formed integral with the lateral vertical panels and engageable with the shield stops to limit the movement of the lateral vertical panels in one direction, whereby positioning of the horizontal band in engagement with the shield stops positions the lateral vertical panels laterally of a person's eyes when the device is mounted on the person's head to limit the side peripheral vision of the person.

3,308,479
PUPPET EQUIPPED PROTECTIVE CLOTH FOR USE ON CHILDREN

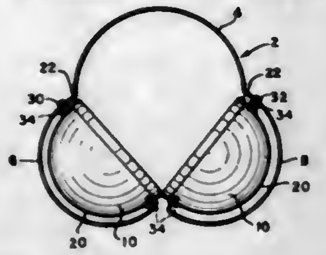
Wayne Sesco, Jr., 5 Prince George Drive,
Hampton, Va. 23369
Filed Jan. 10, 1966, Ser. No. 526,938
5 Claims. (Cl. 2—50)



1. A protective cloth for use on children, said protective cloth comprising a protective panel having an exposed outer side and an under side when in use and having a cut-out portion at its top edge adapted to fit around the neck of the child, said protective cloth being adapted to be secured in place on the child to cover the front portion of the child's body, at least one hollow puppet head secured in place on the outer side of said panel below said cut-out portion, and means providing access to the interior of said puppet head from the under side of said panel to receive one or more fingers of the child for animation of said puppet head.

3,308,480
HEADBAND FOR HEARING GUARDS

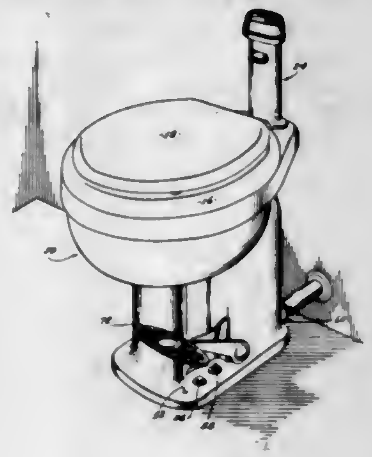
Lorne C. Elder, Hamilton, Ontario, Canada, assignor to Associated Spring Corporation, Bristol, Conn., a corporation of Delaware
Filed Sept. 9, 1965, Ser. No. 486,130
3 Claims. (Cl. 2—209)

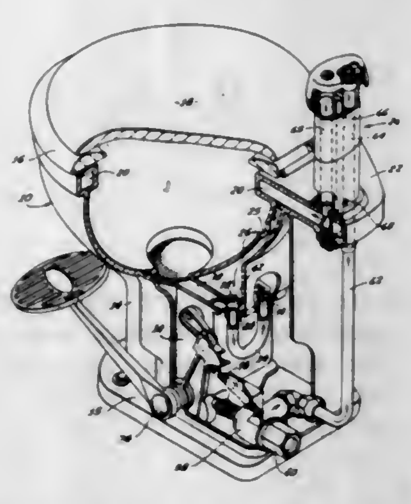


1. A headset for protecting the ears, comprising a unitary integral headband formed from a strip of spring steel of substantially uniform width, said headband having an outwardly bowed central lobe and two outwardly bowed end lobes which are in the same plane as the central lobe and are connected respectively to the ends of the central lobe at obtuse angles to form a supporting part which is generally triangular in shape when not in use, a pair of axially aligned supporting means on each end lobe, and two ear protector devices each of which is associated with one of the end lobes and has means by which it is pivotally mounted on the axially aligned supporting means on its associated lobe.

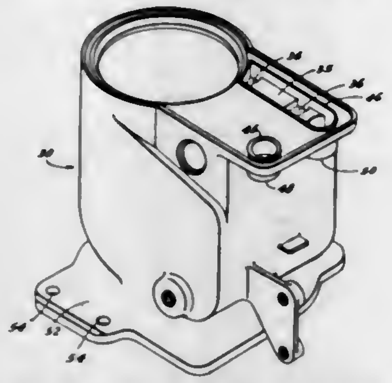
3,308,481
TOILET CONSTRUCTION

Robert F. O'Brien, 1802 Sunview Drive, Orange, Calif. 92667, and Kenneth A. Milette, 16103 Lear Court, Valinda, Calif. 91744
Filed Sept. 1, 1964, Ser. No. 393,686
20 Claims. (Cl. 4—79)





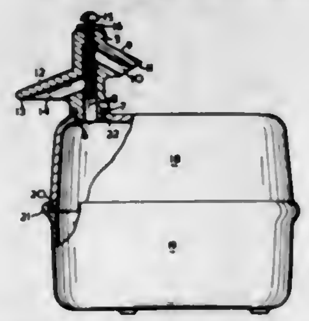
1. In a toilet of the character described for economical use of water, the combination of:
a bowl having a discharge outlet;
control means operable from a normal position through a first range and a second range;
means including a first valve to introduce water into the bowl, the valve being responsive to the control means to open when the control means is in both of said ranges; and
a second discharge valve normally closing the discharge outlet of the bowl and being responsive to the control means to open when the control means is in its second range,
whereby the control means may be moved quickly through both of its ranges and returned quickly to cause a flushing operation using a relatively small quantity of water and with a quantity of water retained in the bowl after the flushing operation,



and whereby for a heavier flushing action the control means may be moved into the first range and held therein for as long a time period as necessary to introduce a desired relatively large quantity of water into the bowl with the second valve substantially closed and later the control means may be moved through the two ranges in sequence and returned to its normal position to flush the bowl through the outlet with the relatively large quantity of water and with a quantity of the water retained in the bowl after the flushing operation.

3,308,482
APPARATUS FOR DEODORISING LAVATORIES AND THE LIKE

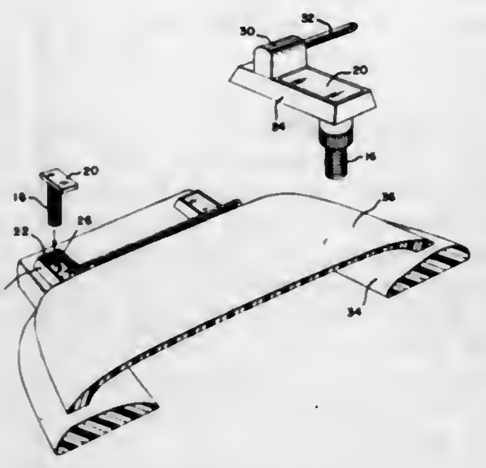
Douglas Berry Holland, 8a Church St., North Sydney, New South Wales, Australia
Filed Jan. 27, 1964, Ser. No. 340,408
1 Claim. (Cl. 4—228)



Automatic deodorising apparatus for deodorising lavatories and the like, characterised by a deodorant measuring and dispensing valve having a body with a bore passage extending axially thereof from a closed top or outer end to the open lower end formed for connection to a supply container holding a quantity of the deodorant fluid, said bore passage containing a fluid supply adjusting member extending thereinto from the top or outer end and arranged for advancement into and retraction from said bore passage for reducing or increasing the volumetric area thereof, and having means for locking a setting, a first and upper nozzle providing an air entry extending out from the said bore passage and body, and a second nozzle preferably of longer form also extending out from said bore passage and body at a location below and on the opposite side to said first nozzle and constituting the water entry and deodorant fluid outlet, the fluid supply adjusting member being of beaded screw-like form screwing through a threaded orifice in the body, the fluid supply adjusting member being arranged at one side of the bore passage of the body.

3,308,483
TOILET SEAT CONSTRUCTION

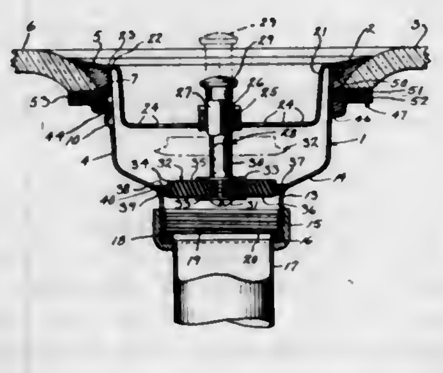
George Miller, 5457 La Forest Drive, La Canada, Calif. 91011
Filed Jan. 31, 1964, Ser. No. 341,572
2 Claims. (Cl. 4—236)



1. In a toilet seat hinge structure suitable for attachment to a toilet bowl, the improvements comprising:
(a) means for securing said hinge structure to a toilet bowl, said means including bolts and nuts for attaching said hinge structure to said bowl;
(b) a pair of planar supports integral with the said hinge structure, said planar supports also being integral with the said means for securing said hinge structure to said toilet bowl, said supports being fixed in a horizontal plane when said hinge structure is attached to the toilet bowl, said supports extending beneath the edge of said toilet seat at the back hereof and having a portion in supporting contact with the bottom surface of said seat with said seat is horizontal.

3,308,484
SINK STRAINER

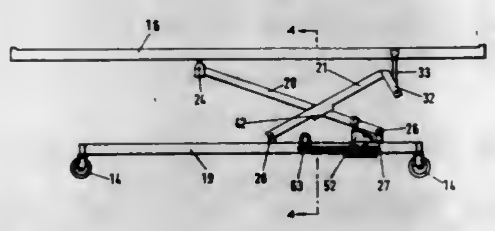
Eugene A. Povalski, Kohler, Wis., assignor to Kohler Co., Kohler, Wis., a corporation of Wisconsin
Filed May 5, 1964, Ser. No. 365,031
5 Claims. (Cl. 4—287)



1. In a sink strainer, the combination comprising
a strainer body having a cup portion, a circumferential supporting flange extending laterally outward from its top to bear downward against an upper surface of a sink, a constricted throat portion at its lower end adapted for connection to a tailpiece, and a retaining shoulder on its lateral surface;
and a cam lock ring adapted to fit around said strainer body and to bear upward against a lower surface of said sink, and having a cam surface engageable with said retaining shoulder on said strainer body, to bear downward against said retaining shoulder to tightly secure said strainer body to said sink when it is assembled with said strainer body.

3,308,485
BEDS

Dermot Knox Lloyd Nesbit-Evans, Wednesbury, England, assignor to J. Nesbit-Evans & Company Limited, Wednesbury, England, a British company
Filed Nov. 29, 1965, Ser. No. 510,220
Claims priority, application Great Britain, Dec. 24, 1964, 52,512/64; Sept. 2, 1965, 37,470/65
2 Claims. (Cl. 5—63)



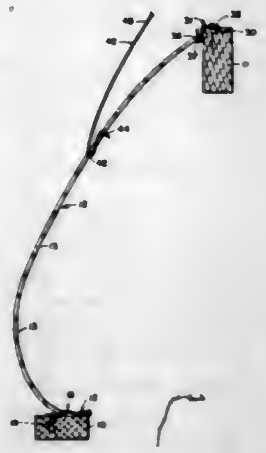
1. A hospital bed or trolley comprising:
a base frame,
a mattress frame located above the base frame,
a linkage connected to the base frame and to the mattress frame,
a hydraulic jack for elevating and lowering the mattress frame relative to the base frame, and
a swinging link;
said linkage comprising a pair of crossed members, the lower ends of both the said pair of members being pivotally connected to the base frame about axes fixed in relation to the base frame,
the upper end of one of said pair of members being likewise pivotally connected to the mattress frame about an axis fixed in relation to the mattress frame,
the upper end of the other of said pair of members being pivotally connected to said swinging link and said swinging link being itself pivoted about an axis fixed in relation to the mattress frame;
said crossed members, at the point of intersection, being connected together by a roller on one member engaging a track upon the other member; and
said hydraulic jack being located with one end abutting said base frame, and the other end abutting said linkage.

3,308,486
FURNITURE STRUCTURES AND HARDWARE THEREFOR

Rome E. Jones, Newton, N.C., assignor to Prestige Furniture Corporation, Newton, N.C., a corporation of North Carolina
Filed Mar. 20, 1964, Ser. No. 353,399
8 Claims. (Cl. 5—259)

1. A seating structure comprising a frame including a pair of spaced frame rails, a sinuous, wire spring comprising a series of opposing, staggered, wire loops connected by substantially straight, wire legs, said spring extending in the form of an arch between said rails, a substantially flat clip mounted on a face of one of said rails, said clip having a spring seat immediately opposite to said face and facing said face, in which seat is seated the leg of said spring which is adjacent the last or outer leg of an end of said spring and also having an outwardly facing seat in which said last leg is seated, the terminal end of said spring being held in substantially flat orienta-

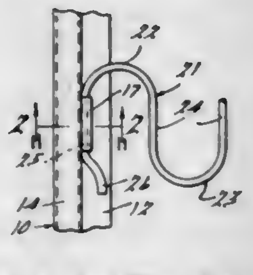
tion next to and substantially parallel with said face of said rail with the curvature of the arch of said spring



being the sharpest in the portion adjacent said terminal end, and means attaching the opposite end of said spring to the other rail.

3,308,487
FRAME ELEMENT FOR SUPPORTING SINUOUS SPRING STRIPS

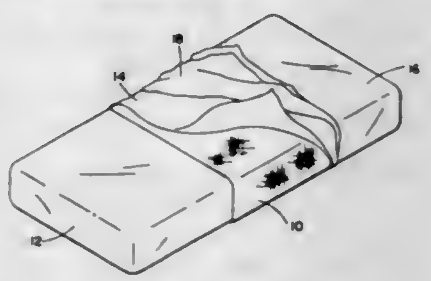
Gordon J. Birgbauer, Jr., Grosse Pointe Park, Mich., assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed May 18, 1964, Ser. No. 368,148
5 Claims. (Cl. 5—260)



1. In combination, a plurality of sinuous spring strips, a frame element for supporting the ends of said sinuous spring strips, said element having a web and a flange portion extending therefrom, and sections lanced in an adjacent web and flange portion which are pushed outwardly to form elongated tunnels between the web and flange portion, the ends of said sinuous spring strips being disposed in said tunnels.

3,308,488
BACTERIOSTATIC DRAWSHEET

Richard J. Schoonman, 1020 E. Wendover Ave., Greensboro, N.C. 27405
Filed May 3, 1965, Ser. No. 452,765
8 Claims. (Cl. 5—335)



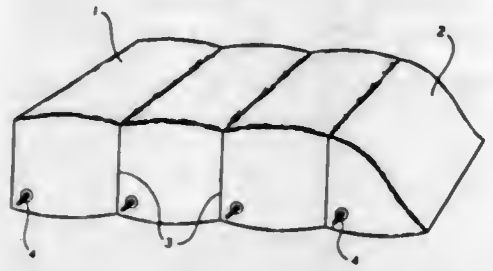
1. A protective bedcovering comprising:

(a) a thin film of water-impervious flexible plastic having an obverse side and a reverse side, each characterized by an intaglio design which defines a corresponding relief design on the opposite side to texture both sides of the film, and

(b) a bacteriostatic agent on both sides of the plastic film effective to kill or inhibit the growth of bacteria coming in contact with said film.

3,308,489
CUSHION FOR RESTING LEGS HIGH

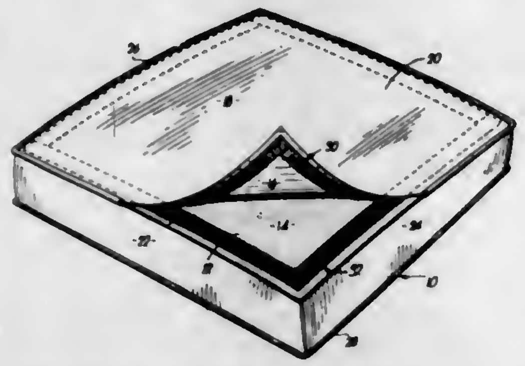
Irma Winkler, Maxingstrasse 68, Vienna XIII, Austria
Filed Dec. 21, 1964, Ser. No. 419,867
Claims priority, application Austria, Jan. 9, 1964, 159/64
4 Claims. (Cl. 5—338)



1. A cushion adapted for use in the treatment of thrombophlebitis comprising at least one compartment of sufficient height to maintain the heel and shank of a reclining person at a raised level and in a substantially horizontal position, and an additional, substantially wedge-shaped compartment fully to support the ham in inclined position, each of the said compartments being separately inflatable, said wedge-shaped compartment along the line where it joins said first-mentioned compartment being adapted to support and rest the knee joint in a semi-bent position to assure complete relaxation of leg muscles, whereby the backflow of blood through the veins will be at its maximum.

3,308,490
CUSHION CONSTRUCTION

Marie L. Cacioppo, Kansas City, Mo., assignor to Louis Marino, Kansas City, Mo.
Filed Sept. 8, 1965, Ser. No. 485,898
1 Claim. (Cl. 5—345)



In combination with a cushion having:

a body of resilient material having an upper surface, a lower surface and a sidewall; and

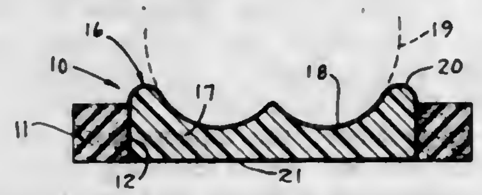
a flexible cover completely enclosing the body and provided with a pair of sections complementally engaging proximal surfaces, together with a continuous panel complementally engaging said sidewall, each section having a continuous peripheral bead joining the same with said panel,

structure interposed between one of said sections and its corresponding surface adjacent and spaced inwardly from the proximal bead for holding said sections against shifting out of alignment with corresponding surfaces and holding said panel against shifting out of alignment with said sidewall comprising:

- a first continuous strip engaging said one section adjacent the peripheral margin of the latter;
- means attaching said strip to said one section;
- a second continuous strip engaging said corresponding surface adjacent the peripheral margin of the latter in alignment throughout with said first strip; and
- means attaching said second strip to said corresponding surface,
- one of said strips having a plurality of raised pile threads provided with a multitude of closed loops extending outwardly toward the other of said strips,
- said other strip having a plurality of raised pile threads of relatively stiff, yieldable material extending outwardly toward said one strip,
- said threads of the second strip having free ends, presenting a multitude of hooks,
- said hooks being releasably interlocked with said loops,
- whereby said beads are maintained by said structure in positions contiguous with corresponding peripheral edges of the sections and the cover thereby held against its tendency to become displaced relative to the body during use of the cushion.

3,308,491
CUSHION STRUCTURE

Wayman R. Spence, Aurora, Colo., assignor to Stryker Corporation, Kalamazoo, Mich., a corporation of Michigan
Filed Dec. 22, 1965, Ser. No. 515,525
16 Claims. (Cl. 5—348)



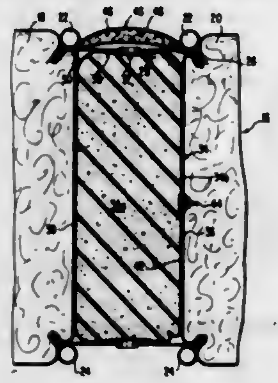
1. A cushion structure attachable to a supporting device for engaging a portion of a body, comprising:

a self-contained, resiliently flexible and semisolid core means having a soft, nonfriable and jelly-like consistency, said core means being hypoallergenic, stable over a selected temperature range and incapable of supporting the growth of algae and bacteria; and

wall means adjacent said core means for protecting the said core means from external contamination.

3,308,492
RECLINING OR SLEEPING EQUIPMENT

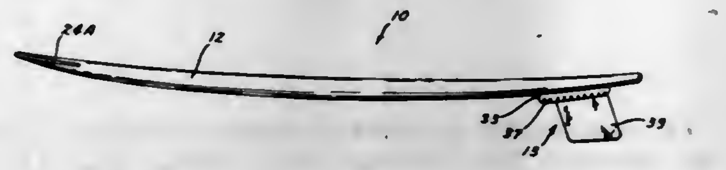
Henry H. Lovette, 2431 English Road, High Point, N.C. 27260
Filed Dec. 28, 1965, Ser. No. 516,880
7 Claims. (Cl. 5—352)



1. A reclining or sleeping equipment comprising at least two independent units which are compressible to a desired extent under body weight, said units having longitudinal sides adapted to be disposed in confronting, side by side, juxtaposed relation, said sides having upper and lower edges, releasable fastener means adjacent said upper and lower side edges joining said sides together in slightly spaced relation so as to assemble said units into a cooperating relationship with the units having coplanar upper supporting surfaces, and an inherently compressible member interposed between said sides and said fastener means and adapted to fill any void existing between the sides and fastener means to complement the upper supporting surfaces and reinforce the sides and prevent the upper edges of the sides from sagging under body weight whereby the upper supporting surfaces function as one in providing uniform support over their entire widths and lengths.

3,308,493
SURFBOARD

Frederick A. Lambach, Omaha, Nebr., assignor to Plastilite Corporation, Omaha, Nebr., a corporation of Nebraska
Filed Dec. 21, 1964, Ser. No. 419,831
9 Claims. (Cl. 9—310)

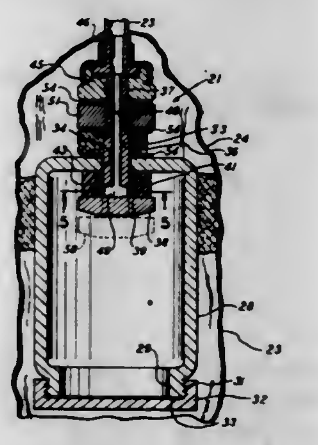


1. A surfboard comprising:

- frame means including an elongated bar bowed slightly from end-to-end;
- a body of a low density material encompassing said frame means, and having the shape of a surfboard; and
- keel means including a keel detachably connected to said frame means and extended in an exposed condition beyond said body, said keel movable longitudinally of said from one secured position to another secured position.

3,308,494
INFLATABLE LIFE PRESERVER

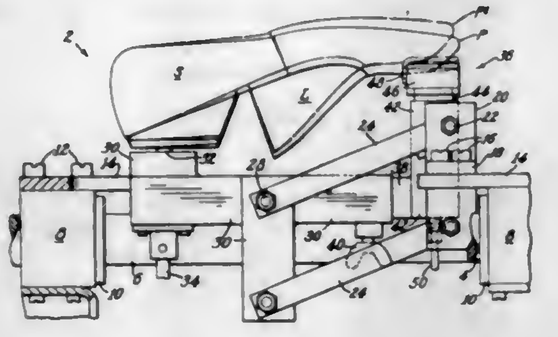
Robert J. Licher, 170 N. Adams, Sierra Madre, Calif. 91024
Filed Nov. 30, 1964, Ser. No. 414,673
4 Claims. (Cl. 9—317)



1. A life preserver comprising an inflatable support bladder, a gas inlet on the bladder, a compressed gas container, a valve body adapted to connect to the gas container, a valve port within the body, a valve member adapted to seat in sealing relationship with the port so as to preclude flow between the container and the gas inlet, bias means urging the valve member out of contact with the valve port, peripherally restrictive means adapted to hold the valve member in sealing relationship with the valve port, said restrictive means being water sensitive such that contact with water relaxes the restriction on the valve member, and a chamber adapted to receive the valve member when the bias means urges the valve out of sealing relationship with the valve port, said chamber conducting compressed gas from the container to the gas inlet of the inflatable bladder.

3,308,495
SHOE CARRIAGE SPINDLES

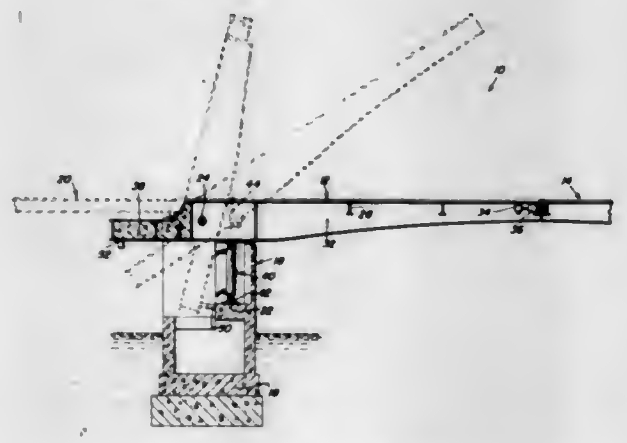
Robert C. Simmonds, Jr., Topsfield, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Nov. 9, 1964, Ser. No. 409,919
15 Claims. (Cl. 12—127)



1. A shoe last supporting spindle comprising a rigid pin having a free end and lateral recesses spaced from said free end, movable pressure applying elements disposed in the recesses, and means mounting said elements for movement laterally outwardly from the recesses upon pressure being applied to said elements in a direction different from that in which they move outwardly.

3,308,496
HYDRAULIC OPERATING SYSTEM FOR OPENING BRIDGES

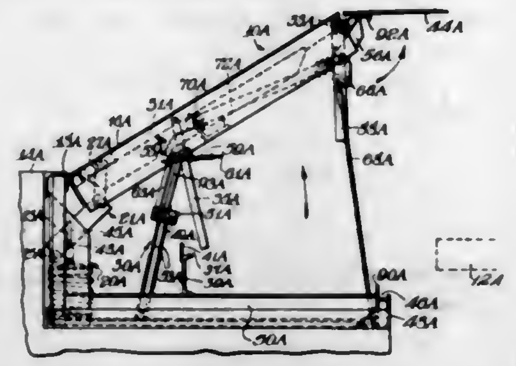
George G. Mooney and Earnest C. Driver, Miami, Fla., assignors to Bascule Design Consultants, Inc., a corporation of Florida
Filed Apr. 17, 1964, Ser. No. 360,490
9 Claims. (Cl. 14—36)



1. In combination with a bridge span pivotally mounted about a fixed axis, means for movement of the span between a lowered position and an elevated position comprising a pair of laterally spaced fluid motor devices having pistons connected to the span forwardly of the fixed axis and fluid operating means connected to said motor devices for extension and retraction of the pistons by equal amounts to elevate and lower said span, and means mounting the motor devices for pivotal displacement during said movement of the span from a substantially vertical position in both the lowered and elevated positions of the span, said fluid operating means including, fluid pressure supply means, directional control means operatively connecting the supply means to the fluid motor devices for extension or retraction of the pistons, stroke limiting means operatively connected to the motor devices for decelerating movement of the pistons as the span approaches the lowered or elevated positions thereof, and overload responsive means operatively connected to the motor devices for limiting pressure developed therein.

3,308,497
POWER-OPERATED LOADING RAMP

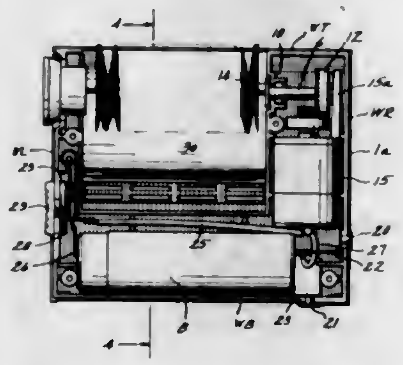
Robert D. Lambert, Fort Wayne, Ind., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Original application Nov. 14, 1962, Ser. No. 237,691, now Patent No. 3,255,478, dated June 14, 1966. Divided and this application Sept. 14, 1965, Ser. No. 496,221
11 Claims. (Cl. 14—71)



1. A power-operated ramp for bridging the space between a vehicle bed and a loading dock comprising a platform, hinge means for connecting the rear of said platform to the edge of said loading dock, powered elevating means capable of reacting between said loading dock and said platform for rotating it upwardly about said hinge means, a control means connected to said platform arranged to cooperate with said powered elevating means to raise said platform to an upwardly inclined position above the bed of a vehicle and to cause said platform to lower under the influence of gravity and freely rest upon said bed, and a retarding means capable of reacting between said platform and said loading dock for preventing said platform from dropping too fast when its outer end is unsupported, said powered elevating means comprising a varying moment spring means capable of reacting between said platform and said loading dock to maintain said platform in a substantially raised condition only when it is above a predetermined angle of inclination, and said control means comprising an auxiliary lifting means capable of reacting between said platform and said loading dock for causing said platform to rise from a position below said predetermined angle to one above it.

3,308,498
BATTERY-POWERED CLOTHES BRUSH

Ross M. Evans, Jr., Cleveland, Ohio, assignor to General Electric Company, a corporation of New York
Filed Mar. 1, 1965, Ser. No. 435,836
6 Claims. (Cl. 15—23)



1. A compact clothes cleaner comprising:

(a) a hollow rectangular housing having top, bottom, side and end walls and dimensioned so that the top and bottom walls may be readily gripped by the hand of a user, said housing having separable housing portions, two of said housing portions having a recessed edge which mutually cooperate to form a nozzle through a side of said housing;

(b) a brush within said housing, said brush being rotatably secured within said housing lengthwise along a first side of said housing with a peripheral portion of said brush projecting outwardly through said nozzle;

(c) an electric motor secured within said housing adjacent a first end of said housing;

(d) means in said housing for drivingly connecting said motor to said brush for rotating said brush;

(e) battery means within said housing located adjacent a second side of said housing opposite said brush;

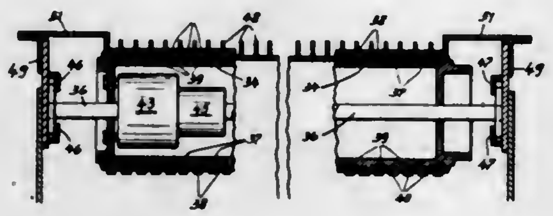
(f) a switch in said housing electrically connected to said motor and said battery for operating said motor in response to movement of a switch actuator member extending outwardly through said housing;

(g) wall means behind said brush defining a dirt-collecting chamber in said housing for receiving particles forced from said brush, said dirt-collecting chamber being disposed in said housing partially surrounded by said brush, said motor and said battery means; and

(h) a clean-out door mounted on said housing for providing easy removal of particles collected in said dirt-collecting chamber.

3,308,499
SHOE-CLEANING APPLIANCE

Karl Stieger, Toggenburgerstrasse 33, Flawil, Saint Gall, Switzerland
Filed Jan. 22, 1965, Ser. No. 427,343
Claims priority, application Switzerland, Jan. 29, 1964, 1,179/64
4 Claims. (Cl. 15—36)



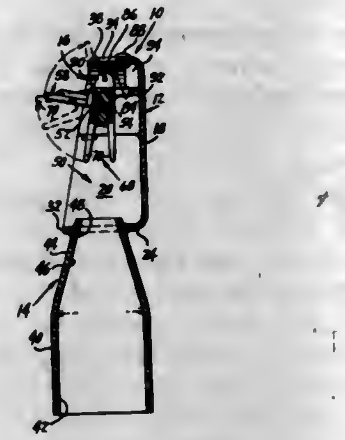
1. In a shoe-cleaning appliance having a grate formed by an array of parallel transversely spaced bars defining a treading surface, roller means extending axially at opposite ends of the bars of said array substantially the full length thereof transversely to said bars and therebelow, drive means for rotating said roller means, and a plurality of endless brushes passing around said roller means and displaceable thereby while extending between the bars of said array and having bristles projecting upwardly beyond said surface, the improvement wherein:

(a) each of said roller means comprises a rotatable hollow drum provided with axially spaced circumferential belt beds each receiving one of said brushes for entraining same upon rotation of said drums, the beds of said drums being axially staggered with respect to one another, each of said drums further comprising slide rings disposed between the respective circumferential beds and rotatable relatively to the respective drum while carrying a respective brush entrained by one of the beds of the other drum whereby alternate ones of said brushes are frictionally entrained by and slipped with respect to each of the drums, said drums being closed at their extremities; and

(b) said drive means includes a respective drive motor received within each of said hollow drums, and transmission means coupled with each of said motors for rotating the respective drum.

3,308,500
ANIMAL COMB AND BRUSH COMBINATION

Oscar G. Woodruff, 404 N. Oro St., Stockton, Calif. 95205
Filed Oct. 11, 1965, Ser. No. 494,706
3 Claims. (Cl. 15—369)



1. An animal grooming implement comprising a frame including a top wall, a pair of side walls, a front wall, a rear wall and an open bottom, said rear wall having an opening therein, a tubular member having an open end secured in said opening, said tubular member comprising a handle and a connector adapted to be secured to a source of vacuum pressure, said side walls having aligned slots therein, at least one of said slots communicating with said open bottom, a grooming implement body, a pair of stub axles extending from said body rotatably journalled in said slots, releasable means retaining said axles in said slots, a first grooming implement extending from said body, a second grooming implement extending from said body at substantially right angles to said first implement, spring means in said frame biasing said body to a position wherein said first element extends outwardly of said frame through said open bottom to a position substantially perpendicular to said top wall, stop means on said implement body limiting rotation of said body in one direction to said position, rotation of said body in the other direction against the bias of said spring means extending said second grooming implement to a position substantially perpendicular to said top wall, and stop means limiting rotation of said body to said last mentioned position.

3,308,501
MARKING PEN

Gerald G. Marsh, Portland, Oreg., assignor to Joyce G. Marsh, Portland, Oreg.
Filed Sept. 17, 1964, Ser. No. 397,191
2 Claims. (Cl. 15—563)

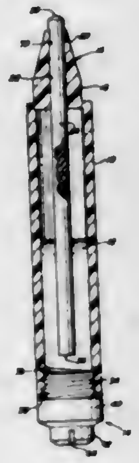
1. A marking pen comprising:
a one-piece body and tip,
said body being hollow to define a fluid ink reservoir and open at one end thereof,
said tip forming a continuation of the opposite end of said body and being solid so as to close said opposite end,
said tip having an axial bore extending therethrough into communication with said reservoir,
said tip and body being formed of relatively rigid material so that said reservoir has a constant volume,
a compressible wick of only one thickness extending through said bore and, at least initially, throughout substantially the entire length of said reservoir so that said wick is immersed in ink within said reservoir in all positions of said pen,
said wick having the same cross sectional shape as said

bore, completely filling said bore and being under compression therewithin so as to prevent leakage of liquid from said reservoir through said bore when disposed with said tip in writing position,

an outer portion of said bore being necked in so as to have a normal diameter less than that of the remainder of said bore and less than the diameter of said wick and so as to have a pinching effect on said wick,

said tip being tapered toward its outer extremity so as to progressively reduce the thickness of the walls thereof defining said outer bore portion and thereby progressively increase the flexibility of said walls in the same direction,

the outer extremity of said tip being axially slotted to form resilient fingers biased inwardly of the remainder of said bore and which press into said wick to prevent the pushing of said wick inwardly of said bore, but which permit the drawing of said wick outwardly of said bore, said slots extending laterally inwardly of said tip to said bore but having a length less than the length of said bore so that said slots are cut off from direct communication with said reservoir by said wick,



said open end of said body being closed by a filler and flow control cap including a cylindrical and externally threaded plug portion extending into said open end and mating with complementary internal threads on the inner wall of said body and a flange portion engaging an end wall portion of said body at said open end when said plug portion is fully threaded into said body,

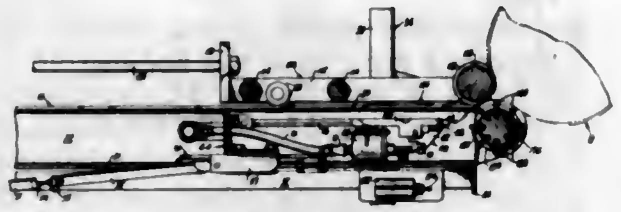
said cap including said flange and plug portions being made of a single solid piece of material,

and means for threading and unthreading said plug portion from said body so as to regulate the bleeding of air into the interior of said body between said flange and plug portions and between the mating threads of said plug and said body thereby to control the flow of fluid through said wick to the writing tip thereof.

3,308,502
SKINNING MACHINE

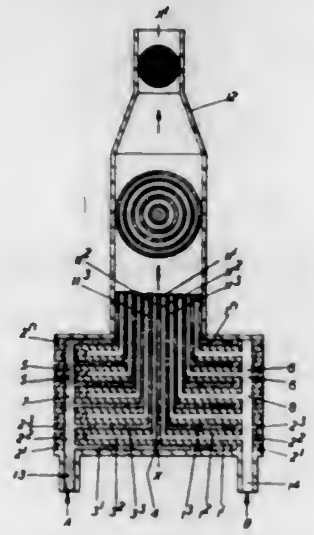
Anthony P. Bednarz, East Hartford, and David O. Roser, Glastonbury, Conn., assignors to Allied Kid Company, Boston, Mass., a corporation of Massachusetts
Filed June 16, 1965, Ser. No. 464,331
16 Claims. (Cl. 17—21)

1. In an apparatus for removing a hide from a carcass, hide separating means comprising a first roll having longitudinally extending blades thereon and a pressure roll parallel to the first roll, said rolls being adapted to receive a hide flap of a carcass therebetween with the carcass abutting the rolls, pulling means having means for attachment to a hide flap for pulling the hide flap through the rolls, and means for rotating the first roll in a direction such that the blades engaging the hide move in a direction opposite to the direction of movement of the hide as it is pulled by said pulling means.



3,308,503
MIXING DEVICE FOR SPINNERETTES

Rene Fays, Paris, France, and Walter Settele, Seeburg-Lucerne, Switzerland, assignors to Textile & Chemical Research Company Limited, Vaduz, Liechtenstein, a corporation of Liechtenstein
Filed Mar. 17, 1964, Ser. No. 352,465
Claims priority, application France, Mar. 22, 1963, 928,925
4 Claims. (Cl. 18—8)

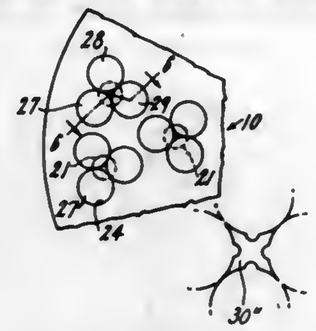


1. Apparatus for spinning crimped artificial or synthetic fibres and filaments comprising two or more juxtaposed constituents which are identically distributed over the entire length of the fibres and filaments so as to impart thereto a continuously heterogeneous structure in the longitudinal direction, said apparatus comprising a stack of thin discs formed with circular central perforations of increasing diameter, said discs being separated from one another by annular packings so that the assembly forms a succession of chambers, and means feeding each of said chambers with a predetermined material to be spun, the said chambers discharging in succession through said center perforations so as to form a column of said material consisting of a succession of thin annular layers adapted to be fed to a spinneret.

3,308,504
SPINNERETS

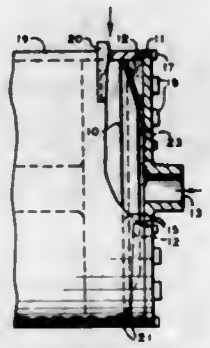
Daniel Shichman, Cedar Grove, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed July 22, 1965, Ser. No. 473,920
14 Claims. (Cl. 18—8)

1. A spinneret provided with at least one cusped extrusion orifice having at least three side walls which are convex inwardly of the orifice, said orifice being defined between a set of pins of circular cross-section arranged in a ring formation with each pin tangent to two of the other pins, and said walls of said orifice being constituted by the minor arcs of the circumferential pin surfaces lying between their points of tangency.



3,308,505
CENTRIPETAL EXTRUSION METHOD AND APPARATUS THEREFOR

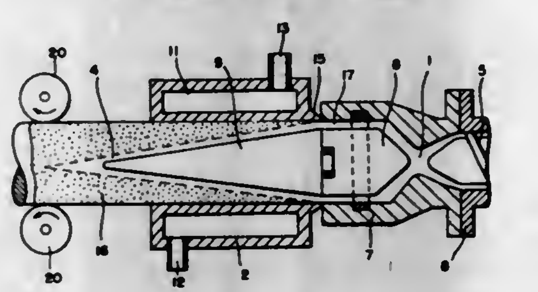
Louis C. Bearer and Mark M. Bowman, Jr., Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 16, 1963, Ser. No. 309,091
6 Claims. (Cl. 18—12)



1. An extrusion apparatus comprising
(a) a case member having an opening therein,
(b) a rotatable plate member having a substantially planar surface,
(c) a stationary plate member having a substantially planar surface fixedly attached to said case member and positioned in front of said opening, said stationary plate member having an extrusion orifice in a portion thereof, the planar surface of said stationary plate member being parallel to and closely spaced from said rotatable plate planar surface, thereby defining an extrusion channel, the spacing between said parallel plates being sufficient to cause visco-elastic extrusion of plastic materials from the periphery of said plates through said extrusion orifice by relative rotation of said parallel plates about an axis passing through said extrusion orifice and substantially perpendicular to said plates at that point,
(d) means for introducing into said space between said parallel surfaces a plastic material, said introducing means including a feed channel formed by a slanting surface on said rotatable member circumscribing said planar surface on said rotatable member, said slanting surface being inclined away from said stationary plate member planar surface at an oblique angle thereto,
(e) said introducing means also including a second orifice in said casing connected to said feed channel at a first point,
(f) means in said feed channel to taper the thickness of said feed channel between said fixed plate planar surface and said slanting surface from said first point to a second point in said feed channel spaced a substantial distance from said first point, said means in said feed channel maintaining the thickness of said feed channel constant from said second point to a third point in said feed channel spaced farther around said rotatable member planar surface to thereby define sections in said feed channel of increasing shear and constant shear.

3,308,506
PROCESS AND APPARATUS FOR THE CONTINUOUS PRODUCTION OF PROFILES FROM THERMOPLASTICS

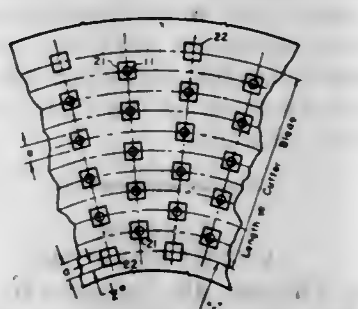
Richard Pflueger, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Nov. 27, 1964, Ser. No. 414,313
Claims priority, application Germany, Nov. 30, 1963, B 74,475
2 Claims. (Cl. 18—12)



1. Apparatus for making rods or other sections from molten thermoplastics which comprises: a molding unit, means for passing molten thermoplastic material into said unit; cooling means surrounding said unit for solidifying said material; means for maintaining a molten cone of said material within said unit, said means including a tapering displacement member, said displacement member being rigidly and concentrically arranged with its apex in the direction of flow of said material and projecting into said molding unit; and means for withdrawing said material in a solidified form from said molding unit.

3,308,507
EXTRUSION APPARATUS

Donald M. Black, Odessa, Tex., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Sept. 17, 1965, Ser. No. 488,036
2 Claims. (Cl. 18—12)

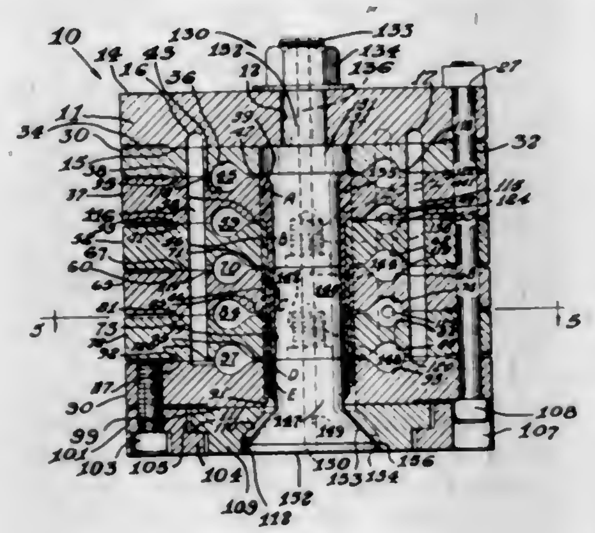


1. In an extrusion apparatus for converting thermoplastic polymeric materials to granular form, means for extruding said materials comprising a die plate member, said die plate member having a plurality of die orifices radially disposed about a central axis, rotary cutter means mounted for rotation about said axis for cutting the extruded material into said granules, said cutter rotating about said axis in substantially sliding contact with the face of said plate member, a plurality of wear plate means located one each about each of said die orifices, said wear plate means being positioned in recesses within said die plate member in substantially coplanar relation to the surface of said die plate member adjacent said rotary cutter, said wear plate means being of generally rectangular configuration and dimensioned whereby the radially outermost point on each wear plate in any one

row of die orifices is at least equal to the radial distance from said central axis to the innermost radial point on a wear plate of the adjacent radially outer row of die orifices, so as to effect uniform wear along substanaially the entire length of said cutter during rotation thereof.

3,308,508
DIE

Walter J. Schrenk, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 2, 1964, Ser. No. 401,093
6 Claims. (Cl. 18—14)

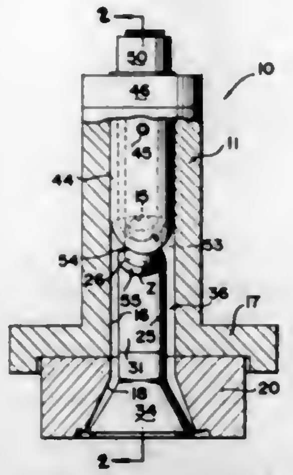


1. A tubing die consisting essentially of a body portion, a plurality of die plates, each of the die plates defining a generally centrally disposed aperture, each of the die plates being adapted to interfit with one another and be maintained in sealing relationship, the adjacent die plates having generally annular recesses disposed adjacent the central opening, the annular recesses in adjacent die plates defining a generally annular plenum and a generally annular passage extending between the annular plenum and the centrally disposed apertures, a terminal die plate disposed remote from the body portion having defined therein an aperture coaxial with the apertures of the die plates, a fixed mandrel disposed within the apertures of the terminal die plate and the die plates so positioned so as to define an annular extrusion orifice in cooperation with the terminal die plate, the die plates and die body forming a plurality of passageways extending through the die plates and communicating with selected plenums.

3,308,509
EXTRUSION DIE

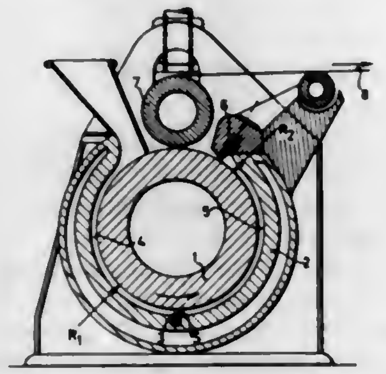
Pong R. Hsia, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed June 1, 1965, Ser. No. 460,426
11 Claims. (Cl. 18—14)

1. In an extrusion die of the type including a body having a bore which opens through an end portion of the body, a mandrel disposed longitudinally in said bore, a first portion of said mandrel at the end portion of the body being spaced from the wall of the bore to provide a plastic conducting passage, a second portion of said mandrel being axially spaced from the first portion to provide a continuous channel in communication with the plastic conducting passage, and means for introducing hot flowable plastic into said continuous channel at a predetermined point whereby the same is directed by the continuous channel into and through said conducting passage, the improvement comprising first and second flow-directing surfaces carried by said first and second mandrel portions respectively, said surfaces being continuous and in opposed relationship to each other, one of said surfaces being planar and angularly related to the axis of said bore, the other of said surfaces being curved, and a portion of said other surface concavely opening toward said one surface.



3,308,510
FILM EXTRUSION MILL

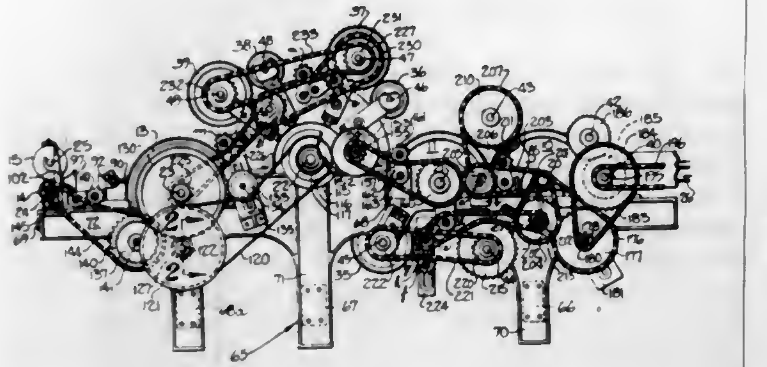
Ernesto Gabbrielli, 9 Spechtweg, Lustenau, Austria
Filed July 2, 1965, Ser. No. 469,249
Claims priority, application Switzerland, July 7, 1964, 8,873/64
2 Claims. (Cl. 18—15)



1. In a pressure shaping apparatus, in combination:
(a) a support;
(b) a roll mounted on said support for rotation about an axis;
(c) a shell secured on said support against rotation and enveloping a portion of said roll,
  (1) respective opposite faces of said roll and of said shell defining therebetween a circumferentially extending chamber having two circumferentially terminal portions,
  (2) the spacing of said shell and of said roll determining the width of said chamber;
(d) axially extending baffle means mounted on said shell in said chamber between the terminal portions thereof for movement toward and away from said roll, said baffle means circumferentially dividing said chamber into two or more compartments, said baffle means including
  (1) an axially elongated member partly received in an axially elongated groove in said face of the shell, and
  (2) actuating means for actuating movement of said baffle member outward of said groove and toward said face of said roll against the pressure of a material in said chamber;
(e) feed means for feeding a material to be shaped to one of said terminal portions; and
(f) a shaping die at the other terminal portion.

3,308,511
CARDING MACHINE

Harry K. Culpan, Johnsonville, S.C., assignor to Wellman Industries, Inc., a corporation of Delaware
Filed Mar. 16, 1964, Ser. No. 352,174
6 Claims. (Cl. 19—105)

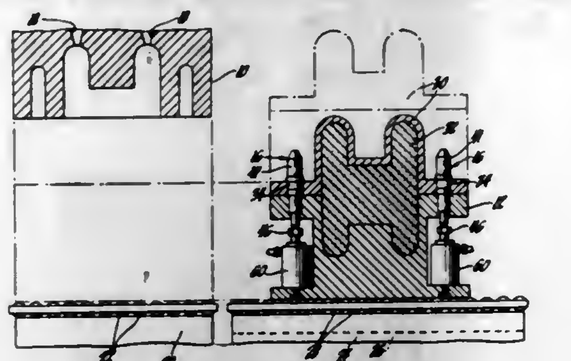


1. In a carding machine having a frame, first and second serially arranged licker-in cylinders, means for feeding fibers to said first licker-in cylinder whereby fibers are transferred from the first to the second licker-in cylinder, a third, main, cylinder arranged to receive fibers from said second licker-in cylinder, and means for driving said main cylinder; improved means for transmitting rotation from said main cylinder to said licker-in cylinders comprising
- a first pair of wheels in fixed axial relation to the respective second and third cylinders, one of said first wheels being a first gear and the other of said first wheels being a first sprocket wheel,
- a second gear journaled on said frame and meshing with said first gear,
- a second sprocket wheel in fixed axial relation to said second gear, a first endless sprocket chain engaging said first and second sprocket wheels and thereby rotating said second cylinder in the opposite direction from that of said third cylinder,
- a second pair of wheels in fixed axial relation to the respective first and second cylinders, one of said second wheels being a third gear and the other said second wheels being a third sprocket wheel,
- a fourth gear journaled on said frame and meshing with said third gear,
- a fourth sprocket wheel in fixed axial relation to said fourth gear, and a second endless sprocket chain engaging said third and fourth sprocket wheels and thereby rotating said first cylinder in the opposite direction from that of said second cylinder.

3,308,512
CORE DRIER CLAMPING MECHANISM

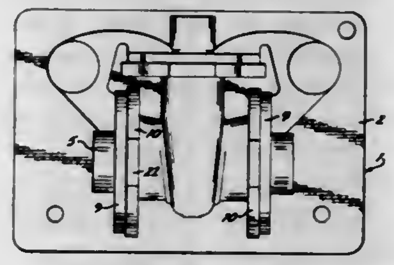
Gerald H. Egan, Beamsville, Ontario, and Ross C. Smith and Stanley M. Thompson, St. Catharines, Ontario, Canada, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 3, 1965, Ser. No. 461,038
5 Claims. (Cl. 22—13)

5. In a core molding apparatus including a lower core box portion, a drier adapted to be placed over said lower core box for receiving a core formed in the lower core box portion when said lower core box is inverted, the improvement comprising of means for temporarily securing said drier to said core box said means comprising a cylindrical pin secured to said lower core box, said drier having an opening therein to receive said pin, said pin having an intermediate elastomeric portion adapted to extend through said opening when said drier is positioned on said core box and means for expanding said elastomeric portion whereby the said elastomeric portion extends beyond the diameter of said opening to thereby lock said drier to said core box.



3,308,513
APPARATUS FOR CORING BOLT HOLES

Milton E. Rowland, Long Beach, Calif., assignor to Pacific Valves, Inc., Long Beach, Calif., a corporation of California
Filed June 1, 1965, Ser. No. 460,181
5 Claims. (Cl. 22—131)



1. An apparatus for coring bolt holes in a steel casting during the casting operation comprising,
- a mold having cavities therein conforming to the shape of the steel article, including a cavity conforming to the shape of a flange on the article;
- said mold having another cavity therein adjacent and parallel to the cavity conforming to the shape of the flange on the article,
- a bolt hole core fitting into the last named cavity,
- said bolt hole core including a core pin projecting into the cavity conforming to the shape of a flange on the article,
- a protruding spot face base on the inner end of the bolt hole core.

3,308,514
METHOD OF HOT TOPPING USING VERMICULAR GRAPHITE

Oliver Osborn, Lake Jackson, and Franciszek Olstowski, Freeport, Tex., and Jack Walter Horvath, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Jan. 7, 1965, Ser. No. 424,136
4 Claims. (Cl. 22—212)

1. In a method of hot-topping a molten metal by covering said molten metal with a refractory, particulate material, the improvement which comprises: covering the exposed surface of said molten metal with a layer of an acid-treated particulate graphite, said metal being at a minimum temperature of about 150° C. and said graphite being further characterized as one which expands into vermicular particles upon being heated at a minimum temperature of about 150° C.

3,308,515
METHOD FOR CAST GRAIN REFINEMENT OF STEEL

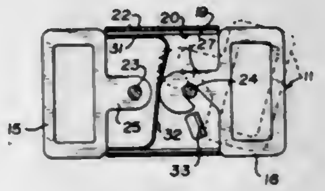
Gordon K. Turnbull, Cleveland, John F. Wallace, Shaker Heights, and Georg W. Form, Cleveland, Ohio, assignors to the United States of America as represented by the Secretary of the Army
Filed Oct. 29, 1962, Ser. No. 233,983
5 Claims. (Cl. 22—215)

MICROSTRUCTURE OF SMALL CONTROL CASTING SHOWING CONTINUOUS FERRITE NETWORK AND ORIENTATION EFFECT.

2. The method of treating molten low carbon steel comprising, deoxidizing the molten material, plunging below the surface of the molten material a comminuted metal additive of approximately .45% by weight of titanium carbide as an inoculant to provide additional nuclei for new crystal growth and also acting as a grain inhibitor to restrict the growth of crystals present in the cast material, adding an additional amount of deoxidizer in sufficient quantity only to prevent oxidation of the additive and gradually cooling the molten material whereby independent nucleation is promoted and normal crystalline growth in the molten material is interrupted and reduced to improve the as-cast grain structure of the steel wherein the macrostructure of the heated steel is at least 70% equiaxed.

3,308,516
STRAP BUCKLE

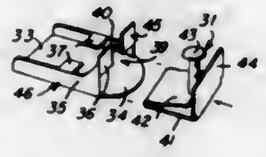
Joseph A. Mullan, Westminster, Colo., assignor to Rose Manufacturing Company, Denver, Colo., a corporation of Colorado
Filed Aug. 10, 1964, Ser. No. 388,495
9 Claims. (Cl. 24—75)



1. A strap buckle having interconnectible body and tongue portions, each portion being adapted to be connected to a strap, the body portion comprising: a flat tubular head open at each end to form a socket therethrough, a pair of posts extending through the body and within the socket portion thereof, and a flat strap eye having a finger outstanding from one edge thereof inserted into one side of the head socket and an orifice through the finger fitted about one of the posts, affixing the strap eye to the head; and the tongue portion comprising: a flat strap eye having a finger outstanding from one edge thereof and being adapted to be inserted into the other side of the head socket, said second mentioned finger including an angled side-slot adapted to be hooked about the other post when the finger is inserted into the socket, whereby to fasten the members together.

3,308,517
CLASP FOR JEWELRY

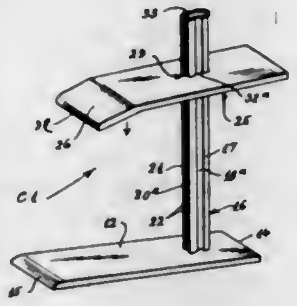
Simon Geldwerth, 1434 57th St., Brooklyn, N.Y. 11219
Filed June 15, 1965, Ser. No. 464,002
16 Claims. (Cl. 24—230)



1. In a keeper for a jewelry clasp, comprising a single sheet of metal formed to provide a flat base having a pair of parallel vertical side walls bent up from the base along parallel lines of bending, a vertical flat front wall means at right angles to the side walls comprising two strips bent inwardly from the front ends of the side walls, and a flat horizontal attaching means spaced above the base and extending between the side walls comprising flat strips joined to the side walls by parallel lines of bending, the lower portion of said front wall means having a horizontal slot for a flat spring catch, said slot extending the entire width of the base.

3,308,518
CLAMP FOR PILES OF CLOTH AND OTHER RESILIENT MATERIAL

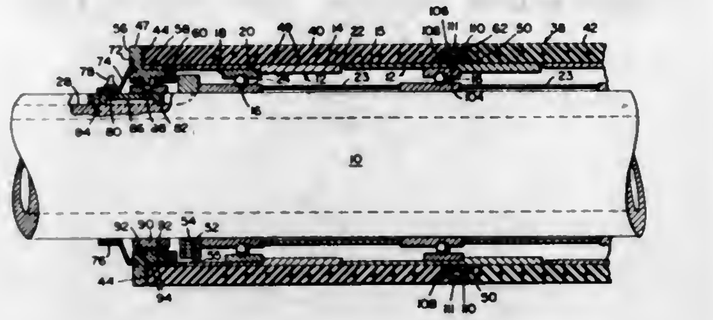
Sidney Waxelbaum, Flushing, N.Y.
(821 Broadway, New York, N.Y. 10003)
Filed Mar. 24, 1965, Ser. No. 442,271
5 Claims. (Cl. 24—263)



1. A clamp for resilient material, comprising a base plate defining a stationary first jaw, a bar secured to and extending upwardly from said plate, said bar being noncircular in cross section, said bar having wider opposite sides generally parallel to edges of said base plate and having narrower opposite front and rear sides extending generally transverse to the edges of the base plate, and a second jaw movably mounted on said bar, said second jaw having a downwardly inclined forward portion defining a tooth extending for the entire width of the second jaw, said second jaw having a generally rectangular rear portion with a centrally located hole therein, said wider sides of the bar having centrally located opposing vertical grooves therein, said hole having a rim with convex inwardly extending opposing projections slidably engaged in said grooves, respectively, whereby when the second jaw is tilted on the bar, said projections engage with said grooves at two upper rear points and two lower front points of the projections, the narrower front side of the bar having a third vertical groove therein with two flat vertical lands at opposite edges of the third groove, the narrower rear side of the bar having a fourth vertical groove therein with two other flat vertical lands at opposite edges of the fourth groove, whereby the front and rear edge portions of the hole engage the bar at four points, so that the second jaw grips the bar at eight points in all.

3,308,519
SECTIONAL CURVED ROLL WITH REINFORCING RINGS

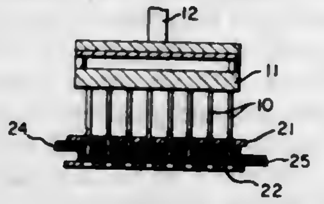
Ronald C. Westgate, Taunton, Mass., assignor to Mount Hope Machinery Company, Taunton, Mass., a corporation of Massachusetts
Filed Apr. 23, 1964, Ser. No. 362,137
6 Claims, (Cl. 26—63)



1. A curved roll comprising, in combination; a curved axle, a series of annular spool assemblies rotatably mounted in axially-gapped end-to-end relation on said axle, a plurality of annular sleeve sections received over said spools in axially-abutting end-to-end relation with one another to provide a continuous peripheral sleeve surface, said sections abutting at points axially intermediate the gaps between said spools, only one of each pair of adjacent ends of said sections being secured to a corresponding one of said spools only in a narrow circumferential region, and a plurality of reinforcing rings, each pair of adjacent ends of said sections being formed with a pair of axially-overlapping circumferential lips one spaced about the other to form therebetween a circumferentially-extending recess internal to said sleeve surface, each said recess receiving one of said rings in axially-overlapping relation to each of said pair of lips, said ring being bonded to said pair of lips.

3,308,520
PROCESS OF SPLICING TOW

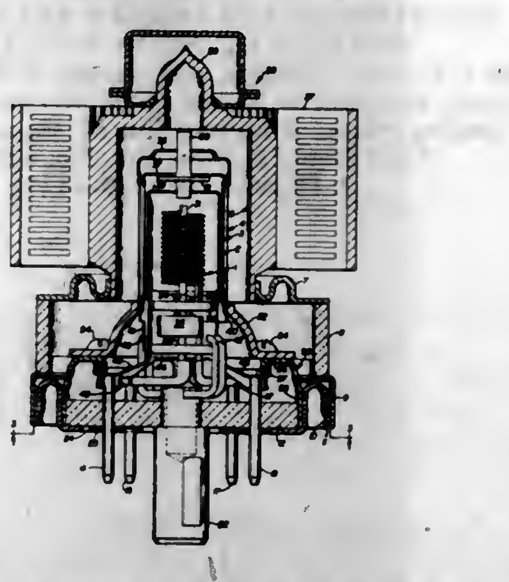
David C. Gagnon, Greenville, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 10, 1965, Ser. No. 431,545
2 Claims. (Cl. 28—72.2)



1. In the process of preparing staple fiber by assembling multifilament ropes of synthetic filaments into a tow and feeding the tow through a staple cutter, wherein individual lengths of filament bundles are joined end-to-end to form a continuous tow for feeding the staple cutter, the improvement of joining the ends of filament bundles by overlapping two ends to point in opposite directions with a 3-inch or greater overlap and punching felting needles repeatedly through the overlapped portions a sufficient number of times to interlock the filaments to form a splice of at least 30 pounds strength, and passing the spliced tow continuously through the staple cutter to cut all of the filaments, including those in the spliced portion.

3,308,521
METHOD OF MAKING ELECTRON TUBE

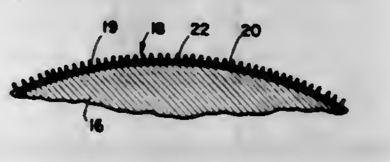
William R. Stuart, San Carlos, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California
Filed Dec. 27, 1962, Ser. No. 247,718
5 Claims. (Cl. 29—25.16)



2. A method of making an electron tube of the type having a header assembly comprising a ceramic header disk, a metal shell joined to said header, a metal screen grid support ring joined to said shell and having a circular centering opening at its inner periphery, metal terminal pins extending through and joined to said header, a metal cathode support ring having legs joined to some of said pins, and a U-shaped metal yoke joined to another one of said pins; said method comprising the steps of first connecting all of said joined parts by braze connections while holding said cathode support ring coaxial with said centering opening, next mounting an inverted cup-shaped cathode structure with the bottom of the structure centered by engagement with said cathode support ring, and the top of said cathode structure being centered by engagement with the upper end portion in a cathode jig, said jig being self-centered with respect to said cathode support ring by engagement with said centering opening; and then bonding said cathode structure to said cathode support ring and thereafter removing said cathode jig.

3,308,522
ANTI-OFFSET ROLL

James V. Miller, Chicago, Ill., assignor, by mesne assignments, to Velcro Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 14, 1962, Ser. No. 244,668
13 Claims. (Cl. 29—120)

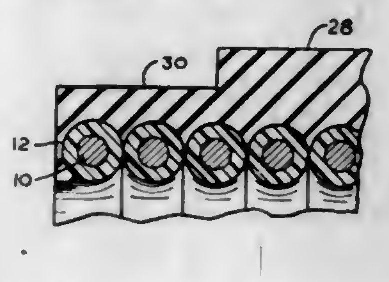


1. A guide roller for engagement with the undried coated or printed surface of a moving web and for minimizing transfer of undried coating material from said web to said roller, said roller comprising a cylindrical body and covering material attached to the circumferential surface of said body, said covering material comprising a base sheet having attached thereto a multitude of pile element projections sparsely distributed over a substantial portion of its outer surface and extending generally normal thereto, each of said pile elements being a strand of fiber made of a non-absorbent material which is substantially inert to said undried coating material and having one of its ends engaged in the base sheet, the length of the element and the lateral spacing between ad-

jacent elements being substantially greater than the maximum cross-sectional dimension of the fiber, and each projection being flexible and tending to resiliently return to its normal position when deflected.

3,308,523
REINFORCED EXPANSIBLE SLEEVE AND METHOD OF MANUFACTURE

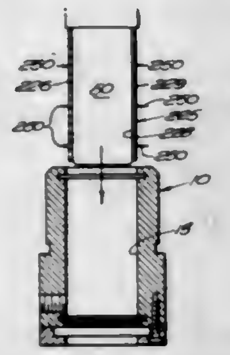
Allan J. Ivester, Whitman, and George P. Knapp, Waban, Mass., assignors to Mount Hope Machinery Company, Taunton, Mass., a corporation of Massachusetts
Filed Dec. 21, 1964, Ser. No. 420,027
3 Claims. (Cl. 29—127)



3. A reinforced expansible annular cylindrical sleeve element for covering a roll, comprising an annular helical coil of reinforcing cord having a coating of uniform thickness of an elastomeric material, the turns of said coil abutting one another axially to space the adjacent turns of said cord uniformly apart, said coil having an internal diameter equal to that of the sleeve element, and an annular body of molded elastomeric material extending circumferentially about the radially-outer surface of said coil to form a cylindrical outer sleeve surface, said body closely covering and being bonded to said coating, the material of said coating having a substantially lower coefficient of surface friction than the material of said body.

3,308,524
METHOD OF MAKING A DIE BUSHING WITH A REPLACEABLE LINER

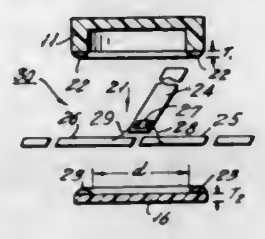
Robert Franklin Moyer, Warwick, R.I., assignor to Harsco Corporation, Harrisburg, Pa., a corporation of Delaware
Filed Jan. 22, 1964, Ser. No. 339,526
6 Claims. (Cl. 29—149.5)



1. A method of fabricating a substantially cylindrical die bushing containing a liner in an axial bore thereof comprising the steps of forming a cylindrical liner member of bimetallic laminate material having an outer steel shell and an inner layer of bearing metal which is softer than said steel, coating the outer surface of the outer steel shell with a layer of non-ferrous metal having a thickness in the order of five ten-thousandths of an inch, placing said liner member on a gage post having a standard outside diameter, the internal diameter of said liner member being larger than the outside diameter of said post to a limit of .04% of the outside diameter of said post, forcing said liner member into said bore of said bushing by means of said gage post whereby said layer of non-ferrous metal is caused to conform to any variations present in said bore, removing said gage post and inserting locking means at each end of said liner for retaining said liner in said bushing.

3,308,525
METHOD OF GLASS GLAZING

Shigeru Tsuji, Kazutami Hayashi, Koichi Kadowaki, and Katsuo Sato, Minatoku, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan
Filed June 14, 1963, Ser. No. 287,863
Claims priority, application Japan, June 16, 1962, 37/25,188
5 Claims. (Cl. 29—155.5)



1. A method for glazing a body comprising the steps of:

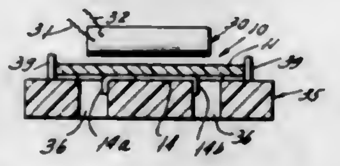
providing a layer of glass powder upon a base member;

preheating said body to a predetermined temperature level sufficient to facilitate fusion of said glass powder;

and bringing said body into pressure contact with said layer of glass powder to produce a fused glass layer of predetermined thickness on said body.

3,308,526
METHOD OF FORMING CIRCUIT BOARD TABS

Walter Jellig, Franklin Square, N.Y., assignor to Sperry Rand Corporation, Ford Instrument Company Division, Long Island City, N.Y., a corporation of Delaware
Filed Oct. 22, 1963, Ser. No. 317,902
2 Claims. (Cl. 29—155.5)

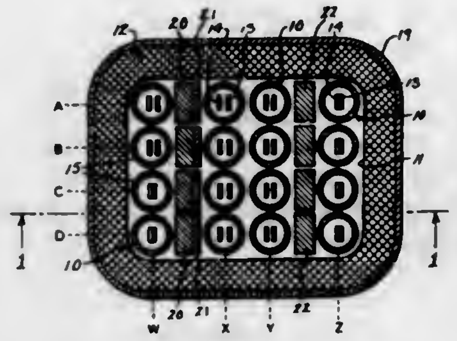


1. A process comprising the steps of forming a multiconductor pattern comprising conductors insulated from each other and adhered to a first surface of an insulating member; placing said member between a field coil and an apertured form block with the other surface of the member facing the field coil; and passing an electric current of changing magnitude through said field coil to induce electric currents in a plurality of the conductors to establish forces to force portions of said plurality of the conductors including end portions thereof aligned with apertures of the form block into these apertures and form component connecting points.

3,308,527
METHOD OF MANUFACTURING RELAYS

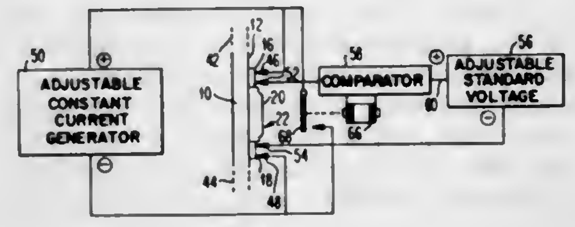
James N. Pearse, Milwaukee, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Original application July 23, 1962, Ser. No. 211,628. Divided and this application Oct. 30, 1963, Ser. No. 324,161
3 Claims. (Cl. 29—155.5)

1. In the manufacture of a relay comprising a plurality of sealed switching units having individual operating characteristics and a common energizing coil defining a window and which coil when energized produces a variable magnetic field within the window, said field varying from a maximum at the periphery of the window to a minimum at the center point of the window; the improved manufacturing procedure of individually subjecting a plurality of switching units of unknown operating characteristics to the magnetizing field of a standard coil of preselected dimension and coil flux, sorting said switching units into groups in accordance with the amount of coil flux required to operate the units by said standard coil, and positioning said switching units within the window, a number of said switching units being positioned adjacent to the periphery of the window and at least one of said switching units being positioned remote from the periphery of the window and intermediate switching units positioned adjacent the periphery of the window, each switching unit being positioned in a predetermined area of the variable magnetic field of said common energizing coil corresponding with the amount of flux needed to operate the respective sorted switching unit.



3,308,528
FABRICATION OF CERMET FILM RESISTORS TO CLOSE TOLERANCES

Robert L. Bullard, Wappingers Falls, Robert A. Hasbrouck, Saugerties, Philip S. Schlemmer, Hyde Park, and Rudolf E. Thun, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 6, 1963, Ser. No. 321,928
2 Claims. (Cl. 29—155.7)


50
ADJUSTABLE CONSTANT CURRENT GENERATOR
42
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44
12
16
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52
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54
18
48
58
COMPARATOR
66
60
56
ADJUSTABLE STANDARD VOLTAGE

1. A method of fabricating a cermet thin film resistor to a predetermined design resistivity comprising

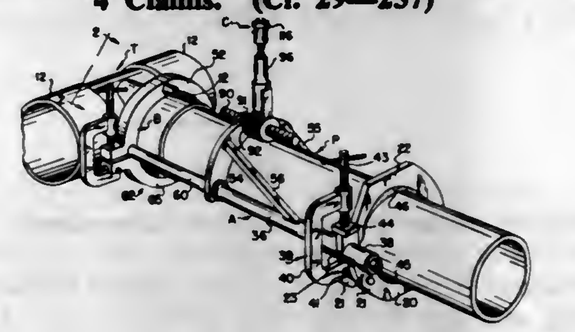
providing a substrate and forming thereon conductive terminal elements and a chromium-silicon monoxide cermet film in lapped relation to form an electrical circuit path between said elements through said film, said film having a resistivity greater than said design resistivity and being encapsulated completely in silicon monoxide,

then annealing said film by subjecting the same to a temperature of about 400° C. in an oven until the resistivity of said film approaches said design resistivity,

and finally heating the cermet film circuit element to a further annealing temperature by passing electrical current through said element until the resistivity of said film reaches said design resistivity.

3,308,529
TUBE COUPLING TOOL

Howard F. Swanda, Rte. 1, Box 13, Hiram, Ohio 44234
Filed May 5, 1964, Ser. No. 364,938
4 Claims. (Cl. 29—237)



1. A tool for assembling two pipe sections having ends which interfit telescopically, said tool comprising:

a first clamp constructed and arranged to surround and support and grip one of said pipe sections;

a second clamp spaced axially from said first clamp and constructed and arranged to surround and grip the other of said pipe sections;

a member disposed axially between said clamps;

rigid first guide means extending axially from said member toward said first clamp;

rigid second guide means extending axially from said second clamp into slidably interfitting engagement with said first guide means;

means connecting said first clamp to said first guide means;

and means acting between said member and said second clamp and selectively operable to draw them together, whereby to draw said first and second clamps together.

3,308,530
METHOD OF CONTROLLING POROSITY OF REFRACTORY METAL STRUCTURES

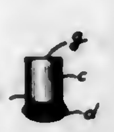
Roberto Levi, New York, N.Y., and Gary C. Irons, Stamford, Conn., assignors to North American Philips Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 12, 1964, Ser. No. 351,512
5 Claims. (Cl. 29—420.5)

1. A method of making a porous refractory metal body of desired shape and dimensions and porosity, comprising the steps of sintering at a high temperature a mass of particles of a refractory metal consisting essentially of tungsten or an alloy thereof to form a body with the desired porosity, infiltrating the pores of the body with a filler material to facilitate subsequent machining of the body, machining the infiltrated body to the desired shape and dimensions, said machining operation causing smearing of refractory metal over the surface thereof, thereafter, while the filler material remains in the pores, subjecting the machined body to a chemical etching treatment with a reagent which will attack substantially only the refractory metal leaving the filler material substantially undisturbed until the smeared refractory metal has been substantially removed, and thereafter removing the filler material from the pores.

3,308,531
METHOD OF WELDING ALLOY PINS

Kurt Wasserkampf, Schickstrasse 9, Berlin-Tegel, Germany
Filed Jan. 24, 1962, Ser. No. 168,557
Claims priority, application Germany, Jan. 27, 1961, B 61,096
1 Claim. (Cl. 29—471.1)

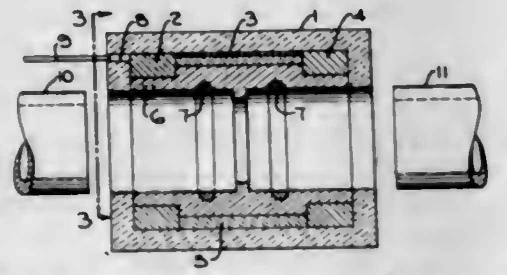
A method of forming a welded connection of a pin to a base element, in which the body of the pin is composed of Sicromal alloy steel comprising significant amounts of the elements, chromium, silicon and aluminum and in which said base element is composed of metal having non-alloyed steel having no more than insignificant amounts of the above constituents of said pins, said method comprising the steps of electrically resistance welding a head on the end of said pin composed of material similar to the material of said base element and of sufficient size to form a weld for said pin and having said constituents in no more than insignificant amounts, and welding said pin to said base element with said head fused to said element and forming the welded joint between said pin and said base element.



3,308,532
METHOD AND FILLINGS FOR EXOTHERMIC BRAZING

Roger A. Long, Escondido, Robert A. Caughey, Los Angeles, and Glenn H. Sievert, El Cajon, Calif., assignors to Whittaker Corporation, a corporation of California

Filed July 29, 1963, Ser. No. 298,326
8 Claims. (Cl. 29—486)

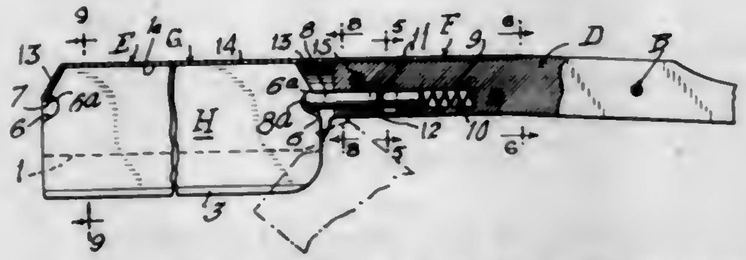


1. An article of manufacture comprising a metal fitting, a brazing material positioned in each of at least two cavities in the inner surface of said fitting, at least two monolithic bodies of exothermic material in contact with the outer surface of said fitting but spaced from each other along a portion of said fitting, said monolithic bodies being disposed to give uniform heating of said fitting to reach the flow temperature of said brazing material and ignition means bridging said monolithic bodies to permit substantially simultaneous ignition of said monolithic bodies.

3,308,533
BARBER'S RAZOR WITH HOLDER FOR EXCHANGEABLE BLADES

Barth A. Holohan, 1486 Deer Path, Mountainside, N.J. 07092

Filed Oct. 8, 1964, Ser. No. 402,562
2 Claims. (Cl. 30—32)

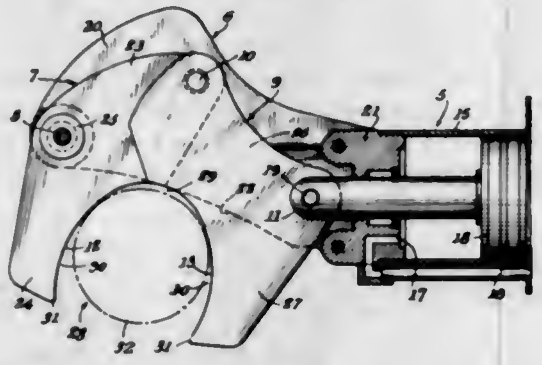


1. In a barber's razor with a holder for exchangeable blades, the combination of an approximately rectangular blade of uniform thickness having a notch at each end thereof and two parallel longitudinal edges at least one of which is a cutting edge, a blade holder comprising a rigid stock of substantial thickness and a clip formed of a single piece of inherently resilient thin material, said clip including a shank fitted over and secured to one end of said stock and having a split tubular head formed with opposed resilient lips at its longitudinal edges having opposed approximately parallel portions of a length approximately equal to the length of said blade and spaced apart a distance less than the thickness of the blade to receive and resiliently hold said blade between them, said parallel portions being of widths to flatwise grip the sides of the blade with their free longitudinal edges disposed in closely spaced relation to the cutting edge of the blades, means on said stock and means on said clip coactive respectively with said notches in the ends of the blade to removably fasten the blade in the clip, the last two-named means including an inwardly projecting flange at the end of the head opposite said shank, and a reciprocable pin in the stock normally spring pressed to dispose one end thereof in the split tubular head, said flange and said pin coacting respectively with said notches in the ends of the blade, and said notches being identical providing for the insertion of the blade into the head with either notch in engagement with either said flange or said reciprocable pin.

3,308,534
HORN CLIPPERS

Ezekiel C. Steiner, 1438 E. Slauson Ave., Los Angeles, Calif. 90011

Filed Mar. 15, 1965, Ser. No. 439,706
6 Claims. (Cl. 30—228)



1. A horn clipper comprising:
(a) a fixed guard provided with two parallel plate portions spaced from each other,
(b) a first clipper member mounted on a fulcrum on said guard and disposed in said space against one plate portion,
(c) a second clipper member pivotally connected to the first member and in said space between the first member and the opposite plate part,
(d) said members being provided with opposed concave cutting edges that define a concavity between them for a horn to be cut when said members are in extended relation on the pivotal connection, and
(e) means to apply force to the second clipper member in a direction to fold the extended members one over the other to a position in which the opposed concave cutting edges are overlapped and the concavity substantially closed.

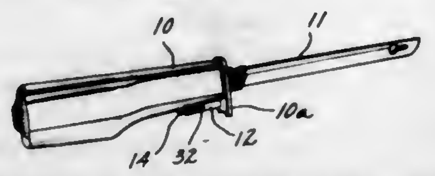
3,308,535
ELECTRIC SLICING KNIFE

Arthur H. Freeman, Brockport, N.Y., and Hugh M. Forman, Wawatosa, Wis., assignors to General Electric Company, a corporation of New York

Filed Sept. 1, 1964, Ser. No. 393,586
9 Claims. (Cl. 30—272)

1. In a portable electric slicing knife having a hollow handle, an electric motor supported by said handle and adapted for connection to a source of power, and cutting means extending forwardly from said handle and connected to said motor, means for controlling the flow of electric current to said motor comprising:
(a) a movable switch actuator pivotally mounted on

the handle and engageable by a finger of the hand grasping the handle, said actuator having a normally opened position and a closed position;
(b) a pair of contacts, one of said contacts being movable by said actuator into electrical contact with the other of said contacts;
(c) means for normally maintaining said contacts in spaced relation to one another;
(d) a manually operated button spaced from said pivotal mounting and positioned in an aperture formed in said actuator;

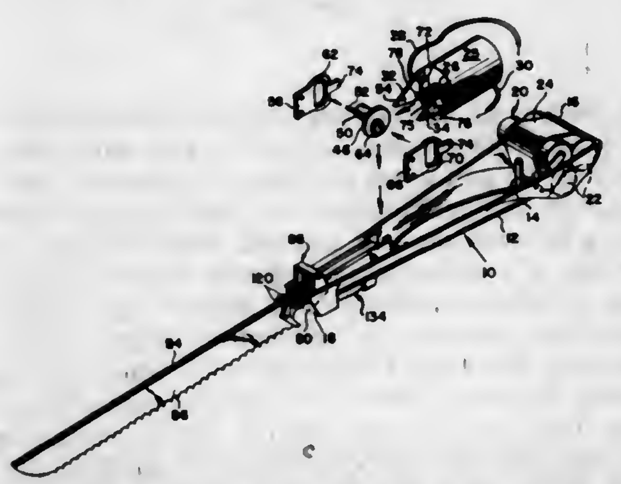


(e) means secured to said actuator and connected to said button for holding said button in first and second positions, said button being manually movable between said first and second positions;
(f) means on said handle for permitting movement of said actuator from said opened position to said closed position when said button is in said first position; and means on said handle for preventing such movement when said button is in said second position.

3,308,536
CUTTING OR SLICING APPARATUS

Robert N. Freedman, Great Neck, N.Y., assignor to Endura Appliance Corporation, Freeport, N.Y., a corporation of New York

Filed Dec. 28, 1965, Ser. No. 526,654
6 Claims. (Cl. 30—272)

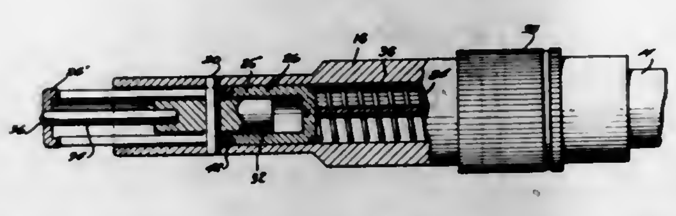


1. Portable slicing apparatus comprising, in combination, a housing having a source of electric power disposed therewithin; an electric motor within said housing having a rotating shaft extending therefrom; a driving bevelled pinion gear mounted on said rotating shaft, said pinion gear comprising a material having the physical characteristics of powdered metal impregnated with oil; a driven bevelled gear operatively associated with said pinion gear, comprising a material having the physical characteristics of Delrin filled with a material having the physical characteristics of Teflon; said driven gear further comprising eccentrics disposed in 180 degree out-of-phase relationship to each other; said driven gear and said eccentrics being mounted on a shaft in rotating relationship therewith; said shaft comprising a material having the physical characteristics of centerless ground steel; said eccentrics comprising a material having the physical characteristics of Delrin filled with a material having the physical characteristics of Teflon, and rotating in response to rotation of said driven gear; knife blade actuators responsive to rotation of said eccentrics for reciprocating movement relative to one another; said eccentrics being disposed in direct operative relationship with respect to said driven gear and with respect to said knife blade actuators; knife blades operatively associated with said actuators; and load bearing means mounted within the housing forwardly of the driven gear and above the blade actuators, and within the housing to the rear of the driven gear and below the blade actuators.

3,308,537
AMALGAM CARRIER AND PLUGGER

Ricardo Faustino Novales, 10 A Avenida, 4–34, Guatemala City 4, Guatemala

Filed Aug. 27, 1963, Ser. No. 304,899
4 Claims. (Cl. 32—60)

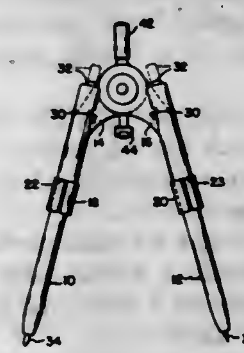


1. In a dental instrument including a hollow handle having a forwardly extending nozzle terminating in a discharge opening, a sleeve slidable into and out of said nozzle opening between a normal position wholly within said nozzle to a position partially projected from said nozzle, said sleeve having a closed forward end with an aperture therein, a pin fixedly carried by said nozzle and disposed so as to project and to extend beyond the end of the nozzle of said sleeve when said sleeve is in the within position and so as to be substantially totally within said sleeve when said sleeve is in the partially projected position, said sleeve having a lengthwise slot means for said pin to extend through the slot means and thus anchoring the pin to the nozzle, and hand actuable means operatively connected to said barrel for effecting the movement of said sleeve.

3,308,538
POCKET COMPASS WITH RETRACTIBLE POINTS

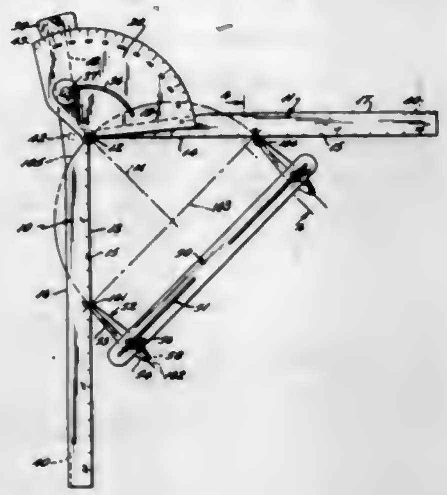
William G. Peck, 7 Alpine Way, Victor, N.Y. 14564

Filed Oct. 20, 1965, Ser. No. 498,402
1 Claim. (Cl. 33—27)



A pocket compass comprising a retractible ball point writing instrument, a second instrument generally similar to said writing instrument but fitted with a needle point in place of a writing tip, an articulated bracket for holding both of said instruments in a generally radial position in a common plane, each of said instruments having a laterally projecting control member for holding the instrument in its advanced position, inward motion of the control member being effective to cause the instrument to retract, said instruments being mounted with their respective control members facing each other, and an abutment member carried by said bracket for engaging the control members when said instruments are swung into juxtaposed, abutting position thereby to retract said instruments as the compass is closed.

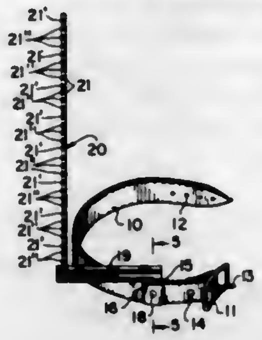
3,308,539
METHOD AND APPARATUS FOR CURVE PLOTTING
Carl E. Sprouse, 2058 Dellwood Dr., Tallahassee, Fla. 32303
Filed June 20, 1966, Ser. No. 558,739
6 Claims. (Cl. 33—27)



1. A drafting instrument for plotting an arc between two points,
- said instrument comprising first and second pivotally connected arms of substantially equal length,
- said arms having inner and outer sides and said first arm having a guiding edge along the inner side of its major portion which is straight and free of obstruction,
- a zero indicia mounted at the end of said first arm,
- said second arm having an angle selector plate mounted thereon and in a plane above said arm,
- said second arm having an inner side which is straight and free of obstruction,
- said angle selector plate extending over into said second arm and overlying said first arm whereby said arms are in the same plane,
- said plate extending through more than 90 angular degrees,
- means for holding the arms in a selected angular position,
- means for adjustably holding a scribing point at the intersection of said arms,
- and a chord point pin holder,
- said chord point pin holder comprising a substantially rigid main elongated body member,
- said body member of a length approximating one of said arms,
- a cross arm for each end portion of said pin holder,
- said cross arms each having means permitting angular and longitudinal adjustment of the cross arm with respect to the pin holder,
- the cross arms having a forward portion and a pin fixed therein and extending downwardly therefrom and a rearward portion and a post fixed thereto and extending downwardly therefrom,
- the pin and the post being of substantially equal length and substantially parallel in order to support the cross arm horizontally above a surface,
- and means for fastening the cross arms to the pin holder in selected position.

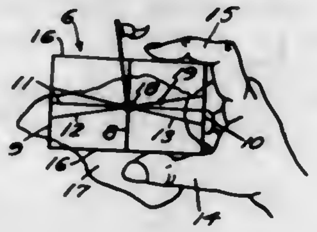
3,308,540
BOW SIGHT
Gordon G. Dean, 560 5th Ave., Salt Lake City, Utah 84102
Filed Mar. 12, 1964, Ser. No. 351,373
5 Claims. (Cl. 33—46)

1. A sighting device for use in the shooting of a bow and arrow, said sighting device comprising an adjustable strap for application about the wrist of an archer, a bracket fixed to said strap in a position for location on the under side of the wrist, an arm fixed to said bracket and extending substantially tangentially to one side of the wrist, a rod mounted in a position to extend upwardly above the wrist to an elevation substantially above the top



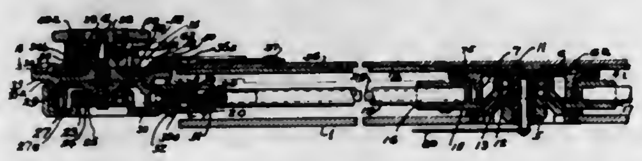
of the wrist, said rod having multicolored markings thereon, and said arm having a slot lengthwise thereof, a screw adjustable along said slot, and a clamping plate fastened to said arm by said screw and clamping said rod adjustably to said arm.

3,308,541
METHOD OF DETERMINING CONTOUR CHARACTERISTICS OF A GOLF GREEN
Stephen B. Sponder, 3701 E. 13th St., Wichita, Kans. 67208
Filed June 18, 1964, Ser. No. 376,171
1 Claim. (Cl. 33—46)



A method of determining contour characteristics of a golf green between the cup and a golf ball comprising observing the golf green through a transparent plate from a position at approximately a right angle to a line extending between the cup and golf ball, said plate having markings of a color contrasting with the color of the golf green including horizontal and vertical lines forming an intersection between top and bottom edges of the plate and other markings having portions which are spaced laterally from said intersection and disposed different distances from said top and bottom edges, positioning the plate with said top and bottom edges in substantially horizontal planes, locating said intersection on the observer's line of sight to the cup, and visually determining the elevation of the ball relative to the cup by observing its location with respect to said other markings.

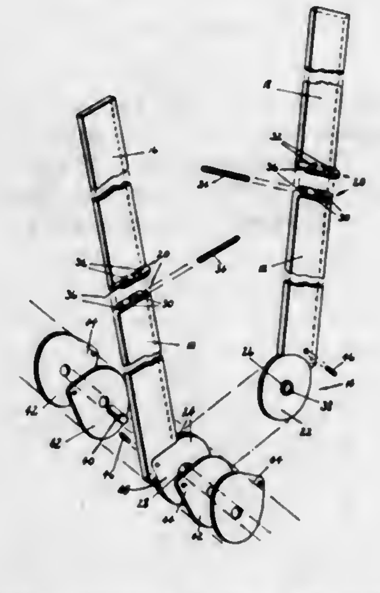
3,308,542
DRAFTSMAN'S INSTRUMENT
Burton W. Hazelton, Kirkwood, Mo. (% Hazelton Products, Inc., Box 206, Valley Park, Mo. 63088)
Filed Dec. 21, 1964, Ser. No. 419,640
9 Claims. (Cl. 33—79)



1. Draftsman's apparatus comprising a drawing board,
- an elongated carrier arm beneath said board and having a vertical axis pivot mounting thereon at a point spaced inwardly from an edge of the board,

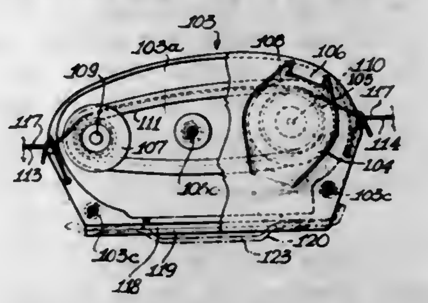
- said carrier arm extending substantially parallel to the plane of the board and beyond said edge,
- an elongated drafting blade overlying the board and extending beyond said edge and having a vertical axis pivot mounting on said carrier arm,
- and mechanism connecting the two pivot mountings and maintaining a predetermined angular relation between the drafting blade and a selected straight line on the board as the carrier arm is moved about its pivot mounting on the board,
- the pivot mounting for the elongated carrier arm on the board and the pivot mounting for the elongated drafting blade on the elongated carrier arm each comprising a self-aligning ball bearing including inner and outer races inclinable relative to each other transversely of the pivot axis and accommodating tilting of the elongated carrier arm to and from the board and tilting of the drawing blade transversely of its length to contact one face of the blade with the drawing board.

3,308,543
FOLDABLE MEASURING RULES
Alan O'Connor Fenton, Gamston, near Retford, England, assignor to William Marples & Sons Limited, Sheffield, England
Filed Dec. 2, 1964, Ser. No. 415,358
Claims priority, application Great Britain, Dec. 10, 1963, 48,723/63
2 Claims. (Cl. 33—105)



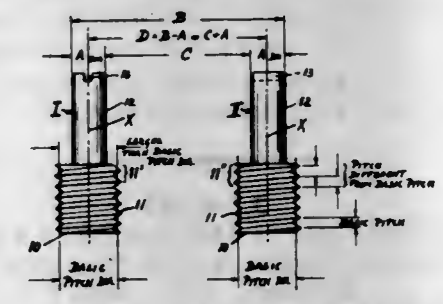
1. In a foldable measuring rule, the combination of a first measuring element, a single leaf of a hinge joint formed integrally with said first measuring element, a second measuring element, a pair of leaves of said hinge joint formed integrally with said second measuring element and spaced side by side for the reception of said single leaf therebetween, and a pivot pin formed integrally with said single leaf and projecting an equal distance from opposite faces thereof for reception in aligned holes in said pair of leaves, said pivot pin having a hollow cylindrical form and said projection distance equalling the thickness of said leaves on said second measuring element to mate with said holes therein to form an accurately positioned pivot by insertion of said single leaf within said pair of leaves, a first pair of washers positioned astraddle said hinge joint, each of said washers overlying one of said pair of leaves of said hinge joint, each washer of said first pair of washers being provided with an integral lug portion secured to said second measuring element, a second pair of washers positioned astraddle said joint, each of said washers overlying a respective washer of said first pair of washers, each of said washers being provided with an integral lug portion secured to said first measuring element, said first and said second pair of washers being provided with axially positioned holes corresponding to the axis of said hollow pivot pin, and a rivet extending through said hollow pin to secure said first and second pairs of washers at the axis of said hinge joint.

3,308,544
LINE MEASURING DEVICE
Jack O. White, 280 Kingsway, Welland Junction, Ontario, Canada
Filed Dec. 6, 1965, Ser. No. 511,743
Claims priority, application Canada, May 14, 1963, 875,524; Great Britain, July 1, 1965, 27,837/65
3 Claims. (Cl. 33—134)



1. A fishing line measuring device comprising a casing, an aligned pair of pulleys mounted for rotation within said casing, a counter carried in said casing and arranged to be driven by rotation of one of said pulleys, and endless belt in the form of a flexible band of resilient material encircling said pulleys and being in driving engagement therewith, said belt having a normally flat, pulley engageing, inner surface and transversely disposed line gripping members formed integrally with said band along the outer periphery thereof, said gripping members being disjoined by a longitudinal, line receiving, narrow channel extending inwardly from the outer periphery of the belt, each pulley having a peripheral belt engaging surface of convex transverse cross-section for flexing concavely the normally flat inner surface of the belt to thereby force the gripping members from a line gripping relationship apart to a line releasing relationship on passage of the belt over said pulleys, said casing having a line receiving slit over a flight of the belt between the two pulleys, downwardly open hooks exteriorly of said casing for holding the line in said slit and guiding the line between the gripping members on the belt passing over said pulleys, whereby line pulled through said slit is gripped by said gripping members along said flight and the movement of said line circulates the belt to thereby register said movement on said counter by rotation of said one pulley.

3,308,545
GAGEPLUGS FOR MEASURING THE CENTER DISTANCE BETWEEN TAPPED HOLES
Leopold Freimark, 45—48 169th St., Flushing, N.Y. 11358
Filed June 23, 1964, Ser. No. 377,269
3 Claims. (Cl. 33—174)

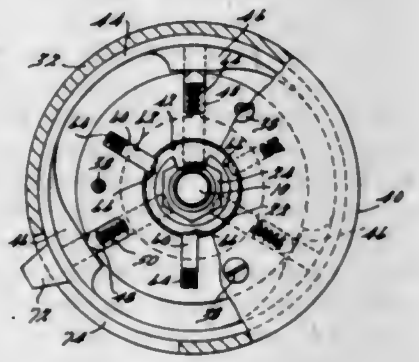


1. A threaded gageplug for locating the axis of internal threads of a threaded bore and for checking the orientation of the axis of internal threads in relation to their surrounding surfaces and adjacent threaded bores, comprising a circularly cylindrical body having two ends and

a circularly cylindrical, coaxial shank of predetermined uniform diameter throughout its length fixed to and extending outwardly from one of said ends and being of a length to extend outwardly from the associated threaded bore when the gageplug is engaged in a threaded bore to be gaged, said body having an outer threaded portion concentric with the axis thereof and starting at the other of said ends, said outer threaded portion matching the internal screw thread of said threaded bore to be checked and having a pitch diameter substantially identical with that of said internal screw thread, said body having an inner threaded portion next to said shank portion with at least one thread of a pitch different from the pitch of the thread to be checked so that all of the flanks of the matching threads are pressed on the corresponding flanks of the internal threads to be checked when the flank of the thread having the different pitch are engaged with the corresponding flanks of the internal threads.

3,308,546
BEARING GAUGE

Harold A. Storch, Birmingham, Mich., assignor to Federal Screw Works, Detroit, Mich., a corporation of Michigan
Filed Jan. 14, 1965, Ser. No. 425,499
4 Claims. (Cl. 33—174)

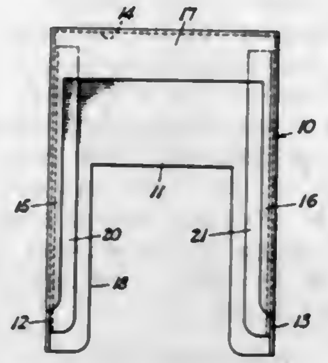


1. A gauge including a housing having a central opening for receiving a washer or the like, a plurality of gauge fingers slidably carried by said housing and movable into said opening for engagement with the washer and out of said opening out of engagement with the washer, a plurality of springs, each spring being operable to bias one of said gauge fingers in a direction out of said opening, an annular cam angularly movable in said housing, said cam surrounding said opening and having a plurality of lobes each engageable with one of said gauge fingers for moving said gauge fingers radially inwardly into said opening against the force of said springs, said cam being movable to a position freeing said guage fingers for movement by their springs away from said washers, and a plurality of spring biased latches engageable with said washer on the opposite side thereof from said gauge fingers, said latches having cam surfaces whereby said latches will be moved radially outwardly upon insertion of said washer in said opening to permit said washer to be moved into engagement with said gauge fingers.

3,308,547
PHOTO PRINT MOUNTING GUIDE

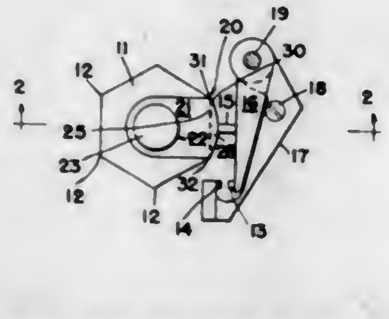
Charles D. Tuppen, Jr., 171 Doncaster Road, Kenmore, N.Y. 14217
Filed July 31, 1964, Ser. No. 386,523
6 Claims. (Cl. 33—180)

1. A sheet mounting device comprising a relatively flat rectangular holder having a back wall with two side walls and one end wall extending at right angles therefrom, flanges extending from the outer edges of said walls inwardly over said back wall spaced from said back wall and generally parallel thereto, and a pair of flanges extending inwardly from said side walls substantially medially of said back wall and said first mentioned flanges to form a pair of superposed channels along the interior of each side wall, said channels being adapted to receive the opposed side edges of a pair of sheet members in superposed relationship and locate the same in accurate super position, said back wall having an opening extending inwardly from the edge thereof opposite to said end wall and said side wall flanges being laterally spaced to form a substantially open front side, whereby a user may grasp said sheet members through said opening and the open front side of said device and withdraw them jointly from said holder.



3,308,548
ADAPTER AND METHOD OF USE

Raymond Matrone, 3419 Asheville St., Philadelphia, Pa. 19136
Filed Jan. 7, 1965, Ser. No. 424,152
2 Claims. (Cl. 33—181)



1. An adapter for overlying a polygonal shaped automotive distributor cam and a central rotor post thereon to facilitate the setting of automotive distributor contact points, comprising

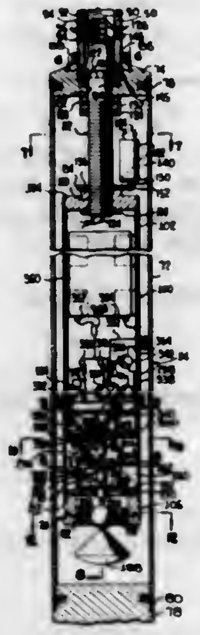
a rigid body of homogeneous material having one portion provided with a transverse aperture for snugly receiving said post, said one portion having a substantially solid smooth face terminating in a straight line, said line adapted to overlie a predetermined surface portion of a polygonal cam in a co-planar relationship, and said smooth face intersecting said aperture for abutting a side face of said cam,

said rigid body having a second portion integral with said one portion at said straight line and of a thickness substantially larger than that of said one portion, said second portion being defined by a flat surface extending from said straight line normal to said smooth surface and by an outermost arcuate segmental surface intersecting the end points of said flat surface,

so constructed and arranged that when said adapter is accommodated by said cam and post with said flat surface precisely abutting the polygonal cam surface portion said arcuate surface will throughout its peripheral edge represent the high points of said cam surface, thereby facilitating the setting of adjacent distributor contact points without rotationally prepositioning said cam.

3,308,549
DEVIATION AND DIRECTION GAUGE MEANS

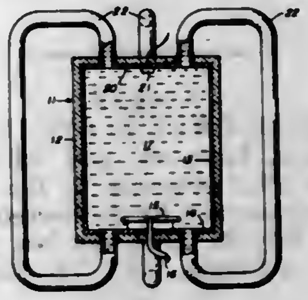
Edward Porter, Fort Worth, Tex., assignor to Azimuth Gauge Inc., Fort Worth, Tex.
Filed Jan. 25, 1966, Ser. No. 530,758
9 Claims. (Cl. 33—205)



1. A deviation and direction gauge means comprising an outer housing, an inner casing disposed within said outer housing and movable relative thereto, deviation indicating means disposed within said inner casing and direction indicating means also disposed within said inner casing, only a single pendulum means movably mounted within said housing and operatively interconnected with both said deviation indicating means and said direction indicating means, and means for automatically controlling the relative directional position of said inner casing at all times to maintain a substantially constant reference direction thereof, means for centering said outer housing substantially centrally within an associated bore within which the housing is disposed, a drive motor mounted within said outer housing and secured thereto, said inner casing being drivingly interconnected with said drive motor, said means for automatically controlling the position of said inner casing comprising a control circuit for controlling the operation of said drive motor, said control circuit including magnetic means adapted to maintain a substantially constant magnetic heading, said pendulum means being swingably supported for substantially universal movement, said direction indicating means including a first resiliently urged contact means and movable with said pendulum means, a first flat plate-like contact means movable with said pendulum means, a second plate-like contact means adapted to engage said first resiliently urged contact means and being connected in an electrical circuit to provide an indication of the direction of orientation of the pendulum means with respect to a reference direction, said deviation indicating means including a second resiliently urged contact means fixed to said inner casing and engaging said first plate-like contact means and connected in an electrical circuit to cooperate therewith to provide an indication of the amount of deviation of the pendulum means with respect to its normal position when the apparatus is disposed in a true vertical position.

3,308,550
ANGULAR DISPLACEMENT SENSOR

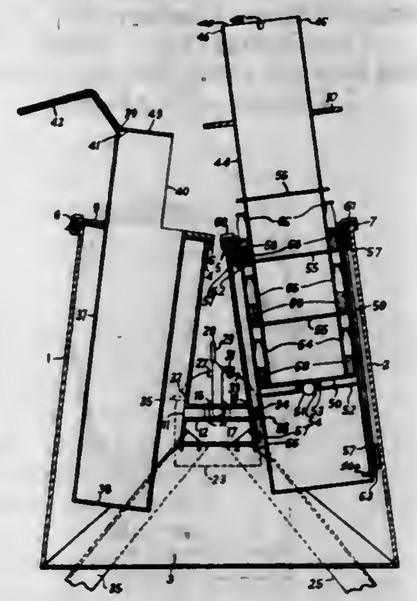
Silas Katz, Silver Spring, Md., and Edward T. Winston, Falls Church, Va., assignors to the United States of America as represented by the Secretary of the Army
Filed Nov. 23, 1964, Ser. No. 413,380
1 Claim. (Cl. 33—206)



An angular displacement sensor comprising:
(a) a vertical cylindrical housing having a top and a bottom and filled with a fluid,
(b) thermal insulating means surrounding said vertical housing,
(c) said housing having an electric heating means near said bottom at the center of said bottom,
(d) a plurality of heat sensitive means positioned in a circle at said top of said housing with the center of said top being the center of said circle,
(e) at least four recycle conduits on the outside of said housing each having one end opening into the top of said housing and the other end opening into the bottom of said housing, the ends opening into the top of said housing being equally spaced on a circle concentric with and larger than the circle on which the heat sensitive means are positioned,
(f) a plurality of radial fins surrounding each of said recycle conduits,
(g) the ends of said recycle conduits opening into the bottom of said housing surrounding said heating means.

3,308,551
FREEZE-DRYING APPARATUS AND METHOD

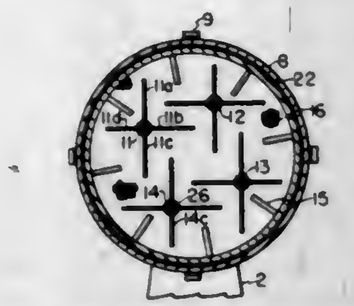
Jose Luis Achucarro, 99 Wakehurst Drive, Southgate, Crawley, Sussex, England
Filed Aug. 19, 1965, Ser. No. 480,914
Claims priority, application Great Britain, Aug. 26, 1964, 35,013/64
9 Claims. (Cl. 34—5)



9. A method of freeze drying substances contained in cylindrical containers comprising mounting the containers on a cylindrical cooler which is rotatably contained in an evacuable container, the mounting being such that the axes of the containers are parallel to the axis of the cooler

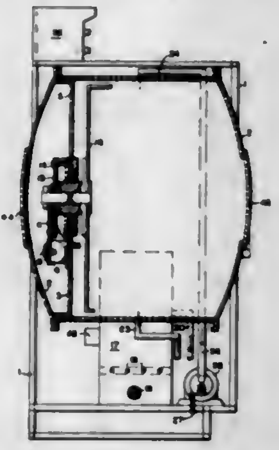
and on rotation of the cooler the containers rotate about their axes, pouring refrigerant from a condenser also mounted on the container into the cooler, rotating the cooler relative to the chamber, when the substances are frozen, returning the refrigerant to the condenser, and evacuating the evacuable chamber and, after freeze drying is complete, releasing the vacuum in the evacuable chamber.

3,308,552
FREEZE-DRYING APPARATUS
Vern F. Kaufman, Lafayette, and William C. Rockwell, El Cerrito, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
Filed July 30, 1964, Ser. No. 386,465
4 Claims. (Cl. 34—92)



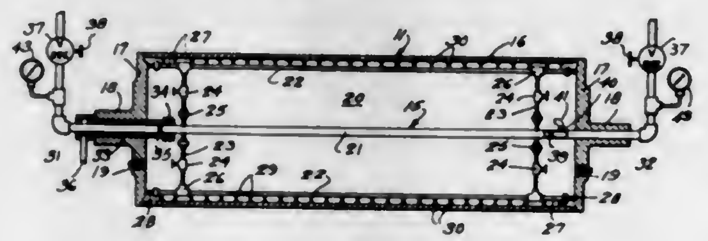
2. A drier adapted for freeze-drying of foods comprising, in combination, vacuum-tight, cylindrical chamber mounted for rotation about its axis, means for rotating the chamber, means for heating the chamber, means for maintaining a vacuum within the chamber, a plurality of fin assemblies extending the length of the chamber and parallel to the axis thereof, each assembly having four separate and distinct fins arranged in the form of a cross with the arms of one cross parallel to the corresponding arms of every other cross, means for heating said fins, a plurality of baffles projecting inwardly from the inner surface of the chamber and extending the length thereof, said fins and baffles cooperating to support material uniformly in the chamber and to define a plurality of labyrinthine passages within the chamber whereby to restrict straight-line movement of material and to direct material in circuitous paths as the chamber rotates.

3,308,553
VACUUM CLOTHES DRYER
Chandley William Lambert, P.O. Box 56, Lake Dallas, Tex. 75065
Filed June 16, 1966, Ser. No. 559,373
2 Claims. (Cl. 34—92)



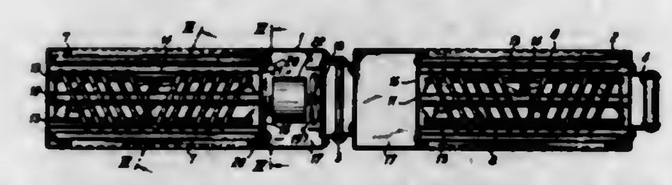
1. In a vacuum clothes dryer, the combination of; an air tight vacuum drum secured within a frame, a motor driven suction pump connected by a conduit to the top of said drum, an insulated box secured to the bottom of said drum, an air heating unit within said box, a heat sensitive thermostatic switch secured to said box and limiting the temperature in said box to a predetermined amount, a pressure sensitive reducing valve connected by conduits to said box and to the lower side of said drum and limiting the pressure in said drum to a predetermined set amount, a rotatable basket within said drum, a shaft secured to said basket, an interior frame within said drum supporting and guiding said shaft, a ratchet wheel secured to said shaft, a ratcheting arm loose on said shaft, a pawl pivoted to said arm and cooperating with said ratchet wheel, a slot in said arm, a guided rod and a compression spring cooperating with said slot and said arm, an electromagnetic coil secured to said interior frame, and an armature slideable in said coil and secured to said rod producing intermittent rotation of said basket by the movement of said rod, said arm and said ratchet wheel.

3,308,554
DRYING CYLINDER
Glen Overton, Allegan, Mich. 49010
Continuation of abandoned application Ser. No. 375,035, June 15, 1964. This application June 22, 1966, Ser. No. 559,693
6 Claims. (Cl. 34—124)



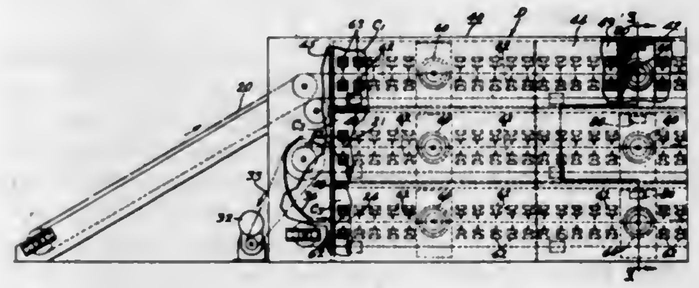
1. In a dryer drum, a cylindrical shell, end heads closing the ends of the shell, journals on said end heads for rotatably supporting the drum, a pipe extending axially through the journals across the entire interior of the drum, a second pipe surrounding said first pipe in one of said journals, a syphon tube in the drum depending from the second pipe for removing spent heating fluid from the bottom of the drum, means for introducing heating fluid to both ends of the central pipe, a plug in the central pipe adjacent one end head, an outlet for the central pipe between the plug and the adjacent end head, a plurality of jet pipes extending longitudinally across the interior of the drum closely adjacent the shell, means for supplying heating fluid from the central pipe to the jet pipes and means for regulating heating fluid flow to the outlet and jet pipes.

3,308,555
DRIER PARTICULARLY FOR PHOTOGRAPHIC SHEET MATERIAL
Alfred Krüger, Hamburg, Germany, assignor to International Copying Machines Co. m.b.H., Hamburg, Germany
Filed Apr. 13, 1964, Ser. No. 359,385
Claims priority, application Germany, Apr. 13, 1963, J 23,547
15 Claims. (Cl. 34—155)



1. In a drier, particularly for photographic sheet material, in combination, a housing formed with an inlet and an outlet through which a sheet material which is to be dried is introduced into and moves out of said housing, respectively; spaced guide means in said housing engaging and guiding sheet material which is to be dried along a given path from said inlet to said outlet; heating means arranged in said housing for heating the air within said housing so as to thereby heat the sheet material while it moves along said path, said guide means engaging the sheet material being also subject to the heating action of said heating means and separate cooling means communicating with said guide means for cooling the latter to thereby prevent heating of said guide means above a predetermined temperature beyond which the sheet material engaged by said guide means is susceptible to heat damage.

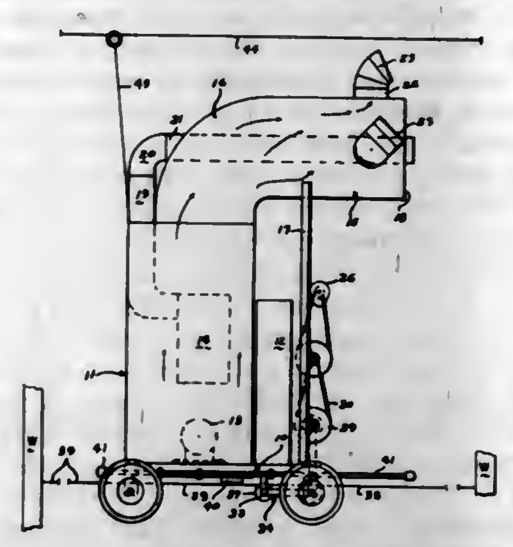
3,308,556
MATERIAL TREATING APPARATUS
John J. Franklin, Glenside, and John R. Thygeson, Sr., Fox Chase Manor, Pa., assignors to Proctor & Schwartz, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 19, 1964, Ser. No. 404,871
7 Claims. (Cl. 34—207)



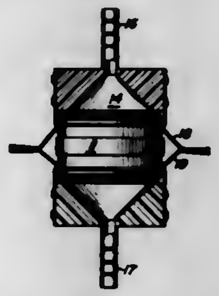
1. Apparatus for treating material comprising an elongated, generally enclosed housing, at least one treating compartment in said housing, means for conveying the material along a predetermined path through said treating compartment, treating medium conditioning means including a plurality of air boxes extending transversely of the direction of movement of said material along said path, each of said boxes having top and opposing side walls which converge from an entrance opening at one end of said box toward a closed end at the opposite end of said box, each box including a bottom wall having a plurality of discharge nozzles confronting the material whereby treating medium entering said box through said entrance opening is discharged through said nozzles, and a curved deflector plate adjacent the entrance end of said box operable to effect predetermined circulation of treating medium through said box in a manner providing uniform flow velocity through all the discharge nozzles and baffle means disposed adjacent said discharge nozzles in the path of flow of treating medium therefrom operable to effect a predetermined flow pattern of the treating medium in the vicinity of the material.

3,308,557
CROP DRYING APPARATUS
Joseph M. Downing, 235 Orchard Drive, Dayton, Ohio 45419
Filed Dec. 16, 1963, Ser. No. 330,801
5 Claims. (Cl. 34—218)

1. A mobile unit for use in a curing shed or the like for accelerated drying of suspended crops, said unit being adapted for a programmed travel within the shed while discharging directed flows of heated air, said unit comprising a mobile platform, wheels on said platform imparting mobility thereto in a longitudinal sense at right angles to the axes of said wheels, a housing installed on and rising from said platform, a conduit communicating at its inner end with the upper end of said housing, said conduit being disposed in said longitudinal sense and projecting in offset relation to said housing, means for blowing heated air under pressure through said housing into said conduit, and outlet means in said conduit discharging the heated air on suspended crops in a peripheral series of directed flows, the outer end of said conduit being closed and said outlet means comprising a plurality of circumferentially spaced generally radial discharge pipes connected in said conduit in advance of said closed outer end, and adjustable air flow directional control means mounted on each of said pipes.



3,308,558
ENVIRONMENTAL CHAMBER
Michael D. Orlando, Frederick, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed May 14, 1964, Ser. No. 367,900
3 Claims. (Cl. 34—218)



3. A small environmental chamber unit for the study of aerosols comprising a hollow cylinder having open ends, a top and bottom means for said cylinder and for forming a chamber therewith, a first membrane filter located between said top and said cylinder, a screen for supporting said first membrane, a second membrane filter located between said bottom and said cylinder, a screen for supporting said second membrane, means securely holding said top and said bottom on said cylinder, and entrance and exit means in said bottom and top means, respectively, for circulating a gas under pressure into and out of said chamber.

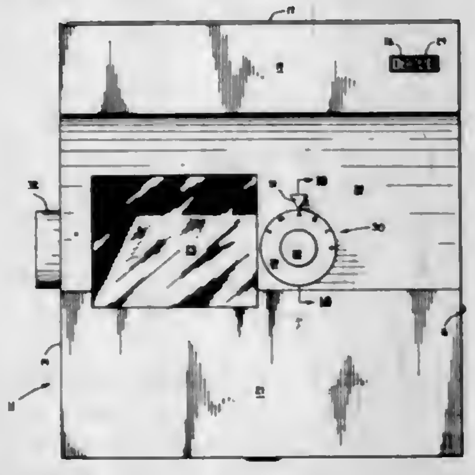
3,308,559
CHEAT-PROOF, PROGRAMMED-LEARNING DEVICE WITH MOTORIZED LESSON SHEET CONTROLLED BY STUDENT
Thomas W. Kirkconnell and Robert N. S. Chiang, Vincennes, Ind., assignors of one-third to Vincennes University, Vincennes, Ind., a corporation of Indiana
Filed May 5, 1964, Ser. No. 365,063
14 Claims. (Cl. 35—9)

4. An educating machine comprising:

a case having a viewing window therein for exposure of educational material, and having a counter window therein for exposing the register of a counter, and having a door therein accommodating removal of contents therefrom, said viewing window being disposed in said door and said door being in the top of said case;

first and second reels disposed in said case, said first reel having a supply of educational material sheet rolled thereon and said second reel having one end of said sheet connected thereto, whereby said sheet can be rolled from said first to said second reel, said sheet having positive drive apertures therein, and said sheet having a plurality of units of educational material thereon, each of said units including a question (**206**) printed in black ink and a plurality of proposed answers (**207, 208, 209, 211**) to said question, said answers each being identified by a different identification character, and one of said answers being correct, and each unit including a plurality of explanations (**212, 213, 214**) of wrong answers, each explanation being provided in a printing medium responsive to light of a different character from that to which each other is responsive, and each unit having adjacent thereto a plurality of apertures arranged to correspond with the arrangement of the answers and answer explanations thereon;

a synchronizing drive member (**38**) having positive drive means thereon engaging the positive drive apertures of said sheet, said positive drive member being coupled to an electric motor (**49**) and drivable thereby when said motor is energized, the construction of said drive member being related to the position of each of said units on said sheet such that one revolution of said drive member will move one unit out of registry with said viewing window and move another unit into registry with said viewing window, said drive member having a key receiving aperture (**38*a***) therein;



a first electrically operable relay (**66**) having control means therein and having controlled means thereon, said controlled means including a first normally-open electrically operable switch (**138**), and said controlled means further including a key (**66*a***) normally received in said aperture in said drive member, said relay being operable when energized to release said key from said aperture in said drive member to accommodate rotation of said drive member by said motor, and said first relay being operable when energized to close said first switch to energize said motor for driving said drive member and thereby for driving said sheet to move one of said units from under the said viewing window and move another of said units into position of registry with said viewing window;

a first manual switch operator (**32**) rotatable between first and second limits, said first switch operator being operable when actuated to close a first switch (**124, 128, 129**) when in the first limit thereof and to open said first switch when moved away from said first limit thereof and operable to close a second switch (**111, 107, 108**) when moved to the first limit thereof and operable to close a third switch (**121, 124**) when moved to the second limit thereof and operable to open said second switch and close a fourth switch (**116, 117, 122**) when moved to said second limit thereof, and operable to open said third switch when moved from said second limit thereof, and operable to open said fourth switch and close said second switch when moved to said first limit thereof, said operator being connected to a light absorber sheet (**67**), the connection of said sheet to said first operator being such that said absorber sheet is disposed above said educational material sheet when said operator is at said second limit, and said absorber sheet is away from said window when said operator is at said first limit;

an ultraviolet bulb;

a "red-light" bulb;

a "green-light" bulb;

an electrically operated registering counter with the register thereof exposed in said counter window, said counter being advanced one-half unit upon energization thereof, and advanced another half unit upon de-energization thereof;

a second manual switch operator, said second manual switch operator including a selector knob (**29**) rotatable on an axis and having a triggerable contactor (**181**) keyed to said knob and rotatable therewith, said triggerable contactor having a plurality of contacts, and said contactor being coupled to said second switch, said operator having means (**188, 156, 191, 192**) normally retaining said contactor in a retracted condition to accommodate rotation of said knob and said contactor, and said operator having a button operated trigger (**196**) thereon to release said contactor when said knob is in one of six rotational positions, said operator being mounted to a base member (**154**) having a plurality of apertures therein, said apertures being arranged in concentric circles and radial lines in said circles, the apertures being thereby arranged in a number sufficient to accommodate a predetermined extent of axial travel of said triggerable contactor (**181**) upon actuation of said trigger to release said contactor, in all of said six rotational positions;

a first rotary contactor (**173**) in said second operator and coupled to a source of electrical energy and positioned to make electrical connection with said second switch when said triggerable contactor is positioned in any one of a first four of said six rotational positions, said rotary contactor making electrical connection with one contactor (**129**) of said first switch when said second operator is in a fifth of said rotational positions, and said rotary contactor making electrical connection with another contactor (**128**) of said first switch when said second operator is in the sixth of said rotational positions;

a support (**87*a***) disposed under said base member with said educational sheet passing between said base member and said support and supported by said support, said support having a plurality of apertures therein registering with the apertures in said base member, and said support having a plurality of spring loaded conductive members therein with pins projecting upwardly through said apertures therein, said pins being thereby engageable by said triggerable contactor when released where said apertures in said educational material sheet are in registry with apertures in said support, a first group of four of said pins (G–1, G–2, G–3, G–4) being disposed in equally spaced relation to each other in an outer circle and connected to said green bulb, a second group of four of said pins (B–1, B–2, B–3, B–4) being disposed in equally spaced relation to each other in an intermediate circle and connected to said ultraviolet bulb, a third group of four of said pins (R–1, R–2, R–3,

R–4) being disposed in equally spaced relationship to each other in said intermediate circle but in a sector of said circle diametrically opposite said second group of four pins, said third group of four pins being connected to said red bulb, a fourth group of four pins (M–1, M–2, M–3, M–4) being disposed in said outer circle but disposed in a sector of said circle diametrically opposite the sector having said first group of four pins thereon, the four pins of said fourth group being connected to said first electrically operated relay (**66**), and a fifth group of four of said pins (C–1, C–2, C–3, C–4) being disposed in an inner circle radially inward from said intermediate circle, the pins of said fifth group being connected to said counter, each pin of each of said five groups being disposed on a common radius with a pin of each other of said five groups;

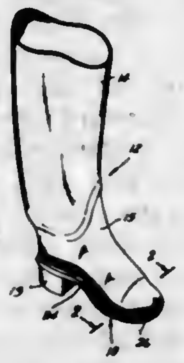
a first normally-closed sheet position sensor switch (**86**) including a sensor engageable with said sheet to keep said sensor switch open, said sensor being receivable in an aperture of said sheet material to thereupon permit closure of said sheet position sensor switch, said sensor switch being connected to said another contactor (**128**) of first switch;

a second electrically operated relay (**64**) connected between said source of electrical energy and said sensor switch and operable, when first energized, to close a second electrically operated switch (**134**), said second electrically operated switch being connected in circuit with the control means for said first electrically operated relay (**66**) and said source of energy to energize said first relay and close said first electrically operated switch to make an electrical circuit through said motor and energize said motor for control of said motor when said second switch operator knob is in a fifth of said six rotational positions thereof, said second electrically operated relay holding said second electrically operated switch closed when said relay is de-energized and being operable when next energized to open said second electrically operated switch and thereby open said first electrically operated switch to de-energize said motor.

3,308,560
RUBBER BOOT WITH FIBREGLASS INSTEP GUARD

James P. Jones, Binghamton, N.Y., assignor to Endicott-Johnson Corporation, Endicott, N.Y., a corporation of New York

Filed June 28, 1965, Ser. No. 467,462
8 Claims. (Cl. 36—4)



1. Safety footwear comprising: a sole assembly; an upper having a toe portion, a metatarsal portion and an instep portion and formed of an outer layer of a flexible material and a flexible lining extending at least through the toe, metatarsal and instep portions; a rigid dome-shaped metal box toe disposed in the toe portion of the upper between the outer layer and the liner and extending downwardly at the side and front portions thereof into engagement with the sole assembly so as to be supported thereby; and a metatarsal and instep guard made of a strong rigid material and having a generally arch-shaped configuration with a transversely concave inner surface and transversely convex outer surface and a longitudinally convex inner surface and a longitudinally concave outer surface and extending through the metatarsal portion and at least the forward part of the instep portion of the upper between the outer layer and liner with its side edges extending downwardly and resting and supported on the sole assembly and with its forward edge overlapping the trailing edge of the metal box toe so that it will obtain additional support therefrom, said guard and box toe being free from attachment to each other so that the overlapping portions may shift relative to each other upon flexing of the footwear.

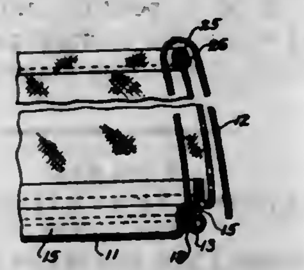
3,308,561
COMPOSITION OF MATTER AND METHOD OF USE THEREOF

Joseph Paul Mayo, 38 Otis Hill Road,
Hingham, Mass. 02043
No Drawing. Filed Mar. 8, 1963, Ser. No. 265,582
11 Claims. (Cl. 36—59)

1. The combination comprising: an athletic shoe having a sole, at least one ground-engaging member extending from said sole, and a composition of matter at least partially covering said sole and said ground-engaging member and comprising from about 70–90% by weight petroleum oil and 10–30% powdered graphite.

3,308,562
SANITARY SHOE COVER OF THE TYPE HAVING A CONDUCTIVE SOLE

Harold Zimmon, 829 Edgewood Road,
Redwood City, Calif. 94062
Filed June 22, 1964, Ser. No. 376,999
2 Claims. (Cl. 36—7.1)



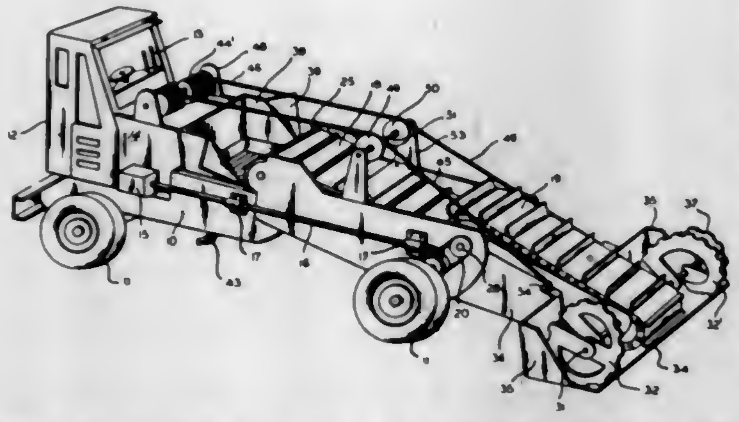
1. A sanitary shoe cover comprising a normally flat sole having a peripheral edge bent vertically upward, a textile cover portion for enclosing the upper portion of a shoe, having a reversely, inwardly bent bottom edge, a welting of textile fabric filled with a filler to import bodily stiffness thereto while leaving a measure of flexibility, said welting having one edge hemmed with a first line of stitching to form a hem to receive said filler and being sewn adjacent said hemmed edge to said peripheral edge of said sole along a horizontal second line of stitching which substantially overlies said first line of stitching and being sewn adjacent its other edge to said bottom edge of said cover portion along a horizontal third line of stitching, said cover portion having an outer periphery spaced outwardly beyond said peripheral edge of said sole and of said welting, said welting extending vertically all around said sole between said peripheral edge of said sole and said bottom edge of said cover portion.

3,308,563
SNOW REMOVING APPARATUS

Joseph C. Danek, 9978 S. Nicholson Road,
Oak Creek, Wis. 53154
Filed Nov. 20, 1963, Ser. No. 324,939
2 Claims. (Cl. 37—12)

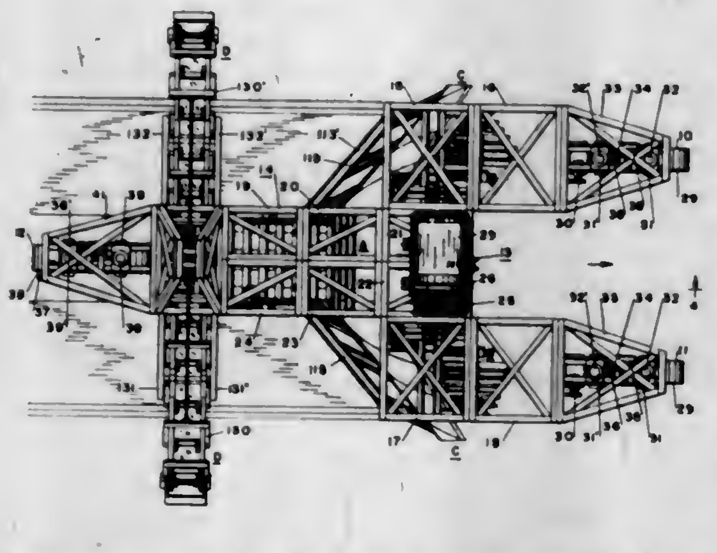
1. A power operated conveyor loader for use with snow removal processes and the like including a motorized wheel supported frame, a scoop having supporting arms

pivotally mounted on a pivot on said frame at a forward portion thereof, said scoop extending forwardly of said frame, a sub-frame having supporting arms pivotally mounted on said motorized frame at a forward portion thereof and at a location above the pivot for the arms of said scoop, cable means attached to the arms of said sub-frame and actuated by mechanism carried by said motorized wheel supported frame for moving said sub-frame in a vertically swinging path to a selected vertical height with respect to said motorized frame, cable means attached to the arms of said scoop and actuated by mechanism carried by said motorized wheel supported frame for moving said scoop in a vertically swinging path and to a selected vertical height with respect to said motorized frame, said sub-frame including an endless conveyor extending from a position above said scoop to a position rearwardly thereof, said sub-frame including lateral conveyer means positioned above said scoop and extending laterally from said endless conveyor on each side thereof, means for operating said lateral conveyors so as to move material from positions laterally of said endless conveyor to a position adjacent thereto, said scoop including a guiding surface cooperable with said endless conveyor for delivering material rearwardly from said scoop.



3,308,564
COMBINATION EXCAVATING TRIMMING MACHINE

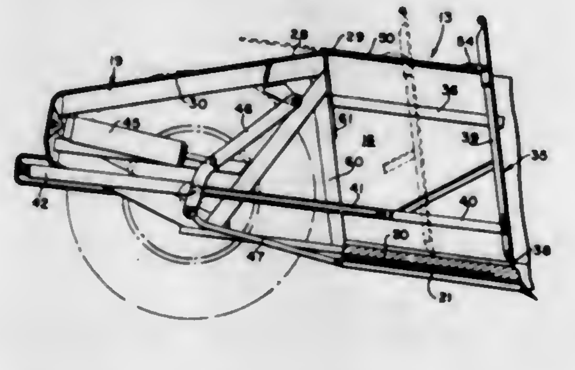
Alfred Perry, Moses Lake, and Harry D. Durston, Kennewick, Wash., assignors to J. A. Terteling & Sons, Inc., Boise, Idaho
Filed Sept. 27, 1965, Ser. No. 490,376
12 Claims. (Cl. 37—96)



1. An apparatus for forming open trapezoidal water conduits in an earth foundation, which foundation has been previously cut and filled from the natural undulating ground profile to a preselected mean elevation, and which conduits include an invert portion, a pair of respective upwardly extending side slope portions commencing at the sides of said invert portion, and at least one berm portion at the upper end of each of said respective side slope portions, the apparatus comprising a mobile bridgelike framework mounted on transport vehicles for movement along a projected work path overlying the conduit to be excavated, digging means carried by said framework and disposed below said framework and extending across the conduit at the front end of said framework with respect to the direction of travel thereof, said digging means having outer digging edges generally conforming to and extending entirely across the preselected cross sectional configuration for the conduit, excavating means carried by said digging means to remove dug material, scraper means carried by said framework aft of said digging means, smoothing and compacting means carried by said framework aft of said scraper means, said scraper means and said smoothing and compacting means extending entirely across and substantially conforming to the pre-selected cross-sectional configuration for the conduit and extending deeper into the conduit than said digging means to cut and trim and compact the said several portions of the conduit to uniform neat line dimensions in a single pass therealong, and means carried by the framework to convey away dug, excavated and trimmed earth material from the conduit.

3,308,565
PROTECTIVE SHIELD ON EARTH-CARRYING SCRAPER

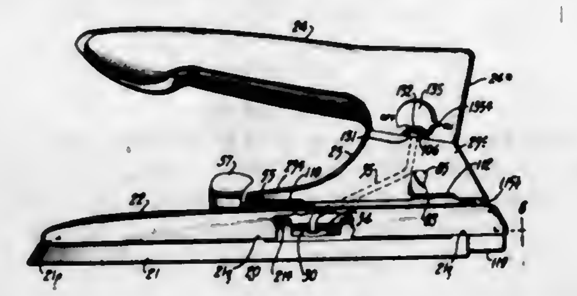
George R. Walters and George A. Luckett, Dallas, Tex., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,034
4 Claims. (Cl. 37—129)



1. In an earth-moving carrier including a forwardly opening earth-moving carrier bowl having a pair of transversely spaced upright sides with a floor structure extending between the sides, a frame including a rear frame portion rearwardly of the sides and centrally located relative thereto with a forward upper edge section extending between the sides, a transverse upright ejector plate positioned between the side walls and adapted to move fore and aft relative to the bowl to effect discharge of material forwardly of the bowl, power means between the frame rear portion and ejector plate for moving the ejector plate between a rear position in close proximity to the frame rear portion and an advanced position spacedly forwardly of the frame rear portion, the combination therewith of a laterally disposed shield supported for sliding movement on the frame rear portion and having a front edge portion closely adjacent the ejector plate; and transverse horizontal hinge means connecting the front edge portion to the ejector plate whereby the shield will move with the ejector plate is it moves to and from its rear position and the underside thereof will engage and slide over the upper edge section of the frame rear portion to thereby cover the gap between the ejector plate and upper edge section.

3,308,566
PRESSING IRON

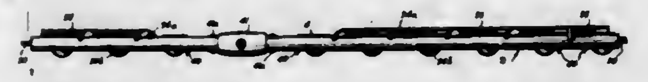
Ivar Jepson, Oak Park, and Vello Laama, Lombard, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 21, 1963, Ser. No. 267,014
24 Claims. (Cl. 38—77)



1. An electrically heated flatiron selectively operable from either a low or a high voltage power source comprising the combination of a sole plate, a first electric heating element mounted in heat exchange relationship with said sole plate, a second electric heating element mounted in heat exchange relationship with said sole plate and disposed adjacent said first element, a pair of terminals mounted on said sole plate, switch means for connecting said first heating element across said terminals when said flatiron is operated from a power source having a voltage of one magnitude and for connecting both said first and second heating elements to said terminals when said flatiron is operated from a power source having a voltage of a different magnitude.

3,308,567
CASINGS FOR TRAWL LINES

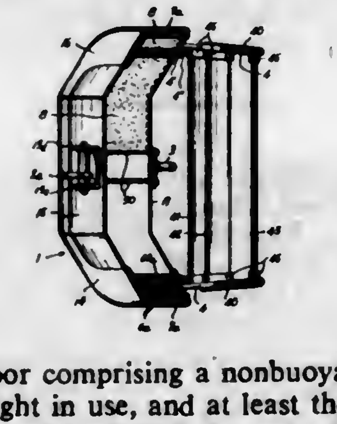
Frank J. Luketa, 5567 Greenwood Ave., Seattle, Wash. 98103
Filed Apr. 30, 1964, Ser. No. 364,889
18 Claims. (Cl. 43—9)



1. In combination, a flexible line, and a casing enclosing said line having integral vanes providing water reaction surfaces thereon set at an angle with respect to the longitudinal axis thereof so that relative water movement during line advance will act upon said water reaction surfaces to hydrodynamically generate unbalanced transverse forces along said line.

3,308,568
POLYHEDRAL TRAWL DOOR

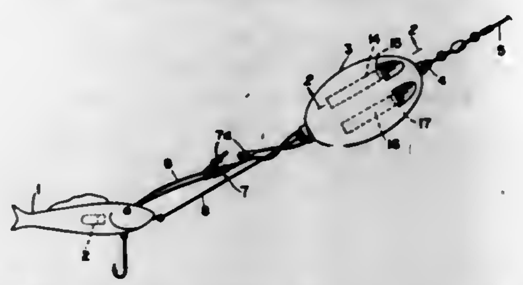
Frank J. Luketa, 5567 Greenwood Ave. N., Seattle, Wash. 98103
Continuation of application Ser. No. 477,283, Aug. 4, 1965, which is a continuation of application Ser. No. 219,276, Aug. 24, 1962. This application June 29, 1966, Ser. No. 564.492
20 Claims. (Cl. 43—9)



1. A trawl door comprising a nonbuoyant body which is generally upright in use, and at least the posterior surface of which is of hydrofoil shape in the longitudinal direction, and auxiliary surfaces located behind the posterior face of the door in position to intercept incipient eddy currents and to direct them towards such posterior face and its trailing end.

3,308,569
FLASHING FISH LURE

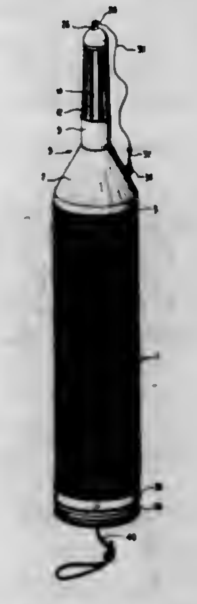
Oscar Foellner and Donald M. Foellner, both of 201 Swartmore Ave., Folsom, Pa. 19033
Filed Nov. 20, 1964, Ser. No. 412,648
6 Claims. (Cl. 43—17.6)



1. A fishing lure comprising:
a translucent body adapted to carry at least one hook,
a bulb mounted within said translucent body,
a watertight container,
a power supply for supplying intermittent electric current to said bulb, said power supply being enclosed in said watertight container, said power supply including at least one small dry-cell battery,
a transistor oscillator circuit connected to said battery, the output of said transistor oscillator circuit being connected to said bulb for supplying intermittent current thereto,
electrical cables between said power supply and said bulb, said electrical cables having releasable watertight connections intermediate the ends of said cables, and
means on said watertight container for securing a line thereto so that said container may be attached to the line on a conventional fishing reel.

3,308,570
FISHING BAIT CONTAINERS

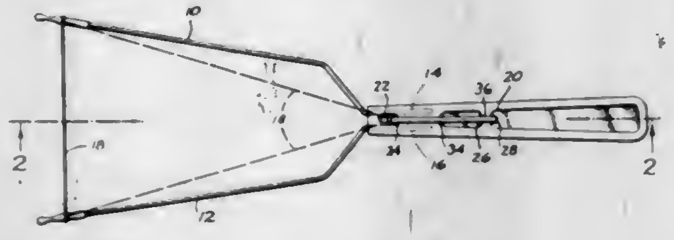
Eddie Horton, 800 44th Ave. N., Nashville, Tenn. 37209
Filed Sept. 30, 1964, Ser. No. 400,333
3 Claims. (Cl. 43—55)



1. A closed bait container and dispenser comprising a container portion, outlet means connected to one end of said container portion, said outlet means including a plurality of resilient, longitudinally extending, circularly arranged, circumferentially spaced, spring fingers, inner ends of said plurality of spring fingers connect-

ed to said container portion, outer ends of said plurality of spring fingers resiliently urged in a converging direction, and closure means having an inner end removably positioned between the outer ends of said spring fingers and urging said outer ends in a radially outwardly direction, said closure means dimensioned to spread said outer ends of said spring fingers to permit free passage of bait from said container portion to a point adjacent said inner end of said closure means, removal of said closure means resulting in convergence of said spring fingers to grip the bait at said point.

3,308,571
INSECT KILLING DEVICE
Forrest H. Jones, 1828 E. 15th,
The Dalles, Oreg. 97338
Filed June 10, 1965, Ser. No. 462,909
3 Claims. (Cl. 43—135)



1. An insect killing device comprising

(a) a forked support including two tines having spaced outer ends,

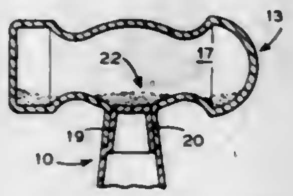
(b) a handle fastened to the inner ends of the tines and projecting inwardly above the plane of the tines,

(c) a resilient band mounted across the outer ends of the tines and stretchable between a relaxed condition, wherein it spans the space between the outer ends of the tines, and a stretched condition wherein it extends to the handle in substantially the same plane as the tines, and

(d) trigger means mounted on the handle and having a band-retaining segment normally projecting above the handle and releasably engaging the resilient band in its stretched condition and an actuating segment normally spaced above the handle and movable toward the handle to retract the band-retaining segment,

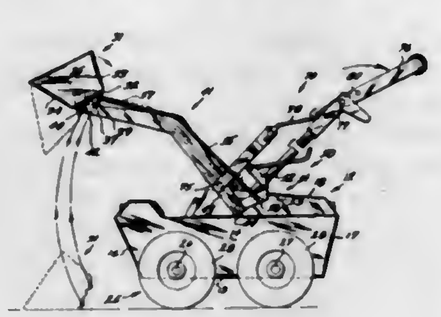
(e) the device being dimensioned to locate an insect between the tines when the band is in its stretched condition, in the area traversed by the band as it snaps from its stretched condition to its relaxed condition upon its release by the trigger means.

3,308,572
SPARKING DEVICE
Leandro W. Tomarkin, P.O. Box 393,
Spring Valley, N.Y. 10977
Filed June 27, 1963, Ser. No. 291,182
10 Claims. (Cl. 46—10)



1. A sparking device comprising an enclosed chamber having light transmitting wall portions and a mixture of powdered triboluminescent phosphor material and granular friction inducing material within said chamber, said mixture constituting by volume a small fraction of the volume of said enclosed chamber, whereby upon shaking said device, the movement of the constituents of said mixture within said chamber and the frictional contact between said powdered triboluminescent material and said granular friction inducing material will give rise to a sparking effect visible through the light transmitting wall portions of said chamber.

3,308,573
SKIP LOADER TOY WITH SOUNDING MEANS
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc.,
Hawthorne, Calif., a corporation of California
Filed Jan. 27, 1964, Ser. No. 340,185
2 Claims. (Cl. 46—40)



1. A realistic, simply operated and constructed skip loader toy comprising:

(a) a body having rolling means for permitting easy movement of said body across the supporting surface;

(b) a rotatable bucket means mounted on said body, said bucket means being adapted to assume stable pickup and dump positions and stable raised and lowered positions;

(c) a first lever means mounted on said body adapted to rotate said bucket means to and between said pickup and dump positions;

(d) a second lever means mounted on said body adapted to move said bucket means to and between said raised and lowered positions, both of said lever means being adapted to be operated by the child from a standing position;

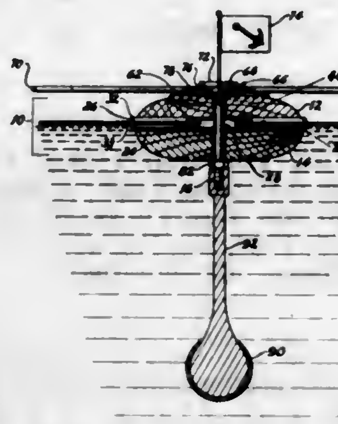
(e) variable speed motor sound means adapted to reproduce internal combustion motor sounds corresponding to the sounds generated during the normal operation of a skip loader;

(f) said motor sound means including a regulator means adapted to operate said motor sound means at high speed during rotation of the bucket means between its pickup and dump positions;

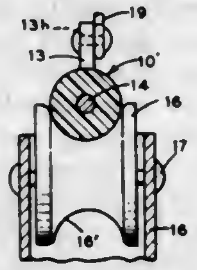
(g) said regulator means comprising switching means for changing said motor sound means to and between high speed and low speed operations concomitant with the change of said bucket means between pickup and dump positions; a trip arm rotatably mounted on said body and coacting with said switching means to operate the same; and a drive pin means mounted on said first lever means and adapted to operate said trip arm.

3,308,574
WAVE-POWERED SPINNING AQUATIC TOY
Raymond Frank Schneider, 1 Highland View Drive,
Bayville, N.Y. 11709
Filed Aug. 27, 1964, Ser. No. 386,979
6 Claims. (Cl. 46—41)

1. A wave-powered aquatic toy comprising a body disposed about a vertical axis, a plurality of paddles supported from said body circularly about said axis not above the water line of said toy, said paddles being free to flap to a restricted extent along an axis eccentric thereto under the influence of waves thereon, and means disposed below said paddles for stabilizing said toy against tilting from said vertical axis under the influence of said waves thereon, whereby said paddles remain in contact with such waves to spin said toy at a high rate of speed under the influence of waves thereon.



3,308,575
TOY TRACKWAY AND VEHICLE THEREFOR
Jerome H. Lemelson, 85 Rector St.,
Metuchen, N.J. 08840
Filed Feb. 26, 1964, Ser. No. 347,532
9 Claims. (Cl. 46—242)



1. A vehicle toy and track comprising in combination,

(a) a vehicle, said vehicle having wheel means to engage and propel said vehicle across a surface,

(b) a base member defining a track surface on which the said wheel means of said vehicle is guided by engagement therewith,

(c) said base member defining said track surface being made of a flexible plastic material which is permanently magnetized along the entire length of said track surface, said flexible magnetic plastic material being capable of being readily shaped by hand to vary the configuration of the track, and

(d) said wheel means of said vehicle being made of a material which is magnetically attracted to said track surface,

(e) the magnetic attraction between said wheel means of said vehicle and said track surface being of sufficient magnitude to provide a means to hold said wheel means of said vehicle against said track surface regardless of the attitude of said track surface to the horizontal end of gravity acting on said vehicle.

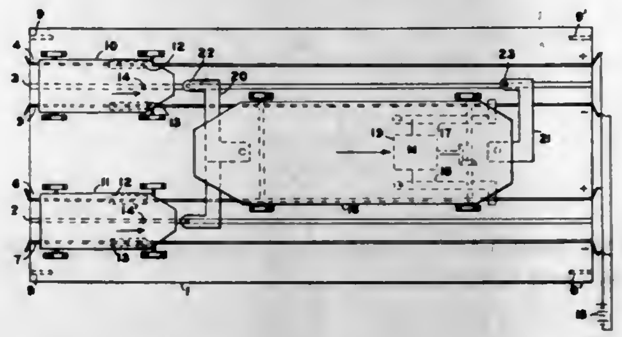
3,308,576
MOTOR VEHICLE AND DUAL TRACK
Walter Nadolny, 1089 Van Buren St.,
Uniondale, N.Y. 11553
Filed Mar. 2, 1964, Ser. No. 348,351
4 Claims. (Cl. 46—243)

1. In a model electrical automobile system of the type having a parallel pair of tracks, each track comprising a slot and having a pair of electric rails spaced on either side of said slot, each track being adapted to accommodate one small vehicle having a center guide pin riding in said slot and electric contacts riding on said electric rails on either side of said slot;

means adapting a large vehicle having an electric motor to ride between said slots and use said electric rails between said slots comprising;

a first guide member connected to and extending from one side of said large vehicle,

a second guide member connected to and extending from one side of said large vehicle,

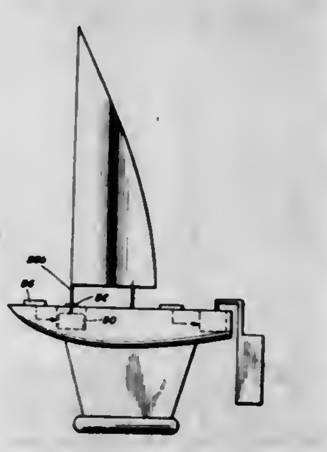


a pair of guide pins one pin connected to each of the said guide members,

each of said pins being adapted to ride in one of said slots,

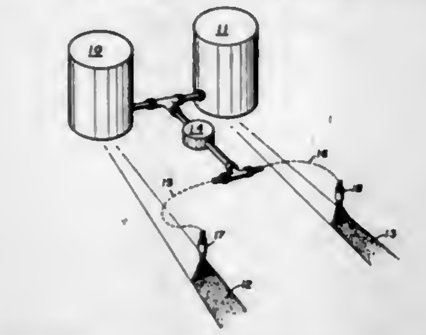
and a pair of electrical contact members each connected to said motor and each adapted to contact one of said inner rails located between said slots.

3,308,577
MINIATURE SAILING GAME CONTROLLED BY PHOTOCELLS
Arthur W. Holt, Silver Spring, Md.
(Podickory Point, Rte. 2, Annapolis, Md. 21401)
Filed May 20, 1964, Ser. No. 368,949
4 Claims. (Cl. 46—244)



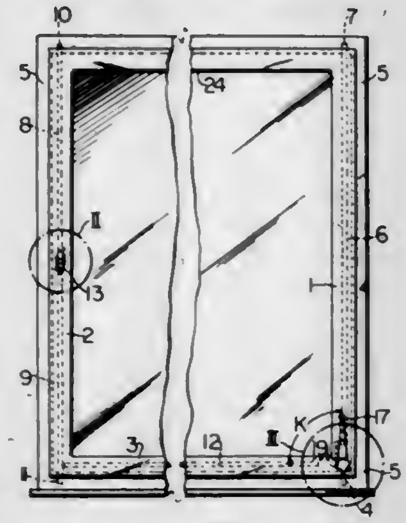
1. In a game set relating to sailing, wherein the set includes a body of water over which there are air currents and a focused light source adapted to be manually directed, the improvement comprising a miniature sailboat provided with a buoyant hull, a sail, a mast to which said sail is attached, means movably connecting said mast to said hull to enable said mast and sail to move to selected positions, and a rudder pivoted to said hull, photosensitive means including a photocell arranged to energize an electric motor, and the motor being mechanically connected with said rudder to pivot said rudder and thereby hydrodynamically control the sailboat as it is propelled by the air currents impinging on the sail, said photosensitive means responding to the manually directed focused light, means to exercise aerodynamic control over the course of the boat by adjusting said mast, the last-mentioned means including a second motor drivingly connected to said mast, and a photocell electrically connected with said second motor to actuate the second motor.

3,308,578
HUMIC ACID HEAT SINK
John P. Karcher, 505 First National Bank Bldg., Midland, Tex. 79701, and Lynn P. Pittard, 201 Sunset, Hereford, Tex. 79045
Filed July 19, 1965, Ser. No. 472,789
5 Claims. (Cl. 47—9)



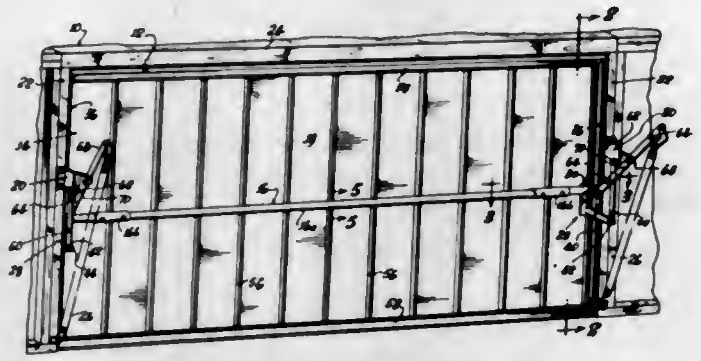
1. The method of accelerating germination of plants in a seed bed which comprises:
(a) covering said seed bed with a layer of humate salts in amounts of from 0.0027 to 0.057 pound per square foot, and
(b) aqueously fixing the humate salts to the surface soil particles.

3,308,579
WINDOW CONSTRUCTION
Hans Thams, Hamburg-Bramfeld, Germany, assignor, by mesne assignments, of fifty percent to Hans Thams, Hamburg-Bramfeld, Germany, and fifty percent to Heinrich Peters, Vienna, Austria
Filed Mar. 23, 1965, Ser. No. 441,999
Claims priority, application Germany, June 5, 1964, T 26,310
1 Claim. (Cl. 49—192)



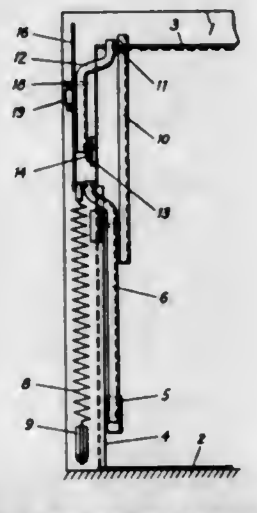
A swingable and tiltable window mounted in a fixed frame comprising a window having a combination lower rotation axis and tilting bearing means at the lower end of one of its vertical members, a rod slidable in said vertical member which extends beyond the top margin of the sash for cooperation with a recess in the fixed frame to form the upper rotation axis, an upper partial rod slidable in the second vertical member which extends beyond the top margin of the sash for cooperation with a recess in the fixed frame for locking the sash against movement and a lower partial rod slidable in the second vertical member which extends beyond the lower margin of the sash for cooperation with a recess in the fixed frame to form a pivot bearing for tilting the sash about a lower horizontal axis, the said upper and lower partial rods being movable through a double action ratchet gear whose rotation through 90° moves the upper partial rod and whose rotation through 180° moves both partial rods, a rod slidable in the lower horizontal member for engagement with a recess in the lower partial rod to lock the said partial rod when it cooperates with the recess in the fixed frame, the rod in the vertical member and the rod in the lower member of the sash being movable through a double action ratchet gear to simultaneously engage the rod in the lower member with the recess in the partial lower rod and retract the rod in the vertical member from the recess in the fixed frame.

3,308,580
DOOR STRUCTURE HAVING TORQUE TUBE
Frank R. Ogilvie, Glendora, Calif., assignor to Boniard I. Brown, West Covina, Calif.
Filed Nov. 9, 1964, Ser. No. 409,872
10 Claims. (Cl. 49—206)



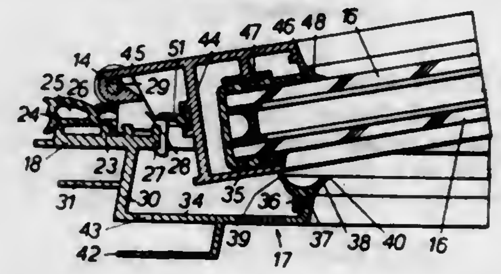
1. An overhead door structure comprising a door panel having opposite ends and upper and lower edges, a single torsionally rigid generally tubular torque transmitting member connected with the door panel and extending lengthwise of said panel intermediate said edges thereof, hinge means operatively connected with the respective ends of said torque transmitting member for mounting said door in a door frame for movement between open and closed positions, means torsionally attached to said torque transmitting member and adapted to receive a force of sufficient magnitude to open and close the door and being proportioned to resist bending to transmit said force to said torque transmitting member without substantial deflection of said force receiving means.

3,308,581
OVERHEAD DOOR
Gustav A. Gustavsson, Nygatan 6, Motala, Sweden
Filed Jan. 18, 1965, Ser. No. 426,017
2 Claims. (Cl. 49—206)



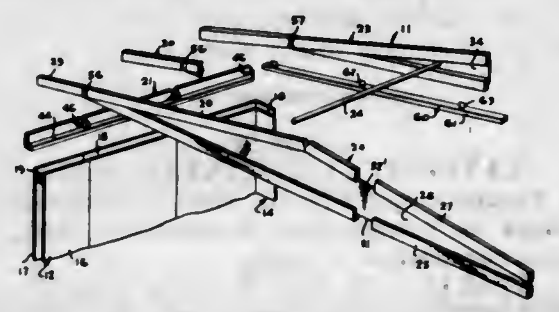
1. An overhead door having a guiding mechanism for guiding the door during its opening and closing, said guiding mechanism including on each side of the door a two-arm lever, pivotally mounted in the door frame side about a horizontal shaft, said two-arm lever having the free outer end of a longer arm pivotally connected to the lower end of the door and the free outer end of a shorter arm connected to the one end of a spring, the other end of which is connected to the door frame, and further including on each side of the door a rail, fastened to the inside of the door near its outer side, thus extending in the height direction of the door, and a support arm, pivotally mounted in the door frame side for swinging movement backwards perpendicular to the plane of the door opening, said support arm at its one end being provided with a roller cooperating with said rail and at its other end being provided with stop means cooperating with said door frame side, preferably via a buffer, to limit said swinging movement of the support arm, and further including on each side of the door a control arm, the one end of which being pivotally mounted in said shorter arm of said two-arm lever and the other end of said control arm being mounted in said support arm through a pin and slot connection.

3,308,582
WINDOW CONSTRUCTIONS
Bjørn Knag Bakke, Bergen, Norway, assignor to A. Knag A/S, Bergen, Norway
Filed June 29, 1965, Ser. No. 467,974
Claims priority, application Germany, July 7, 1964, K 53,396
14 Claims. (Cl. 49—383)



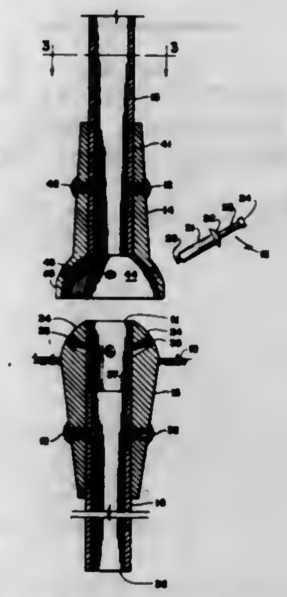
1. In a window construction for mounting in a wall structure and comprising a metal frame, a glass pane located therein and a metal casement formed from a pair of horizontal profile members and a pair of vertical profile members and having pivotably mounted on one of its profile members an edge portion of said frame, the improvement which comprises in spacing inner edges of said profile members on one side of said pane and in both a vertical and a horizontal direction, at a distance which is less than the corresponding distance between corresponding edges of said frame on the same side of said pane, and which further comprises a sealing strip arranged at said inner edges of the profile members to bear sealingly against said pane.

3,308,583
PREFABRICATED ROOF STRUCTURE
John W. Chaney, 932 Tiverton, Los Angeles, Calif. 90024
Filed May 14, 1963, Ser. No. 280,269
6 Claims. (Cl. 52—92)



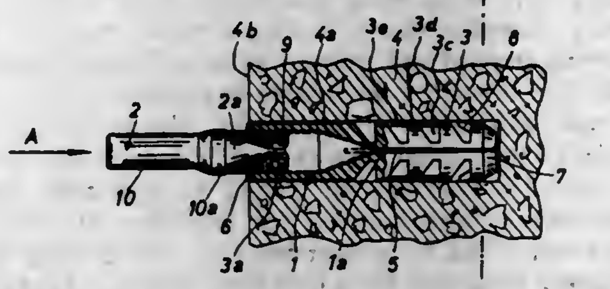
1. A prefabricated roof structure for a building having side walls, including a top plate to extend horizontally along the top edge of one of said side walls, a roof beam having a portion extending across and supported above the upper side of said top plate, blocking members secured to the upper side of said top plate, said blocking members being elongated in essentially a common direction longitudinally of said plate, to extend between said beam and other similar beams, and having adjacent ends spaced apart to form a recess therebetween receiving said beam, and a connector bracket secured to said top plate attaching said beam to the top plate and having a thin portion projecting into a slit formed in said top plate.

3,308,584
HIGHWAY GUIDE POST
William G. Graham, P.O. Box 7, Jenner, Calif. 95450
Filed May 23, 1963, Ser. No. 282,656
4 Claims. (Cl. 52—98)



1. A ball and socket connector for a highway guide post, composed of two halves, each half having a spherical surface adapted to mate with and slide on the spherical surface of the other, each of said halves having holes formed therein that are transverse such surfaces, each hole in one half being aligned with a hole in the other half in pairs of holes, the inner one of said halves formed with an interior space, each of said pairs of holes extending radially of said surfaces and thru said halves from the exterior of the outer half to said interior space so that each such pair of holes forms a hole that is blind interiorly of said connector, and a frangible rivet extending thru each of said pair of holes to secure said halves together and to impede such sliding.

3,308,585
DEVICE FOR BONDING EXPANSION ANCHOR SLEEVES IN MASONRY OR THE LIKE
Artur Fischer, Tumlingen, Kreis Freudenstadt, Germany
Filed Apr. 13, 1964, Ser. No. 359,179
Claims priority, application Germany, Apr. 11, 1963, F 39,475
17 Claims. (Cl. 52—98)



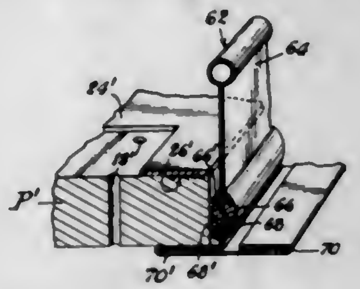
8. In a supporting structure having an exposed side and an expansion anchor hole extending inwardly from said open side thereof, in combination, a deformable expansion anchor sleeve received in the hole of said supporting structure and having a leading portion and a slot extending from said leading portion toward but short

of the other end thereof; and an expendable bonding device including an adhesive-containing container received in and substantially filling the interior of said sleeve, said container having a leading portion provided with a weakened spot which may be destroyed in response to increasing pressure of adhesive so that the adhesive may penetrate into the slot of said sleeve and thereupon into the material surrounding said hole, and a plunger secured to said container and arranged to be driven into said leading portion thereof to destroy said weakened spot and to cause expulsion of adhesive into the material of the supporting structure to bond said sleeve thereto, whereupon said device may be withdrawn from the sleeve so that the latter may receive a fastener.

3,308,586
VENTILATING PANELS

Kern C. Olson, Minneapolis, Minn., assignor to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware

Filed Jan. 13, 1964, Ser. No. 337,210
9 Claims. (Cl. 52—99)



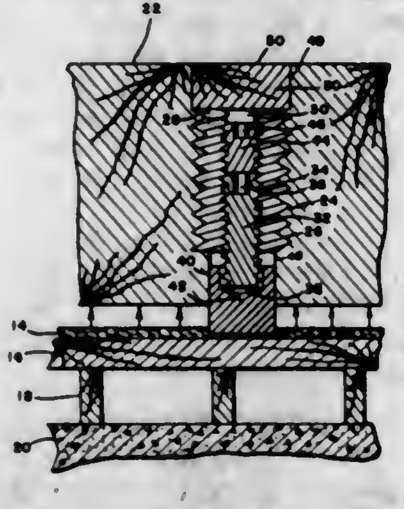
1. In a ventilating ceiling having a ventilating panel with ventilating openings through its body portion for the passage of air through the ventilating panel, and having a supporting grid including horizontal flanges providing a circuitous ledge removably supporting the ventilating panel, a layer of air-impervious material over at least a portion of the back of the ventilating panel, said layer covering at least some of the ventilating openings of the body portion and said layer being secured to the panel at regions other than the portion of the back having said covered ventilating openings, said layer having means at a selected portion within the periphery of the panel and in close proximity to at least one ventilating opening in the panel for readily severing and removing a portion of the layer over said ventilating opening.

3,308,587
BOWLING ALLEY BOARD ADJUSTOR

Howard L. Gilroy and Walter J. Lillard, Flint, Mich., assignors to G.L.C. Bowling Supplies, Inc., a corporation of Michigan

Filed Dec. 30, 1963, Ser. No. 334,418
2 Claims. (Cl. 52—126)

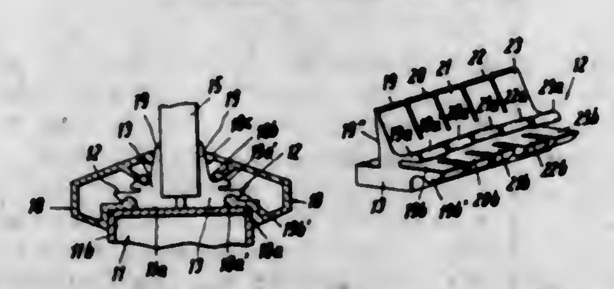
1. In combination with a bowling alley board and a leveling strip supporting said board from below, an externally threaded sleeve having a transverse slot in the upper end thereof and adapted to be embedded completely within said board by threadable engagement with a vertical bore extending through said board, an internally threaded longitudinal bore extending downwardly through said sleeve, a bearing cup having an upwardly disposed recess therein, and adapted for insertion into said bore in said board and to be supported by said leveling strip, a first screw arranged for adjustable, threaded engagement with said threaded bore of said sleeve, the lower end of said first screw being received within said recess in said bearing cup and the upper end of said first screw being disposed below the upper end of said sleeve when said lower end of said first screw extends below the lower end of said sleeve, means for gripping and rotating said screw to force and maintain said sleeve and board upwardly from and in spaced relationship with said bearing cup and leveling strip, a locking screw adapted for threadable engagement within said threaded bore of said sleeve above said first screw and disposed to contact, and to be wedged against the upper end of said first screw to restrain said first screw against rotation, and means for gripping and rotating said locking screw.



3,308,588
MOUNTING FOR PANELS AND THE LIKE

Ernst von Wedel, Senne, near Bielefeld, Germany, assignor to Heinz Schurmann & Co., Bielefeld, Germany

Filed Oct. 16, 1964, Ser. No. 404,366
Claims priority, application Germany, Oct. 17, 1963, Sch 34,010
22 Claims. (Cl. 52—127)



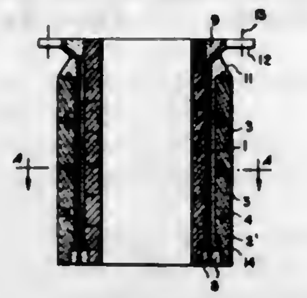
1. A mounting arrangement for panel type building elements comprising, in combination, support means; a building element having a first side and a second side, at least said first side having a substantially planar surface portion; holding means securing said building element to said support means and comprising an elongated body portion mounted on said carrier and including a row of elastic projections integral with said body portion and pressing against said substantially planar surface portion of said first side of said building element in the direction toward said second side, said projections having retaining surfaces at least some of which are staggered with reference to each other in said direction and stop means located on said support means and engaging said second side of said building element, preventing the same from moving in said predetermined direction.

3,308,589
LAYERED CURVILINEAR WALL

Masao Yoshioka and Kiyoshi Mori, Kitakyushu, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed Dec. 18, 1963, Ser. No. 331,517
Claims priority, application Japan, Dec. 22, 1962, 37/58,412
1 Claim. (Cl. 52—249)

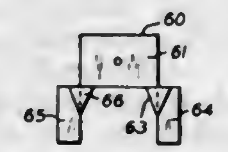
A connecting pipe adapted to extend between a container for vacuum degassing molten metal, especially molten steel, and a body of molten metal, and which is exposed to molten metal on both the outside and inside thereof, said pipe comprising a central cylindrical metal wall, a lining of fire bricks on the inside of said wall, an L-section flange projecting outwardly from said cylindrical wall adjacent the lower end of said wall, a bottom row of fire bricks each having a groove in an inside lower portion thereof and being supported on the L-section flange at the outside surface of the iron wall, each of the bricks in said bottom row of bricks having a groove in the upper surface thereof aligned with the grooves in the other bricks, mortar fixing the bottom bricks to the flange, a bottom metal ring in the upper grooves of the bottom bricks, further bricks in circular rows one on top of the other up the outside of said wall, each further brick having grooves in the upper and lower surfaces thereof aligned with the corresponding grooves in the other bricks, the lower groove in the bottom row of further bricks fitting over the bottom metal ring, further metal rings in each circular groove defined between the circular rows of further bricks, and mortar fixing the further bricks and the further metal rings to each other.



3,308,590
REMOVABLE PANEL FASTENER

Harold V. Ettore, Yorktown Heights, and Frederick R. Ashby, Carmel, N.Y., assignors to United States Plywood Corporation, New York, N.Y., a corporation of New York

Filed Feb. 3, 1964, Ser. No. 342,080
6 Claims. (Cl. 52—281)



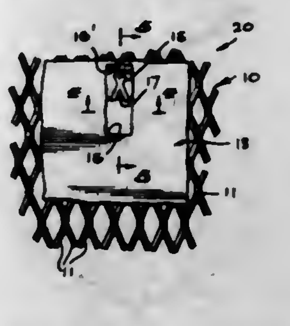
3. A wall mounting which comprises in combination, (1) a first panel having attached thereto, (2) a fastener which is characterized by, (3) a first base section contiguous to and rigidly affixed to a framing member, (4) a shoulder section extending vertically from one side of said base section, (5) leg sections extending beyond said shoulder and in the same plane with said base section and extending behind the rear surface of said first panel, (6) pins extending beyond said shoulder at the top thereof and into the side of said first panel, (7) a second base section extending vertically from one side of said first base section and in a plane parallel to the plane of said shoulder, said second base section being attached rigidly to a stud, (8) a second panel perpendicular to said first panel the one edge of which seats in the area defined by the planes of said shoulder, said second base section and the front surface of said first panel.

3,308,591
EXPANDED METAL WITH PAPER BACK

William Brandt Goldsworthy, 1230 Monterey Pass Road, Monterey Park, Calif. 91754

Filed July 24, 1964, Ser. No. 385,026
8 Claims. (Cl. 52—454)

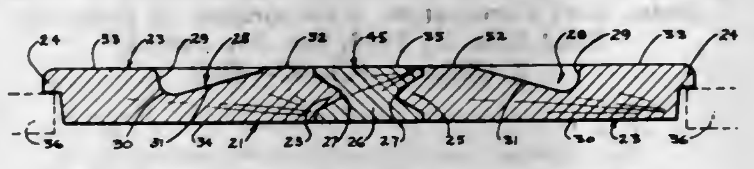
1. A composite material adapted to be attached to a support for application thereto of a mortar-like plastic material comprising: a first sheet of expanded metal having a multiplicity of openings therethrough each bounded by a plurality of strands of said expanded metal which are integrally joined at positions spaced about the respective opening, a second sheet of relatively thin, flexible material overlying said first sheet, attachment means securing said second sheet to said first sheet at each of several individual areas of attachment generally uniformly spaced about said sheets, and each said attachment means comprising a tongue of said expanded metal integral with and extending from said first sheet and through a hole in said second sheet, said tongue comprising multiple irregular free end elements and multiple elongated elements extending in respective different directions whereby to encompass an over-all area relatively greater than the area covered by the elements alone, said tongue overlying a portion of said first sheet and a portion of said second sheet adjacent the respective hole in said second sheet of areas comparable to the over-all area encompassed by said tongue, said portion of said second sheet adjacent the respective hole being contacted by and firmly gripped between said elements of said tongue and said portion of said first sheet adjacent the respective hole.



3,308,592
RAISED PANEL MEMBERS

Theodore G. Miller, Jr., Washington, D.C., assignor to Design & Manufacturing Company, Inc., a corporation of the District of Columbia

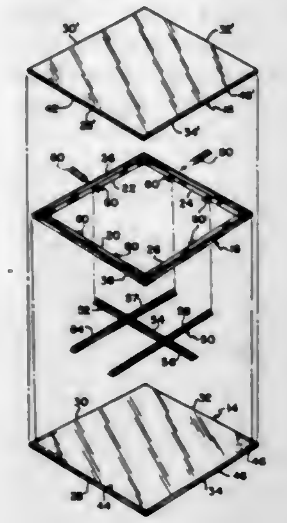
Filed Apr. 30, 1964, Ser. No. 363,811
3 Claims. (Cl. 52—455)



1. In a raised-panel construction including vertical stiles and upper and lower horizontal rails joining said stiles, said stiles and rails having a first interengaging means on their inner edge, said stiles and rails including first and second flat surfaces on one face thereof which are arranged in coplaner relation with respect to each other and which are arranged in spaced-apart relation with respect to each other, at least one filler piece having a second interengaging means in its edge receiving said first interengaging means; each of said stiles and rails being of one piece integral construction and having a recessed portion defining in the stile and rail a shoulder, a curved section, and an inclined surface providing a rise, and said rise being arranged contiguous to, and merging into, the first flat surface; said shoulder, curved section, rise and flat surfaces being an integral part of the stile and rail, said rise being arranged angularly with respect to the adjacent first flat surface, said shoulder being arranged contiguous to the adjacent second flat surface, and said curved section being arranged at the junction of the rise and the shoulder.

3,308,593
PANEL FOR INCLUSION IN A UNIT TO BE INSTALLED IN A BUILDING OPENING

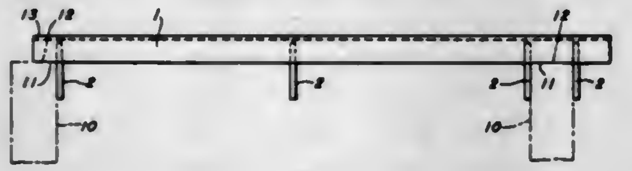
Norman Earle Smith, Miami Beach, Fla., assignor to Crossly Window Corp., Miami, Fla.
Filed Mar. 25, 1965, Ser. No. 442,674
10 Claims. (Cl. 52—456)



1. In a panel structure for fitting within and closing a frame adapted to be set in a wall opening, first and second panes of regular geometrical contour, a spacer frame having a bottom wall and parallel spaced planar side walls extending outwardly from and integral with the respective edges of said bottom wall, said spacer frame being interposed between said panes to space the panes and to define therewith a closed space, a mullion within said closed space and comprising at least one elongated muntin element having its ends abutting said bottom wall at points spaced therealong, and means projecting inwardly from said bottom wall in fixed relation therewith, at each point of contact of said muntin element with said bottom wall and in contact with laterally opposed surfaces of said muntin element, to maintain said mullion fixed with respect to said frame.

3,308,594
SLOTTED PANEL ASSEMBLY

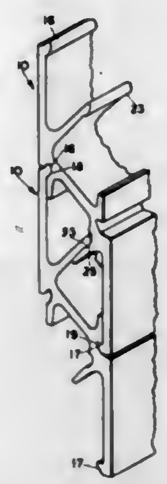
Robert H. Ashworth, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed June 10, 1963, Ser. No. 286,623
2 Claims. (Cl. 52—507)



1. A slotted floor panel comprising a plurality of channels having converging side flanges along the webs thereof, said channels being arranged in laterally spaced parallel positions with said webs lying in a common horizontal plane and with said flanges extending downwardly therefrom, said channel webs forming a floor surface and respectively having downwardly opening slots along opposite edges thereof, and at least two tie-plates respectively having dovetails at spaced intervals along one edge thereof, said tie-plates occupying positions spaced longitudinally of said panel and extending transversely of said channels with said dovetails fitted in the spaces between the said converging side flanges and holding said channels against movement out of said parallel positions, each of said dovetails having side edges that diverge upwardly from said tie-plate and having holding engagement with the internal surfaces of the channel flanges defining the said spaces in which said dovetails are received, said panel being supported solely by contact with at least a pair of spaced supporting surfaces directly engaging the free edges of said flanges.

3,308,595
STRUCTURAL UNIT WITH ENGAGING MEANS

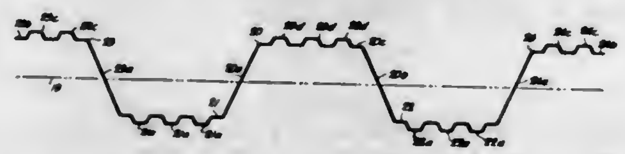
Edward G. Markow, Oakdale, N.Y., assignor to Grumman Aircraft Engineering Corporation, Bethpage, N.Y., a corporation of New York
Filed July 23, 1964, Ser. No. 384,708
3 Claims. (Cl. 52—579)



1. In a structural panel assembly, an integrally formed structural unit comprising a pair of spaced, substantially contiguously disposed walls each having inner and exterior surfaces and each being provided on one end thereof with hooked flanges, a web interconnecting said walls in the vicinity of the ends thereof remote from said hooked flanges, abutments integral with and extending from the ends of said web, each of said abutments having outer surfaces disposed substantially in the plane of the inner surface of that wall connected to the same end of said web, a groove provided in the outer surface of said abutments at their junction with said web, said groove being contoured corresponding to said hooked flanges to coact with and immovably secure a similarly hooked flange carried by an associated structural unit, a rib extending inwardly from one of said walls at the juncture thereof with said web, a second rib extending inwardly from the other of said walls at the juncture thereof with said web and being substantially parallel to said first-mentioned rib, one of said ribs being provided with a bead and the other of said ribs being provided with a groove matingly complemental to said bead to coact with and immovably secure a similarly formed bead provided on a rib of said associated structural unit.

3,308,596
CORRUGATED PANEL

Merle D. Cooper, Leavenworth, Kans., and Hubert C. Olson, Independence, Mo., assignors to Butler Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed Nov. 4, 1963, Ser. No. 321,216
2 Claims. (Cl. 52—630)



1. A corrugated panel having a single major corrugation centrally thereof,

elongate panel portions flanking said major corrugation and a pair of partial major corrugations flanking the latter,

a plurality of minor corrugations on the peaks of the major and partial major corrugations and a plurality of minor corrugations on the elongate panel portions between the major corrugations,

all of the corrugations, major and minor, running in the same direction on the panel,

the panel between those portions thereof with minor corrugation substantially straight,

there being an equal number of minor corrugations on the peak of the major corrugation and on the elongate panel portions flanking the latter,

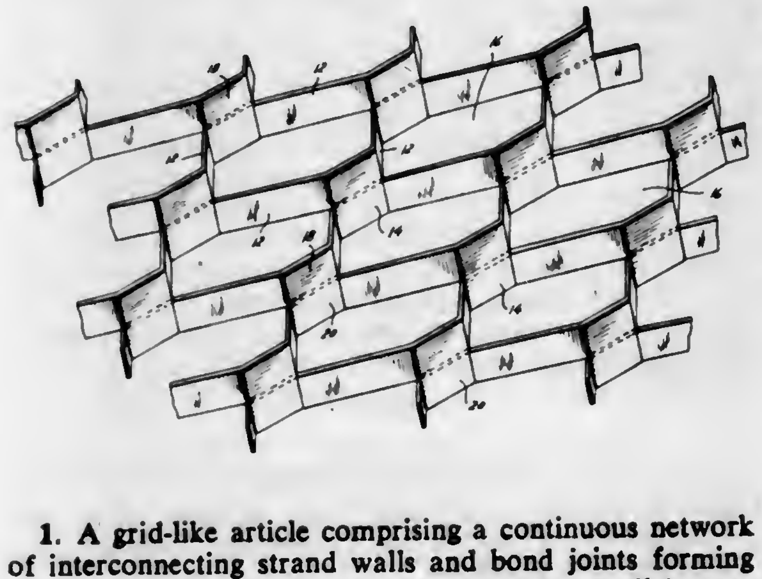
the minor corrugations positioned on the major and partial major corrugations extending, in transverse section, in the same direction,

the minor corrugations in the said elongate panel portions extending in opposite directions to the latter, in transverse section,

and the minor corrugation being evenly distributed on the peaks of the major and partial major corrugations and the elongate panel portions.

3,308,597
GRID-LIKE ARTICLE AND APPARATUS FOR AND METHOD OF MAKING SAME

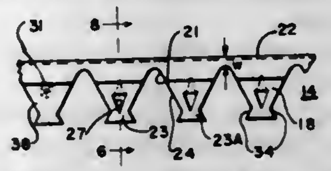
Robert D. Simonton, Bay Village, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 3, 1964, Ser. No. 335,466
3 Claims. (Cl. 52—635)



1. A grid-like article comprising a continuous network of interconnecting strand walls and bond joints forming a repeating pattern of pockets arranged in parallel rows, each of said pockets of any row being displaced from any adjacent pocket of the next adjacent row by about one-half the width of said pocket, the four strand walls of said pockets being joined together by substantially flat and straight bond joints, two strand walls of each of said pockets residing within a first plane parallel to an adjacent plane containing said other two strand walls of said pocket, the former two strand walls each form one strand wall for an adjacent pocket of each adjacent row and the latter two strand walls each form one strand wall for the next adjacent pockets of said adjacent rows, said planes forming an angle no greater than 45 degrees with a horizontal reference plane; said bond joints in each of said rows residing in third and fourth planes parallel to each other and perpendicular to said first plane and the adjacent plane parallel to said first plane, and one-half of each of said bond joints joining together in pairs as a unit half of the strand walls of a pocket within one row and the other half of each of said bond joints residing in the next adjacent plane and joining together in pairs as a unit half of the strand walls of the next pocket within said row such that opposite pairs of strand walls forming said pockets are off-set from each other by about one-half the depth of said bond joints and two bond joints of one row and one bond joint from the adjacent rows comprise the boundaries for each of said pockets.

3,308,598
PANEL BINDING STRIP

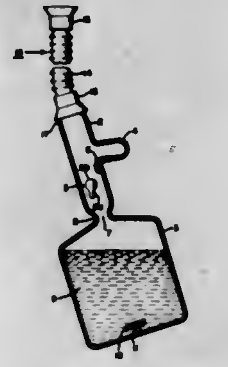
Edgar Wilson, Greensburg, Ind., assignor to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Filed Dec. 4, 1963, Ser. No. 327,993
2 Claims. (Cl. 52—717)



1. A trim strip for attaching a cover sheet to a frame of a panel which comprises a body substantially J-shaped in section and including spaced arms and a base connecting the arms, each of said arms having a plurality of spaced substantially V-shaped slots therein dividing the arms in a plurality of tabs, the slots in the arms being aligned, the spacing between arms being sufficient to receive an edge of the panel frame and being greater than the distance from the base to apexes of the slots, the strip being yieldable at the apexes of the slots to follow the contour of the panel frame, means at free ends of the tabs of one of the arms extending sidewise therefrom for engaging adjacent tabs to limit bending to a predetermined degree short of full closing of the slots, means on the tabs of one of the arms for attaching the cover sheet thereto and means on tabs of said one of the arms for attaching the panel to a main frame.

3,308,599
VALVE SEALING METHOD

Edward F. Perlowski, Jr., Baldwinsville, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 12, 1964, Ser. No. 374,692
4 Claims. (Cl. 53—22)



3. A valve sealing method for selectively hermetically sealing an aperture defined by a constriction located intermediate neck and tank portions of a capsule to provide interconnection of said capsule and a light valve tube while maintaining hermetic isolation therebetween and for removing said hermetic seal to enable the transfer of writing fluid from within said tank portion of said capsule to a reservoir within said light valve tube, comprising the steps of:

(a) providing a hollow side arm on said neck portion and in communication therewith at a position remote from said constriction,

(b) positioning a valve member and viscous sealing fluid within said side arm, said sealing fluid retaining said valve member within said side arm,

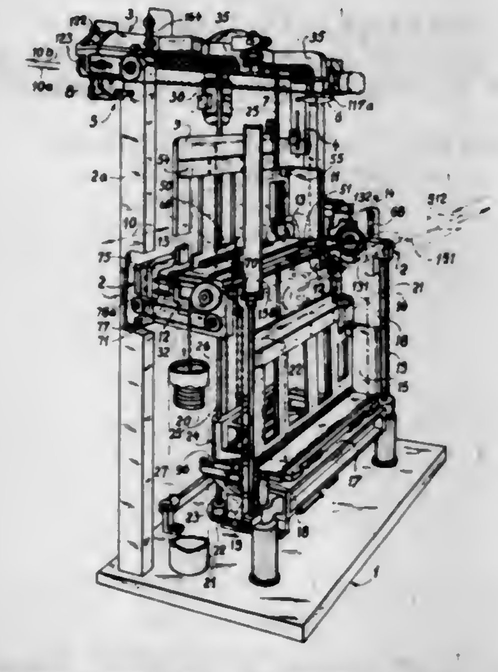
(c) introducing said writing fluid into said tank portion,

(d) connecting said capsule at said neck portion thereof to an evacuating means for degassing said capsule and said writing fluid,
(e) heating said side arm for rendering said sealing fluid fluent,
(f) tilting said capsule to extricate said valve member from said side arm,
(g) transferring said valve member to said constriction in plugging relationship therewith,
(h) heating said sealing fluid and causing it to flow into sealing relation with said valve member and said constriction,
(i) cooling said sealing fluid for completing the hermetic valve seal,
(j) inverting said capsule for positioning said neck portion thereof below said tank portion and connecting said capsule in hermetically sealed fashion with said reservoir,
(k) evacuating and degassing said light valve tube,
(l) heating said sealing fluid for rendering it fluent to enable release of said valve member from said constriction,
(m) retaining said valve member, following the removal thereof from said constriction, while transferring said writing fluid to said reservoir.

3,308,600

MACHINE FOR MAKING AND HANDLING CIGARETTES AND SIMILAR ARTICLES

Otto Erdmann and Adolf Schmid, Hamburg-Bergedorf, Germany, assignors to Hauni-Werke Koerber & Co. K.G., Hamburg-Bergedorf, Germany
Filed Aug. 14, 1962, Ser. No. 216,805
Claims priority, application Great Britain, Aug. 18, 1961, 29,884/61; Aug. 28, 1961, 30,912/61; Nov. 16, 1961, 41,026/61
29 Claims. (Cl. 53—236)



1. An apparatus for circulating storing devices for cigarettes and similar articles along a transfer station at which the articles are transferred into and at least partially fill the storing devices, said apparatus comprising a frame; a series of several components forming a carrier unit adapted to accommodate a storing device; guide means provided in said frame and defining an endless path for said carrier unit, said path comprising a plurality of sections including a path section in which the carrier unit may advance while passing along said transfer station; a plurality of advancing means for moving said carrier unit in the sections of said path, each of said advancing means being arranged to engage the carrier unit while the carrier unit moves in the respective section of said path and each thereof being disengaged from the carrier unit when the carrier unit moves in another section of said path; and means for delivering empty storing devices into and for withdrawing filled storing devices from said carrier unit at a point upstream of said path section so that a filled storing device accommodated in said carrier unit may be withdrawn and that an empty storing device may be introduced into said carrier unit before the carrier unit advances to said path section.

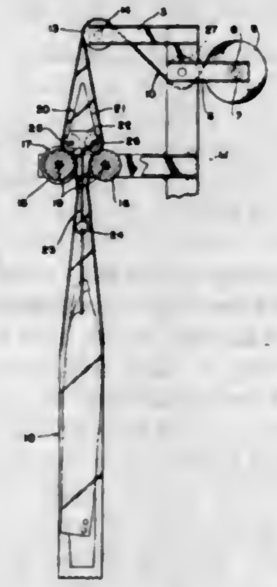
13. In a machine for making and handling cigarettes and similar articles, in combination, a magazine adapted to support a supply of storing devices; a transfer assembly for transferring articles into empty storing devices; an apparatus for circulating storing devices from said magazine toward and along said transfer assembly and back to said magazine, said apparatus comprising a frame, a carrier adapted to accommodate a storing device, guide means provided in said frame and defining an endless path for said carrier, said path having a vertical path section extending along said transfer assembly, advancing means for moving said carrier in said path, and means for delivering empty storing devices from said magazine into said carrier and for returning filled storing devices from said carrier into said magazine at a point upstream of said path section so that a filled storing device accommodated in said carrier may be returned into said magazine and that an empty storing device may be introduced into said carrier before the latter advances to said path section; and a mechanism for moving said magazine with respect to said circulating apparatus so as to move consecutive storing devices into a position for introduction into said carrier.

23. As a novel article of manufacture, a carrier for supporting storing devices of the type adapted to receive stacked rows of cigarettes and similar articles while advancing along the transfer station of a cigarette making machine, said carrier comprising an elongated bottom wall; a rear wall rigid with and extending upwardly from said bottom wall; and holder means provided on at least one of said walls for engaging and for retaining a storing device so as to support the storing device against movements other than in the longitudinal direction of said bottom wall.

3,308,601

BAGGING DEVICE

Joseph P. Masters, Cleveland, Ohio, assignor, by mesne assignments, to Lincoln Bag Corporation, Chicago, Ill., a corporation of Illinois
Filed July 30, 1963, Ser. No. 298,684
1 Claim. (Cl. 53—256)

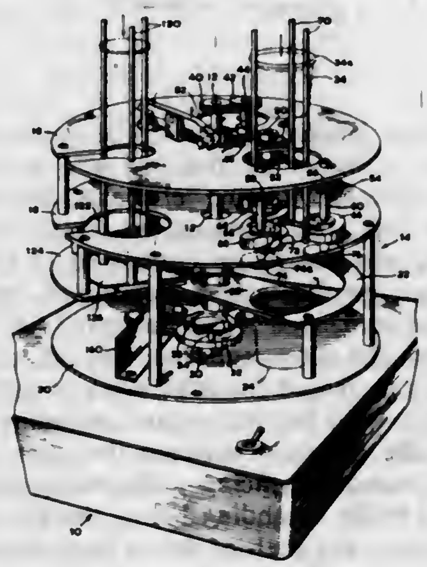


A bagging device comprising:
a frame means,
a plurality of supply means mounted on said frame means for dispensing continuous thin plastic tubular bagging material having spaced transverse tear lines to define individual bags,
a plurality of floating head means,
each of said head means having a body with a smooth tapered upper portion and an enlarged intermediate portion having lower surfaces which turn abruptly substantially inwardly with respect to the lateral extremities to form with said upper portion a substantially triangular cross-section having symmetrical base portions defining parallel clamping surfaces,
said lower surfaces being defined by the surfaces of rollers mounted on opposite sides of said intermediate portions such that said rollers present antifriction surfaces at the said lateral extremities and along said clamping surfaces for smooth flow of the bagging material therealong,
a downwardly projecting lower extension portion lying entirely within and between said clamping surfaces,
a fabric article holding means disposed on said lower extension portion,
support means mounted on said frame means,
guide means for each of said floating head means mounted on said support means, said guide means comprising parallel members mounted on fixed axes, said guide means loosely holding each of said floating head means such that it may be manually raised therefrom with the fabric article hanging means disposed below and between said parallel members, said parallel members being the opposing clamping elements to the parallel clamping surfaces of said floating head means such that said floating head means and said parallel members create a partial clamping action on opposite points of said bagging material when said material is pulled from said supply means.

3,308,602

FLUIDS DISPENSER

John Elsworth Duble, 100 Lawnside Drive; Ronald Moroney, 22 Elkhorn Drive, Apt. 104; and Derek V. Mancini, 418 Davisville Ave.; all of Toronto, Ontario, Canada
Filed Mar. 11, 1964, Ser. No. 351,135
Claims priority, application Great Britain, Mar. 12, 1963, 9,711/63
4 Claims. (Cl. 53—283)

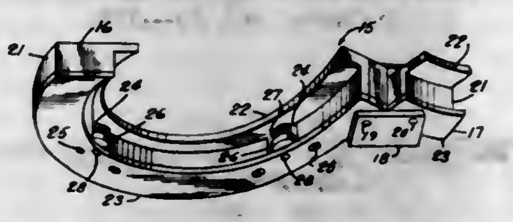


1. A device for filling, capping and dispensing containers, said device comprising a frame, a central, rotatable, vertical shaft mounted within said frame, means for rotating said shaft, a rotatable index arm freely mounted at its center on said shaft, means for intermittently rotating said index arm, power transmitting means interconnecting said arm rotating means and said shaft whereby said arm rotating means is operated by rotation of said shaft, container carrying means carried at each end of said index arm, a container feeding station at which a container is fed to one of said container carrying means when one end of said index arm is stopped at said container feeding station, a container filling station at which a measured quantity of liquid is fed to a container carried by one of said container carrying means when one end of said index arm is stopped at said container filling station, a capping station at which a filled container carried by said container carrying means is capped when one end of said index arm is stopped at said capping station, and a dispensing station at which a filled and capped container is dispensed from the device when one end of said index arm is stopped at said dispensing station, a container feeding mechanism, a filling mechanism and a capping mechanism positioned at said container feeding, filling and capping stations, respectively, separate power transmitting means connecting each of said mechanisms to said shaft whereby they are operated by the rotation of the shaft, means for controlling said shaft rotating means so that said device ceases operation only when one end of said index arm is at said container dispensing station, said filling station being positioned relative to said dispensing station so that liquid is fed to a container carried at one end of said index arm only after the opposite end of said index arm passes said dispensing station whereby said device does not cease operation with a container filled but not delivered to said dispensing station.

3,308,603

TOOL FOR CRIMPING SEALS ON CONTAINERS

William Nelson Mouser, Lake Odessa, Mich., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 6, 1963, Ser. No. 328,764
2 Claims. (Cl. 53—334)



1. A tool for crimping the depending skirt of a sealing ring onto the circumferential bead surrounding the covered opening of a container comprising:
(a) a pair of opposed, selectively opened and closed, semi-circular jaws, joined by a vertical pivot, said jaws having an inwardly directed flange at the top thereof adapted to rest upon the top of the container;
(b) a plurality of spaced, rotatable rollers mounted in said jaws; said rollers when said jaws are closed, defining a circle of less diameter than the depending skirt, and said rollers having annular grooves slightly larger than the height of the circumferential bead.

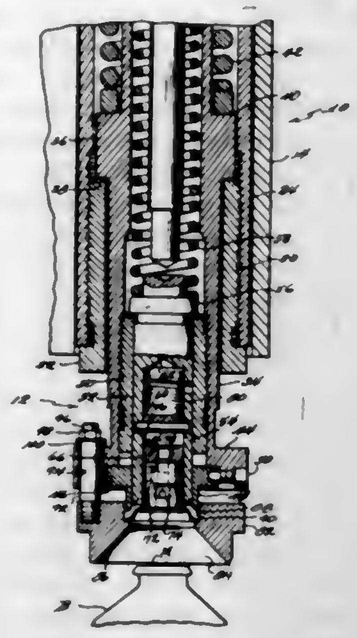
3,308,604

CROWNING HEAD

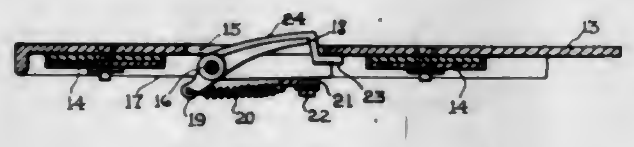
William J. R. Nekola, Towson, Md., assignor to Crown Cork & Seal Company, Inc., Philadelphia, Pa., a corporation of New York
Filed Mar. 10, 1965, Ser. No. 438,591
20 Claims. (Cl. 53—343)

1. In a crowning head for applying to a mouth of a container a crown type cap having a top portion and an annular skirt depending therefrom, the skirt having an outwardly flared free edge, the improvement comprising: means for initially receiving and holding a cap; a presser foot normally positioned above the top portion of the cap

when the cap is initially held by said means, said presser foot having a cap receiving surface cavity therein complementary in size and shape to the top portion and a portion of the depending annular skirt of the cap; and a throat ring having a bore therein with a diameter sufficient to receive at least a portion of the skirt of the cap but less than the diameter of the outwardly flared edge of the skirt of the cap.



3,308,605
SEALING STATION OF AN ARTICLE WRAPPING MACHINE
Warren T. Hansen, East Moline, and Milton A. Wertheimer, Rock Island, Ill., assignors to Gellman Manufacturing Co., Rock Island, Ill., a corporation of Illinois
Filed Feb. 21, 1964, Ser. No. 346,506
1 Claim. (Cl. 53—379)



In combination,

(a) a heated plate across which a wrapped article is to be moved,

(b) means for heating the plate,

(c) said plate having a substantially elongated rectangular opening formed therein in the path of movement of the article across the plate,

(d) a shaft carried by the plate at the under surface thereof,

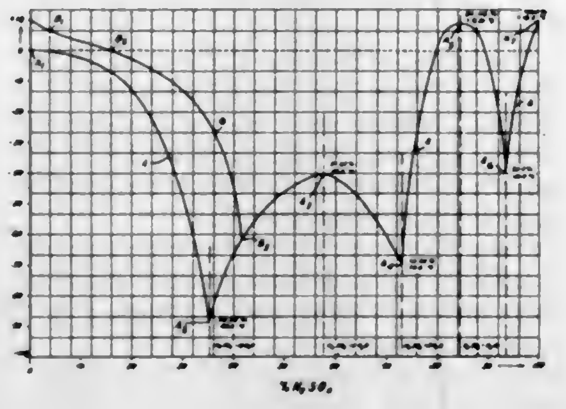
(e) a plurality of independently movable wiper fingers freely journaled on said shaft having a free end projecting through said opening in the path of movement of said wrapped article and an opposite end beneath and beyond said shaft,

(f) said wiper fingers each being curved longitudinally in the direction of movement of said article,

(g) and spring means beneath said plate connected to said opposite end of each of said fingers independently urging said fingers into the path of movement of said wrapped article,

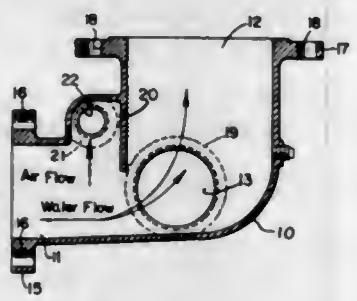
(h) each of said fingers including at their free end a substantially L-shaped extension engageable with the bottom side of the plate to limit the pivotal movement of each finger by its respective spring means and for conducting heat from said plate into each of said wiper fingers.

3,308,606
METHOD OF DRYING MOISTURE BEARING CHLORINE GAS
Per O. Hagbarth, Schwalzwaldstrasse 75, Frankfurt am Main, Germany
Original application Jan. 4, 1962, Ser. No. 164,319, now Patent No. 3,215,504, dated Nov. 2, 1965. Divided and this application July 15, 1965, Ser. No. 482,969
Claims priority, application Germany, June 26, 1961, H 42,960
4 Claims. (Cl. 55—29)



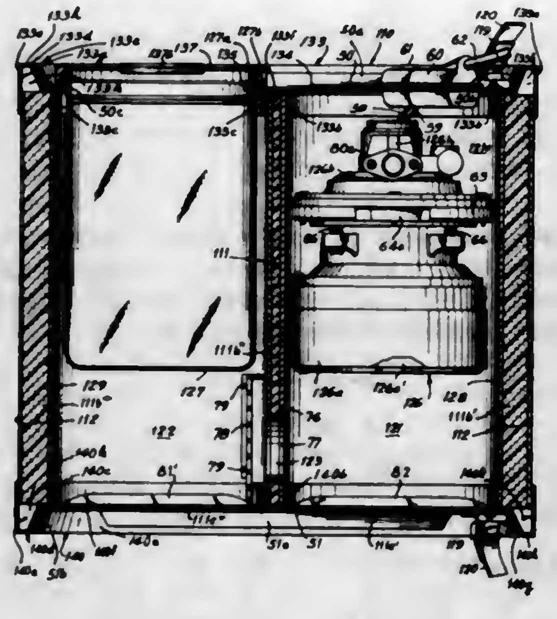
1. A method of drying a gas essentially consisting of chlorine and moisture which comprises contacting said gas with sulfuric acid having a temperature and concentration represented in the chart of temperatures versus concentration of aqueous sulfuric acid shown in FIG. 1 by a point in an area bounded by an isothermal line at 9.8° C. and the portions of the line $B_1B_2B_3A_3A_4A_5$ at temperatures lower than said 9.8° C.

3,308,607
AIR-ELIMINATION DEVICE
Johannes G. Mueller, Michigan City, Ind., assignor to Weil-McLain Company, Inc., Michigan City, Ind., a corporation of Indiana
Filed July 2, 1964, Ser. No. 380,009
2 Claims. (Cl. 55—201)



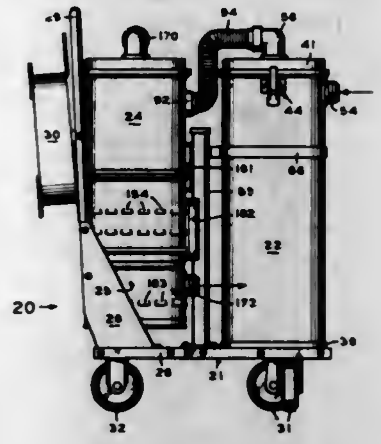
1. In a water header adapted to be connected between the outlet of a boiler or the like and a water supply system for external heating elements together with a compression tank, the combination which comprises, an inlet opening adapted to be connected to said outlet, a vertical outlet opening and a horizontal outlet opening adapted to be connected to said external heating element supply system, the cross-sectional area adjacent said inlet opening being increased for effecting a pressure reduction as water enters said header, means including a vertically extending baffle disposed between the inlet opening and the outlet openings in facing relationship with the inlet opening, said baffle extending below the top of said inlet opening and into the path of water flow through said inlet opening, said baffle and increased cross-sectional area defining an air trap pocket between the air trap opening and the baffle, at least one air outlet port formed in the header adjacent the top of the air trap pocket and adapted to be connected to said compression tank so that air bled off and trapped in the pocket may be directed to the compression tank prior to passage of the water past the baffle and said water thereafter being directed to at least one of said external heating element supply outlet openings.

3,308,608
VACUUM CLEANER
Torsten Brimberg, Bandhagen, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed May 17, 1965, Ser. No. 456,144
Claims priority, application Sweden, Jan. 28, 1960, 815/60
5 Claims. (Cl. 55—276)



1. A suction cleaner having a casing provided with an air inlet and an air outlet and a dust bag and a motor-fan unit therebetween, the casing comprising first and second ends and an outer side wall of annular form therebetween, the air inlet and air outlet being at the first end of the casing, means defining a U-shaped air passageway within the casing which includes a closed end at the second end of the casing and a pair of spaced elongated arms which extend from the closed end of the air passageway toward the first end of the casing and terminate at the air inlet and air outlet, respectively, at the first end of the casing, each of the elongated arms including a hollow member, the hollow members being spaced from one another and from the outer side wall of the casing and extending between the first and second ends of the casing, means for positioning the dust bag within the hollow member of one arm of the U-shaped passageway which terminates at the air inlet, means for mounting the motor-fan unit within the hollow member of the other arm of the U-shaped passageway which terminates at the air outlet, a body of semi-rigid foamed plastic which completely fills the space between the outer side wall of the casing and the hollow members and the space between the hollow members and functions to permanently anchor and position the hollow members within the outer side wall of the casing, the hollow arms being separated from one another by a partition which includes a portion of each of the hollow members and a portion of the foamed plastic body which is disposed therebetween, the partition having an opening at the second end of the casing which defines the closed end of the U-shaped passageway, the casing at the first and second ends including end closures each having an outer flange and a pair of spaced inner flanges of annular form, the outer flanges telescopically fitting over the outer side wall at opposite ends of the hollow members and the inner flanges of each of the end closures telescopically fitting within the end of a different one of the hollow members at each end of the casing.

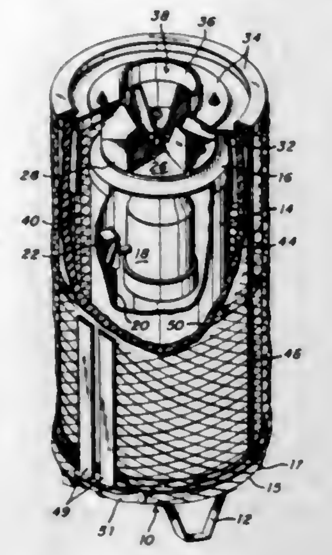
3,308,609
VACUUM CLEANING SYSTEM
Harold W. McCulloch, Mesquite, and Forney E. Farley, Dallas, Tex., assignors to John E. Mitchell Company, Dallas, Tex., a corporation of Missouri
Filed Nov. 27, 1963, Ser. No. 326,423
2 Claims. (Cl. 55—319)



1. A vacuum cleaning system comprising a base, first, second, and third individual tanks supported side by side by the base, a first inlet opening into the first tank adjacent the upper end thereof for admitting air carrying dirt and liquid, the lower portion of the first tank below the inlet thereof providing a heavy particle and liquid receptacle for receiving heavy dirt particles and at least most of the liquid carried by the air entering the first tank, a first outlet from the first tank adjacent the upper end thereof, a second inlet opening tangentially into the side of the second tank, passage means connecting the first outlet to the second inlet, a float valve in the path of the first outlet for blocking the outlet when the lower portion of the tank fills with liquid, an inverted frusto-conical member supported on a substantially vertical axis within the second tank with a large opening at the upper end and a smaller opening at the lower end of the inverted frusto-conical member, the large opening being positioned below the inlet opening, the tank including a dirt collector below the inverted frusto-conical member, means defining a generally horizontal annular channel within the second tank, the annular channel having an open lower end above the inverted frusto-conical member and having a central passage through it communicating with the open lower end, the second inlet opening into the side of the annular channel whereby the annular channel swirls the air above the inverted frusto-conical member as dirt and foreign matter fall from the swirling air, a second outlet from the second tank adjacent the upper end thereof and communicating with the central passage through the annular channel, a third inlet to the third tank, passage means connecting the second outlet to the third inlet, a micron separator and vacuum pump means in the third tank, passage means in the third tank to cause air entering the third inlet to flow through the micron separator for separation of the remaining fine dirt particles from the air and thence through the vacuum pump means, the vacuum pump means comprising two separate vacuum pumps, first passage means leading from the micron separator to the inlet to one of the vacuum pumps, constantly open second passage means leading from the outlet of the said one vacuum pump to the inlet to the other vacuum pump, third passage means leading from the micron separator to the inlet of the said other vacuum pump and bypassing the said one vacuum pump, a plate slidable across the third passage means to selectively alternately block and unblock the third passage means while the second passage means remains open, and a manually engageable knob accessible externally of the third tank for sliding the plate.

3,308,610
FLUID APPARATUS FOR REMOVING MIST OR VAPORS FROM THE AIR

William E. Springer, Springfield, and Jerry V. Sherick, New Carlisle, Ohio, assignors to Robbins & Myers, Inc., Springfield, Ohio, a corporation of Ohio
Filed Mar. 31, 1964, Ser. No. 356,294
3 Claims. (Cl. 55—471)

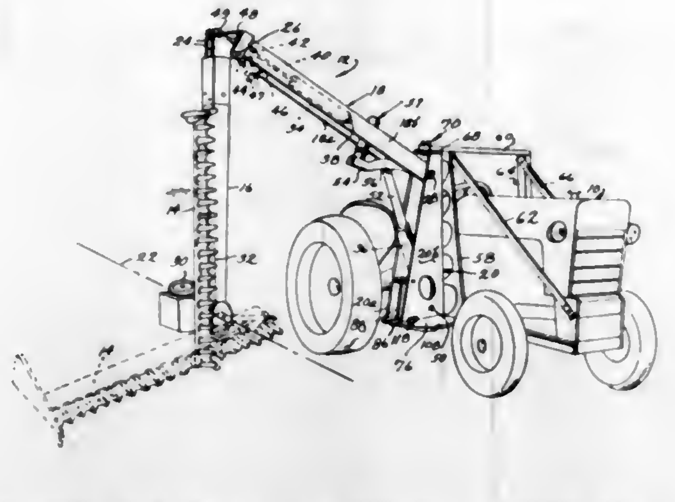


2. Apparatus for removing oil mist from air having oil mist therein comprising:
- a base in the form of a liquid receptacle,
- an inner hollow cylinder supported by the base and substantially normal thereto,
- a closure member covering the cylinder at the end thereof opposite the base,
- a motor within the hollow cylinder, the motor having a rotary shaft extending through the closure member,
- a fan attached to the rotary shaft exterior of the inner cylinder,
- a wall of open pore urethaen foam material encompassing the fan and the inner cylinder and spaced therefrom so that a passage is formed between the inner cylinder and the wall,
- the fan forcing air having oil mist therein into the wall of urethane foam material, the air passing through the wall while the oil mist condenses into liquid oil within the wall, the liquid oil flowing within the wall to the base.

3,308,611
MOWING ATTACHMENT

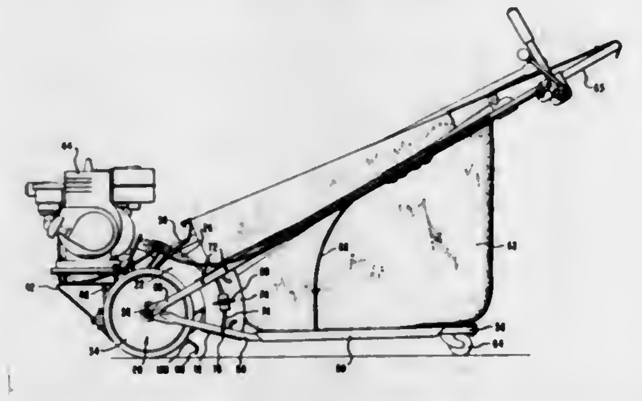
Charles Frederick Barber, Cambridge, Ohio, assignor to Mo Trim, Inc., Cambridge, Ohio, a corporation of Ohio
Filed Jan. 20, 1964, Ser. No. 338,998
11 Claims. (Cl. 56—25)

1. In a mowing attachment for use in combination with a tractor or the like; a vertical support mast rotatable through an arc about a vertical axis; a boom member pivoted at one end to said mast for rotation in a vertical plane; a cutting head supported from the other end of said boom member; a hoist lever disposed below said boom member and pivoted at one end to said mast; a piston and cylinder device disposed below said hoist lever and pivoted at its ends to said hoist lever and said mast; a compression spring between said hoist lever and said boom member for reducing transmittal of vibration and vertical shock forces from said boom member to said piston and cylinder device; a cam member having a notch therein and a cam surface adjacent said notch, said cam surface extending in a plane which is at right angles to the axis of rotation of said mast; a movable cam engaging member, one of said members being fixed with respect to said mast and the other being carried by said mast; a spring urging said cam engaging member into engagement with said cam member so as to releasably latch said mast against rotation when said member resides in said notch, said cam surface having a contour which when engaged by said member, converts part of the force of said tension spring into torque on said mast in a direction to pivot said mast toward a position in which said member resides in said slot.



3,308,612
RAKE OR SWEEPER

Edwin F. Oblinger, Springfield, Ohio, assignor to Parker Sweeper Company, Springfield, Ohio, a corporation of Ohio
Continuation of application Ser. No. 337,697, Dec. 27, 1963. This application June 6, 1966, Ser. No. 562,414
13 Claims. (Cl. 56—27)

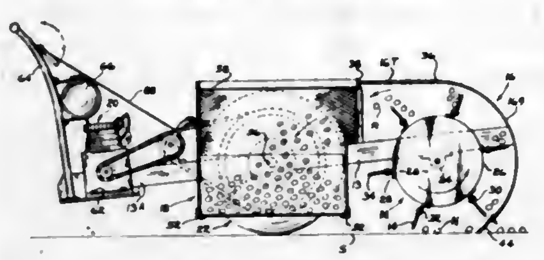


1. A reel of the rake type, comprising in combination:

(A) A rotatable reel frame including:
- (1) means forming a plurality of spaced and axially aligned axles;
- (2) a plurality of tine-supporting means arranged longitudinally of and alongside of the axis of the axles and spaced at an equal distance from said axis;
- (3) a plurality of resilient tines, each having a coil portion supported by the tine supporting means, said tines each including:
  - (a) an elongated portion extending outwardly and trailwise from the coil supporting portion at an acute angle relative to a radially extending line passing through the axis of the reel and the coil supporting means;
  - (b) an end portion extending outwardly from the end of the elongated portion, said end portion being materially shorter than the elongated portion and extending substantially radially of said axis of the reel;
- (4) and means for supporting the inner ends of the tines.

3,308,613
NUT GATHERING APPARATUS

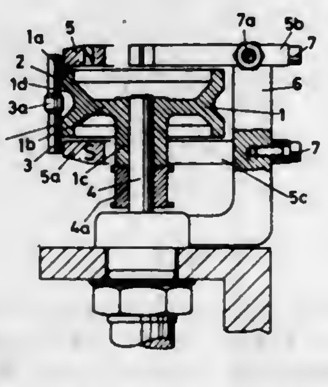
Clarence Orden Davidson, Rte. 1, Box 905, Lakeport, Calif. 95453
Filed Mar. 10, 1964, Ser. No. 350,778
4 Claims. (Cl. 56—328)



1. Apparatus for gathering nuts from a ground surface comprising a frame including two spaced apart side members, a pair of wheels mounted longitudinally centrally of said frame for affording movement thereof on the ground surface, a nut impervious refuse pervious cage spanning said frame side members at the forward extremity of said frame, said cage defining a rearwardly concave arcuate nut guiding surface which surface terminates at a distance above the ground surface in excess of the diameter of the nuts for defining an input end, at least one blade driven concentrically with said arcuate surface for moving nuts upwardly on said arcuate surface, a resilient strip extending downwardly and rearwardly from said cage for affording ingress of nuts thereunder in response to movement of the apparatus on the ground surface and for preventing egress of nuts in response to movement of said blade, said cage terminating at the upper end thereof in a rearwardly tangentially extending portion for defining a discharge guide surface, and a receptacle disposed rearwardly beneath said discharge guide for receiving nuts therefrom, said receptacle being disposed longitudinally symmetrically with respect to said wheels to render the balance of the apparatus independent of the weight of nuts in said receptacle.

3,308,614
APPARATUS FOR FALSE-TWISTING TEXTILE THREADS

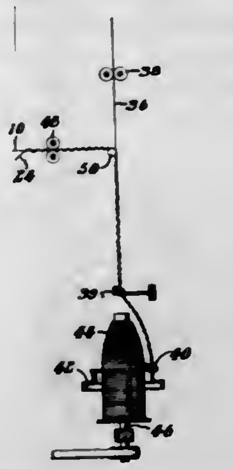
Fritz Stahlecker, Uhlandstrasse 18, Bad Uberkingen, Wurttemberg, Germany
Filed Feb. 21, 1966, Ser. No. 529,145
Claims priority, application Germany, Feb. 22, 1965, S 95,590, S 95,591
10 Claims. (Cl. 57—77.45)



1. An apparatus for false-twisting individual textile threads comprising at least one false-twisting tube, a drive shaft, means for driving said shaft, a drive wheel mounted on said shaft and having a hub, an outer rim, and a connecting web securing said hub to said rim and being disposed substantially centrally of the width of said rim, the peripheral outer surface of said rim forming a driving surface adapted to engage with and to rotate said tube at a high speed, and at least one magnet for holding said tube in engagement with said driving surface and in a fixed position relative to said magnet merely by magnetic attraction of said magnet and for thus preventing said tube from shifting in tangential directions on said drive wheel.

3,308,615
STRETCH NOVELTY YARN AND METHOD OF MAKING SAME

John W. Susskind, Narberth, and William B. Susskind, Wynnewood, Pa., assignors to Clifton Yarn Mills, Inc., Clifton Heights, Pa., a corporation of Delaware
Filed Mar. 10, 1965, Ser. No. 438,481
17 Claims. (Cl. 57—144)



1. A composite stretch novelty yarn comprising a taut, straight non-elastic core thread, an untensioned non-elastic thread wrapped about said core thread in one direction, slidable therealong and bulging outwardly therefrom in a series of node-like formations that produce the characteristic novelty effect, and an initially stretched elastic thread twisted in the opposite direction with said combined non-elastic threads to form the finished composite yarn, said elastic thread being operative to bind said effect thread to said core thread and secure the same against sliding therealong, said combined non-elastic threads being adapted to bulge outwardly in a series of node-like loops when said composite yarn is permitted to relax.

16. A method of producing composite stretch novelty yarns which comprises advancing a core thread into a twist zone, advancing a non-elastic effect thread into said twist zone and wrapping the same about said core thread so that the average diameter of wrap is substantially larger than the diameter of the portion of said core thread within the wraps, advancing the combined core and effect threads into a second twist zone, and advancing a tensioned elastic thread into said second twist zone and twisting it with the combined core and effect threads so that the effect thread will be held about said core thread and secured against sliding therealong solely by the intertwist of said combined core and effect threads and said elastic thread, so that when said composite yarn is elongated said combined core and effect threads and said elastic thread are arranged in tight ply formation, and so that when said composite yarn is permitted to relax said combined core and effect threads bulge outwardly from said elastic thread.

3,308,616
SEWING THREAD

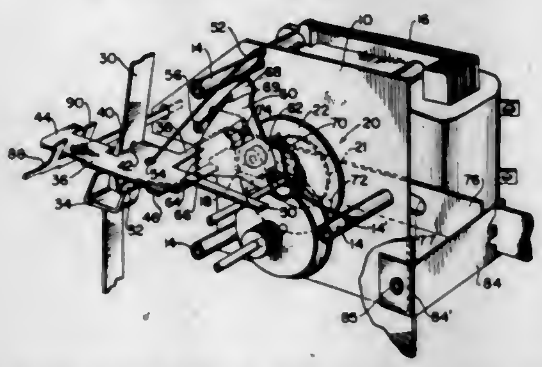
Kenneth Roger Williams, Landenberg, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 8, 1965, Ser. No. 438,073
9 Claims. (Cl. 57—153)

1. A sewing thread twisted from a continuous filament yarn formed from a linear, synthetic polymer and uniformly bearing on the surface of the said yarn from about 0.9% to about 11% by weight based on the weight of the said yarn of a heat-treated finish selected from the class consisting of (1) a mixture of about 10% by weight alumi-

num tristearate and 90% by weight dimethyl polysiloxane, (2) methyl phenyl polysiloxane of about 18,000 cs. viscosity and (3) a mixture of methyl hydrogen siloxane and dimethyl siloxane, the filaments of the said yarn having a flexural rigidity of from about 2.7×10^{-4} to 14.0×10^{-4} gram (centimeter)^2 the finish having been applied to the yarn before twisting and having been heat-treated after the yarn bearing the finish has been twisted.

3,308,617
REPEAT ALARM WITH CONDITION INDICATOR

Charles A. Balchunas, Hopkinton, Mass., assignor to General Electric Company, a corporation of New York
Filed June 15, 1965, Ser. No. 464,080
9 Claims. (Cl. 58—21.155)



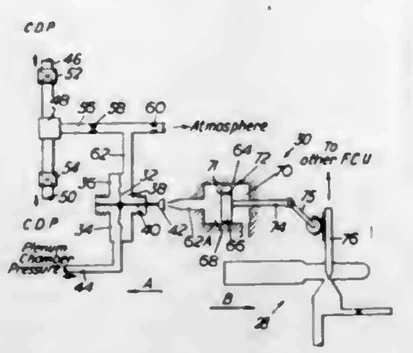
1. A temporary shut-off mechanism which comprises: a timer; a gear rotatable by said timer; an alarm actuating arm normally biased to an alarm position but movable to a silent position; an actuating member movable between a first position urging said arm to said silent position and a second position released from said arm, permitting it to move to said alarm position; latch means normally retaining said actuating member in said first position; release means for disengaging said actuating member from said latch means at an alarm time; cam means coaxially mounted relative to said gear for rotation between first and second arcuate positions and for motion between outer and inner radial positions relative to said gear, said cam means including an arcuate peripheral bearing surface; means on said cam means for engaging the teeth of said gear when said cam means is in its radially inner position; resilient means normally urging said cam means to said second arcuate position and said outer radial position; manually operable lever means normally retaining said cam means in its first arcuate position but shiftable to release said cam means and simultaneously force said actuating member to its first position, said lever means thereafter being retained against said actuating member by the peripheral bearing surface of said cam means to enable an observer to tell that the temporary shut-off mechanism is engaged; and spring means biasing said lever means to move said cam means to its radially inner position to cause said engaging means to engage said gear teeth, whereby said cam means is driven by said gear and returned to its first arcuate position.

3,308,618
RANGE BLOWER PRESSURE CONTROL

Albert Jubb, Derby, and Keith Anthony Hatchett, Alvaston, Derby, England, assignors to Rolls-Royce Limited, Derby, England
Filed Dec. 4, 1964, Ser. No. 416,058
Claims priority, application Great Britain, Dec. 9, 1963, 48,605/63
7 Claims. (Cl. 60—39.15)

1. In a power producing plant which includes at least two gas turbine engines each of the type having compressor means, combustion equipment, turbine means connected to drive the compressor means and means for varying the flow of fuel to the combustion equipment, and each arranged to discharge its gas efflux into a common plenum chamber, said chamber having at least one variable outlet nozzle, at least one power turbine connected to be driven by gas discharging through said variable outlet nozzle, control apparatus comprising:

means for sensing a derived pressure which is functionally related to the delivery pressure having the highest value among the delivery pressures of all the compressor means,

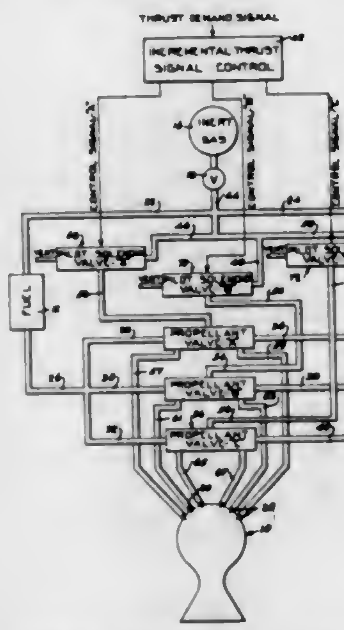


a pressure responsive device subjected to said derived pressure in one direction and to the pressure in the plenum chamber in an opposite direction, said device being responsive to the ratio of said plenum chamber pressure and said derived pressure, and

actuating means, operated by said device, to actuate the means for varying the flow of fuel to the combustion equipment in each engine, whereby said ratio is substantially maintained at a preselected value.

3,308,619
INCREMENTAL THRUST CONTROL SYSTEM

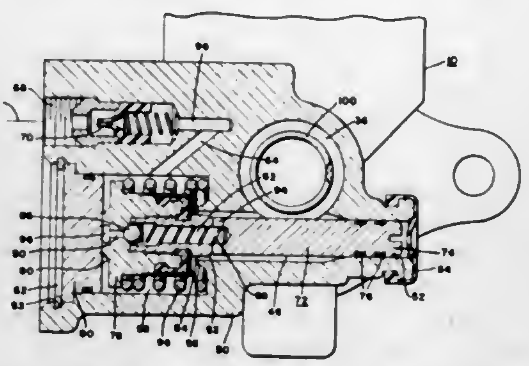
Harry L. Richardson, River Edge, and Ludwig Muhlfelder, Livingston, N.J., assignors to Curtiss-Wright Corporation
Filed May 14, 1965, Ser. No. 455,802
9 Claims. (Cl. 60—39.27)



1. A fuel control system for controlling the thrust output of a rocket engine or the like comprising: fuel injector means including a plurality of fixed area fuel injector openings for supplying fuel to the combustion zone of said engine, at least some of said openings having a different flow area size than other of said openings; valve means for opening and closing said fuel injector openings, there being one such valve means associated with each size flow area opening, each said valve means being responsive to predetermined thrust demand signals for opening its associated flow area injector opening such that for each thrust demand signal a corresponding fuel injector opening will be selected for producing a level of fuel flow in accordance with the thrust demand signal, and said valve means and said fuel injector area openings being so related that a number of fuel flow levels are provided with the number of fuel flow levels varying in accordance with the formula $(2^{n}—1)$, where n equals the number of said valve means.

3,308,620
PRESSURE REDUCER FOR DUAL MASTER CYLINDER

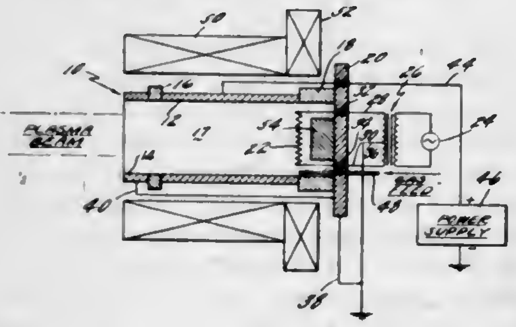
Wolfgang Melinat, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 15, 1965, Ser. No. 448,346
6 Claims. (Cl. 60—54.5)



1. A pressure control comprising: a control body; an inlet to said control body from a pressure source; an outlet from said control body to a pressure operable device; said control body having a first chamber communicating with said inlet and a second chamber of larger diameter communicating with said outlet; piston means having a first portion slidably carried in said first chamber and having a second portion reciprocable in response to pressure in said second chamber, said piston means including differential areas and valving means carried in juxtaposition to the juncture of said first and second chambers; and spring means carried by said piston means and disposed to urge said piston means away from a portion of said control body in a manner keeping said sealing means out of engagement with the juncture of said first and second chambers, a first differential area of said piston means responsive to inlet pressure and a second differential area of said piston means responsive to outlet pressure to selectively position said sealing means relative to said control body thereby maintaining a constant pressure differential at said outlet and inlet when pressure rises in said second chamber sufficient to compress said spring means.

3,308,621
OSCILLATING-ELECTRON ION ENGINE

Edward A. Pinsley, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,972
20 Claims. (Cl. 60—202)



1. An electrical propulsion engine including:

a chamber having positive and negative particles therein said chamber having an open end,

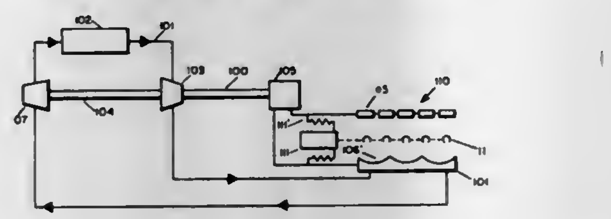
a cathode in said chamber removed from said open end for generating negative particles,

means for accelerating at least part of said positive particles through the open end of said chamber and for causing at least part of said negative particles to oscillate in said chamber,

and magnetic mirror means for introducing a magnetic field of non-uniform flux density into said chamber in the vicinity of said cathode for reflecting negative particles from the vicinity of said cathode toward the open end of said chamber.

3,308,622
ION PROPULSION SYSTEM WITH ION ENGINE UTILIZING POWER SUPPLY HOT SURFACE

Eugene Caplinger, Sierra Madre, and Stanton L. Eilenberg, Woodland Hills, Calif., assignors to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California
Filed July 29, 1964, Ser. No. 386,030
8 Claims. (Cl. 60—202)



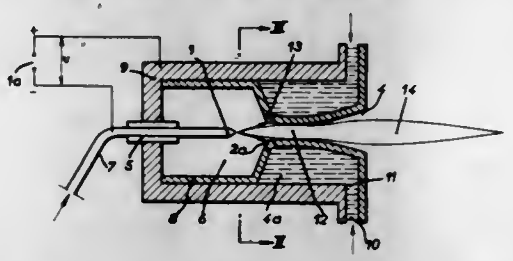
1. An efficient, reliable ion propulsion system adapted to operate for a long time period comprising:

(a) a power supply means including a heat source, a power conversion means for converting heat energy from said heat source into electrical energy and heat discharge means removing heat from said power supply means; and

(b) a contact ion engine including propellant supply means for supplying propellant vapor to said heat discharge means to ionize it and accelerator means for ejecting the ionized propellant to propel said ion propulsion system, said accelerator means being energized by electrical energy from said power supply means.

3,308,623
ELECTRO-THERMIC EJECTORS

Franck Guillaume Michel Ferrie, Cachan, Robert Emile Marchand-Revers, Paris, and Don Pierre Louis Jean Colombani, Versailles, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Aug. 5, 1964, Ser. No. 387,703
Claims priority, application France Aug. 19, 1963, 945,033
14 Claims. (Cl. 60—203)



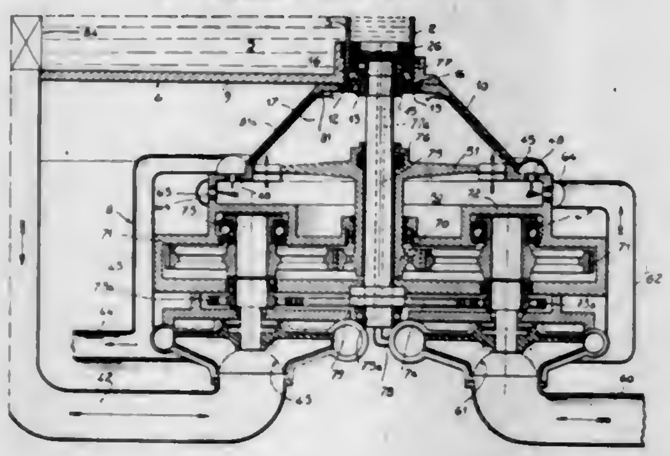
1. An electro-thermic ejector comprising an ionization chamber, means providing a discharge nozzle out of the chamber, means for supplying a propellant to the chamber, at least two electrode devices each having an electrode portion, means for energizing the electrode devices to ionize the propellant and produce an electric discharge attaching between respective electrode portions of the electrode devices to heat the propellant and produce ejection thereof through the nozzle, the electrode portion of at least one of said electrode devices being made of consumable conductive substance adapted to be

vaporized by the electric discharge attaching thereto to produce gas adapted to be ionized, heated and ejected together with the propellant, and feed means for renewing said electrode portion as fast as the consumable substance is consumed.

2. An electro-thermic ejector as claimed in claim 1, in which the chamber is supplied with propellant having a low molecular weight, for use in an arc-jet rocket, and the consumable substance is an alkali metal.

3,308,624
ROCKET ENGINE WITH CONSUMABLE CASING

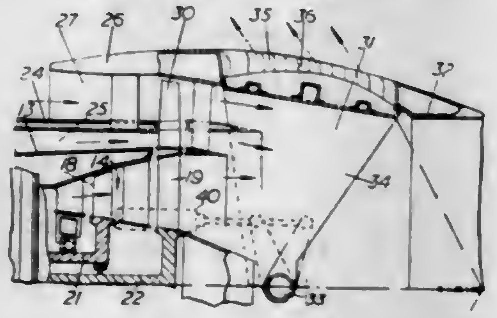
Antonino Ciancitto, % Ing. A. Giambrocono, Paterno, Catania, Italy
Filed Mar. 17, 1964, Ser. No. 352,486
Claims priority, application Italy, May 3, 1963, 695,265/63
8 Claims. (Cl. 60—224)



1. A rocket engine comprising, in combination, elongated casing means adapted to contain propellants for said engine and having a bottom wall and side wall means movably arranged with respect to said bottom wall; means forming an annular chamber attached to said bottom wall; a plurality of propelling nozzles mounted on said chamber forming means and communicating with the interior of said annular chamber formed thereby; prolellant pumping means mounted on said chamber forming means alternately with said nozzles for pumping propellant from said casing into said annular chamber; prime mover means for driving said pumping means; and cutter means driven by said prime mover means for gradually destroying said side wall means as the propellant is used up.

3,308,625
GAS TURBINE BY-PASS ENGINE

William Shaw, Alvaston, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Sept. 18, 1964, Ser. No. 397,433
Claims priority, application Great Britain, Oct. 28, 1963, 42,502/63
8 Claims. (Cl. 60—229)

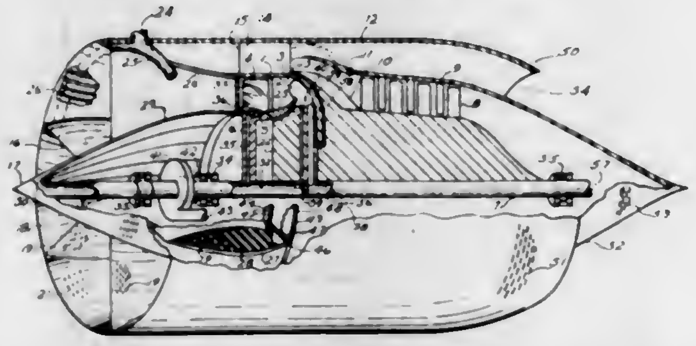


1. A gas turbine by-pass engine comprising: a casing defining a flow duct; compressor means, combustion equipment, and turbine means arranged in flow series in said flow duct; a second casing surrounding said first casing and defining therewith an annular by-pass duct, said by-pass duct having an upstream end which received by-pass air from said compressor means and said by-pass duct by-passing said combustion equipment and turbine means; an outer casing at least partly surrounding said second casing and defining therewith an annular fan duct; a fan mounted in said fan duct, said fan having a structural connection to and being driven by said turbine means; and an exhaust duct having a nozzle mounted at its downstream end, the downstream ends of said flow duct, by-pass duct and fan duct all terminating substantially at and all communicating with the upstream end of said exhaust duct whereby the gases leaving all of the downstream ends of said flow duct, by-pass duct and fan duct substantially simultaneously mix and flow through said exhaust duct.

4. A gas turbine by-pass engine as claimed in claim 1 wherein the exhaust duct has openings therein, forwardly facing deflector vanes mounted in said openings to assist in directing the said gases forwardly; a plurality of thrust reverser members which are mounted in the exhaust duct and which are movable between an inoperative position in which they permit the said gases to flow rearwardly through the said nozzle and an operative position in which they prevent the said gases from flowing rearwardly through the said nozzle and direct the said gases forwardly through the openings in the exhaust duct, the said openings being maintained closed when the thrust reverser members are in their inoperative position, and power means for moving the thrust reverser members between the said inoperative and operative positions as required.

3,308,626
CONVERTIBLE GAS TURBINE-ROCKET REACTION PROPULSION ENGINE

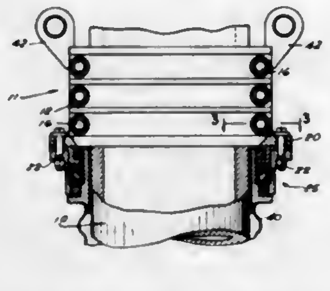
Daniel E. Nelson and Marjorie Webster Nelson, both of Rancho Cordova, Calif. (both of 212 Appleton Drive, Aptos, Calif. 95003)
Filed June 9, 1964, Ser. No. 373,765
6 Claims. (Cl. 60—244)



1. A reaction propulsion engine operable in either a gas turbine mode or a rocket mode comprising a compressor, a compressor air intake, a separate ram air intake, an engine exhaust duct, an outer member surrounding said exhaust duct and forming therewith an annular passage between said member and said exhaust duct, means progressively, selectively, connecting said compressor or said ram air intake to said annular passage, a hollow member within said exhaust duct, hollow vanes connecting said annular passage with said hollow member, a combustion chamber, second compressor means for drawing air from said annular passage through said vanes and hollow member and supplying said air to said combustion chamber, a self-contained oxidizer supply, means for selectively placing said self-contained oxidizer supply in communication with said combustion chamber, a fuel supply, heat exchanger conduits in the walls of said exhaust duct communication with said fuel supply and said combustion chamber, and a turbine driven by combustion gases from said combustion chamber and driving said compressors.

3,308,627
CLAMP FOR COUPLING PILE SHELL TO MANDREL

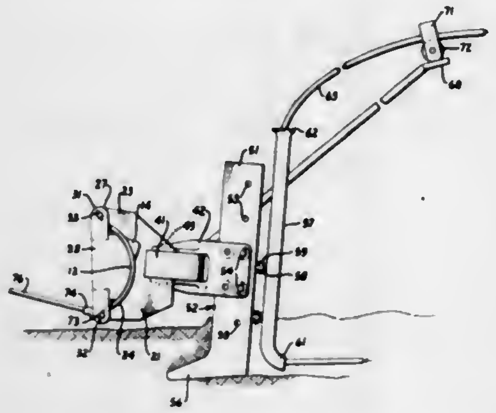
Charles L. Guild, East Providence, R.I., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Mar. 8, 1963, Ser. No. 263,985
2 Claims. (Cl. 61—53.7)



1. A clamp coupling between a pile shell and a mandrel comprising:
- a mandrel telescoped within a pile shell;
- a collar rigidly secured to said mandrel, said collar comprising two semi-circular sections, the inner surface of each section having a plurality of pads for gripping said mandrel;
- a cylindrical ring member secured to the pile shell; and
- coupling and bearing means between said collar and said ring member permitting relative rotation therebetween.

3,308,628
CABLE LAYING ATTACHMENT FOR A SCRAPER VEHICLE

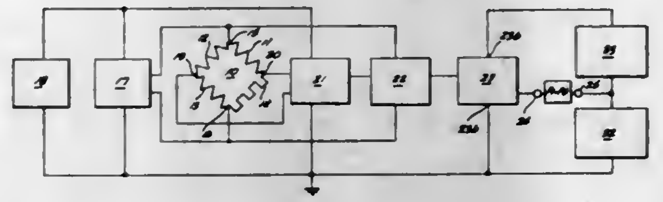
Robert K. Nichols, Los Gatos, Calif., assignor to Communications Construction & Excavating Company, Inc.
Filed Oct. 1, 1964, Ser. No. 400,738
1 Claim. (Cl. 61—72.6)



A cable laying attachment for a scraper vehicle having a scraper blade comprising:
- (a) a frame adapted to abut the rearward portion of said blade and to extend beyond the forward portion of said blade to provide a pair of spaced upper and lower apertured ears;
- (b) a retainer having a convex surface directed toward said frame to abut said forward portion of said blade and terminating in upper and lower apertured ends overlying said ears;
- (c) pins passing through said apertured ears and said apertured ends;
- (d) a horizontal table on and extending rearwardly from said frame;
- (e) a swinging arm having bifurcations extending above and below said table;
- (f) a pivot pin passing through said bifurcations and said table;
- (g) a trenching tool having an upright bar terminating at the lower end in a digging member;
- (h) means for securing said bar on said arm;
- (i) means on said bar for guiding a cable to a point near said digging member; and,
- (j) towing means secured to said frame and to said scraper vehicle.

3,308,629
CONTROLLED TEMPERATURE SYSTEM

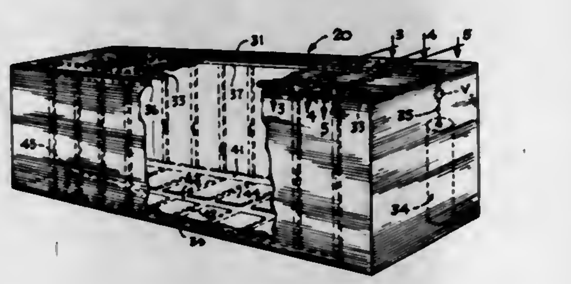
Robert L. Sharp, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed May 19, 1965, Ser. No. 466,863
5 Claims. (Cl. 62—3)



1. An environmental fluid temperature controlled system comprising in combination:
- a fluid containing tank;
- an electrical bridge circuit including for one leg thereof a temperature sensitive resistance wire sensor element disposed in the environmental fluid to be controlled;
- a thermoelectric element having a first portion in the fluid to be controlled and second portion external to said tank; and
- means responsive to unbalance of the bridge circuit resulting from a fluid temperature change sensed by the sensor element to adjust the flow of current through the thermoelectric element in a direction and degree sufficient to cause heat exchange between the first and second portions thereof in a manner to counteract the temperature change sensed by the sensing element.

3,308,630
REFRIGERATION METHOD AND APPARATUS

Carl F. Fritch, Jr., Glen Ellyn, and Donald I. Gilna, Park Ridge, Ill., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed July 1, 1965, Ser. No. 468,874
10 Claims. (Cl. 62—52)



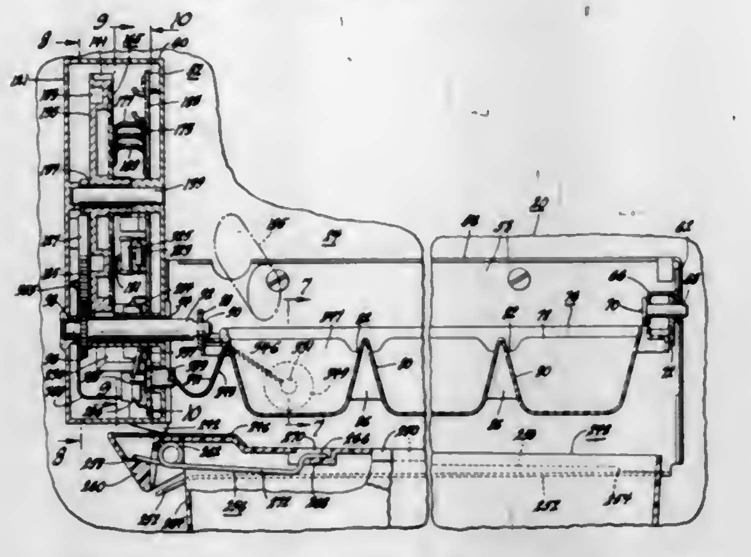
1. Method of refrigerating a compartment or container including walls, comprising the steps of: vaporizing cold liquefied gas at separate and distinct spaced first and second locations by heat from the compartment, passing the resultant cold vapor from the first location in heat exchange relationship with one of the walls to the second location to assist in vaporization of cold liquefied gas at the second location, passing the vapor cooled at the second location in heat exchange relationship with a different wall, passing the resultant cold vapor from the second location in heat exchange relationship with different portions of said one wall to the first location to assist in vaporization of cold liquefied gas at the first location, and passing the vapor cooled at the first location in heat exchange relationship a still different wall.

3,308,631
FLEXIBLE TRAY ICE MAKER

Walter G. Kniffin, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 1, 1964, Ser. No. 371,588

8 Claims. (Cl. 62—137)



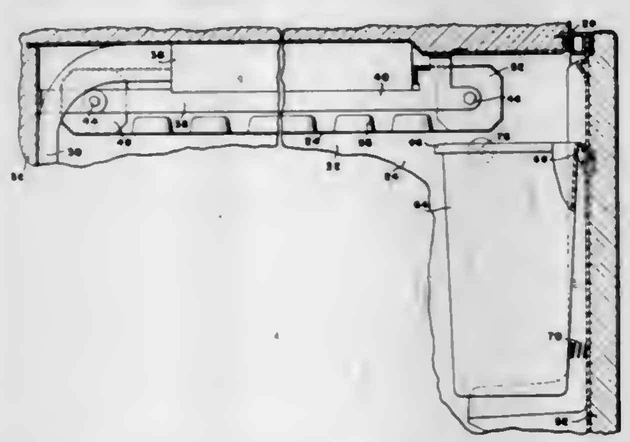
1. An automatic liquid freezer including a mold having liquid holding compartments, means for freezing liquid in said mold, means for discharging frozen liquid from said mold, collecting means for collecting said frozen liquid, means comprising resilient means for supporting said collecting means, means responsive to a deflection of said resilient means for stopping said means for discharging frozen liquid, and positive force means coincidentally responsive to the operation of and operably connected to said means for discharging frozen liquid for positively deflecting said collecting means.

3,308,632
ICE MAKER WITH DOOR MOUNTED BIN

Howard E. Winfield, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 28, 1964, Ser. No. 421,403

4 Claims. (Cl. 62—137)



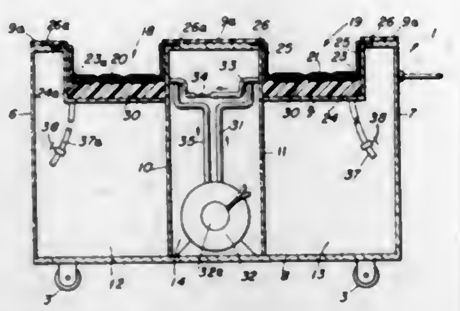
3. Refrigerating apparatus including insulated walls and a door enclosing a freezing compartment, a liquid freezer mounted in said compartment connected to one of said walls, a removable collecting receptacle removably mounted on said door, means for supplying liquid to be frozen to said freezer, said freezer having means for freezing said liquid and discharging the frozen liquid into said receptacle, one of the walls of said freezing compartment being provided with a control means having means cooperating with said receptacle and responsive individually to the absence of the receptacle and the opening of said door for stopping the discharge of the frozen liquid by the freezer.

3,308,633
HEATING AND COOLING REFRIGERATION SYSTEM

Richard W. Kritzer, Jr., 2030 N. Cleveland Ave., Chicago, Ill. 60614

Filed Sept. 2, 1964, Ser. No. 393,896

8 Claims. (Cl. 62—239)



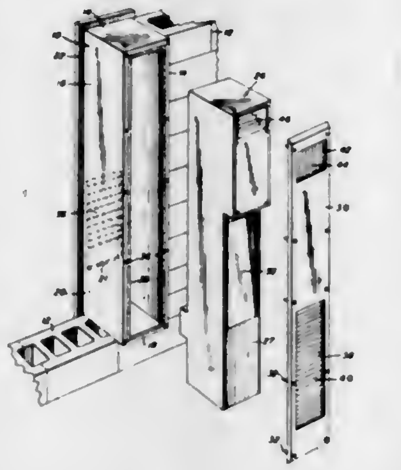
1. An article of furniture comprising
(a) a table top,
(b) means for supporting said table top,
(c) a heat exchanger supported by said table top in position to support articles to be kept cool,
(d) another heat exchanger supported by said table top in position to support articles to be kept warm, and
(e) means for feeding refrigerant through said heat exchangers in a refrigeration cycle effective to cool said first mentioned heat exchanger and heat said other heat exchanger.

3,308,634
BUILT IN WALL AIR CONDITIONER CASING AND AIR CONDITIONER COMBINATION

Herman M. Smith, 2948 Forest Hill Blvd., West Palm Beach, Fla. 33406

Filed Dec. 22, 1965, Ser. No. 515,606

8 Claims. (Cl. 62—263)



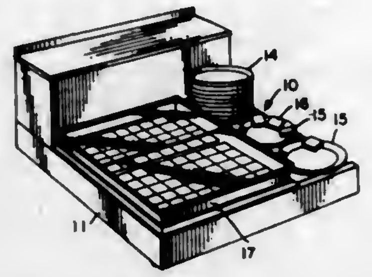
1. A built in wall air conditioner casing comprising a pair of comparatively long vertically extending spaced apart parallel rectangular side walls, a comparatively short top wall and a comparatively short bottom wall connecting said side walls together, an outside wall secured to said top, side and bottom walls, said outside wall having an outside air opening therethrough, and an inside wall also secured to said top, side and bottom walls, said inside wall having an inside air entrance opening extending from about its mid area to adjacent its bottom end and thus adjacent the floor of the room in which it extends, and an air discharge opening adjacent its top end and thus adjacent the room ceiling, said casing being arranged to removably receive and house an air conditioner, said casing being integrally built into a building wall and providing a load bearing member greater than the load bearing strength of the building wall material displaced thereby.

3,308,635
REFRIGERATING APPARATUS

Howard J. Tenniswood, 212 Richards St., Adrian, Mich. 49221, and Leo Peters, 750 Plymouth Road, SE., Grand Rapids, Mich. 49506

Filed May 3, 1965, Ser. No. 452,629

8 Claims. (Cl. 62—277)



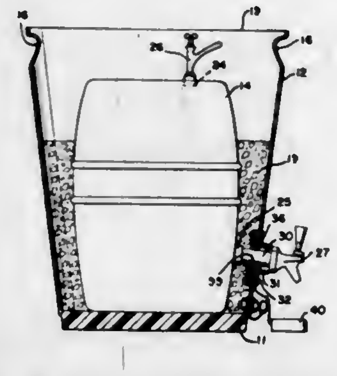
1. Refrigerating apparatus comprising a generally rectangular frame, a metal evaporator plate mounted on said frame and providing a generally horizontal exposed upper surface, an evaporator coil mounted in said frame below said plate, a heat conductive material surrounding said coil and contacting the under surface of said plate, a heat insulating material below said heat conductive material and providing a support for said plate within said frame, a compressor compartment in said frame adjacent one edge of said plate and equipped with a compressor operatively coupled to said coil, and drain means in said plate connected to said compartment, said compartment including an enclosure provided as part of said frame, said enclosure projecting vertically above said plate, said enclosure having a pair of vertically extending sides arranged generally parallel to said edge and the enclosure side remote from said plate edge being open and having a condenser coil positioned therein, said condenser coil projecting above said plate.

3,308,636
SELF-CONTAINED COOLER

Ronald B. Schaaf, 127 Milton St., San Francisco, Calif. 94112

Filed Oct. 22, 1965, Ser. No. 500,846

7 Claims. (Cl. 62—400)



1. A cooler for use in combination with a fluid reservoir having a normally closed discharge tap opening in the lower portion thereof and a faucet having a shank adapted to effect opening of said opening upon insertion thereinto, said cooler comprising:
(a) a tank adapted to house said reservoir and contain a fluid coolant in contact therewith, said tank having:
  (1) a base wall to support said reservoir in upright condition when said reservoir is housed in said tank;
  (2) a continuous side wall sealingly secured around and extending upwardly from said base wall, said side wall being dimensioned to extend around said reservoir when said reservoir is housed in said tank, and
  (3) an opening in said side wall alignable with the tap opening of said reservoir when said reservoir is housed in said tank, the opening in said side wall being adapted to have the shank of said faucet inserted therethrough from the exterior thereof to effect opening of said tap opening;
(b) sealing means operatively associated with the opening in said side wall to establish a substantially fluid tight seal with said faucet shank when said shank is received therethrough.

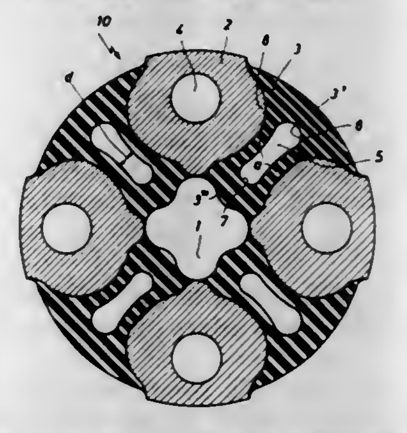
3,308,637
COUPLING ELEMENT

Hans Deuring, Burscheid, Cologne, Germany, assignor to Goetzewerke Friedrich Goetze A.G., Dusseldorf, Germany

Filed June 30, 1965, Ser. No. 468,504

Claims priority, application Germany, Oct. 23, 1964, G 41,843

7 Claims. (Cl. 64—13)



1. A rotationally elastic coupling element having an axis and comprising, in combination:
(a) a plurality of non-elastic members arranged about said axis and spaced circumferentially apart from each other; and
(b) a plurality of elastic members interposed between said non-elastic members, each of said elastic members having a recess which extends in the direction of a radius of the coupling element and which extends throughout the entire axial length of the coupling element, the inner end of each recess being spaced from the innermost extremity of the respective elastic member and the outer end of each recess being spaced from the outermost extremity of the respective elastic member; each recess, in a region approximately midway between its inner and outer ends, being defined by walls which bulge toward each other and which, at least when the coupling element is in unstressed condition, are spaced from each other;
(c) said non-elastic members being provided with outward bulges which are parallel to said bulging walls of said elastic members.

3,308,638
EXTENDABLE AND SHORTENABLE CANDLE

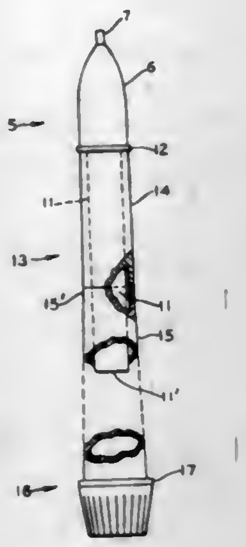
Walter Binderman, Eatontown, N.J. 07724

Filed Dec. 7, 1964, Ser. No. 416,357

3 Claims. (Cl. 67—55)

1. An extendable and shortenable candle, comprising, in combination:
a hollow candle tip mountable over a candle body portion and having a wick exit in the upper portion and having container engaging means in the lower portion of its hollow interior for supporting a fuel container within said candle,
an elongated fuel container having a top provided with engaging means coacting with the engaging means in the tip, and designed to hold fuel and a wick to be fed through said wick exit,

at least two removable sleeve candle body portions, mountable under said tip in superimposed relation to each other and including a lowermost sleeve portion, said sleeve portions having snugly fitting interior portions designed to fit around said container, said lowermost portion being provided with mounting means for mounting in a candlestick,

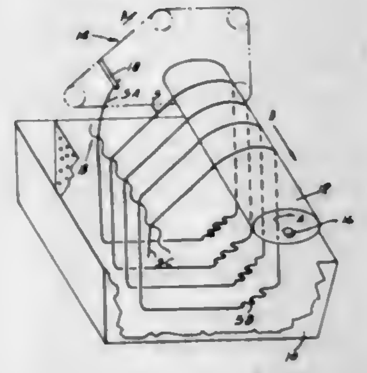


said candle tip having a bottom width adequate to extend over the upper edges of all of said body portions, and

said container having a length adequate to extend into and hold together all of said sleeve portions.

3,308,639
APPARATUS FOR THE FLUID TREATMENT OF FABRICS IN ROPE FORM

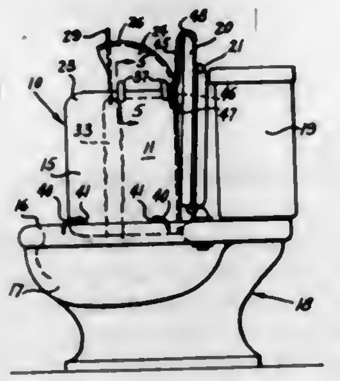
George E. Ziegler, Balloch, Alexandria, and Gilbert I. Kilgour, Gartocharn, Dunbartonshire, Scotland, assignors to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 20, 1964, Ser. No. 405,888
Claims priority, application Great Britain, Jan. 24, 1964, 3,086/64
5 Claims. (Cl. 68—176)



1. Winch apparatus comprising, in combination, a winch roller mounted for rotation, a convolution guide and feed member cooperating with the winch roller, a conveyor positioned near one end of the winch roller, means on the conveyor for securing thereto one end of the fabric in rope form, means for rotating the winch roller, means for driving the conveyor, and means for actuating the convolution guide and feed member to wind the fabric in rope form in helical convolutions in side-by-side relation over the winch roller and the convolution guide and feed member and to draw the fabric in rope form through the apparatus by unwinding the helix at its trailing end and compensatingly rewinding the helix at its leading end and simultaneously advance the successive convolutions in a direction toward said trailing end.

3,308,640
SANITARY DIAPER WASHER

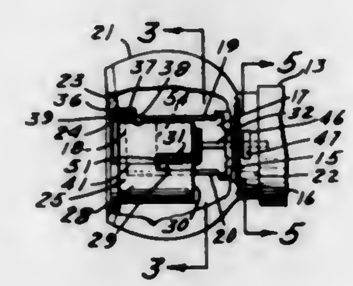
Doctor Park Russey, S. 2nd at Elm, Abilene, Tex. 79602
Filed Nov. 13, 1964, Ser. No. 410,947
7 Claims. (Cl. 68—235)



1. A diaper washer including a substantially semicircular shell of a diameter adapted to seat on the rim of a toilet bowl, means adapted to support said shell on a toilet bowl, a cover portion of substantially dome-shaped configuration having an open front, means for mounting said cover portion on said shell, and a diaper hanger secured to the inside of said cover.

3,308,641
ROTATABLE CAP WITH SHOULDER TO RETAIN REMOVABLE CORE

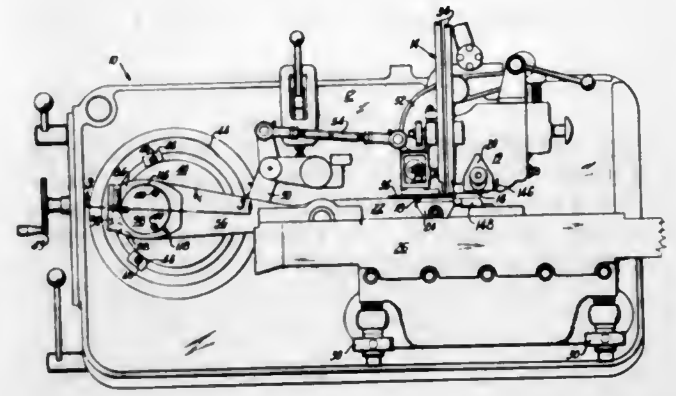
Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280, and George B. Solovieff, San Clemente, Calif.; said Solovieff assignor to said Russell
Filed Mar. 1, 1965, Ser. No. 435,929
2 Claims. (Cl. 70—224)



1. In a lock comprising a tubular spindle having a free outer end and a slot therein extending longitudinally inwardly from said outer end, a hand hold on said spindle having an outwardly facing opening thereon, and a removable key-actuated mechanism including a rotatable key plug, an extendable and retractable gate and a laterally extending tumbler housing, the combination of means for holding said key-actuated mechanism in engagement with said lock comprising a split cap, said cap including an inwardly facing shoulder thereon, said cap being anchored against endwise movement between said hand hold and said spindle, said gate in extended position being located behind said shoulder of the cap, thereby to secure said key-actuated mechanism against removal, said gate in retracted position being clear of said shoulder of the cap to effect removal of said key-actuated mechanism from the spindle and the hand hold.

3,308,642
THREAD ROLLING MACHINE

Robert D. Morton, West Hartford, Conn., assignor to The Hartford Special Machinery Company, Simsbury, Conn., a corporation of Connecticut
Filed Nov. 5, 1963, Ser. No. 321,484
1 Claim. (Cl. 72—88)

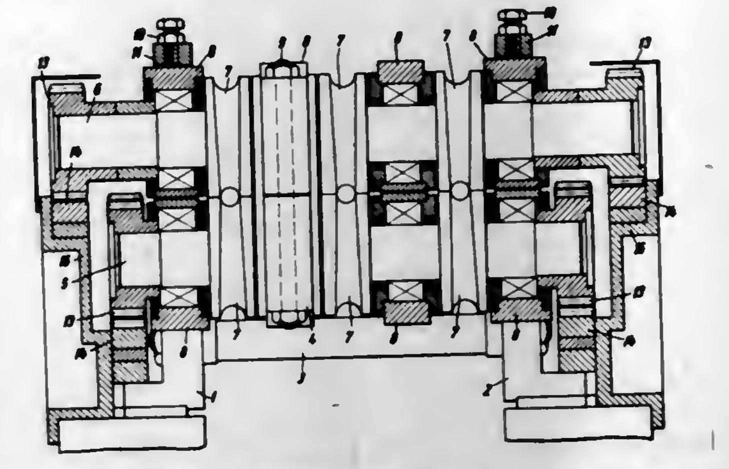


In a thread rolling machine having a reciprocable driven die, a rotatable drive member, a connecting rod having one end operatively connected to the reciprocable driven die, and connecting means for mounting the other end of the connecting rod to the rotatable drive member, the improvement wherein the connecting means is plurally eccentric to the axis of the rotatable drive member and comprises in combination an angularly adjustable eccentric sleeve bearing and an angularly positionable crank pin, the connecting rod having at said other end bifurcated end portions providing a generally cylindrical opening receiving the eccentric sleeve bearing for angular adjustment therein and means connecting the bifurcated end portions for clamping the sleeve against angular movement in said opening, the drive member including a rotatable drive wheel having a generally cylindrical opening radially spaced from the axis of rotation of the wheel, said opening being provided with means for positioning the crank pin in a plurality of angularly related positions, said crank pin comprising a first crank pin portion received within the cylindrical opening of the rotatable drive wheel and a second crank pin portion eccentrically thereof rotatably received within the eccentric bearing, and means on said crank pin cooperating with said positioning means for securing the first crank pin portion to the rotatable drive wheel in one of said angularly related positions for fixing the eccentricity of the second crank pin portion with respect to the axis of rotation of the drive wheel and gear means fixed to said eccentric sleeve bearing adapted for angularly adjusting the sleeve bearing with an intermeshing gear wrench to additionally vary the eccentricity of said other end of the connection rod relative to said axis.

3,308,643
ROLLING FRAME FOR PILGRIM MILL

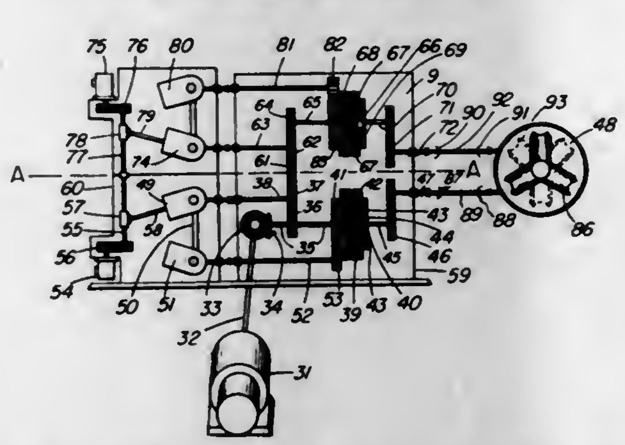
Heinz Fahrenholz and Josef Gerretz, both of Monchen-Gladbach, Germany, assignors to Mannesmann-Meer Aktiengesellschaft, Monchen-Gladbach, Germany, a corporation of Germany
Filed July 7, 1964, Ser. No. 380,790
Claims priority, application Germany, Apr. 13, 1964, M 60,623
6 Claims. (Cl. 72—238)

1. In a rolling frame, in combination, a support including two end posts, a pair of roll shafts operable for oscillating rotary movement supported by said support, a plurality of rolls mounted on each shaft, said rolls being oppositely positioned in pairs on the shafts and defining roll grooves, oscillating driving means for said shafts including pinions mounted on each shaft and racks, each rack meshing with a pinion, and means operable for journalling said roll shafts comprising a series of bearing members journalling each shaft, each roll being disposed between two bearing members, each bearing member of one shaft being disposed opposite and connected to a bearing member of the other shaft and forming therewith a bearing housing, and pre-tensioned bolts connecting the two bearing members of each bearing housing.



3,308,644
DRIVE FOR TUBE REDUCTION MILLS

Walter vom Dorp, Rheydt, Germany, assignor to Mannesmann-Meer Aktiengesellschaft, Monchen-Gladbach, Germany, a German company
Filed Dec. 2, 1963, Ser. No. 327,458
3 Claims. (Cl. 72—249)



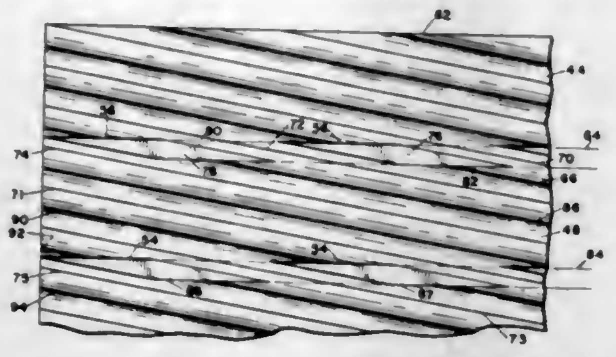
1. In a rolling mill installation comprising a plurality of roll stands, each having two roll heads, and a drive assembly comprising a main drive shaft from which drive units are driven, one drive unit for each roll head, each drive unit having a transmission element comprising bevel and spur gear assemblies, a totalizing drive element with a mechanical super-imposed drive element and a step down gear train element, the improvement which comprises positioning the transmission element, totalizing drive element and step down gear train element for the two roll heads of a roll stand in a single housing in mirror symmetry to one another with respect to a horizontal plane passing through the center of the housing, and driving one of said drive units by means of a spur gear driven by the transmission element of the other unit.

3,308,645
DIE FOR PRODUCING SELF-LOCKING THREADED FASTENER

Lynn F. Hampton, Columbus, Ohio, assignor to Columbus Bolt and Forging Co., Columbus, Ohio, a corporation of Ohio
Original application Aug. 12, 1960, Ser. No. 49,267. Divided and this application Nov. 19, 1963, Ser. No. 343,428
4 Claims. (Cl. 72—469)

1. An improved thread rolling die means comprising, in combination, first and second relatively movable die portions; a plurality of longitudinally extending crests on

the face of one of said die portions, the longitudinal axes of said crests being inclined relative to the longitudinal axis of one of said die portions, said face of said die portion including a groove intersecting said crests, the horizontal sides of said groove being substantially parallel with the longitudinal axis of said die portion.

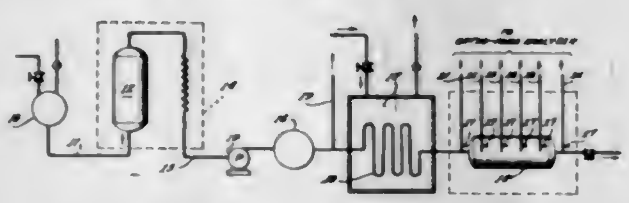


3,308,646

TEMPERATURE MEASUREMENT

Alan H. Singleton, Emmaus, Pa., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

Filed Oct. 14, 1964, Ser. No. 403,826
8 Claims. (Cl. 73—1)



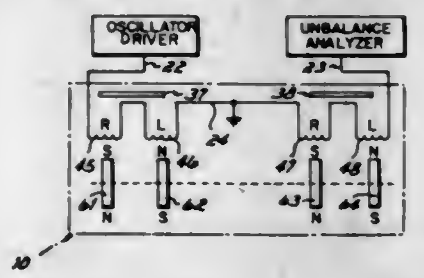
1. The method of determining the absolute temperature at a local region within a bed of catalyst effective in ortho-para hydrogen conversion, which comprises passing a stream of hydrogen through said catalyst bed at a rate such that equilibrium is essentially attained at the outlet of said bed, withdrawing at said local region an at least partially converted hydrogen stream, analyzing said withdrawn stream to determine the amount of para hydrogen present therein, and comparing the content of para hydrogen found by analysis with temperature-composition equilibria data to ascertain the temperature at said local region corresponding to the para hydrogen content of said converted stream.

3,308,647

VIBRATION PICKUP WITH CALIBRATING MEANS

Arthur R. Crawford, Columbus, Ohio, assignor to Abex Corporation, a corporation of Delaware

Filed Apr. 21, 1965, Ser. No. 449,802
7 Claims. (Cl. 73—1)



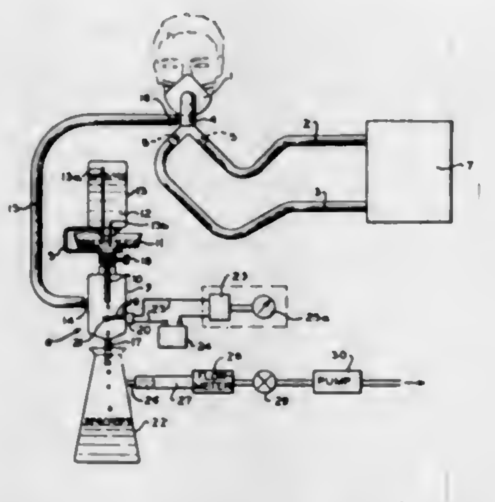
5. A method of checking a vibration analyzer adapted to receive signals from a vibration pickup having two sets of coils, each set of coils consisting of two series connected component coils oppositely wound relative to one another and two magnets axially shiftable relative to said coils, each of said magnets being magnetized in a direction parallel to their axis of movement, said vibration analyzer being effective to analyze unbalance forces of a device having a rotating member rotated within a predetermined speed range, said method comprising the steps of removing the vibration pickup from engagement with said apparatus being tested, connecting one set of coils of said pickup to an oscillator having an output signal with a frequency within the frequency range of the apparatus being tested, applying a velocity dependent signal from a second set of coils of said pickup to said analyzer, and comparing said analyzer readings with previously observed readings.

3,308,648

GAS MEASURING METHOD AND APPARATUS

Joseph D. Moulton and Philip F. Grieger, West Orange, and Theodore L. Treitler, Millburn, N.J., assignors, by mesne assignments, to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

Filed Sept. 12, 1963, Ser. No. 308,407
11 Claims. (Cl. 73—23)



1. Apparatus for measuring a gaseous constituent of a gas stream, comprising means for dropping a liquid into said gas stream having the capability of undergoing a measurable change in its characteristics in response to contact with said gaseous constituent, a holder in said stream for catching said drops, said holder comprising a pair of spaced elements capable of catching respective drops of said liquid and holding each drop by surface tension with each held drop being displaced by a new drop as the latter falls thereon, and means for measuring each drop for said change in its characteristic while the drop is retained by said holder.

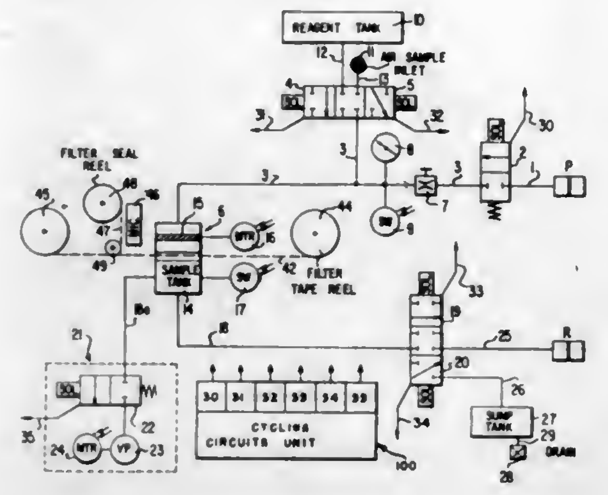
3,308,649

FLUID CONTAMINATION ANALYZER

Raymond L. Colechia, Mystic, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 23, 1963, Ser. No. 334,079
5 Claims. (Cl. 73—61)

1. A fluid contamination analyzer comprising; a sealed self contained unit, said unit including a sample chamber assembly having a sample tank and a movable sealing element for said tank, an inlet conduit connected to said sealing element, a first inlet in said inlet conduit for admitting a liquid to said assembly, a second inlet in said inlet conduit for admitting a gas sample, a reagent tank connected to said inlet conduit, solenoid valve means for selectively controlling the flow of fluid from said first and second inlets and said reagent tank, a vacuum pump and valve assembly connected to said sample tank for selectively creating a vacuum induced fluid flow to said tank, a fluid outlet conduit connected to said sample tank, solenoid valve means for controlling the flow of fluid in said outlet conduit, a filter tape having individual spaced filter pads thereon, means for indexing said tape between said sealing element and said tank, whereby individual filter pads may be sequentially sealed between said element and said tank for exposure to and contamination by fluid admitted to said unit, microscopic analysis apparatus positioned adjacent to the sample chamber assembly for inspection of each of the contaminated filter pads after exposure to and contamination by the fluid, and electrical timed cycle control means for controlling the operation of said valves, said movable element and said indexing means.

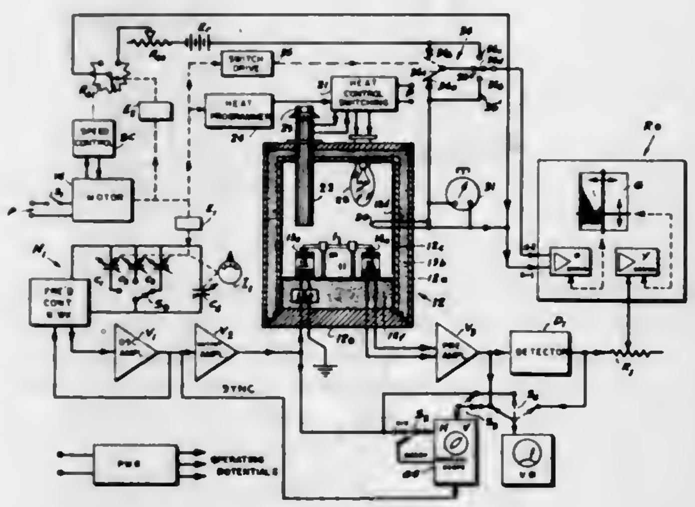


3,308,650

ACOUSTIC SPECTROMETER

John V. Fitzgerald, 106 Norris Ave., Metuchen, N.J. 08840

Filed May 17, 1963, Ser. No. 281,308
13 Claims. (Cl. 73—67.2)



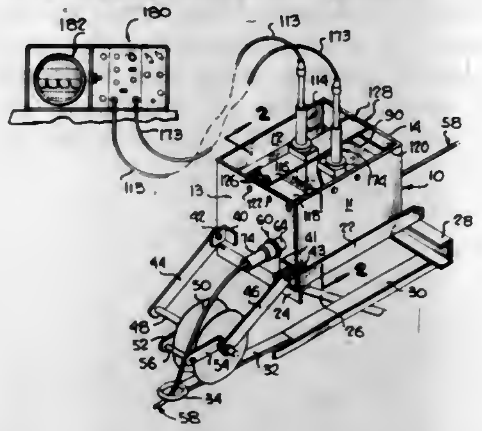
6. An integrated automatic system for subjecting a solid specimen to controlled vibratory and thermal energy and for indicating the response thereto comprising a thermally controlled enclosure adapted to contain said specimen and having thermal electric means for maintaining adjustable predetermined temperatures therein, transducer means responsive to thermal conditions of said enclosure, variable frequency specimen excitation means for imparting resonance vibration to said specimen, sensing means responsive to the vibration of said specimen, frequency responsive signalling means responsive to said excitation means, and plural-variable response indicating means having one channel connected to be responsive to said sensing means and another channel connected to be selectively responsive to said temperature transducer means and to said frequency responsive signalling means.

3,308,651

ULTRASONIC TESTING APPARATUS FOR DETERMINING THE PRESENCE OR ABSENCE OF MATERIAL WITHIN A TUBULAR MEMBER

James J. Cullen, Hazlet, N.J., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 18, 1964, Ser. No. 352,754
5 Claims. (Cl. 73—67.5)



1. Apparatus for determining the presence or absence of material within an elongated member comprising a container, a body of liquid disposed within said container, said container including inlet means and outlet means aligned with one another, mask means supported within said container and having a first bore formed therethrough in alignment with said inlet and outlet means for snugly receiving an elongated tubular member having a core material therewithin, said tubular member passing through said inlet means, thence through said bore and then outwardly of the apparatus through said outlet means, said mask means including a second bore of less diameter than said first bore formed therethrough intersecting said first bore and disposed substantially perpendicularly thereto, said mask means including a recessed portion at one end of said second bore, an ultrasonic transducer having at least a portion thereof disposed within the recessed portion of said mask means and supported thereby, ultrasonic pulses being directed through said second bore as a beam, and substantially all of said beam being transmitted through the core material of said elongated member disposed within said first bore, said transducer means being disposed at one end of said second bore and the opposite end of said second bore being open, ultrasonic transducer receiver means disposed in alignment with said second bore and the open end thereof for receiving ultrasonic impulses from said open end, said first bore being positioned directly between said transducers, and indicating means operatively connected with said receiver means for providing an indication of the presence or absence of material within the elongated member disposed within the bore of said mask means.

3,308,652

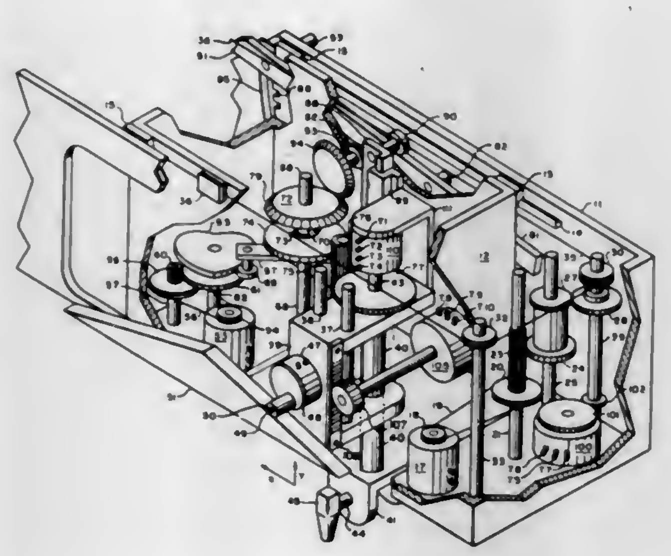
ULTRASONIC TRANSDUCER SCANNER

Henry W. Appel Eastchester, Willy Borberg, Briarcliff Manor, and Arthur F. Hayek, Pleasantville, N.Y., assignors, by mesne assignments, to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

Filed Jan. 29, 1964, Ser. No. 340,997
5 Claims. (Cl. 73—71.5)

1. A scanning device for examination of the interior of a solid object by driving an ultrasonic probe comprising:
a first support,
a second support mounted on and horizontally movable with respect to said first support;
a holder slidably attached to said second support and free to move in a direction orthogonal to the horizontal motion of said support,

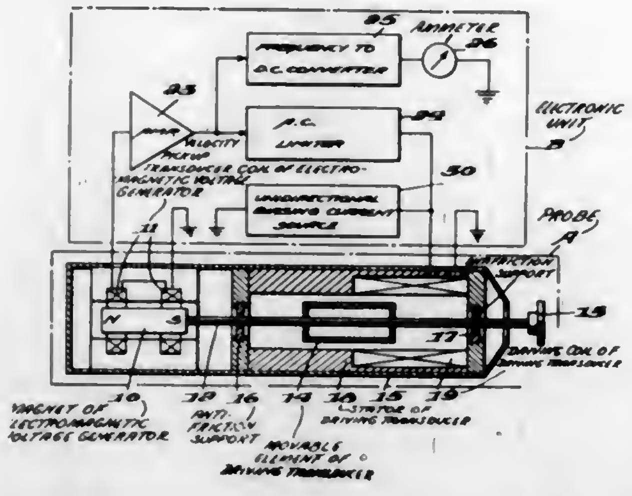
a freely rotatable mount for said ultrasonic probe arranged on the lower end of said holder;
first motive means for moving said second support in the horizontal direction such that the holder remains normal to the object being scanned,
a cam follower rotably mounted on said second support,
first camming means fixed with respect to said first support and coacting with said follower for controlling the position of the holder in said orthogonal direction as a first function of the displacement of the second support along said horizontal direction;
second motive means for providing an oscillatory mechanical movement to said rotatable mount.



second camming means fixed with respect to said first support, and,
means mounted on said second support coacting with said second cam means for combining said horizontal and oscillatory movements, and applying the combined movement to control the angular position of the said rotatable mount, whereby the rotatable mount oscillates about a mid-point determined by the instantaneous position of the second support along its horizontal direction, thereby enabling the mid-point of said oscillatory movement to continuously point toward the center of the object being scanned.

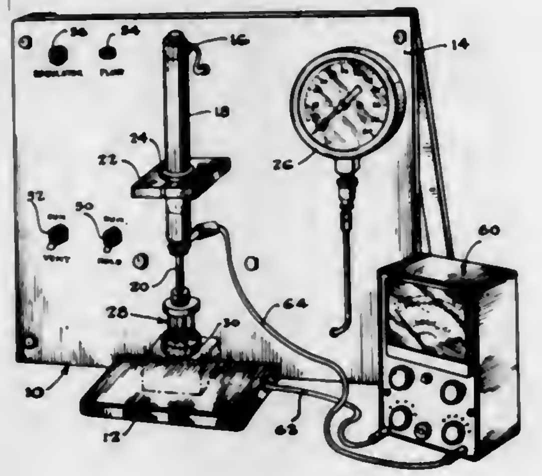
3,308,653
VIBRATION TONOMETER
Wilfred Roth, West Hartford, Conn., assignor to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare
Filed Aug. 16, 1963, Ser. No. 305,916
4 Claims. (Cl. 73—80)

1. Apparatus for measuring intraocular pressure comprising, in combination:
(a) a floatingly mounted member of predetermined mass formed to be placed against a generally spherical surface of the eye,
(b) means for applying to said member a biasing force in the direction to press it against the eye for determining the average force with which said member is pressed against the eye,
(c) regenerative means for applying to said member an oscillating force of a peak value less than that of said biasing force for cyclically virbating said member in contact with the eye,
(d) said regenerative means comprising means responsive to the natural frequency of oscillation of said member of predetermined mass so pressed against the eye and means controlled by said frequency responsive means for generating said oscillating force at the natural resonant frequency of said mass pressed against said eye, and


25
FREQUENCY TO D.C. CONVERTER
AMMETER
26
23
A.C. LIMITER
24
VELOCITY PICKUP
TRANSDUCER COIL OF ELECTROMAGNETIC VOLTAGE GENERATOR
ELECTRONIC UNIT
B
50
UNIDIRECTIONAL BIASING CURRENT SOURCE
PROBE
A
11
ANTIFRICTION SUPPORT
13
17
DRIVING COIL OF DRIVING TRANSDUCER
10
18
16
14
15
19
MAGNET OF ELECTROMAGNETIC VOLTAGE GENERATOR
ANTI-FRICTION SUPPORT
STATOR OF DRIVING TRANSDUCER
MOVABLE ELEMENT OF DRIVING TRANSDUCER

(e) means for measuring the frequency of said oscillating force as a measure of the intraocular pressure of the eye.

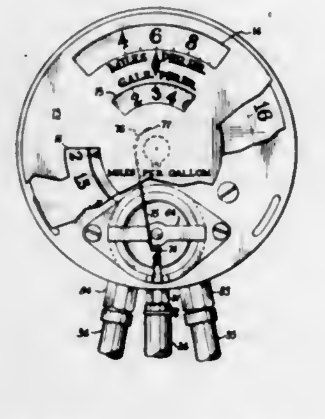
3,308,654
METHOD AND APPARATUS FOR TESTING TENDERNESS
Durward B. Badgley, Chicago, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 3, 1963, Ser. No. 313,551
9 Claims. (Cl. 73—81)



3. An improved apparatus for comparative testing tenderness of an item, said apparatus comprising: a base for receiving a sample of the item; surface contacting means for exerting a force against a portion of a surface of said sample, said means containing a plurality of spaced open areas having no contact with the sample; pressure means to apply a gradually increasing pressure against said surface contacting means; sensing means positioned at a given level above said open areas to detect extrusion of the item to said given level above said open areas as said pressure increases; and recording means to display an indication of the relative pressure being exerted by said pressure means when the extrusion of said item reaches said given level.

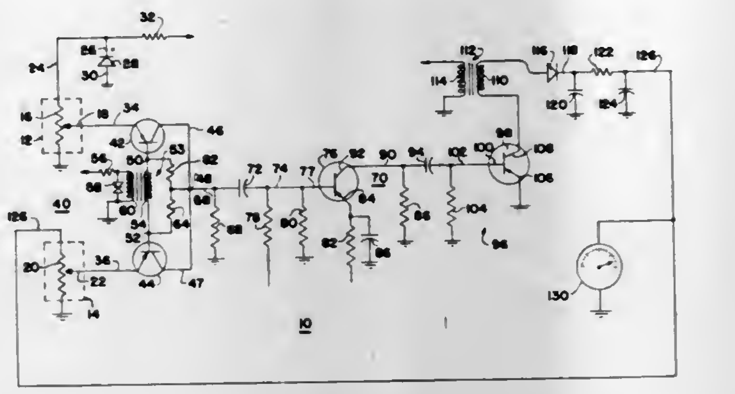
3,308,655
VEHICLE FUEL CONSUMPTION INDICATING INSTRUMENT
Donald E. Nichols, 11228 28th Ave. SW., Seattle, Wash. 98146
Filed Nov. 4, 1963, Ser. No. 321,126
5 Claims. (Cl. 73—114)

1. An instrument for installation on a vehicle to present engine performance data to the operator inclusive of speed, fuel flow, and distance traveled per unit of fuel consumption, comprising two rotatable discs movable around a common reference axis, each disc having a respective supporting shaft, one shaft rotating within the other, a housing to encompass the rotatable discs and to rotatably support the disc shafts, one disc having speed and distance traveled per unit of fuel indicia on its face and the other disc having fuel consumption indicia on its face and a pointer located to indicate specific indicia of distance traveled per unit of fuel on the other disc, and multiple pressure change activated changeable volume pressure chamber assemblies: one such pressure chamber assembly, comprising, an orifice for connection to tubing also connected to fluid flow ram pressure sensor, a ram pressure sensor for placement in fluid moving relative to the vehicle connected to the pressure chamber assembly by tubing, projecting chamber portions movably supported on the pressure chamber assembly advancing and retracting as fluid ram pressures increase and decrease respectively, and actuating linkage and a nonlinear reacting spring to convert the linear motion of the projecting chamber portions into circular logarithmic motion of the disc indicating speed; and another changeable volume pressure chamber assembly comprising two adjacent axially aligned pressure chambers, having movable partitions, two ports, one for each adjacent pressure chamber, tubing connected between the chamber ports and ports in a fuel line on the respective sides of a restrictive orifice, a fuel line section having a restrictive orifice, a common projecting chamber portion movably supported on the two chamber assembly advancing and retracting as the differential pressure changes, and additional actuating linkage on a nonlinear reacting spring to convert the linear motion of the common projecting chamber portion into circular logarithmic motion of the disc indicating fuel consumption.

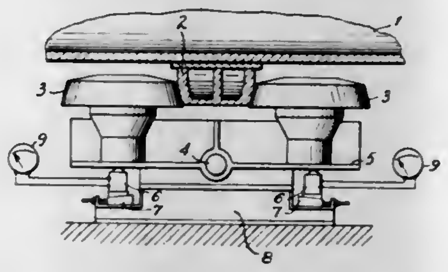


3,308,656
ENGINE PRESSURE RATIO SYSTEM
Samuel H. Auld, Wichita, Kans., assignor to Lear Jet Corporation, Wichita, Kans., a corporation of Delaware
Filed Aug. 21, 1963, Ser. No. 303,486
4 Claims. (Cl. 73—115)

1. A pressure ratio measuring device for determining the relation between the exhaust and inlet pressures of a jet engine or the like, comprising, in combination, a first pressure transducer of the potentiometric type having a wiper arm and a resistor with one side of said resistor being connectible to a source of an excitation voltage with the other side thereof being at a reference signal level, means to sense pressure at the inlet of the engine with the first said wiper arm being operatively connected thereto, means operable to regulate the level of the excitation voltage applied to said resistor, a modulator having two inputs and an output with one of said inputs being connected to said wiper arm of said first transducer, an amplifier having an input connected to said output of said modulator with said amplifier being operable to receive and amplify a signal therefrom, a demodulator having the input thereof electrically connected to the output of said amplifier to receive and demodulate a signal received therefrom, a second transducer of the potentiometric type having a wiper arm and a resistor with one side of said resistor being at said reference signal level and with the output of said demodulator being electrically connected to the other side of said resistor of said second transducer, said wiper arm of said second transducer being connected to the other input of said modulator, means to sense pressures at the exhaust of the engine with the second said wiper arm being operatively connected thereto, a meter electrically connected to said output of said demodulator, said device being constructed and adapted so that said wiper arms of said transducers are moved in response to inlet and exhaust pressures in the engine during operation of the engine to provide an electrical signal to said modulator inputs with the difference therebetween being amplified by said amplifier and demodulated by said demodulator to be imposed on said meter to provide a visible indication of the ratio of the pressures between said transducers.

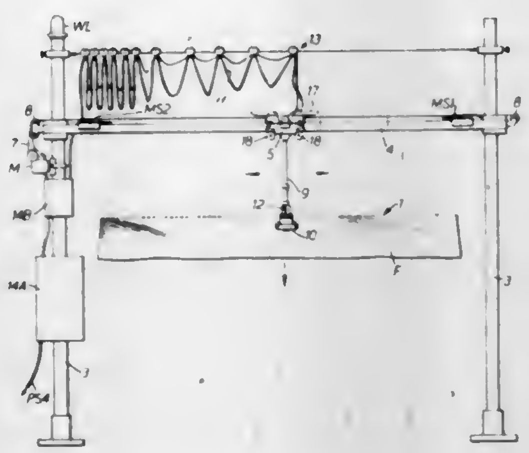


3,308,657
JOURNALLING STRUCTURE FOR ROTATABLE PROCESSING DRUMS SUCH AS ROTARY KILNS, TUBE MILLS
Rudolf Kus, Bochum, Germany, assignor to Westfalia Dinnendahl Groppel Aktiengesellschaft, Bochum, Germany, a corporation of Germany
Filed Nov. 20, 1964, Ser. No. 412,887
Claims priority, application Germany, Nov. 22, 1963, W 35,681
1 Claim. (Cl. 73—140)



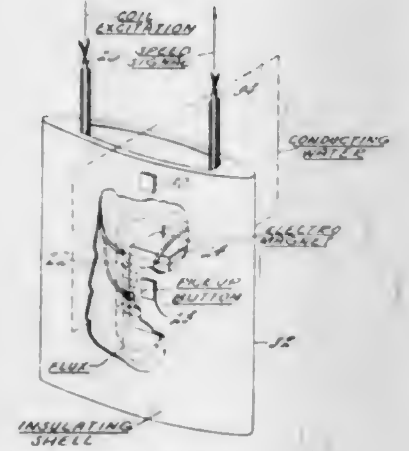
A journalling structure for a rotatable processing drum, comprising a ring member coaxially mounted on the drum to rotate together therewith, two rotatable pressure rollers spaced from each other and having substantially parallel axes, said ring member being straddled jointly by said two rollers and engageable therewith on opposite sides respectively of the ring member, a rigid support, a teeter bar pivoted in its middle to said support, said two rollers being mounted on the respective end portions of said teeter bar, and two force gauges mounted between said respective end portions and said support and responsive to thrust forces imposed by said ring upon said two rollers.

3,308,658
DEVICES FOR DETECTING FLAWS IN FABRICS
Leonard Thomas Frank Bryan, Northrepps, Stanley Hill, Amersham, England
Filed Mar. 10, 1964, Ser. No. 350,744
Claims priority, application Great Britain, Mar. 12, 1963, 9,831/63
10 Claims. (Cl. 73—159)



1. Apparatus for detecting flaws in fabrics comprising photo-electric flaw detector means, drive means to traverse said detector means continuously to and fro across the width of a moving web of fabric to scan the fabric for flaws, said detector means being sensitive to variations in light received from the fabric so as to be actuated by a change of light resulting from a flaw in the fabric and, upon detection of such flaw, providing a flaw signal, and electronic control means instantly responsive to said flaw signal to cause immediate reversal of the direction of traverse of said detector means to re-scan the flaw region means counting said flaw signals; and responder means to effect an alarm upon said counting means counting a predetermined and adjustable number of flaw signals.

3,308,659
ELECTROMAGNETIC SPEED SENSOR
James A. Herndon, Coventry, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 17, 1963, Ser. No. 273,607
4 Claims. (Cl. 73—194)



4. Apparatus for sensing the speed of a fluid comprising:

a core of magnettic material, said core having first and second poles at the ends thereof,

a winding about said core for energizing said core and producing an alternating magnetic field between said poles,

a wall of insulating material positioned adjacent one of said poles within the influence of said magnetic field,

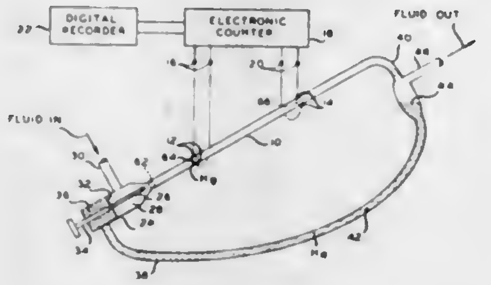
a plurality of electrodes mounted on said wall symmetrically about said pole, said electrodes being within the influence of said magnetic field and adapted to contact said fluid,

means for connecting together opposite electrodes to produce a plurality of pairs of electrodes, each pair of electrodes producing a speed signal indicative of fluid flow speed past said pair of electrodes,

servo means responsive to said speed signals for aligning one of said pairs of electrodes in the direction of fluid flow, said aligned pair of electrodes producing an output signal indicative of maximum fluid velocity,

and means responsive to said servo means for producing a signal indicative of fluid flow direction.

3,308,660
HIGH PRECISION FLOW METER
Donald D. De Ford, Glenview, Ill., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 15, 1964, Ser. No. 375,114
6 Claims. (Cl. 73—194)



1. A fluid meter comprising in combination:

(a) a tube of droplet-size bore having a fluid inlet at one end and a fluid outlet at the other end;

(b) a first pair of facing electrodes in said bore;

(c) a second pair of facing electrodes in said bore substantially spaced from said first pair and defining a predetermined bore volume between the two pairs of electrodes;

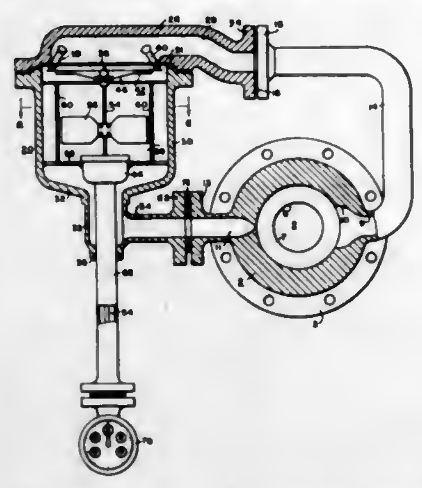
(d) a pipe of small bore extending into the fluid inlet of (a) for injection of mercury droplets into said tube;

(e) a source of mercury connected with the pipe of (d); and

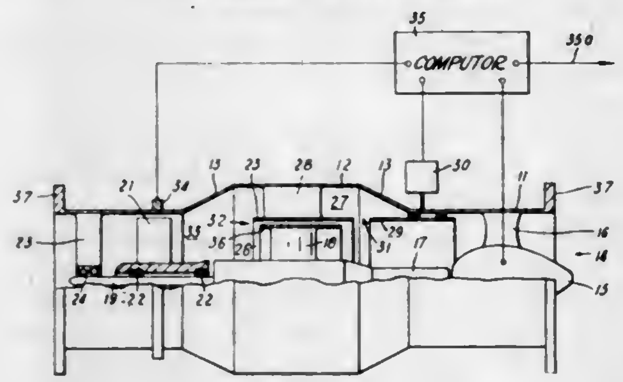
(f) a needle valve in the delivery end of the pipe of (d) communicating with the mercury source of (e) for regulating the flow of droplets of mercury into said pipe.

3,308,661
FLOW METER WITH DAMPENING MEANS
Wilbur W. Stevenson, 1125 Lancaster Ave., Pittsburgh, Pa. 15218
Filed Sept. 28, 1964, Ser. No. 399,624
3 Claims. (Cl. 73—202)

1. In a meter, in combination, a conduit conveying a condensible gaseous fluid to be measured, an orifice in the conduit, means including a meter for conveying a portion of the fluid from the upstream face of the orifice and passing it to the meter for measuring the quantity of fluid so conveyed, the meter comprising a rotatable turbine, damping blades attached to the turbine, a damping liquid comprising condensed fluid associated with the damping blades, a casing for holding the damping liquid, the casing having walls exposed to the atmosphere to maintain the liquid at relatively low temperature to prevent undue evaporation thereof, and the casing including additional walls forming channels with said walls exposed to the atmosphere for passage of exhaust steam from the turbine to the downstream face of the orifice, the additional channel walls being positioned and extending close to the path of rotation of the damping blades whereby to assist in exerting a damping force thereon.



3,308,662
METERS FOR MEASURING THE MASS FLOW OF FLUIDS
Robert Maurer, 69 Torbay Road, Rayners Lane, Harrow, Middlesex, England
Filed May 18, 1964, Ser. No. 368,135
Claims priority, application Great Britain, May 25, 1963, 20,957/63
12 Claims. (Cl. 73—231)



1. A meter for measuring the mass flow of a stream of fluid therethrough, comprising; means directing a portion of said stream along a first path; means for imparting a swirl to the fluid in said first path; means directing the remainder of said stream along a second path, bypassing said first path; means defining a mixing chamber, said first and second paths both discharging into said mixing chamber; an outlet leading from said mixing chamber; speed measuring means adjacent said outlet for measuring the total swirl velocity of the entire fluid stream entering said outlet; and means for measuring the torsional reaction of said fluid whereby the total mass flow may be calculated from said speed and reaction measurements.

3,308,663
METERING SYSTEM FOR THE NET OIL PRODUCED FROM AN OIL WELL
Edward H. Short III, Tulsa, Okla., assignor, by mesne assignments, to Combustion Engineering, Inc., a corporation of Delaware
Filed Apr. 24, 1964, Ser. No. 362,411
3 Claims. (Cl. 73—233)

1. An apparatus for determining the water content of an oil-water mixture comprising,

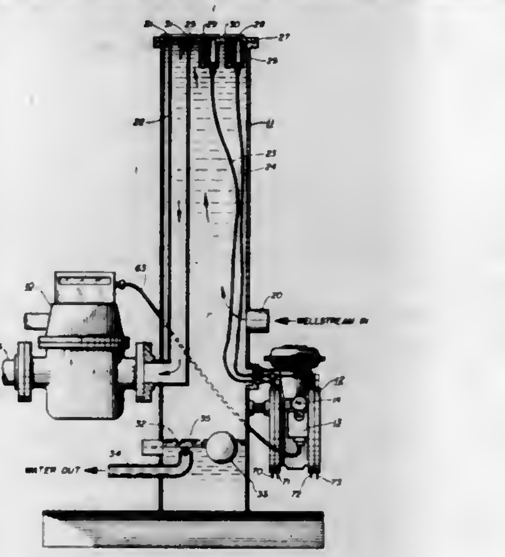
means for flowing the entire oil-water mixture in a vertical conduit up to a predetermined height,

means for providing a sample of a clean oil phase and a sample of a water phase, each representative of the oil and water in the mixture,

means to establish the sample of the oil phase in a column with substantially the predetermined height of the water-oil mixture in the vertical conduit,

means to measure the density difference between the oil phase sample and the entire mixture by their differential at the predetermined height,

means to establish the sample of the water phase in a column with substantially the predetermined height of the oil-water mixture in the vertical conduit,

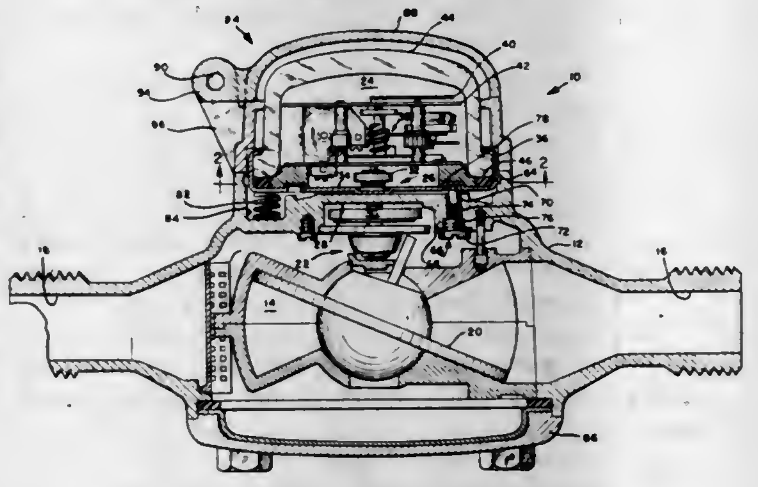


means to measure the density difference between the water phase sample and the oil phase sample by their differential at the predetermined height,

a positive displacement meter to measure the flowing quantity of the oil-water mixture in the vertical column,

and means for continuously compensating the measurement of the flowing quantity of the oil-water mixture by the means measuring the density differences to determine the water cut.

3,308,664
TAMPER-PROOF METER
Donald J. Kullmann, Milwaukee, Wis., assignor to Badger Meter Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 24, 1965, Ser. No. 515,282
11 Claims. (Cl. 73—273)

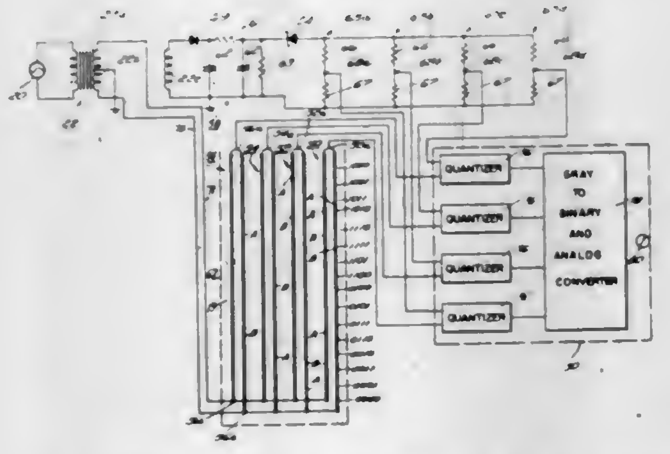


10. A tamper-proof meter comprising, in combination, a meter housing, positive displacement flow responsive means within said housing, a registering unit connected to said meter housing and said flow responsive means and movable relative to said meter housing and said flow responsive means about an axis extending through said meter housing, a hood assembly adapted to fit over and enclose said registering unit, first means engaged be-

tween said meter housing and said hood assembly to prevent movement therebetween about said axis, means on each of said meter housing and said hood assembly defining a surface on said meter housing facing toward said meter housing and a surface on said hood assembly facing toward said hood assembly and away from said meter housing, said registering unit including means arranged for engagement with said surfaces of both said meter housing and said hood assembly and effective when so engaged to prevent relative axial movement of said meter housing, said registering unit and said hood assembly, and locking means arranged for engagement with and operative to lock said registering unit against movement about said axis when said means on said registering unit is engaged with said surfaces.

3,308,665
FLUID DEPTH INDICATOR

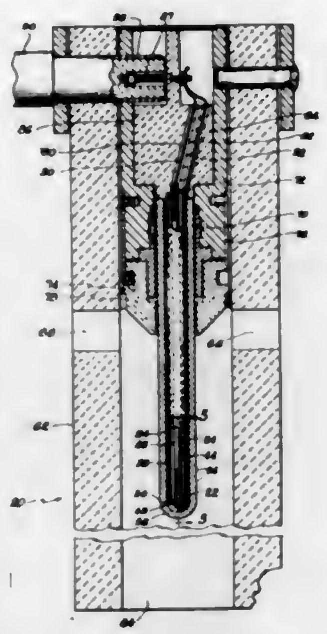
Sidney B. Williams, Lexington, and Vernon C. Westcott, Lincoln, Mass., assignors to Trans-Sonics, Inc., Lexington, Mass.
Continuation of application Ser. No. 290,757, June 26, 1963. This application Feb. 18, 1966, Ser. No. 539,241
33 Claims. (Cl. 73—295)



1. A system for providing a multiple digit representation of the position of the surface of a liquid, said system comprising
(A) a plurality of stacks of immersible thermoelectric junctions,
(B) each stack extending through a range of liquid level to be measured by it,
(C) at least a first stack having a first pair of terminal means and at least two junctions that can be immersed in said liquid and that are
  (1) vertically spaced apart to be successively immersed by a rising liquid level,
  (2) arranged in circuit between said first terminal means to develop a net thermoelectric voltage therebetween which changes back and forth between at least first and second values as the level of said liquid rises or descends past each immersible junction of said first stack,
(D) at least a second stack having a second pair of terminal means and at least two further junctions, at least one of which can be immersed in said liquid, and that are
  (1) vertically spaced apart,
  (2) arranged in circuit between said second terminal means to develop a net thermoelectric voltage therebetween which changes back and forth between at least two different values as the level of said liquid rises or descends past each immersible junction of said second stack, and
(E) output means responsive to the net thermoelectric voltages developed by the respective stacks.

3,308,666
HIGH TEMPERATURE MEASURING DEVICES

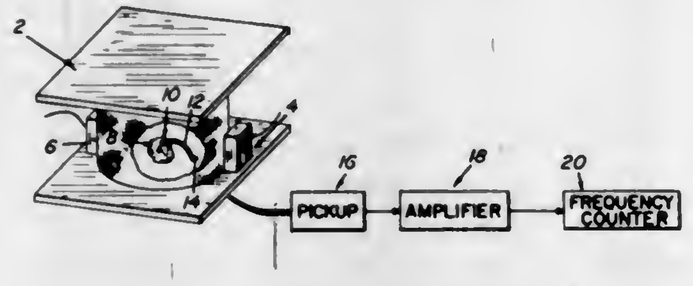
Arthur R. Anderson, Glenview, Truman M. Stickney, Morton Grove, and Donald W. Gordon, Chicago, Ill., assignors to Cook Electric Company, Morton Grove, Ill., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,614
11 Claims. (Cl. 73—362)



1. In a device for measuring high temperatures,
the combination comprising a protective casing,
a temperature sensing element disposed within said casing along the axis thereof,
said element being made of a material having progressively decreasing electrical resistance with increasing temperature,
a pair of electrodes making electrical contact with opposite axial end portions of said element and disposed coaxially relative thereto,
and means coaxial with said sensing element engaged with said axial end portions thereof and supporting said sensing element within said casing with said casing being spaced outwardly from said sensing element.

3,308,667
TEMPERATURE DETERMINATION SYSTEM

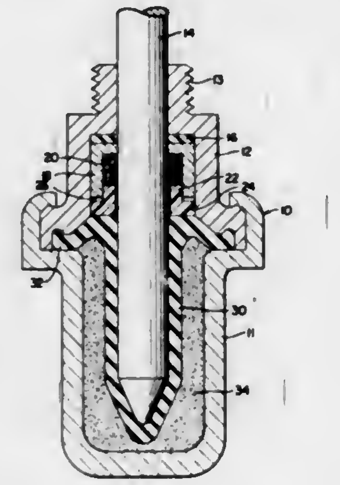
William Pearlman, 809 Malcolm Drive, Silver Spring, Md. 20901
Filed July 23, 1964, Ser. No. 384,813
16 Claims. (Cl. 73—362)



1. A method of determining a given parameter within a given environmental area subjected to a varying electrical field, said method comprising the steps of:
(a) electrically sensing said parameter within said area and producing first electrical signals having a frequency corresponding to the value of the parameter sensed;
(b) converting said first electrical signals into pressure signals of corresponding frequency;
(c) transmitting said pressure signals to a location outside said area and removed from said varying electrical field;
(d) converting said pressure signals transmitted outside said area into corresponding second electrical signals; and
(e) using said second electrical signals to indicate said value of said parameter sensed.

3,308,668
TEMPERATURE RESPONSIVE ACTUATOR APPARATUS

Backman Wong, Wayland, Mass., assignor to Standard-Thomson Corporation, Waltham, Mass., a corporation of Delaware
Filed Mar. 27, 1964, Ser. No. 355,189
11 Claims. (Cl. 73—368.3)

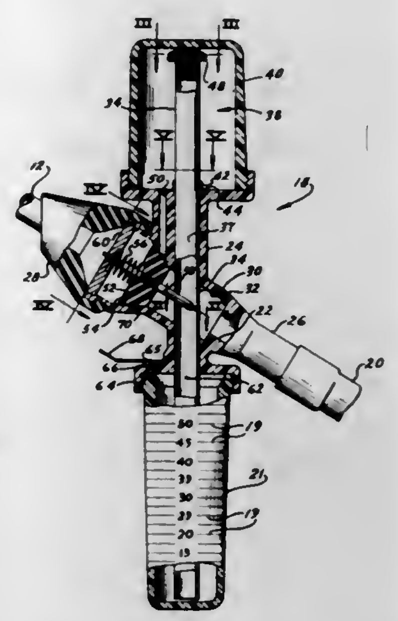


3. Actuator apparatus comprising:
a container provided with a wall having an opening therethrough,
a rod extending into the container through the opening, the rod being reciprocally axially movable with respect to the container,
lubrication means within the container and disposed adjacent the rod and operable to lubricate the rod, the lubrication means including lubricant material which flows from the lubrication means to the rod as the lubrication means operates,
pressure responsive means within the container, the pressure responsive means being operable upon the rod to force relative movement between the rod and the container, the pressure responsive means also being operable upon the lubrication means for flow of lubrication material to the rod from the lubrication means.

3,308,669
PROPORTIONATE LIQUID SAMPLING DEVICE, SPECIFICALLY A MILK SCALE

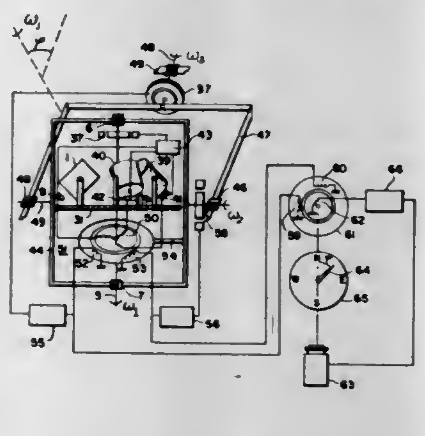
Frederick G. J. Grise, Pleasant St., Barre, Mass. 01005, and Robert F. Rice, 65 Eastern Ave., Leominster, Mass. 01453
Filed Jan. 27, 1965, Ser. No. 430,238
22 Claims. (Cl. 73—422)

1. A milk scale or other device for obtaining a proportionate sample from a small liquid stream, comprising a main passageway for the liquid stream, a cup, means for diverting a small proportionate sample of liquid from said main passageway to said cup, said diverting means comprising a small orifice through which the sample passes, a plunger operatively associated with said orifice on the inner side thereof and means for periodically moving said plunger toward and away from said orifice and creating a pumping action for removing solids which tend to collect in said orifice and affect its size and the accuracy of the sample passing therethrough.



3,308,670
GYRO PLATFORM ARRANGEMENT

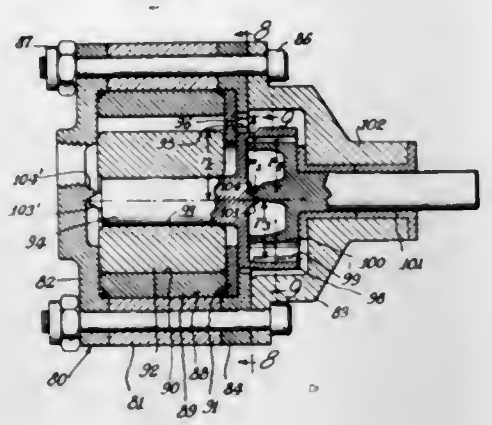
Carl-Erik Granqvist, Lidingo, Sweden, assignor to AGA Aktiebolag, a corporation of Sweden
Filed Dec. 23, 1963, Ser. No. 332,815
Claims priority, application Sweden, Jan. 11, 1963, 304/63
5 Claims. (Cl. 74—5.34)



1. A gyro platform for navigational purposes, such as for north-seeking or head-indication, comprising; gimbal frames, a platform mounted in the said gimbal frames, said platform having a shaft of rotation substantially perpendicular to the plane of the platform and connected to the gimbal frames, at least three mutually similar gyros, each gyro having a gyro rotor rotating about its spin axis at a speed equal to that of the other gyros, pivot mountings for each said gyro on the platform and positioned at equiangular distances about said shaft of rotation of the platform, each pivot mounting comprising a pivot axis being substantially parallel to the plane of the platform, a constant torque means on each gyro for seeking to rotate the gyro about said pivot axis thereby generating a constant precessional force acting on the platform, thereby causing a rotation of the platform at substantially constant speed about said shaft of rotation, position-indicating means connected between the platform and each gyro for generating signals indicating changes from a prescribed position of angular equilibrium of the position of each gyro with regard to the platform.

3,308,671
MECHANICAL RESONANT VIBRATION GENERATOR WITH FREQUENCY STEP-UP CHARACTERISTIC

Albert G. Bodine, Jr., Los Angeles, Calif.
(7877 Woodley Ave., Van Nuys, Calif. 91406)
Original application Oct. 8, 1964, Ser. No. 402,474. Divided and this application July 29, 1966, Ser. No. 568,818
5 Claims. (Cl. 74—87)

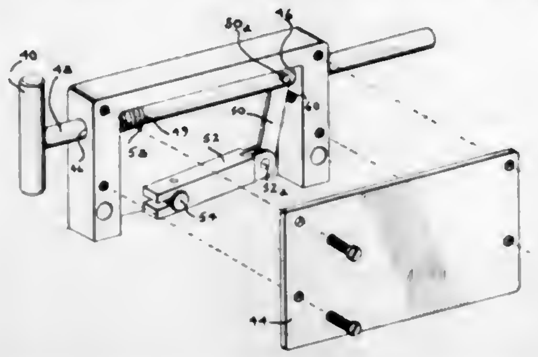


1. In a sonic vibration system, the combination of: an elastically vibratory system comprised of a resonator having a resonant frequency range and a portion which vibrates in said resonant frequency range, and sonic vibration generating means for generating vibration in said system in said resonant frequency range comprised of a bearing means fixed to said portion of said elastically vibratory resonator to vibrate therewith, an inertia rotor guided by said bearing means for turning in an orbital path in engagement with said bearing means, said inertia rotor being drivable around said path to vibrate said resonator at a frequency in the region of the resonant frequency, said inertia rotor having a bearing surface which rolls around a closed path defined by said bearing means so that the periodic force reaction of said inertia rotor in its orbit is delivered to said elastically vibratory resonator via said bearing means, the relative circumferential path dimensions of said bearing means and said bearing surface being different but of similar order of magnitude such that said inertia rotor describes more than one cycle around said bearing means while said inertia rotor turns once relative to its own axis, and a rotating drive shaft means for rotating said rotor relative to its own axis, said rotating shaft means being drivingly connected to said rotor through a plurality of link members, all in such manner that said rotating shaft means causes more than one orbital revolution of said inertia rotor and a corresponding number of elastic vibration cycles in said elastically vibratory system for each revolution of said shaft means, and thereby accomplishing a step-up in frequency from said shaft means to said vibratory system whereby said drive means experiences reduced angular reaction and enhanced rotational stability in relation to torque pulses transmitted by back-reaction from said rotor.

3,308,672
SWITCH CLOSURE MECHANISM

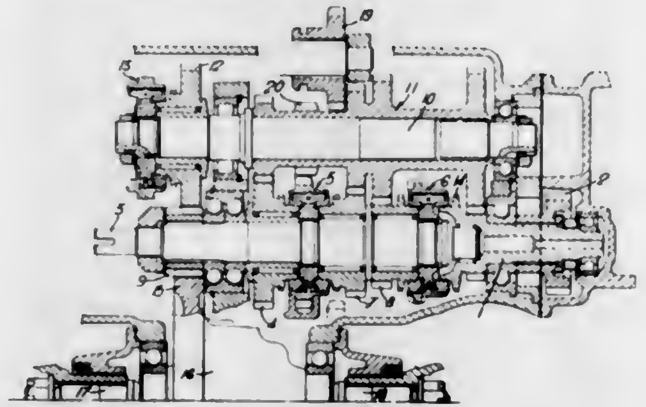
Richard William Patrick, New Cumberland, and Bruce Richard McFadden, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 12, 1965, Ser. No. 439,405
7 Claims. (Cl. 74—89)

4. In a drive mechanism for providing a controlled closure of switch contacts, a switch base, a driving shaft positioned and secured thereon for sliding movement and including a handle positioned for manual push-pull operation, a driven shaft secured in said base for rotary movement to effect switch operation, a linkage connecting said driving shaft to said driven shaft including links positioned relative to said shafts and connected thereto at points to effect a rotary drive of said driven shaft responsive to manual displacement of said driving shaft with the force required to effect a displacement of said shaft increasing during a first period of displacement and then decreasing during a second portion of displacement whereby to better assure switch operation by including a completed displacement of said shafts.



3,308,673
VARIABLE-SPEED POWER TRANSMISSION MECHANISMS

Harry Gardner, Barnt Green, England, assignor to The Austin Motor Company Limited, Birmingham, England
Filed Nov. 3, 1964, Ser. No. 408,481
1 Claim. (Cl. 74—333)



Variable speed power transmission mechanism for a motor vehicle comprising a unitary power unit arranged transversely of the vehicle and including aligned input and output shafts, a layshaft parallel with said input and output shafts, change-speed gearing connecting said shafts for securing four forward speeds and including a final drive pinion secured to said output shaft, an overdrive pinion coaxially arranged on said layshaft and constantly meshing with said final drive pinion, synchromesh coupling means for connecting said overdrive pinion with said layshaft, and a final drive differential gear assembly having a driving gear in constant mesh with said final drive pinion and having also a pair of output shafts arranged parallel with said input, output and layshafts.

3,308,674
RADIAL ROLLER ANTI-FRICTION TRANSMISSION

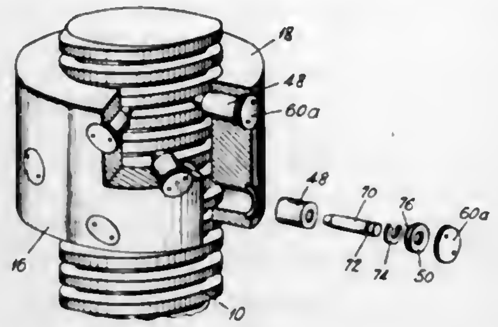
Arthur M. Maroth, Grumman Hill Road, Wilton, Conn. 06897
Filed Jan. 27, 1965, Ser. No. 428,305
6 Claims. (Cl. 74—424.8)

1. An anti-friction transmission mechanism engageable and cooperable with projections of a shouldered part, comprising in combination:

(a) a support member having an annular portion adapted to extend along the projections of said part in spaced relation thereto,

(b) a plurality of roller elements carried by and projecting from the annular portion of the support member and arranged for engagement and line contact with side surfaces of the projections of said part,

(c) anti-friction bearing devices disposed between said roller elements and annular portion of the support member, mounting the elements thereon in substantially radial disposition with respect to said annular portion,



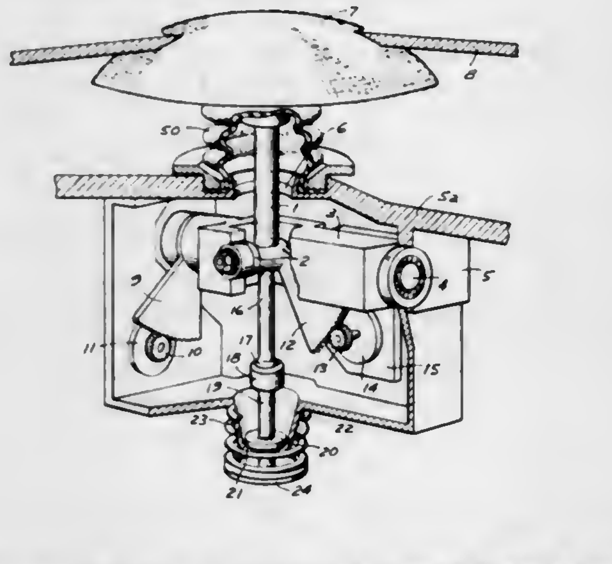
(d) the annular portion of the support member having sockets in which the roller elements and bearing devices are carried,

(e) said roller elements comprising pins, and

(f) the bearing devices comprising thrust bearing assemblages engaged with ends of the roller elements, and comprising separate radial bearing assemblages engaged with sides of the roller elements.

3,308,675
CONTROL DEVICE

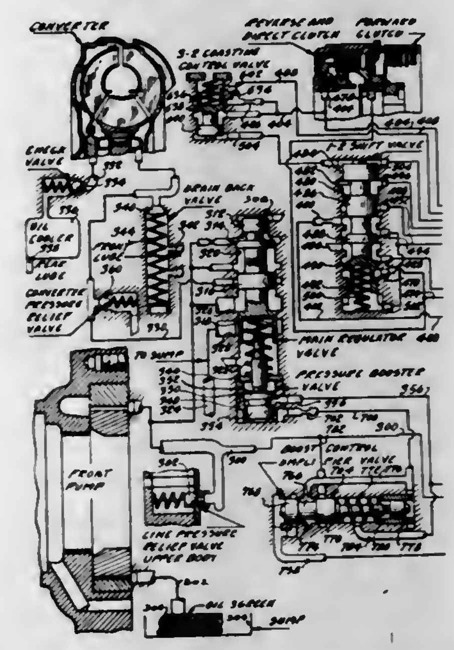
Olov Mattias Jonsson, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden
Filed Dec. 11, 1964, Ser. No. 417,736
Claims priority, application Sweden, Dec. 20, 1963, 14,340/63
7 Claims. (Cl. 74—471)



1. A control device comprising a control lever, a pivot joint supporting said lever at one end thereof universally pivotal within a given solid angle relative to a neutral position of the lever, and return spring means acting upon said lever in any position of tilt thereof to urge the lever continuously toward said neutral position, said return spring means including a first member having a surface bounded by a plane circular rim, a second member having a plane seating surface for said first member, one of said members being connected to said lever for participation in pivotal movements thereof and the other member being stationarily mounted, and a spring means axially and symmetrically disposed relative to the circular rim of said first member to act upon one of said members in a direction normal to said plane seating surface when the lever is in its neutral position to urge the two members into a stable position relative to each other in which position said circular rim abuts along substantially its entire periphery against said plane surface while permitting an angular rocking movement of the first member in reference to said seating surface about any peripheral point of the rim.

3,308,676
ENGINE MANIFOLD PRESSURE RESPONSIVE CONTROL SYSTEM FOR A MULTIPLE RATIO POWER TRANSMISSION MECHANISM

Robert P. Zundel, Birmingham, and Curtis F. Druckrey, Livonia, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 390,165
10 Claims. (Cl. 74—472)

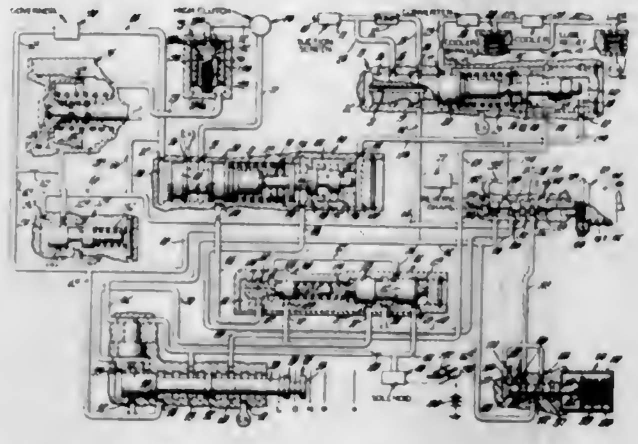


5. A control system for a power transmission mechanism adapted to deliver driving torque from a throttle controlled internal combustion engine having a throttle controlled air-fuel mixture intake manifold to a driven member, torque delivery gear elements defining plural torque delivery paths between said engine and said driven member, clutch and brake means for controlling the relative motion of said gear elements to establish various speed ratios, a fluid pressure source, fluid pressure operated servo means for actuating said clutch and brake means, a fluid pressure source, conduit structure including a high pressure region interconnecting said fluid pressure source and said servos and including distributor valve means for selectively distributing control pressure to said servos, primary throttle valve means communicating with said high pressure region and with said intake manifold for producing a pressure signal that is proportional in magnitude to intake manifold pressure, regulator valve means communicating with said pressure source for maintaining a predetermined operating pressure level in said conduit structure, an auxiliary passage interconnecting said regulator valve means and said primary throttle valve means whereby the former is sensitive to changes in said pressure signal, a second throttle valve means connected mechanically to said engine throttle and communicating with a high pressure region of said circuit for producing a pressure signal that is proportional in magnitude to the degree of movement of said engine throttle, boost control valve means disposed in and partly defining said auxiliary passage and communicating with the high pressure region of said conduit structure for modulating the pressure in said auxiliary passage to produce changes in the operating pressure level maintained by said regulator valve means, said boost control valve means communicating with each of said signals and responsive to changes in relative magnitudes thereof to pro-

duce unrestricted pressure distribution through said auxiliary passage means when the difference in magnitude of said signals is less than a predetermined value and for producing a regulated pressure level in said auxiliary passage means when said difference is greater than said predetermined value.

3,308,677
TRANSMISSION CONTROL SYSTEM

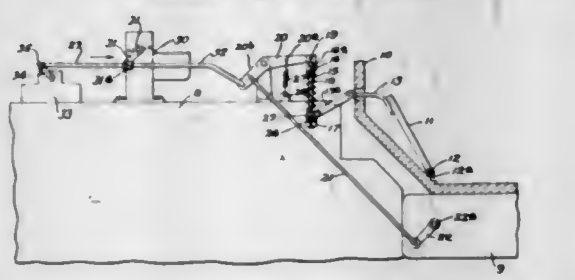
Henri J. Van Lent, Warren, and Raymond P. Michnay, Rochester, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 25, 1965, Ser. No. 427,706
11 Claims. (Cl. 74—472)



1. In a transmission for an engine driven vehicle of the type having an engine intake manifold and having fluid pressure responsive transmission servos for establishing different transmission drive ratios, a fluid pressure source, means for controlling the transmission drive ratio including a shift valve effective in a downshift position to establish a first drive ratio and movable to an upshift position to establish a second drive ratio, means for biasing said shift valve from said downshift to said upshift position comprising a vehicle speed responsive governor, a modulator valve for delivering variable pressure to said shift valve tending to bias said shift valve from said upshift to said downshift position, said modulator valve being responsive to engine manifold vacuum to vary the pressure delivered thereby, and an altitude compensator valve for delivering a control pressure to said modulator valve, the pressure delivered by said compensator valve being varied in response to changes in absolute atmospheric pressure to compensate for changes in engine manifold vacuum due to changes of absolute atmospheric pressure.

3,308,678
VEHICLE THROTTLE CONTROL

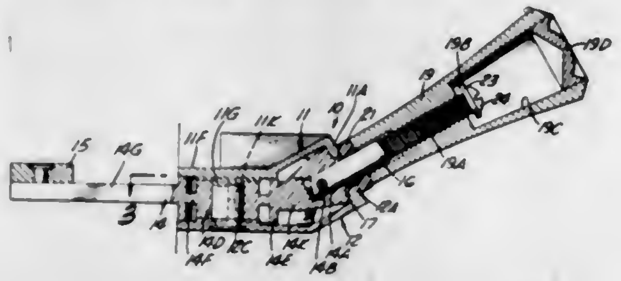
Brooks Walker, 1280 Columbus Ave., San Francisco, Calif. 94133
Continuation of application Ser. No. 159,091, Dec. 13, 1961. This application Sept. 2, 1965, Ser. No. 489,788
7 Claims. (Cl. 74—472)



1. A throttle control linkage adapted to be used with a vehicle having an automatic transmission with a shift control lever and a carburetor having a throttle and a throttle control device, said throttle control linkage comprising a first linkage means adapted to be connected to said shift control lever and said throttle control device, a throttle control foot pedal, a second linkage means connected to said foot pedal and to said first linkage means at a point intermediate said throttle control device and said shift control lever, a dash pot operatively connected to said first linkage means for delaying the opening movement of said carburetor throttle when said pedal is moved suddenly to open the throttle, said second linkage means including a soft link, said soft link being operatively interposed in said second linkage means between said foot pedal and said first linkage means whereby said foot pedal can be suddenly fully depressed while said dash pot resistance to sudden motion will delay the throttle opening and said first linkage means will maintain the relationship between the throttle control device and said automatic transmission shift control lever independently of the changes in relationship between the position of said foot pedal and the position of said throttle control device.

3,308,679
JALOUSIE OPERATOR

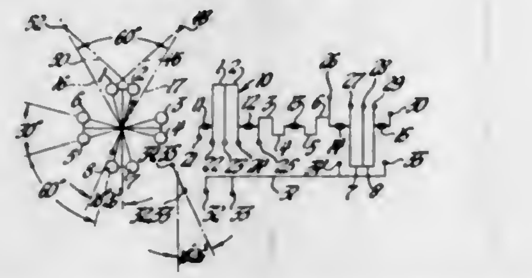
Homer L. Joselyn and Ralph N. Holloway, Monterey Park, Calif., assignors to Parlyn, Inc., Monterey Park, Calif., a corporation of California
Filed Mar. 18, 1965, Ser. No. 440,699
5 Claims. (Cl. 74—531)



4. A jalousie structure, including a housing; said housing having an internal arcuate channel which communicates with an arcuate open channel defined by said housing; a lever structure pivoted on said housing and having a portion thereof movable in said internal arcuate channel; a threaded stud extending from said portion and through said arcuate open channel; and a handle member threaded on said stud for clamping said lever structure to said housing.

3,308,680
ENGINE CRANKSHAFT AND BALANCING ARRANGEMENT

Everett B. Sherrick, Orchard Lake, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 445,028
9 Claims. (Cl. 74—603)



1. In an eight cylinder V-type four-cycle internal combustion engine having two banks of four cylinders each with an angle of 60° between the banks,

a crankshaft having eight crankpins arranged sequentially in first, second, third and fourth pairs of adjacent crankpins, the crankpins of each pair being displaced 30° from one another,

the first and second pairs of crankpins being displaced 90° from one another and 180° from the fourth and third pairs of crankpins respectively,

one journal provided before said first pair of crankpins and another after said last pair of crankpins and an additional journal intermediate each adjacent pair of crankpins,

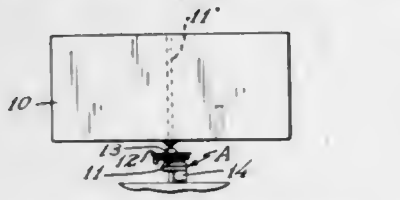
at least two counterweights on said crankshaft so angularly and longitudinally displaced and of sufficient magnitude as to counterbalance both the total rotating unbalance couple of constant magnitude produced on said crankshaft by eccentric rotating and reciprocating masses and one-half the maximum residual planar couple produced on said crankshaft by reciprocating masses,

and a second shaft positively driven by said crankshaft at crankshaft speed but in the opposite direction of rotation,

said second shaft carrying at least two counterweights so angularly and longitudinally displaced and of sufficient magnitude as to completely balance the remaining portion of the residual planar couple which is not balanced by said crankshaft counterweights.

3,308,681
GEAR CASE VENT

Mortimer J. Huber, 5901 W. Bald Eagle Blvd., St. Paul, Minn. 55110
Filed May 11, 1965, Ser. No. 454,858
4 Claims. (Cl. 74—606)



1. A gear case vent system including;

a hollow housing,

a motor secured to said housing and having a motor shaft extending into said housing,

a driven shaft extending from said housing and supported thereby,

a series of gears supported within said housing connecting said motor shaft to said driven shaft,

said housing including a top panel, a bottom panel, and a peripheral connecting wall portion,

a substantially vertical passage extending from the upper surface of the top panel downwardly through the peripheral wall portion to a point spaced from the under surface of the bottom panel and communicating at its lower end with the interior of the gear housing adjoining the upper surface of the bottom panel, and

a second substantially vertical passage extending from the under surface of the bottom panel upwardly through the peripheral wall portion to a point spaced from the upper surface of the top panel and communicating at its upper end with the interior of the housing adjoining the under surface of the top panel, whereby

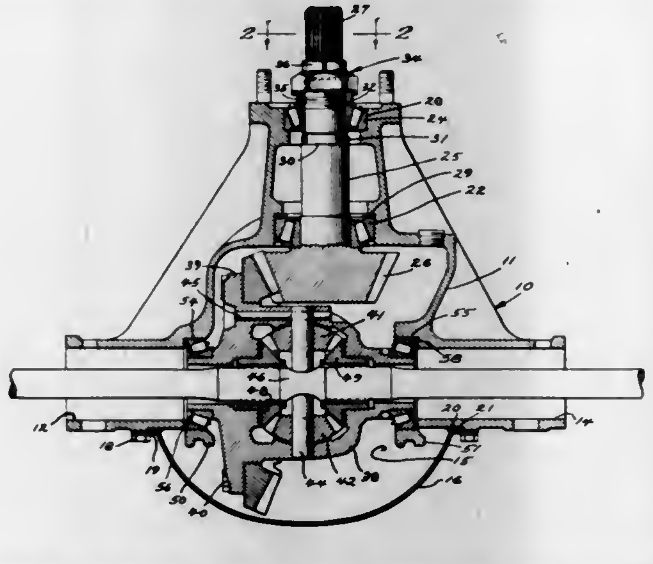
when oil is directed into the housing through said first mentioned vertical passage, said second vertical passage functions as an overflow and a vent for the interior of the housing.

3,308,682
DIFFERENTIAL GEAR ASSEMBLY

Stanley V. Puidokas, Kenosha, Wis., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Oct. 23, 1964, Ser. No. 405,965
3 Claims. (Cl. 74—607)

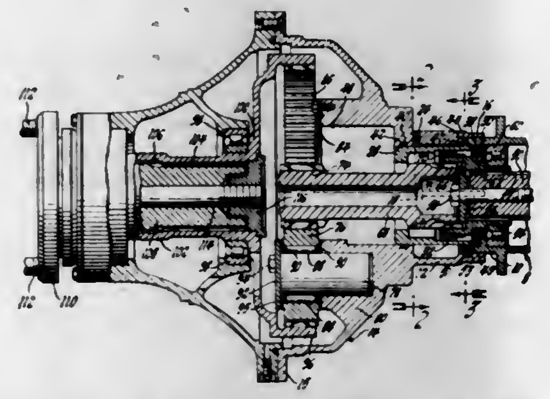
1. A differential gear assembly comprising:

(a) a housing defining a chamber having an exit;
(b) a case rotatably mounted in the housing chamber;
(c) differential gears mounted in the case;
(d) a ring gear secured to the exterior of the case;
(e) said housing having spaced bearing seats;
(f) bearings having outer races received in the bearing seats;
(g) a pinion shaft;
(h) inner races for the bearings and mounted on the pinion shaft;
(i) a pinion gear at one end of the pinion shaft and engaging the ring gear;
(j) external threads on the pinion shaft;
(k) external splines on the pinion shaft adjacent to the external threads, said splines extending axially of the pinion shaft;
(l) means for drawing the inner races of the bearings axially toward each other thereby establishing a predetermined pre-load condition on the bearings, said means including a nut having internal threads at one end, threaded onto the pinion shaft threads, said nut having a circumferential flange at its other end, said flange overlying the shaft splines;
(m) means for locking the nut on the shaft threads to maintain the pre-determined pre-load condition on the bearings, said means including circumferentially spaced projections formed on the nut flange and extending into the grooves between adjacent splines.



3,308,683
ADJUSTABLE SEAL

Stanley W. Herman, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 4, 1965, Ser. No. 437,241
11 Claims. (Cl. 74—607)

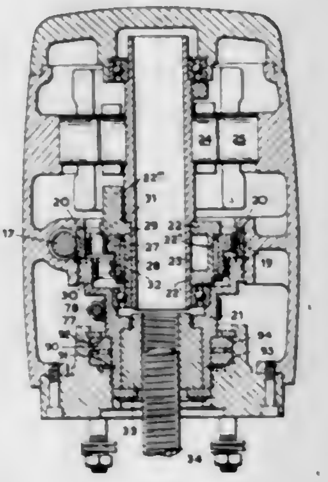


1. In a telescoping seal between spaced first and second relatively stationary members, comprising a sealing member mounted for axial reciprocal movement in said first member, said sealing member being extendable

from a telescoped position in said first member into a position within said second member to connect said members in a fluid-tight manner, said sealing member being axially retractable from said position within said second member back into said first member to provide access to the space confined by the sealing member when extended.

3,308,684
GEAR TYPE TRANSMISSION

Harry Wilkinson and Desmond Ernest Hutchinson, Bradford, England, assignors to The English Electric Company Limited, London, England, a British company
Filed May 22, 1964, Ser. No. 369,551
Claims priority, application Great Britain, May 31, 1963, 21,915/63
8 Claims. (Cl. 74—626)



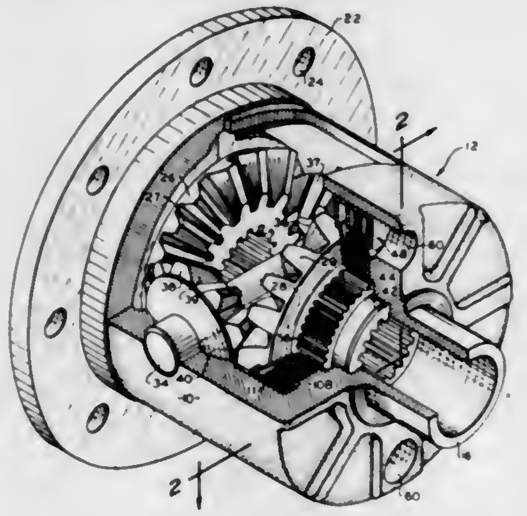
1. In or for an actuator having an electric driving motor, a gear type transmission comprising, in combination, a drive member arranged to be eccentrically rotated; means coupling the drive member to the electric motor to be driven thereby; a double gear member disposed about the drive member and arranged to be eccentrically rotated thereby; a rotatable output gear member; an annular member surrounding the gear member; a spring centred worm meshing with the annular member to hold the annular member normally stationary, the gear member having teeth which mesh with teeth on the output gear and having teeth which mesh with teeth on the normally stationary member; means for causing rotation of the worm for imparting a rotary movement to the annular member, whereby the output gear member may be caused to rotate by rotating the drive member by means of the electric motor, or by rotation of the normally stationary member; and position-responsive means controlled by the output gear member and co-operable with electrical switches operated by the said position-responsive means at set positions of the output member.

3,308,685
DIFFERENTIAL GEARING DEVICE HAVING A SELF-CONTAINED CLUTCH THEREIN

Richard J. Wojcikowski, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed Jan. 13, 1965, Ser. No. 425,304
7 Claims. (Cl. 74—711)

1. In a differential transmission unit the combination comprising

(a) a rotatable casing,
(b) shaft means drivingly connected to said casing and extending inwardly thereof,
(c) a pair of compensating gears rotatably mounted on said shaft means,
(d) a pair of side gears rotatably mounted in said casing and each being in meshing engagement with said compensating gears,
(e) a unitary self-contained clutch means associated with at least one of said side gears for frictionally connecting said side gear to said casing, said unitary self-contained means comprising
  (1) a first and a second annular and radially extending friction surface member disposed in an axial side by side cooperative relationship with each other,
  (2) an annular resilient member being axially deformed and axially compressed and disposed in an axial side by side relationship with one of said first and second members and resiliently pressing said first and second members into frictional engagement, and
  (3) a pair of clutch pack forming means formed separately from and axially movable relative to said casing and said gears,

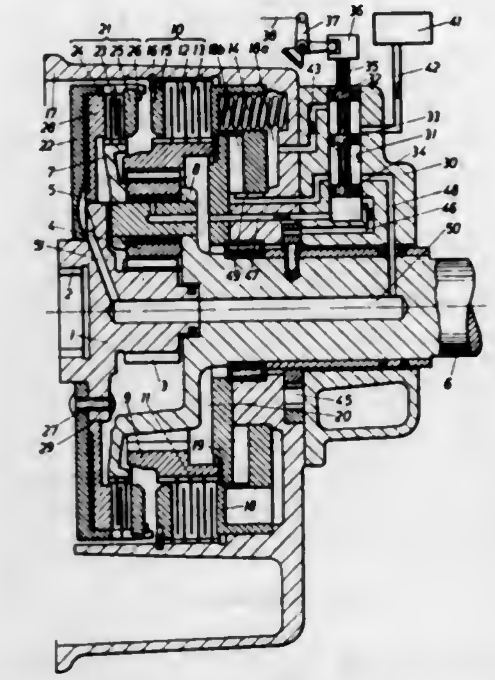


(f) a pair of first driving means extending radially outward from said first member and drivingly connecting the same to said casing and second driving means drivingly connecting said second member to said one side gear,
(g) each of said clutch pack forming means including a pair of axially spaced radially and circumferentially extending abutting surfaces and circumferentially and axially extending means securing said abutting surfaces in an axially spaced relationship,
(h) said abutting surfaces being disposed on opposed axial sides of said members and abutting the axial outer portion thereof at locations at least circumferentially intermediate said pair of first driving means and compressing said resilient member whereby said resilient member presses said first and second members into frictional engagement with the action and reaction loads thereof being imposed on said abutting surfaces independently of said casing and said gears.

3,308,686
TWO SPEED PLANETARY GEAR AUXILIARY RANGE TRANSMISSION

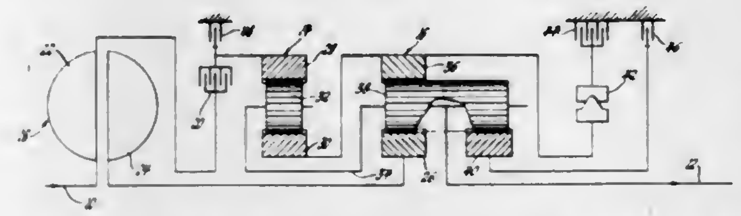
Alfred Magg, Friedrichshafen, and Peter Angerer, Ailingen, Germany, assignors to Zahnradfabrik Friedrichshafen, Aktiengesellschaft, Friedrichshafen, Germany
Filed Sept. 4, 1964, Ser. No. 394,523
Claims priority, application Germany, Sept. 10, 1963, Z 10,346
11 Claims. (Cl 74—752)

1. A speed reducing and direct drive auxiliary transmission for use in conjunction with a main transmission, comprising an input shaft to be driven by the main transmission, an output shaft coaxial with said input shaft for driving a vehicle, a planetary gear system having planetary gears for driving said output shaft, a sun gear on said input shaft meshing with said planetary gears, and a ring gear, frictional brake means operative to effect braking of said ring gear responsive to predetermined low speed of said output shaft to maintain a reduced speed drive for said vehicle, and frictional clutch means for frictionally coupling said input shaft to said output shaft responsive to a predetermined increase of speed of said output shaft, wherein said brake and clutch means comprise pressure operated devices, and control means comprising pump means communicating with said brake means and responsive to speed of said output shaft for effecting pressure to release said brake means and to engage said clutch means upon output pressure increase of said pump means at said predetermined increase of speed of said output shaft, and brake engagement means comprising pneumatic pressure means operatively connected to maintain said brake means normally engaged.



3,308,687
TRANSMISSION

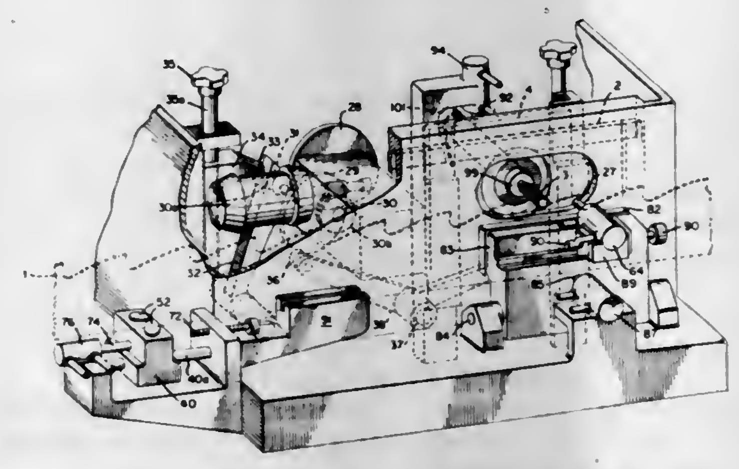
August H. Borman, Jr., Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 22, 1963, Ser. No. 325,606
9 Claims. (Cl. 74—760)



6. In a transmission, the combination of first and second planetary gear units, the first planetary gear unit having an input gear, a reaction gear, and an output planet carrier having a planet pinion revolvably positioned thereon so as to be in intermeshing relation with the input and reaction gears, the second planetary gear unit having an input gear connected to the first planetary gear unit reaction gear, a reaction gear, and a planet carrier having a planet pinion revolvably positioned thereon so as to be in intermeshing rotation with both the input gear and the reaction gear, the first and second planetary gear unit planet carriers being joined together, means selectively operable to drive connect the first gear unit input gear to a source of torque, an overdrive brake operative to prevent rotation of the second gear unit reaction gear, the first and second planetary gear units providing certain individual drive ratios so that with the overdrive brake operative and with the first gear unit input gear drivingly connected to the source of torque by the selectively operable means the first and second gear unit planet carriers have respectively imposed thereon positive and negative torques the sum of which causes the planet carriers to be overdriven relative to the first planetary gear unit input gear, and an underdrive brake operative to hold the first gear unit reaction gear so that with the first gear unit input gear drivingly connected to the source of torque by the selectively operable means the planet carriers are under-driven relative to the first planetary gear unit input gear.

3,308,688
PROCESS AND APPARATUS FOR SHARPENING THE TEETH OF SAW BLADES

Otto Stier, Biberach an der Riss, Germany, assignor to Vollmer Werke Maschinenfabrik G.m.b.H., Biberach an der Riss, Germany
Filed Mar. 15, 1965, Ser. No. 439,831
Claims priority, application Germany, Mar. 17, 1964, V 25,629
17 Claims. (Cl. 76—43)



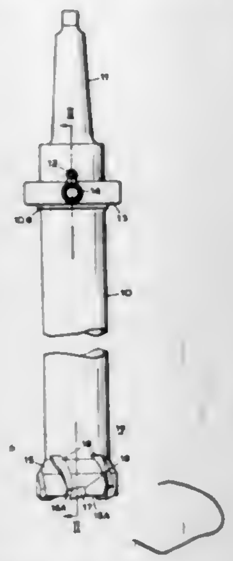
1. In a process for sharpening the teeth of a saw blade, the steps of situating a rotary sharpening tool whose aixs is perpendicular to the saw blade in a tooth gap defined by the front cutting edge of one tooth, a throat edge of said gap, and the back edge of the adjacent tooth which is situated in front of the cutting edge of said one tooth, continuously moving said tool in only one direction sequentially along and in contact with said front edge, said throat edge, and said back edge, to sharpen the saw blade at said edges, while rotating said tool in a direction in which it tends to roll along said edges, maintaining said blade stationary while said tool is in contact therewith, and, after said tool moves beyond said back edge, displacing said blade in the same direction in which it moves during cutting, to an extent sufficient to situate the next tooth gap in a position to receive said tool for sharpening the front, throat, and back edges of said next tooth gap.

3,308,689
TREPANNING TOOLS

James Stewart Macdonald, Whetstone, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Nov. 16, 1964, Ser. No. 411,400
Claims priority, application Great Britain, Nov. 22, 1963, 46,138/63
5 Claims. (Cl. 77—69)

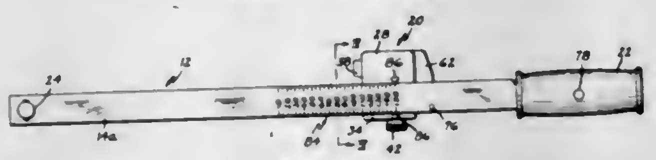
1. A trepanning tool for cutting a cylindrical hole in a workpiece, comprising a hollow generally-cylindrical barrel portion, a hollow generally-cylindrical cutter head arranged co-axially at one end of the barrel portion, the axial length of the cutter head being substantially less than that of the barrel portion and the wall thickness of the cutter head being substantially greater than that of the barrel portion so as to allow an annular space to be created adjacent the barrel portion within said cylin-

drical hole, a plurality of cutting teeth arranged around the end of the cutter head, each said tooth having a cutting edge spaced axially from the end of the cutter head and a rake angle of between approximately 12° and approximately 30°, and a slot formed on the cutter head adjacent each said tooth and communicating with the cutting edge of said tooth and with said annular space, wherein each said slot is narrower at the end thereof adjacent the corresponding cutting tooth than at the end thereof opening into said annular space, so as to permit the free passage of substantially unbroken strips of swarf from the tooth into said annular space.



3,308,690
TORQUE LIMITING DEVICE

Gabriel M. La Pointe, Worcester, Mass., assignor to Parker Mfg. Company, Worcester, Mass., a corporation of Massachusetts
Filed May 14, 1965, Ser. No. 455,836
7 Claims. (Cl. 81—52.5)

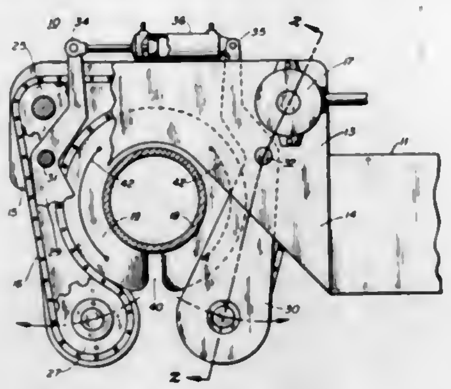


1. For use with a torque limiting wrench assembly of the type which includes an elongated frame having a torque applying member at one end and a handle at the other end, a torque limiting device comprising the combination of: a housing carried by said frame, a magnet fixed within said housing, a magnetically permeable armature reciprocally mounted within said housing for movement from a first position in contact with said magnet to a second disengaged position removed from said magnet, an actuating pin on said armature slidably extending through said magnet and housing to terminate in an exposed end outside said housing, and lever means connecting said handle to the exposed end of said actuating pin, said lever means operable to transfer a signal perceptible to the sense of touch from said actuating pin to said handle upon movement of said armature from said first position to said second position.

3,308,691
CLUTCH BETWEEN A SOURCE OF POWER AND A MEMBER TO BE ROTATED

William Guier, 3100 E. 71st St., Tulsa, Okla. 74105
Filed Sept. 29, 1965, Ser. No. 491,278
8 Claims. (Cl. 81—54)

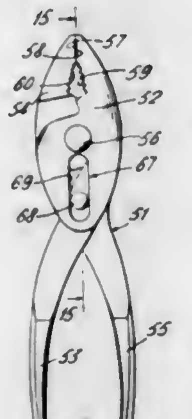
1. An apparatus for rotating a member, including,
a member to be rotated positioned at the location of rotation,
an endless chain having a finite length within which the member is captured,
a system of pivot points for the chain arranged to apply to surface of the finite length of the chain with predetermined force to develop friction between the chain surface and the member,



means mounted and linked to the chain to move the chain over the pivot points and rotate the member,
and a body of deformable and resilient material arranged between the surface of the member and the surface of the finite length of chain surface to mechanically link between the chain surface and member.

3,308,692
PLIER-TYPE TOOL HAVING CAM AND SLOT ACTUATION MEANS

Shichiro Sato, 14 of 172, Shimo-oh-ichi Higashicho, Nishinomiya, Japan
Continuation of application Ser. No. 351,185, Mar. 11, 1964. This application Apr. 13, 1966, Ser. No. 542,996
Claims priority, application Japan, Mar. 18, 1963 (utility model), 38/19,360
1 Claim. (Cl. 81—342)

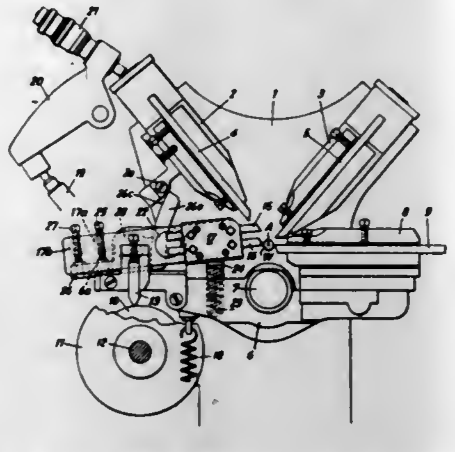


A tool comprising an elongated member adapted to remain stationary with respect to other components of the tool, said elongated stationary member having a jaw portion at one end and an elongated handle portion situated beyond said jaw portion and extending to the other end of said elongated stationary member, first pivot means connected with said elongated stationary member between said jaw and handle portion thereof, a movable jaw member pivotally connected by said first pivot means to said stationary member for cooperation with said jaw portion thereof, second pivot means operatively connected with said stationary member and situated between said first pivot means and said handle portion of said stationary member adjacent to said first pivot means, a drive handle lever pivotally connected at one end portion by said second pivot means to said elongated stationary member and said drive handle lever extending beside said handle portion to cooperate therewith during turning of said lever with respect to said stationary member at said second pivot means, and pin-and-slot means interconnecting said lever with said movable jaw member for turning the latter at said first pivot means with respect to said jaw portion of said stationary member during turning of said lever with respect to said stationary member at said second pivot means, said pin-and-slot means including an elongated slot extending generally longitudinally of said stationary member and said lever, having one end situated adjacent said second pivot means and extending from said latter one end thereof away from said second pivot means toward the ends of said stationary member and lever which are on the side of said second pivot means opposite from said first pivot means, said lever being turnable at said second pivot means with respect to said stationary member between a fully closed position where said movable jaw member engages said jaw portion of said stationary member and a fully opened position where said movable jaw member is situated at a maximum distance from said jaw portion of said stationary member, and said lever having an intermediate position between said fully opened and fully closed positions, said first pivot means, said second pivot means, and a pin of said pin-and-slot means all being located substantially in alignment with each other and distributed substantially longitudinally of said lever and stationary member in said intermediate position of said lever, said second pivot means including a pivot pin integrally fixed with and projecting from said lever, said stationary member being formed with an opening which receives said integral pivot pin of said lever, said pin of said pin-and-slot means also being integral with and projecting from said drive handle lever, said opening of said pivot means which is formed in said stationary member is elongated and extends generally transversely with respect to said slot of said pin-and-slot means, and said elongated transverse opening being formed with a plurality of pin-receiving portions thereof relatively narrow portions of a smaller width than said pin-receiving portions situated between the latter, said pin of said second pivot means having in cross section an elongated configuration with the longer dimension being longer than the width of said narrow portions of said elongated opening so that when said pin is in any one of said pin-receiving portions of said elongated opening it will be turnable therein pivotally connecting said lever to said stationary member while when said lever is turned to a predetermined position said pin of said second pivot means will have its shorter dimension aligned with said narrow portions to be movable therethrough for situating said pin in a selected one of said pin-receiving portions of said elongated opening.

3,308,693
AUTOMATIC LATHE

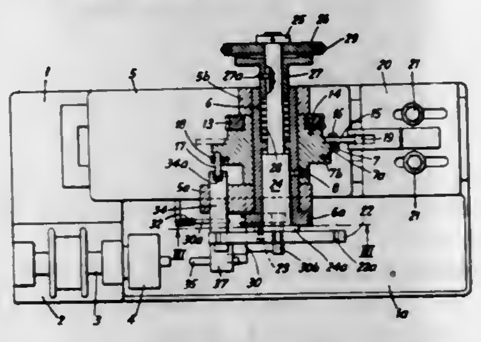
André Bechler, 4 Rue Centrale, Moutier Switzerland
Filed June 23, 1964, Ser. No. 377,196
Claims priority, application Switzerland, July 2, 1963, 8,183/63
7 Claims. (Cl. 82—2)

1. In an automatic lathe comprising fixed support means, a work-holding spindle mounted on said support means for rotation about a fixed main axis, a member movably mounted on said fixed support means, tool holder means on said member adapted to hold at least two tools and guide same for movement toward and away from said main axis in directions at least approximately perpendicular to said fixed main axis, tool holder slides mounted on said support means in a fan-like arrangement and each adapted to hold a further tool and guide same for movement in a direction at least approximately perpendicular to said fixed main axis, a camshaft and cams secured on said camshaft to move said member and said tool holder slides, said tool holder means including a tool holder movably mounted on said member and adapted to hold two superposed tools, said tool holder means including operator means operable only in response to movement of one of said tool holder slides adapted to impart to said tool holder a tool-change-over movement by which one of the tools held by same is removed from its work position and at the same time the other of the tools held by same is moved to its work position, said operator means being constructed and arranged so that it is insensitive to movement of said tool holder means toward and away from said main axis.



3,308,694
AUTOMATIC LATHE

André Bechler, 4 Rue Centrale, Moutier, Switzerland
Filed Nov. 12, 1964, Ser. No. 410,802
Claims priority, application Switzerland, Nov. 27, 1963, 14,510/63
10 Claims. (Cl. 82—2)



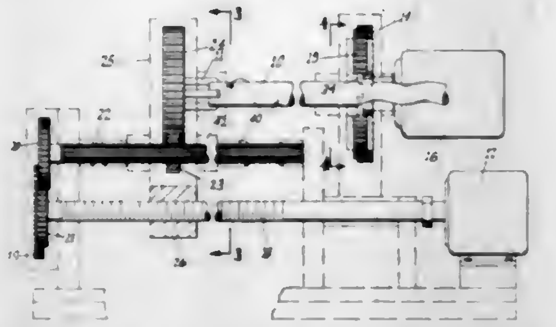
1. An automatic lathe comprising a bed frame, a work support carried by said bed frame journaled for rotation about a turning axis, a slide movable on said frame in a longitudinal direction, a turret journaled on said slide for rotation about a transverse axis contained in the plane perpendicular to said longitudinal direction and movable therealong, and cam means journaled on said slide for rotation relative thereto, said cam means operating to independently produce timed longitudinal movement of said slide and transverse movement of said turret in response to rotation of said cam means.

3,308,695
APPARATUS FOR MACHINING A HELICAL ELEMENT

Gilbert H. Hagerman, New Carlisle, Ohio, assignor to Robbins & Myers, Inc., Springfield, Ohio, a corporation of Ohio
Filed Sept. 16, 1964, Ser. No. 396,876
5 Claims. (Cl. 82—5)

1. In an apparatus for machining an elongated, rodlike workpiece, to create therefrom a helical element having a circular cross section normal to its axis at any point along its length, said apparatus comprising a chuck, rotatably mounted on one axis, for holding said workpiece by one end, a cutter head rotatably mounted on another axis, displaced from said one axis, and containing

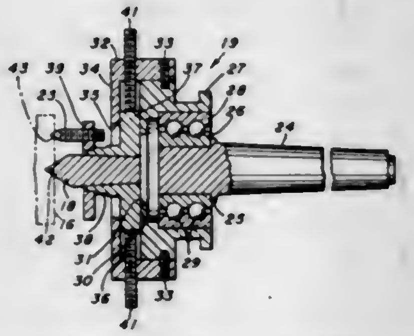
a plurality of cutting elements radially disposed therein with their cutting edges inwardly directed, means for rotating said cutter head at relatively high speed, a fixed work support for said workpiece immediately adjacent



said cutter head, means for advancing said chuck along said one axis to feed said workpiece at relatively slow speed, eccentrically into said cutter head, and means for concurrently rotating said chuck and the workpiece held thereby about said one axis, at relatively slow speed.

3,308,696
LATHE LIVE CENTER

John La Marca, 1312 Dormont Ave.,
Pittsburgh, Pa. 15216
Filed Mar. 3, 1965, Ser. No. 436,815
4 Claims. (Cl. 82—33)

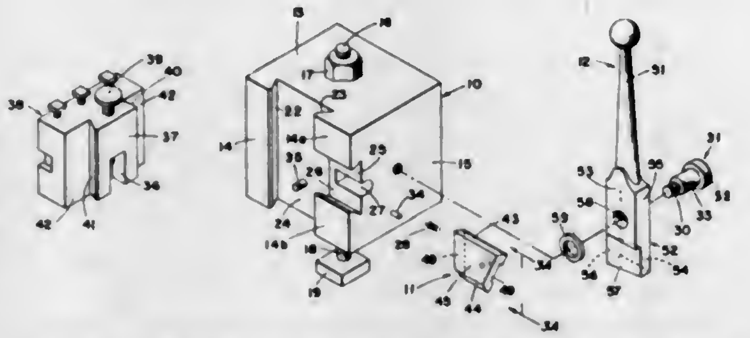


1. A live center assembly for a lathe, comprising,
(a) a shaft,
(b) a housing rotatably mounted on one end of the shaft, the housing having spaced outer and inner end walls extending beyond the end of the shaft with an opening through at least the outer end wall,
(c) a plate slidably disposed in the space between the end walls,
(d) a center pin mounted on the plate and projecting beyond the plane of the outer end walls, and
(e) means for adjusting the plate in all directions transversely of the axis of rotation of the housing, whereby the center pin may be offset from a neutral position of alignment with the axis of rotation.

3,308,697
TOOL POST

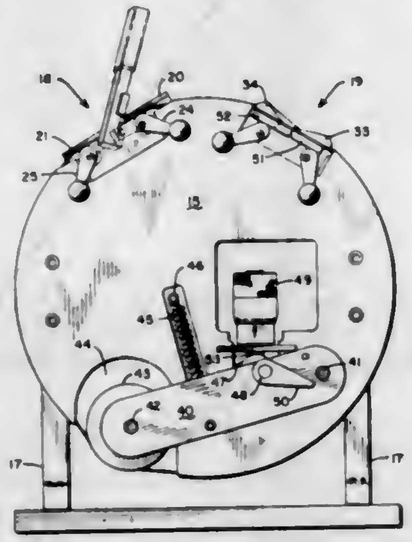
Henry A. Cocco, 3005 Dogwood Lane,
Broomall, Pa. 19008
Filed Nov. 18, 1964, Ser. No. 412,176
12 Claims. (Cl. 82—36)

8. For use with a tool holder having a mounting projection thereon extending laterally of a face of the tool holder, a tool post comprising in combination,
(a) a tool post block having a recess formed therein opening through at least one face of the block, which recess is sized and shaped to close fittingly slidably receive thereinto the tool holder mounting projection with the face of the tool holder from which extends the mounting projection substantially slidably surface engageable with the said at least one face of the tool post block through which the recess opens, said tool post block also having formed therein a locking slide channel one end of which opens into the recess through a portion of a wall of the block which defines one side surface of the recess,
(b) a locking slide in said tool post block close fittingly slidably disposed within the said locking slide channel for rectilinear movement therein, one end of said locking slide being proximate to and shiftable through the plane of the channel opening into the mounting projection receiving recess,
(c) an operating handle and pivot means pivotally securing said handle to said tool post block for rotation in a plane transverse to the line of movement of said locking slide, and
(d) interengaged camming means associated partly with said operating handle and partly with said locking slide effective to rectilinearly shift said locking slide in its channel toward said mounting projection receiving recess to lock a tool holder therein when said handle is rotated in one sense and effective to permit retraction of said locking slide from said recess to release a tool holder when said handle is rotated in the opposite sense.



3,308,698
FABRICATING ENDLESS BELTS FROM STRIPS OF WEBBING

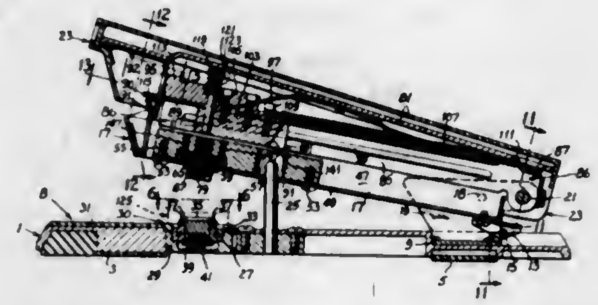
Silas Arthur Brown, Lake Elmo, Minn., assignor to Buckbee-Mears Company, St. Paul, Minn., a corporation of Minnesota
Filed Feb. 14, 1964, Ser. No. 344,971
6 Claims. (Cl. 83—78)



1. A fixture for use in making elongated thin strips of perforated metallic material into endless belts, comprising: a circular member having a peripheral groove in which the strip of material is nested, the length of said groove substantially defining the desired length of the endless belt; a first station located on the periphery of the circular member including, a pair of clamps for detachably clamping the respective ends of the strip to the circular member and a cutting device pivotally mounted to the circular member for cutting through the strip with a straight diagonal cut line which does not pass through any of the perforations; and a second station located on the periphery of the circular member displaced from said first station which includes another pair of clamps for detachably clamping the ends of the strip in abutting relationship along the cut line while they are being welded together.

3,308,699
SHEARING AND EXTRACTOR DEVICE

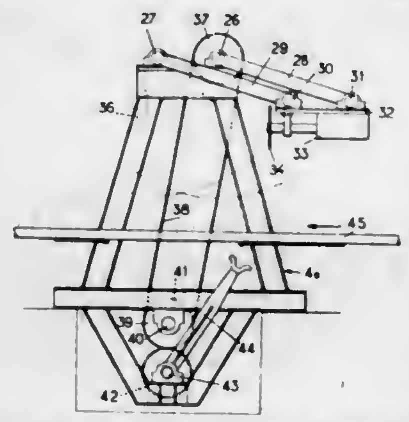
William Thomas Illingworth and David John Howard, both of Houston, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed May 28, 1964, Ser. No. 371,889
20 Claims. (Cl. 83—133)



1. Apparatus for shearing devices from supporting means therefor, said devices having parts to be sheared out therewith; comprising a base, a die on the base having first spaced shearing means, resiliently movable engaging means located adjacent said shearing means for engaging said parts, registration means for locating said supporting means with said parts extending across the first shearing means and said engaging means, rotatable means on the base, a shear punch carried on said rotatable means, said punch having second spaced shearing means for engagement with said parts and shearing action thereof by angular movement of the second shearing means relative to said first shearing means when said rotatable means is rotated, said engaging means substantially following angular movement of the rotatable means while resiliently engaging said parts as they are sheared.

3,308,700
CUTTING APPARATUS WITH PENDULUM LIKE MOVEMENT

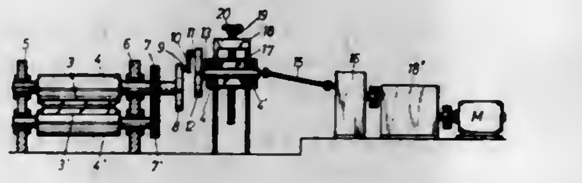
Jacques Marcel Bernard Dedieu, Aulnoye-Aymeries, France, assignor to Societe Anonyme dite: Vallourec, Paris, France
Filed Apr. 26, 1965, Ser. No. 450,737
Claims priority, application France, Apr. 28, 1964, 972,703, Patent 1,402,070
7 Claims. (Cl. 83—311)



1. A cutting device for elongate material being continuously advanced along a predetermined line, said device comprising a cutting member, suspension means carrying said cutting member and mounted to swing about an axis located eccentrically with respect to the center of mass of said suspension means and cutting member, said suspension means constraining said cutting member to swing in a path comprising a portion substantially coincident with said predetermined line and means for releasing said suspension means from a starting position in which said center of mass is out of vertical alignment with said axis, said suspension means being mounted to swing when so released primarily under the influence of inertia and gravity while moving said cutter member along said coincident path portion.

3,308,701
FLOATING SHEARS FOR SECTIONING MATERIAL, ESPECIALLY ROLLING STOCK MATERIAL

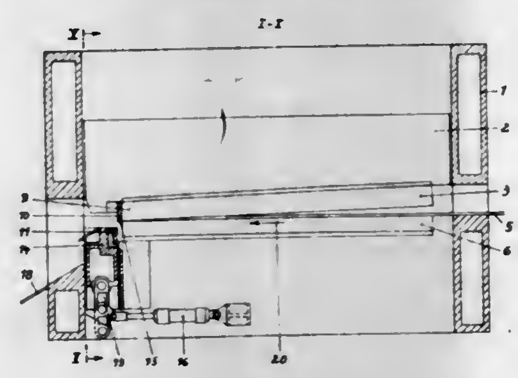
Josef F. Fröhling, Olpe, Westphalia, Germany, assignor to Josef Fröhling, Olpe, Westphalia, Germany, a company
Filed June 1, 1965, Ser. No. 460,070
Claims priority, application Germany, June 4, 1964, F 43,063; Nov. 12, 1964, F 44,423
5 Claims. (Cl. 83—324)



1. Floating shears for sectioning material, especially rolling stock material, which include: a pair of rotatable shafts provided with cutting blades for receiving therebetween the material to be sectioned, motor means, transmission means drivingly connected to said motor means, two crank disc means respectively drivingly connected to one of said shafts and to said transmission means, said disc means having their axes of rotation substantially parallel but offset with regard to each other, link means pivotally connected to both of said crank disc means and drivingly interconnecting the same, and means operable to adjust said two crank disc means relative to each other while maintaining their axes of rotation substantially parallel to each other.

3,308,702
SHEARS WITH A STATIONARY BLADE AND A MOVABLE BLADE

Ernst Klein, Dusseldorf, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany
Filed Apr. 8, 1964, Ser. No. 358,187
Claims priority, application Germany, Apr. 13, 1963, Sch 33,106
4 Claims. (Cl. 83—558)



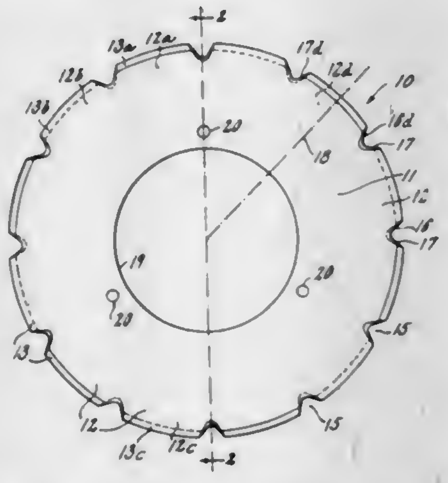
1. Shears for trimming rolled metal sheets or plates, comprising: a stationary longitudinal blade, a movable longitudinal blade co-operating with the said stationary blade, a pair of transverse blades located at the delivery

end of the longitudinal blades for cutting up a border strip severed by the longitudinal blades, and a bearing surface for supporting the metal sheet or plate that is being trimmed, one of the transverse blades extending outwardly of the said bearing surface and being driven, for cutting up the severed border strip, in unison with the movable longitudinal blade, and the other transverse blade being movable into its cutting position for cutting up the severed border strip and out of its cutting position to facilitate the advance of the partially severed border strip along with the sheet that is being trimmed, the cutting edge of the movable longitudinal blade being arranged at an acute angle with the said bearing surface, and being still in contact with the stationary longitudinal blade even in the open position of the shears, and the angle of inclination and the working stroke of the movable longitudinal blade being so dimensioned that on the entry side of the shears, at the termination of a cut, the end of the movable longitudinal blade is located at a distance from the stationary longitudinal blade equal to the thickness of the sheet to be cut.

3,308,703

CUTTER FOR GROOVING RUBBER

Herman C. Sauer, Ambler, Pa., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 13, 1965, Ser. No. 495,630
3 Claims. (Cl. 83—676)



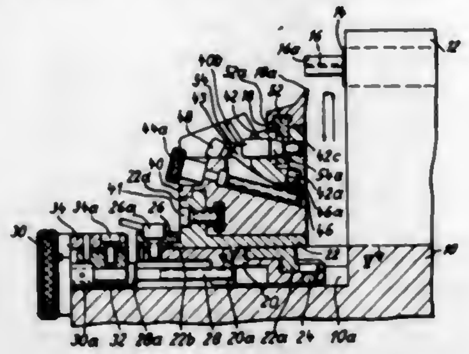
1. A cutter for grooving uncured rubber and removing material located below the surface of said rubber, comprising: a circular blade having a plurality of teeth located around the periphery thereof, the top cutting edges of said teeth being beveled with alternate teeth having oppositely directed bevels, each of said teeth having at least one side cutting edge formed by a gullet which separates adjacent teeth, said side cutting edges being beveled with alternate cutting edges having oppositely directed bevels, and said cutting edges being slanted radially outwardly in a direction away from the direction of rotation of said blade.

3,308,704

KNIFE ADJUSTING MEANS FOR MICROTOME

Rolf Burkhardt, Munich-Pasing, Germany, assignor to Compur-Werk Gesellschaft mit beschränkter Haftung & Co., Munich, Germany
Filed Nov. 6, 1964, Ser. No. 409,435
Claims priority, application Germany, Nov. 11, 1963, C 31,372
9 Claims. (Cl. 83—699)

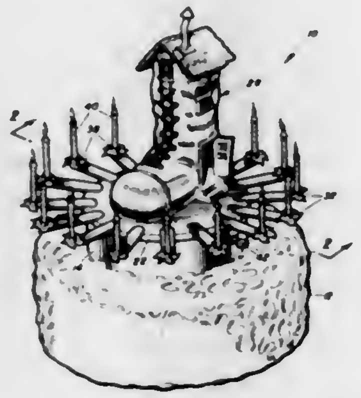
9. In a microtome of the class described for cutting a preparation having an axis which moves in a plane, a knife, means mounting said knife for pivotal movement about three axes, each of said axes being disposed across the other two axes and intersecting said other axes substantially at a point lying in the plane of the movement of the preparation axis, and separate means for clamping said knife in a preselected adjusted angular position about each of said axes.



3,308,705

CAKE DECORATOR

Roger V. Shinnick, 8403 Glen Road, Baltimore, Md. 21234
Filed June 1, 1966, Ser. No. 554,411
5 Claims. (Cl. 84—95)

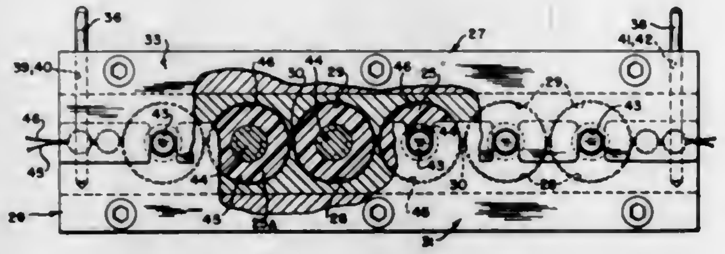


1. A cake decorator, comprising, a casing, a music box mechanism positioned in said casing, said mechanism having a winding and drive stem extending vertically and centrally upwardly, means including a flat turntable spaced parallel to the upper surface of said casing secured to said winding and drive stem and arranged for rotation with respect to said casing, magnetic means recessed in the top center of said turntable, and a decoration structure having a magnetic material embedded in its bottom removably mounted on said turntable.

3,308,706

WOODWIND INSTRUMENT BODY

Arnold Brilhart, Carlsbad, Calif., assignor to Brilhart Musical Instrument Corporation, Carlsbad, Calif., a corporation of New York
Filed Apr. 30, 1963, Ser. No. 276,911
5 Claims. (Cl. 84—380)

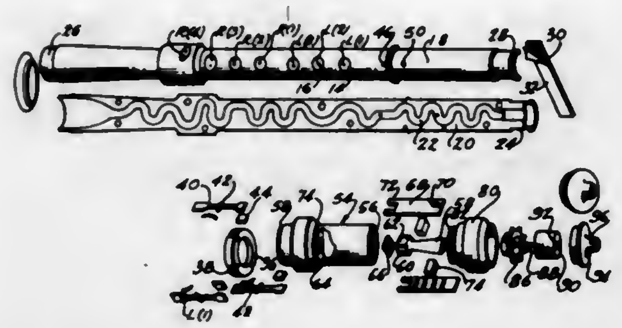


1. A non-metallic woodwind instrument body having a tubular configuration comprising a plurality of unitarily combined, resin-impregnated plastic fibers, said plastic fibers oriented substantially parallel the longitudinal axis of said instrument body.

3,308,707

MUSICAL INSTRUMENT

George S. Kelischek, 386 Allendale Drive SE., Atlanta, Ga. 30317
Filed Feb. 21, 1966, Ser. No. 529,012
10 Claims. (Cl. 84—380)



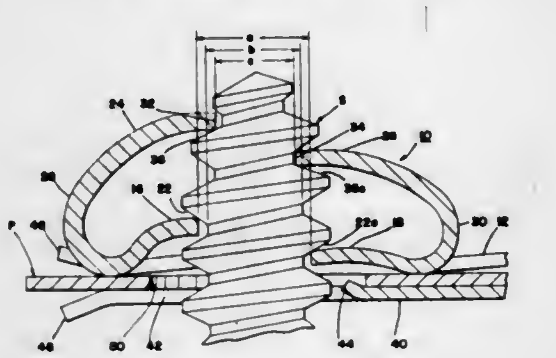
1. In a production krummhorn which resembles a real Renaissance krummhorn, such as a type hand-made from wood:

(a) a krummhorn body assembled from at least two interlocking sections and having a bore extending therethrough and having openings in each end of the body through which the sound and air passes, said interlocking sections forming a unitary body and each section having a bore cavity.
(b) key means on said body, and finger openings in the body to be covered and uncovered by the fingers to make different notes,
(c) a reed on said body having reed positioning means thereon,
(d) and tone adjustment means.

3,308,708

FASTENING DEVICE

Robert J. Holton, Cleveland, Ohio, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 14, 1964, Ser. No. 389,752
5 Claims. (Cl. 85—32)

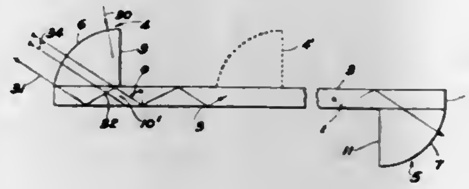


1. A sheet metal fastening device for securement with a threaded member, such as a screw, bolt or the like, said device comprising, a generally flat base having an aperture therein, thread engaging means defined by marginal portions of said aperture which extend outwardly from said base for engagement with the lower surface of a thread of said threaded member when initially inserted through said aperture, a pair of resilient finger portions made integral with an extending upwardly and angularly inwardly from a said base on opposite sides of the aperture therein, the free ends of said finger portions being axially off-set relative to one another and extending generally radially inward toward one another in overhanging relationship relative to said thread engaging means, said thread engaging means including an upwardly projecting generally frusto-conical projection defining upper and lower generally helical edges separated by a slot portion formed radially relative to the aperture in the said base portion, the maximum transverse distance between said edges being substantially greater than the maximum transverse dimension between the free ends of said finger portions, the minimum transverse dimension between said edges being substantially greater than the root diameter of said threaded member adapted to be inserted through the aperture in the said base, and the maximum transverse distance between the free ends of said finger portions being substantially less than the root diameter of said threaded member for engagement with the upper surface of a thread of the threaded member when initially inserted through said aperture, whereby upon turning of said threaded member through said aperture a force is imparted by said threaded member to initially draw said edges downwardly and axially into engagement with said lower thread surface, and substantially simultaneously therewith to pivot said finger portions through a generally vertical plane and radially inwardly into engagement with said upper thread surface, so that a counter-force is imparted by said threaded member to pivot said finger portions in generally opposite directions to draw said edges downwardly and axially inwardly, thereby to urge said edges and said finger portions into tight gripping engagement with the root portions of said threaded member so that in the final installed position, the axial distance between the corresponding axially aligned points on said edges and the free ends of said finger portions is substantially greater than in the said initially installed position thereof.

3,308,709

MULTIPLE REFLECTION OPTICAL DEVICE

Nicolas J. Harrick, Ossining, N.Y., assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 12, 1963, Ser. No. 287,239
10 Claims. (Cl. 88—1)

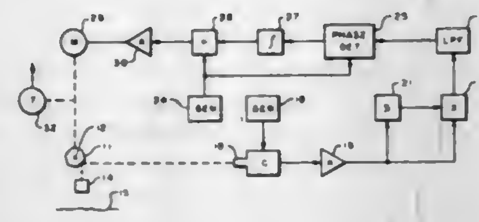


1. A multiple reflection optical device comprising a substantially radiation transparent, high refractive index, elongated member having flat opposed surfaces and dimensions at which radiation entering a region thereof and incident on one of the opposed surfaces at an angle above the critical angle is internally reflected to the other opposed surface thereof substantially confining the radiation within the member whereby the radiation propagates through the member by internal reflections before exiting therefrom, substantially radiation transparent means in optical contact with a surface portion of one of said opposed surfaces for transmitting radiation into said elongated member, means for extracting the propagated radiation from the elongated member, said transmitting means having a generally cylindrically curved entrance surface adjacent the surface contacting the said surface portion for receiving the radiation, said curved surface having a radius of curvature whose center is substantially at the center of the elongated member between the said opposed surfaces, and means for pivoting the elongated member, transmitting means and extracting means relative to the incident radiation about an axis which is generally coincident with the center of the radius of curvature of the said curved entrance surface.

3,308,710

GROUND VELOCITY INDICATOR FOR VEHICLES UTILIZING TWO SCANNING RATES

Gus Stavis, Briarcliff Manor, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed June 14, 1963, Ser. No. 288,022
5 Claims. (Cl. 88—1)



1. A velocity sensor for use in vehicles travelling in close proximity to a supporting surface comprising,

servo means,

means driven by said servo means for optically scanning a small area of the supporting surface, producing an optical image of said surface the apparent motion of said optical image being a function of the velocity at which said means is driven and the velocity of said vehicle,

electronic means for converting said optical image into a series of successive electric wave trains,

means responsive to successive electric wave trains for producing an error signal corresponding to the relative phase displacement of successive electric wave trains,

bistable means for alternately providing positive and negative voltages,

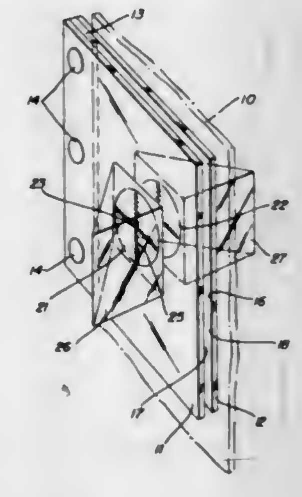
means for controlling the velocity of said servo means responsive to said error signal and the output of said bistable means whereby the rate of optical scan is alternately equally above and below said vehicle velocity, and

speed indicator means operated by said servo means.

3,308,711

OPTICAL SYSTEM FOR CHECKING REGISTRATION

Richard W. Dyer, Allentown, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 27, 1962, Ser. No. 219,403
1 Claim. (Cl. 88—14)



In a registration checking device,

a pair of transparent plates,

a spacer member for maintaining the plates in spaced, parallel configuration to define an inspection slot,

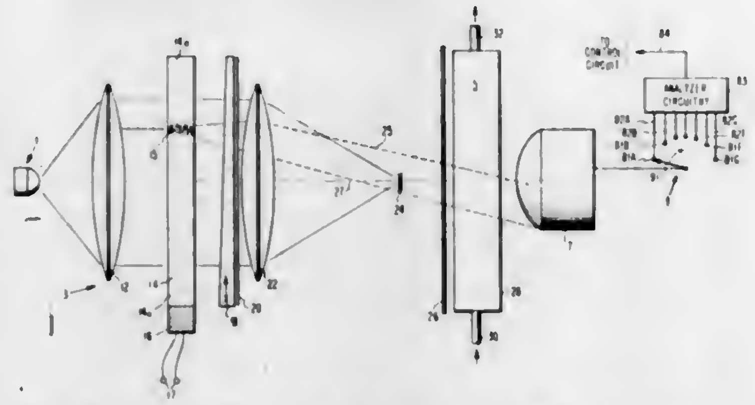
a pair of aligned reticles formed on the inner adjacent faces of the plates, one reticle being on either side of the slot, and

a pair of right-angle prisms mounted symmetrically over the reticles on the plates for projecting the images of both reticles and the areas within the slot immediately adjacent the reticles toward a common viewpoint.

3,308,712

TRANSDUCER FOR SPECTRUM ANALYSIS APPLICABLE TO CLOSED LOOP CONTROL

Ronald H. Kay, Los Gatos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 6, 1963, Ser. No. 321,916
8 Claims. (Cl. 88—14)



1. A spectrum analyzer for detecting the absorption spectrum of a sample comprising:

an acoustical delay line,

means for directing collimiated light through said acoustical delay line,

a wedge interference filter positioned to intercept the light passing through said delay line,

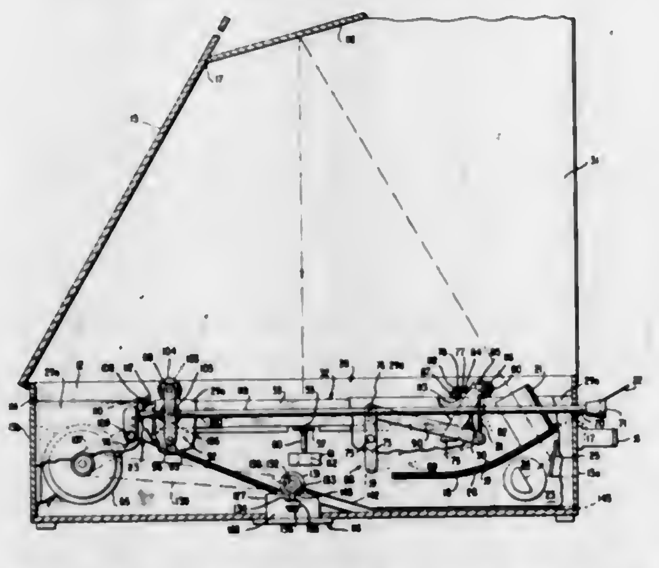
means for directing the light which passes through said delay line and through said wedge interference filter through said sample, including a mask positioned to block light which passes directly through said delay line, whereby only light which is diffracted by a pulse in said delay line reaches said sample, and

means for detecting the light passing through said sample.

3,308,713

PORTABLE READER PRINTER

Christopher R. Miller, Potomac, Md., assignor to Documentation, Incorporated, Bethesda, Md., a corporation of Maryland
Filed Sept. 30, 1963, Ser. No. 312,407
40 Claims. (Cl. 88—24)

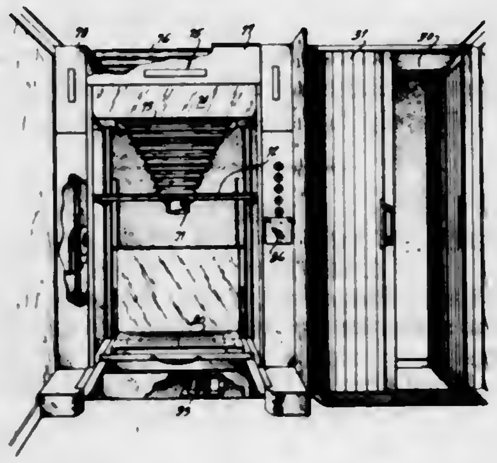


1. A portable reader printer for selectively providing a visual of photomechanical reproduction of an image from a light pervious storage medium comprising a support means, optical projection means secured to said support means and positioned to optically project the image from said light pervious storage medium, a removable sheet supply packet including alternately disposed sheets of clear opaque and photosensitive sheet material, said clear opaque material forming a projection screen, means to position said sheet supply packet upon said support means in optical alignment with said projection means whereby said projected image is directed upon the uppermost sheet of said supply packet, sheet feeding means secured to said support means to selectively remove the uppermost sheet from said supply packet, a sealed photomechanical reproduction unit mounted upon said support means, and means operating in conjunction with said sheet feeding means to direct said photosensitive sheets from said supply packet to said photomechanical reproduction unit.

3,308,714

COMBINED PHOTOGRAPHIC ENCLOSURE AND CAMERA

Murray Friedel, North Miami Beach, Fla., assignor to Visual Graphics Corporation, New York, N.Y., a corporation of New York
Filed Oct. 20, 1964, Ser. No. 405,107
9 Claims. (Cl. 88—24)



1. A device for copying both opaque and transparent copy materials comprising in combination, a light tight two compartment enclosure, an exterior first door for access to the first of said compartments and an interior second door for access from the first to the second compartment, latch means carried by the enclosure to prevent both doors from being opened at the same time, a camera in the second compartment, said camera comprising a lens board, a camera lens on said lens board, a copy holder above the lens board to receive material to be copied, a light tight bellows connected at one end to the lens board and at its opposite end to the copy holder, means carried by the second compartment to vary the distance between the lens board and the copy holder, means to illuminate the copy in the copy holder, an image platen spaced from the lens board and adapted to receive light coming from the lens, a source of vacuum connected to the image platen and means carried by the said platen to apply the vacuum source to specific areas of the platen.

3,308,715

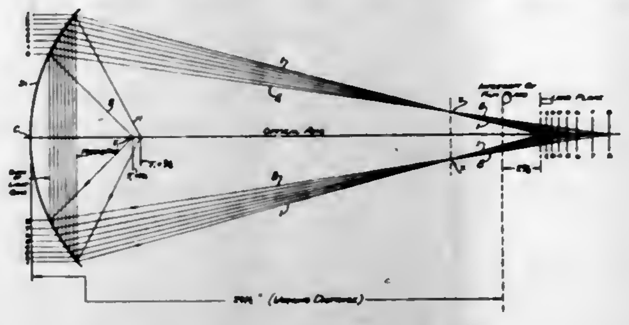
PROJECTION SYSTEM AND EQUIPMENT

Clarence S. Ashcraft, Fort Lauderdale, Fla., assignor to C. S. Ashcraft Manufacturing Co., Inc., Long Island City, N.Y., a corporation of New York
Continuation of application Ser. No. 257,895, Feb. 12, 1963. This application Nov. 1, 1965, Ser. No. 514,439
4 Claims. (Cl. 88—24)

1. A film projection system comprising

an ellipsoidal mirror segment with a first focal point and a second focal point along its axis, said first focal point being spaced about ⅙ as far from said mirror as said second focal point, said mirror segment being used for reflecting a cone of substantially homogenously distributed light,

high intensity light source means movable along said axis for increasing and decreasing the area of the mirror used for reflecting, said light source means increasing the angle of said cone as said means is



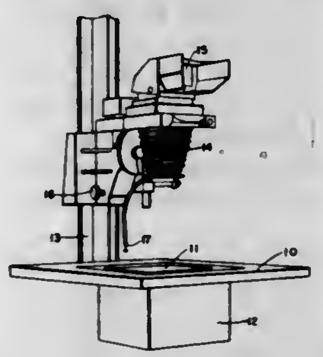
moved away from said first focal point toward said second focal point, and

an aperture frame for a film positioned on said axis about ⅚ of the distance from said mirror to said second focal point, whereby said light source means may be adjusted toward said first focal point to a position where the reflected light cone will just cover the entire aperture with minimum peripheral loss on said aperture frame around said aperture.

3,308,716

APPARATUS FOR DARK FIELD BACKGROUND PHOTOGRAPHY OF MEDICAL AND BIOLOGICAL SPECIMENS

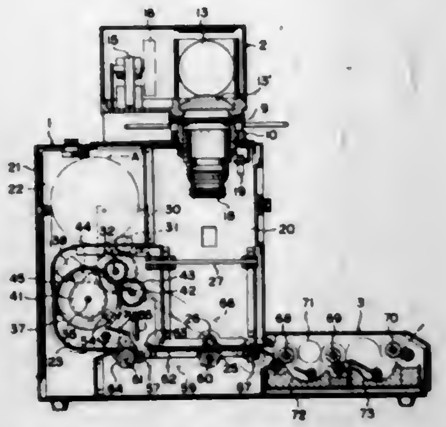
Frank T. Caporael, Gaithersburg, Md., assignor, by mesne assignments, to Photolume Corporation, Bethesda, Md., a corporation of Maryland
Filed Oct. 6, 1964, Ser. No. 401,925
4 Claims. (Cl. 88—24)



1. For use with a camera for photographing, cataloging and documentation of objects which must not be subject to direct light rays, a dark field baffle box comprising a box-like receptacle having a specular highly light reflecting interior surface, variable intensity incandescent lamps therein, a baffle assembly having a support frame receivable over the open end of said box-like receptacle, variable masking means carried by said support frame for regulating the photographic field opening, and light diffusion radiation deflection means carried by and suspended beneath said support frames, said light diffusion radiation deflection means having a flat base and upwardly divergent sides coated with light absorbing material of the group of velour and flocking porous to light so that the light emitted from the incandescent lamps will be reflected from the specular light reflecting surfaces of the box-like receptacle to indirectly illuminate the area between the light diffusion deflection means flat base and variable masking means whereby the obejct to be photographed has uniform indirect background illumination.

3,308,717
ENLARGING AND PRINTING MACHINE

Yoshiro Okishima and Tomoji Murata, Sakai, Japan, assignors to Minolta Camera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Dec. 16, 1964, Ser. No. 418,750
Claims priority, application Japan, Feb. 19, 1964, 39/8,991
1 Claim. (Cl. 88—24)

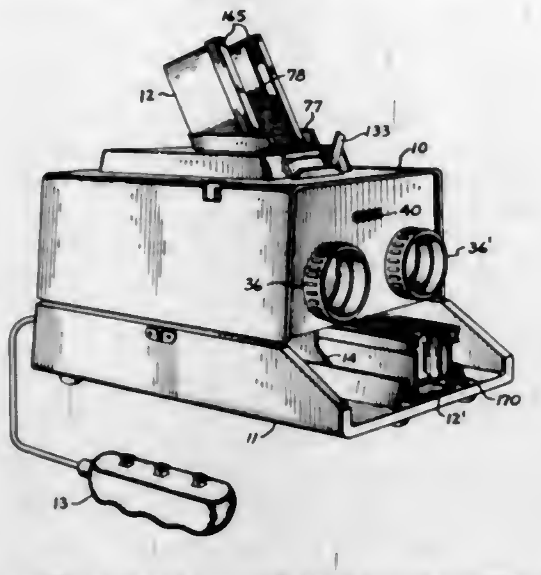


An enlarging and printing machine for photographing apparatus comprising
a main light source,
a plurality of main time exposure switches controlling energization of said main light source,
a reflecting mirror disposed on one side of said main light source,
lens means disposed on another side of said main light source for projecting light rays from said reflecting mirror,
camera means including a focusing lens receiving the projected light rays from said lens means,
a film carrier between said lens means and said focusing lens whereby a film image is projected to said focusing lens,
a supply of sensitized paper adapted for intermittent feeding under said focusing lens whereby a projected film image is directed onto a portion of said paper,
drive means including an intermittent gear for intermittently advancing said paper and including cutting means for cutting the said portion of paper,
developer means receiving the said portion of paper to develop the image thereon,
transfer means operated by said drive means for transferring the said portion of paper to said developer means,
an auxiliary light source operatively disposed adjacent said focusing lens and imparting non-image forming light onto the sensitized paper to enhance contrast of the film image projected thereon,
a plurality of auxiliary time exposure switches controlling energization of said auxiliary light source,
intercepting mirror means movable in an out of the path of the image being projected onto said portion of paper whereby said main and auxiliary time exposure switches may be selectively actuated to control the contrast, and
cam means on said drive means engageable with said intercepting mirror means to effect movement thereof.

3,308,718
SHUTTER MECHANISM FOR SLIDE PROJECTORS

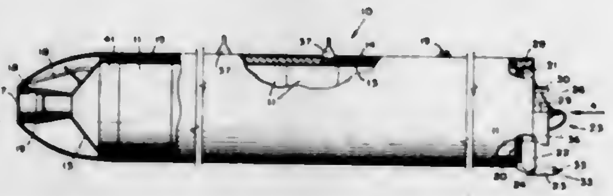
Joseph Antos, Rte. 1, Box 18A, Jones Road, Big Rock, Ill. 60511
Original application Nov. 9, 1962, Ser. No. 236,614, now Patent No. 3,264,937, dated Aug. 9, 1966. Divided and this application Dec. 15, 1965, Ser. No. 514,085
16 Claims. (Cl. 88—26)

1. A shutter assembly for use with a slide projector of the type employing twin optical systems comprising, in combination, a pair of shutter mechanisms respectively associated with different ones of said twin systems, means for selectively and alternately opening and closing said shutter mechanisms, means for controlling said shutter mechanisms so that closure of one of said mechanisms is accompanied by opening of the other of said mechanisms with at least one of said mechanisms open at all times, and operator controlled means for selectively controlling the time required for said shutter mechanisms to shift between open and closed states so that said shutter mechanisms may be selectively shifted at either of relatively fast and relatively slow speeds.



3,308,719
MODULAR DISPENSER FOR AIRCRAFT CARRIED DEVICES

Jack A. Myers, Ridgecrest, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 3, 1964, Ser. No. 415,828
3 Claims. (Cl. 89—1.5)

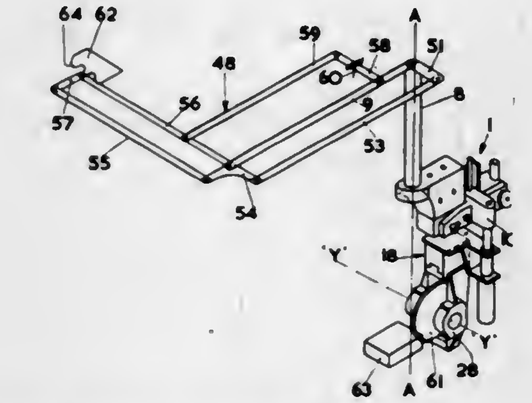


1. Apparatus for sequentially delivering from an airplane, along its direction of flight, a plurality of modules, each containing a plurality of payloads, comprising:
(a) a cylindrical tube adapted to be carried by the airplane with its longitudinal axis disposed in the direction of flight of the airplane,
(b) an openable closure disposed at the rear end of the tube,
(c) a plurality of cylindrical modules disposed in axial abutting relation and slideably fitted within the tube and substantially filling same between its ends,
(d) each module being of a frangible material, such as styrofoam, adapted to disintegrate after it leaves the tube and when subjected to the airstream of the airplane,
(e) each module having a plurality of parallel apertures extending substantially between opposite ends thereof, said apertures forming voids within the major portion of the volume of a module,
(f) each void containing a payload,
(g) an ogive fairing at the forward end of the tube having a central circular aperture therein of a cross sectional area considerably smaller than the cross sectional area of the tube, forming a metering orifice through which ram air may enter the tube,

(h) a space disposed between the rear end of the aperture and the most forwardly disposed module, forming a chamber in which ram air may diffuse and increase in static pressure, for urging the modules rearwardly and out of the tube at a desired rate, dependent upon the rate at which ram air may enter said orifice, whereby the sequential delivery of the modules along the line of flight of the airplane may be predetermined, and
(i) means for opening said closure.

3,308,720
PROFILE FORMING APPARATUS

Albert Henry Banner, Sutton Coldfield, and Thomas Benjamin Lee, Birmingham, England, assignors to Lightning Fasteners Limited, London, England, a corporation of Great Britain
Filed Sept. 27, 1965, Ser. No. 490,272
Claims priority, application Great Britain, Nov. 20, 1964, 47,368/64
8 Claims. (Cl. 90—13.1)

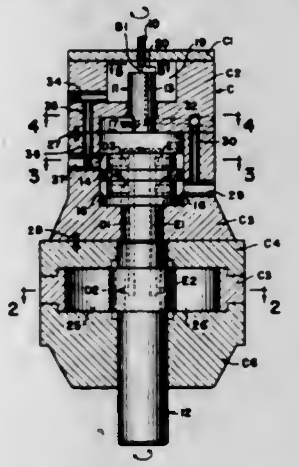


1. Profile forming apparatus comprising a tool holder, a tool holder support, guide means carrying the tool holder and by means of which the tool holder is movable in a reciprocable manner upon the tool holder support, and reciprocating means operably connected to the tool holder for reciprocating it relative to the support, and in which the tool holder has rotary cutting tool holding means for rotatably holding a rotary cutting tool with its rotational axis located in a predetermined fixed location and extending in a predetermined direction relative to the tool holder, at least the tool holder and guide means have a pivotal axis about which they are pivotable and which extends in a direction normal to said predetermined direction of the cutting tool axis, and, in any desired pivotal position and during pivotal movement of the tool holder and guide means relative to the pivotal axis, the tool holder is reciprocably movable by the reciprocating means, upon the guide means and relative to the tool holder support, along a path which lies in a plane containing the pivotal axis and which extends in a direction at an angle to the direction of the pivotal axis and also at an angle to a plane lying normal to the direction of the pivotal axis.

3,308,721
HYDRAULIC ROTARY SERVO MECHANISM

Ryuichi Sagawa, Higashinadaku, Kobe, and Hiroshi Sugimoto, Ikutaku, Kobe, Japan, assignors to Kawasaki Jukogyo Kabushiki Kaisha, Ikutaku, Kobe, Japan
Filed Apr. 6, 1965, Ser. No. 445,885
4 Claims. (Cl. 91—375)

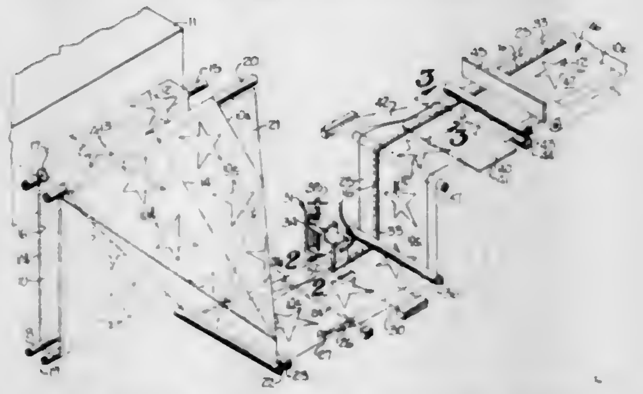
1. A servo motor for moving an output shaft in accordance with the movement of an input shaft to produce a substantial torque on the output shaft, said motor comprising a casing, an input shaft, a valve shaft, and an output shaft in axial alignment with said shafts being rotatably mounted in said casing, said valve shaft including a stub shaft adjacent said input shaft and a tubular enlargement, said tubular enlargement having a pair of axially spaced annular grooves around the outer periphery thereof, a segmental shaped piston extending radially from said stub shaft, said output shaft having one end rotatably mounted in the bore of said tubular enlargement, a paddle piston on said output shaft intermediate the ends thereof, said chasing including a first section having a sump surrounding the free end of said stub shaft, a cover closing said sump, said input shaft being rotatably mounted in said cover, a control plate fixed on the end of said input shaft adjacent said stub shaft and substantially covering an area of said stub shaft, a second casing element of a size to receive the tubular enlargement of said valve shaft and having a bore receiving an intermediate portion of said output shaft, said first casing element having a segmental cylinder receiving the segmental shaped piston of said valve shaft and providing a fluid-tight seal between said segmental cylinder and said segmental piston, thereby providing first and second variable volume chambers, a third casing element including a first plate, a collar forming a cylinder and an end plate, said first plate and said end plate rotatably receiving said output shaft, a stationary vane between said collar cylinder and the intermediate portion of said output shaft providing a seal between said output shaft and said collar cylinder, said first and second plates, said stationary vane and said paddle piston providing first and second variable volume chambers in said paddle piston cylinder, means to secure said casing elements in proper angular relation, said second casing element having an inlet for fluid under pressure in registry with one annular groove on the enlargement of said valve shaft for continuously supplying fluid under pressure, first inlet passage means from said inlet for fluid under pressure to the first variable volume chamber of said segmental cylinder, second inlet passage means from said inlet for fluid under pressure to the second variable volume chamber of said segmental cylinder, means to accurately control the flow of fluid to said first and second inlet passage means whereby a balanced flow may be maintained to accurately maintain the segmental piston in a desired position in the segmental cylinder, said stub shaft being provided with a first axially extending bore providing a first outlet passage from said first chamber of said segmental cylinder to the free end of the stub shaft, said stub shaft being provided with a second axially extending bore providing a second outlet passage for fluid from the second chamber of said segmental cylinder to the free end of said sub shaft whereby said control plate on said input shaft may partially close said first and second outlets and thereby control the flow of fluid from said first and second variable volume chambers of said segmental cylinder and thereby control the position of said segmental piston and valve shaft, outlet means from said sump including an outlet into the second groove of said valve shaft, a first axially extending passage in said output shaft terminating in the first chamber of said paddle cylinder and a



second axially extending passage in said output shaft terminating in the second chamber of said paddle cylinder, a pair of radially extending passages from each of said axially extending passages of said output shaft for communication of one radial passage of each pair with one of said grooves and for communication of the other radial passage of that pair with the other groove, said valve shaft having a pair of oppositely disposed passages in communication with said first groove and adapted to selectively provide communication with one of the radial passages of each pair of radial passages, said valve shaft also being provided with a pair of oppositely disposed passages in communication with the second annular groove and adapted to selectively provide communication with the other radial passage of each pair of radial passages, said servo motor providing for power operation of said output shaft in the same angular direction and to the same angular extent as the rotation of said input shaft but with substantially increased torque whereby the servo motor will effectively operate said output shaft to produce the desired controlled motion thereof.

3,308,722
METHOD OF FORMING MERCHANDISE CONTAINER

Jack C. Peterson, Charlotte, N.C., assignor to Package Products Company, Inc., Charlotte, N.C., a corporation of North Carolina
Filed Oct. 28, 1964, Ser. No. 407,142
8 Claims. (Cl. 93—35)

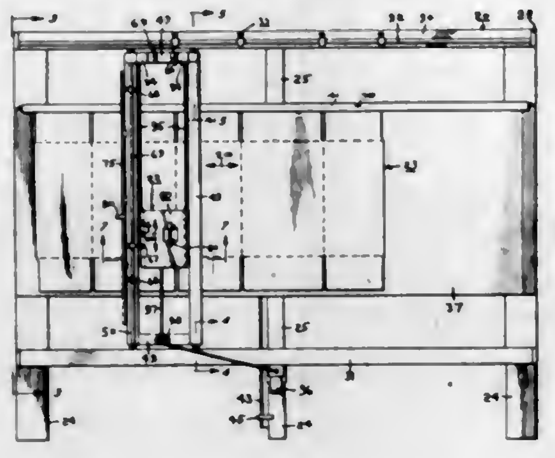


1. A method of forming a merchandise container comprising the steps of

(a) moving an elongate web of sheet material in a predetermined path of travel,
(b) longitudinally scoring the web along a line spaced a small distance from one side edge thereof to form a tear line therein,
(c) longitudinally folding the web along a medial line offset a predetermined distance from the center line of the web to juxtapose the portions of the web on opposite sides of the fold line with one side edge portion, including the tear line, projecting outwardly beyond the side edge of the other portion,
(d) folding the projecting portion of said one portion over the side edge of said other portion and into juxtaposed relation to said other portion to form a closure flap,
(e) longitudinally slitting the web adjacent the medial line along which the web has been folded while
(f) maintaining the thusly separated portions of the web in lateral and longitudinal registration,
(g) longitudinally sealing the closure flap to the underlying other portion along a line disposed between the tear line and the adjacent side or free edge of the closure flap, and
(h) transversely cutting and sealing the web portions at longitudinally spaced points to divide the web into bag or container blanks and to seal the web portions, including the closure flap, together along the cut, side edges thereof.

3,308,723
APPARATUS FOR SLITTING AND SCORING CARTON BLANKS

Charles J. Bergh, Jr., 1208 Old Lancaster Road, Berwyn, Pa. 19312
Filed Aug. 6, 1964, Ser. No. 387,975
20 Claims. (Cl. 93—58)

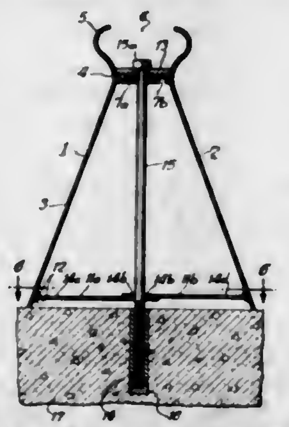


1. A carton blank slotting and scoring apparatus comprising in combination,

(a) a stand including
  (1) a platen upon which a carton blank may be flatwise disposed,
  (2) means for removably fixedly clamping a carton blank to said platen,
(b) a carriage carried by said stand and rectilinearly shiftable with respect to said platen,
(c) a slotting and scoring head carried by said carriage for movement at right angles to the path of carriage motion, said head including,
  (1) a slotting device and means for selectively operating the same,
  (2) a scoring device and means for selectively operating the same,
  (3) means for selectively positioning each of said slotting and scoring devices for operation along lines parallel to the lines of motion of said head and carriage.

3,308,724
ROADWAY GUARD RAIL BARRIER

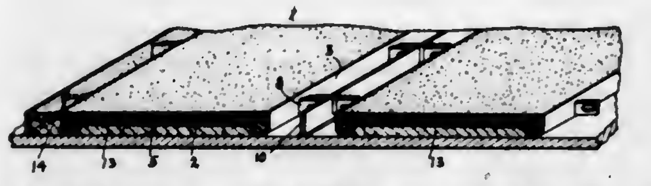
Henry Such Smith, Raritan Road, P.O. Box 55, Roselle, N.J. 07203
Filed Oct. 8, 1963, Ser. No. 315,739
13 Claims. (Cl. 94—1.5)



1. A roadway guard barrier comprising a structure mounted in fixed relation to and extending longitudinally along a roadway, said structure providing continuous and rigid support along a smooth continuous outer surface exposed to and inclined obtusely with respect to traffic on said roadway, said outer surface being flat and rising abruptly and flatly from such roadway at an angle between about 50 and about 71 degrees and to a height of at least 13 inches, said outer surface having frictional characteristics similar to those of finished metal.

3,308,725
PAVING ELEMENT AND PAVING EMPLOYING THE SAME

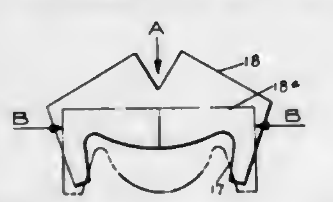
Harry S. Nagin, Bala Cynwyd, Leon Nagin, Churchill Borough, and Harold Nagin, Pittsburgh, Pa., assignors to Reliance Steel Products Company, McKeesport, Pa., a corporation of Pennsylvania
Filed Oct. 1, 1964, Ser. No. 400,795
6 Claims. (Cl. 94—4)



1. A pavement comprising a continuous planar base structure, a plurality of panels arranged in spaced parallel relation over the base structure, each panel comprising a rectangular shallow pan having a bottom, upwardly-extended side and end walls, a marginal bead of each pan projecting below the level of the bottom a slight distance to form a space between the base on which the pan sets and the bottom of the panel, a spreadable composition applied to the base filling said space, the pans being filled with a mass of epoxy resin and aggregate hardened in situ in the pans, anchoring elements on the sides of the pans extending into the spaces between the pans accessible from above the pans, anchoring means on the base in said spaces to which said elements are secured, and a filling material in said spaces and embedding the said elements and anchoring means.

3,308,726
SEALS FOR CONTRACTION AND EXPANSION JOINTS IN CONCRETE PAVEMENTS

Donald F. Dreher, P.O. Box 56, East Brookfield, Mass. 01515
Filed Oct. 29, 1963, Ser. No. 319,875
19 Claims. (Cl. 94—18)

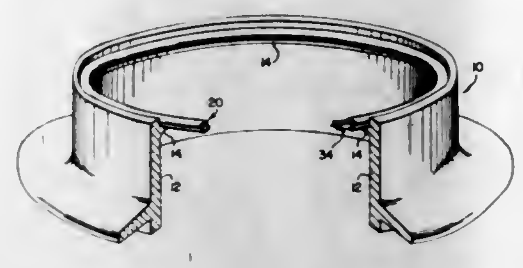


1. Insertable deformative means for sealing motionable joints between sections of concrete paving, comprising a symmetrical elastomeric extrusion having a V-notched recess formed longitudinally in its upper medial section, its top surfaces sloped outward and downward therefrom, and its sides inclined inward approximately perpendicular to said surfaces, whereby when the extrusion is positioned between two opposed faces and subjected to compression therebetween the medial portion will be deflected downward, the V-notch closed, the top surfaces substantially aligned and the sides conformed to said faces.

3,308,727
SUPPORT FOR MANHOLE COVER AND THE LIKE

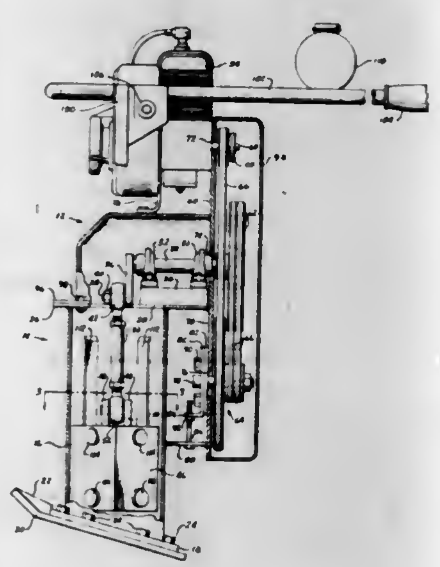
William A. Hurt, Jr., Highland Heights, Ohio, assignor to Central States Industrial Supply Company, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 8, 1964, Ser. No. 358,195
3 Claims. (Cl. 94—34)

1. A cushioning device for use in supporting a cover, such as a manhole cover, on a support member, said device comprising an elongated, resilient gasket member, said gasket member being of a hollow, substantially symmetrical shape in transverse cross-section including spaced, outwardly arched top and bottom walls, a pair of spaced, side walls integrally uniting and defining flexure regions between said top and bottom wall, said side walls each having converging planar portions which extend toward one another in a direction away from their respective junctures with the top and bottom walls to a line of union between said top and bottom walls, said planar portions being of a substantially greater thickness at their junctures with the respective top and bottom walls as compared to their thickness at the respective lines of union with the top and bottom walls, said gasket member having free ends adapted to be spliced together by a generally X-shaped resilient plug member insertable into said ends, said plug member having prong elements which frictionally engage the confronting interior surfaces of the side walls of said device in the inserted position for moving said ends in spliced relationship.



3,308,728
TAMPING MACHINE

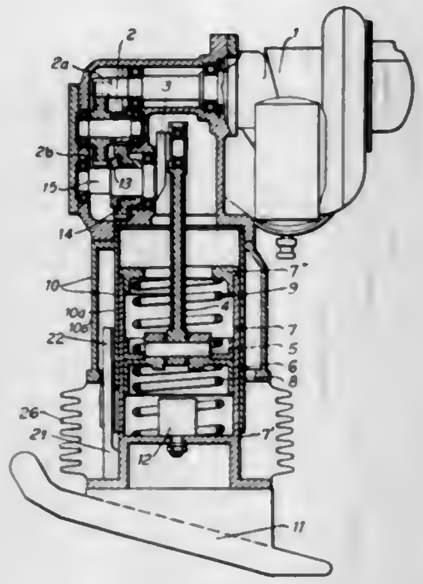
Gerald H. Brown, 870 N. 20th St., Columbus, Ohio 43219
Filed Aug. 28, 1964, Ser. No. 392,890
7 Claims. (Cl. 94—48)



1. A tamping machine comprising: a housing having a generally vertically oriented tamping tube, a tamping shoe mounted on the bottom of said tamping tube, a weight block slidable within said tamping tube, a crank arm, drive means rotating said crank arm about a generally horizontal axis lying in first vertical plane, a connecting rod interconecting said crank arm and said weight block, the vertical center line of said rod oscillating in in a second vertical plane perpendicular to said first vertical plane, and two pairs of bearing assemblies disposed between said weight block and said tamping tube on opposite sides of said first vertical plane, the two bearing assemblies of each of said pairs being disposed on opposite sides of said second vertical plane.

3,308,729
RECIPROCATING SYSTEM FOR MANUALLY GUIDED MOTOR DRIVEN WORKING DEVICE

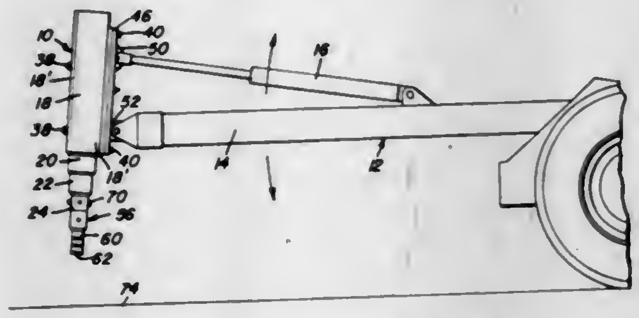
Heinrich Kestel, Munich, Germany, assignor to Hermann Wacker and Peter Wacker, Munich, Germany
Filed July 20, 1964, Ser. No. 383,862
Claims priority, application Germany, Aug. 2, 1963, W 35,009
5 Claims. (Cl. 94—49)



1. In a motor driven and manually guided working device operative to effect reciprocating movements and comprising a housing, a motor and transmission means including a pinion, a gear and a crank mounted in said housing, said housing having a portion defining an inner and an outer cylinder portion with a space therebetween, a reciprocating system disposed in said inner cylinder portion and comprising a working cylinder mounted for reciprocating movement in said inner cylinder portion, said working cylinder having an open top end wall and a bottom end wall, a working tool connected to the bottom end wall of said working cylinder, a piston having a connecting pin reciprocably mounted in said working cylinder, spring means disposed intermediate said piston and said top wall and intermediate said piston and said bottom wall, a connecting rod extending between said crank and said connecting pin and a resilient block mounted on said bottom end wall to protect the lower spring means against shock blows and thereby against wear and breakage.

3,308,730
INTERCHANGEABLE ROCK AND FROST BREAKER AND TAMPER

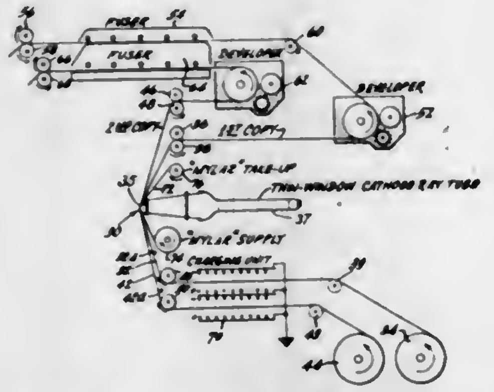
Eugene J. Vorwald, R.F.D., Holy Cross, Iowa 52053
Filed Aug. 7, 1964, Ser. No. 388,079
7 Claims. (Cl. 94—49)



1. A ground and rock impact bit assembly comprising an elongated vertically disposed impact member including means at its lowermost end adapted to impact with hard ground and rock formations, a pair of mounting members carried by said impact member including means adapted for quick releasable securement to a lifting member, one of said members defining a guide member and the other of said members defining a follower member engaged with the guide member for guided limited longitudinal reciprocal movement of said impact member relative to said mounting member, said guide member including a pair of opposing abutment surfaces between which said follower member is disposed and reciprocal, and resilient deformable members disposed between said opposing surfaces and said follower member for cushioning the impact of the lower end of said impact member with the ground upon rapid lowering of said mounting means.

3,308,731
ELECTROSTATIC PRINTING

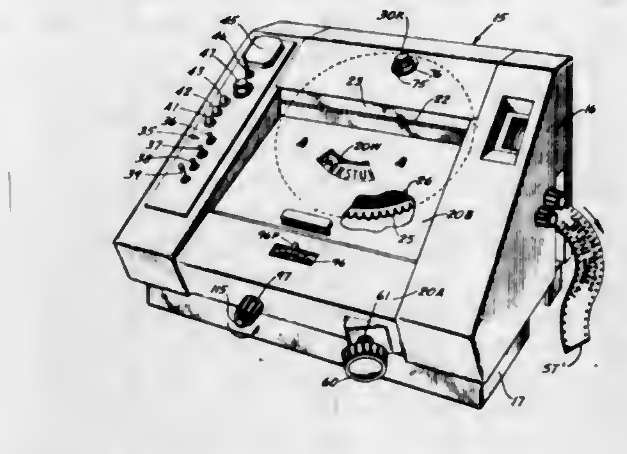
Roger George Olden, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Original application Mar. 22, 1961, Ser. No. 97,611, now Patent No. 3,210,185. Divided and this application Jan. 7, 1965, Ser. No. 424,101
1 Claim. (Cl. 95—1.7)



Apparatus for processing two electrophotographic recording elements simultaneously to provide an original copy and a mirror-imaged master copy of an image, said master copy comprising means from which additional copies of said image may subsequently be made, each of said elements comprising a backing sheet and a photoconductive layer thereon, said apparatus comprising means to charge each of said elements electrostatically, an exposure station, means to guide said elements through said charging means to said exposure station so that said photoconductive layers of said two elements are in contact with each other at said exposure station, means to direct an image of electromagnetic radiation through said elements to expose said photoconductive layers simultaneously and to produce electrostatic images thereon, the layer of one said elements being exposed through its backing whereby the electrostatic image produced on said one element is the mirror image of that produced on the other of said elements, first means to develop said electrostatic image on said one element, means to guide said one element through said first means to develop said electrostatic image thereon, sheet material, means to press said sheet material against said developed image on said one element to transfer at least part of said developed image from said one element to said sheet material to produce a mirror image of said developed image on said sheet material, second means to redevelop said one element to restore said developed image thereon, means to guide said one element through said second means to redevelop and to restore said developed image whereby to provide said master copy from which other copies may subsequently be made, third means to develop said other of said elements, and means to guide said other of said elements through said third means to develop the electrostatic image thereon whereby to provide said original copy.

3,308,732
PHOTOCOMPOSING MACHINE

Bently P. Raak, Short Hills, Joseph P. Grlica, West Orange, and Harry Carlin, Colonia, N.J., assignors to Varityper Corporation, Newark, N.J., a corporation of Delaware
Continuation of application Ser. No. 195,532, May 17, 1962. This application June 22, 1965, Ser. No. 466,016
9 Claims. (Cl. 95—4.5)

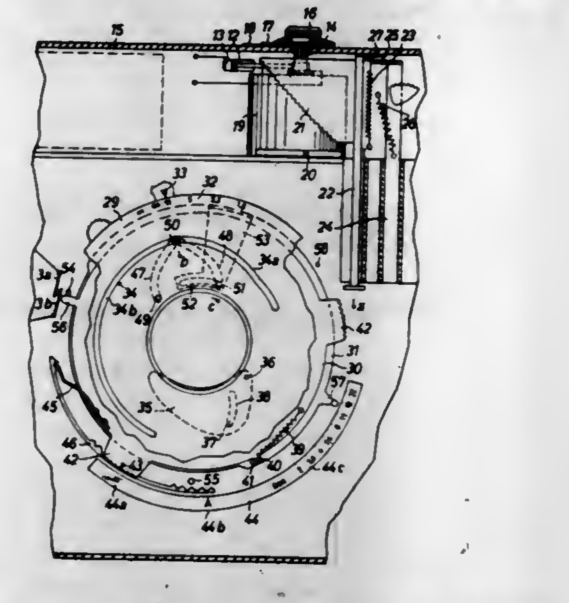


1. In a photocomposing machine wherein a photosensitive strip is to be advanced stepwise through an exposure station incidental to composing copy therewith, means for locating in the machine a rotatable type matrix being rotatable about a first and fixed axis and bearing a plurality of type fonts at different radial locations thereon and of which one at a time is to be selected for composing a series of characters, means to selectively index the type matrix relative to the exposure station to enable the type characters of the selected font to be successively photographed in the desired character sequence, and a variantly settable selector mask being rotatable about a fixed axis offset from said first axis at the exposure station and having a differently located apertures for concealing the type fonts save that which is selected for composing in accordance with the setting of said mask, each of said apertures being related to a font and being movable into a position to mask all fonts but its related font at the exposure station.

3,308,733
CAMERA ASSEMBLIES PARTICULARLY FOR MAKING EXPOSURES WITH ARTIFICIAL ILLUMINATION

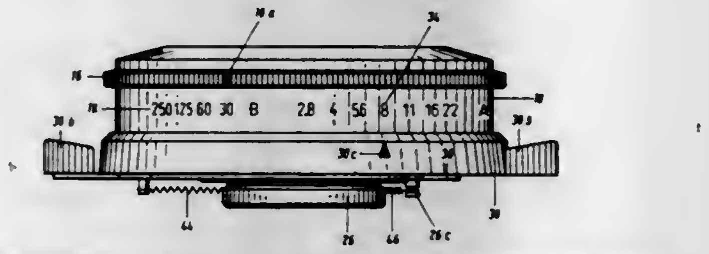
Joachim von Albedyll and Fridolin Hennig, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany
Filed July 27, 1964, Ser. No. 385,145
Claims priority, application Germany, July 26, 1963, A 43,690
10 Claims. (Cl. 95—10)

1. In a device for making photographic exposures with artificial illumination, in combination, illuminating means for artificially illuminating a subject which is to be photographed; regulating means operatively connected to said illuminating means for regulating the intensity of the light provided thereby; light measuring means for measuring light intensity; adjusting means operatively connected to said light measuring means for adjusting the latter according to the speed of the film which is exposed, said adjusting means being operatively connected to said regulating means for actuating the latter to regulate the light intensity provided by said illuminating means according to the film speed adjustment of said light measuring means; and an objective assembly including a focusing means for setting into the objective the distance between the subject and the device and also including a diaphragm adjusting means and a scale cooperating with said diaphragm adjusting means and having at least one range used when making exposures with artificial illumination, said objective assembly including a coupling means coupling said focusing means and diaphragm adjusting means to each other when said diaphragm adjusting means is at the range of said scale for providing exposures with artificial illumination for automatically providing predetermined apertures for different settings of said focusing means, respectively.



3,308,734
PHOTOGRAPHIC SHUTTER WITH DIAPHRAGM MECHANISM

Ewald Spiessl, Deisenhofen, near Munich, Germany, assignor to Compur-Werke Gesellschaft mit beschränkter Haftung & Co., Munich, Germany
Filed July 22, 1964, Ser. No. 384,377
Claims priority, application Germany, Aug. 8, 1963, C 10,793
6 Claims. (Cl. 95—64)



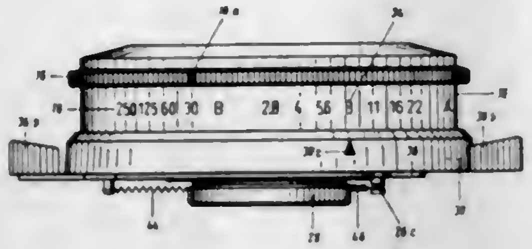
1. A shutter mechanism for a camera comprising a housing, shutter actuating means in said housing, diaphragm blades pivotally mounted in said housing, a diaphragm control ring rotatably mounted in said housing for pivoting said blades to a predetermined setting interconnecting means for said diaphragm control ring and said shutter actuating means, said interconnecting means including a projection on said diaphragm control ring and an abutment on said actuating means, and spring means connected between said diaphragm control ring and said actuating means whereby initial rotation of said shutter actuating means rotates said diaphragm control ring to pivot the diaphragm blades to the predetermined setting thereof and further rotation of said shutter actuating means actuates the shutter.

3,308,735
CONTROL MECHANISM FOR PHOTOGRAPHIC EQUIPMENT

Ewald Spiessl, Am Rain, Germany, assignor to Compur-Werk Gesellschaft mit beschränkter Haftung & Co., Munich, Germany
Filed July 22, 1964, Ser. No. 384,378
Claims priority, application Germany, Aug. 8, 1963, C 30,653
3 Claims. (Cl. 95—64)

1. A setting device for photographic equipment comprising a housing, diaphragm blades pivotally mounted

in said housing, a control ring operatively connected to said diaphragm blades whereby rotation of the control ring positions the blades, a setter ring rotatably mounted on said housing, a cam on said setter ring, a transmission member slidable in said housing, means on said transmission member cooperating with said control ring whereby rotation of said control ring causes said transmission member to slide, a pin on one end of said transmission member engageable with said cam whereby the position of said cam determines the degree of rotation of said control ring, and further including a driving pin on said control ring adapted to cooperate with an abutment positioned by a photo-electric exposure meter.



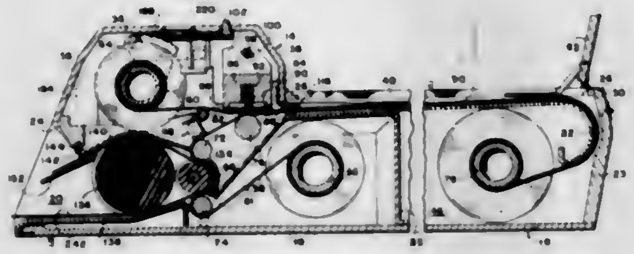
3,308,736

PHOTOGRAPHIC DOCUMENT COPYING APPARATUS

Nicholas Gold, Arlington, Mass., and Arthur J. Sable, Saratoga, Calif., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed June 3, 1964, Ser. No. 372,147

16 Claims. (Cl. 95—75)



1. Photographic document-copying apparatus comprising, in combination:

a first assemblage including materials employed in said apparatus to produce copies of documents and adapted to be discarded when said materials are expended; and

a second assemblage constructed for assembly in combination with said first assemblage to form a complete document-copying apparatus and being reusable with a succession of said first assemblages;

said first assemblage including a support, a supply of photosensitive image-recording sheet mounted on said support, a pressure-applying member and a light source mounted on said support, a pair of guide members mounted on said support adjacent opposite sides of said light source for guiding said image-recording sheet from said supply to said pressure-applying member and supporting a section of said image-recording sheet between said guide members in juxtaposition with said light source, a supply of a second sheet mounted on said support and joined with said image-recording sheet at said pressure-applying member, a leader coupled with said image-recording and second sheets, a take-up member mounted for rotation on said support, said leader being coupled with said take-up member, and guide means for guiding said leader along a path of predetermined length between said pressure-applying member and said take-up member;

said second assemblage including a housing for enclosing said first assemblage and the components of said second assemblage comprising sections movable with respect to one another to permit loading of said first assemblage into said housing in operative association with the components of said second assemblage, a rotary member positioned between said guide members for frictionally engaging and supporting said section of said image-recording sheet against said guide members closely adjacent said light source, means driven by rotation of said rotary member in frictional engagement with said image-recording sheet for feeding original documents into said apparatus between said rotary member and said image-recording sheet at one of said guide members and advancing said original documents from between said rotary members and said image-recording sheet at the other of said guide members and from said apparatus, drive means including means for coupling with said take-up member and rotating said take-up member to coil said sheets thereon, a second pressure-applying member juxtaposed with the first-mentioned pressure-applying member for cooperating with said first pressure-applying member to distribute a processing liquid between said sheets, and means for operating said light source to expose said image-recording sheet during movement of said image-recording sheet through said apparatus in response to rotation of said take-up member.

3,308,737

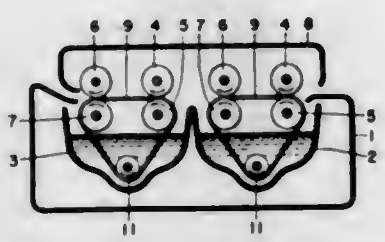
DEVICE FOR APPLYING A TREATING SOLUTION TO SENSITIZED COPYING PAPER

Susumu Fukuda, Ikuta-ku, Kobe, Japan, assignor to Fuji Photo Film Company Limited, Kanagawa-ken, Japan, a corporation of Japan

Filed June 9, 1964, Ser. No. 373,742

Claims priority, application Japan, June 18, 1963, 38/45,880

2 Claims. (Cl. 95—89)



1. A device for applying a treating solution to sensitized copying paper comprising, in combination, a housing; a tank positioned in said housing and having a bilge-shape bottom, said tank being arranged to contain a treatment liquid; two pairs of rollers, each including an upper and a lower roller, rotatably mounted in said housing above said tank and extending substantially parallel to the longer dimension of the bilge; a fifth roller rotatably mounted to extend longitudinally of the bilge in said bottom; and an endless belt of absorptive material trained between the rollers of the two pairs and under said fifth roller, in the bilge, for immersion in the liquid in the tank, the belt traveling along an inverted triangular path; the copying paper being inserted into the nip of one pair of rollers for passage between the two pairs of rollers in contact with the liquid absorbed in said belt, for continuous treatment of copying paper until the liquid level in the bilge falls below the portion of said belt trained under said fifth roller.

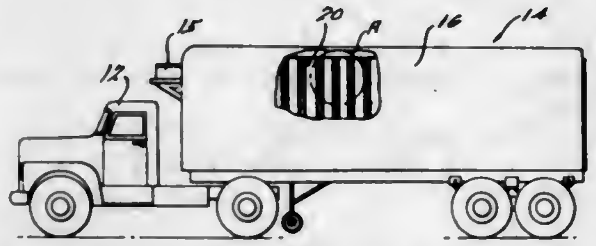
3,308,738

VENTILATING RIB PANELS

Fred G. Heimann, Mount Clemens, Mich., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 28, 1964, Ser. No. 421,508

7 Claims. (Cl. 98—6)



1. A panel liner assembly for use in lining the exterior of a ventilated vehicle having a cargo disposed therein for transportation and an outer skin enclosing said cargo, said liner assembly comprising;

a plurality of extruded panels having an outer backing wall and means integral therewith forming a plurality of parallel air ducts on a surface of said backing wall for directing a cooling fluid between the floor and ceiling of the vehicle,

said duct forming means having a pair of converging side members and means connecting said side members forming a generally trapezoidal duct,

said duct forming means including an open space disposed therebetween and being disposed generally vertically and inwardly of the outer skin and coacting with the cargo to form ducts for directing cooling fluid between the floor and ceiling of the vehicle,

means formed on said panels for interconnecting said panels, one with the other, and

fastener means connecting said interconnecting means of adjacent panels including means supporting said plurality of panels relative to the outer skin.

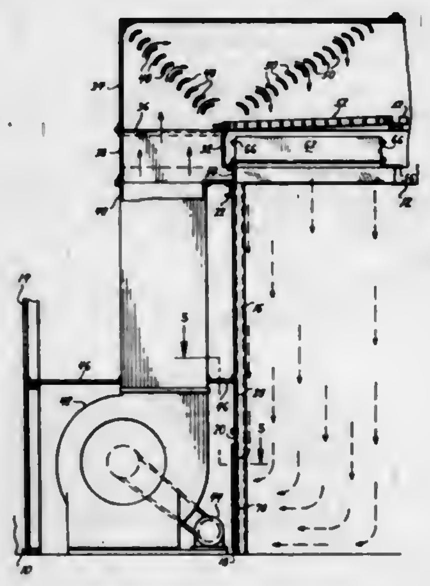
3,308,739

PITLESS AIR SCREEN

Ernest F. Gygax, Glendale, Mo., assignor to Universal Match Corporation, Ferguson, Mo., a corporation of Delaware

Filed Aug. 27, 1964, Ser. No. 392,569

2 Claims. (Cl. 98—36)



1. A pitless structure for maintaining an air screen adjacent a doorway opening which can act as a barrier and substantially keep drafts of air from passing through said doorway opening and which comprises:

(a) a vertically-directed air duct adjacent one side of said opening.

(b) a second vertically-directed air duct adjacent the opposite side of said opening,

(c) a plenum chamber adjacent the top of said opening,

(d) the upper ends of said air ducts extending to and communicating with the ends of said plenum chamber,

(e) an opening in the lower end of that face of the first said air duct which confronts said second air duct,

(f) an opening in the lower end of that face of said second air duct which confronts the first said air duct,

(g) said openings being immediately adjacent the bottom of said doorway opening.

(h) air-guiding elements within the discharge opening of said plenum chamber which can guide air passing outwardly through said discharge opening into the form of a barrier-like air screen moving downwardly toward the bottom of said opening, and

(i) an air moving device which can cause air to enter said openings in said faces of said air ducts, to pass upwardly through said air ducts and enter said plenum chamber, and to pass outwardly through said discharge opening and past said air-guiding members into said doorway opening with sufficient velocity to form a barrier-like air screen that extends substantially from side to side and from the top to to substantially the bottom of said doorway opening,

(j) some of said air being drawn back into said openings in said confronting faces of said air ducts for recirculation across said doorway opening as part of said air screen, and

(k) said bottom of said doorway opening being substantially imperforate so said discharge opening of said plenum chamber confronts a substantially imperforate surface.

(l) said discharge opening of said plenum chamber and said air-guiding members limiting the depth of said air screen, in the direction of traffic passing through said doorway opening, to a value smaller than the depth, in the direction of traffic passing through said doorway opening, of said openings in said faces of said air ducts,

(m) whereby said air screen increases in depth as it moves from said top of said doorway opening to said bottom of said doorway opening.

(n) said pitless structure recirculating enough air across said doorway opening to enable said air screen to be substantially continuous, and to act as a barrier, across said doorway opening.

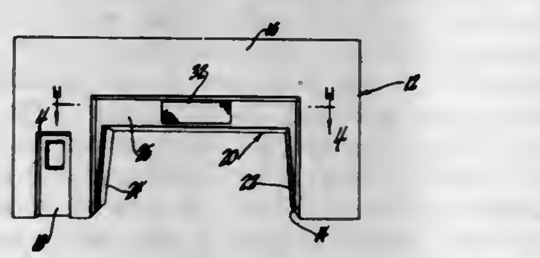
3,308,740

DRAFT-FREE AIR CURTAIN CLOSURE

Artel R. Henson, Birmingham, and Andrew J. Gladd, Farmington, Mich., assignors to Disco Engineering, Inc., Detroit, Mich., a corporation of Michigan

Filed Jan. 15, 1965, Ser. No. 425,762

2 Claims. (Cl. 98—36)

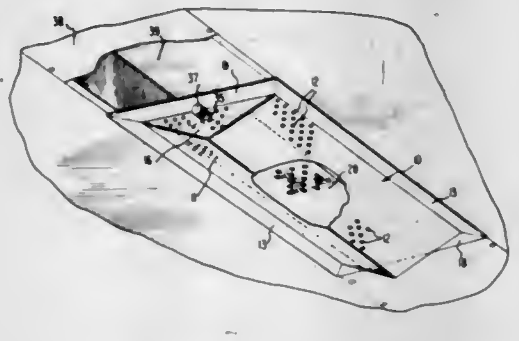


1. In car wash buildings and like work spaces where open access for vehicular and other travel is desirable, the exclusion of inclement weather and drafts through said open access to such work spaces is necessary, and a rela-

tively continuous extrication of waste and work product air from the work space is important to personal health and safety, the improvement comprising;

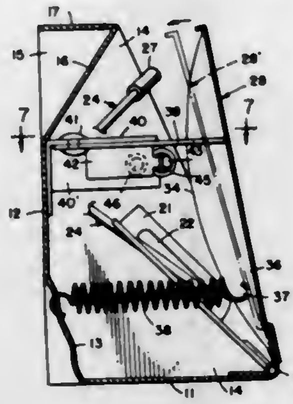
an air curtain structure received and mounted in contiguous relation to a doorway access to a work space,
said air curtain structure including a plenum chamber part extending over and across said access and having ducts connected thereto and disposed in close fitted relation along adjacent sides of said access,
a fresh air intake opening provided in the outer disposed side face of said plenum chamber part,
discharge openings provided in said ducts relatively aligned across said access for providing curtain air from each thereof flowing transversely across said access,
said intake opening being disposed apart from said discharge openings to preclude the recirculation of curtain air,
means within said plenum chamber part for atmospherically conditioning fresh air received through said intake opening for subsequent use in said work space,
blower means provided in said air curtain structure for inducting fresh air through said intake opening and distributing conditioned air to said ducts in sufficient volume for discharge under pressure across and in the plane of said access providing an air curtain sealing said access and for deflection within said work space at least in part therebehind,
said blower having sufficient capacity for providing make-up air in said work space more than compensating for the extrication of waste and other air for pressurizing said work space to back-up said air curtain and preclude drafts and the like therethrough.

3,308,741
VENTILATING AIR DIFFUSER APPARATUS
John Edward Chambers, P.O. Box 5106, Station B, Greenville, S.C. 29607
Filed May 28, 1965, Ser. No. 459,637
2 Claims. (Cl. 98—40)



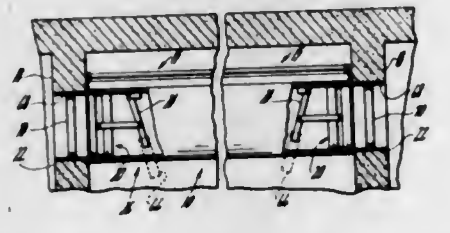
1. An air diffuser comprising a perforated main air diffuser panel having diverging perforated side walls, side longitudinal flanges and end walls, a substantially flat slotted air flow control panel secured to said flanges and opposing said main air diffuser panel and forming therewith an air chamber, a substantially flat sliding slotted valve plate on the outer face of the control panel and having constrained guided movement with the control panel and said flanges and movable in opposite directions longitudinally of the control panel so that the degree of registry of slots in the control panel and valve plate may be varied from fully registered to non-registered, there being no obstructing elements projecting outwardly of the valve plate so that the side of the air diffuser opposite the main air diffuser panel is substantially flat, a screw-threaded part on the valve plate within said chamber, a lead screw on one of said end walls having screw-threaded engagement with said part, the lead screw including a portion having opposite hand screw threads, and a part on said end wall having screw threads engaging said opposite hand portion.

3,308,742
AIR DISTRIBUTING DEVICES WITH TEMPERATURE-RESPONSIVE PATTERN CONTROL
Hoyt K. Veber, Kellogg, Iowa, assignor to Titus Manufacturing Corporation, Waterloo, Iowa, a corporation of Iowa
Filed Aug. 7, 1964, Ser. No. 388,093
4 Claims. (Cl. 98—40)



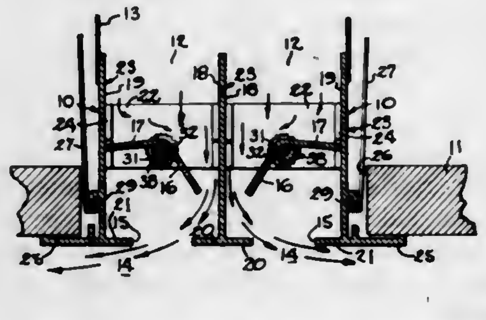
2. An air distributing device comprising a bottom wall, a rear wall having forwardly-directed end portions and a forwardly-directed upper portion extending along the upper part of said rear wall between said end portions, said rear wall thereby defining a cavity, a front wall opposite said cavity and spaced from said rear wall, passage means in said bottom wall for admitting forced air into the lower part of said device between said rear wall and front wall, means mounting said front wall for pivotal movement about a pivot axis along the lower portion of said front wall for pivotal movement of said front wall toward and away from said rear wall, resilient bias means drawing said front wall toward said rear wall, a cam member mounted in said device and having a camming surface acting against said front wall, and temperature-responsive means operatively associated with said cam member and responsive to the temperature of the air flowing through said device for moving said cam member and allowing said front wall to pivot in response to temperature changes which activate said temperature-responsive means.

3,308,743
EXTENSIBLE VENTILATING AIR DUCT SECTION
William J. Waeldner, Waverly, and Carl W. Palmquist, Clarks Summit, Pa., assignors to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Sept. 10, 1964, Ser. No. 395,451
12 Claims. (Cl. 98—40)



1. An extensible duct section for use in conjunction with a ceiling having spaced depending bulkheads at least one of which has an opening therein, said duct comprising a hollow member which defines an air passageway and which is long enough to at least approximately span the space between adjacent bulkheads, a sleeve telescopically carried in at least one end of said hollow member and adapted to be received in said bulkhead opening for supporting the adjacent end portion of said hollow member, means for supporting the opposite end portion of said hollow member adjacent another bulkhead, and means accessible through a side opening in said member and operable to move said sleeve means between extended and retracted positions, said last-mentioned means comprising an actuating arm pivotally supported in the interior of said member and having a free end located adjacent said side opening, said last-mentioned means further including linkage for moving said sleeve in response to movement of said arm whereby said sleeve can be telescopically extended out of the open end of said hollow member into said bulkhead opening.

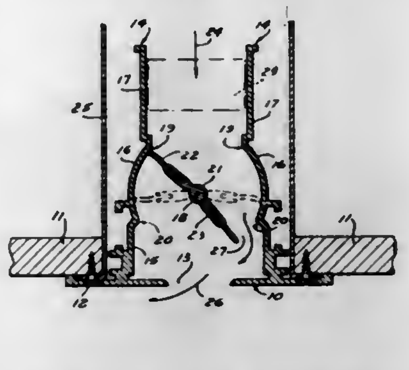
3,308,744
STRIP TYPE AIR DISTRIBUTOR
Albert W. Schach, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Dec. 7, 1964, Ser. No. 416,535
7 Claims. (Cl. 98—40)



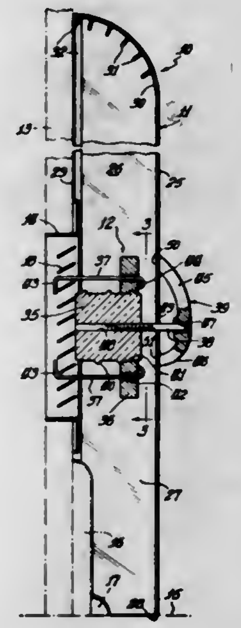
1. An air distributor having, in combination, laterally spaced and substantially parallel sidewalls defining the sides of an air passage having an elongated outlet end, flanges extending inwardly from said walls at said outlet end substantially in a common plane and perpendicular to the walls with the adjacent edges of said flanges spaced apart to define an elongated air discharge slot generally centered in said outlet end, a pintle disposed within said passage generally parallel to said slot and overlying the latter midway between said walls, supports spaced apart along said passage longitudinally of said slot and secured to said walls with the opposite ends of said pintle mounted on said supports, two elongated vanes each having a longitudinal edge extending along said pintle and ends close to the respective supports, and means hingedly connecting each of said longitudinal edges to said pintle, said vanes being swingable about the pintle from blocking positions substantially closing said passage into side-by-side positions extending downstream from the pintle toward said slot, and being swingable both together and independently about said pintle into different selected angular positions to vary the angle of discharge of air through said slot.

3,308,745
AIR DIFFUSER
Charles Davies, 265 Coligni Ave., New Rochelle, N.Y. 10801
Filed Sept. 10, 1965, Ser. No. 486,351
7 Claims. (Cl. 98—40)

1. In an air diffuser, a pair of opposed concave walls defining an air passage between them and arranged symmetrically on opposite sides of a horizontal center line, the wall curvatures being concentric to said line, the upper wall edges being spaced to form an inlet for air to be diffused, the lower wall edges being spaced to form an outlet, the spacing between the lower edges being greater than the spacing between the upper edges, a shaft mounted for rotative adjustment on an axis coincident with said center line, and vanes carried by said shaft and extending radially in opposite directions, the outer edges of said vanes being adapted to engage with said walls when the shaft is rotated, whereby said vanes may be optionally positioned (a) with both vanes out of engagement with said walls so that air can flow downwardly along both walls, (b) with both vanes engaging said walls so that air flow is blocked, or (c) with only one vane in engagement with the upper part of a selected one of said walls so that air flow can be directed in varying amounts along the other of said walls.

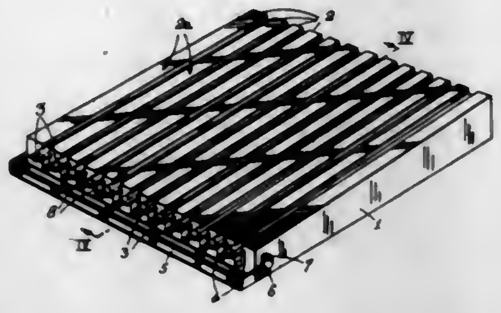


3,308,746
ADAPTOR FOR HOT AIR HEATING SYSTEMS
Le Roy Weiss, Homewood, Ill.
(1812 Tragone Drive, Bridgeville, Pa. 15017)
Filed Dec. 29, 1964, Ser. No. 421,963
6 Claims. (Cl. 98—108)



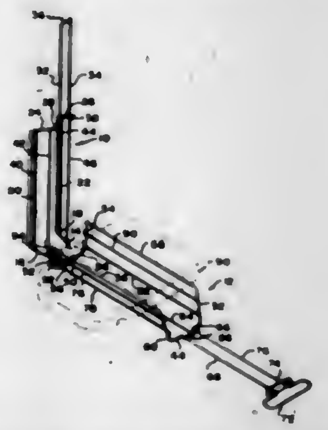
1. An adaptor for hot air heating systems of the type having exhaust registers vertically positioned in the lower region of the wall generally adjacent the floor and away from the ceiling of the space heated by the system, said adaptor comprising a clear plastic body having three sides defining a longitudinal open channel passage substantially through the length thereof, and means for detachably securing said body to said register with one end and the longitudinal edges of the body in general complemental engagement with the floor and the wall respectively to provide an enclosed passage extended upwardly from the register to the other end of said body, pliable gasket means secured about the periphery of said adaptor for preventing leakage therefrom, said body having an exhaust opening at the termination of the other end thereof generally adjacent the ceiling of the space to exhaust the air from the adaptor into the space adjacent the ceiling.

3,308,747
GRILLERS AND LIKE APPLIANCES
Armando Spagnolo, 11 Joel Road, Berea, Johannesburg, Transvaal, Republic of South Africa
Filed July 21, 1964, Ser. No. 384,092
Claims priority, application Republic of South Africa, Aug. 1, 1963, 63/3,460
1 Claim. (Cl. 99—400)



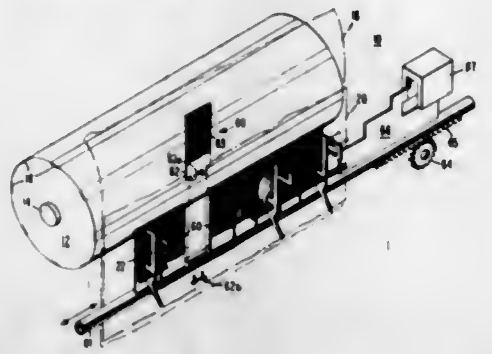
A griller comprising a base of a one piece construction; a plurality of food grilling formations of one piece with and extending upwardly from the base in spaced and juxtaposed relationship to one another; a pair of longitudinally extending and opposed slots in each pair of adjacent grilling formations in spaced relationship above the base; and a grease receiving element located between each pair of adjacent grilling formations in spaced relationship above the base, opposite longitudinal sides of each grease receiving element being frictionally held in the slots in the relevant pair of adjacent grilling elements, wherein the grease receiving elements have a lower heat conductivity than the base and grilling formations, and slope downwardly towards a collection zone when the griller is in operative position; and a grease receptacle is provided in the collection zone.

3,308,748
TOASTER APPARATUS
Joseph O. Jalbert, 401 W. Madison Ave., Dumont, N.J. 07628
Filed Aug. 18, 1965, Ser. No. 480,613
2 Claims. (Cl. 99—402)



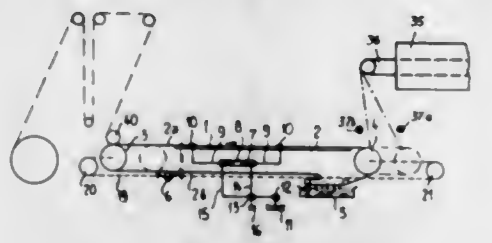
1. Toaster apparatus for making a shaped toasted article comprising cradle-like wire grills nestable in spaced relation, a wire defining the outline of each cradle-like grill having at each end of the grill a straight bottom portion and outwardly and upwardly flaring portions which have their corresponding upper ends connected by parallel longitudinally extending straight wire side portions, a spacing element at one end of said nestable grills hinging the corresponding bottom wire portion of each cradle to each other, and the other end of each cradle-like grill having an outwardly extending handle member rigidly connected thereto for clamping said grills in nested relation against the article to be toasted, whereby said toasted article will be trough shaped with a substantially flat bottom.

3,308,749
PRINT IMPRESSION CONTROL FOR SPECIALLY CONFIGURED TYPE ELEMENTS
Albert A. Dowd, Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 24, 1965, Ser. No. 458,336
14 Claims. (Cl. 101—93)



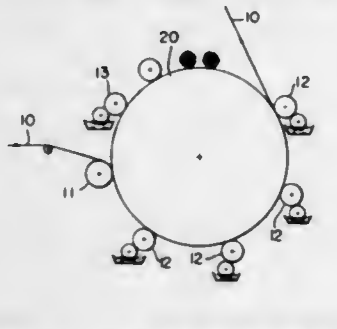
1. In a printer apparatus, the combination comprising a platen,
a type element movably mounted proximate said platen,
said type element having a front surface for impacting a record medium against said platen,
said type element having on said front of said type element a raised character the surface of which lies in a plane generally parallel with said platen surface,
said character surface having an asymmetrical distribution on said front surface of said type element,
said type element having a rear surface adapted to be struck for moving said type element to impact said platen,
said rear surface being inclined relative to the plane of said character surface,
said inclination being related to the surface distribution of said character,
and means for impacing said rear surface of said type element,
said impacting means having an impacting surface parallel with the plane of said character surface.

3,308,750
INTERMITTENT PRINTING OF WEB ON CONVEYOR BELT
Heinrich Voegelin, Wiler, near Utzensdorf, Switzerland, assignor to Fritz Buser A.G., Wiler, near Utzensdorf, Switzerland, a corporation of Switzerland
Filed Sept. 17, 1964, Ser. No. 397,246
Claims priority, application Switzerland, Sept. 18, 1963, 11,517/63
8 Claims. (Cl. 101—126)



1. In a web printing machine of the type which has an endless conveyor trained around two rotatable elements respectively at opposite ends of the conveyor for carrying a web to be printed via the upper part of the conveyor to and from a printing table and in which there are means operative on the said upper conveyor part for advancing said part intermittently with intervening stops of given duration for printing onto said web,
the improvement of apparatus for constantly moving the lower conveyor part, which is between said rotatable elements, notwithstanding intermittent movement of said upper conveyor part,
characterized by said rotatable elements being bodily movable in unison with constant parallel spacing in forward and reverse directions, and comprising:
means for bodily moving said rotatable elements forward as aforesaid a predetermined distance as said upper conveyor part advances, and
means responsive to the forward movement of said rotatable elements for rearwardly moving said rotatable elements bodily as aforesaid for said predetermined distance while said upper conveyor part is stopped.

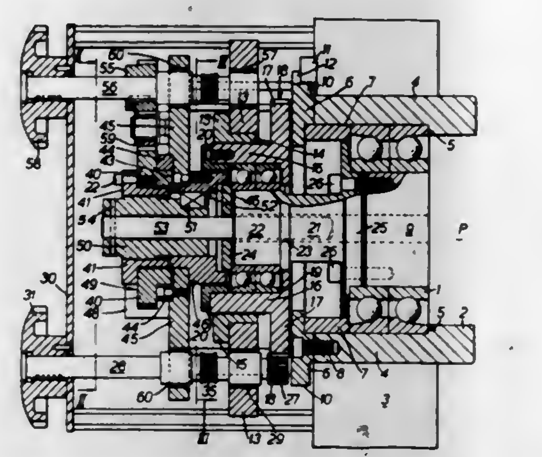
3,308,751
MEANS FOR ADHERING A WEB TO AN IMPRESSION SURFACE DURING MULTICOLOR PRINTING
Junji Hata, Kyoto-shi, Japan, assignor to Dai Nippon Printing Co., Ltd., Tokyo, Japan
Filed July 14, 1964, Ser. No. 382,469
Claims priority, application Japan, July 18, 1963, 38/36,669
1 Claim. (Cl. 101—178)



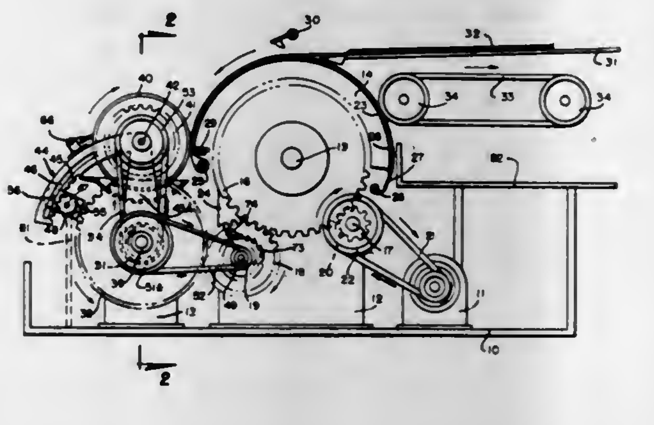
In a multicolored printing apparatus for printing on sheet material of little dimensional stability, a rotary drum having a peripheral surface coated with silicone rubber, means for applying a resin solution to said peripheral surface of said drum, means for continuously applying a sheet material of a relatively small degree of dimensional stability to the surface of the drum to receive a resin film therefrom, drying means extending part of the way around the periphery of the drum for drying the resin film received by the surface of the sheet material which is directed toward the drum, a rotary printing drum, means directing the resin-coated sheet material from said first-mentioned drum to said printing drum, with said resin film engaging the printing drum, moistening means for moistening the resin film as it is applied to the printing drum, said resin film having the property of adhering the sheet material to the printing drum as a result of moistening of the resin film, and printing roll means printing with a plurality of different colors, respectively, on the surface of the sheet material which is directed away from said printing drum while the sheet material adheres to the printing drum through the action of said resin film which also increases the dimensional stability of the sheet material.

3,308,752
PRINTING CYLINDER CIRCUMFERENTIAL AND LATERAL REGISTER ADJUSTMENT
Derek A. Stevenson, Leeds, England, assignor to R. W. Crabtree & Sons Limited
Filed July 15, 1964, Ser. No. 382,870
Claims priority, application Great Britain, July 15, 1963, 28,025/63
5 Claims. (Cl. 101—248)

1. A rotary printing machine comprising a frame, a plate cylinder, means mounting said cylinder in said frame for rotation about a predetermined axis, drive means operatively connected to said cylinder, said drive means including gear means connected to said cylinder and a hub connected to said gear means, first adjusting means for circumferentially adjusting said cylinder relative to said drive means, first control means for controlling said first adjusting means, said first adjusting means including a spur gear operatively connected to said first control means, a member connected to said first control means and displaceable longitudinally relative to said cylinder in response to operation of said first control means, a crankshaft rotatably mounted on said hub and connected between said member and said gear means for causing the circumferential adjustment of said cylinder, second adjusting means operable independently of said first adjusting means for moving said cylinder along a path generally parallel to said predetermined axis, second control means adjacent said first control means for controlling said second adjusting means, and said first and second control means being disposed at a location remote from said drive means.



3,308,753
UNIVERSAL PRESS DRIVE FOR ENGRAVED CYLINDERS
Alexander A. Zenone, R.F.D. 1, Box 105, Severna Park, Md. 21146
Filed Oct. 21, 1965, Ser. No. 499,319
10 Claims. (Cl. 101—248)



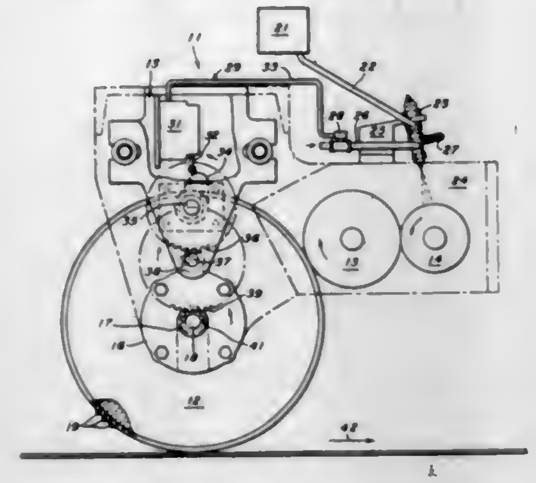
1. In combination in a universal drive for a printing press having an impression cylinder for use with a plurality of printing cylinders of differing diameters, a shaft for driving a single printing cylinder, a gear floating on said shaft, drive means for said gear, lost motion means having one part keyed to said shaft and another part connected to be driven by said floating gear whereby said shaft may experience different angular velocities independently of the velocity of said floating gear during each printing cycle.

3,308,754
ROTARY DRUM PRINTER AND INKING APPARATUS THEREFOR

John E. Munn, Forest Hills Borough, Pa., assignor to Jas. H. Matthews & Co., Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 19, 1964, Ser. No. 376,441

9 Claims. (Cl. 101—348)



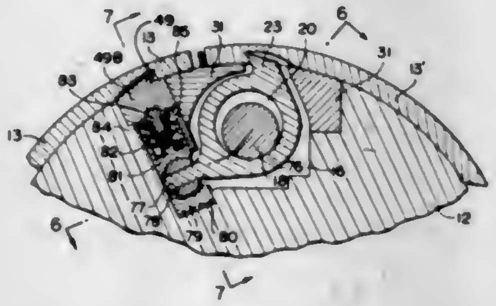
3. A printing machine of the class described having a frame, a rotatable printing drum with work-imprinting type thereon, a rotatable transfer roll bearing against the printing drum for applying ink to the type on said drum, a rotatable squeegee roll bearing against the transfer roll, the transfer roll being driven by contact with the printing drum, the squeegee roll being driven by the transfer roll, adjustable valve-controlled means for intermittently applying ink at intervals to the squeegee roll and cutting off the supply of ink between said intervals, and means controlled by rotation of the printing drum for effecting the intermittent opening and closing of the valve-controlled means while the printing drum is rotating, whereby ink is supplied to the transfer roll according to the speed of the printing drum.

3,308,755
PRINTING PLATE FASTENING APPARATUS FOR A ROLLING PRESS

Masumi Eda, 3 7-chome, Den-enchofu, Tokyo, Japan, Yuji Fujishiro, 7 1-chome, Fukazawa-cho, Tokyo, Japan, and Akio Nanba, 14 of 119 Minezawa-machi, Yokohama, Japan

Filed Oct. 5, 1964, Ser. No. 401,350

9 Claims. (Cl. 101—378)



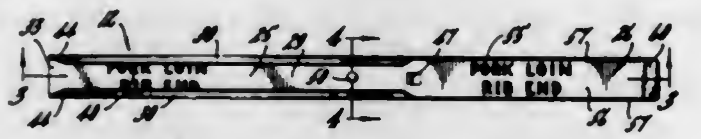
1. A printing roller with mounting means for lead plates comprising a roller having stepped shaft portions and having diametrically opposed axially extending channels in the periphery thereof, a pawl operating shaft having eccentrics spaced therealong rotatably mounted in each channel, an L-shaped lever pivotally mounted about its apex on each eccentric, one arm of each L-shaped lever serving as a pawl for connection to one end of one lead plate and adapted to be projected beyond and retracted within the periphery of the roller, said pawl operating shaft being splined on one end, a helical gear splined on said splined end of said shaft, screw threads of different pitch adjacent each end of the splined portion of said shaft, a flanged bushing threaded on one of said screw threads, and a lock nut on the other of said screw threads with means to adjust the flanged bushing and lock nut to vary the axial position of the helical gear, fixed pawls mounted on said roller adjacent the movable pawls and extending in the opposite direction to secure the other end of another lead plate, a pair of internally toothed segmental gears mounted on the stepped shaft portion of said roller each cooperating with one helical gear whereby arcuate movement of each segmental gear causes rotation of its associated helical gear and thereby operation of the pawls mounted on the cooperating pawl operating shaft, each segmental gear being provided with an outwardly opening rabbet at each axial end, a retaining collar having a rib fitting into each rabbet and fixed to said roller retaining said segmental gears in operative relation, means to limit the movement of each segmental gear between pawl projected and pawl retracted positions, an operating lever receivable in a radial aperture in each segmental gear, a lock key mounted in one shaft step of said roller and movable into a recess in the cooperating bearing portion of its associated segmental gear, resilient means urging said lock key into said recess to prevent relative angular motion between said roller and said segmental gear, an indicating pin mounted in said segmental gear and pressed toward said lock key to indicate the pawl projected position, a retaining pin mounted in said gear segment for axial movement and of a length to extend into the radial lever receiving aperture, and into a registrable recess in one retaining collar, and adapted to be received in a recess in the portion of the operating lever received in the gear segment, said one retaining collar having a second pin receiving recess with which said pin may register in another position of said pawls, the other arm of each L-shaped lever extending toward the adjacent fixed pawls of the other lead plate, a follower on said other arm of each L-shaped lever, a stop limiting the movement of each follower on the other arms away from said stationary stop, a coil spring cartridge assembly reacting between said stationary stop and the other surface of said other arm of each pawl whereby rotation of said pawl operating shaft will cause said L-shaped levers to move the pawl arms into projected or retracted position, a plurality of plate releasing arms pivotally mounted on said pawl operating shaft, a key between each releasing arm and said pawl operating shaft providing lost motion in causing operation of said releasing arms, take up spring means reacting between said releasing arms and said roller preventing vibration of said releasing arms in inoperative position thereof.

3,308,756
REPLACEABLE PRINTING TYPE SLUG MEMBER

Edward C. Karp, Belvidere, Ill., assignor to Sanitary Scale Company, Belvidere, Ill., a corporation of Illinois

Filed Dec. 21, 1964, Ser. No. 419,942

4 Claims. (Cl. 101—396)



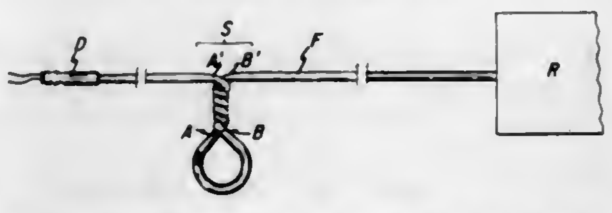
1. A replaceable slug member adapted to cooperate with printing means to provide indicia for printing commodity information and the like on labels, comprising: an elongated printing section, and a handle section extending longitudinally from said printing section, said printing section and said handle section being fabricated unitarily from a single piece of sheet metal, said printing section including a relatively flat base and converging walls extending upwardly therefrom to define a dovetail slot, said handle section including a relatively flat base and walls extending upwardly therefrom, said dovetail slot in said printing section adapted to grip a generally correspondingly shaped mounting pedestal on the printing means to retain said slug in seated relationship thereon, printing indicia embossed on said relatively flat base of said printing section, and tab means extending upwardly from the base of said handle section at the free end thereof to facilitate inserting and removing said slug member from said printing means.

3,308,757
SAFE-ARM MECHANISM FOR EXPLOSIVE TRAINS

James Hennessy, Pitman, and George A. Noddin, Mantua, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 30, 1965, Ser. No. 468,423

6 Claims. (Cl. 102—22)



1. An arming system comprising a donor charge, a receptor charge separated from the donor charge by distance sufficient to preclude sympathetic actuation of the receptor charge by a detonation stimulus from the donor charge, and a **safe-arm mechanism** connecting said charges,

said **safe-arm mechanism being characterized** by its ability to **propagate a detonation** stimulus to the receptor **charge when surrounded by a** liquid medium and its **inability to propagate such** a stimulus when surrounded by **a gaseous medium** and comprising a length of **detonating fuse in the** form of a loop with **an entwined segment at its** base, said detonating fuse having a core of **cap-sensitive**, high-velocity detonating explosive at **a** loading of about from 5 to 25 grains/foot encased in a ductile metal sheath, and the ratio of said core loading to sheathing thickness in inches being about from 250 to 700.

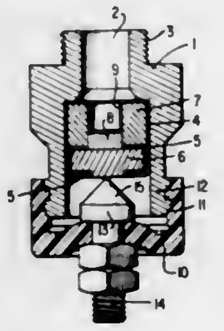
3,308,758
IGNITION DEVICE

Hans Stadler, Nurnberg, and Heinz Gawlick and Helmut Bendler, Furth, Bavaria, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed July 2, 1965, Ser. No. 469,261

Claims priority, application Germany, July 2, 1964, D 44,823

17 Claims. (Cl. 102—28)



1. An ignition element for an electrical ignition device, comprising:

mechanically rigid casing means of electrically conductive material forming a first pole piece,

said mechanically rigid casing means being provided with exhaust aperture means in the extension of the ignition composition and being adapted to be connected with ground, and a primer assembly arranged at least in part in said casing means including electrically conductive means forming a second pole piece, insulation means between said first and second pole pieces, ignition composition means electrically connected in series between said second pole piece and said casing means,

mechanically rigid contact means of electrically conductive material in electrical connection with each of said first and second pole pieces, each of said first and second pole pieces being in series connection with their respective contact means and said ignition composition means,

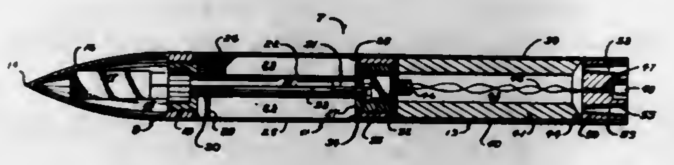
and means for normally holding at least one of said contact means in resiliently yielding contact pressure connection with its corresponding pole piece including cap means of thermoplastic material operatively connected with said casing means and mechanically stressed in the assembled unfired normal condition.

3,308,759
RADAR REFLECTOR ROCKET

Glenn P. Sorenson, Walnut Creek, Calif., assignor to MB Associates, a corporation of California

Filed Feb. 4, 1963, Ser. No. 255,784

10 Claims. (Cl. 102—49)



1. In a rocket-type device for dispersing radar reflector means, the combination comprising a cylindrical, elongated, uninterrupted body portion including fore and aft sections, a solid propellant motor in one of said sections and a means for dispersing said radar reflector means in the other of said sections, longitudinally extending tubular means in said other section, radial axially extending vane means associated with said tubular means projecting outwardly thereof to said body portion and thereby providing longitudinally arranged chambers for the radar reflectors, removable skin means forming at least portions of the body portion arranged to retain the radar reflectors in a confined state in said chambers, latch means carried by said skin means projecting inwardly from the surface thereof, means on said latch means adapted to engage said tubular means, longitudinally slidable actuator means positioned in said tubular means and power means for motivating said actuator means, whereby said latch means are disengaged from said tubular means to permit discharge of said radar reflectors from said chambers.

3,308,760
PASSIVE MAGNETIC PROXIMITY FUSE

Johannes Peters, Deisenhofen, near Munich, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Hamburg, Germany

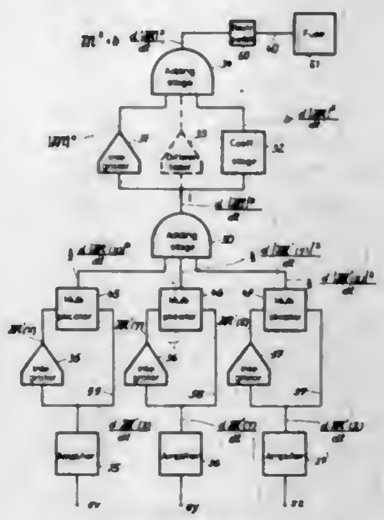
Filed Nov. 29, 1962, Ser. No. 243,177

Claims priority, application Germany, Dec. 23, 1961, B 65,340

7 Claims. (Cl. 102—70.2)

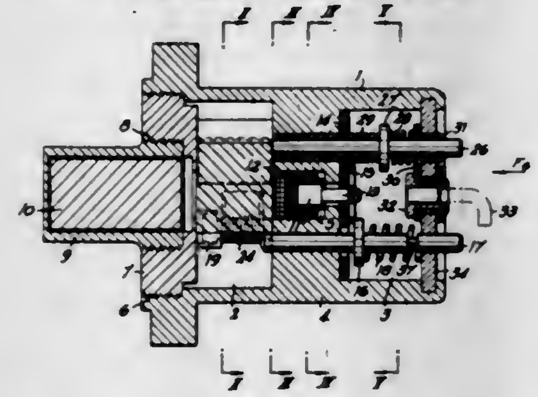
1. In a method for igniting an explosive charge having a relative speed with respect to a target, which target causes a change of the earth's magnetic field, which change induces voltages in an ignition device and which voltages are added to produce an ignition voltage: the improvement comprising simultaneously deriving, in a manner known per se, the induced voltages correspond-

ing to such changes in the earth's magnetic field in three coordinates in quadrature with each other, individually amplifying each induced voltage, multiplying each amplified induced voltage by its own respective time integral, adding the thus obtained products of amplified voltages



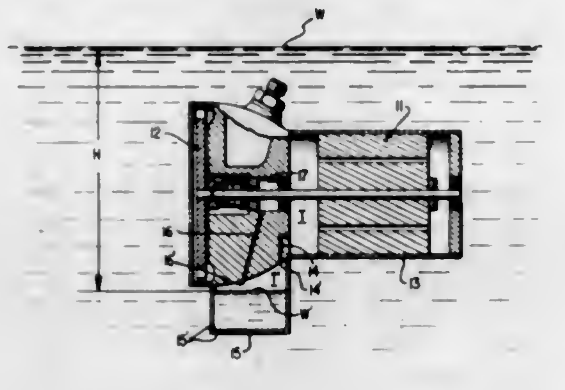
to derive a summation voltage proportional to the differential quotient of the square of the modulus of the change of the intensity of the earth's magnetic field, and applying said summation voltage to a fuse as an ignition voltage.

3,308,761
ELECTRIC FUSES FOR PROJECTILES
Jean Vilbajo, Brussels, Belgium, assignor to Contigea Societe Anonyme, Brussels, Belgium
Filed Sept. 22, 1964, Ser. No. 398,322
Claims priority, application Belgium, Sept. 30, 1963, 637,973; Aug. 31, 1964, 652,467
4 Claims. (Cl. 102—70.2)



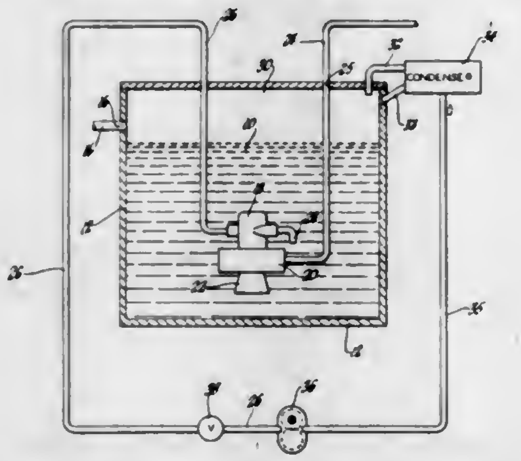
1. An electric fuse for a projectile having an electric generator, said fuse comprising a hollow housing, a primer fixedly mounted in said housing, a detonator, a support pivotally mounted within said housing and carrying said detonator, an elastic element engaging an inner wall of said housing and said support, said elastic element pressing said support from an inoperative position to an operative position wherein a pyrotechnic chain is established through said generator, said detonator and said primer, a rod slidably mounted in said housing, a second elastic element pressing said rod against said support to maintain said support in said inoperative position, said rod being withdrawn from engagement with said support when the projectile is launched, a second rod slidably mounted in said housing, and a third elastic element pressing the second-mentioned rod against said support to maintain said support in its operative position, the first-mentioned rod short-circuiting said primer when said support is in its inoperative position and removing this short circuit when said support is in its operative position, the second-mentioned rod short-circuiting said generator when said support is in its inoperative position and removing this short circuit when said support is in its operative position.

3,308,762
MOTOR ASSEMBLY
Ludwig Fricker, Stuttgart-Feuerbach, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Apr. 27, 1965, Ser. No. 451,269
Claims priority, application Germany, Apr. 28, 1964, D 44,286
10 Claims. (Cl. 103—87)



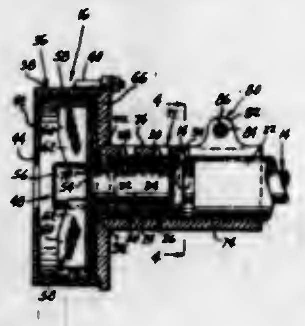
1. An installation preventing water from penetrating into the interior space of the assembly housing of electrical machines, especially of electric motors for driving feed pumps, particularly fuel feed pumps, comprising:
electric motor means including a substantially closed housing means,
relatively small vent line means for venting the interior space of said electric motor housing means and provided with relatively small outer orifice means,
the orifice means of said vent line means pointing substantially in the downward direction,
a substantially closed second housing means forming ante-chamber means located below said orifice means and having relatively small second orifice means vertically spaced a substantial distance below said vent line orifice means for providing the only direct communication with the atmosphere, said ante-chamber means being of such size that the desired pressure equalization between the air present within the space of the ante-chamber means, on the one hand, and of the occurring water columns, on the other, is reacted still ahead of the interior space of the motor housing means.

3,308,763
GAS OPERATED SUMP PUMP
Ziyad R. Kanaan, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 12, 1965, Ser. No. 495,203
6 Claims. (Cl. 103—87)



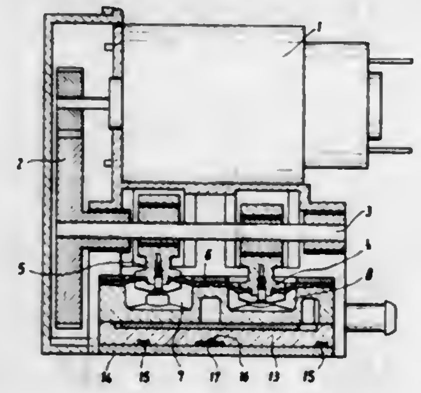
1. A liquid metal circulating system comprising, in combination: a closed container partially filled with liquid metal defining a gas plenum above the liquid metal, a liquid metal inlet, a pump submerged in the liquid metal, a discharge conduit from the pump to the outside of the container, a turbine submerged in the liquid metal and drivingly connected to said pump, means for delivering inert gas under pressure to said turbine, said turbine having a gas discharge outlet into the liquid metal, an inert gas outlet from said plenum, and means to recirculate gas from said gas outlet to said delivery means.

3,308,764
PUMP AND DRIVE MEANS THEREFOR
Donald C. Walker, P.O. Box 725, Mill City, Oreg. 97360
Filed May 4, 1965, Ser. No. 453,093
11 Claims. (Cl. 103—103)



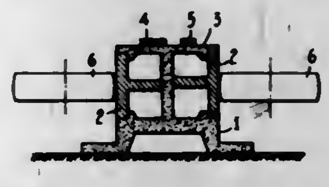
1. A pump comprising:
an impeller rotor;
a cylindrical casing having a tangential discharge opening;
a front closure member having an inlet opening therethrough;
a rear closure member having an opening therethough;
a driven shaft secured to the rear of the rotor and extending through the opening in the rear closure;
a drive shaft;
means connecting the drive shaft to the driven shaft for rotatably driving the rotor;
means, connected to the casing, mounting the drive shaft connecting means for rotary movement and for reciprocable movement relative to the casing to permit rotary movement of the rotor and translational movement of the rotor in the direction of the longitudinal axis of the cylinder casing.

3,308,765
PUMP CONSTRUCTION
Erich Mutschler, Allensteiner Strasse 23, Bietigheim, Wurttemberg, Germany, and Michael Reibl, Holderlinstrasse 456, Ensingen, Kreis Vaihingen, Germany
Filed May 21, 1965, Ser. No. 457,630
Claims priority, application Germany, May 22, 1964, S 91,181
16 Claims. (Cl. 103—152)



1. A diaphragm pump with built-in electric motor, especially as supply pump for windshield wiper installations in motor vehicles, comprising:
pump means having pump chamber means, diaphragm means in said chamber means, piston means operatively connected with said diaphragm means, and electric drive means for driving said piston means,
said pump means further including a plate-like structural element provided with suction and pressure channels which are operatively connected with the pump chamber means, and a pressure equalization channel provided in said plate-like structural element, said pressure equalization channel offering effectively a flow resistance which is a multiple of the flow resistance at one of the suction and pressure channels,
all of said channels being constituted by recesses in said plate-like structural element open at least on one side, and common cover plate means closing off said channel means.

3,308,766
GUIDING ARRANGEMENT FOR RAILROAD-TYPE VEHICLES EQUIPPED WITH PNEUMATIC TIRES
Mario Urbinati, 101 Circonvallazione Appia, Rome, Italy
Filed Apr. 3, 1964, Ser. No. 357,248
Claims priority, application Italy, Apr. 20, 1963, 7,870/63
9 Claims. (Cl. 104—119)

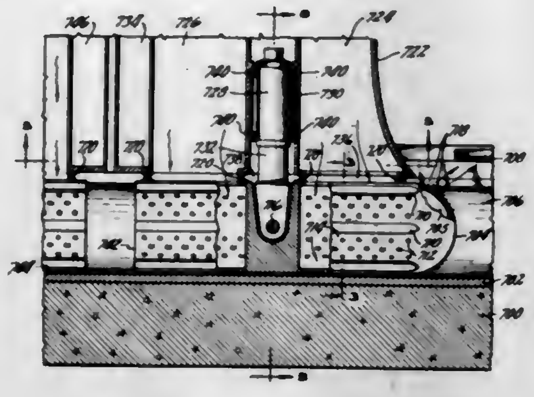


1. A guiding arrangement for railroad-type vehicles equipped with pneumatic tires rolling on a track, comprising in combination support elements spaced from one another arranged on the plane of symmetry of the track, a plurality of guide elements having a substantially square overall cross section, arranged in continuity following one another, carried by said support elements to form a continuous guiding rail longitudinally extending with respect to the track, said guide elements having two opposite and parallel vertical faces made of conductive materials insulated from one another and from said support elements by means of layers of dielectric materials and cooperating with corresponding pairs of vertical-axis wheels of the vehicles to force the vehicles to follow the path defined by said guide rail, said parallel vertical faces forming a bipolar feed system for the vehicles, switching and crossing means for the vehicles arranged on switching and crossing zones of the track consisting of a plurality of rotary support elements carrying on their two faces lying at a right angle to one another said guide elements, said guide elements being interchangeable therebetween by rotating said rotary support elements, a longitudinal axle passing through said rotary support elements and rigidly connected thereto for rotating said rotary support elements from one to another railway direction and a continuous longitudinal housing containing said rotary support elements and longitudinal axle, said rotary support elements resting in each operative position on the bottom of said housing.

3,308,767
TRANSPORTATION DEVICE UTILIZING HYDROSTATIC BEARINGS
Edward N. Hall, Bloomfield, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 22, 1964, Ser. No. 420,279
7 Claims. (Cl. 104—134)

1. A hydrostatic support for a vehicle on a rail transportation system comprising:
a source of fluid under pressure carried by said vehicle,

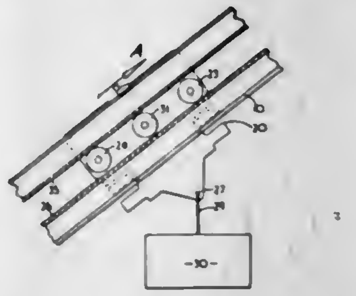
a plurality of substantially parallel spaced rails having tubular cross sections and longitudinal slots,
a plurality of fluid bearings mounted within said rails and having orifices distributed along the bearing surface facing said rail,



means connected to said bearings through said slot for supporting said vehicle, and
means for applying said fluid pressure source to said orifices for issuing fluid therefrom and producing a film of fluid between said bearings and said rails.

3,308,768
CONVEYORS FOR CONVEYING GOODS

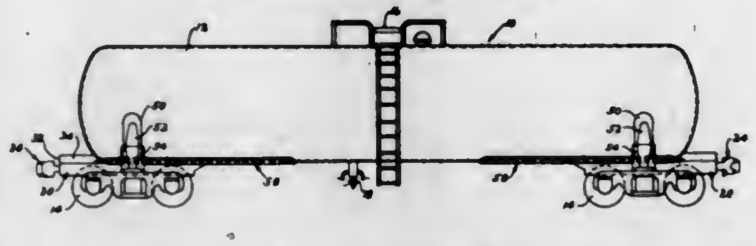
Olaf John Barclay Orwin, Quinton, Birmingham, England, assignor to Fisher & Ludlow Limited, Tipton, England, a British company
Filed June 29, 1965, Ser. No. 467,958
Claims priority, application Great Britain, July 7, 1964, 27,858/64; May 1, 1965, 18,425/65
7 Claims. (Cl. 104—172)



1. A conveyor comprising a plurality of wheeled goods supporting trolleys each having a front and rear end, a pair of trolley supporting wheels adjacent each end, the two wheels in each pair spaced transversely apart from one another and mounted for rotation about a common substantially horizontal axis, with the axes of the two pairs of wheels being substantially parallel to one another, a supporting track for said trolleys having an upwardly directed load supporting surface engageable with said pairs of trolley supporting wheels, a power driven element adapted to advance said trolleys along said track, each trolley having a pair of guide wheels rotatable about a vertical axis, with the two guide wheels of each pair being spaced longitudinally from one another, and each engageable with said trolley track, a pair of intermediate wheels on each trolley disposed between the two pairs of trolley supporting wheels, means mounting said intermediate wheels for rotation about an axis substantially parallel to the axes of rotation of the trolley supporting wheels, and means mounting each of the two pairs of trolley supporting wheels in a position in which a flat plane tangential to the track engaging undersides of the two pairs of trolley supporting wheels is a short distance above the track engaging underside of the intermediate pair of wheels, the axes of rotation of the intermediate wheels being substantially in a vertical plane perpendicular to the direction of trolley advancement when the trolley is loaded, and within which vertical plane lies the load reaction of the weight of the supported goods on the trolley, whereby at least the major part of the load is supported from the trolley track through said intermediate wheels when the trolley advances horizontally.

3,308,769
RAILWAY TANK CAR

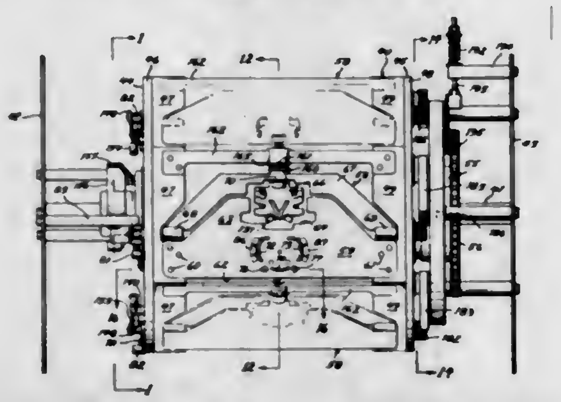
Samuel P. Halcomb, St. Louis, Mo., and Mack H. Lawrence, Farmington, Mich., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed July 26, 1965, Ser. No. 474,856
5 Claims. (Cl. 105—362)



1. A railway tank car comprising a generally cylindric-like body shell, a bolster structure adjacent each end of the body shell having a cradle secured to the body shell, a stub center sill structure adjacent each end of the car extending inwardly beyond the bolster structure, a coupler and draft gear structure carried by each center sill structure, a saddle plate secured between each stub center sill structure and the body shell and extending inwardly beyond the center sill structure, said saddle plate being generally arcuate and conforming to the outer adjacent surface of the body shell, said saddle plate extending inwardly beyond the inner end of said adjacent stub center sill structure and having an inner end portion of a reduced cross-sectional area, said end portion having opposed side edges converging inwardly of the car in a straight line direction to provide a gradual decrease in width of the end portion, said end portion terminating inwardly of the car in a transverse edge extending transversely of the longitudinal centerline of said car and connecting said side edges, said saddle plate being welded along said opposed side edges to said body shell, and a major portion of the length of said transverse edge being unsecured to the body shell thereby to minimize stress concentrations along said transverse edge and to permit stress to be dissipated primarily along said welded opposed side edges.

3,308,770
PRETZEL-TWISTING MACHINE

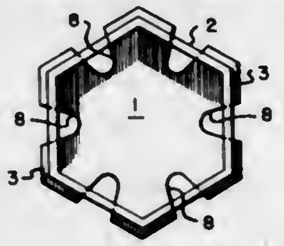
Edwin I. Groff, West Reading, Pa., assignor to Quinlan Pretzel Company, Inc., Reading, Pa., a corporation of Pennsylvania
Filed Nov. 24, 1964, Ser. No. 413,517
11 Claims. (Cl. 107—8)



1. In a pretzel-twisting machine, a rotatable drum, and a plurality of forming units about the periphery of said drum, said forming units each comprising a pair of adjacent plates mounted along the periphery of said drum, a formation on one of said plates for medially engaging a delivered dough strip to support the latter in U-shaped relation with its legs overlying the other plate, a pair of arms pivotally carried on the inner side of said other plate for swinging movement toward and away from each other, journal means mounting said arms for simultaneous axial rotation and swinging movement, transverse fingers on said arms swingable therewith toward and away from each other and rotatable with said arms between positions inward of and projecting outward through said other plate, constraining means on said other plate and arms constraining the latter to synchronized motion for rotating said fingers outward when said arms are swung together to pinch said dough-strip legs, and mounting means mounting said plates for relative pivotal movement to twist the legs of said dough strip and relative swinging movement to swing the legs to the bight of said dough strip.

3,308,771
LOADING PALLET

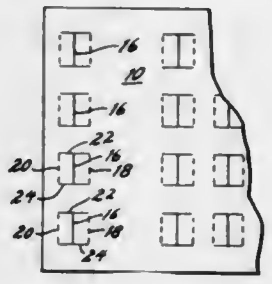
Lars Roland Malte Wettlen, Lomma, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a Swedish company
Filed Feb. 24, 1966, Ser. No. 529,757
Claims priority, application Germany, Apr. 24, 1965, A 23,654
2 Claims. (Cl. 108—51)



1. Loading plate for transportation of stacked cartons comprising: a base plate, a ring member on said base plate, said base plate having a portion extending outwardly beyond said ring member, a carton telescoping over said ring member with the bottom thereof resting on said extending portion of said base plate, said ring member having a shape which conforms to the inner shape of the base portion of the carton and a notch in said base plate extending from said outwardly extending portion to a position toward the center of said base beyond said ring member to provide an attachment point for a pull instrument.

3,308,772
DISPOSABLE PALLET

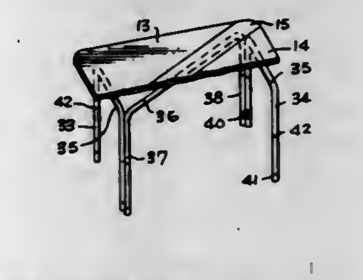
Neil A. Thomas, Jr., Havertown, Pa., assignor to Crescent Box Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 3, 1966, Ser. No. 518,309
2 Claims. (Cl. 108—56)



1. A pallet including a platform having spaced, parallel rows of spaced openings formed therein, each having opposite side and end edges,
integral, downwardly converging flaps hingedly connected to said side edges to form legs for supporting said platform,
a reinforcing member for each of said rows of spaced openings,
said reinforcing member comprising an elongated bottom wall and integral upwardly diverging side walls hinged to the opposite longitudinal edges of said bottom wall,
the width of said flaps being substantially equal to the width of said side walls whereby, when said reinforcing member is inserted between said legs, said side walls will abut said flaps, the upper edges of said side walls will abut the underside of said platform, and the bottom edges of said flaps will abut the longitudinal edges of said bottom wall.

3,308,773
FOLDING TABLE

William J. Long, Los Angeles, Calif., assignor of fifteen one-hundredths each to Roger A. Marrs, Van Nuys, and Lowell O. Tucker, South Gate, Calif.
Filed July 29, 1965, Ser. No. 475,785
1 Claim. (Cl. 108—79)



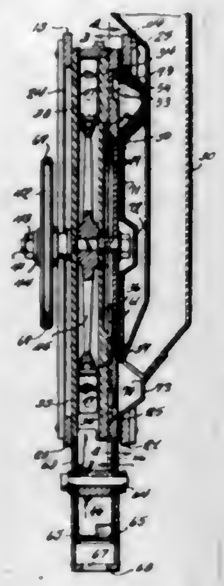
A folding table comprising:
a substantially U shaped tubular supporting member formed to provide stationary leg supports on its opposite ends joined by an elongated mid-section length;
a central top section mounted on said supporting member mid-section length;
a pair of substantially triangular top leaf sections pivotally attached to opposite sides of said central top section so as to provide parallel pivot axes diagonally across the table disposed between opposite corners thereof;
hinge means rotatably securing said pair of leaf sections to opposite edge marginal regions of said central top section whereby said parallel diagonally extending pivot axes are provided;
a pair of U shaped tubular leg members, each formed to provide a pair of parallel legs joined by a mid-section length; and
pivot means movably securing one leg of each of said leg members to one of said leg supports whereby the other leg of each of said leg members may be moved outwardly from a stored position adjacent said supporting member mid-section length to an extended position substantially normal to said supporting member to selectively support said top leaf sections when said sections are pivoted outwardly about said diagonal pivot axis to provide a composite table top and wherein the opposite ends of said table top are supported on said pair of leg members via said leg member mid-section lengths.

3,308,774
SEED PLANTER

Eugene G. Keeton, Trenton, Ky., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Continuation of application Ser. No. 338,927, Jan. 20, 1964. This application May 16, 1966, Ser. No. 550,569
25 Claims. (Cl. 111—77)

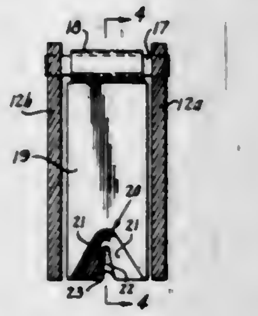
18. A seed planter comprising: a housing having a discharge opening in one of its faces, a cam associated with said face, rotatable means mounted on said face, means for rotating said rotatable means, movable means mounted

on said rotatable means and adapted to be actuated by said cam, a supply of seed through which said movable means pass during rotation of said rotatable means, said cam during rotation of the disc causing said movable means to assume an open position when passing through said seed to receive one of the same and then release said means to securely hold the seed during rotation of the rotatable means until said discharge opening is reached.



3,308,775
SEED VALVE

Orville J. Klene, R.R. 5, Greensburg, Ind. 47240
Filed Mar. 1, 1965, Ser. No. 435,854
7 Claims. (Cl. 111—86)

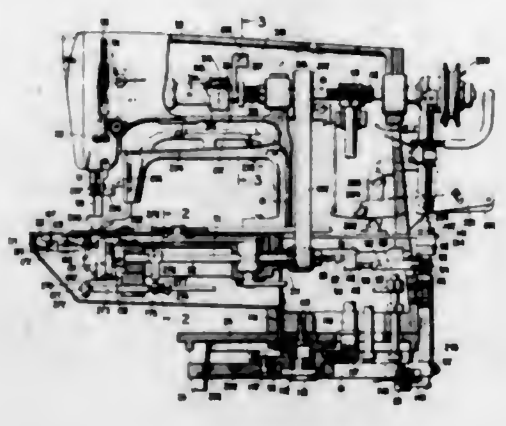


1. In combination with a furrow opening tool, including a blade having a forward end and a rear end, a keel beneath said blade, and side walls defining a hollow open-ended seed chamber at the rear end of said blade, a seed valve, comprising a relatively flat plate having a seed guiding notch at its lower end, and means pivoting said valve at the upper rear end of said seed chamber, normally closing the open end thereof.

3,308,776
SEWING MACHINES HAVING BOBBIN THREAD REPLENISHING MEANS

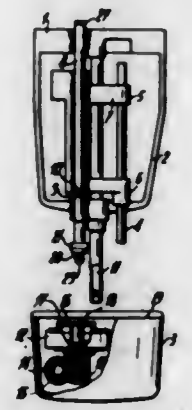
Michael F. Ivanko, Rockaway, and Robert W. Busch, Jr., Boonton, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed May 6, 1964, Ser. No. 365,333
5 Claims. (Cl. 112—181)

1. In a lockstitch sewing machine, a loop taker mechanism having a bobbin mounted inside, rotatable means for restraining thread, disconnectable means for rotating the bobbin and for rotating the means for restraining thread, and a loop-seizing beak which moves in a circular path, means carrying thread from a first source positioned in proximity to the loop taker mechanism for introducing thread to the bobbin for a winding operation by means of the loop-seizing beak in cooperation with the means for restraining thread, the means for rotating the bobbin and for rotating the means for restraining thread being connected thereto, a needle mechanism carrying thread from a second source for passing through goods to be sewn and for presenting loops of thread to the loop-seizing beak for passing around the bobbin, the means for rotating the bobbin and for rotating the means for restraining thread being disconnected therefrom to permit passage of thread from the second source around the bobbin to form lockstitches in the goods with the thread from the bobbin during a sewing operation, and means connected to the loop taker mechanism, the means carrying thread from a first source, and the needle mechanism carrying thread from a second source for selectively controlling the winding and sewing operations.



3,308,777
ROTARY HOOK SEWING MACHINE

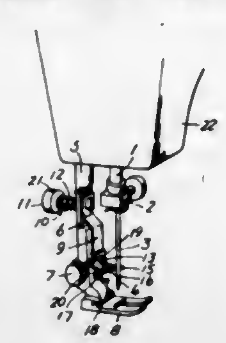
Rolando Gianinazzi, Geneva, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a corporation of Switzerland
Filed Jan. 20, 1964, Ser. No. 338,887
Claims priority, application Switzerland, June 26, 1963, 8,070/63
1 Claim. (Cl. 112—186)



In a rotary hook sewing machine, including an overhanging machine head, a vertical axle carried by the head, a cradle adapted to oscillate around said axle, a needle bar vertically slidable in the cradle, a work supporting lower part, a vertical axis rotary hook disposed within said lower part and presenting a housing adapted to contain a spool to provide a lower thread supply, finger means of soft plastic material displaceably mounted on the head for engaging in a central bore of the spool to retract the spool from the hook housing, and coil spring means urging said finger means into an inoperative position relative to the head, said vertical axle being tubular and housing said spring means, said finger means presenting an extension partially engaged in said tubular axle when in said inoperative position.

3,308,778
THREADING DEVICE FOR SEWING MACHINES

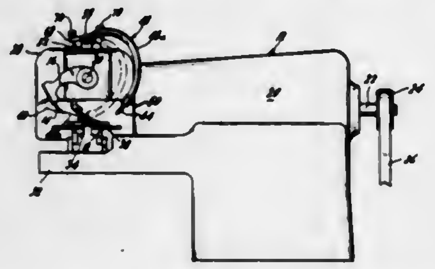
Yoshihiko Nakajima, Suginami-ku, Tokyo, Japan, assignor to Janome Sewing Machine Co., Ltd., Tokyo, Japan
Filed Feb. 24, 1964, Ser. No. 346,672
Claims priority, application Japan, Feb. 27, 1963, 38/12,132
16 Claims. (Cl. 112—225)



1. In a sewing machine, in combination, a needle bar, a needle having an eye and mounted on said needle bar; a presser bar located opposite said needle bar and needle and formed with a bore perpendicular to said needle; a support; mounting means for mounting said support on said presser bar for movement between a higher retracted position and a lower position, and also for movement in said lower position between an inoperative position farther spaced from said needle and an inoperative position closer to said needle, said mounting means including a pin passing through said bore of said presser bar and being turnable therein for moving said support between the higher and lower positions, and being axially shiftable therein for moving said support between said inoperative and operative positions; spring means secured to said pin and to said presser bar and urging said support to turn to said higher position and to move to said inoperative position; threading means carried by said support and being spaced from said needle in said retracted and inoperative position; positioning means carried by said support and being spaced from said needle in said retracted position, said positioning means cooperating with said needle during movement of said support from said inoperative position to said operative position to align said threading means with said needle eye whereby said threading means enters said needle eye and projects through the same in said operative position adopted to draw a thread through said needle eye during movement of said support to said inoperative position.

3,308,779
BENDABLE THREAD-SEVERING DEVICE

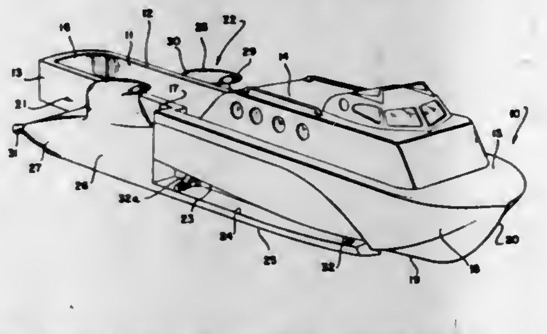
Ragnar W. Winberg, 115 W. Elder Ave., Floral Park, N.Y. 11001
Filed Jan. 11, 1965, Ser. No. 424,628
3 Claims. (Cl. 112—252)



1. In combination with a sewing machine having a support and thread-stitching mechanisms at a work-stitching location of a thread-severing device for severing the the thread at said work-stitching location at the end of a stitching interval, said thread-severing device including electrical wiring and an electrically energized burning member, a tubular housing disposed about said electrical wiring and having said burning member exposed beyond one end thereof, a source of electrical energy connected to said electrical wiring for applying electrical energy to heat up said burning member, means operatively connected to and mounting said housing on said support for moving said exposed burning member from a clearance position removed from said work-stitching location to an operative position in proximate relation to said work-stitching location, and means operable in timed relation to the end of said stitching interval for moving said burning member from said clearance position to said operative position, said housing at said one end being fabricated of bendable material and being adapted to be bent to position said burning member relative to the thread at said work-stitching location such that contact is made therebetween upon movement of said burning member into said operative position.

3,308,780
HYDROSKI VEHICLE

Franz W. Abramson, La Canada, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Aug. 3, 1965, Ser. No. 476,801
14 Claims. (Cl. 114—66.5)

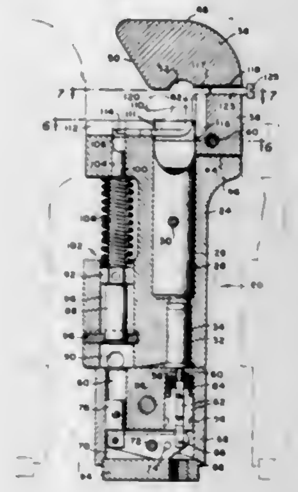


1. A high speed marine vehicle comprising:
An elongated hull having a planing surface;
strut means pivotally secured to said hull and extendable downwardly therefrom;
a pair of hydroskis disposed in opposite sides of said elongated hull and pivotally secured to said strut means;
  each hydroski having a planing surface generally conforming to the shape of said hull to cooperatively provide primary lift during operation with skis retracted;
  a propulsion system mounted on the after extremity of each of said hydroskis; and
actuator means pivotally connected to said hull and to said strut means for moving said strut means to lower and raise said hydroskis whereby said vehicle is operable as either a conventionally planing or a hydroski vehicle.

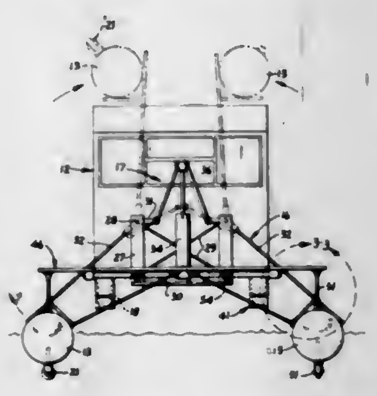
3,308,781
MULTIPLE UNIT MINE CABLE CUTTER

Mark Kurtz, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 16, 1957, Ser. No. 684,380
1 Claim. (Cl. 114—221)

A mine cable cutter comprising an elongated frame, a barrel provided in said frame adjacent one side thereof and opening at one end of said frame; a hook-shaped member attached to the frame adjacent said end, said hook-shaped member comprising a shank portion attached to said frame and extending forwardly thereof, said hook-shaped member further comprising an anvil portion extending from said shank portion across and spaced from the adjacent end of said frame, thereby forming a mine cable receiving recess between said anvil and said frame, a cutting member slidably mounted in said barrel, explosive means for forcibly driving said cutting member across said cable receiving recess and against said anvil; actuating means for discharging said explosive means, an S-shaped trigger-pin having a first arm releasably engaged with said last means for retaining said means in an inoperative position, and a second arm extending transversely of said recess and longitudinally of the path of travel of said cutting member at substantially right angles to said first arm, said second arm being adapted to be moved by a mine cable as said cable moves through said recess whereby said trigger-pin is released from said actuating means, whereby said explosive means is discharged, said trigger-pin further comprising a third arm affixed to one end of said second arm and extending at substantially a right angle to said arm, said third arm extending into a hole formed in said shank portion, said third arm being provided with a threaded end portion located within the hole in said shank member, an internally threaded cap member extending into the hole in the shank member from the side of the shank opposite that from which the third arm enters said shank, said cap member being screwed onto the threaded end portion of said third arm and being provided with an enlarged head portion of a width larger than the maximum width of the hole in said shank member, thereby locking said trigger-pin against removal from the hole in said shank member.

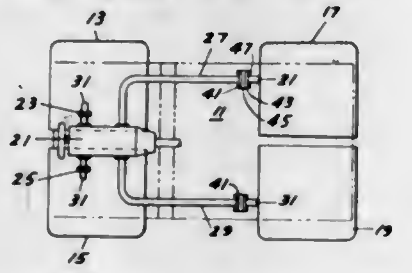


3,308,782
AMPHIBIOUS VEHICLE
Robert M. Dahl, 42 Diablo View Road,
Pleasant Hill, Calif. 94523
Filed Apr. 5, 1965, Ser. No. 445,489
6 Claims. (Cl. 115—1)



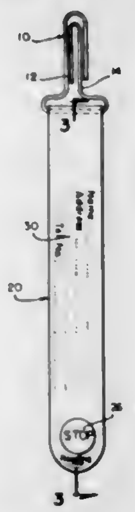
1. A device for flotation of house trailers and the like, comprising a pair of pontoons, a framework adapted for attachment to a house trailer, booms carried on said framework for freedom of swinging movement, said pontoons being attached to the distal ends of said booms for movement between an elevated position above the house trailer and a lowered position spaced laterally from and lower than the house trailer, the bottoms of said pontoons being lower than the bottoms of the wheels of the house trailer in said lowered position by a distance sufficient to elevate the bottoms of the house trailer wheels above the water when said pontoons are afloat, said booms being formed and proportioned for lifting and supporting the weight of the house trailer on said pontoons as the latter move toward said lowered position, ground engaging means on said pontoons each of which ground engaging means is formed to provide freedom of lateral movement of the pontoons relative to the ground while the house trailer is being lifted and supported thereon, and actuating means connected to said booms and formed for effecting said swinging movement of said pontoons between said elevated and lowered positions.

3,308,783
AMPHIBIOUS VEHICLE
Roger R. Gay, Bloomfield Hills, and Felix R. Winsen, Royal Oak, Mich., assignors to the United States of America as represented by the Secretary of the Army
Filed Oct. 20, 1965, Ser. No. 499,109
11 Claims. (Cl. 115—1)



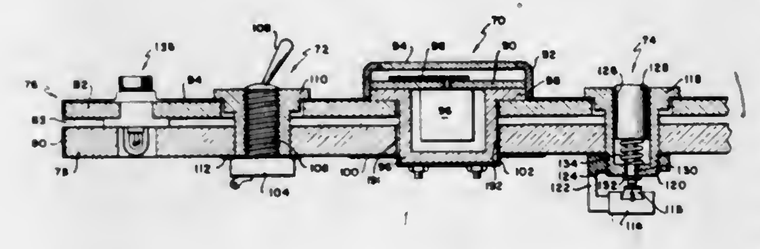
1. In a vehicle, means for making said vehicle amphibious comprising;
- an internal combustion engine,
- means for releasing combustion exhaust gases from said engine,
- a plurality of means attached to said vehicle which are substantially gas-tight only when said vehicle is afloat,
- and individual means attached to said exhaust gas releasing means for transferring exhaust gas to only one of said gas-tight means, said individual means being so attached to said exhaust gas releasing means as to preclude transfer of gas from one of said gas-tight means to any other of said gas-tight means.

3,308,784
BOOKMARK
Ruth S. Miller, 3945 Connecticut Ave. NW.,
Washington, D.C. 20008
Filed Oct. 22, 1965, Ser. No. 500,867
1 Claim. (Cl. 116—119)



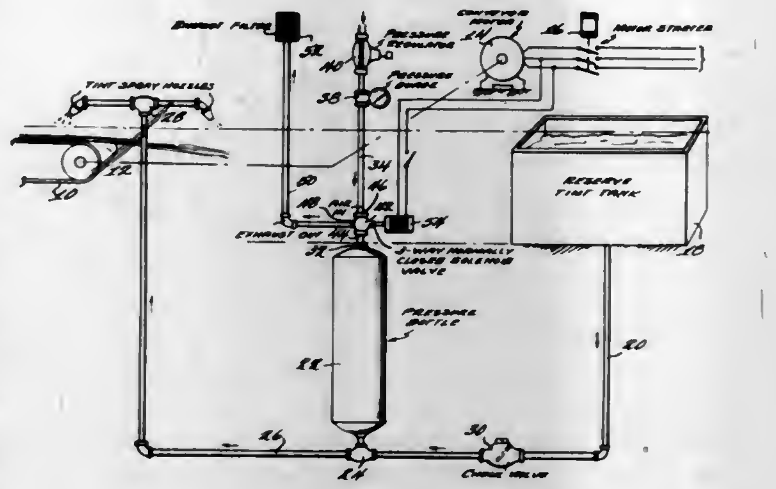
A bookmark comprising
- a metal clip consisting of a single piece of wire bent in a single plane to form inner and outer parallel U shaped members nested within one another, and a loop connecting said two U shaped members, said loop consisting of a loop-forming extension of one leg of the outer of said U shaped members and a loop-forming extension of one leg of the inner of said U shaped members, and a cross bar extending transversely between said two extensions and connecting said extensions to one another, said loops being disposed at opposite ends of said cross bar, said clip being adapted to be bent out of its initial single plane so as to straddle the cover or a few pages of a book between the inner of said U shaped members on one side of said cover or pages and the outer of said U shaped members on the opposite side of said cover or pages;
- a flexible laminated strip comprising a layer of cloth and a layer of paper laminated to one another in face to face relation, one end of said flexible strip being looped directly around said cross bar of said metal clip;
- means securing the loop forming end of said flexible strip to the back of said flexible strip;
- a metal disc located adjacent to but spaced from the other end of said flexible strip and secured to the front of said strip; and
- the outer surface of said disc being concave or provided with raised or embossed areas to facilitate lifting said bookmark by applying a finger to the upper surface of said disc to move it to another page.

3,308,785
PANEL MOUNTED METER AND ACCESSORY ILLUMINATION SYSTEM
George K. C. Hardesty, Box 156, Mayo, Md. 21106
Filed Jan. 30, 1963, Ser. No. 255,133
15 Claims. (Cl. 116—129)



1. An illumination system for illuminating a meter mounted upon a control or display housing, comprising:
- a light conducting panel formed of a transparent light transmitting material and having substantially parallel polished front and rear surfaces operative to specularly reflect light rays therebetween;
- a meter, said meter having a meter dial plate juxtaposed to the front surface of said light conducting panel;
- said meter dial plate including light diffusing scale means superposed forwardly of the most rearward mounting surface of said meter and having indicia on its obverse surface;
- light diffusing means in optical contact with a surface of said light conducting panel and substantially congruent with and in alignment with said meter dial plate;
- means for attaching said meter and light conducting panel to said control or display housing; and
- light producing means located within said light conducting panel and energizable to transmit light rays through said panel wherein said light diffusing means diffusely reflects some of these transmitted rays through said panel front surface and into said scale means for illumination thereof, thus facilitating observation of the indicia on the obverse side of said scale means.

3,308,786
FIBER LIQUID TREATMENT SYSTEM
Cecil S. Wise, Dallas, and Ralph H. Rhyne, Gastonia, N.C., assignors to Fiber Controls Corporation, Gastonia, N.C., a corporation of North Carolina
Filed July 8, 1963, Ser. No. 293,493
2 Claims. (Cl. 118—11)

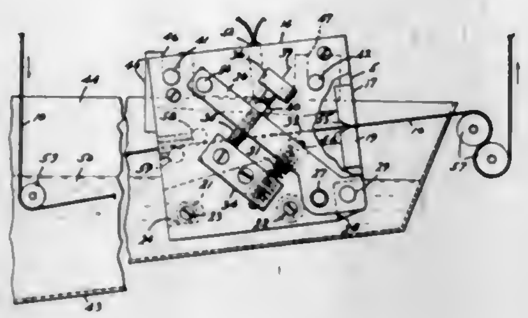


1. The combination comprising: a tank adapted to receive a supply of liquid to be sprayed; a pressure bottle positioned lower than the tank adapted to receive a smaller quantity of liquid from the tank; conduit means communicating the tank to the bottle; a spray head; a check valve interposed in the conduit means and arranged to allow fluid flow only in a direction proceeding from the tank to the bottle; conduit means communicating the bottle to the spray head; conduit means connecting a source of gas under pressure to said pressure bottle; valve means interposed in the last-mentioned conduit means to selectively communicate said gas pressure source to the bottle so as to supply liquid therefrom to the sprayer, the last-mentioned valve comprising a three port, two-position valve having a first position wherein the bottle is communicated to the atmosphere and excluded from communication with the source of gas pressure so that fluid flows from the tank into the bottle displacing air from the bottle through the valve, and a second position wherein the bottle is communicated to the source of gas pressure and excluded from communication with the atmosphere so that the gas expels the liquid from the bottle and out through the sprayer; an article conveyor; an intermittently operating electric motor operatively connected to said conveyor for advancing said conveyor, valve operating means for said three port, two-position valve operatively connected in circuit with said motor to be energized when the motor operates and deenergized when the motor does not operate so that the sprayer will spray liquid as the conveyor advances due to operation of said electric motor and the liquid supply in the bottle will be replenished when the conveyor is at rest as said electric motor is inoperative.

3,308,787
COATING CONTROL DEVICE
Henry J. McDermott, Collingdale, Pa., assignor, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 22, 1963, Ser. No. 296,847
3 Claims. (Cl. 118—125)

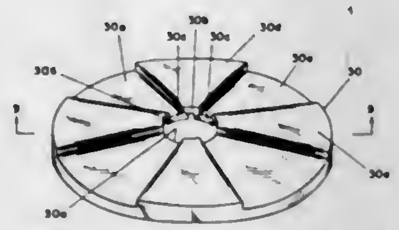
1. A device for removing excess hot coating from a freshly coated strap, said device comprising a pair of side plates having parallel planar inner faces spaced apart a distance slightly greater than the width of the strap, a first wiper member fixed to and between said side plates, said wiper member having a wiper head with ends abutting the inner faces of said side plates, a second wiper member articulated between said side plates for

movement toward and away from said first wiper member, said second wiper member fitting slidably between the inner faces of said side plates, said side plates and wiper members providing a substantially rectangular slot therebetween through which an excessively coated strap may be drawn for controlled removal of excess coating, a lever pivotally mounted on the outside of one of said side plates, means extending through the said one of said side plates and connecting said lever to the second wiper member, resilient means urging said lever in a direction to move said second wiper member toward said first wiper member, and adjustable means for limiting the movement of said second wiper member toward said first wiper member.



3,308,788
TEAT CUP ASSEMBLY

Daniel O. Noorlander, Madison, Wis., assignor to Bel-Mar Manufacturing Corporation, McFarland, Wis., a corporation of Wisconsin
Filed Sept. 23, 1965, Ser. No. 489,667
3 Claims. (Cl. 119—14.52)

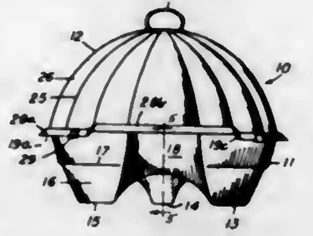


3. An improvement in a teat cup assembly having a substantially rigid shell having a port adapted to be connected to the pulsating vacuum line of a milking machine, a resilient liner positioned in said shell for receiving the teat of a cow in the upper portion thereof and being adapted to have its lower end connected to the vacuum milk line of said milking machine, said improvement comprising:

(a) a resilient disk adapted to be positioned in the top portion of said shell,
(b) said disk having a substantially centrally located aperture defined by a continuous edge having alternating upper and lower portions for receiving the teat of a cow,
(c) said upper edge portions engaging the wall of said teat to prevent said teat cup assembly from dropping off of said teat,
(d) said disk having a plurality of lower channel sections formed in the top of said disk between said upper edge portions and extending outwardly from the lower edge portions of said central aperture, and
(e) said teat engaging upper edge portions maintaining said lower edge portions from the teat wall for admitting air through said lower channel sections into the top of said liner at the end point of milking.

3,308,789
MINIATURE HOUSING FOR PETS AND THE LIKE

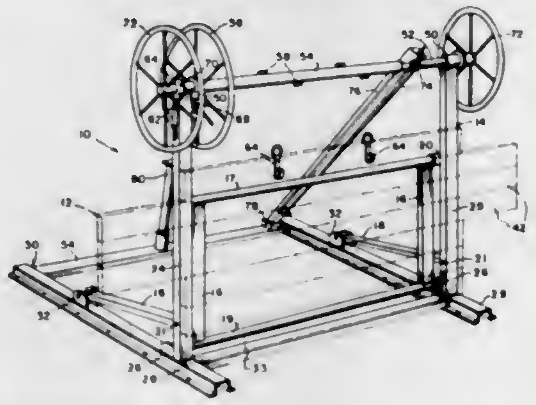
James L. Artig, White Bear Lake, Minn., assignor to Artig Products, Inc., a corporation of Minnesota
Filed June 11, 1965, Ser. No. 463,291
17 Claims. (Cl. 119—19)



3. A building structure comprising a lower member having a hollow bottom open at its top and having a side wall and spaced apart ground engaging leg means, said side wall having an inwardly recessed portion forming an opening extending generally vertically and providing a passage for ingress and egress, and an inverted cup-shaped upper member that is hollow and open at its bottom received and supported by the lower member and having a portion extending above and over said inwardly recessed wall portion of the lower member thereby providing a cover over the same.

3,308,790
LIVESTOCK TIPPING TABLE

Albert L. Crowson, Baker, Oreg., assignor to Commercial Welding Co., Inc., Baker, Oreg., a corporation of Oregon
Filed Sept. 29, 1965, Ser. No. 491,170
5 Claims. (Cl. 119—103)



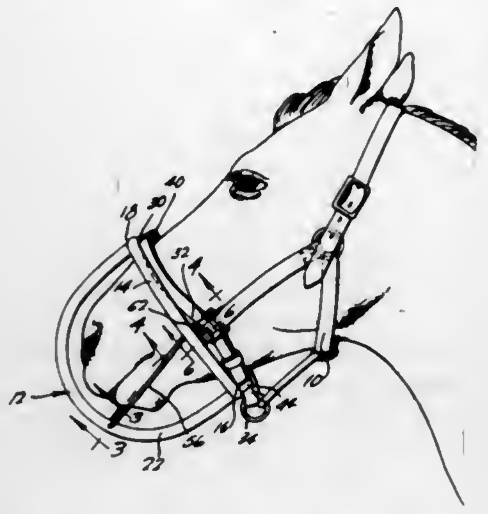
3. In combination,
a base,
a table,
means mounting the table pivotally on the base,
an elongated pivot frame secured pivotally to the base and extending past one edge of the table,
capstan means mounted on said edge of the table, manually operable means connected to the capstan means and carried by the table for rotating the capstan means,
and a cable extending around the capstan means and secured at opposite ends thereof to opposite ends of the pivot frame for moving said edge of the table along the pivot frame to swing the table relative to the base when the capstan means is turned.

3,308,791
ANTI-CRIBBING MASK FOR HORSES

Janet M. d'Elia, 401 Sherbrook Drive, Silver Spring, Md. 20904
Filed Oct. 20, 1965, Ser. No. 498,307
4 Claims. (Cl. 119—129)

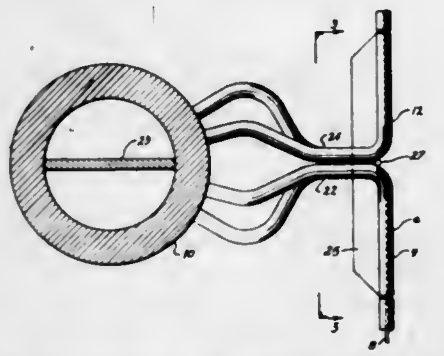
1. An anti-cribbing mask comprising an oval of tubular plastic material having generally quadrant zones, the mask having means adapted to be attached to a halter for a

horse, said oval adapted to fit laterally over the nostrils and mouth of a horse, a semicircular piece of tubular plastic material terminating at its ends at an upper and a lower point of said oval, and proximate to the means for attachment to said halter, said semicircular tubular plastic material adapted to extend peripherally of the nostrils and mouth of the horse without engagement thereto, and a substantially U-shaped structural member for supporting the intermediate part of the semicircular tubular plastic material in rigid relation with respect to similar intermediate points of the oval tubular plastic material and threadedly adjustably secured thereto, said arrangement being adapted for preventing cribbing by animals.



3,308,792
FLUID HEATER SUPPORT

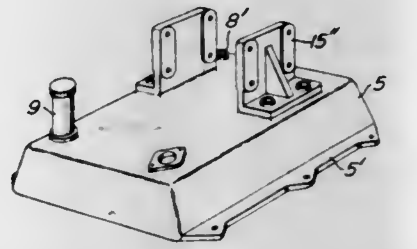
Carl W. Lawton, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Aug. 26, 1965, Ser. No. 482,717
4 Claims. (Cl. 122—510)



1. In a top supported fluid heater having a furnace and vertical tubes lining the walls of said furnace, a web intermediate adjacent tubes and welded to the adjacent tubes, a mixing header system receiving fluid from the tubes lining the lower portion of said furnace walls and discharging fluid to the tubes lining the upper portion of said furnace walls, an apparatus for supporting the lower portion of the furnace walls from the upper portion of the furnace walls comprising: the lower end of the tubes forming the upper portion of the furnace walls bent outwardly from the furnace at least 90°; the upper portion of the tubes lining the lower portion of the walls bent outwardly from the furnace at least 90°, with the tubes of the upper and lower portions of the furnace being in line with each other; a flat bar located intermediate adjacent tubes throughout the area of the 90° bends and extending upwardly and downwardly through a portion of the straights of the furnace wall tubes; said flat bar having a depth in a direction perpendicular to the furnace wall substantially greater than its width parallel to the furnace wall, and the furnace side edge of said bar being generally flush with the welded web connecting adjacent tubes at either end of the flat bar and forming a portion of the furnace side of the wall, said flat bar being welded to the welded web at each end of the flat bar; said flat bar being welded to the adjacent tubes throughout its entire length and the in line tubes of the upper and lower furnace portions being welded together at the 90° bend to form a gas-tight seal.

3,308,793
ROTARY PISTON ENGINES

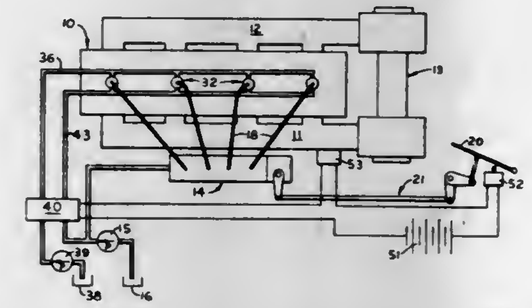
Ryusuke Ito, Amagasaki-shi, Japan, assignor to Yanmar Diesel Engine Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Dec. 2, 1964, Ser. No. 415,241
Claims priority, application Japan, Dec. 6, 1963, 38/91,170
1 Claim. (Cl. 123—8)



In combination with a rotary piston engine of the type including a casing having an inner peripheral wall profiled approximately epitrochoidal and a piston mounted in said casing and having apices held in sliding contact with said epitrochoidal inner wall and a pair of spaced parallel mounting surfaces on said casing, a lubricating oil sump base having feet to be secured to a mounting surface, said lubricating sump base having thereon a pair of vertical parallel flanges adapted to be secured to said mounting surfaces formed on the casing, and means connecting said sump to an engine lubricating circuit.

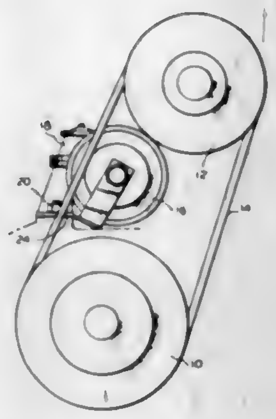
3,308,794
ENGINE FUEL SYSTEM

John M. Bailey, East Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 21, 1964, Ser. No. 419,986
4 Claims. (Cl. 123—30)



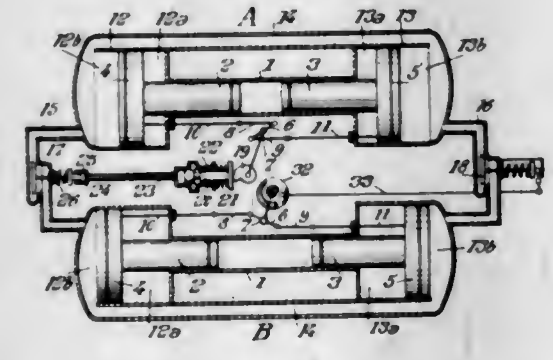
1. A fuel system for a multi-cylinder engine having pump means for a primary fuel, a conduit from the pump means to each cylinder, a source of secondary fuel under pressure lower than pressure delivered by said pump means, passage means communicating secondary fuel from the source to each of said conduits, and check valve means in each said passage means to admit secondary fuel to the conduits only at spaced intervals of low pressure of primary fuel in the conduits.

3,308,795
CUT-OFF DEVICE FOR AUTOMOBILE ENGINE
Gene H. Amsbury, 503 S. Dawson St.,
Raleigh, N.C. 27601
Filed June 6, 1966, Ser. No. 555,488
5 Claims. (Cl. 123—41.15)



1. An ignition cut-off device comprising a resiliently mounted rotatable pulley supportably mounted from a portion of an automotive engine, said engine having an ignition system including at least a conductor, said conductor having a terminal contact spatially related to the rotatable pulley, and potentially engageable therewith upon displacement of the pulley from its stressed or tensioned position, said pulley being normally in engagement with a belt driven under tension by said engine and being held under displacement against the characteristic of said resilient mounting by said tension, said terminal contact forming a short circuit to ground through said pulley when the belt has lost its tension imposed upon said pulley due to breakage of the belt or slipping off the pulleys, in which case the pulley comes into contact with said terminal contact thereby forming said short circuit.

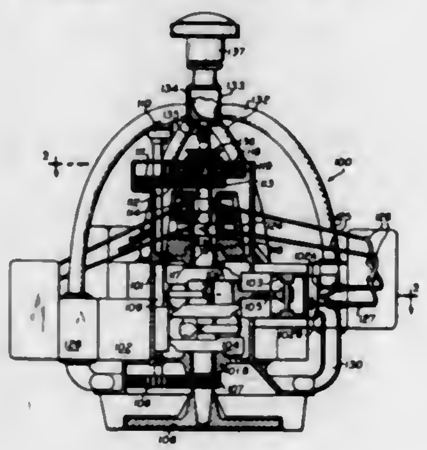
3,308,796
INSTALLATION COMPRISING TWO OR MORE FREE PISTON ENGINES
Jean Baptiste Guy and Auguste Moiroux, Lyon, and Edmond Salel, Meyzieu, France, assignors to Societe d'Etudes et de Participations, Eau, Gaz, Electricite, Energie, S.A., Geneva, Switzerland
Filed Mar. 22, 1965, Ser. No. 441,452
Claims priority, application France, Apr. 1, 1964,
969,427
11 Claims. (Cl. 123—46)



1. An installation comprising in combination a first and a second free piston engines, each of said free piston engines comprising a motor cylinder, a motor piston reciprocating in said motor cylinder, a compressor cylinder, a compressor piston, rigid with said motor piston and forming therewith a piston assembly, reciprocating in said compressor cylinder, a pneumatic accumulator comprising an air cushion for storing energy during the outwards stroke of said piston assembly and restoring energy to said piston assembly for the inwards stroke thereof,

means for controlling the difference of phase between said two free piston engines at a predetermined value comprising communication means connecting the cushions of said first and second free piston engines, valve means in said communications means, actuator means operative, on the one hand, by the piston assembly of the first free piston engine for opening said valve means once per cycle of operation of said first free piston engine and, on the other hand, by the piston assembly of said second free piston engine for opening said valve means once per cycle of operation of said second free piston engine, said actuator means being adapted to permit the opening of said valve means for periods of time the lengths and positions of which are fixed in relation to said predetermined value of the difference of phase between the said two free piston engines to enable the quantities of air transferred from the cushion of one of the free piston engines to the cushion of the other free piston engine to equal the quantities of air transferred in the opposite direction, during each cycle of operation of said free piston engines, when the latter operate with the predetermined difference of phase.

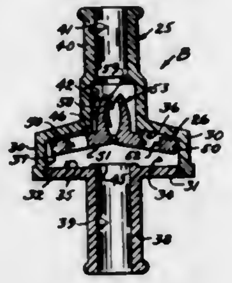
3,308,797
INTERNAL COMBUSTION ENGINE
Placido Leandro Buyatti, Vincente Lopez, Buenos Aires, Argentina, assignor to Sociedad Civil de Estudio e Investigaciones del Desarrollo y Progreso del Automotor y Mandatos B.M.B., Buenos Aires, Argentina, a corporation of Argentina
Filed Apr. 6, 1964, Ser. No. 357,421
4 Claims. (Cl. 123—90)



1. An internal combustion engine for automatically obtaining substantially constant torque over a relatively wide range of engine speeds comprising:

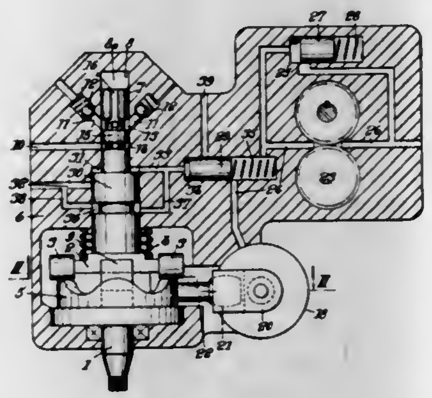
(a) a plurality of cylinders,
(b) a piston head reciprocally mounted in each of said cylinders,
(c) a crank shaft,
(d) a connecting rod for connecting each of said piston heads to said crank shaft,
(e) means defining an intake port and an exhaust port formed in each of said cylinders,
(f) a valve for individually valving the respective intake and exhaust ports of each cylinder,
(g) distributor means including a distributor shaft,
(h) said distributor shaft connected in driving relation with said crank shaft whereby said distributor shaft is driven in a direction opposite to that of the crank shaft,
(i) means for sequencing the operation of the valve of the respective cylinders for obtaining substantially constant torque over a range of variable engine speeds,
(j) said latter means including a cam shaft,
(k) split cam means coupled to said cam shaft for relative movement therebetween, each of said split cam means having a fuel admission cam segment and an exhaust cam segment,
(l) a valve actuator operatively associated with said segments for actuating said valves,
(m) means for varying the relative movement between said two segments of split cam means in proportion to engine speed whereby the timing of the opening and closing of the valves results in a substantially constant torque over a wide range of engine speeds, said means including,
  a counter weight pivotally connected to each of said split cam means,
  means for hingedly connecting adjacent end portions of said counter weights,
  means coupling said weights to rotate with said cam shaft,
  and a resilient means interconnecting the other end of said counter weights,
  said weights cooperating to vary the spacing time of the respective valves in proportion to the centrifugal force produced by said rotating weights.

3,308,798
METERING VALVE FOR CRANKCASE VENTILATION SYSTEMS
Kenneth M. Snider, 227 Walter Ave.,
Mansfield, Ohio 44903
Filed May 5, 1965, Ser. No. 453,340
7 Claims. (Cl. 123—119)



1. In a metering valve, the combination of a valve case including a chamber having an intake face, an outlet face opposite said intake face, and a side wall portion at the outer periphery of and extending between said intake face and said outlet face, an intake conduit coupling having a port opening into said chamber at the intake face thereof, an outlet conduit coupling having a port opening into said chamber at the outlet face thereof, and a valve seat in said chamber at each said port; and a diaphragm mounted in said chamber for substantially free reciprocable movement between said intake and said outlet faces of said chamber according to flow conditions through said metering valve, said diaphragm having a disc-like body portion extending substantially transversely across said chamber with the outer periphery thereof adjacent said side wall portion of said chamber, said disc-like body portion including a central body portion juxtaposed for sealing abutment with each said valve seat of said chamber for sealing of said port of said intake conduit coupling at one extreme of reciprocable movement of said diaphragm and sealing of said port of said outlet conduit coupling at the other extreme of reciprocable movement of said diaphragm, and a plurality of passageways about said central body portion opening from said intake face of said chamber to said outlet face thereof and permitting relatively free flow through said metering valve at intermediate ranges of reciprocable movement of said diaphragm, said passageways being closed to flow therethrough by abutment of said diaphragm with said outlet face and said valve seat of said port opening thereinto when said diaphragm is at its extreme position toward said outlet face, said central body portion of said diaphragm including a normally closed valve and said normally closed valve including means opening to permit substantially restricted flow of material through said metering valve under flow conditions which cause said central body portion of said diaphragm to abut said valve seat of said chamber at said port of said outlet conduit coupling.

3,308,799
DEVICES FOR VARYING THE BEGINNING OF DELIVERY IN FUEL INJECTION PUMPS
Pierre Etienne Bessiere, Saint Nom-La-Breteche, France, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany, a German society
Filed Nov. 5, 1964, Ser. No. 409,054
Claims priority, application France, Nov. 14, 1963,
953,761
6 Claims. (Cl. 123—139)

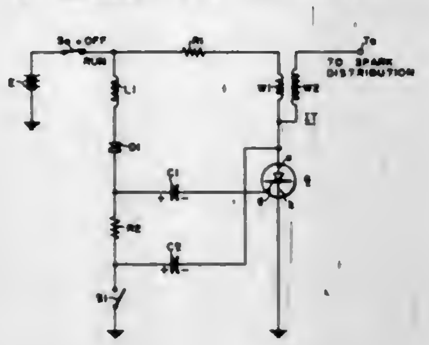


1. A fuel injection pump system for feeding fuel to an internal combustion engine, which comprises, in combination,
a main cylinder having an axis of symmetry,
a main piston slidable in said cylinder in the direction of said axis,
a main fuel feed conduit opening into said cylinder,
at least one delivery conduit leading out from said cylinder,
two elements operatively connected with said piston and said cylinder, respectively, adapted to cooperate together for producing reciprocating axial displacements of said piston in said cylinder,
said elements being angularly movable with respect to each other about said axis to adjust the beginning of fuel injection on every piston stroke,
a hydraulic jack, including a jack cylinder and a jack piston movable in said jack cylinder to form therewith a variable volume chamber, for controlling the angular position of said two elements with respect to each other,
means, responsive to a pressure variable in response to variations of the speed of said internal combustion engine, for feeding liquid to said jack cylinder, said liquid feeding means including a pipe opening into said jack cylinder and forming the only communication between said variable volume chamber and the outside,
an auxiliary pump operatively connected with said main piston and said main cylinder for working in synchronism with the relative axial displacements of said main piston and said main cylinder,
means operative by said auxiliary pump for closing said pipe during the delivery strokes of said piston,
a discharge conduit,
and means operative by said auxiliary pump for opening said discharge conduit at the end of every delivery stroke of said auxiliary pump.

3,308,800

IGNITION CIRCUITS

John W. Motto, Jr., Greensburg, and Warren C. Fry, Connellsville, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 23, 1964, Ser. No. 384,656
6 Claims. (Cl. 123—148)

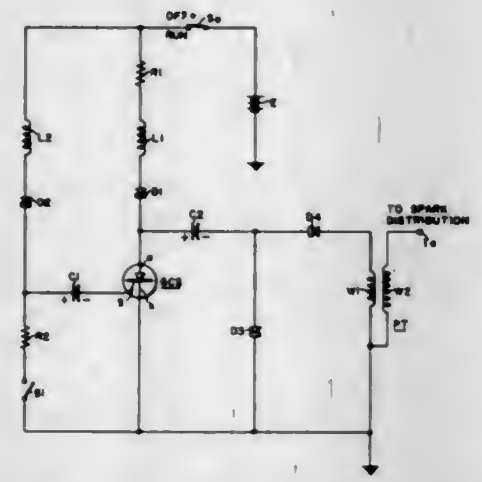


1. An ignition circuit comprising, a gate control switch including a plurality of electrodes, an ignition transformer including a primary winding operatively connected in sereis with said gate controlled switch and a secondary output winding, a first capacitive device operatively connected to one electrode of said gate controlled switch, a second capacitive device operatively connected to another electrode of said gate controlled switch, a charging circuit operatively connected to said first and second capacitive devices to charge said first and second capacitive devices, a set of ignition points operatively connected to said first and second capacitive devices, upon closing said set of ignition points said first and second capacitive devices discharging therethrough to render said gate controlled switch non-conductive, with a voltage being induced in said primary winding of said ignition transformer by the gate controlled switch being rendered non-conductive, an output spark voltage being provided in said secondary output winding in response to the induced voltage in said primary winding, upon opening said set of ignition points a voltage being induced in said charging circuit to recharge said first and second capacitive devices.

3,308,801

CAPACITIVE DISCHARGE IGNITION SYSTEM

John W. Motto, Jr., Greensburg, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 23, 1964, Ser. No. 384,676
2 Claims. (Cl. 123—148)

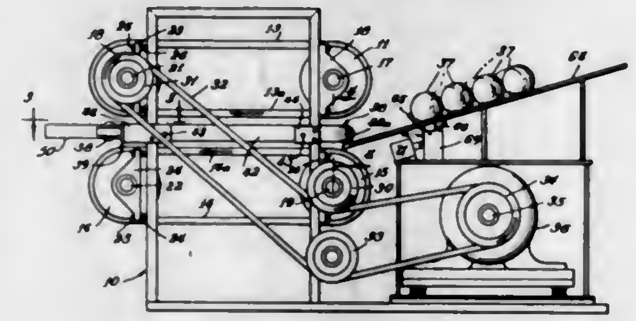


1. An ignition system comprising: a gate controlled switch having an anode-cathode circuit and a gate circuit; a first capacitor device connected in the anode-cathode circuit of said gate controlled switch; a first charging circuit connected in the anode-cathode circuit of said gate controlled switch; a second capacitor device connected in the gate circuit of said gate controlled switch; a second charging circuit including an inductive device connected to said second capacitive device for charging said second capacitive device; switch means connected to said second capacitive device, said second capacitive device being discharged by the closing of said switch means to render said gate controlled switch non-conductive and induce a first voltage in said first charging circuit, said first capacitive device being charged to said first voltage; conversion means including a primary coil connected to said first capacitive device and a secondary coil; upon opening said switch means a second voltage being induced in said inductive device of said second charging circuit and being applied to the gate electrode of said gate controlled switch to render said gate controlled switch conductive, with said first capacitive device being discharged through said gate controlled switch to apply said first voltage to the primary coil of said conversion means and induce an output spark voltage in said secondary coil.

3,308,802

POWER DRIVEN BASEBALL PITCHING MACHINE WITH BATTER SIGNALLING MEANS

Earl Applegate, 750 Harvard Terrace,
Frankfort, Ind. 60423
Filed Apr. 20, 1964, Ser. No. 360,932
3 Claims. (Cl. 124—1)

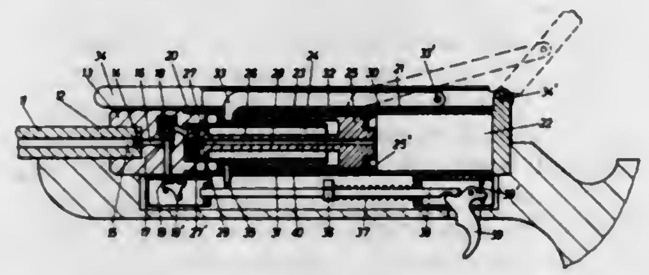


2. A ball pitching machine comprising: power-driven means for pitching balls fed thereto and solenoid operated ball release means for feeding balls one at a time to said power-driven means; said solenoid operated ball release releasing the ball upon deenergization of the solenoid; and signaling means operatively connected to the ball release energized upon energization of the ball release solenoid for signaling the batter to get "set."

3,308,803

PROJECTILE PROPELLING DEVICE OPERATED BY COMPRESSED AIR

Fritz Walther, Ulm (Danube), Germany, assignor to Carl Walther-Jagd- u. Sportwaffen-Fabrik, Ulm (Danube), Germany
Filed Mar. 10, 1964, Ser. No. 350,718
Claims priority, application Germany, Mar. 11, 1963, W 34,070
6 Claims. (Cl. 124—13)

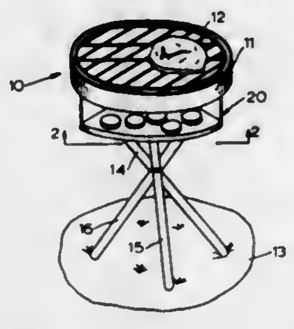


1. A compressed air gun having a barrel, and air compressing means at the rear end of the barrel for supplying compressed air thereto to drive a pellet through the barrel; said air compressing means comprising a pair of cylinders, pistons in the cylinders interconnected by a bored rigid rod to move said pistons in unison in the same directions in their cylinders, said cylinders including a smaller cylinder and a larger cylinder, said smaller cylinder being adjacent said barrel, a base in said rod forming a first passage leading from the larger cylinder to the smaller cylinder, a second passage leading from said smaller cylinder to said barrel, a one-way valve in said first passage responsive to a predetermined pressure in said larger cylinder for opening said first passage, and a normally closed valve in said second passage selectively operable to open said second passage to release air compressed in said smaller cylinder into said barrel.

3,308,804

BREAD WARMER ATTACHMENT FOR OUTDOOR GRILLS

Wade C. Euliss, Rte. 1, Box 120,
Burlington, N.C. 27215
Filed Oct. 22, 1965, Ser. No. 500,758
6 Claims. (Cl. 126—25)



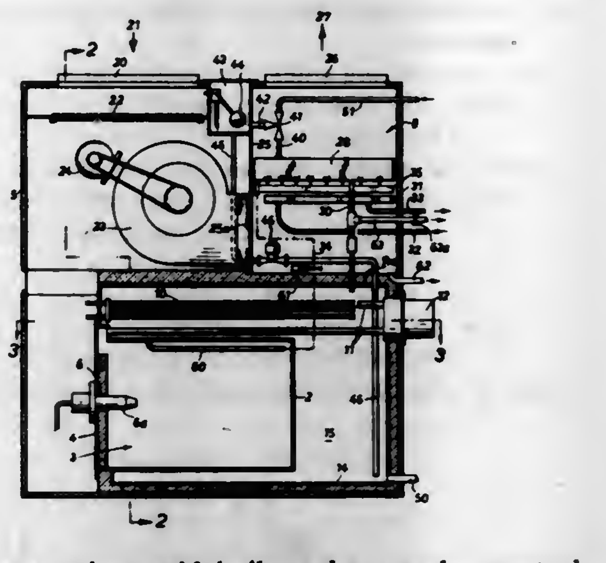
1. In combination with an outdoor barbeque grill which includes a charcoal receptacle having an exposed and substantially planar lower surface, an apparatus for warming bread and the like comprising a substantially trapezoidal shaped horizontal surface having a major and minor base edges and a pair of convergingly oriented side edges; first and second vertically positioned, upwardly extending side walls integrally connected to respective convergingly oriented side edges of said horizontal surface, said vertical walls each having a laterally and outwardly directed flange being an integral extension thereof; and means for connecting said flanges to said exposed lower surface of said charcoal receptacle whereby said horizontal surface is positioned to receive the radiant energy given off by the burning charcoal.

3,308,805

HEATING AND AIR CONDITIONING APPARATUS

Hans Stöckli, 3 Muhlehalde, Dietikon, Zurich, Switzerland
Filed June 3, 1963, Ser. No. 285,035
Claims priority, application Germany, June 8, 1962, St 19,342
1 Claim. (Cl. 126—113)

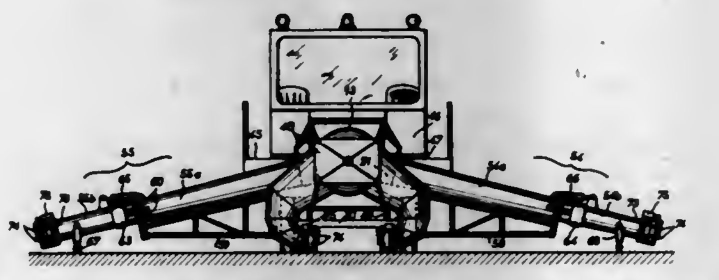
Air conditioning apparatus comprising a combustion chamber, a burner mounted in said combustion chamber, a combustion gas collector, a set of tubes connecting said combustion chamber to said combustion gas collector, a vessel to confine a fluid to be heated surrounding at least part of said combustion chamber and said set of tubes, an air ducting means, a blower within said air ducting means for producing a unidirectional flow of air through said ducting means, a heat exchanger mounted in said air ducting means having a fluid inlet and outlet, fluid conduit means connecting said vessel to said heat exchanger fluid inlet and said heat exchanger fluid outlet to said vessel, means for circulating fluid from said vessel through said fluid conduit means and heat exchanger and back into said vessel, a boiler tube in said combustion chamber, a nozzle for discharging water or steam into said air ducting means, means for introducing water at one end into said boiler tube, a valve controlling said boiler tube, and a conduit connecting the opposite end of said boiler tube to said nozzle.



3,308,806

DEVICE FOR CLEARING WIDE SNOW- OR ICE-COVERED RUNWAYS, ROADS OR THE LIKE

Jean H. Bertin, Neuilly-sur-Seine, and Ernest Dubois, Fontenay-aux-Roses, France, assignors to Bertin & Cie, Paris, France, a company of France
Filed Oct. 20, 1965, Ser. No. 498,453
Claims priority, application France, Jan. 27, 1965, 3,477
7 Claims. (Cl. 126—271.2)



1. An apparatus for cleaning wide tracks covered in snow or glazed frost and comprising: a carrier vehicle, a turbo-jet arranged on said vehicle with its exhaust facing the vehicle front, the axis of said turbo-jet being substantially horizontal, a chamber connected to the exhaust of said turbo-jet for collecting the hot gases issuing therefrom, two curved discharge ducts connected to said chamber, the transverse discharge apertures of such ducts being near the ground and slightly staggered in the longitudinal direction which is the direction of vehicle movement, and at least one pair of straight auxiliary discharge ducts connected to said chamber and disposed in a substantially transverse direction and slightly behind the curved ducts.

3,308,807

COLLAPSIBLE OVEN FOR CAMP STOVE

Ellwood E. Little and Wilbur J. Townsend, Wichita, Kans., assignors to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Aug. 6, 1965, Ser. No. 477,697
8 Claims. (Cl. 126—275)

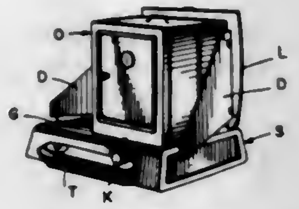
1. In a collapsible oven for a camp stove having stable erect and collapsed positions.

said oven being of rectilinear configuration and having an interior space enclosed by front, back, side, top and bottom panels,

the construction comprising:

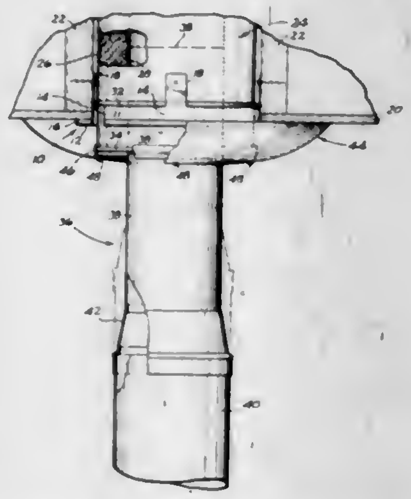
storage compartment-providing flange means extending

inwardly from the perimeters of said front and back panels,
said flange means including top, bottom, and side sections forming extensions, respectively, of said top, bottom, and side panels when said oven is in its erect position,
the inner facing sides of the storage compartments provided by said flange means being open when said oven is erect,
said side panels including vertical sections hingedly connected at their adjacent inner edge portions to fold inwardly so that the sections of each side panel are superposed when said oven is collapsed,
the outer vertical edge portions of said side panel sections being hingedly connected to the respective inner edge portions of said flange means side sections,
one of the outer edge portions of said top panel being hingedly connected to the inner edge portion of the top section of one of said flange means,
one of the outer edge portions of said bottom panel being hingedly connected to the inner edge portion of the bottom section of the other of said flange means,
each of said top and bottom panels being foldable inwardly when said oven is collapsed to form a closure respectively for one of the said facing sides of said storage compartments, and
a flame and heat baffle mounted on the top of said bottom panel and projecting upwardly therefrom,
said baffle being dimensioned for storage in the one of said storage compartments to which said bottom panel provides said closure,
said baffle being movable into a storage compartment when said oven is collapsed while remaining attached to said bottom panel.



3,308,808
TELESCOPING CHIMNEY FLUE ASSEMBLY

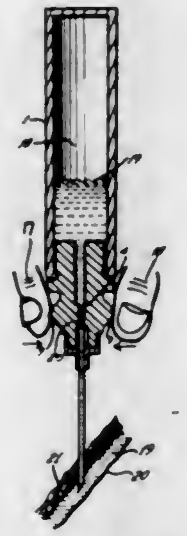
Dannie O. Malafouris, 7945 NE. Alberta St., Portland, Oreg. 97218
Filed May 28, 1965, Ser. No. 459,662
6 Claims. (Cl. 126—314)



1. A telescoping chimney flue assembly comprising
(a) a support plate having a central opening,
(b) means for fastening the support plate to a structural member,
(c) a starter flue pipe section insertable through the opening in the support plate substantially normal to the plane thereof, the flue pipe section having a bore of substantially uniform cross section,
(d) interengaging means on the flue pipe section and the support plate for supporting the flue pipe section releasably on the support plate, and
(e) a length of stove pipe dimensioned for slidable telescoping adjustable insertion in the bore of the flue pipe section.

3,308,809
BLOOD WITHDRAWAL DEVICE AND DISPENSER

Milton J. Cohen, 7111 Connecticut Ave., Chevy Chase, Md. 20015
Filed July 15, 1963, Ser. No. 294,885
3 Claims. (Cl. 128—2)



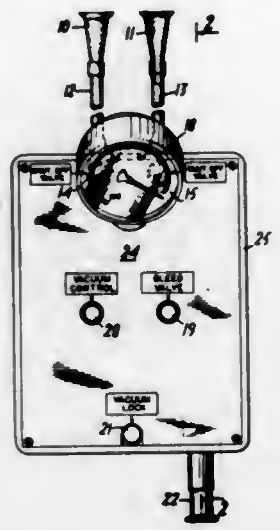
1. A device of the type described comprising a vial having an open mouth, a closure of resilient material dimensioned to be received in fitting relationship in the open mouth of the vial with a portion of the closure extending outwardly from the end of the vial, axially aligned bores extending inwardly from opposite ends of the closure and terminating in spaced relationship one from the other in an intermediate portion of the closure located outwardly from the end of the vial, an elongate crosswise slit extending through the intermediate portion of the vial interconnecting the axially aligned bores one with the other, and portions extending outwardly from the closure in crosswise alignment with the slit whereby the slit opens to form a passage communicating the axially aligned bores in the closure upon deformation of the intermediate portion of the closure responsive to application of lateral pressure on the outwardly extending portions and whereby the slit automatically returns to closed position for sealing the space between said axially aligned bores in response to the release of said pressure and a hollow needle received in fitting relationship within the bore extending inwardly from the outer end of the closure.

3,308,810
DEVICE FOR APPLYING SUCTION TO THE EYE AND METHOD FOR TREATING THE EYE BY USING SUCH DEVICE

Miles A. Galin, New York, N.Y., assignor to Theratronic Corp of America, New York, N.Y., a corporation of New York
Filed Feb. 17, 1965, Ser. No. 436,719
12 Claims. (Cl. 128—2)

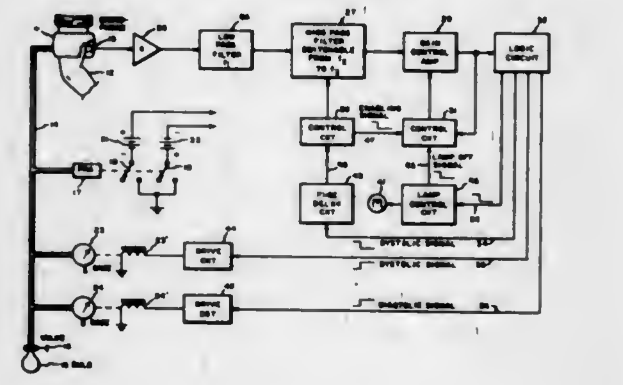
1. A device for optical use comprising:
a suction cup compatible with the limbal area of the eye,
a suction tube adapted to be in free communication with said suction cup,

a first valve freely communicating with and selectively interrupting said suction tube,
a vacuum tube adapted to communicate with said suction tube and said valve,
a pressure gage in free communication with the vacuum tube,
a vacuum lock valve adapted to selectively terminate said vacuum tube,
a bleed valve adapted to be operatively interposed in said vacuum chamber between said vacuum lock valve and said first valve for the selective reduction of the vacuum therein, and
means for generating a partial vacuum operatively communicating with said vacuum lock valve and said vacuum chamber for the establishment of a vacuum therein,
whereby a vacuum may be generated and controlled in said vacuum tube by said vacuum generating means while said first valve is closed and at least part of said controlled vacuum may be transmitted through said suction tube to the eye by opening said first valve after said cup is placed against the eye.



3,308,811
SPHYGMOMETER

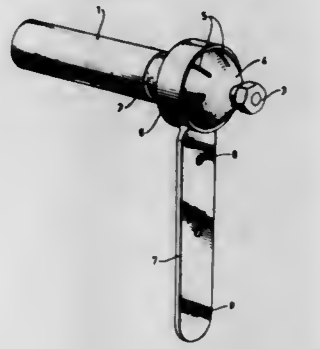
Frank N. Gillette and John W. Gray, Pleasantville, and Arvid W. Jacobson, Millwood, N.Y., assignors, by mesne assignments, to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 30, 1964, Ser. No. 355,610
10 Claims. (Cl. 128—2.05)



1. A sphygmometer, comprising:
a cuff for encircling a portion of the human body,
means for inflating said cuff to occlude an artery,
means for reducing the pressure in said cuff slowly,
a microphone for monitoring the sounds of arterial flow past said cuff and generating electrical signals in response thereto,
filter means receiving signals generated by said microphone for normally passing a first band of frequencies in the range of from thirty to one-hundred cycles per second and selectively actuable to pass a second band of frequencies in the range of from fifty to one-hundred cycles per second,
means responsive to the first occurrence of a signal passing through said filter means as the pressure in said cuff is reduced for recording the pressure then existing in said cuff and for actuating said filter to pass said second band of frequencies, and
means responsive to a subsequent interruption of the signal passing through said filter for recording the pressure then existing in said cuff.

3,308,812
DEVICE FOR OSTEOSYNTHESIS

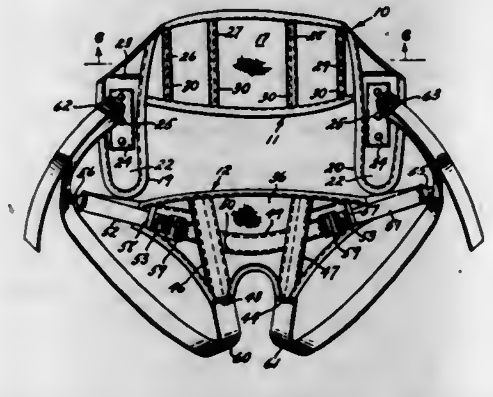
Åke Samuel Gidlund, Lokevagen 13, Djursholm, Sweden
Filed May 27, 1964, Ser. No. 370,428
1 Claim. (Cl. 128—92)



A device for osteosynthesis comprising a pin having a conical end portion terminating in a threaded end, a hollow ball fitted over the threaded end of said pin and having its internal surface engaged with the conical end portion thereof, said ball being provided with a plurality of spaced longitudinal slits to render it expansible, a socket ring tightly surrounding said ball and provided with a laterally extending supporting member and a clamping nut threadably engaged on the threaded end of said pin for securely clamping said ball against the conical end portion of said pin and simultaneously expanding said ball into locked engagement within said socket ring.

3,308,813
HERNIA BELT

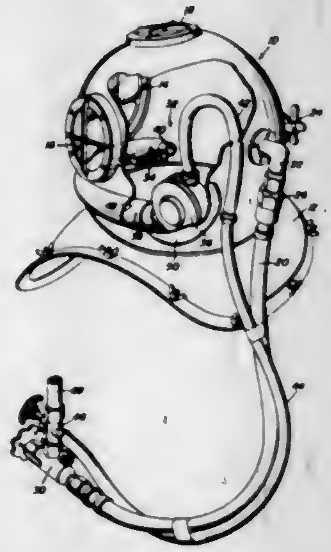
Lester H. Loeffel, West Haven, Conn., assignor to The Berger Brothers Company, New Haven, Conn.
Filed Apr. 30, 1965, Ser. No. 452,187
3 Claims. (Cl. 128—96)



1. Improved hernia belt construction, comprising: a rear panel element of elongated configuration and having first and second end portions, a front panel element of elongated configuration and having first and second strap means selectively interconnectable with the end portions of said rear panel element in one of several adjusted positions, said first and second strap means being mutually interconnected across a surface of said front panel

element, a pair of straps extending downwardly from said front panel element, and having adjustable means interconnecting said rear panel element thereto in the area of interconnection of said first and second strap means, and stiffening means disposed on said front panel element and extending from each of said downwardly extending straps to overlie the interconnection of said first and second strap means in the area of the inguinal canal of a wearer.

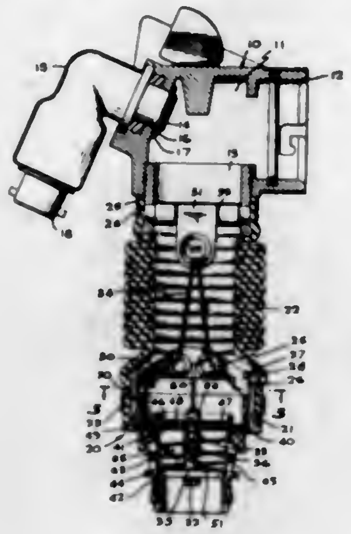
3,308,814
DIVING HELMET WITH AIR REGULATING MEANS
Hugh D. Wilson, Goleta, Calif., assignor to Union Carbide Corporation, a corporation of New York
Filed Oct. 30, 1963, Ser. No. 320,024
7 Claims. (Cl. 128—142)



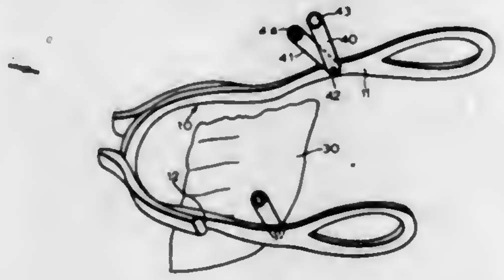
1. In a diving apparatus comprising:
a diving helmet;
a first gas hose communicating with the interior of the diving helmet;
an external source of pressurized gas communicating with the first gas hose to supply the interior of the diving helmet with the gas;
a mouthpiece fixed within the helmet for reception by the mouth of a diver;
a second gas hose communicating the mouthpiece to the external source of pressurized gas;
at least one demand type regulator associated with the second gas hose to reduce the pressure of the gas to the mouthpiece to a level commensurate with ease of diver breathing and which is actuable to supply gas to the mouthpiece only when the diver inhales thereon; and
means for exhausting the gas from the helmet after such gas has been at least partially consumed by the diver.

3,308,815
CONNECTOR REGULATOR FOR BREATHING MASK
Orland W. Wilcox and James A. Stapenhill, Sierra Madre, Calif., assignors to Sierra Engineering Company, Sierra Madre, Calif., a corporation of California
Filed Aug. 10, 1964, Ser. No. 388,615
4 Claims. (Cl. 128—142)

1. A releasable connector for installation between a relatively stationary oxygen supply and a crossover fitting interconnecting a breathing mask and a portable oxygen supply system comprising a first hose connecting means for connection to the crossover fitting, a supply line fitting having a second hose connecting means thereon and a flexible hose connected between said hose connecting means, a bracket in said first hose connecting means, a bail bracket in said second hose connecting means, locators substantially centrally disposed in said hose connecting means and a flexible connection attaching said locators to each other, a valve seat in said supply line fitting, a valve element seated on said seat, an actuator member for the valve element, and complementary axially operable guide members for said valve element located respectively on said bail bracket and said actuator, whereby to confine movement of said valve element to an axial direction for all angular positions of said hose connection means relative to each other.

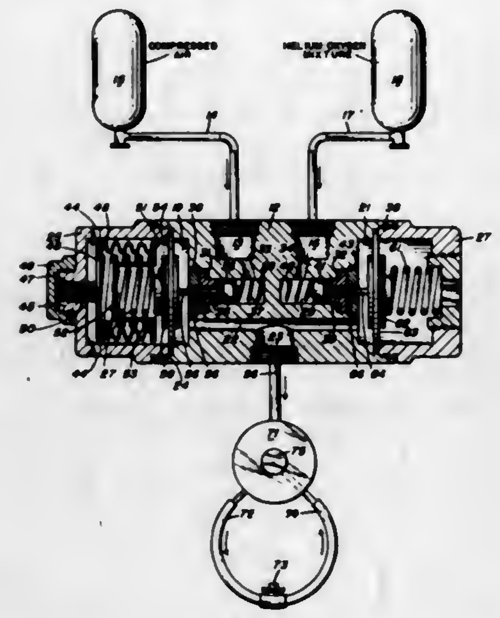


3,308,816
QUICK DONNING FRAME FOR RESPIRATOR MASKS AND THE LIKE
Burton P. Franklin, Danville, Va., and Paul W. Bless, Leaksville, N.C., assignors, by mesne assignments, to Dynamic Products Company, Durham, N.C., a partnership
Filed Aug. 7, 1964, Ser. No. 388,111
2 Claims. (Cl. 128—146.2)



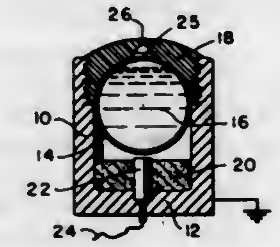
1. In a mask device, in combination, a respirator mask adapted for use before the wearer's face; a head frame comprising an integral U-shaped resilient lightweight body portion including opposed sides, a closed end connecting the sides, and a pair of opposed finger press members on said body portion adapted to provide means for spreading said sides to facilitate donning, said body portion being designed to encircle the face between points in front of each ear, said sides being spaced apart at their free ends a distance less than the wearer's head measured at said points, said free ends being formed as relatively flat expansive shapes adapted to engage substantially large areas of the face at said points such that when said sides are spread and said free ends placed over said points and said sides then relaxed, said frame will be clamped to the wearer's head sufficient to provide support for said mask; and means for adjustably mounting said mask comprising a pair of elastic bands each secured at one end to respective ones of said sides and having snap fastener means at the other end adapted to grasp said mask.

3,308,817
REDUCTION REGULATOR VALVE FOR SCUBA SYSTEM
Henry W. Seeler, 3142 Atherton Road,
Dayton, Ohio 45409
Filed Apr. 24, 1964, Ser. No. 362,537
10 Claims. (Cl. 128—147)



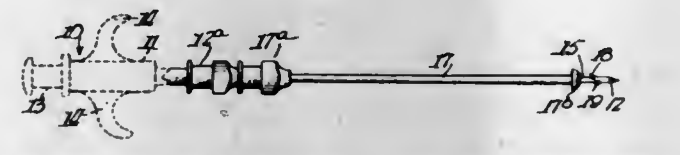
1. In an open circuit scuba diving demand breathing system for divers, said system having a tank of compressed air and a tank of a mixture of helium and oxygen and having a mouthpiece forced with respiratory valves, a regulator valve comprising:
a cylindrical housing having inlets connected to the separate tanks of air and the helium-oxygen mixture and an outlet connected to the mouthpiece, said housing being formed with two internally threaded ends;
means controlling the admission of air to said housing, said means being located within the housing adjacent one of the threaded ends to provide for removal;
means actuated by the pressure of the admitted air controlling the admission of helium-oxygen mixture to said housing, said means being located within the housing adjacent the other end of the housing to provide for removal;
means actuated by change of water pressure controlling the air admission means to decrease the air admission upon increase in static water pressure;
whereby at increasing depth the static water pressure throttles the admission of air and increasingly admits the helium-oxygen mixture until at a predetermined depth the air is shut off and only the helium-oxygen is admitted.

3,308,818
INJECTION CARTRIDGE
Eugene V. Rutkowski, 1010 Esplanade, Apt. 17,
Redondo Beach, Calif., 90277
Filed July 24, 1964, Ser. No. 385,092
5 Claims. (Cl. 128—173)



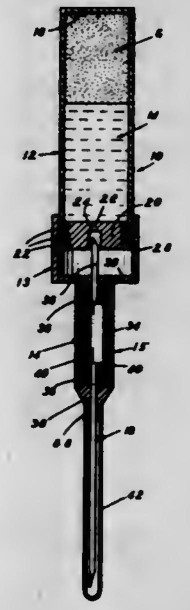
1. Apparatus for subcutaneous injections of liquid medicaments and the like, comprising;
(a) an outer container adapted to withstand high gas pressure,
(b) a hermetically sealed ductile inner container, containing the medicament,
(c) said inner container having a first portion of its wall supported by said outer container and a second portion adapted to deform into a retroversion contact with the first portion, without rupturing, to thereby reduce its volume to zero,
(d) said first portion of the inner container being unsupported by the outer container over a relatively small area to permit the inner container to rupture,
(e) a nozzle in the outer container communicating with said area through which the medicament may be discharged at a sufficiently high velocity to effect subcutaneous injection,
(f) a powder type propellant in said first container, the products of combustion of which are adapted to deform said inner container, and
(g) means for initiating combustion of said propellant.

3,308,819
ANESTHETIC DEVICE
Leon J. Arp, Ames, Iowa, assignor to Iowa State University Research Foundation, Inc., Ames, Iowa, a corporation of Iowa
Filed Dec. 9, 1963, Ser. No. 328,999
3 Claims. (Cl. 128—215)



1. In combination, a hypodermic syringe equipped with a pointed cannula for the delivery of anesthetic, a unitary flexible plastic tube ensleeved about said cannula, said tube having integral spur means positioned adjacent the end of said cannula effective to anchor said tube in position in cervical tissue when the cannula is removed from the tube.

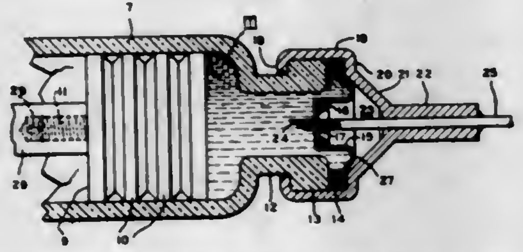
3,308,820
DISPOSABLE MEDICINAL SYRINGE
Raymond E. Hubbard, 3317 Mackin Road,
Flint, Mich. 48504
Filed Apr. 6, 1964, Ser. No. 357,587
3 Claims. (Cl. 128—216)



1. A syringe of the type described, comprising a sealed tubular vial to contain a charge of liquid medicament under sealed gas pressure, a cup-like slip cap having an open end in which said vial is slidably received, an end of said vial in said cap being covered by a penetrable wall member, said slip cap having a tubular needle co-

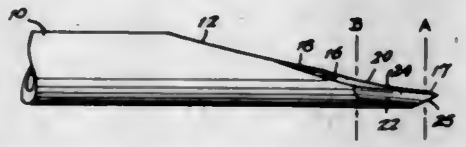
axially facing said wall member to penetrate the latter upon movement of said vial in said cap toward said needle, administration cannula means coaxial with and spaced axially from said slip cap, and a tubular aspiration unit between said cap and cannula means and in communication with the interior of both thereof, comprising a flexibly compressible aspiration sleeve engaging the slip cap and cannula means at its opposite axial ends to communicate the same with one another, and means to support the cannula means in fixed axial spacing relative to said slip cap.

3,308,821
DISPOSABLE HYPODERMIC SYRINGES
Walter A. Shields, Jamaica, N.Y.
(38—09 24th St., Long Island City, N.Y. 11101)
Filed Mar. 23, 1964, Ser. No. 353,666
3 Claims. (Cl. 128—218)



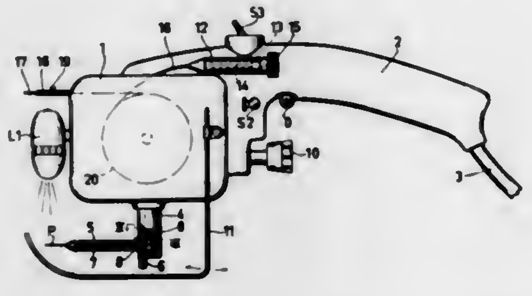
1. A disposable syringe comprising a vial open at both ends, a plunger slidable in liquid-tight contact with the inner surface of the vial and closing one end of the vial, a diaphragm of flexible and penetrable material and closing the end of the vial opposite the end closed by the plunger, a cap member securing the diaphragm in vial closing position and forming with said diaphragm a cavity, and a hypodermic needle having opposite penetrating ends and secured in the cap member with one penetrating end positioned in said cavity, the diaphragm comprising an annular gasket portion compressed between the end of the vial and the cap member, a flexible annular portion connected at the first circumferential edge thereof to the gasket portion, a stiff annular portion connected to the second circumferential edge of the flexible annular portion, and a thin penetrable portion connected to the stiff annular portion and closing the diaphragm, whereby the hypodermic needle is sealed from the contents of the vial and the movement of the plunger into the vial creating hydraulic pressure to forcibly flex the diaphragm flexible annular portion outwardly of the vial and forcibly move the thin penetrable portion against the penetrating end of the hypodermic needle and causing the needle to penetrate said thin penetrable portion of the diaphragm and the flow of the contents through the hypodermic needle.

3,308,822
HYPODERMIC NEEDLE
Vincent D. De Luca, Woodbury, Conn., assignor, by mesne assignments, to Loretta Fontano, Woodbury, Conn.
Filed Apr. 2, 1964, Ser. No. 356,845
4 Claims. (Cl. 128—221)



1. A hypodermic needle comprising a cannula having an axially extending lumen, said cannula having a pointed tip and including an inclined forward face providing an inclined forward open end to the lumen, a first pair of forwardly convergent bevel faces meeting said forward face at obtuse angles thereto to form rearwardly divergent edge lines and cutting across the open end of the lumen from intermediate points of its side edges to the center point of its forward end, said bevel faces intersecting each other along a central edge line coinciding with the vertical diametric plane of said cannula and extending forwardly from the forward end of the lumen at an outward angle thereto, and a second pair of forwardly convergent bevel faces intersecting said first pair of bevel faces at acute angles thereto to form rearwardly divergent upwardly inclined sharp cutting edges and intersecting each other along a central edge line coinciding with said vertical diametric plane and inclined rearwardly from said first central edge line to the outer cannula surface to form a sharp cutting edge.

3,308,823
APPARATUS FOR INOCULATION AGAINST SMALLPOX AND THE LIKE HAVING MEANS FOR VIBRATING AND HEATING A NEEDLE
Nils Oskar Abraham Peterson, Vikingavagen 13, Djursholm, Sweden
Filed Nov. 7, 1963, Ser. No. 322,117
Claims priority, application Sweden, Nov. 9, 1962, 12,051/62
7 Claims. (Cl. 128—253)

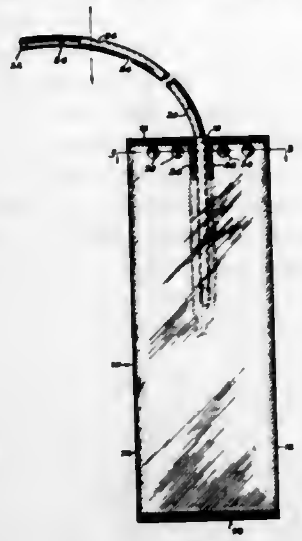


1. Apparatus for inoculation against smallpox and the like, comprising a supporting structure, an electromagnetic vibrator mounted on said structure, said vibrator having a vibrating arm, a needle, means connecting said needle to said arm, electric means for heating said needle, an electric power supply to said electric heating means, an electric power supply to said vibrator and switching means for energizing said electric heating means only when said vibrator is deenergized and for energizing said vibrator only when said heating means is deenergized.

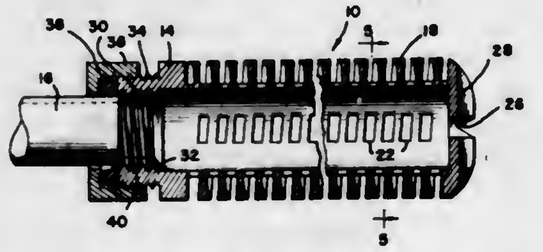
3,308,824
FLATUS BAG AND CATHETER
Christine M. Gandy, 303 W. Meridian, Dade City, Fla. 33139
Filed Dec. 14, 1962, Ser. No. 244,803
3 Claims. (Cl. 128—275)

1. A catheter and receiver device comprising, in combination,

- a limp, flexible bag formed by a pair of opposed walls normally disposed in face-to-face contact throughout substantially their entire areas,
- a tube projecting into said bag between said walls,
- said walls being joined continuously and uninterruptedly from a point immediately adjacent one side of said tube and marginally of said walls to a point immediately adjacent the opposite side of said tube, and being joined along opposed areas immediately adjacent to, on opposite sides of and partially along the length of said tube to provide a neck receiving said tube and positioning the inner end of said tube inwardly from the margin of said bag,
- and vent means located between the inner end of said tube and that marginal portion of the bag from which the tube extends inwardly, said vent means being formed by at least one perforation through a portion of only one wall of said bag which is in face-to-face opposition with a corresponding portion of the other wall.

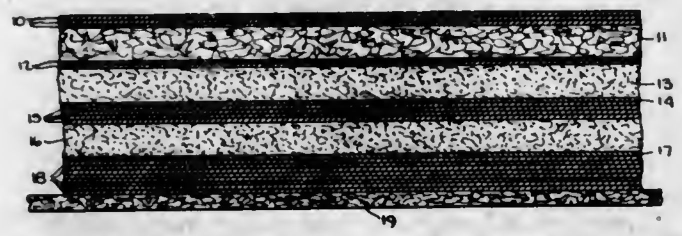


3,308,825
SURGICAL SUCTION DEVICE
Joseph R. Cruse, Silver Spring, Md.
(2282 Alhambra Drive, Palm Springs, Calif. 92262)
Filed Aug. 2, 1963, Ser. No. 299,561
11 Claims. (Cl. 128—276)



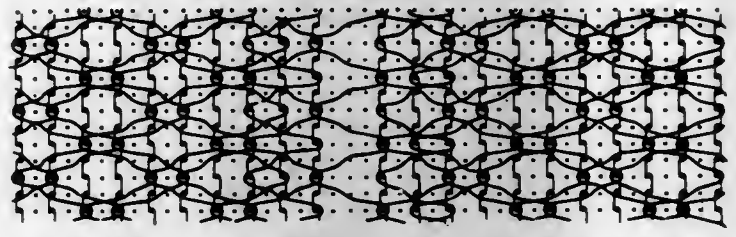
1. In a surgical suction device, a suction tip which comprises, an outer tube having an end wall at its free end, an external helical groove provided substantially along the length of said outer tube, a plurality of side ports communicating said groove with the interior of said outer tube, an external transverse groove provided at the free end portion of said outer tube, a port communicating said transverse groove with the interior of said outer tube, an open end inner suction tube axially slidable inwardly of said outer tube for withdrawing fluid material introduced through said ports, annular means carried exteriorly of said inner tube for shearing non-fluid material protruding through the side ports of said outer tube as said inner tube slides across said side ports, and means for locking said inner tube in selected position relative to said outer tube.

3,308,826
SANITARY NAPKINS
Lawrence R. Blake, Cumberland, Md., assignor to Celanese Corporation, a corporation of Delaware
Filed Mar. 9, 1961, Ser. No. 94,598
16 Claims. (Cl. 128—290)



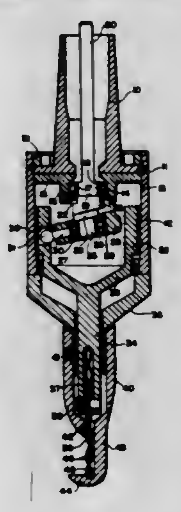
1. In a sanitary napkin, an interlaced cover fabric comprising yarns of less than 100 denier, said fabric having a weight of from 0.4 to 0.8 ounce per square yard and a capillarity factor from 6 to 9.

3,308,827
NAPKIN FABRICS
John Gross, Charlotte, N.C., assignor to Celanese Corporation, a corporation of Delaware
Filed Sept. 3, 1963, Ser. No. 306,244
9 Claims. (Cl. 128—290)



1. A sanitary napkin comprising a longitudinally extending absorbent pad, and a flat undistorted wrapper surrounding said pad, said cover fabric including tabs projecting longitudinally beyond said pad for attachment to a support, said wrapper comprising a warp knit fabric comprising three sets of warp yarns, a first set of warp yarns being formed into longitudinally extending chains and the second and third sets of warp yarns extending transversely of said chains in generally opposite directions, each of said second and third sets of warp knit yarns being interlaced with at least one other of said sets of yarns to form a unitary fabric.

3,308,828
CRANIOTOMY INSTRUMENT
Calvin C. Pippin, Raleigh, N.C., assignor of twenty-eight percent to Eugene E. Bernard, Raleigh, N.C.
Filed Aug. 8, 1963, Ser. No. 300,724
5 Claims. (Cl. 128—310)

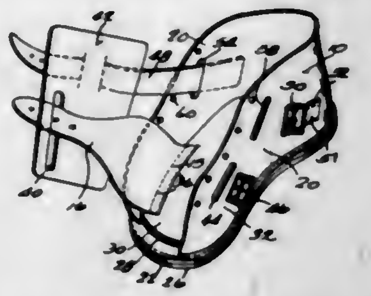


1. A surgical instrument comprising a drive shaft, means for rotating said drive shaft, a cam means mounted on and at an angle to said shaft, a wobble plate means rotatively mounted on said cam means, connector means, a housing, said connector means slidably and rotatively mounted within said housing in operative relation to said plate means by means of a universal joint and a cutting means fixedly mounted axially on said connector means whereby when said shaft is rotated, said cam will rotate relative to said plate to reciprocate said cutting means axially of the housing until a resistance to reciprocation is applied whereupon said plate will rotate in relative fixed relation to said cam to rotate said cutting means.

3,308,829
CORRECTIVE SHOE WITH ABDUCTION STRAP
Clyde A. Edwards, 4059 River Road, Muncie, Ind. 46618
Filed Apr. 18, 1966, Ser. No. 543,283
8 Claims. (Cl. 128—583)

1. In a corrective device for alleviating a clubfoot condition, a new article of manufacture comprising a sole element having medial and lateral side margins and

adapted to support the user's foot, and a flexible strap having an anchorage portion connected to the sole element across the transverse width of the strap at a location spaced inwardly from the medial side margin thereof for a distance sufficient so that it will underlie a portion of the wearer's foot supported on said element, said strap having a portion positioned to extend about the first metatarsal head of such a foot and having sufficient length to pass about a wearer's foot so supported and to extend across such a foot, and having a free terminal end which, when tensioned, will exert abduction pressure upon such a foot in a direction which is primarily toward the lateral side margin of said element as distinguished from downwardly thereon.



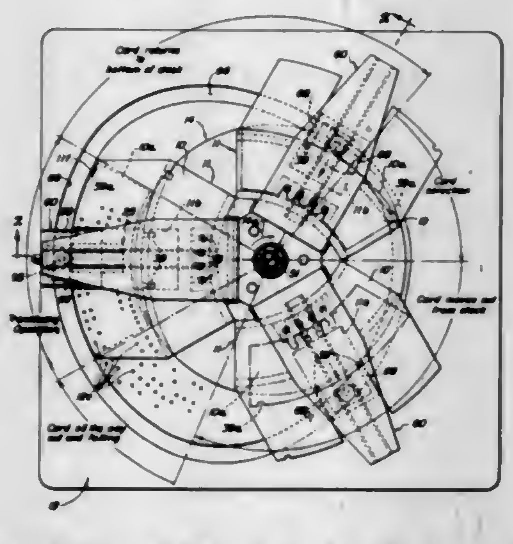
3,308,830

RANDOM ACCESS DATA-STORAGE SYSTEM

Eugene H. Irasek, Pacoima, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Dec. 11, 1963, Ser. No. 329,762

16 Claims. (Cl. 129—16.1)



1. In a device of the class described, a plurality of individual elements, means for retaining said elements as an assembled group and for selectively releasing an element for movement with respect to said group, means for rotating the assembled group of elements at a speed so as to generate a centrifugal force which will displace a selectively released element with respect to said group, a transducing means, means for applying a released element to said transducing means, and means for automatically returning a released element back to said assembled group after being applied to said transducing means.

3,308,831

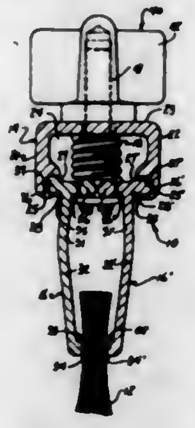
CLAMP DEVICE

Victor J. Kritzke, Sheboygan, Wis., assignor to Mayline Company, Inc., Sheboygan, Wis., a corporation of Wisconsin

Filed Oct. 5, 1965, Ser. No. 493,004

4 Claims. (Cl. 129—16.7)

2. A clamp device for holding one or more sheets of material adjacent an edge thereof and comprising: an elongate support member of generally channel-shaped cross-section and including a web and spaced first and second flanges defining an elongate slot extending generally the full length thereof, first and second gripping members each including a body portion having a gripping means at one end thereof and oppositely extending first and second lateral portions at the other end thereof, each said first lateral portion having a hinge connection to the slot side of the respective flange, each hinge connection including a longitudinally extending C-sectional edge portion on one of the items comprising said first lateral portion and said flange, each hinge connection including a longitudinally extending bead portion on the other of said items and engaged in said C-sectional portion, each said second lateral portion extending to a point adjacent the center of said elongate slot to substantially span the slot, resilient means disposed in the space between said web and said lateral portions and engaged with the support member and each said second lateral portion for urging the gripping means apart, and actuating means for simultaneously pivoting the grippings members about their respective hinge connection for moving the gripping means toward each other.



3,308,832

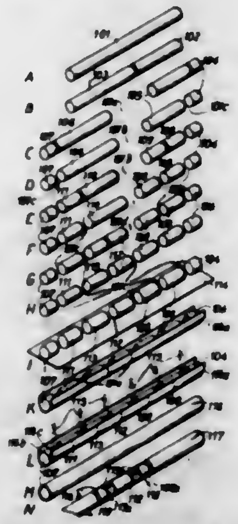
METHOD FOR PRODUCING FILTER CIGARETTES AND THE LIKE

Carl Stelzer, Hamburg-Bergedorf, and Bernhard Schubert, Hamburg-Lohbrugge, Germany, assignors to Hauni-Werke Körber & Co. K.G., Hamburg-Bergedorf, Germany

Filed July 21, 1964, Ser. No. 384,131

Claims priority, application Great Britain, July 22, 1963, 29,014/63; Aug. 9, 1963, 31,553/63; Aug. 19, 1963, 32,673/63

32 Claims. (Cl. 131—20)



1. A method of producing composite mouthpieces for filter cigarettes and the like, comprising the steps of arranging a first rod-shaped member which constitutes a filter for tobacco smoke and is free of tobacco in axial alignment with but at a predetermined distance from a

second rod-shaped member whereby said rod-shaped members are separated by a gap; applying around portions of said rod-shaped members an adhesive-coated wrapper to transform said gap into an open-sided pocket; introducing into said open-sided pocket a free-flowing stream of discrete particles of a flowable filter material which is free of tobacco so that the pocket is at least partially filled with such flowable filter material; convoluting the wrapper around said rod-shaped members to seal said pocket whereby said flowable filter material is entrapped in the pocket to form a filter for tobacco smoke which, together with said first rod-shaped member, constitutes a composite mouthpiece; and moving said rod-shaped members sideways, at the same speed, and in the same direction prior to and following the introduction of said flowable filter material.

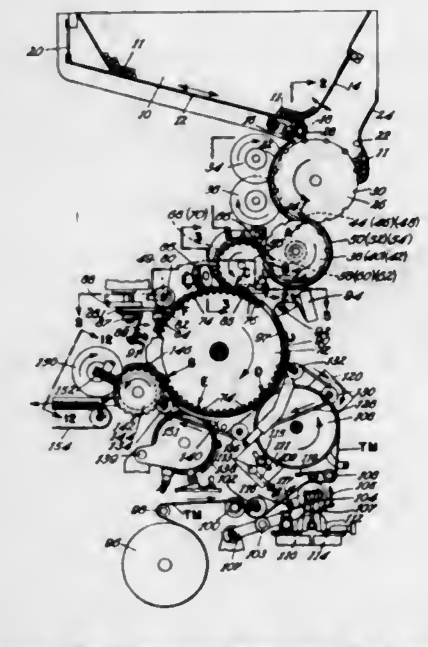
3,308,833

MACHINE FOR MAKING CIGARETTES

George Dearsley, Richmond, Va., assignor to American Machine & Foundry Company, a corporation of New Jersey

Application Feb. 18, 1963, Ser. No. 266,122, which is a division of application Ser. No. 829,007, July 23, 1959, which in turn is a division of application Ser. No. 509,293, May 18, 1955, now Patent No. 3,036,581, dated May 29, 1962. Divided and this application June 10, 1965, Ser. No. 462,980

2 Claims. (Cl. 131—94)



1. Apparatus for applying uniting bands to composite assemblies of filter tip cigarettes which comprises a nest of rollers for rotatably supporting each composite assembly, means for rotating said nest of rollers, carrying means for forwarding a uniting band into engagement with said composite assembly and for simultaneously rotating said composite assembly with its uniting band about its own axis, and means for lockably adjusting the amount of pressure exerted on the composite assembly when applying a uniting band to the assembly by regulating the distance said band carrying means is spaced from said nest of rollers, while said nest of rollers is in motion or while the machine is stationary.

3,308,834

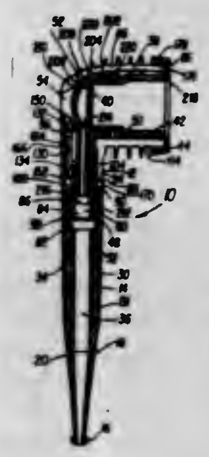
PIPE

Frank Furedy, 18 E. Huron St., Chicago, Ill. 60611; Christina Wideen-Furedy, heir of said Frank Furedy, deceased

Filed May 5, 1960, Ser. No. 27,163

4 Claims. (Cl. 131—196)

1. A tobacco smoking pipe comprising a stem, a bowl and stem housing portion, and a container separable from and mounted in said housing to receive and hold the tobacco while it is being smoked, said container being formed of non-charring, non-absorbent material, and said bowl housing comprising at least two portions which are relatively movable between two positions, in one of which they enclose and support said container and in the other of which said container is removable from said housing, the division between said two relatively removable portions approximating a plane defined by the axes of the usually vertically extending portion of the bowl housing and of the usually horizontally extending stem housing portion and a plane approximately perpendicular to the axis of the stem housing portion and remote from the ends thereof.



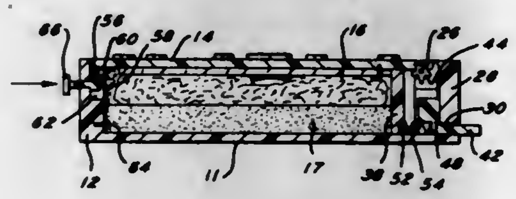
3,308,835

COMPACT

Albert Silverberg, Roselyn Hall Apartments, Apt. 303, 17th and Limekiln Pike, Philadelphia, Pa. 19141

Filed June 9, 1964, Ser. No. 373,677

4 Claims. (Cl. 132—83)



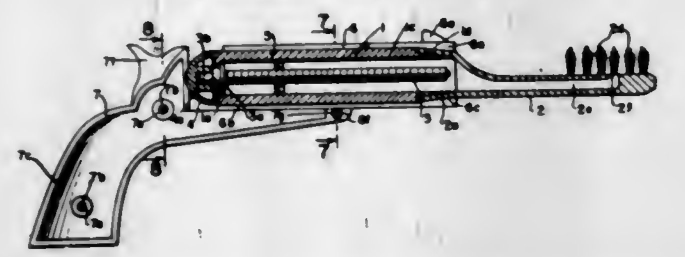
1. A case for carrying small articles comprising a box having an open top, a bottom opposite said open top, and an upstanding peripheral wall connected to said bottom, a lid pivotably secured to said box intermediate opposed portions of said peripheral wall adapted to close said open top, a rod having its ends journaled in opposed portions of said upstanding peripheral wall, at least one rotatable gear fixedly connected to said rod, said rod being fixedly connected to said lid, a slide actuator slidably supported on the bottom of said box for raising said lid, said slide actuator including a cross-bar protruding through an aperture in a portion of said upstanding peripheral wall, gear teeth upwardly projecting from said actuator in meshing engagement with said rotatable gear on said rod for rotating said rod and thereby moving said lid, means within said box for urging said cross-bar outwardly of said box through the aperture in said peripheral wall portion and biasing said lid to a closed position on said open top, and latch means associated with another portion of said upstanding peripheral wall and said lid for holding said lid in a closed position on said open top whereby said cross-bar and latch means must be actuated to open said lid.

3,308,836
TOOTHPASTE CARTRIDGE AND BRUSH

William C. Joines, Cheyenne, Wyo., assignor to Edward O. Logan and John B. Brannen, both of Cheyenne, Wyo.

Filed June 19, 1964, Ser. No. 376,406

6 Claims. (Cl. 132—84)



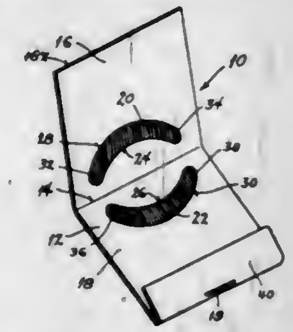
1. In combination, a toothbrush head having bristles adjacent one end, the other end terminating in an enlarged conical socket having tapered internal walls, said head having a bore therein communicating with the socket and discharging at the base of the bristles; a barrel portion extending from the socket and having its outer end open; a disposable and replaceable toothpaste-containing cartridge removably housed in the barrel and having its outer end closed and having its inner end open and tapered and making a slip-fit with the internal walls of the socket, said cartridge extending beyond the open end of the barrel; means carried by the cartridge for forcing the toothpaste therefrom to the base of the bristles, and a pistol-butt simulating portion pivotally connected to the underside of the barrel portion and normally extending parallel therewith, said butt portion including a hammer simulating portion normally aligned with the barrel portion but spaced from the outer end of the cartridge, whereby said butt simulating portion may be swung to bring the hammer portion out of alignment with the barrel to permit insertion and withdrawal of a cartridge from the barrel.

3,308,837
DISPOSABLE LIP-COSMETIC APPLICATOR

Marion Porter Selleck, 9 Mountainville Road, Danbury, Conn. 06810

Filed July 9, 1964, Ser. No. 381,372

2 Claims. (Cl. 132—88.7)



1. A disposable one-piece prepared sheet for applying cosmetic make-up to lips comprising, in combination:

(a) an elongate bendable sheet-like body having a fold line,

(b) said body being reversibly foldable about said line and having portions of appreciable expanse on opposite sides of said fold line,

(c) said body being normally folded about said line with the said two portions disposed flatwise to each other and with the inner sides of said portions juxtaposed and facing each other,

(d) means releasably holding said portions in the said folded condition, and

(e) a pair of shaped, substantially identical arcuate deposits of cosmetic material symmetrically located on said facing inner sides of the portions with respect to said fold line, said deposits being adapted for at least partial transfer to the lips when forcibly brought in contact therewith by reversely folding the body through a 360° arc to bring the portions therefor back-to-back with the deposits outermost and then applying the reversely-folded body between the lips,

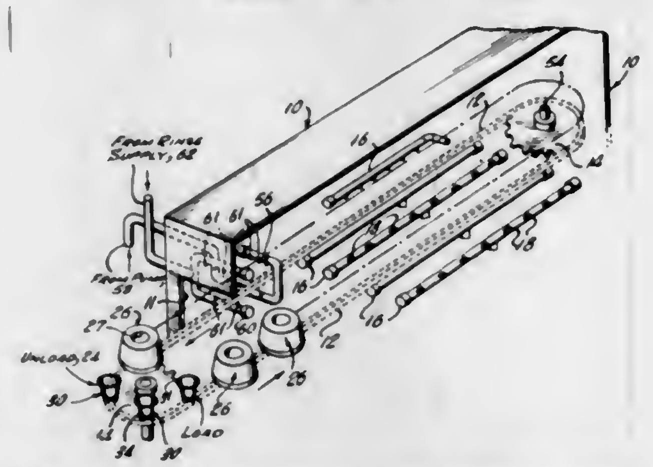
(f) said deposits being disposed with their concave edges nearest to the fold line and with their ends spaced from the fold line to minimize likelihood of smearing of cosmetic material around the corners of the mouth, and the symmetrical disposition and identical shaping of the coatings preventing loss of coating material to adjoining surfaces of the said two body portions if said portions are forced together bringing the coatings in contact with each other, when the body is folded.

3,308,838
BAKING PAN CLEANING APPARATUS

Robert K. Nolte, Chatham, N.J., assignor to Metalwash Machinery Corporation, Elizabeth, N.J., a corporation of New Jersey

Continuation of abandoned application Ser. No. 377,458, June 18, 1964, which is a continuation of abandoned application 319,274, Oct. 28, 1963. This application Apr. 7, 1966, Ser. No. 541,025

7 Claims. (Cl. 134—70)



2. A machine for treating articles having raised wall portions of varying heights in random intermixed sequence while traveling in inverted relation therethrough comprising, a housing, conveyor means for transporting the articles through said housing, said conveyor means including a plurality of upstanding supports for supporting the bottoms of each of the inverted articles placed thereover, said supports extending to a height above said conveyor means greater than the largest interior depth of article to be treated, fluid projections means for directing fluid to contact the inside wall portions of said articles, and means located above said conveyor means substantially parallel thereto for limiting upward displacement of the articles, said last mentioned means being fixedly located to said housing at a small predetermined height above the upper surface of said supports, said height being slightly in excess of the maximum thickness of the bottoms of the articles to be treated to permit free passage of the conveyor supported articles thereunder.

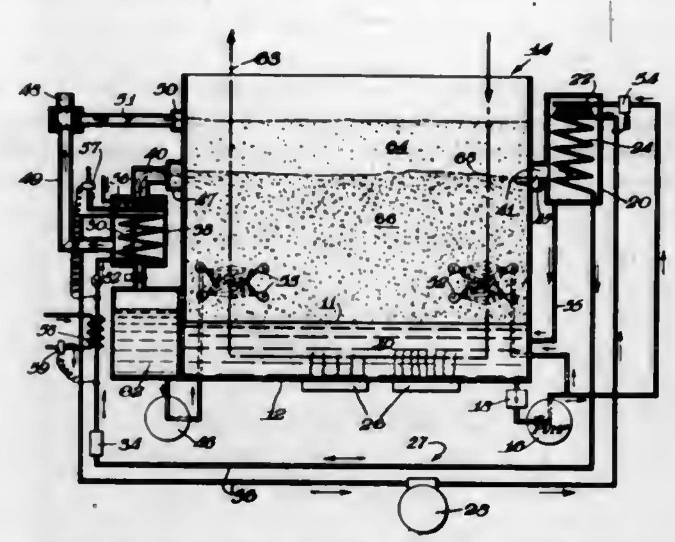
3,308,839
METHOD AND APPARATUS FOR CLEANING OBJECTS WITH SOLVENT

Donald J. Barday, 721 16th St., Boulder, Colo. 80302

Filed Oct. 12, 1964, Ser. No. 403,142

11 Claims. (Cl. 134—76)

1. An apparatus for cleaning objects by contacting them with a solvent liquid comprising a tank for containing said liquid and its vapor, vapor generating means connected to said tank for establishing and maintaining a warm saturated vapor zone above the level of said liquid, first vapor abstracting means connected to said tank a distance above said liquid level for limiting the upper level of said warm saturated vapor zone, second means for abstracting the mixture of air and solvent vapor disposed within said tank above said saturated vapor zone and said first vapor abstracting means, means for drying said abstracted mixture and returning it above said warm saturated vapor zone to provide a cool unsaturated air blanket above it to shield said warm saturated vapor zone from the ambient atmosphere, the portion of said tank between said warm saturated vapor zone and said blanket being free of any means preventing said blanket from directly contacting said warm saturated vapor zone, and conveyor means for moving said objects from said liquid where they are washed through said warm saturated vapor zone where they are rinsed and through said blanket where they are dried.

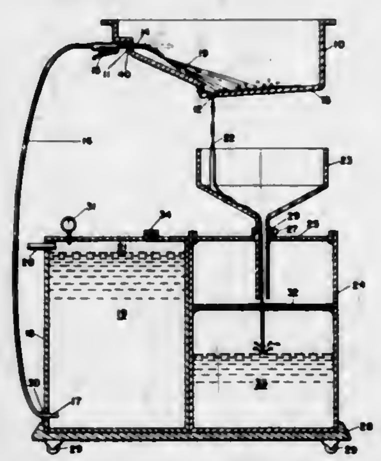


3,308,840
ENGINE OIL PAN AND CLEANING ATTACHMENT

Archie L. Kelley, R.D. 1, Clarendon, Pa. 16313

Filed July 28, 1964, Ser. No. 385,585

3 Claims. (Cl. 134—167)



2. In combination, an automobile having an oil pan and a flushing arrangement,

said oil pan having a generally flat bottom with spaced ends extending upwardly therefrom,

one part of said bottom being generally horizontal, but inclined slightly toward a horizontal portion in said bottom adjacent one said end,

said oil pan having a bottom with a generally horizontal portion and an inclined portion,

means connecting said inclined portion to said horizontal portion,

a generally vertically extending end attached to said horizontal portion at the end thereof remote from said inclined bottom portion,

two spaced drain openings in said horizontal bottom portion,

an upper orifice in said inclined portion of said bottom at the end thereof remote from said horizontal bottom,

said flushing means comprising a tank adapted to contain a liquid solvent,

nozzle means connected to said tank and extending into said upper opening and adapted to project liquid onto said inclined portion,

a funnel disposed under said drain openings in said oil pan,

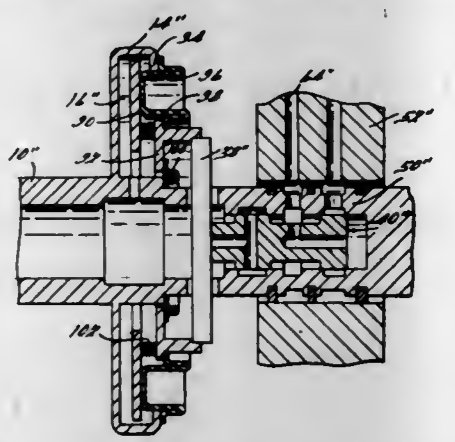
said funnel communicating with the inside of said tank whereby liquid draining from said oil pan will be returned to said tank.

3,308,841
FLUID PRESSURE GOVERNOR MECHANISM

George E. Lemieux, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed July 3, 1963, Ser. No. 292,546

9 Claims. (Cl. 137—47)



1. A fluid pressure governor mechanism comprising, in combination, a rotatable shaft having a fluid chamber projecting radially from the axis of rotation of said shaft, a plurality of fluid pressure actuated means of different radial extent in said chamber so as to be subject to different effects of fluid centrifugal forces acting thereon and thereby each variably movable by the dynamic head fluid pressure force induced thereon upon rotation of said shaft, a valve, means operatively transmitting the variable movement of each of said means to said valve, a valve body having line pressure and governor pressure and exhaust control passages and a bore connecting said passages and slidably receiving said valve, said line pressure passage containing a fluid under pressure, said valve controlling communication of fluid between said line pressure and governor pressure passages and said governor pressure and exhaust control passages, and means connecting the fluid under pressure in said governor passage to one portion of said valve to act thereon to oppose movement of said valve by said fluid pressure actuated means to regulate the pressure level of the fluid in said governor pressure passage as a function of the change in speed of rotation of said shaft and the radial extents of the plurality of fluid pressure actuated means.

3,308,842
CONNECTOR

James Martin, Southlands Manor, Southlands Road, Denham, near Uxbridge, England

Filed Sept. 10, 1965, Ser. No. 486,484

Claims priority, application Great Britain, Sept. 11, 1964, 37,370/64

5 Claims. (Cl. 137—68)

1. A connector for coupling a plurality of pressure fluid conduits, comprising

(1) a first connector part;

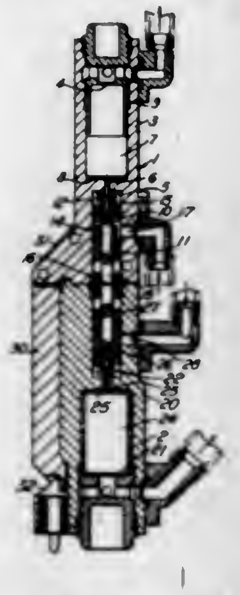
(2) a complementary connector part;

(3) means for releasably securing the connector parts together;

(4) a pressure fluid inlet means in the first part connectable to one of said pressure fluid conduits for receiving pressure fluid therefrom;

(5) a first pressure fluid source in said first connector part;

(6) a pressure fluid outlet means in the first part connectable to another one of said pressure fluid conduits for delivering pressure fluid released from said source to the other conduit;



(7) a second pressure fluid source in said second connector part;

(8) another pressure fluid outlet means in the second part connectable to a third one of said pressure fluid conduits for delivering pressure fluid released from the second source to the third conduit; and

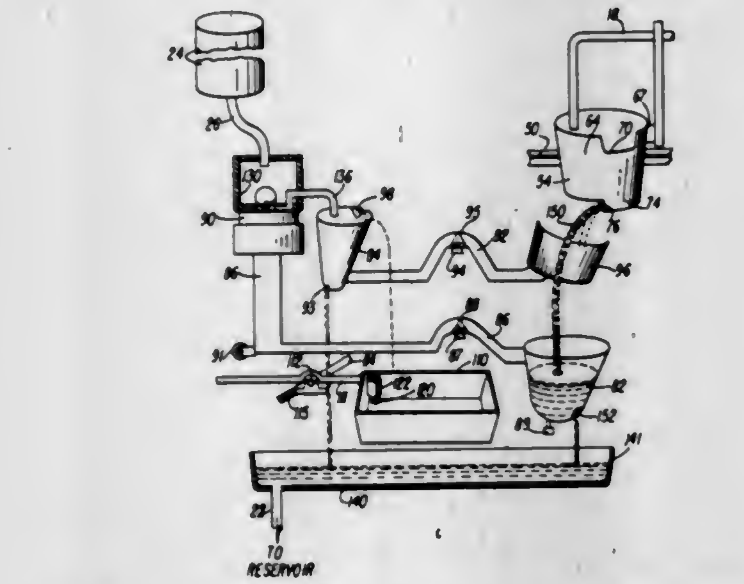
(9) actuating means operated by the pressure fluid received from the one conduit for releasing pressure fluid from the first and the second pressure fluid sources.

3,308,843
VISCOSITY CONTROL APPARATUS

Raymond Hollis, Park Ridge, and Frank X. Barr, Buffalo Grove, Ill., assignors to Graymills Corporation, Chicago, Ill., a corporation of Illinois

Filed June 24, 1963, Ser. No. 290,018

9 Claims. (Cl. 137—92)



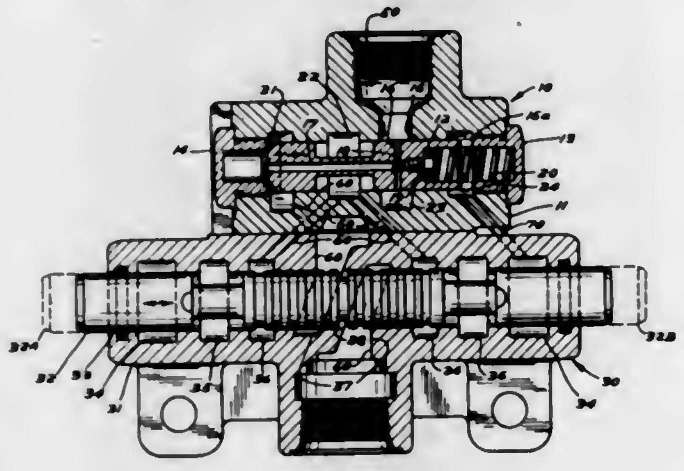
6. For maintaining the viscosity of a liquid containing a solvent volatile in air in a system wherein the liquid is pumped from a reservoir through a delivery duct to the point of use and thence returned to the reservoir, a viscosity control apparatus comprising a liquid by-pass line adapted to be positioned between the delivery duct and the pump intake of the system, a supply of said solvent, a valve controlling the solvent supply, means responsive to a higher viscosity of liquid in the by-pass line for opening said valve and adding a selected quantity of solvent to the liquid in the by-pass line, and means for immobilizing said opening and adding means until a selected period of time has lapsed.

3,308,844
CONTROL APPARATUS

Wayne R. Nelson, Fridley, Minn., assignor to Gresen Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota

Filed Oct. 2, 1964, Ser. No. 401,122

16 Claims. (Cl. 137—118)



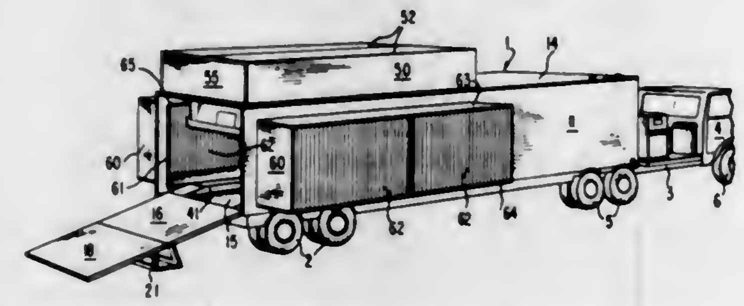
1. In combination with hydraulic control apparatus including at least one open center valve and a variable delivery pump, control valve means comprising in combination: a valve body including an axially extending bore and at least three axially displaced, radially extending grooves, one of said grooves being connected to an inlet port and one of said grooves being connected to an outlet port; a valve member reciprocably journaled in said bore, said valve member having means operative in a first position to provide fluid communication intermediate said inlet and outlet ports and in a second position to provide fluid communication intermediate said inlet port through the other of said grooves to at least one open center valve; means biasing said valve member toward said second position; and means operative to selectively drive said valve member to said first position.

3,308,845
MOBILE SERVICE STATION UNIT

Frederick E. Bellas, 148 Zerby Ave., Edwardsville, Pa. 18704, and Robert A. Decker, 261 McLean St., Wilkes-Barre, Pa. 18702

Filed Apr. 14, 1964, Ser. No. 359,683

17 Claims. (Cl. 137—234.6)



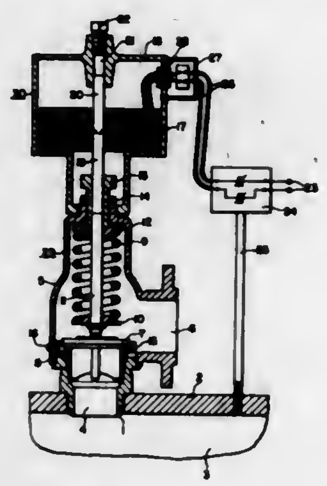
1. A mobile wheeled service unit for vehicles comprising: a transportable base structure of sufficient size to at least receive a vehicle, a top wall portion, side wall portions connected to support said top wall portion in spaced relation above said base structure, a vehicle entrance ramp connected to one end of said base structure, vehicle lift means connected to said base structure interior of said service unit, and movable roof panel means movable into open and closed positions connected to said top wall portion above said vehicle lift means, whereby upon opening said movable roof panel means a vehicle may be raised on said lift means for service in said service unit.

3,308,846
RELIEF VALVE IMPROVEMENT

Arthur M. Yuile, Pittsburgh, Pa., assignor to Canadian Westinghouse Company, Limited, Hamilton, Ontario, Canada

Filed Oct. 16, 1963, Ser. No. 316,589

6 Claims. (Cl. 137—487.5)



3. A relief valve for an enclosure comprising a valve member that is moved to open and close the valve and adapted to open the valve at a predetermined fluid pressure in said enclosure, biasing means for applying to said valve member a major part of the available valve closing force, a releasable assistant means comprising a solenoid for applying to said valve member a minor part of the available valve closing force, said minor part having a constant value, and means responsive to said fluid pressure for releasing said releasable assistant means upon reaching said predetermined pressure whereby the fluid pressure to be relieved from said enclosure acts upon said valve member to open the valve.

3,308,847
SOLENOID-OPERATED, SHUT-OFF AND REGULATOR VALVE

Harry M. Umann, Los Angeles, Calif., assignor, by mesne assignments, to Croname, Incorporated, Chicago, Ill., a corporation of Illinois

Filed Jan. 31, 1964, Ser. No. 341,794

1 Claim. (Cl. 137—613)

A shut-off and regulator valve, comprising:

(a) a valve body, defining at one end a shut-off valve chamber having an annular inlet cavity, a central outlet cavity, and an annular valve seat therebetween, and defining at its opposite end a regulator valve chamber having a central inlet coaxial with the axis of said outlet cavity, and an outlet at one side of said inlet;

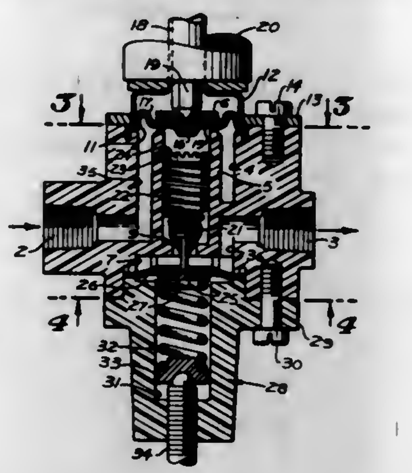
(b) a shut-off valve diaphragm closing said inlet cavity and engageable with said valve seat to shut off flow to said outlet cavity;

(c) means for effecting movement of said shut-off valve diaphragm;

(d) a regulator valve element within said outlet cavity and engageable with the inlet of said regulator valve chamber;

(e) a spring within said outlet cavity urging said valve element toward its closed position;

(f) a frusto conical disk having peripherial wall penetrating elements, said retainer disk being axially movable into said outlet cavity to engage and compress said spring, said penetrating elements preventing movement of said retainer disk out of said outlet cavity;



(g) a regulator valve diaphragm closing said regulator valve chamber and engageable with said valve element;

(h) a spring backing said regulator valve diaphragm;

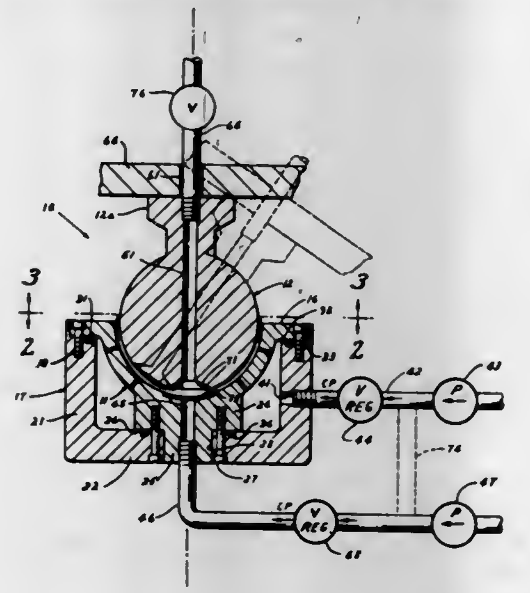
(i) and means for adjusting the force of said spring.

3,308,848
FLUID POWER TRANSMISSION

Harold I. Johnson and Orrin A. Wobig, Seabrook, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed July 27, 1964, Ser. No. 385,526

10 Claims. (Cl. 137—615)



1. A device for transmitting fluid power through a fluid-supported bearing comprising:

a first bearing member in the form of a cup having an inner bearing surface, said first bearing member having an opening in the bottom thereof;

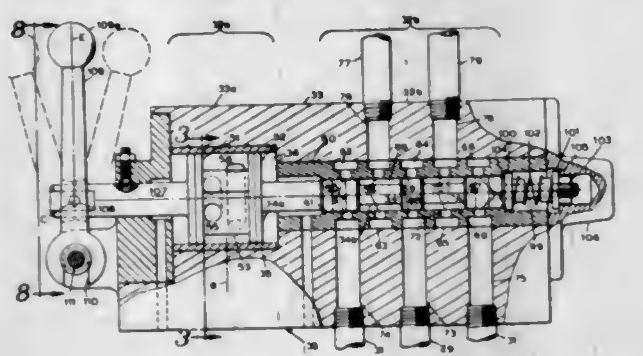
a second bearing member having a convex surface conforming to the bearing surface of the cup and adapted to be supported therein, said second bearing member having a flow passage extending therethrough;

means for supplying air under pressure at a plurality of points between said first bearing member and said second bearing member to support the second bearing member on a flowing film of air; and means for supplying air under pressure through the opening in the bottom of the cup to said flow passage in the second bearing member whereby controlled amounts of fluid power may be transmitted through the fluid bearing structure without affecting the floating of the second bearing member.

3,308,849
VALVE FOR DUAL MOTOR CONTROL

Paul R. Bohart, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio

Filed Oct. 9, 1964, Ser. No. 402,755
2 Claims. (Cl. 137—625.17)



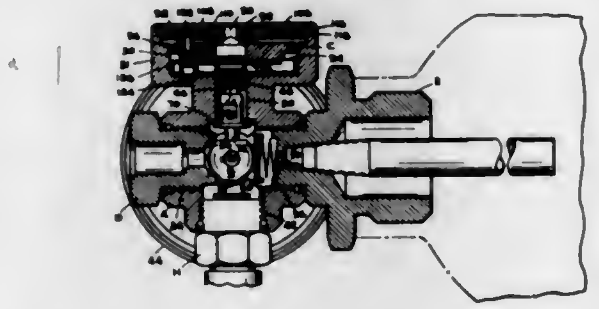
1. A valve for effecting coordinated reversible operation of a first hydraulic motor and a second hydraulic motor in a hydraulic system including a source of fluid under pressure and a sump comprising in combination a housing having an axis extending therethrough, said housing having a first portion with operating ports angularly spaced around said axis for connection to the source and the sump and motor ports angularly spaced around said axis for connection across said first motor, said housing having a second portion with axially spaced operating ports for connection to the source and the sump and axially spaced motor ports for connection across said second motor, a movable valve member having a first portion received in said first portion of the housing, said first valve member portion defining two passages to connect, disconnect, and reversely connect the motor ports of the first housing portion with the operating ports thereof on angular movement to a first, second, and third angular position of said first valve member portion and in any axial position thereof, said valve member having a second portion received in said second portion of the housing, said second valve member portion defining two passages to connect, disconnect, and reversely connect the motor ports of the second housing portion with the operating ports thereof on axial movement to a first, second, and third axial position of said second valve member portion and in any angular position thereof, and a handle connected to said valve member for angular movement thereof as said handle is moved in one direction and for axial movement thereof as said handle is moved in another direction transverse to said one direction.

3,308,850
CABLE ACTUATED MULTI-FITTING GAS VALVES

Vincent A. Gill, Montclair, N.J., assignor to General Pneumatic Corporation, Newark, N.J., a corporation of New Jersey

Filed Oct. 1, 1964, Ser. No. 400,793
22 Claims. (Cl. 137—625.32)

3. A valve comprising a body having an internal chamber, said body having a pair of opposite, axially aligned, internally threaded ports in communication with said chamber, a rotatable valve shaft extending through an opening in said body on an axis perpendicular to the axis of said ports, said shaft being formed intermediate its length with an area of reduced diameter, an O-ring at said area surrounding the shaft and in engagement with the adjoining portion of the valve body, a back-up ring in the area of reduced diameter adjoining the O-ring, the portion of the shaft above the area of reduced diameter having a slight amount of clearance with respect to the opening, the portion of the shaft below the area of reduced diameter having a larger amount of clearance with respect to the opening, said shaft having an annular flange within said internal chamber, a thrust-bearing intermediate the flange and the adjoining portion of the valve body, a valve member having a bore extending therethrough positioned in said internal chamber, said valve shaft being connected at its lower end to said valve member, a seat ring positioned in said internal chamber for engagement with the valve member, and resiliently mounted means opposite said seat ring for urging the valve member against the seat ring.

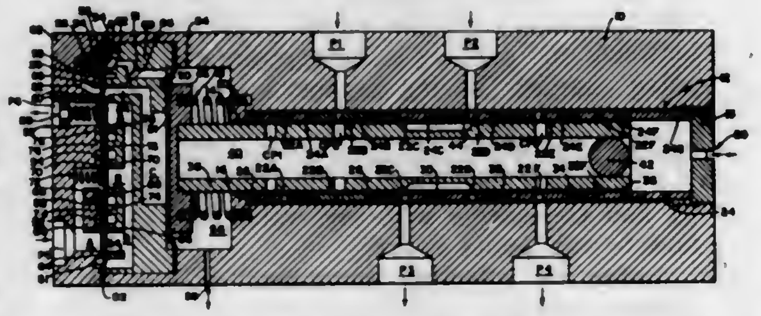


7. A valve comprising a body having an internal chamber, said body having a pair of opposite, axially aligned, internally threaded ports in communication with said chamber disposed on a first axis, said body having a second pair of opposite, axially aligned, internally threaded ports disposed on a second axis, the ports being of the same diameter and identically threaded, a rotatable valve shaft extending through an opening in said body on a third axis, said first, second and third axes being mutually perpendicular to one another, a ball valve member having a bore extending therethrough position in said internal chamber, said valve shaft being connected at its lower end to said valve member whereby rotation of the valve shaft rotates the valve member, a seat ring positioned in said internal chamber for engagement with the valve member, a guide ring in engagement with the valve member opposite said seat ring, a coiled compression spring for urging the guide ring against the valve member, and means for limiting the extent of rotation of the valve shaft to align the bore with a port.

3,308,851
PNEUMATIC CONTROLLED SELECTOR VALVE

Richard S. Zoludow, South Bend, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed July 10, 1964, Ser. No. 381,641
10 Claims. (Cl. 137—625.48)

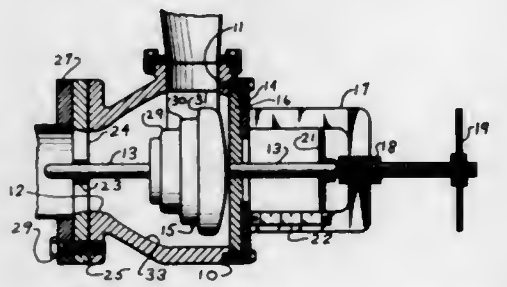


1. Selector valve means comprising a valve body, a bore in said body, a plurality of flow ports in said body adapted to be selectively interconnected and commonly connected with said bore, sleeve means telescopically inserted in said bore, valve spindle means in said sleeve means axially displaceable therein, interconnecting port means in said sleeve means adjacent each of said flow ports, isolating means in said sleeve means cooperating with the periphery of said bore and said spindle to isolate said interconnecting port means from each other, control means in said valve spindle selectively interconnecting combinations of said flow ports through said interconnecting port means and said valve spindle as a function of displacement of said valve spindle, pneumatic motor means selectively displacing said valve spindle and an apertured relay diaphragm for controlling said motor means in response to pressure differential across opposite sides thereof.

3,308,852
FLOW CONTROL VALVE

Joseph D. Parker, Beloit, Wis., and John F. Schmaeng, Rockton, and Walter C. Mih, South Beloit, Ill., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Dec. 20, 1963, Ser. No. 332,126
6 Claims. (Cl. 138—46)



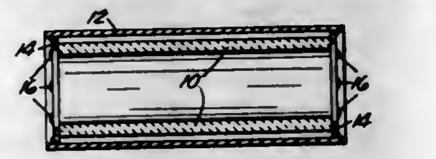
1. A flow control valve particularly adapted for controlling the flow of incompressible fiber-water mixtures comprising a valve body having a valve chamber therein, closed at one end and open at its opposite end and providing an outlet leading axially of said valve body, an inlet into said valve body through the wall thereof and adjacent the closed end of said body, a valve stem extending axially of said valve body through said closed end and mounted for movement along said valve body, a valve plug, circular in cross section, mounted on said stem and converging from the upstream to the downstream end thereof, said valve chamber having an internal converging wall downstream of said inlet and in the form of a gradual curve of greater radius near said inlet than said outlet and generally conforming to the form of said valve plug, said valve plug having a series of steps therein having rounded corners of different predetermined radii increasing from the downstream to the upstream end of said plug, in which a line extending along the terminal edges of said steps forms a curve conforming to the wall of said valve chamber and cooperating therewith to provide a plurality of axisymmetric rounded corners restrictions to the flow of fluid from said inlet through said outlet upon movement of said valve plug toward valve closing positions.

3,308,853
CONSTRAINED CERAMICS

Donald L. O'Brien, South St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Nov. 6, 1963, Ser. No. 321,860
4 Claims. (Cl. 138—177)

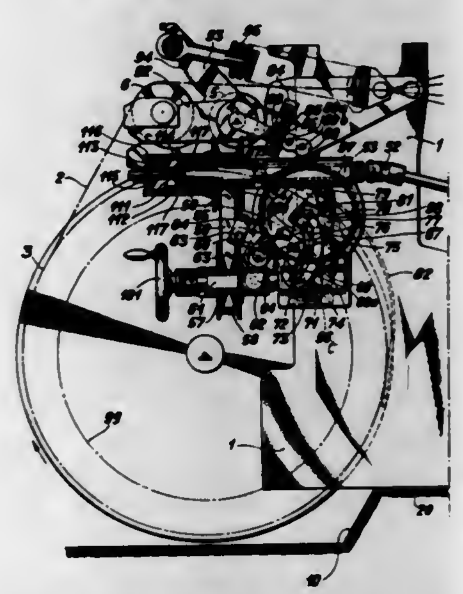
3. A ceramic ducting unit consisting essentially, in combination, of a ceramic core having Young's compressional modulus not more than about 1×10^5 pounds per square inch and a metallic restraining frame axially retaining said core in compression on substantially flat parallel surfaces at less than the crushing strength of said core, said core having a coefficient of thermal expansion substantially one-third of the coefficient of thermal expansion of the said restraining frame and having at least one axial passage therethrough.



3,308,854
LOOM FOR WEAVING

Erwin Pfarrwaller, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a corporation of Switzerland

Continuation of application Ser. No. 337,268, Jan. 13, 1964. This application Oct. 19, 1965, Ser. No. 511,265
Claims priority, application Switzerland, Jan. 22, 1963, 609/63
5 Claims. (Cl. 139—99)



1. A loom for weaving, comprising
a drive means positioned at the loom front,
a cloth take-up roller operatively connected directly to said drive means in an inseparable, inflexible manner to be driven thereby, said cloth take-up roller including means for frictionally engaging a cloth,
a variable speed transmission positioned at the loom rear operatively connected directly to said drive means to be directly driven thereby at an input speed corresponding in rigid relation to the speed of rotation of said take-up roller, and in a direction corresponding to the direction of rotation of said take-up roller,
a warp beam operatively connected solely to said variable-speed transmission to be driven thereby,
means operatively connected to said variable-speed transmission for varying the speed ratio of said transmission whereby the speed of said warp beam is varied with respect to the speed of said take-up roller.

3,308,855
CATCH THREAD LOOM ATTACHMENT

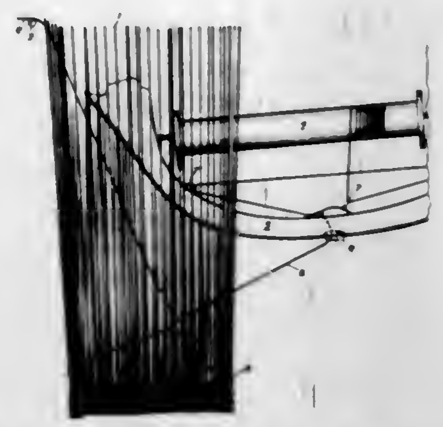
Angus L. Power, Medfield, and Fred Weidhaas, Easthampton, Mass., assignors to United Elastic Corporation, Easthampton, Mass., a corporation of Massachusetts

Filed Aug. 26, 1965, Ser. No. 482,749
5 Claims. (Cl. 139—116)

1. In a catch thread loom in which at least one weft thread from external supply sources is pulled through the shed of the warp by a catch thread carried by the loom

shuttle, which catch thread also binds each weft thread on at least one edge of the fabric, the shuttle having a controlled travel without overshoot, the improvement which comprises,

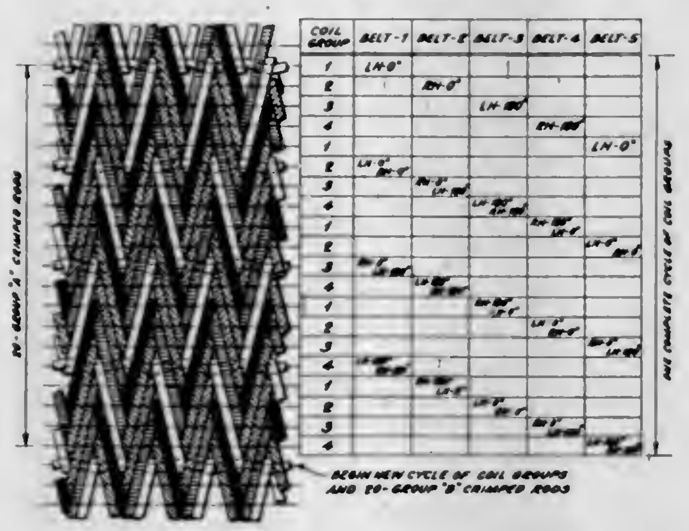
(a) means driven synchronously with shuttle travel for withdrawing a precisely predetermined length of each weft thread from the external thread sources and



feed the predetermined length to the catch thread without tension during the shuttle travel in which the catch thread pulls the weft through the shed, the length so withdrawn and fed being substantially equal to the length of weft thread in a double pick, whereby the loops of catch thread binding weft threads at at least one edge of the fabric are of uniform length and a fabric of uniform edge appearance is produced.

3,308,856
WOVEN MESH CONVEYOR BELT AND METHOD OF MAKING SAME

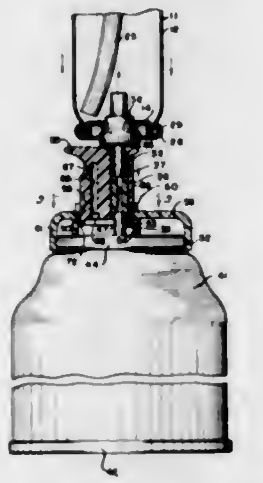
Othmar C. Ploss, Winchester, Va., assignor to Ashworth Bros., Inc., Winchester, Va., a corporation of Massachusetts
Filed Mar. 11, 1964, Ser. No. 351,147
22 Claims. (Cl. 140—71)


COIL GROUP
BELT-1
BELT-2
BELT-3
BELT-4
BELT-5
BEGIN NEW CYCLE OF COIL GROUPS AND 20-GROUP "B" CRIMPED RODS

1. A method of making a conveyor belt which comprises forming a plurality of flat helical coils having spaced loops, each coil being formed by twisting a wire around an elongated flat mandrel and simultaneously effecting relative longitudinal movement between the coil and the mandrel, each of said coils having a leading edge and a trailing edge relative to the completed belt, some of said coils being formed with a right hand twist on a single mandrel, the other coils being formed with a left hand twist on a single mandrel, two different groups of said right hand coils having their leading edges formed by opposite edges of their respective mandrel, two different groups of said left hand coils having their leading edges formed by opposite edges of their respective mandrel, nesting said coils closely together in edgewise relationship with right hand coils alternating with left hand coils to substantially fill the surface of the belt, said different groups of left hand coils and said different groups of right hand coils respectively being distributed substantially uniformly in the belt, and inserting rods through said loops across the belt to pivotally interconnect the leading edge of each of said coils to the trailing edge of another coil, said rods passing through and intermediate the edges of at least one coil nested between the thus interconnected coils.

3,308,857
PRESSURIZED DISPENSING CONTAINERS

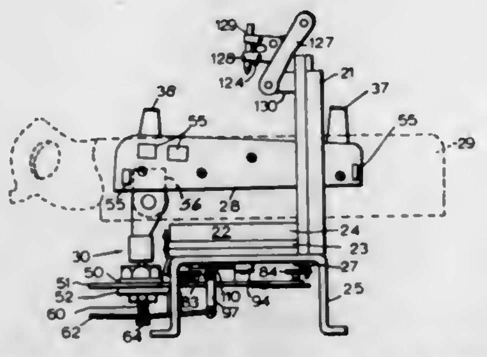
Russell Park McGhie, New York, N.Y., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed June 2, 1964, Ser. No. 372,029
11 Claims. (Cl. 141—20)



3. A pressurized dispensing container comprising an upper valve assembly having an upwardly projecting displaceable operating and discharge stem, a cover member adapted for mounting on said container, a head rotatably mounted on said cover member about a spaced axis parallel but eccentric with respect to the axis of said valve stem, said head having a first longitudinal through passage and a second longitudinal passage terminating in a lateral discharge outlet, the axes of said passages being equally spaced with respect to the axis of rotation of said head so that said head may be rotated between two operative positions where said first and second passages respectively are aligned with said stem.

3,308,858
CARPENTER'S MITER BOX

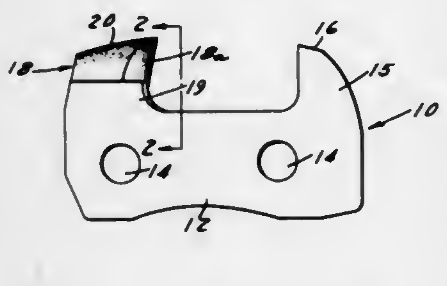
Harold F. De Hart, 1116 Junction Road, Durham, N.C. 27704
Filed Sept. 29, 1964, Ser. No. 400,272
3 Claims. (Cl. 143—89)



1. A miter box having a horizontal work support base; a saw; a vertical backing member secured to said base and including a centrally located vertical passage for receiving said saw when engaged with a workpiece supported on said base against said member; a carriage device including a movable carriage and rail means located lengthwise of and beneath said base and on which said carriage travels; manually operable means for locking said carriage at predetermined positions corresponding to particular angles of cut; vertical post means supported on said carriage and movable therewith along the front edge of said base; a saw guide pivotally secured at one end to said post means in a manner allowing said guide to swing both vertically and horizontally; means releasably securing said saw to said guide; and a vertically adjustable support member mounted on said backing member adjacent said passage being arranged to adjustably support the free end of said guide adjacent said passage and having an extension overlying said base adapted to clamp said workpiece.

3,308,859
SELF-SHARPENING SAW CHAIN

Jack W. Ehlen, Torrance, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Jan. 4, 1966, Ser. No. 518,586
5 Claims. (Cl. 143—135)



1. A saw chain cutter link, comprising:

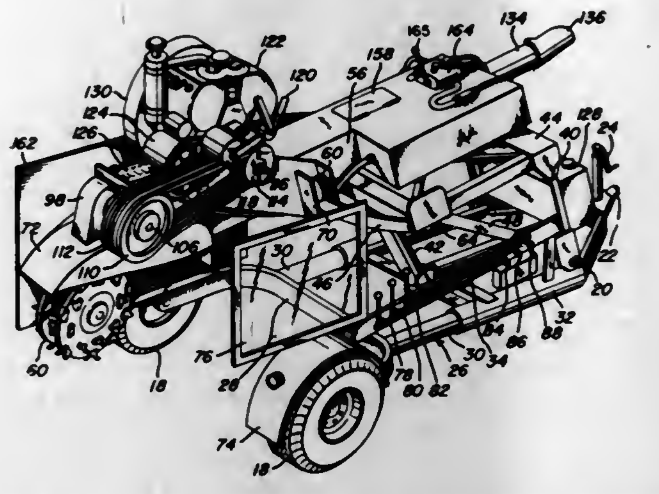
(A) a relatively flat vertical link body portion;

(B) a depth gauge adjacent one end of said link and extending upwardly thereof;

(C) and a cutter element extending upwardly of said link body portion in rearwardly spaced relation to the depth gauge, said cutter element comprising a longitudinally extending elongated cutter body having a rearwardly and downwardly profiled top surface and a generally vertical outer side surface, said surfaces being adjoined, extending generally in the direction of the cutting path, the leading end of said cutter body being downwardly and rearwardly inclined from the top surface and beveled inwardly and rearwardly from the outer side surface so as to have leading top and side joining cutting edges, the top and outer side surfaces throughout their length being hardened so as to have a hard case, the hardened surfaces extending longitudinally substantially in the cutting direction, the cutter body inwardly of said hard case in both the top and outer side surfaces throughout their length comprising a core which is progressively softer inwardly from said hard case in substantially the same degree of variation throughout relative to both top and outer side surfaces from an outer predetermined maximum hardness to an inner predetermined minimum hardness, the leading end of said cutter body being subjected to abrasion when cutting material, the leading end of the core abrading away faster than the hard case of the top surface and the outer side surface, the abrasion occurring inwardly of the top and side surfaces progressively in amounts in accordance with the varied inwardly progressive softness of the core so that the leading end retains generally said inclined and beveled surfaces and so that the leading edge of said top surface and the leading edge of the outer side surface remain and function as relatively sharp cutting edges.

3,308,860
STUMP CUTTER

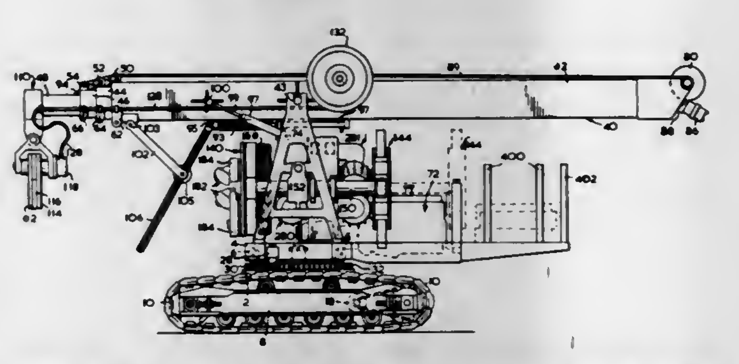
Alphonse D. De Shano, Hamilton, Ohio, assignor to The Tool Steel Gear & Pinion Company, Cincinnati, Ohio
Filed Nov. 27, 1964, Ser. No. 414,070
18 Claims. (Cl. 144—2)



3. A stump cutter comprising in combination: an elongate chassis having a forward end, a rear end, and spaced wheels supporting the forward end above ground level; a carriage reciprocable upon the chassis lengthwise thereof intermediate said ends; a first frame tiltably mounted upon the carriage for movement toward and from the forward end of the chassis; a second frame supported upon the first frame for tilting movement therewith, said second frame having a forward end portion movable toward and from ground level as the first frame is tilted in opposite directions; a power driven cutting tool on the forward end of the second frame for engaging a stump to be disintegrated; means for tilting the second frame in opposite directions for elevating and lowering the cutting tool; and means for reciprocating the carriage lengthwise of the chassis, to advance and retract the cutting tool across the stump.

3,308,861
DELIMBER

Douglas D. Hamilton, Mount Royal, Quebec, Canada, assignor of one-third to Canadian International Paper Company, one-third to Quebec North Shore Paper Company, both of Montreal, Quebec, Canada, and one-third to Albitibi St. Anne Paper Ltd., Beaupre, Quebec, Canada, all corporations of Canada
Filed Dec. 18, 1964, Ser. No. 419,422
40 Claims. (Cl. 144—3)

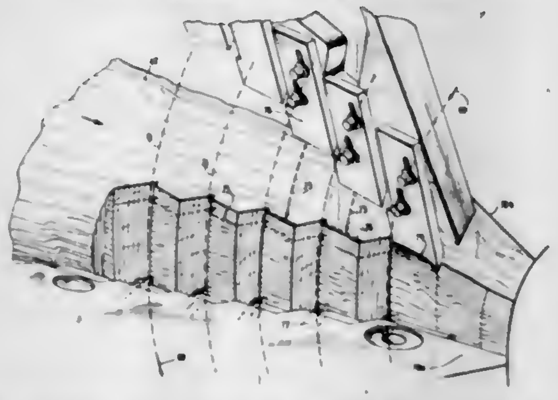


15. In a delimber: support means; means supported thereby for feeding a tree along a substantially linear feed path; an annular housing rotatably mounted on said support means and encircling said feed path; a plurality of first shafts circumferentially spaced about said housing; a plurality of arms, each of said plurality of arms being secured adjacent one of its ends to an associated one of said first shafts; means for rotation of said annular housing in a first direction; means responsive to the rotation of said annular housing in said first direction for rotating said first shafts and for moving said arms which are se-

cured thereto radially outward; a plurality of hubs, one rotatably mounted on each of said arms spaced from its pivot and movable generally radially relative to said feed path with rotation of said arms about their pivots, means for rotaing said annular housing in one direction and for rotating said hubs in the opposite direction at a substantially greater speed for delimbing a tree fed along said path, the axis of rotation of each of said hubs extending substantially parallel to the axis of said feed path; an elongated cutter blade on each of said hubs extending radially from and longitudinally along each of said hubs, each of said blades having a cutting edge shaped such that a portion of each generates a cylindrical surface of revolution as it rotates about the axis of its hub, said hubs each having a forward end presented toward the direction from which a tree is fed along said path, each of said blades extending angularly partially about its hub in the direction opposite to that in which said hub is rotated with said portion thereof extending helically, the portion of each of said cutting edges forward of said portion thereof extending radially inward to merge with its hub along an arcuate path shaped so that it describes a substantially hemispherical surface of revolution having a radius substantially equal to that of said cylindrical surface; resilient means acting on said first shafts biasing said arms to carry said hubs radially inward; and guide means associated with each of said hubs for limiting the approach of the cutting edges of said blades to a tree fed along said path to a predetermined distance from the surface bark of said tree.

3,308,862
METHOD FOR DIVIDING LOGS INTO CHIPS

Josef Traben, Appenwelererstr. 50a,
Oberkirch, Baden, Germany
Filed Aug. 5, 1964, Ser. No. 387,755
7 Claims. (Cl. 144—326)

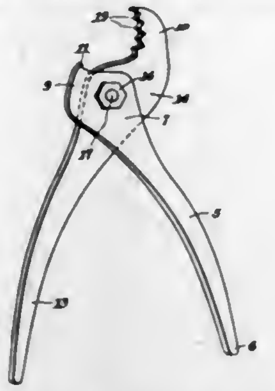


5. A method of producing wood chips from a log comprising the steps of scoring the log along two spaced paths extending generally across the grain of the log at a number of stepped intervals across the grain of the log and cutting generally along the grain of the log between said scored paths at a number of stepped intervals to remove a chip from the log.

3,308,863
NUT CRACKER

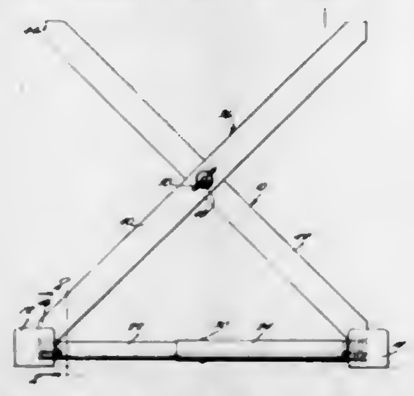
Mike A. Schall, Box 46, Rugby, N. Dak. 58368
Filed Sept. 11, 1964, Ser. No. 395,861
1 Claim. (Cl. 146—13)

A nut cracking device, comprising, two levers, flat bearing plates formed towards one end of each lever, said plates positioned in an overlapping relationship in abutment with each other, a bolt extending through aligned holes formed in said plates to permit a pivotal movement between the levers, a large jaw extending from one of said plates, arcuately extending teeth protruding from one side of the jaw, and arranged in a concave arc a small jaw extending from the other plate and terminating with a single tooth directed towards the large jaw, a small recess being formed inwardly adjacent the single tooth, said single tooth being restrained from contact with the teeth of the large jaw and being directed towards the innermost of said teeth.



3,308,864
FOWL STAND

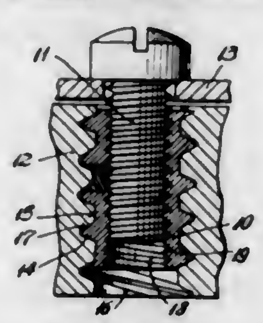
Virginia Lee Glaus, 1003 New Castle St.,
Butler, Pa. 16001
Filed Mar. 25, 1964, Ser. No. 354,530
2 Claims. (Cl. 146—216)



1. A supporting stand for fowl or the like comprising a pair of longitudinal base members, a pair of adjustable transverse base members interconnecting the longitudinal base members, a plurality of pairs of longitudinally spaced crossed supporting bars, means adjustably interconnecting the supporting bars and the longitudinal base members for varying the spatial relation of the pairs of supporting bars, means interconnecting the supporting bars in each pair at their point of intersection to form equal lengths of upper portions and equal lengths of lower portions thereof, and means on the upper end of each supporting bar for engaging the fowl or the like for effective support thereof, said means on the upper end of each bar includes a pointed tip for penetrating engagement with the fowl.

3,308,865
BOLT ANCHORING MEANS

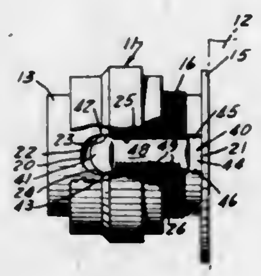
Melvin A. Raichelson, Springfield, Mass., and Richard H. Sullivan, Cromwell, Conn., assignors to American Standard Products Incorporated, Hartford, Conn., a corporation of Connecticut
Filed May 4, 1965, Ser. No. 453,078
2 Claims. (Cl. 151—7)



1. A bolt anchoring device comprising a cylindrical bushing having a locking thread on the outer surface adapted to be threaded into a threaded socket in a body of softer material than the bushing, the locking thread on the bushing being generally triangular in cross-section with a truncated crest and a broad inclined surface at the root disposed at a slight angle to the axis of the bushing with the flanks of the threads on the body and bushing engaging with an interference fit and capable of causing the material of the threads on the body to be deformed and to flow to fill up any voids including the void between the crest on the threads in the socket and the inclined root surfaces thereof and securely lock the bushing in the socket as an incident to the threading of the bushing into the socket, said bushing having a bolt-receiving threaded bore therethrough, the improvement wherein the bushing is provided with a radially disposed aperture formed in said bushing completely through the wall thickness thereof and between the crests of a pair of thread convolutions, the walls forming said aperture intersecting the opposed flanks of said pair of threads, the axial distance between said walls being greater than the surface of the root, but less than the distance between the opposed flanks measured at the crests of said thread whereby a space is formed between the crests of the mating thread on said body and said radially extending walls, and a deformable synthetic resinous plug disposed in the hole having a volume filling the hole and projecting beyond the threads on the outside and inside of the bushing, the end of the plug projecting on the outside of the bushing being deformed by the threads on the body as the bushing is threaded into the body and flowing into said space between said mating threads and the walls of said aperture to thereby interlock with the threads on the bushing and on the body to resist turning of the bushing in the socket and also to hold the plug in position on the bushing and the other end of the plug being shaped by the threads on the bolt to resist turning thereof.

3,308,866
THREADED MEMBER ANTI-LOOSENING DEVICE

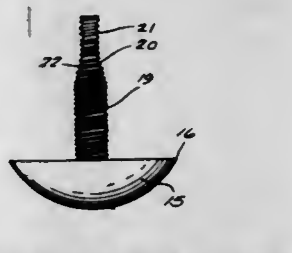
Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280, Richard L. Armstrong, Santa Fe Springs, and Harold W. Falk. Los Angeles, Calif.; said Armstrong and Falk assignors to said Russell
Filed June 7, 1965, Ser. No. 461,922
3 Claims. (Cl. 151—25)



1. An anti-loosening device for a threaded connection comprising a first threaded member having external threads thereon, a second threaded member having internal threads thereon adapted to engage said external threads, one of said threaded members having a longitudinal slot extending transversely of the threads, said slot having a depth greater than the depth of the threads, opposite sides of said slot being undercut for at least a portion of the length and forming overhanging edges, and a spring metal insert for said slot having a thickness less than the depth of the slot and having a breadth wider than the breadth of said slot between said overhanging edges, said spring metal insert having outer edge section of a width greater than the distance between said overhanging edges and being engaged in the undercut portions of the slot and having a longitudinally extending portion intermediate said outer edge sections, said longitudinally extending portion being narrower throughout its thickness than the minimum distance between said overhanging edges and having inner and outer faces bowed longitudinally outwardly to a location wherein the inner face is removed from the bottom of the slot and the outer face is located outwardly of the root diameter of the threads of said one of said threaded members, said spring metal insert being adapted to be depressed by the other of said threaded members when said threaded members are in engagement, whereby to inhibit relative rotation therebetween.

3,308,867
TIRE RIVETS

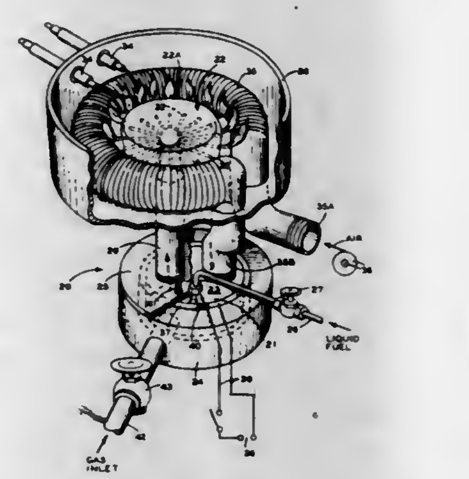
Bertha P. Nitzsche, P.O. Box 207,
Stoughton, Wis. 53589
Filed May 6, 1965, Ser. No. 453,618
4 Claims. (Cl. 152—370)



1. A tire rivet including a dished suction cup, a central elongated stem integral therewith, a helical thread on the entire length of said stem, a plurality of sharp ribs on the concave face of said suction cup, the entire unit being formed of crepe rubber.

3,308,868
COMBINATION OIL AND GAS BURNER CONSTRUCTION

Robert Reichhelm, Wallingford, Conn., assignor to Combustion Efficiency Corporation, Darien, Conn.
Filed May 5, 1965, Ser. No. 453,354
17 Claims. (Cl. 158—11)

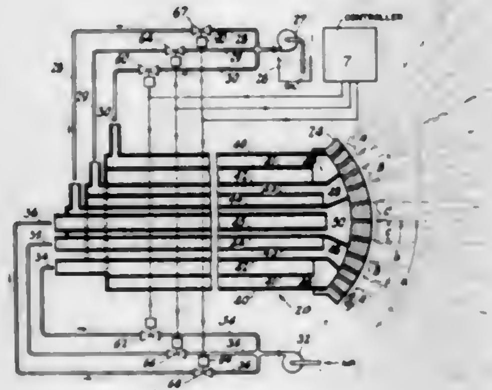


1. A combination gas and oil burner comprising:
(a) means defining a gasifying chamber,
(b) a heating means disposed within said chamber,
(c) means for introducing a liquid fuel into said chamber,
(d) a burner head,
(e) means connecting said burner head in communication with chamber,
(f) an air preheating means,
(g) means for directing a stream of air through said preheating means,
(h) said air preheating means having an outlet end connected in communication with said chamber

whereby said air heated therein is directed to said chamber and utilized to gasify said liquid fuel so that the latter is intimately mixed with said heated air to form a combustible mixture,
(i) a gas conduit connected to said chamber to supply a gas to said chamber as an alternate fuel,
(j) means for controlling the flow of said respective fuels to said chamber to proportion the flow of said respective fuels thereto,
(k) and said burner head being common to the burning of said gasified liquid fuel and/or gas,
(l) and an ignition means in said gasifying chamber whereby said ignition means is intermittently operated to scavenge said chamber in the event a heavy liquid fuel is being used.

3,308,869
LIQUID FUEL BURNER FOR WIDE RANGE OF LOAD

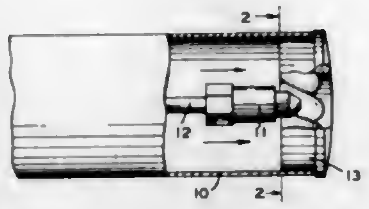
William L. Livingston, Burnsville, Minn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 17, 1965, Ser. No. 514,516
7 Claims. (Cl. 158—28)



1. A burner system for burning liquid fuel in a furnace at a variable combustion rate comprising a source of liquid fuel and gaseous medium for atomizing said fuel; a burner throat adapted to be provided in the wall of said furnace; an elongated fuel nozzle of the gas atomizing type for delivering a mixture of liquid fuel and gaseous atomizing medium to said burner throat; said fuel nozzle having a nozzle tip at the furnace end thereof including a nozzle wall adapted to face the interior of said furnace; a plurality of orifices provided in said nozzle wall for discharging jets of a mixture of said fuel and atomizing medium into said furnace; said orifices comprising at least two groups, the orifices of each group being spacedly located on at least one imaginary line surrounding the longitudinal axis of said nozzle, with the lines of said groups being spaced from said axis at progressively larger distances; the axes of the orifices in each group being inclined to the longitudinal axis of said nozzle at an acute angle, with the size of said angle increasing with increasing distance from said nozzle axis; a multiplicity of mixing chambers for mixing said fuel and atomizing medium; means for operatively connecting each of said mixing chambers with one of said groups of orifices; conduit means for connecting each of said mixing chambers with said source of fuel and with said source of atomizing medium; flow control means cooperating with each of said conduit means to control the flow of fuel and atomizing medium to each group of orifices; and means for selectively operating the flow control means of each group of orifices as required by variations in said combustion rate.

3,308,870
OIL BURNER AIR CONE

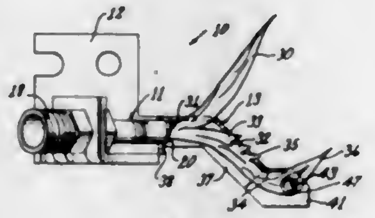
John P. Rex, Jr., Fenton, Mich., assignor to Rex Roto Corporation, Walled Lake, Mich., a corporation of Michigan
Filed Sept. 30, 1964, Ser. No. 400,516
1 Claim. (Cl. 158—76)



An oil burner nozzle air nose cone comprising a molded fibrous refractory ring, said ring being held in a stable nose cone form by an inorganic refractory binder, said ring being adapted for retention in an air tube surrounding an oil burner nozzle, said ring having a plurality of flutes molded in its internal surface adapted to induce a swirling movement of incoming air in order to mix incoming combustion air with an oil spray ejected from said nozzle, and said internal surface forming the most immediate adjacent element surrounding said oil burner nozzle.

3,308,871
PILOT BURNER MEANS OR THE LIKE

Fred Riehl, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Dec. 2, 1964, Ser. No. 415,410
21 Claims. (Cl. 158—143)

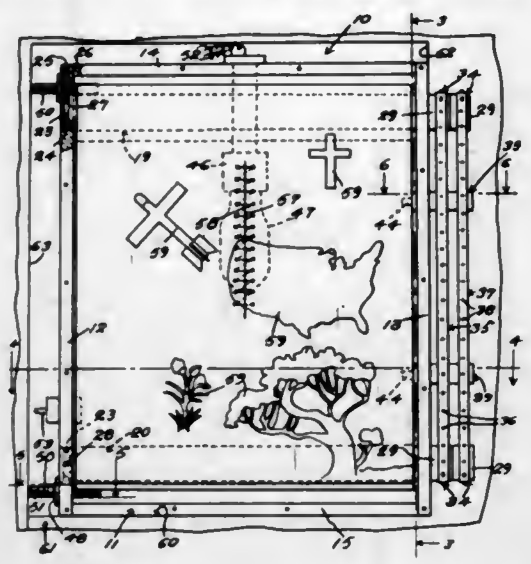


1. In a fuel control system, a pilot burner means having a first outlet means to normally issue a small standby flame during normal flow of fuel to said pilot burner means, and means for increasing the flow of fuel to said pilot burner means to increase the size of said standby flame for ignition purposes, said pilot burner means having a second outlet means spaced from and below said first outlet means to produce a heater flame at said second outlet means only when said increased flow of fuel is directed by said fuel flow means to said pilot burner means.

3,308,872
ORNAMENTAL WINDOW SHADE

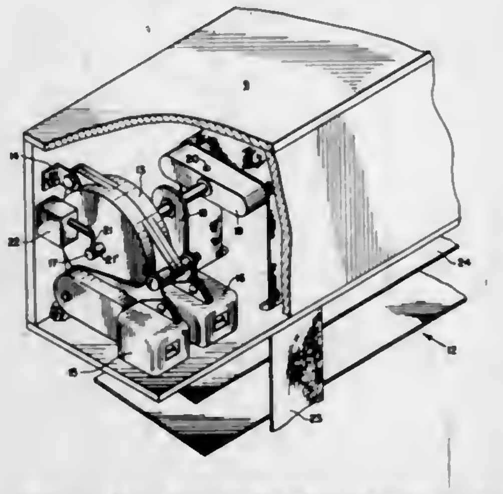
Robert C. Smith, 1422 E. 22nd Ave., Denver, Colo. 80205
Filed Feb. 16, 1965, Ser. No. 432,986
5 Claims. (Cl. 160—120)

1. An ornamental window shade comprising a rectangular frame, means adjustably mounted in said frame and adapted to engage a window opening for detachably clamping the frame therein, a pair of rollers journaled in said frame in spaced apart substantially parallel relation to one another, a transparent or translucent curtain attached to and wound on said rollers, a light source disposed within said frame, and manually actuated means connected to said rollers and disposed externally of the frame for revolving the rollers simultaneously in the same direction for selectively moving dissimilar portions of the curtain into a position between the light source and an open side of the frame.



3,308,873
VENETIAN BLIND OPERATION

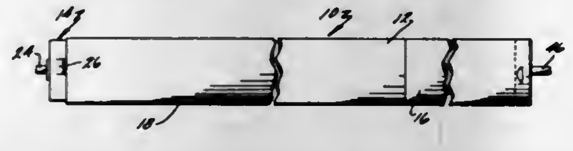
Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Apr. 20, 1965, Ser. No. 449,547
5 Claims. (Cl. 160—176)



1. In a device for automatically opening and closing a Venetian blind, the combination comprising: a Venetian blind including a plurality of slats and a paddle retained in substantially spaced parallel relationship by strap means, differential gearing means, first and second driving means having their respective outputs connected to said differential gearing means, said first driving means imparting motion to said differential gearing means in a counterclockwise direction, said second driving means imparting motion to said differential gearing means in a clockwise direction, a shaft fixedly connected to and driven by said differential gearing means and connected to said paddle of said Venetian blind, said differential gearing means displacing said shaft in a clockwise or a counterclockwise direction at a speed which is the difference between the motion imparted to said differential gearing means by said first and said second drive means, said shaft displacing said paddle, said paddle and said strap translating said rotational motion of said shaft to vertical motion thereby opening and closing said slats of said Venetian blind, pin means carried by and rotatable with said shaft, and a switch means actuated by said pin means after determined displacement of said shaft in said counterclockwise direction so as to de-energize said first drive means.

3,308,874
END CONSTRUCTION FOR SHADE ROLLER

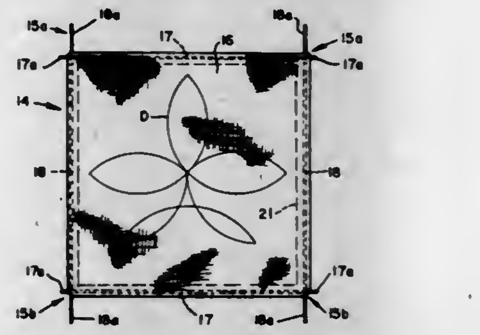
James A. Anderson, Muskegon, Mich., assignor to Breneman, Inc., a corporation of Ohio
Filed Feb. 3, 1965, Ser. No. 430,127
14 Claims. (Cl. 160—326)



1. An adjustable roller construction for window shades, comprising: a shade roller having a main body portion characterized by an open tubular gudgeon pin end and a motor end, said motor end having a flat spear for mounting the roller; a cylindrical plug body arranged to be insertable in said tubular end; a cap structure for the end of said plug body; said cap structure having an end portion and a tubular skirt having a diameter sufficient to telescope over said plug end; at least two oppositely disposed resiliently flexible wings cut from said cap structure skirt and extending outwardly at an angle from said cap and toward said main body; said angle of extension of said wings being such that the ends of said wings are within the circumferential silhouette of said main body; said wings abutting said tube end when said plug is inserted thereinto to prevent the plug from being forced completely inside the roller tube; said wings being resiliently deformable toward said body against their inherent outward bias to pass into said roller tube, to there bear outwardly against the inner walls of the tube and augment the frictional engagement of tube and body.

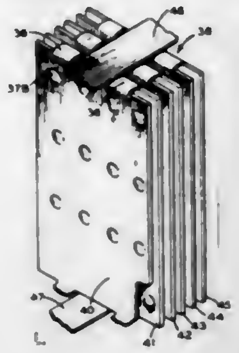
3,308,875
DECORATIVE PANEL

William L. Abrams, 29 Warnock Drive, Westport, Conn. 06880
Filed Oct. 23, 1964, Ser. No. 405,905
7 Claims. (Cl. 160—369)



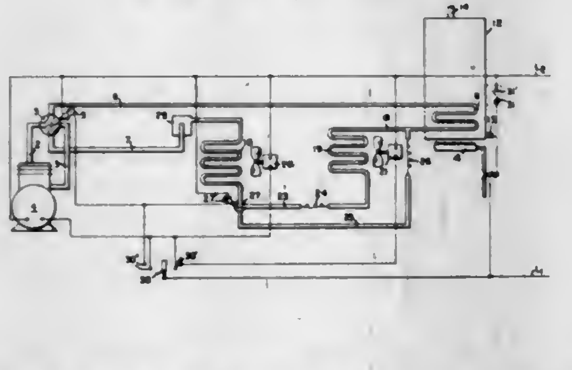
1. A decorative panel for attachment to a mesh support having a predetermined mesh size, comprising
(a) plurality of elongate frame members having end portions and central body portions,
(b) said frame members being arranged with their end portions in intersecting relation and with their central body portions defining a predetermined closed geometric configuration,
(c) bonding means premanently uniting said members at said intersections to form a frame having said predetermined configuration,
(d) the dimensions of said frame between said bonding means being substantially greater than the openings of said mesh support,
(e) said end portions defining substantially rigid locking means,
(f) sheet material supported by said body portions of said frame and being flexible therewith,
(g) whereby said frame may be fully flexed to accomodate insertion and removal of said locking means from said mesh support.

3,308,876
REGENERATIVE HEAT EXCHANGER'S PLATE HEAT TRANSFER SURFACE DETAILS
Arthur J. Gram, Jr., Wadsworth, and Andrew P. Lecon, Akron, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 30, 1965, Ser. No. 483,620
5 Claims. (Cl. 165—10)



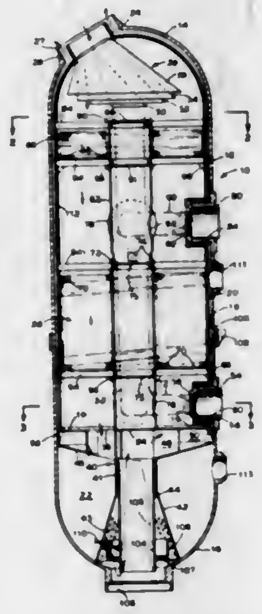
1. In a rotary regenerative fluid heater having a stationary housing, a cylindrical rotor having radial partitions forming a plurality of sector shaped compartments therein, regenerative heat exchange material positioned in each of said compartments, means for passing a heating fluid and a fluid to be heated in counterflow relationship separately through said compartments containing said regenerative heat exchange material, said regenerative heat exchange material comprising a plurality of rows of metallic plates arranged in stacked rows, the plates in each row being connected by a perforate hinge at opposite ends with an opposite adjacent plate, each plate being dimpled in the same assembled direction to provide a closely spaced fluid flow passageway between adjacent plates, and metallic means transversely positioned along and between opposite connected ends of and welded to each of said plates for rigidly attaching said plates in each row of plates to maintain said closely spaced relationship therebetween.

3,308,877
COMBINATION CONDITIONING AND WATER HEATING APPARATUS
Karl M. Gertels, Cazenovia, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed July 1, 1965, Ser. No. 468,715
10 Claims. (Cl. 165—29)



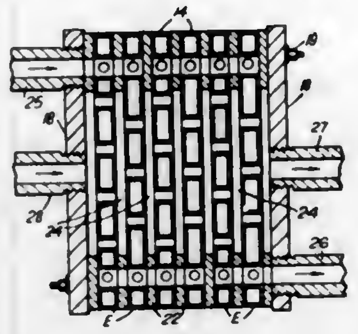
1. In an apparatus for conditioning an area, the combination of a compressor having suction and discharge sides, expansion means, a first heat exchanger connecting said compressor discharge side with said expansion means, and a second heat exchanger in heat exchange relation with a first fluid medium connecting said expansion means with said compressor suction side to form a closed refrigeration system, said first fluid medium being usable to condition said area; a third heat exchanger disposed in heat exchange relation with a second fluid medium to be conditioned connected between said first exchanger and said compressor discharge side whereby upon operation of said compressor, said system cools said first medium while heating said second medium; supplemental first heating means for said second fluid medium; first control means responsive to temperature conditions of said second fluid medium effective at a predetermined second fluid medium temperature to actuate said supplemental heating means; second heating means effective when actuated to heat said first fluid medium from said second fluid medium; and second control means operative upon a demand for heat of the area being conditioned to actuate said second heating means.

3,308,878
HELIUM HEATED STEAM GENERATOR
Darrell G. Durst, Massillon, and Paul F. Olhoeft, Akron, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 24, 1964, Ser. No. 399,012
18 Claims. (Cl. 165—134)



1. A fluid heated vapor generator comprising:
(A) a vertically elongated pressure shell comprising a vertically extending side wall an upper head and a lower head,
(B) a container disposed within and spaced from said shell and forming therewith a vertically extending annular flow space,
(C) heating fluid inlet means extending through the upper end of said shell and annular space and connected to the upper end of said container for supplying heating fluid therein,
(D) a plurality of vertically extending tubes disposed within said container for flowing a fluid therethrough to be vaporized as it passes in indirect heat exchange relationship with the heating fluid,
(E) a heating fluid chamber disposed in the lower end of said shell below said container,
(F) inlet and outlet means for said tubes extending through the vertical side wall of said shell whereby the tubes are drainable, a heating fluid outlet means from the lower end of said container communicating with said chamber,
(G) heating fluid circulating means disposed in the lower end of said shell and arranged to receive heating fluid from said chamber after it has passed through said container and to deliver it to said annular space whereby the heating fluid cooled in its passage over said tubes protects the pressure shell from the higher temperature heating fluid flowing through the container, and
(H) heating fluid outlet means from said annular space located at the same end of the vessel as said heating fluid inlet means.

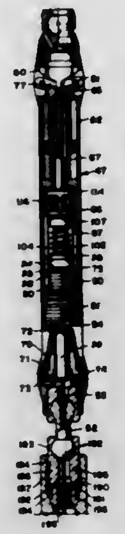
3,308,879
HEAT EXCHANGERS
Herbert Fernyhough Maddocks, 26 Garth Drive, Liverpool Road, Chester, England
Filed June 10, 1964, Ser. No. 373,966
4 Claims. (Cl. 165—167)



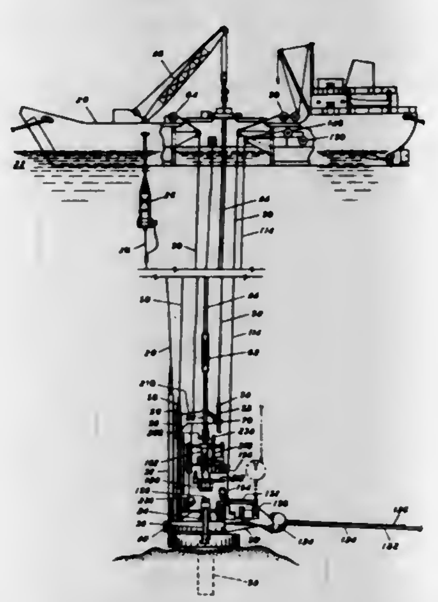
1. A heat exchanger comprising a plurality of heat exchanger elements each heat exchanger element comprising two spaced parallel walls having smooth marginal portions to permit adjacent elements to be assembled in peripherally sealed disposition and having a plurality of apertures in the faces thereof within said marginal portions, a corresponding plurality of tubular members having a length substantially equal to the distance between the outer faces of said parallel walls, the ends of each of said tubular members being secured in fluid-tight relationship to the periphery of each of said apertures, whereby the outer faces of said parallel walls have flush smooth faces, said elements being assembled such that the tubular members of adjacent elements are not axially aligned whereby sinuous flow paths are provided, clamp means to hold said exchanger elements in mutually spaced parallel order with chambers between adjacent elements defined by the outer faces of the mutually facing parallel walls of exchanger elements, means to circulate a first fluid through said heat exchanger to flow in succession through all said tubular members and chambers in said successive sinuous paths, and means to circulate a second fluid through the interior of said exchanger elements causing said second fluid to flow within all elements between the parallel walls thereof and around the tubular members interconnecting said walls to provide for exchange of heat through the exchanger element structures between the two said fluids respectively.

3,308,880
THROUGH-THE-FLOWLINE TOOL INSTALLATION SYSTEM
Edward D. Yetman, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 28, 1963, Ser. No. 254,167
4 Claims. (Cl. 166—.5)

1. A system for installing a tool in a preselected tool receiving positions formed therein at longitudinally spaced locations, comprising:
(a) identical short indexing areas located within the conduit adjacent said positions, said areas having an internal diameter less than the internal diameter of the conduit;
(b) a carrier operatively engaging the tool and adapted to propel said tool through the conduit;
(c) a selectively operable installation mechanism secured to the tool and adapted to be activated to install said tool in said preselected position;
(d) an indexing device operatively secured to said installation mechanism;
(e) sensing means carried by said indexing device and cooperable with said indexing areas to sense the number of said areas through which the device has passed; and,
(f) actuating means carried by said indexing device and cooperating with said sensing means to activate said installation mechanism to install the tool in said preselected tool receiving position.



3,308,881
METHOD AND APPARATUS FOR OFFSHORE WELL COMPLETION
Edward T. Chan, San Francisco, and William R. Postlewaite, Menlo Park, Calif., assignors to Chevron Research Company, a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 235,432
13 Claims. (Cl. 166—.6)



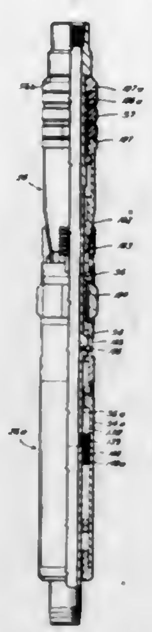
7. Apparatus for connecting an end of a pipeline to a submerged base comprising a platform positioned in a body of water above a submerged base, a pulling means extending from said platform downwardly to said base, means mounting the lower end portion of said pulling means on said base for longitudinal movement of said pulling means relative to said base, means on said platform for pulling the lower end of said pulling means toward said base, a pipe line, means for detachably connecting the lower end of said pulling means to an end of said pipeline, securing means for said end of said pipeline on said base, said pulling means being disposed to pull said end of said pipeline into engagement with said securing means.

3,308,882
WELL TESTING METHOD AND APPARATUS

Maurice P. Lebourg, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Dec. 24, 1963, Ser. No. 333,224

35 Claims. (Cl. 166—3)



30. A method of testing earth formations and sampling formation fluids at formation conditions comprising the steps of:

suspending in a well bore on a string of pipe a valved well tool and expandable packer,

expanding the packer to isolate a section of the earth formations,

cyclically operating the valved well tool more than once by opening and closing the valved tool to flow formation fluids through a chamber therein and thence into the string of pipe,

recording the pressures of the formation fluids while the valved tool is being operated,

finally closing the valved tool to trap and confine the last flowing sample of the formation fluid at formation conditions within the chamber prior to release of the packer,

releasing the packer to retract it, and

retrieving the packer and well tool to the surface to inspect the formation fluid trapped within the chamber.

3,308,883
THICKENED WATER FOR SECONDARY RECOVERY PROCESS

William R. Foster, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Nov. 5, 1964, Ser. No. 409,318

6 Claims. (Cl. 166—9)

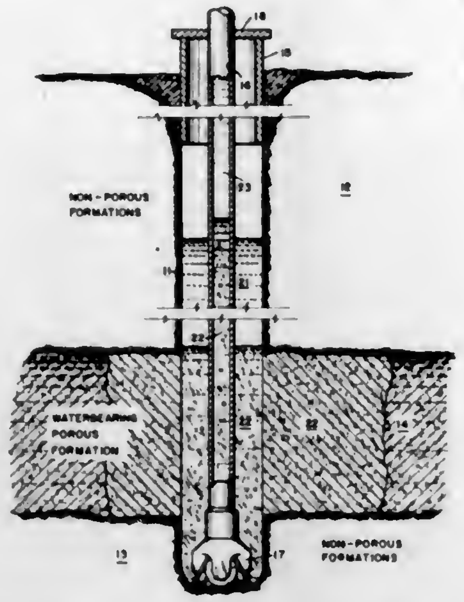
1. In a method for the recovery of oil from an oil-containing subterranean formation wherein a fluid is injected into an injection well penetrating said formation, the improvement comprising injecting through said injection well and into said formation a thickened aqueous solution comprising water having incorporated therein from 0.01 to 1.0 percent by weight of a water-soluble compound selected from the class consisting of sulfonated poly-(dialkyl phenol) and its salts wherein the alkyl groups are in the two and six positions on the phenol nucleus and are selected from the class consisting of methyl, ethyl, and normal propyl.

3,308,884
PLUGGING UNDERGROUND FORMATIONS

Thomas J. Robichaux, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 13, 1963, Ser. No. 330,351

1 Claim. (Cl. 166—33)



A method for plugging a water-bearing porous formation encountered in air-drilling of a borehole by forming a gel in the pores of the formation which renders the formation non-porous which comprises the steps of

(a) preparing a solution of resin and amine which maintains a viscosity below 100 centipoises at least until it enters said formation, said solution consisting of
  (1) 55 to 70 parts by volume of toluene,
  (2) 30 to 45 parts by volume of the following resin-forming components:
    (i) a mixture of liquid glycidyl ethers of 2,2-bis(4-hydroxyphenyl)propane having an epoxy equivalency of about 1.75 to 2.1 and a molecular weight of about 350 to 400,
    (ii) bis(3-methyl-4-aminocyclohexyl)methane, and
    (iii) phenol

the composition of the solution being predetermined to maintain the reaction product of said epoxide and amine in solution for the time required to inject said solution into said formation, and thereafter to be converted completely to a gelled resin,

(b) pumping a liquid into said borehole until flow of liquid into said water-bearing formation is established,

(c) thereafter pumping said solution into said formation, and

(d) retaining said solution in said formation for a sufficient time to permit the solution to gel and the gelled resin to cure in place, substantially completely plugging said formation.

3,308,885
TREATMENT OF SUBSURFACE HYDROCARBON FLUID-BEARING FORMATIONS TO REDUCE WATER PRODUCTION THEREFROM

Burton B. Sandiford, Placentia, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,109

10 Claims. (Cl. 166—33)

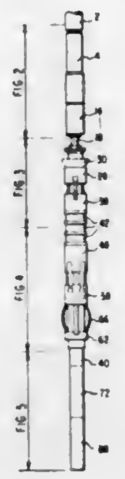
1. A method for recovering fluid hydrocarbons from a subterranean formation which is penetrated by a well bore, and for reducing the concomitant production of reservoir water therefrom, which comprises: injecting into said formation through said well bore an aqueous treating solution comprising a minor proportion of a water-soluble, partially hydrolyzed polyacrylamide treating agent having a molecular weight in excess of about 200,000, at least about 8% but not more than about 70% of the amide groups thereof having been hydrolyzed to carboxyl groups, then terminating the injection of said treating agent and thereafter placing the treated well on production.

3,308,886
RETRIEVABLE BRIDGE PLUG

Robert T. Evans, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware

Filed Dec. 26, 1963, Ser. No. 333,499

14 Claims. (Cl. 166—134)



1. A retrievable bridge plug comprising a packer mandrel, a packer ring mounted on said mandrel, a plurality of upper slips and lower slips on opposite sides of the packer ring, said slips being mounted in mechanical slip bodies, said packer ring being positioned between and in engagement with said mechanical slip bodies, each of said bodies having a shoulder adjacent the packer ring and having inclined surfaces cooperating with said slips to displace said slips outwardly against a well casing upon longitudinal movement of said slips relative to said slip bodies, one of said bodies being movable longitudinally along the mandrel, the other of said bodies being secured to said mandrel, and means for moving said one body toward the other body and said slips longitudinally toward each other and longitudinally relative to their respective mechanical slip bodies to expand the packer ring, whereby the slips maintain the packer ring expanded.

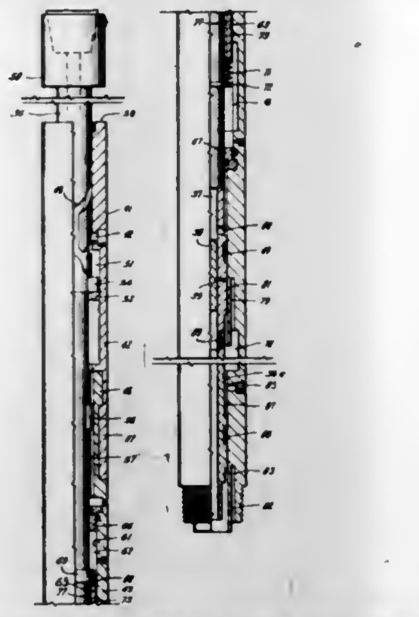
3,308,887
WELL TESTER

Benjamin P. Nutter, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Dec. 24, 1963, Ser. No. 333,225

20 Claims. (Cl. 166—150)

10. A well testing tool comprising: first and second telescopically arranged members adapted for coupling in a tool string, said members having passageways and valve means for selectively placing said passageways in communication, means securing said members to one another, at least one abutment means mounted on one of said members for rotation relative to both of said members, at least one abutment means mounted on the other of said members, and index means including cam means cooperable between said first mentioned abutment means and one of said members for positioning said abutment means in engagement in one longitudinal position of said members whereby forces in one direction can be transmitted from one of said members to the other through said abutment means and for rotating said first mentioned abutment means relative to both of said members in response to longitudinal motion of one of said members to disengage said abutment means to permit relative movement of said members to another longitudinal position.

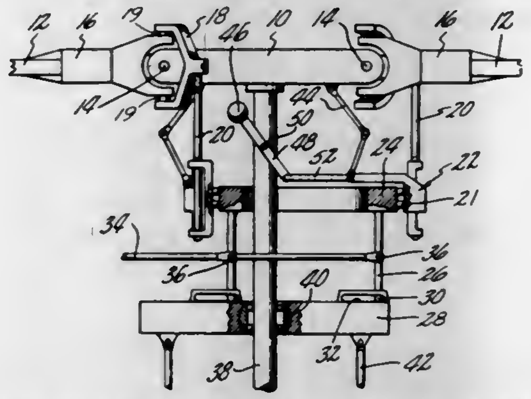


3,308,888
COMPOUND HELICOPTER ROTOR CONTROL SYSTEM

Peter J. Arcidiacono, East Hampton, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Dec. 20, 1965, Ser. No. 514,847

7 Claims. (Cl. 170—160.25)



1. In an aircraft, a rotor, a plurality of blades mounted on said rotor for flapping movement about horizontal flapping hinge pins and for pitch changing movement about their longitudinal axes, means for controlling the pitch of said blade collectively and cyclically including a swash plate rotatable with said rotor, control horns pivotally mounted on said blades for swinging movement, an upstanding control rod for each blade supported on said swash plate for lateral bodily movement with the latter and connected at its upper end to the horn of its respective blade, and mechanism for moving said swash plate together with its connected control rods bodily laterally with respect to said rotor into a position in which the control rod of an advancing blade lies outboard of its flapping hinge pin and the control rod of a retreating blade lies inboard of its flapping hinge pin.

3,308,889
VARIABLE PITCH PROPELLER WITH AUTOMATIC ADJUSTMENT

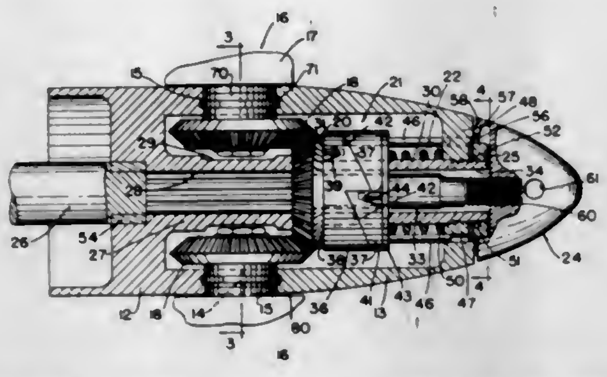
Henrik G. Langhjelm, Southfield, and Charles J. Di Gioia, Birmingham, Mich., assignors to Finn Bergishagen, Birmingham, Mich.

Filed July 6, 1965, Ser. No. 469,779

6 Claims. (Cl. 170—160.51)

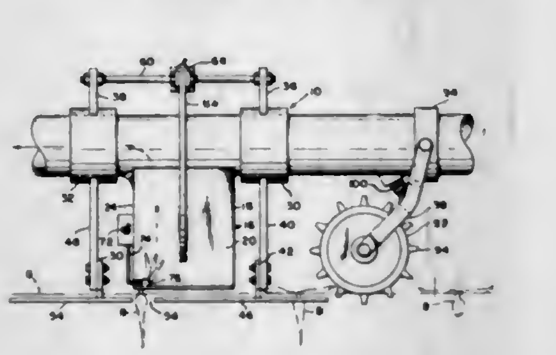
1. A variable pitch propeller comprising an axially extending hub, a power shaft disposed coaxially within said

hub, said hub having an internal and axially elongated extension at which said shaft is drivingly connected thereto, a plurality of propeller blades journaled by said hub on axes each in a plane radial to the hub to permit rotation of each blade to vary its pitch angle, and resilient means in said hub for applying biasing torque to said blades about the axes thereof in a direction to urge the same toward their greatest pitch angle, said means being responsive to rotative blade adjustment in the opposite direction under increasing fluid pressure load on the blades to increase the blade-biasing torque applied by said means, said resilient means including a first cam rotatively journaled in said hub on said extension of the latter and rotatively responsive to said blade adjustment, said first cam being in axially fixed relation to said hub extension, a second cam mounted for axial sliding on said hub extension, said second cam coaxially engaging said first cam and being restrained in said hub against rotation relative to the latter, said second cam being axially movable in response to rotation of the first cam, and a spring unit urging said cams against one another.



3,308,890
BEET BLOCKING APPARATUS

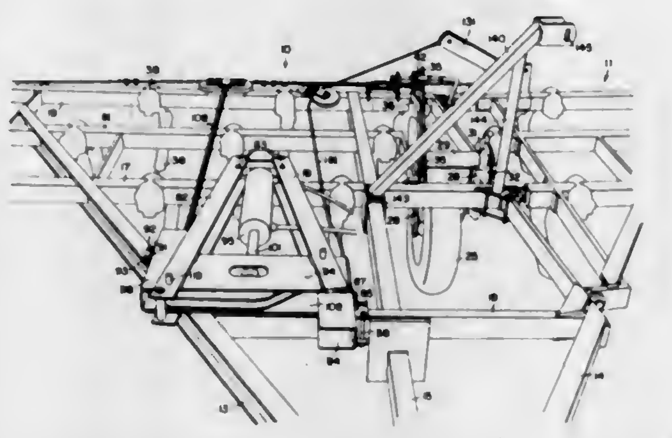
Dan R. Rhode, Rte. 2, Box 429,
Toppenish, Wash. 98948
Filed Aug. 17, 1964, Ser. No. 389,839
3 Claims. (Cl. 172—6)



1. A row crop thinning machine adapted to be mounted on a tractor, comprising: (a) a tubular header member connected to a blower fan for creating air suction in said header, said header member being adapted to be generally horizontally supported; (b) a depending, generally rectangular suction housing attached to and opening into said header, said suction housing being open at its lower end and said lower end being adapted to be spaced a predetermined distance above the ground line; (c) a plant contacting and trip means located at the lower end of said suction housing for contacting plants drawn into said housing by air suction; (d) a pair of spaced apart mounting means pivotally received on said header one on each side of said suction housing, each of said mounting means including a depending cutter arm and a generally horizontally disposed cutter blade at the lower end of each arm with said blades located below the lower end of said housing, said cutter arms and blades being designed to swing through a limited arc, said blades also being spaced from each other generally below said trip means; and (e) operating means for pivoting said mounting means, said operating means being connected to and operated by said trip means.

3,308,891
TOOL CARRIER

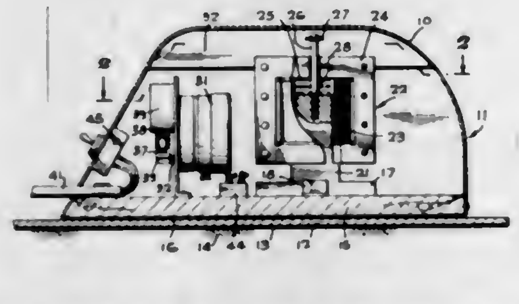
William W. Jackson, Altoona, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Oct. 19, 1964, Ser. No. 404,611
10 Claims. (Cl. 172—456)



1. An agricultural implement comprising a main frame adapted to be propelled forwardly over the ground, at least one outrigger frame, hinge means connecting said outrigger frame to one side of the main frame for swinging about a generally fore-and-aft extending axis, ground-working tools connected to both said main frame and said outrigger frame, a power cylinder carried by one of said frames and including an extensible and retractable piston rod, a link pivoted at its midportion to the outer end of said piston rod, ground-engaging means movably connected with said main frame and shiftable relative thereto for raising and lowering said frame, means connecting one end portion of said link with said ground wheels, means connecting the other end portion of said link with said outrigger frame, and means operable to optionally lock one or the other end of said link against shifting.

3,308,892
IMPACT BEATING BLOCK

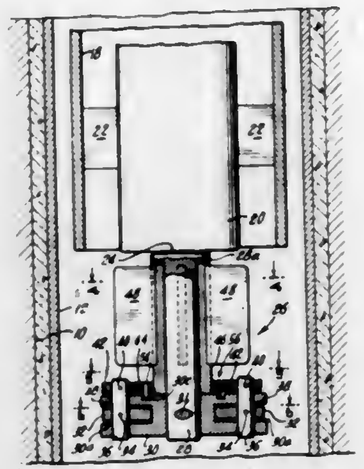
Thomas T. Palmer, 8224 Skyline Drive,
Los Angeles, Calif. 90046
Filed Aug. 12, 1964, Ser. No. 389,134
10 Claims. (Cl. 173—117)



1. A hand-held impact beating block comprising:
(a) a casing adapted to be held in the hand;
(b) a beating block secured to said casing;
(c) a solenoid mounted on said beating block within said casing and having a portion mounted for reciprocating movement perpendicular to said block;
(d) means for periodically energizing said solenoid to deliver a series of blows to said beating block.

3,308,893
DOWNHOLE HORIZONTAL SLOTTING TOOL

John D. Wisenbaker and Robert W. Stuart, Dallas, Tex., assignors of one-half each to American Coldset Corporation, Teterboro, N.J., a corporation of Texas, and Core Laboratories, Inc., Dallas, Tex.
Filed Dec. 31, 1963, Ser. No. 334,819
7 Claims. (Cl. 175—40)



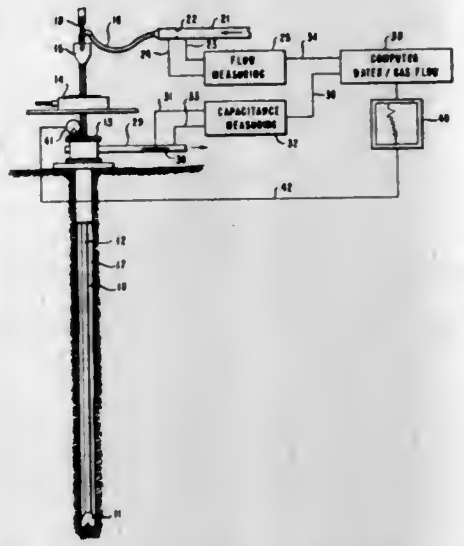
1. A down-hole horizontal slotting tool comprising a support assembly adapted to be lowered on a wire line into an at least partially liquid-filled well borehole, centering members mounted at spaced positions around said support assembly for movement between extended positions at which they engage the sidewalls of said borehole to resist transverse and rotational movements of said support assembly and retracted positions clear of said sidewalls, and means for moving said centering members between said extended and retracted positions, a motor on said support assembly, a rotor assembly projecting from said support assembly and mechanically coupled to said motor to be rotated thereby about a vertical axis, cutter elements movably mounted at angularly spaced positions on said rotor assembly for movement in a horizontal plane toward and away from said axis, a vane assembly mounted on said rotor assembly for limited rotational movement relative thereto, vanes on said vane assembly arranged to be immersed in the liquid in said borehole to impart a drag against rotation of said vane assembly and urge it to rotate relative to said rotor assembly, and means mechanically coupling said vane assembly to said cutter elements whereby such relative rotation of said vane assembly causes outward movement of said cutter elements when said rotor assembly is rotated in one direction and inward movement of said cutter elements when said rotor assembly is rotated in the opposite direction.

3,308,894
MONITORING SYSTEM FOR GASEOUS FLUID DRILL BOREHOLES

Tom R. Reinhart, New Orleans, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Apr. 24, 1964, Ser. No. 362,376
2 Claims. (Cl. 175—68)

1. A method for improving air drilling of boreholes in which circulation of the drilling air stream is down the drill string and up the annulus between the drill string and the borehole wall, the improvement comprising the steps of:

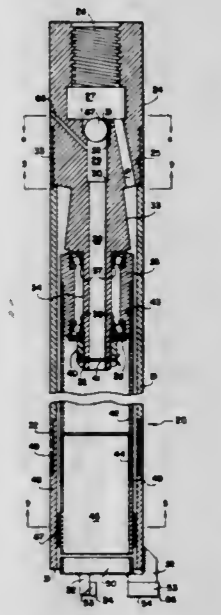
drilling the borehole while circulating air to return the formation cuttings to the surface;
monitoring at the surface the dielectric constant of the return fluid and solids stream to determine the water content thereof;
halting the drilling when the water content of the return fluid and solids stream raises above a preset background level;



treating the formation to shut off the flow of water and continuing to drill the borehole.

3,308,895
CORE BARREL DRILL

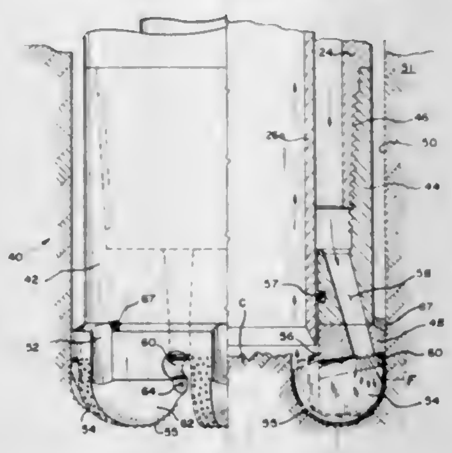
Edward F. Oxford, Macon, Ga., and Gerald L. Barton, Langley, S.C., assignors to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
Filed Dec. 16, 1964, Ser. No. 418,691
3 Claims. (Cl. 175—237)



1. A core barrel drill comprising a mounting body having an axial bore opening through the upper end thereof, an extension integrally formed on the lower end of said body and having an axial bore extending therethrough communicating with the axial bore in said mounting body, a cylindrical outer barrel detachably secured at its upper end to said mounting body and having its lower end open, a cylindrical bit detachably secured to the lower end of said outer barrel, an inner barrel having its lower end open, said inner barrel positioned concentric of said outer barrel in spaced relation thereto, means securing said inner barrel to said extension for relative rotation therebetween, said inner barrel having its lower end adjacent to but slightly spaced from said bit, a shoulder formed in the upper end portion of the bore in said extension, said body having a plurality of ports extending downwardly and outwardly from the axial bore in said body through the side of said body terminating at a position communicating with the space between said outer barrel and said inner barrel and being adapted to direct water under

pressure from the axial bore in said body into the space between said outer barrel and said inner barrel, the axial bore in said extension communicating the axial bore in said body with the interior of said inner barrel and being adapted to direct water under pressure from the axial bore in said body into said inner barrel, and detachable means for engagement with said shoulder for selectively closing the ports and the axial bore in said extension.

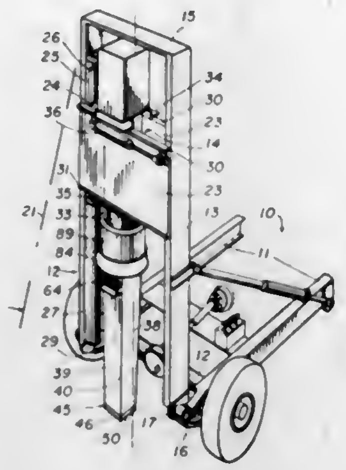
3,308,896
DRILLING BIT
Homer I. Henderson, 2220 Live Oak,
San Angelo, Tex. 76903
Filed Aug. 20, 1964, Ser. No. 391,834
11 Claims. (Cl. 175—330)



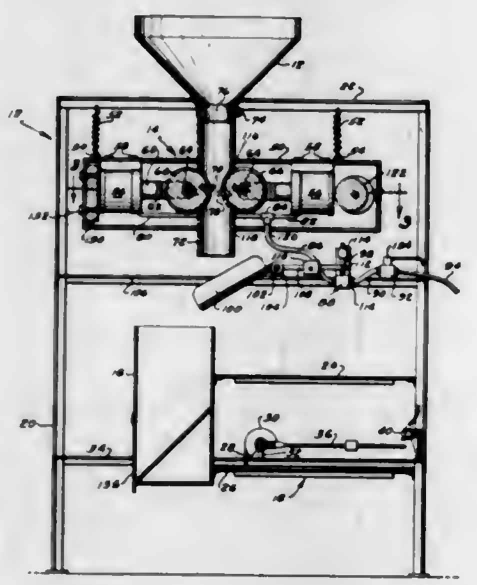
1. A drill bit comprising:
a body adapted to be secured to the lower end of a drill pipe and rotated thereby,
at least one blade protruding below the bottom of said body and extending transversely across said body from the periphery thereof to a central portion thereof,
a penetration-limiting surface trailing said blade on said bottom of the body,
a water course passageway extending transversely through said body between the periphery thereof and a radially inward portion thereof,
a fluid jet conduit extending downward through said body from the upper end thereof and opening in said passageway adjacent one end thereof,
said passageway being flared outward to enlarged cross-section from said one end thereof to the other end thereof, and
means at the trailing portion of said penetration-limiting surface forming an elongated restricted throat opening transversely across said surface into said passageway,
said passageway being displaced above said penetration-limiting surface.

3,308,897
EARTH CORING PUNCH AND DRIVE APPARATUS THEREFOR
Norman D. Becker, Calgary, Alberta, Canada, assignor to Becker Drilling (Alberta) Ltd., Calgary, Alberta, Canada, a company of Canada
Filed Apr. 6, 1964, Ser. No. 357,447
Claims priority, application Canada, Nov. 6, 1963, 888,474
5 Claims. (Cl. 175—405)

1. An earth perforating punch for sinking compacted wall boreholes in rock fill and recovering the contents of said boreholes, comprising an upwardly elongate tubular casing having a closing upper end wall, an open shoe in the form of an annulus integrally joined with and depending from the periphery of the lower end of said casing, said shoe having a peripheral depending cutting edge and having inner side walls bevelled to provide an aperture of which the cross sectional area decreases upwardly from said cutting edge, the smallest cross-sectional dimensions of said aperture being significantly smaller than any internal cross-sectional dimensions of said casing, said shoe also having a plurality of wedge-shaped teeth uniformly spaced apart along the peripheral cutting edge and disposed at right angles thereto, said teeth having extension portions tapering in thickness downwardly to chisel edges depending below said cutting edge, said chisel edges having a length spanning the widest lateral dimension of said annulus and extending inwardly of the plan projection of said annulus, a side opening in said casing adjacent said end wall, and a curved duct connecting said opening with the interior of said casing.

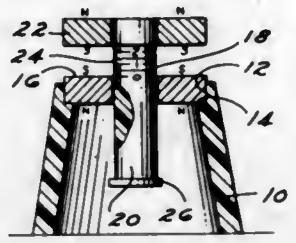


3,308,898
VIBRATED FLOW CONTROL VALVE AND WEIGHER
Kenneth M. Allen and Chester H. Harper, Newberg, Oreg., assignors to Allen-Harper, Inc., Newberg, Oreg., a corporation of Oregon
Continuation of application Ser. No. 258,502, Feb. 14, 1963. This application Sept. 22, 1965, Ser. No. 495,751
11 Claims. (Cl. 177—64)



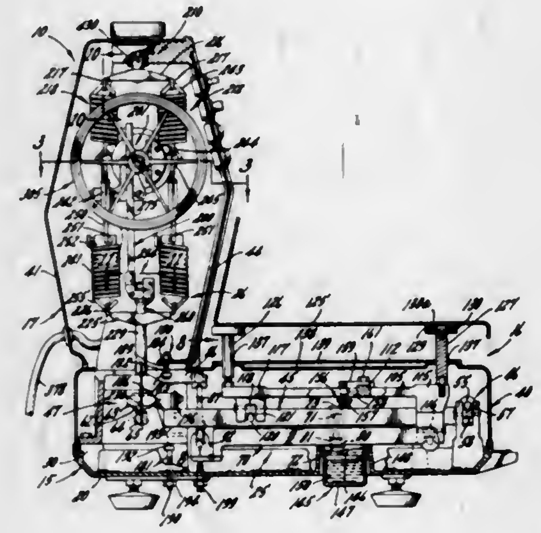
1. In a vibratory flow control valve,
a carrier frame,
means for supporting the carrier frame resiliently,
a vibrating device carried by the frame and vibrating the same,
a resilient tube adapted to guide material therethrough,
and pinch means carried by the frame for constricting a portion of the tube.

3,308,899
POSTAL WEIGH SCALE USING OPPOSED MAGNETS
Robert C. Dinsmore, Flint, Mich., assignor to Dinsmore Instrument Company, Detroit, Mich., a corporation of Michigan
Filed July 8, 1966, Ser. No. 563,879
3 Claims. (Cl. 177—201)



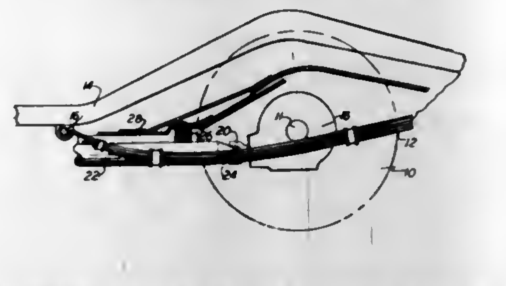
1. A device for serving as a scale which comprises a base having a top portion for mounting an insert, a first insert of magnetic material on said top portion, said insert on said base having an axial passage, a shaft slidingly received in said passage, and a platform including a second insert of magnetic material on the top of said shaft having a polar disposition wherein similar poles of said inserts are facing each other, whereby the magnetic repelling action of said inserts serves as a variable resistance increasing with the proximity of said magnets to serve as a scale for a weighing device for articles placed on the platform.

3,308,900
WEIGH SCALE WITH FAST RESPONSE LEVER AND SPRING BALANCE ARRANGEMENT
Edward C. Karp, Belvidere, Ill., assignor to Sanitary Scale Company, Belvidere, Ill., a corporation of Illinois
Filed Apr. 9, 1964, Ser. No. 358,672
10 Claims. (Cl. 177—230)



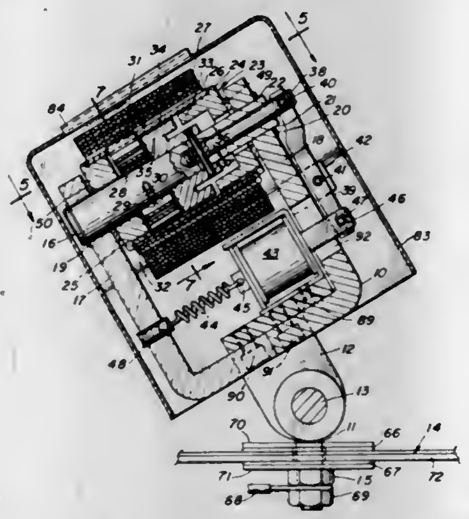
1. A weighing scale, comprising: a lever arrangement including a long lever and a short lever, the effective length of the short lever being substantially two-thirds that of the long lever, a balance arrangement connected to said lever arrangement and opposing reaction of said lever arrangement to weight applied thereto with a predetermined counterforce, the ratio of said weight to said counterforce being less than 2 to 1, and means for interpreting the amount of reaction of said balance arrangement in terms indicative of the precise weight applied to said lever arrangement.

3,308,901
DRIVE SHAFT TRAVEL LIMITING DEVICE
Stanley J. Cislo, Detroit, and Clark A. Tea, Southfield, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 25, 1965, Ser. No. 466,882
7 Claims. (Cl. 180—70)



3. In a motor vehicle having chassis support structure, a pair of road wheels, a rigid axle housing interconnecting said road wheels, a pair of leaf springs connecting said axle housing to said support structure, a differential gear unit centrally situated in said axle housing, a forwardly mounted transmission, a one piece rotatable drive shaft connected to said gear unit at one end and to said transmission at its other end, a resilient motion limiting device secured to said support structure in vertical alignment with said drive shaft, said device being situated between the rear of said shaft and the midpoint of said shaft, said device being normally spaced apart from said drive shaft and constructed to limit the upward movement of said drive shaft.

3,308,902
FAIL-SAFE AUTOMATIC BELT ANCHOR SYSTEM
Andrew G. Carter, 2930 Lake Drive SE.,
Grand Rapids, Mich. 49506
Filed Nov. 19, 1964, Ser. No. 412,557
16 Claims. (Cl. 180—82)



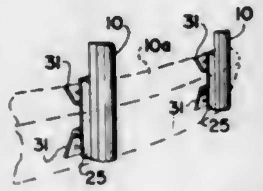
1. In combination with a vehicle having a voltage source and an ignition system including a switch, and also having a safety belt including a buckle having portions connecting opposite sections of said safety belt, a terminal device for said safety belt, said device comprising:
a frame normally secured to said vehicle;
a shaft mounted in said frame;
a reel receiving an end of at least one of said belt sections, said reel being rotatable with respect to said frame and mounted on said shaft;
reel biasing means urging said reel to rotate with respect to said frame to wind up said belt section;
locking means engageable and disengageable with said reel to fix said reel with respect to said frame;
locking-biasing means urging said locking means into engagement;
means including a solenoid for disengaging said locking means;

conductor wires electrically connected to said buckle portions, respectively, and

electric circuit means connecting said solenoid to said voltage source, and also said conductor wires in shunt relationship with said solenoid when said buckle portions are coupled.

3,308,903
MOTOR VEHICLE PUSH PREVENTING BUMPER GUARD

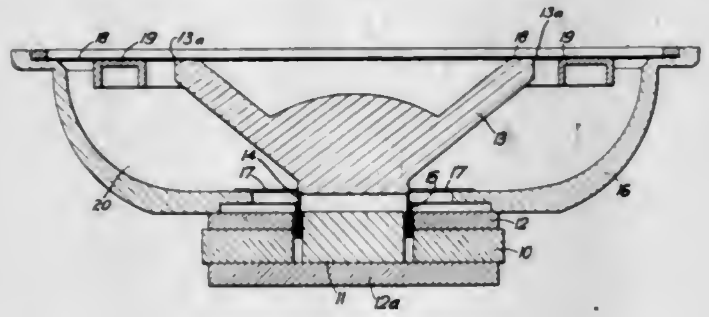
Leonard H. Sobel and Martin Sobel, both of 312 Penn St., Brooklyn, N.Y. 11211
Filed Oct. 14, 1963, Ser. No. 315,785
15 Claims. (Cl. 180—83)



1. A device for preventing the pushing of a first vehicle by a second vehicle, comprising switch means contained in a part of said second vehicle which is contactable with said first vehicle when both vehicles are in contact, and means connected to said switch means in such manner as to render said second vehicle inactive immediately upon contact between said vehicles and for a time delay period thereafter.

3,308,904
LOUDSPEAKERS

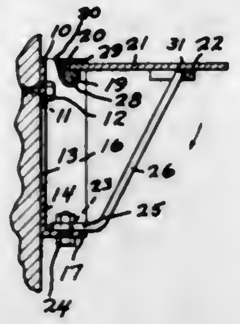
Stanley Kelly, Enfield, Middlesex, England, assignor to Decca Limited, London, England, a British company
Filed Aug. 23, 1965, Ser. No. 481,582
Claims priority, application Great Britain, Aug. 26, 1964, 34,920/64
4 Claims. (Cl. 181—32)



1. A loudspeaker comprising a fixed support, an electro-mechanical transducer mounted in said support, a rigid circular piston driven by said transducer whereby the piston is moved with respect to the support in accordance with applied electrical signals, a rigid annulus surrounding the piston and concentric therewith, and a sheet of flexible material secured to the piston and to said fixed support, which sheet extends outwardly in a radial plane from the piston, said annulus being secured on said sheet of flexible material whereby the flexible material forms a compliant coupling between the piston and the annulus and between the annulus and the support, the flexible material and annulus together forming an air seal between the piston and the support, the annulus having a mass and effective area equal respectively to the mass and effective area of the piston, and the spacing between the piston and annulus and between the annulus and support being so proportioned that the compliance between the piston and annulus is equal to the compliance between the annulus and the support.

3,308,905
COLLAPSIBLE STEP

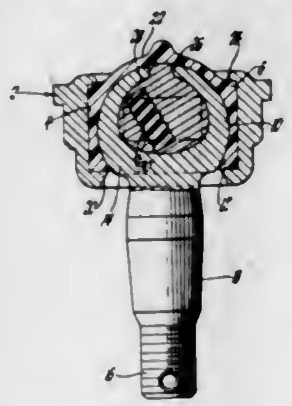
Francis H. Peck, 609 Superior St., Storm Lake, Iowa 50588
Filed Aug. 9, 1965, Ser. No. 478,167
1 Claim. (Cl. 182—89)



A collapsible step comprising a framework, a step member pivoted to said framework, means for supporting said step member in horizontal position including a bar pivoted to a lower portion of said framework and adapted to engage said step, a boss attached to said step member having a cavity therein, the upper end of said bar being adapted to be received in said cavity, a rod attached to said step member, said rod being journalled in said framework, a helical spring receiving said rod and bearing against said step member and said framework, said framework including an upper horizontal portion, a lower horizontal portion vertically spaced therefrom, horizontally spaced vertical portions merging with said horizontal portions, vertical flanges attached to said vertical portions in which said rod is journalled, a horizontal flange attached to said lower horizontal portion, said bar having a horizontal lower end portion and an upwardly inclined integral portion, a bolt passing through said horizontal lower end portion and said horizontal flange, swinging of said upwardly inclined portion away from said boss providing means whereby said step member will be spring urged to a vertical position and to be enclosed in said framework, means for attaching said upper horizontal portion to a body to which said framework is attached.

3,308,906
LIFETIME LUBRICATED BALL JOINT

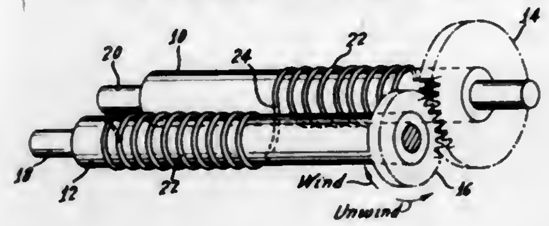
Harold J. Burke, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 15, 1964, Ser. No. 375,027
6 Claims. (Cl. 184—1)



1. A ball joint assembly comprising, an apertured socket, a stud extending through the aperture, a head portion formed on said stud having an outer surface in bearing engagement with the inner surface of said socket, means forming a lubricant reservoir in said head portion, and solid pellet means in said reservoir operable responsive to a chemical reaction to slowly expand and displace lubricant therefrom at a rate sufficient to assure maintenance of a film of lubricant between said bearing surfaces.

3,308,907
MOTOR

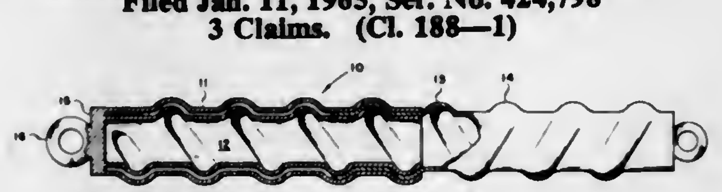
Lawrence E. Bodkin, 1833 Ryar Road, Jacksonville, Fla. 32216
Filed July 15, 1965, Ser. No. 472,206
17 Claims. (Cl. 185—39)



1. A motor comprising a pair of rotatable members, an elongated, longitudinally extensible and resilient member wound at least in part about one said rotatable member, one end of said resilient member being anchored on said one rotatable member, the other end of said resilient member being anchored on the other said rotatable member whereby one portion of said resilient member extends between said rotatable members, means forming a driving connection between said rotatable members to provide simultaneous rotation thereof to unwind said resilient member relative to said one member and wind said resilient member about said other rotatable member and to provide that said resilient member will be unwound relative to said one member at a rate different from the rate at which it will be wound about said other rotatable member, and means for providing that the ratio of the rates at which said resilient member is unwound relative to said one rotatable member and wound about said other rotatable member is substantially different during initial unwinding of said resilient member from said one member than during subsequent unwinding of said resilient member relative to said one member.

3,308,908
ENERGY ABSORBER

John P. Bunn, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif., a corporation of California
Filed Jan. 11, 1965, Ser. No. 424,798
3 Claims. (Cl. 188—1)

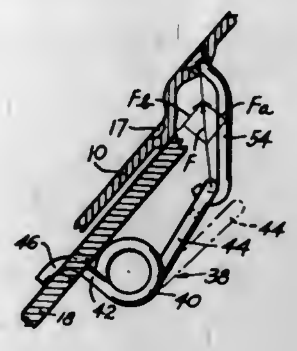


1. An energy absorber comprising a plurality of rigid tubes assembled in overlapped relation and mated to each other by deformations in the walls thereof in the form of a helix, at least one of said tubes being unconnected from the other tubes whereby the relative rotation thereof varies the length of overlap aforesaid and being fabricated of a material having a yield point below that of said other tubes, and an attachment secured to the remote outer ends of said tubes.

3,308,909
HOLD-DOWN DEVICE

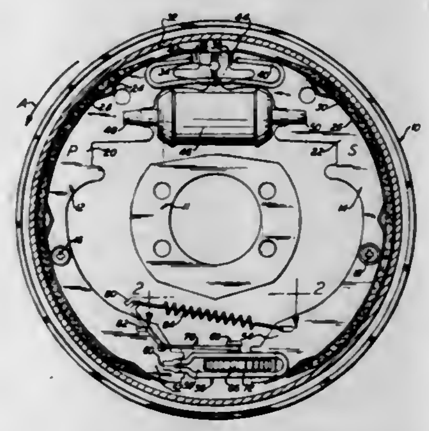
Donald D. Johannesen, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,637
10 Claims. (Cl. 188—78)

1. In a drum brake: a drum rotatable about an axis, a support member, a brake shoe slidably supported by said support member for engagement with said drum and comprising a rim with friction material attached thereto and a web transverse to said rim and attached at its outer edge to said rim, a cantilevered resilient hold-down device comprising a main coiled body portion which comprises at least one coil, said coiled portion engaging the surface of said web which faces away from said support member, the axis of said coiled portion being generally parallel to the plane of said web, said coiled portion extending into an arm at both axial ends thereof each of which are transverse to the axis of said coiled portion, one of said arms being anchored to said shoe and the other of said arms terminating at a location which is horizontally spaced from the plane of said web in a direction away from said support member; means operatively connected to said support member and said other arm for developing a force on said hold-down device and thereby exert a force on said shoe in a direction toward said support member.



3,308,910
INTERNAL SHOE BRAKE

Clarence E. Scheffler, Port Huron, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 4, 1965, Ser. No. 461,469
8 Claims. (Cl. 188—79.5)



6. A brake assembly having a backing plate and a pair of arcuate brake shoes movably connected to said backing plate;

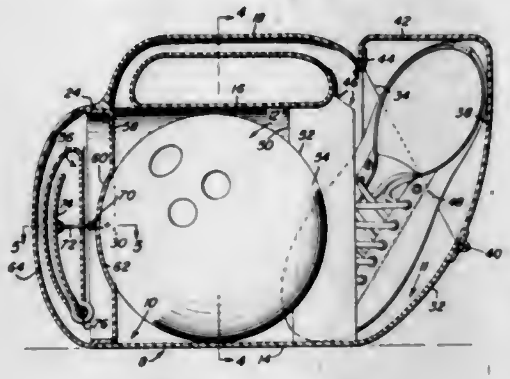
- an annular brake drum rotatably disposed with respect to said brake shoes;
- said shoes having first and second adjacent ends;
- an anchor secured to said backing plate;
- first spring means urging said first ends into engagement with said anchor;
- brake applying means adapted to move said shoes into engagement with said drum;
- a link means interconnecting said second ends;
- a ratchet wheel rotatably connected to said link means;
- said ratchet wheel having a progressively increasing diameter;
- the second end of said other shoe having a portion engaging the periphery of said ratchet wheel;
- second spring means having one end constructed to urge said ratchet wheel to rotate;

said second spring means also being constructed to urge said other shoe into engagement with said ratchet wheel.

3,308,911
END LOADING AND UNLOADING BOWLING BALL CARRIER

James H. Stevens and Naomi J. Stevens, both of Russell, Ky., assignors to Dumpy Company, Inc., a corporation of Kentucky

Filed Aug. 24, 1966, Ser. No. 579,475
10 Claims. (Cl. 190—51)



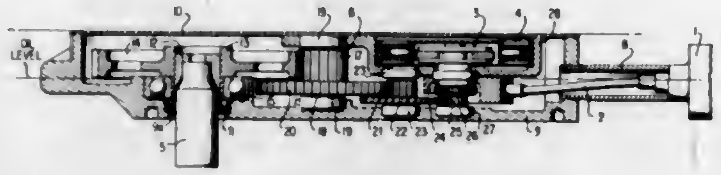
1. An end loading and unloading hand-type carrier for a bowling ball, shoes and accessories comprising: a ball encasing bag characterized by an elongated rigid but hollow body open an opposite ends and essentially cylindrical in transverse cross-section and of a length greater than the diameter of the ball and accordingly defining and providing a compartment, the ball enclosing part of said compartment having an internal diametral dimension substantially equal to he diameter of said ball and functioning to allow the ball to be (A) lined up with one open end and rollably shoved into and lodged for storage in said compartment and, alternatively, to be (B) rolled outwardly in an opposite direction and discharged and dumped from the compartment by way of said one open end, limit stop means embodied within the encompassing confines of said compartment and situated inwardly from the respective open ends and serving to check the inward movement of said ball when it is being loaded for storage in said compartment, a readily openable and closable rigid cover for said one open end, that portion of said body opposite said one open end being enlarged and transforming the adjacent end of the compartment into a pouch-like receiver for a pair of bowling shoes or the like, said receiver having an entrance opening and a rigid hingedly mounted cover therefor, said first named cover being provided exteriorly with a hand-grip, and the top surface of said body being provided exteriorly with a hand-grip complemental to said first named hand-grip.

3,308,912
REVOLVING DOOR OPERATING MECHANISM AND SPEED CONTROLLER

Amuel Edmond Sheckells, Evansville, Ind., assignor to International Steel Company, Evansville, Ind., a corporation of Indiana

Filed Jan. 26, 1966, Ser. No. 523,222
10 Claims. (Cl. 192—4)

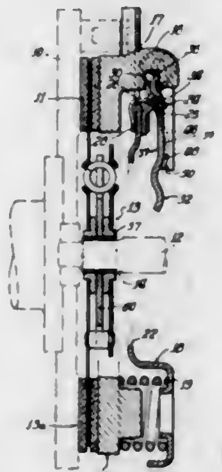
1. A revolving door operating mechanism and speed control device of the character described comprising, a housing, a main gear rotatably mounted within said housing, said main gear being adapted to be secured to the revolving door shaft, centrifugal brake means positioned within the housing, gear train means rotatably mounted within the housing, said gear train means being operatively connected between the main gear and the centrifugal brake means, a clutch assembly mounted concentrically within said centrifugal brake means, and motor means operatively connected to said clutch assembly, whereby upon energization of said motor means, the clutch assembly is rotated to cause rotation of said centrifugal brake means while simultaneously rotating the revolving door shaft through the gear train; said main gear, gear train means, centrifugal brake means and clutch assembly, all being positioned within said housing in spaced, parallel, closely adjacent horizontal planes to thereby form a low-profile operating mechanism and speed control device adapted for selective installation in either an overhead or floor-type revolving door installation.



3,308,913
CLUTCH

Byron D. Montgomery, Birmingham, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Substituted for abandoned application Ser. No. 130,784, Aug. 11, 1961. This application Sept. 11, 1964, Ser. No. 398,471
1 Claim. (Cl. 192—68)

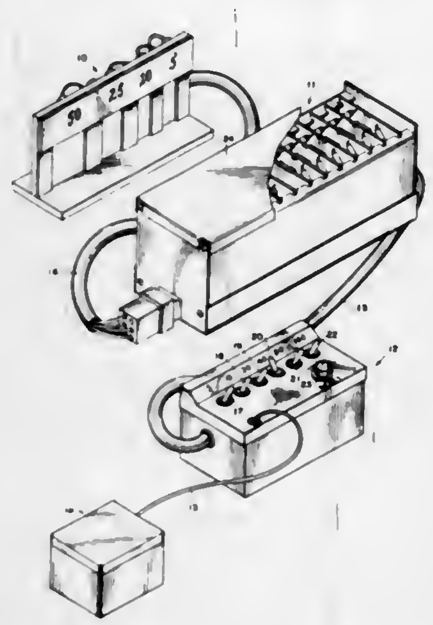


In a clutch assembly having a driven member, a pressure plate having drive lugs extending laterally therefrom with a recess formed on each of said lugs, and a cover plate having a plurality of openings formed therein to receive said lugs, the improvement comprising; a plurality of fulcrum means on the exterior surface of said cover plate which include a portion extending from said cover plate having a surface disposed adjacent said lugs, a chamfered portion defining with said extending surface a fulcrum line generally parallel to the exterior surface of said cover plate and spaced therefrom, a plurality of release levers having an end portion adapted to engage said recess and being adapted to contact said fulcrum means along said fulcrum line, said lever arms further including a fulcrum engaging means provided with a chamfered portion adapted to contact said fulcrum means along a fulcrum line disposed generally parallel to said exterior surface of said cover plate and spaced therefrom a distance greater than the distance between said exterior surface of said cover plate and said first mentioned fulcrum line, and a plurality of release lever springs positioned between said release levers and said cover plate to hold said release levers on said cover plate and to urge said end portion of said release levers into engagement with said recess.

3,308,914
ELECTRONIC COIN COUNTING SYSTEM

Lelyn D. Lake, Carmel, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed July 19, 1965, Ser. No. 472,905
16 Claims. (Cl. 194—2)



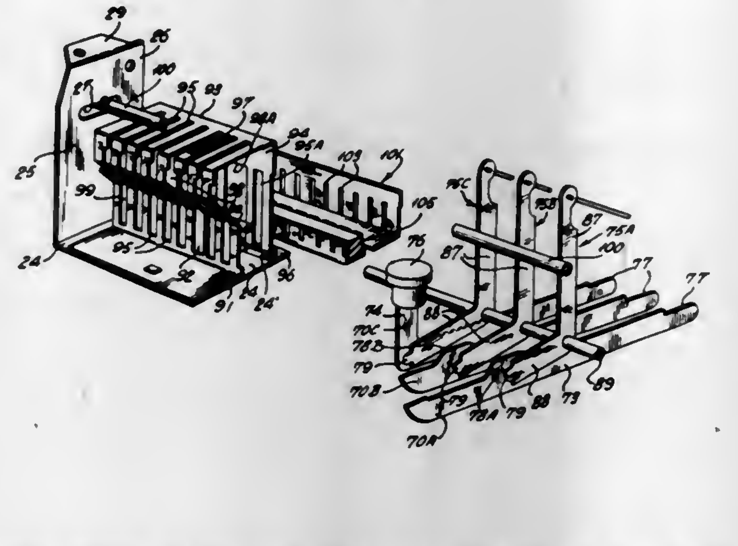
1. A coin operated device comprising: coin acceptor means for receiving coins of different monetary values, a plurality of trigger circuits each operable to sense the presence of coins within said coin acceptor means and to generate at least one pulse in response to the presence of each of said coins, a coupler circuit connected to said trigger circuits for combining selected ones of said pulses into further pulses representing multiples of a base monetary unit, an electronic counting means connected to said coupler circuit for couting and totaling said further pulses, an output circuit connected to said electronic counting means actuated when said electronic counting means reaches a predetermined overflow count, said output circuit causing actuation of said coin operated device when said overflow count is reached, and means for resetting said electronic counting means for subsequent operations.

3,308,915
COMB CONSTRUCTION FOR TYPEWRITER

Willis Rexford, Girard, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York

Original application Mar. 13, 1963, Ser. No. 264,843, now Patent No. 3,223,220, dated Dec. 14, 1965. Divided and this application Dec. 2, 1965, Ser. No. 511,057
4 Claims. (Cl. 197—17)

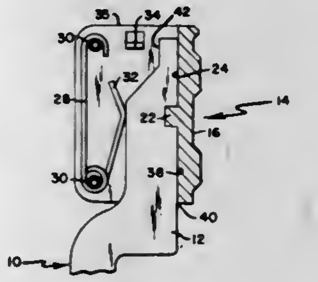
1. A typewriter comprising, in combination, a support base, a keyboard including typing key levers, a transverse guide comb guiding said key levers at the rear ends thereof, a type bar basket, pivotally mounted bell cranks connecting respective typing key levers to respective type bars of said type bar basket, and guiding and spacing means for said typing key levers and said bell cranks, said guiding means including a comb extending transversely of said base rearwardly of said keyboard, said comb comprising a sheet of metal bent to form a forward wall extending upwardly from said base, a top wall extending substantially parallel to said base, and a rear wall extending downwardly from said top wall to said base, said front and top walls being formed with a plurality of slots equal in number to the number of typing key levers and to the number of associated bell cranks, said slots being closed end slots and extending upwardly in said front wall and rearwardly into said top wall, the portions of said slots in said front wall being wider than the portions thereof in said top wall, the portions of said slots in said front wall each receiving a typing key lever and one arm of its associated bell crank, with clearance, the portion of each slot in said top wall receiving, with clearance, the normally upwardly extending arm of a bell crank.



3,308,916
CHANGEABLE TYPE

Floyd H. Canny, Syracuse, and Aaron C. Zeamer, Groton, N.Y., assignors to SCM Corporation, New York, N.Y., a corporation of New York

Filed May 17, 1965, Ser. No. 456,289
3 Claims. (Cl. 197—36)



1. A type bar assembly for typewriters or the like comprising:

(a) a removable hollow type element having at least one character formed on a face thereof and having a lug integrally projecting from the back side of said face;

(b) a type bar having a lug matching recess near one end and on the front side thereof for receiving said type element lug when assembled therewith thereby aligning said type element with respect to said type bar;

(c) a spring supported by said type element within the hollow thereof having a free end contacting the rear side of said type bar for securing said type element to said type bar in said aligned relationship; and

(d) an abutment formed from said type element and located adjacent and normally out of contact from the rear side of said type bar to substantially trap said type bar between said lug and said abutment thus preventing accidental removal of said type element from said type bar by said abutment contacting said type bar when the type bar assembly is actuated under adverse conditions.

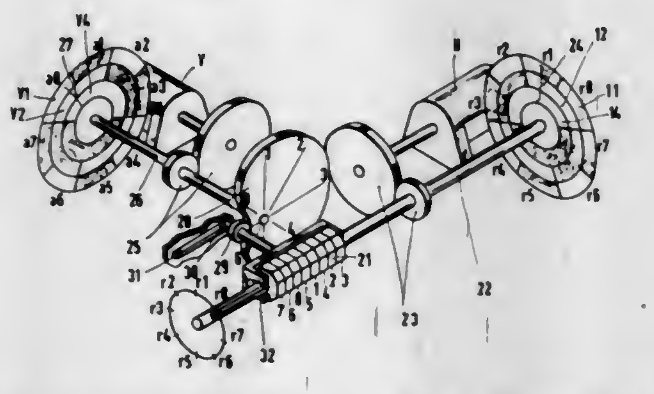
3,308,917
TYPE CARRIER POSITIONING MEANS EMPLOYING TWO MOTORS

Robert Stabenau, Sven Voelcker, and Hermanus Lambertus Tutert, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Feb. 19, 1965, Ser. No. 433,850

Claims priority, application Germany, Feb. 20, 1964, S 89,611

4 Claims. (Cl. 197—48)



1. An apparatus for setting of a type carrier and the like comprising means for mounting the type carrier for movement in two different coordinate directions in response to a multi-unit code signal wherein a portion of said signal controls displacement of the type carrier in one coordinate direction and the remaining portion of said signal controls displacement of the type carrier in the other coordinate direction, a pair of motors, means operatively connecting one of said motors to the type carrier for effecting movement of the carrier in one direction, means operatively connecting the other of said motors to the type carrier for effecting movement of the carrier in the other direction, means including a source of code pulses forming said multi-unit code signal for selecting a desired position of the type carrier in one of the coordinate directions corresponding to a portion of the code pulses and in the other coordinate direction corresponding to the remaining code pulses of said multi-unit code signal, means responsive to said selecting means for energizing each of said motors in accordance with the selected position, and means for maintaining said energizing means operable until the selected position in each coordinate direction is achieved.

3,308,918
PSEUDO-INTERLOCK EMPLOYING STROBE SIGNAL WITH SELECTED KEYS

Randell L. James, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 20, 1965, Ser. No. 488,494

5 Claims. (Cl. 197—107)

1. A terminal for typing and for transmitting code signals of at least some messages typed comprising:

a first set of keyboard keys connected to generate signals for transmission when each of said keys is operated,

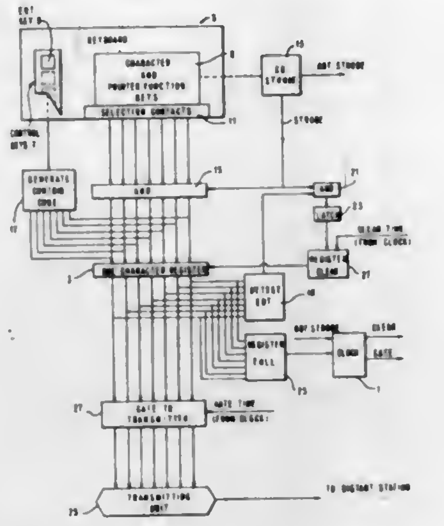
means to create a first condition when a key from said first set of keys is operated,

at least one other keyboard key connected to generate signals for transmission when operated,

a register to store signals generated prior to transmission of said signals,

means responsive to signals stored in said register to create a second condition when said register holds a signal identical in meaning to that created by said other key,

means to generate a response condition when said first condition and said second condition both occur prior to the keyboard generation of a subsequent signal, and



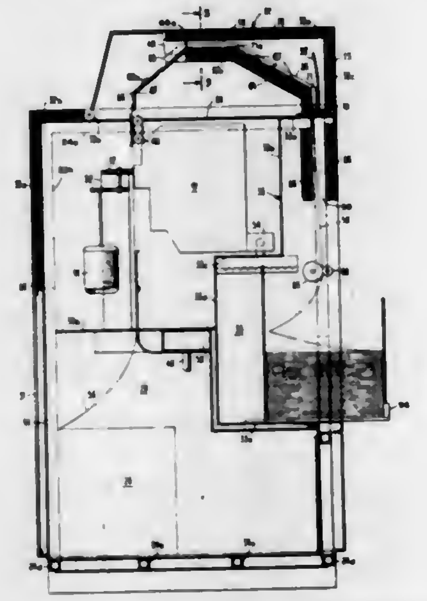
means controlled by said response condition to inhibit transmission of the contents which created said second condition of said register.

3,308,919
VENTILATED AND SOUNDPROOFED ENCLOSURE FOR PRINTER

James M. Cunningham, Endwell, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed May 28, 1965, Ser. No. 459,749

4 Claims. (Cl. 197—186)



1. The combination with a printer having a print station for an impact printing mechanism for printing on a continuous document of,

an enclosure for said mechanism having a plurality of walls and a cover with an open document storage receptacle in one of said walls,

feed roll means positioned adjacent the receptacle for drawing said document from the print station toward the receptacle, and

means including a guide plate having a plurality of angularly related positions separated by transverse document supporting corner ridges and defining a generally U-shaped path for directing the document to an opening in the enclosure adjacent the feed roll means,

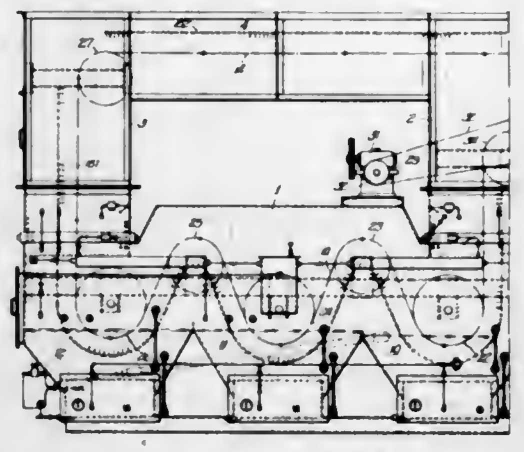
said guide plate being positioned relative to the cover and said one wall to define therebetween an acoustic trap having a central portion with restricted end portions for noises originating in said impact printing mechanism.

3,308,920
DEGREASER WITH OPTIONALLY ROTARY AND NON-ROTARY CONTAINERS

Howard N. Arnold, Western Springs, Ill., assignor to Baron-Blakeslee, Incorporated, Cicero, Ill., a corporation of Illinois

Filed May 4, 1965, Ser. No. 453,166

7 Claims. (Cl. 198—19)



1. In a machine for degreasing articles, an inclined roller top loading table, a roller top unloading table inclined downwardly away from said loading table, a roller top discharge conveyor leading from said unloading table and inclined downwardly therefrom, a loading and unloading station between said tables, an endless conveyor travelling past said station, uniformly spaced cages mounted on said conveyor, cage activated means for automatically stopping the conveyor with a cage at said station for a predetermined period of time and for advancing it a distance corresponding to the spacing of said cages at the expiration of such time period, said cages being adapted for reception of article containing baskets, an elevator adjacent said loading station and normally in lowered position, said elevator having a roller top inclined downward toward said loading table, a roller feed conveyor inclined downwardly to said top of said elevator in the normal lowered position of the latter, elevator controlled means for delivering baskets singly from said feed conveyor to said elevator, cage and elevator actuated means for raising said elevator and delivering a basket therefrom to said loading table and then returning said elevator to its normal lowered position, means actuated by a basket delivered to said loading table and effective for pushing a basket therefrom into a cage at said station and thereby pushing from said cage a basket onto said unloading table, and means actuated by a basket pushed onto said unloading table and effective for delivering said basket from said unloading table to said discharge conveyor.

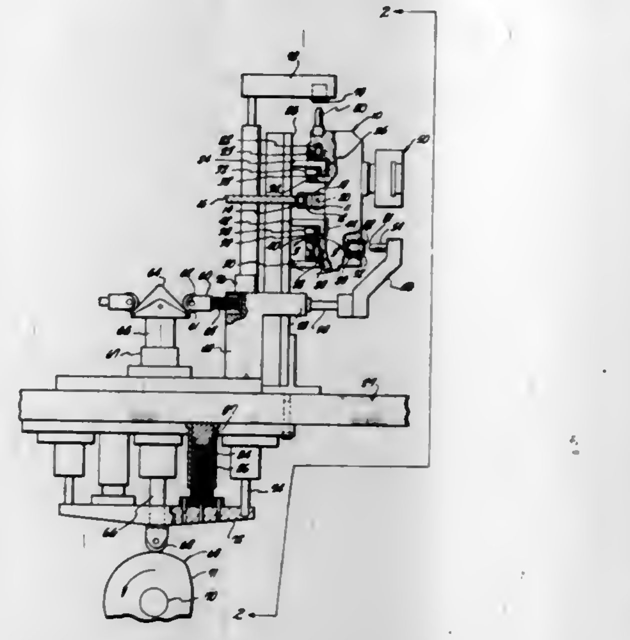
3,308,921
CARRIAGE

Richard R. Bower, Northridge, Calif., assignor to Leach Corporation, San Marino, Calif., a corporation of Delaware

Filed Feb. 15, 1965, Ser. No. 432,797

8 Claims. (Cl. 198—19)

1. Apparatus for carrying an article to and fixing it exactly at a location, the apparatus comprising a carriage adapted to carry the article, means for moving the carriage to and stopping it in the general vicinity of the location, the carriage having some freedom of movement with respect to its moving means when stopped in the general vicinity of the location, first indexing means on the carriage, second indexing means mounted adjacent the location, third indexing means on the carriage and extending transversely to the first indexing means on the carriage, fourth indexing means mounted adjacent the location and extending transversely to the second indexing means, the first and second indexing means being matable with each other, the third and fourth indexing means being matable with each other, and means for moving the indexing means relative to each other to engage and position the carriage exactly at the location.

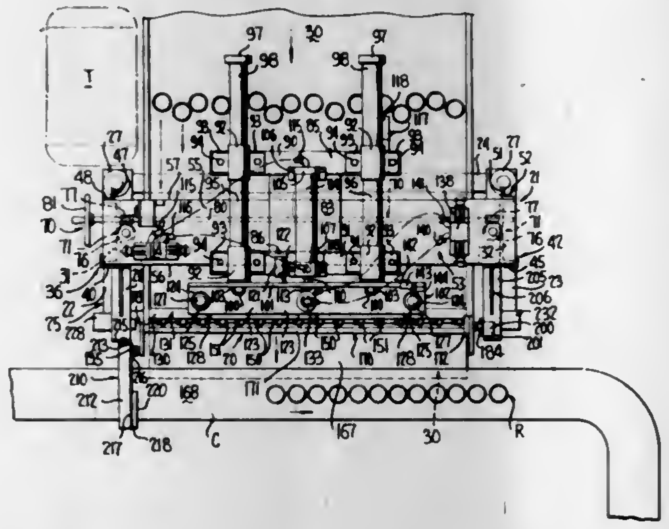


3,308,922
AUTOMATIC LEHR UNLOADER

Warren L. Ellis, Naperville, Ill., and George E. Ruck, Lancaster, Ohio, assignors, by mesne assignments, to Brockway Glass Company, Inc., Brockway, Pa., a corporation of New York

Filed Mar. 18, 1964, Ser. No. 352,921

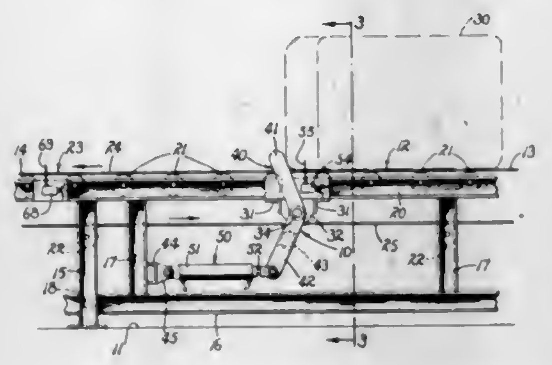
27 Claims. (Cl. 198—30)



1. Unloader apparatus comprising first means adapted to be positioned adjacent a plurality of articles each having at least a single open end defined by a body wall portion of a predetermined diameter, said first means being movable in a first direction for entering articles, some of which may be misaligned, second means for moving said first means in a direction other than said first direction for automatically aligning the misaligned articles so entered by said first means, said first means being moved by said second means against the body wall portions

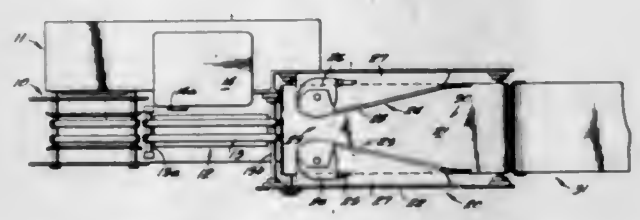
causing alignment of misaligned articles, and said first means being moved in said other direction a distance at least equal to said predetermined diameter.

3,308,923
ARTICLE POSITIONING DEVICE
Richard B. Crawford, 6067 N. Forkner, Fresno, Calif. 93705
Filed Oct. 22, 1965, Ser. No. 501,338
8 Claims. (Cl. 198—33)



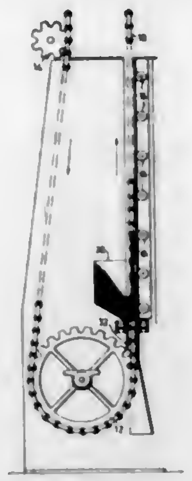
1. An article positioning device for arranging articles in a predetermined proper attitude during their movement along a transporting mechanism, comprising article constraining means pivotally mounted on said transporting mechanism for movement between an extended article engaging position within the path of movement of such articles and a position retracted therefrom, force means connected to said constraining means to extend and to hold the same in said article engaging position temporarily to restrict movement of improperly oriented articles along said transporting mechanism until their movement disposes them in said proper attitude against said constraining means, and means on the transporting mechanism connected to said force means being effective upon engagement by said properly oriented articles alternately to retract and to extend said constraining means.

3,308,924
ARTICLE CHECK-WEIGHING AND SEGREGATING APPARATUS
William Hecox, Canal Winchester, Ohio, assignor, by mesne assignments, to Exact Weight Scale Corporation, Columbus, Ohio, a corporation of Ohio
Filed Mar. 29, 1965, Ser. No. 443,226
2 Claims. (Cl. 198—39)



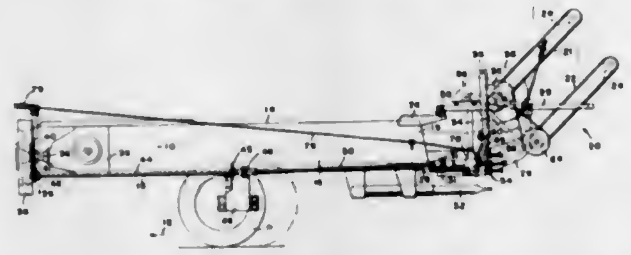
1. A check-weighing mechanism comprising a weighing platform, means for moving magnetic articles across the platform at high speed, and magnetic means carried by the platform for drawing the articles down against the platform as they are moved across the platform but having insufficient force to interrupt said movement across the platform, said means for moving the articles across the platform comprising downwardly yieldable belts associated with a flat surface of the platform, said magnetic means carried by the platform comprising a permanent magnet for exerting a downward pull on the belt-supported articles so that they will move into contact with said flat surface.

3,308,925
FEED MEANS FOR MAGNETIC CONVEYOR
Sten Alfred Alfredéen, Farsta, Sweden, assignor to Diamond Power Specialty Corporation, Lancaster, Ohio
Filed Dec. 8, 1965, Ser. No. 512,375
Claims priority, application Sweden, Sept. 21, 1965, 12,255/65
11 Claims. (Cl. 198—41)



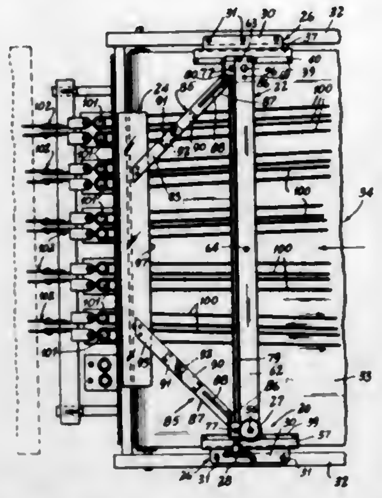
1. A magnetic conveyor comprising an endless transport means traveling along a predetermined path, means to produce a main magnetic field through which said endless transport means passes, a feed position for feeding magnet transport goods to said transport means, and means to produce a barrier magnetic field disposed across said path, and through which field said transport means passes before it passes through said main magnetic field; said barrier magnetic field being located adjacent and below said feed position.

3,308,926
POWER TAKE-OFF DEVICE FOR BALE THROWER
William E. James, Dijon, France, assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed May 25, 1966, Ser. No. 552,892
10 Claims. (Cl. 198—128)



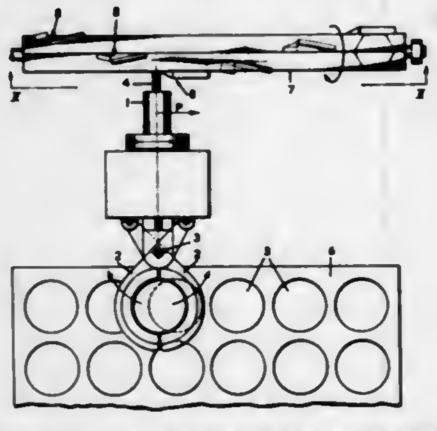
1. A bale thrower for receiving and trajecting bales after they emerge from the rearward discharge end of a fore-and-aft extending bale case of a baler, comprising rotatable bale trajecting means, support means connecting said trajecting means to said bale case for lateral pivotal movement relative thereto to vary the direction in which bales are trajected, a variable speed drive sheave, means connecting said drive sheave to said trajecting means, means for opening and closing said drive sheave to vary the speed of said trajecting means, a universal shaft having one end pivotally connected to said drive sheave and through which power is supplied to the sheave, means pivotally connecting an opposite end of said universal shaft to said bale case, a carrier arm pivotally connected to said support means, and means linking said carrier arm to said drive sheave and to said universal shaft to pivot said shaft relative to said bale case and the shaft and sheave relative to each other and to the carrier arm when said support means is moved laterally relative to said bale case.

3,308,927
PARTITION STRIP HOLDDOWN DEVICE
Donald F. Cunningham, Milwaukee, Wis., assignor to U.S. Partition & Packaging Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed May 15, 1964, Ser. No. 367,726
5 Claims. (Cl. 198—160)



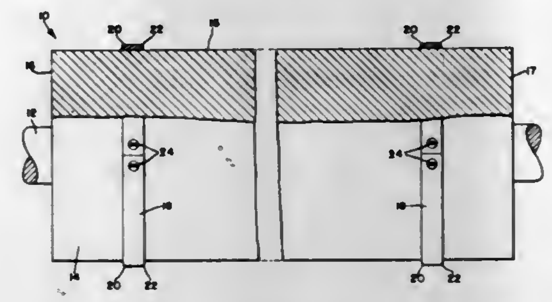
1. In combination, a holddown device for preventing vertical movement of partition strips in a travel segment just prior to entering an assembly zone comprising a frame adapted to span the partition strip feeding belt of a partition strip feeder including spaced columns, a transverse member connecting said columns at the top, means for mounting said columns at the sides of a partition strip conveyor belt for limited back and forth movement in respect thereto, means for effecting simultaneous movement of said columns, a generally horizonal member supported by said columns for disposition across a partition strip conveyor belt adjacent the discharge end thereof, and means for adjusting the vertical position of said member, said member including a pivotally mounted partition strip engageable portion which can be moved into inoperative position.

3,308,928
APPARATUS FOR CAUSING ARTICLES SEPARATELY SUPPLIED BY GRIP MEANS TO BE DEPOSITED IN A ROW ONE AFTER ANOTHER
Jacob H. Mosterd, Stationsweg 117, Barneveld, Netherlands
Filed Mar. 17, 1965, Ser. No. 440,393
Claims priority, application Netherlands, Mar. 18, 1964, 64/02883
1 Claim. (Cl. 198—179)



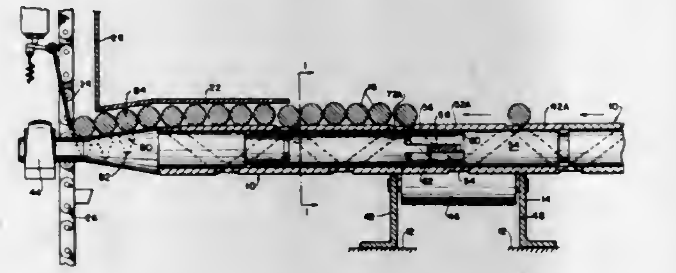
An apparatus for causing articles separately supplied by grip means to be deposited in a row one after another, comprising a grip, a stepwise rotatable shaft along which said grip is movable, a cam on said grip for opening said grip, and rotatable shaft having a plurality of stops helically spaced about its periphery so that upon contact of said cam with a stop said cam is actuated by said stop for opening said grip, and means on said top engaged by said cam for then turning said shaft through part of a revolution whereby when a plurality of grips are used they can successively unload articles in a consecutive series of predetermined locations.

3,308,929
MATERIAL HANDLING APPARATUS
George H. Shriver, Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,586
4 Claims. (Cl. 198—202)



1. A belt-type conveyor comprising: a plurality of substantially cylindrical rollers, at least one of said rollers having a pair of axially spaced circumferential ribs on its outer periphery, each rib having a substantially rectangular cross section with an axial dimension less than 10% of the axial dimension of the roller and a radial dimension less than 10% of the diameter of the roller; and an endless, flexible belt trained around the rollers, the ribs operatively engaging a surface of the belt to keep the belt running true.

3,308,930
CONVEYOR APPARATUS
Leonard De Francisci, Lido Beach, N.Y., assignor to De Francisci Machine Corporation, a corporation of New York
Filed Dec. 29, 1964, Ser. No. 422,084
8 Claims. (Cl. 198—213)



1. Apparatus for conveying and storing macaroni rack rods comprising in combination:

(a) two threaded conveyor screws positioned on parallel axes and spaced to engage said rods adjacent their opposite ends when aligned transversely on said screws,

(b) means for rotating the threads of said screws oppositely to each other and outwardly from each other about their upper rod supporting surfaces, whereby said rods when placed on said screws are conveyed thereby to a rod discharge station, and

(c) stop means adjacent said rod discharge station for stopping the lead rod of a plurality of rods on said screws,

said threads having a pitch other than equal to the cross-sectional width of said rods where such rods engage said screws when aligned transversely thereon, said width being taken parallel to said screw axes, whereby said screws rotate relatively free of load build-up from rods stopped by said stop means, and whereby said rods do not jam against each other when stopped by said stop means.

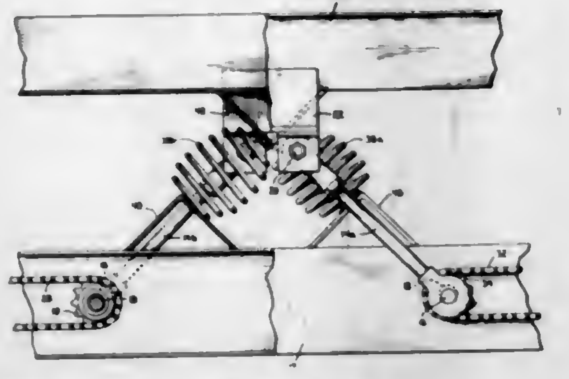
3,308,931

VIBRATORY CONVEYOR

Leo F. Bedan and Carroll L. Bedan, both of Rte. 1, Floyds Knobs, Ind. 47119

Filed Aug. 5, 1965, Ser. No. 477,437

7 Claims. (Cl. 198—220)



1. A vibratory conveyor, comprising:
a longitudinally-extending material-supporting member;
a base;
a series of rightward-travel drive links at spaced points along the conveyor, each operatively pivotally connected to the material-supporting member;
rightward-travel drive means supported by the base for driving said right-ward-travel drive links;
a series of leftward-travel drive links at spaced points along the conveyor, each operatively pivotally connected to the material-supporting member;
leftward-travel drive means supported by the base for driving said leftward-travel drive links.

3,308,932

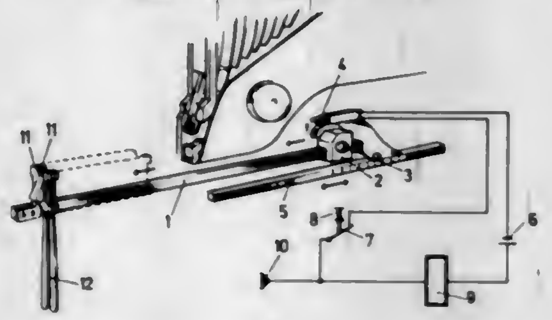
METHOD AND APPARATUS FOR CONTROLLING A LINE CASTING MACHINE

Karl Debus, Bad Homburg, and Leon Starck, Frankfurt am Main, Fechenheim, Germany, assignors to Linotype G.m.b.H., Frankfurt am Main, Germany

Filed Sept. 27, 1965, Ser. No. 490,492

Claims priority, application Germany, Sept. 29, 1964, L 48,888

37 Claims. (Cl. 199—18)



1. An apparatus for controlling a line casting machine comprising, in combination, control means including a record carrier having wrong recordings or no recordings for representing line end signals, and sensing means for sensing the recordings on said record carrier for controlling the line casting machine to automatically discharge matrices in accordance with sensed recordings; an assembling elevator having an assembler slide for receiving discharged matrices and being moved by the same to successive positions including a predeterminable intermediate position and an end position corresponding to a complete line of assembled matrices; switch means connected with said control means and actuated by said assembler slide in said predeterminable intermediate position to stop said control means; adjusting means associated with said switch means and said assembler slide for adjusting and thereby predetermining said intermediate position in which said assembler slide actuates said switch means to stop said control means; first manually controlled means for moving said record carrier beyond said intermediate position so that additional recordings are sensed and additional matrices discharged into said assembler slide; and second manually controlled means for starting operation of said assembling elevator when the recording representing the last character of a line determined by the operator has been sensed.

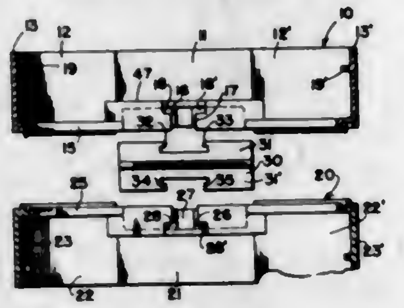
3,308,933

HINGED BOX

Philip Beck, New York, N.Y., assignor to Arrow Manufacturing Company, Incorporated, West New York, N.J., a corporation of New Jersey

Filed June 13, 1966, Ser. No. 556,929

8 Claims. (Cl. 206—1)



1. A hinged box comprising upper and lower portions and hinge means connecting them together to form the box,
at least one of said upper and lower portions consisting essentially of an annular frame having planar sides substantially parallel to the axis thereof and an internal flanged portion extending radially inwardly from adjacent one end thereof, the other end of said frame forming an open end, said flanged portion extending around a major portion of the annular frame, said annular frame having a straight side within a region where said flanged portion does not extend and having internal slot means formed in said straight side extending inwardly from the flanged end of the annular frame, said internal slot means receiving one leaf of a hinge element thereby connecting the upper and lower portions of the box, said flanged portion of the frame forming the exposed inner edge of the box opening,
the interior surface of the annular frame member between the flange and the open end being substantially free of undercut portions except for at least one pair of relatively short, inwardly extending studs formed opposite to each other on said interior surface,
means covering the open end of said frame member comprising a body portion of the same size and configuration as the interior opening of said open end, and tabs extending from the body portion scored for folding inwardly, the radial length of said tabs being of a length such that the inwardly folded ends thereof rest against said internal flange when inserted within said annular frame from the open end so that the body thereof is approximately level with the open end of said frame,
at least one pair of said tabs comprising slot means fitted around the pair of studs on the internal surface of the frame member.

3,308,934

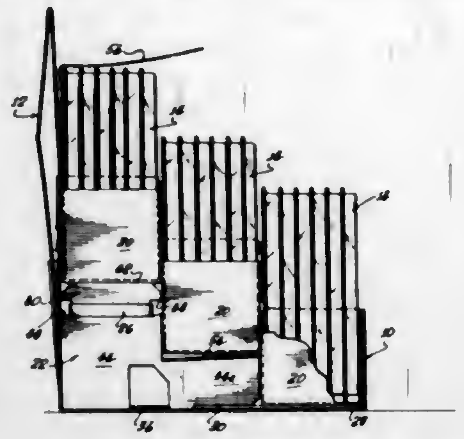
DISPLAY PACKAGE

Kenneth Reiner, 7875 Telegraph Road, Pico Rivera, Calif. 90660

Filed Apr. 14, 1965, Ser. No. 448,014

15 Claims. (Cl. 206—45)

1. A display package comprising an outer carton having an open top, a bottom, and upstanding side walls; a collapsible elevating device within said outer carton and resting in a flat collapsed position upon the surface of said bottom, a plurality of inner wrappers aligned one behind the other within said carton and resting upon said elevating device to confine the elevating device in said collapsed position between themselves and said bottom, and resilient means forming a part of said elevating device and adapted to cause it to change its position from said collapsed position to a raised condition wherein a portion of the elevating device is raised above said bottom so that at least one of said inner cartons is elevated thereby to a position above the bottom of the carton and projecting outwardly of the open top thereof.



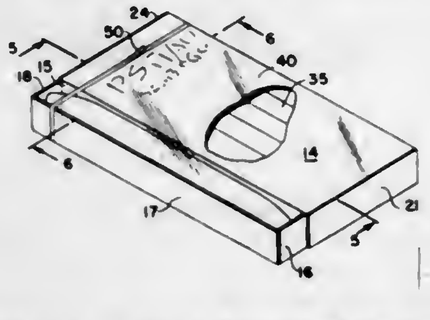
3,308,935

FOLDING CARTON

Raymond A. Cote, Metuchen, N.J., assignor to International Paper Company, New York, N.Y., a corporation of New York

Filed July 15, 1963, Ser. No. 295,056

2 Claims. (Cl. 206—45.33)



1. In a display package for cigars, in combination, a plurality of cigars disposed in a folding carton made from a substantially rectangular blank comprising a single detachable open display tray panel having one cigar disposed thereon, a bottom panel hingedly connected at one side along a line of severance to one side of the tray panel, a first side panel hingedly connected at one side along a line of weakness to the other side of the bottom panel, a top panel hingedly connected at one side along a line of weakness to the other side of the first side panel, a second side panel hingedly connected at one side along a line of weakness to the other side of the top panel, a glue flap hingedly connected at one side along a line of weakness to the other side of the second side flap, gallery flaps hingedly connected along lines of weakness to the ends and other side of the tray flap, outer end flaps hingedly connected at one end along lines of weakness to the ends of the bottom panel, a tuck flap hingedly connected at one end along a line of weakness to the other end of one of the outer end flaps, an inner end flap hingedly connected at one end along a line of weakness to an end of the top panel, the tuck flap and the inner end flap being at opposite ends of the panels to which they are connected wherein the open display tray panel and the bottom panel are disposed in the same plane, the first side panel is disposed perpendicularly to the bottom panel, the top panel is disposed parallelly to the bottom panel, the second side panel is disposed perpendicularly to the bottom panel, the glue flap impinges against the bottom panel adjacent the line of severance, the gallery flaps are disposed perpendicularly to the open display tray panel, the outer end flaps are disposed perpendicularly to the bottom panel, the tuck flap is disposed parallelly to the top panel within the carton, and the inner end flap is disposed perpendicularly to the bottom panel interiorly of an outer end flap, and an overwrap of transparent material about the cigars and carton.

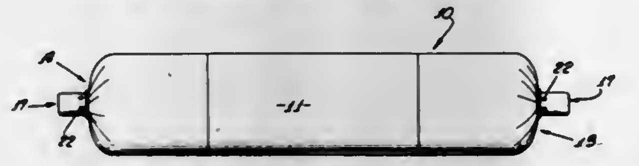
3,308,936

CLOSED END FILM PACKAGE

Max Roland, Burlingame, Wendell J. Stratton, Glendale, and Axel W. Stratton, Jr., Daly City, Calif., assignors to Nebraska Packing Co., Glendale, Calif., a corporation of California

Filed Feb. 27, 1964, Ser. No. 347,898

6 Claims. (Cl. 206—46)



1. An improved package, comprising a film wrap to contain a filler, a metallic band collapsed about and holding the wrap at one end of the package in gathered condition to block exposure of the filler to the exterior, and a metallic receptacle having an inwardly deformed skirt tightly retained on and extending about the collapsed band to block expansion thereof in order to prevent said filler exposure, the receptacle having a flanged end firmly engaging the film and interiorly receiving the band sufficiently as to effect film squeezing between the band and the main extent of the package thereby inwardly maintaining the main extent of the film in tensioned condition at the periphery of said end of the package.

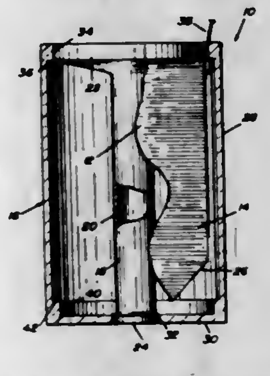
3,308,937

PROTECTIVE CONTAINER FOR SPOOLS OF ELONGATED MATERIAL

Leonard B. Rosen, R.D. 2, Jamestown, Pa. 16134

Filed Oct. 23, 1965, Ser. No. 503,474

6 Claims. (Cl. 206—52)



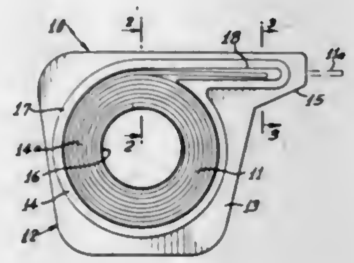
1. In combination, a spool having a central core, a flange member extending from said core at one extremity of said core, an elongated material wound on said core with the exterior layer of said material extending outwardly from said core a distance less than the periphery of said flange member, and a continuation of said core extending beyond said elongated material at the other extremity of said core, the cross-sectional area of said continuation being smaller than the cross-sectional area of said flange member, a container receiving said spool and including a substantially continuous wall, said wall having an open upper end and a lower end spaced therefrom, a bottom member secured to said lower end of said wall, said bottom member having portions forming an aperture corresponding in size and shape to the cross-

sectional configuration of said continuation and slidingly receiving said continuation, said wall having portions at said open upper end defining an opening corresponding in size and shape to the cross-sectional configuration of said flange member, said opening being larger than said aperture and said portions defining said opening frictionally engaging the periphery of said flange member to removably secure said spool within said container with the remainder of said wall in spaced, protective, overlying relationship to said elongated material.

3,308,938
SOLDER DISPENSER

Roland E. Barnaby, Jr., Garden City, N.Y., assignor to Rayline, Inc., Mineola, N.Y., a corporation of New York

Filed May 6, 1964, Ser. No. 365,265
13 Claims. (Cl. 206—56)

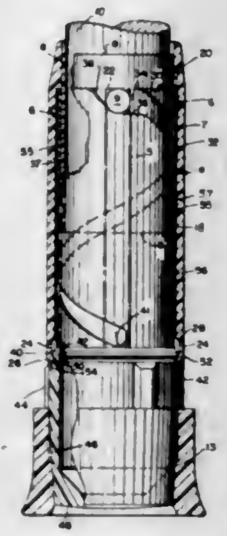


1. Flexible wire strip solder dispensing means, comprising, a length of flexible wire strip solder edge-deformed along its length to define an out-of-round cross sectional configuration, said length being wound in a flat helix with the line of edge deformation being oriented to engage adjacent convolutions, and a container for the solder helix, including a pair of laterally spaced apart surfaces embracing the helix and means defining a discharge opening through which a free end of the length of wire strip solder passes.

3,308,939
PLASTIC LIPSTICK HOLDER

Stanley Sakalys, Providence, R.I., assignor to Brier Manufacturing Company, Providence, R.I., a corporation of Rhode Island

Filed Aug. 24, 1964, Ser. No. 391,671
12 Claims. (Cl. 206—56)

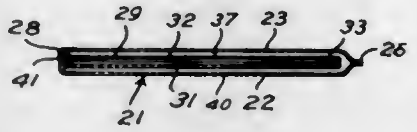


1. A plastic lipstick holder comprising an inner, flexible and resilient, thin-walled, plastic cam sleeve having a base at its lower end and open at its top end and having a spiral cam slot therein extending to the open top end thereof, a plastic outer sleeve located peripherally and concentrically around said cam sleeve, said outer sleeve being open at its top and having a longitudinal groove in the inner surface thereof terminating at a point spaced from the open top thereof to form an end wall of said groove, a cylindrical-shaped lipstick carrier slidably received in said cam sleeve and having a lug extending through said cam slot and into said longitudinal groove, means detachably attaching said outer sleeve at its lower end portion to a portion of said cam sleeve below said cam slot for rotation of said sleeves with respect to each other, whereby said carrier is axially propelled within said sleeves, an edge of said spiral slot comprising a driving edge for axially driving said lug and hence said carrier axially upwardly, the inner surface of said outer sleeve located radially outwardly of the slotted portion of said cam sleeve having a slight clearance with respect to the outer periphery of said slotted portion of said cam sleeve to permit freedom of rotation of said sleeves with respect to each other, at least said slotted portion of said cam sleeve being sufficiently flexible so that when said lug is located in said cam slot intermediate its ends, downward force applied to said carrier and transmitted by said lug to said driving edge of said cam slot will spread said cam sleeve into tight frictional engagement with said inner surface of said outer sleeve to lock said carrier against axial downward movement.

3,308,940
CLINICAL THERMOMETER DEVICE

Theodore Morris, Jr., 1707 Undercliff Ave., Bronx, N.Y. 10453

Filed Aug. 11, 1965, Ser. No. 478,798
13 Claims. (Cl. 206—56)



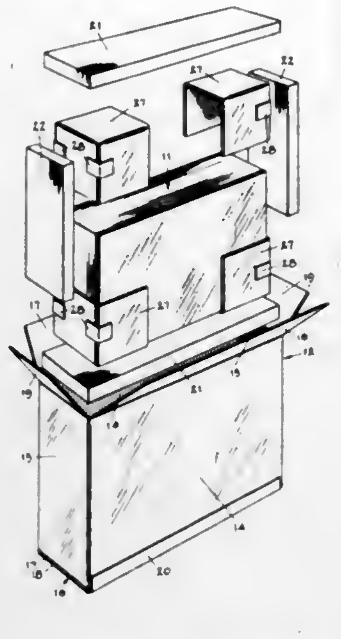
1. A protective sheath-container device for an elongate clinical instrument to enable its insertion without previous sterilization into a body cavity without risk of transmitting infection, which container device comprises a sealed container-jacket of flexible sterilizable material and having a sterilizable interior, and extending into said interior an elongate pocket open at its outer end to the exterior of and in sealed relationship to the container-jacket for receiving through said open end and to extend into its closed end the insertion end of said instrument such as the bulb end of a clinical thermometer; and said container-jacket having a frangible part through which the closed inner end of said pocket can be pushed out from the interior of said container by applying a sufficient pushing force on said instrument to fracture said part, thereby to expose the instrument for use while sheathed within the outwardly extending exposed pocket.

3,308,941
PACKAGE FOR GLASS SHEETS

James Samuel Kean, Sr., Ralph C. Hansen, and Frederick L. Metzger, all of Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed June 30, 1965, Ser. No. 468,206
6 Claims. (Cl. 206—62)

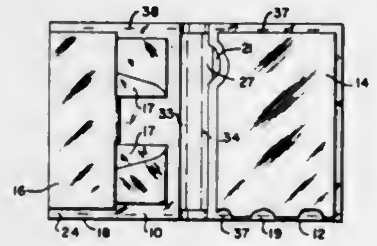
1. A container for packaging frangible sheet material, comprising a rectangular carton having a pair of spaced, relatively large side walls joined by narrow end walls, flaps depending from the opposite side walls folded and secured in overlapping relation to close the bottom and top of said container, a plurality of rectangular sheets stacked in face-to-face relationship within said carton, a corner pad over each corner of said stack of sheets, and a cushioning strip between each edge of the stack of sheets and the corresponding top, bottom and end walls of said carton.



3,308,942
WRITING PORTFOLIO

Russell C. Johnson, Indian Hill, and Gordon C. Bess, Sycamore Township, Hamilton County, Ohio, assignors to R. C. Johnson, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed Dec. 4, 1963, Ser. No. 327,989
6 Claims. (Cl. 206—63)

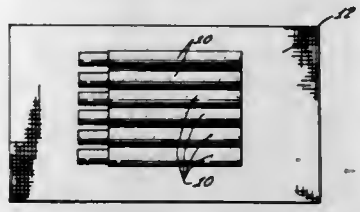


4. A portfolio comprising a body which includes an inner rear panel, an outer rear panel, an outer back panel, an outer front panel, an inner front panel, an inner back panel, and a telescoping flap hinged together in tandem relation, means for attaching upper and lower edges of the inner and outer front panels together, means for attaching upper and lower edges of the inner and outer rear panels together, the telescoping flap being received between the inner and outer rear panels, the front and rear panels being swingable between an open position in substantial alignment and a closed position in spaced substantial parallelism, hinge lines defining the inner back panel being spaced from hinge lines defining the outer back panel when the portfolio is in open position and being in substantial alignment therewith when the portfolio is in closed position, there being a slot in the inner front panel extending parallel to hinge lines and terminating short of upper and lower edges thereof, and an envelope holder comprising a body panel extending through said slot and having a tab portion received between the inner and outer front panels and an exposed portion, and a pocket member mounted on the exposed portion.

3,308,943
METHOD OF PACKAGING PURIFIED GRAPHITE AND THE PACKAGE FORMED THEREBY

Eugene Davila, 1209 Meeker St., West Covina, Calif. 91790

Filed Aug. 5, 1963, Ser. No. 299,908
8 Claims. (Cl. 206—84)

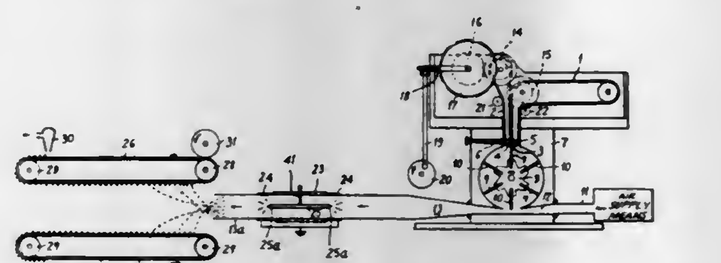


5. As a new article of manufacture, at least one carbon article of high purity and a permeable enclosure enveloping the article or articles, said enclosure being made of carbon of the same high purity as the contents of the enclosure.

3,308,944
SEPARATION OF MIXTURES OF TEXTILE FIBRES

Norman Henry Chamberlain, John Bamber Speakman, and Alex Kaltsoyannis, Leeds, England, assignors to Reclamation Trades Research Organisation Limited, London, England, a British company

Filed June 20, 1963, Ser. No. 289,325
Claims priority, application Great Britain, June 20, 1962, 23,787/62; Aug. 30, 1962, 33,313/62
7 Claims. (Cl. 209—3)



4. Apparatus for separating textile fibres of different kinds from a textile fabric containing a mixture of said different kinds of textile fibres, comprising means for pulling the textile fabric apart into individual fibres of different kinds and differentially charging said fibres, an air passage into which said fibres are discharged, means generating a stream of air in said air passage for entraining the fibres discharged thereinto and conveying the fibres along said passage to an electrostatic separator at a controlled velocity, said electrostatic separator comprising electrodes charged to different potentials whereby to cause the fibres in the air stream to move along different paths in accordance with the charges thereon and thereby effect separation of the different kinds of fibres.

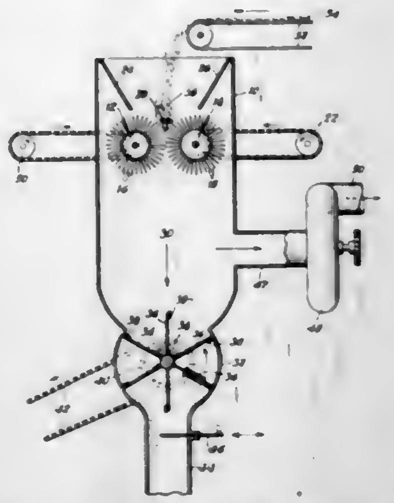
3,308,945
METHOD AND APPARATUS FOR DE-SHOTTING AND SEPARATING MINERAL FIBER

Wayne J. Oja, Cloquet, Minn., assignor to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware

Filed Jan. 13, 1964, Ser. No. 337,290
6 Claims. (Cl. 209—3)

1. Apparatus for removing shot from the ends of nodulated and non-nodulated mineral fiber comprising at least one pair of parallel cylindrical rotors on parallel axes, each rotor of the pair having an inner cylindrical axial roll spaced from a corresponding axial roll of the other rotor, each rotor of the pair having a brush-like multiplicity of radially projecting elements extending from its roll, the ends of said elements of the pair providing overlapping cylindrical paths of revolution which

paths form an obstructed nip, means to rotate one of said rotors of the pair in a feeding direction into the nip of the pair at a relatively slow speed to serve as a rotary holder and feeder for the material fed to the pair for forming a supply ahead of the nip, means to rotate the other rotor of the pair in the opposite direction at a relatively greater speed to pick individual fibers from the said supply, to detach shot from fibers and to discharge fibers and shot from the exit end of the said nip generally in a tangential direction, and means to carry the fibers of the discharge in air in one direction away from the shot moving by inertia in another direction.



3,308,946
SINK FLOAT METHOD OF CLASSIFYING WET FLOCCULATED SOLID PARTICLES

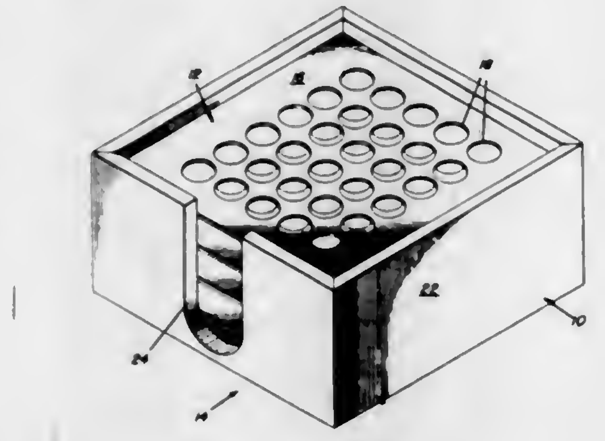
Abraham Mitzmager, Kiriat Bialik, and Joseph Mizrahi, Kiriat Haim, Israel, assignors, by mesne assignments, to Israel Mining Industries—Institute for Research and Development, a company of Israel
No Drawing. Filed Nov. 5, 1963, Ser. No. 321,399
Claims priority, application Israel, Dec. 24, 1962, 18,443/62
8 Claims. (Cl. 209—5)

1. A method for the sink-float classification of granular solid materials composed of at least two fractions which, in a water-wet condition, have different apparent specific gravities, comprising the steps of: producing a dispersion of said granular material in a water-wet condition and flocculated state in an organic liquid having a specific gravity intermediate between the apparent specific gravities of said fractions, said fractions being incapable of being separated from each other in said organic liquid in the natural gravitational field of the place of operation, subjecting said dispersion to sink-float separation in a cyclone, under conditions of a gravitational field increased in relation to the natural gravitational field of the place of operation and separately collecting said fractions of different apparent specific gravity.

3,308,947
EGG GRADER

John Dundam, 15 Chestnut St., Oneonta, N.Y. 13820
Filed Feb. 12, 1965, Ser. No. 432,338
1 Claim. (Cl. 209—123)

An egg grader comprising:
a plurality of grading sheets;
each of said sheets having a plurality of apertures therein;
said apertures in each individual sheet being substantially equal in size to the other apertures in that sheet; and
means maintaining said grading sheets in spaced superposed substantially vertical disposition with the apertures in each sheet being directly aligned with the apertures in each other sheet;
said grading sheets in vertical disposition defiining an uppermost sheet, a lowermost sheet and at least one intermediate sheet;
each aperture in said uppermost sheet having aligned directly therebeneath, an aperture in each intermediate sheet and an aperture in said lowermost sheet;
said aligned apertures defining axially aligned rows of apertures;
said apertures in each aligned row progressively diminishing in size from the uppermost to the lowermost aperture;
said grader being operative when an egg is dropped into each of said axial rows of apertures to permit said egg to gravitationally descend under its own weight until it reaches an aperture having a size smaller than its size whereupon said egg will remain retained within said aperture;

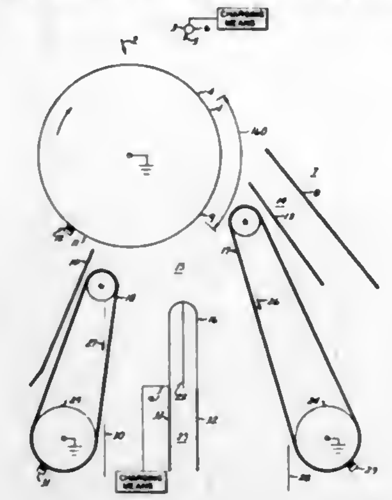


said means including a depending peripheral skirt upon each of said sheets and an inturned flange means at the lower end of each peripheral skirt, said inturned flange means extending partially under said sheet whereby, when said sheets are disposed in said vertical disposition, the inturned flange means from one sheet rests upon the peripheral margin of the next lower sheet;
said means further including a plurality of elongated hinge means, each such hinge means being connected between the lower edge of one peripheral skirt and the upper edge of the peripheral skirt of the next lower sheet;
said sheets being separable from one another by swinging movement about said hinge means, once an egg has been dropped through each of said aligned rows of apertures, whereby each of said sheets will carry eggs having a size grading larger than the apertures therein but smaller than the apertures in the sheet directly thereabove.

3,308,948
HIGH VOLTAGE SEPARATION OF FINE PARTICLES

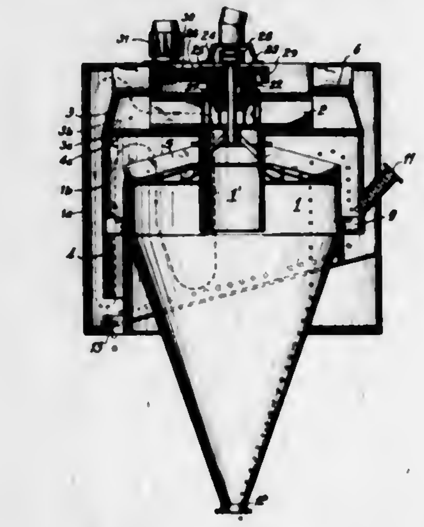
Roger E. Barthelemy, 1600 Holly Oaks Lake Road, Jacksonville, Fla. 32211
Filed Feb. 20, 1963, Ser. No. 259,952
20 Claims. (Cl. 209—127)

1. In a high tension roll type separator comprising a grounded roll and an ionizing electrode charged to a potential of at least 30 kilovolts spaced from the upper forward quadrant of said roll, an auxiliary static electrode disposed below and in the path of particles thrown from the lower forward quadrant of the roll, a conductive grounded wall extending from a forward portion of said roll and disposed between and spaced from each of said electrodes, means to charge said auxiliary electrode to a potential in excess of substantially 60 kilovolts the same sign as said ionizing electrode, and means for separately collecting particles attracted respectively toward said auxiliary electrode and toward said wall.



3,308,949
SIFTER OF THE CIRCULATING AIR TYPE

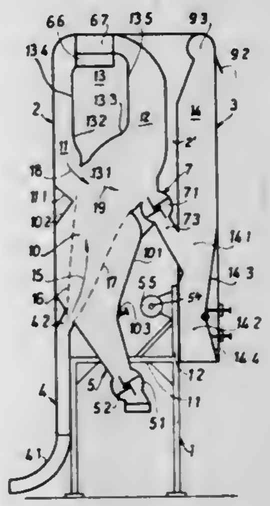
Siegfried Schauer, Hohenecken, near Kaiserslautern, Germany, assignor to Gebr. Pfeiffer Barbarossawerke A.-G., Kaiserslautern, Pfalz, Germany
Filed Dec. 31, 1964, Ser. No. 422,611
Claims priority, application Germany, Jan. 2, 1964, P 33,305
7 Claims. (Cl. 209—133)



1. Sifting apparatus of the circulating air type comprising an outer housing having a material intake, an inner housing and a cyclone arranged centrally of said housings, said cyclone defining a separator for fine substances and for grit and having a discharge aperture at its lower end for fine substances, a baffle arranged in and defining an air gap with said inner housing above said cyclone and dividing said inner housing into an upper centrifugal separating space and a lower grit discharging chamber and air circulating space for the upward flow of air, said outer housing having a grit discharge aperture disposed below and in receiving relation to said discharging chamber and said inner housing having an open upper end in air circulating relationship with said outer housing, the walls of said inner and said outer housing defining an air circulating space for downward flow of air, a central air shaft arranged centrally in the upper end of said cyclone, dispersing means arranged in said discharging chamber around said cyclone and below said material intake, a sifting wheel rotatably mounted above said cyclone at the upper end of said lower grit discharging chamber and air circulating space, a blower wheel rotatably mounted above said baffle in said centrifugal separating space, and means for rotating said sifting wheel and said blower wheel to circulate air flow through the upper end of said cyclone, said air shaft, said blower wheel upwardly therefrom into and downwardly in said air circulating space, upwardly in said chamber through said dispersing means to said sifter and said cyclone.

3,308,950
METHOD OF AND APPARATUS FOR SEPARATING TOBACCO

Heinz Harte, Hamburg-Bergedorf, Johannes Iwen, Reinbek, and Waldemar Wochnowski, Hamburg, Germany, assignors to Hauni Werke Körber & Co. K.G., Hamburg-Bergedorf, Germany
Filed May 7, 1963, Ser. No. 278,688
Claims priority, application Great Britain, May 9, 1962, 17,823/62
20 Claims. (Cl. 209—137)



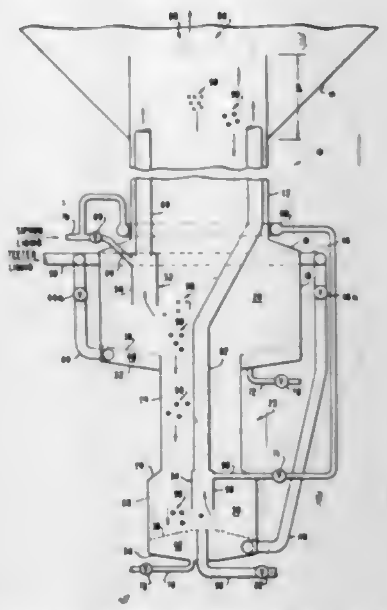
10. An apparatus for pneumatically separating lighter particles from heavier particles which together form a mixture, comprising a housing defining an upwardly inclined expansion space having an upper portion and a lower portion; an intake connected to the housing and communicating with the lower portion of said space, said intake being arranged to admit into said space a continuous stream of such mixture together with an ascending current of high-velocity air whereby the current entering said space expands sufficiently to permit descent of some of the heavier particles; first extractor means for withdrawing such descending particles from the lower portion of said space; baffle means provided in said housing above said space and defining a plurality of channels each of which communicates with and extends upwardly from said space so that the remainder of the mixture may be entrained by the air toward said channels with a force sufficient to entrain only the lighter particles whereby the additional heavier particles contained in the remainder of the mixture tend to descend and form a further stream which hinders the entry of additional heavier particles into said channels; second extractor means adjacent to the upper portion of said space for withdrawing said further stream from the housing; and off-take means for withdrawing lighter particles from said channels.

3,308,951
SECONDARY HINDERED SETTLING COLUMN FOR HYDROSIZERS

Robert D. Evans, Pierce, Fla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Dec. 3, 1964, Ser. No. 415,593
3 Claims. (Cl. 209—158)

1. In apparatus for hydraulically classifying particles having a range of sizes, the combination of a first vertically disposed column, a first chamber positioned beneath the first column of larger cross-sectional area than said first

column and communicating therewith, a second vertically disposed column of smaller cross-sectional area than said first column positioned beneath said first chamber and communicating therewith, a second chamber positioned beneath the second column of larger cross-sectional area than said second column and communicating therewith, said columns and said chambers being filled with a liquid, means for separately introducing liquid into each of said first and second chambers at rates such that there is effected an upward flow of liquid through said first and second chambers and through said first and second columns, with the upward flow rate in said second column being greater than the upward flow rate in said first column and with the upward flow rates in said first and second chambers respectively being less than the upward flow rates in said first and second columns, means for applying particles to be classified to the top portion of said first column, and means for separately discharging particles from each of said first and second chambers.

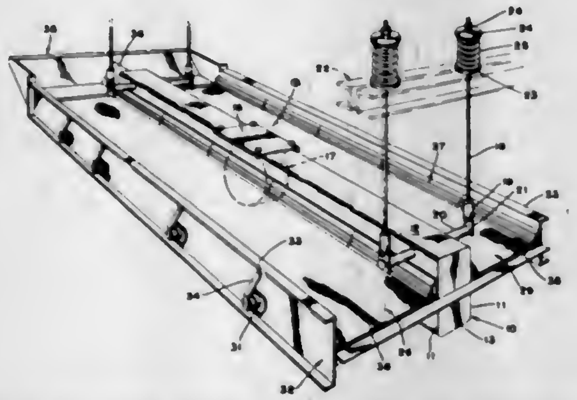


3,308,952
VIBRATING SCREENING APPARATUS WITH WEDGE RING SUPPORT

Walter J. Parks, deceased, late of Cleveland, Ohio, by Robert L. Baker, executor, Auburn Township, Geauga County, Ohio, assignor to W. S. Tyler, Incorporated, a corporation of Ohio

Continuation of application Ser. No. 100,287, Apr. 3, 1961. This application Aug. 30, 1965, Ser. No. 486,593

5 Claims. (Cl. 209—329)



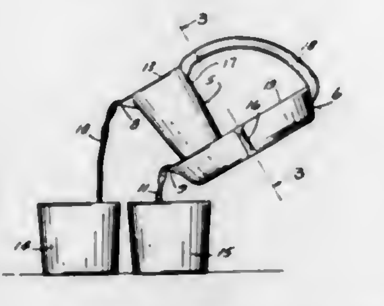
1. In a screening apparatus at least one resiliently supported central longitudinal tubular member running parallel to the flow of material in the screening apparatus, said member being symmetrically located with respect to the screen structure and extending substantially the length of the screen deck, said longitudinal member being a central support for the entire screen assembly and being a hollow tubular member of rectangular cross section, and cross members connected to and running transversely of said longitudinal member in spaced relation in the direction of its length, said cross members being of rigid material and extending continuously under the screen decks supported thereby, and vibration producing elements secured to said central longitudinal member to produce the required vibrational motion in said member.

3,308,953
SEPARATOR FOR LIQUIDS OF DIFFERENT SPECIFIC GRAVITIES

Carl F. Hinshaw, Lake of the Hills, Lake Wales, Fla. 33853

Filed July 17, 1964, Ser. No. 383,362

7 Claims. (Cl. 210—83)



1. A device for separating liquids of different specific gravity compirising:

an outside container,

an inside container,

means fastening said inside container into said outside container and overflow means for overflowing liquid of low specific gravity from the inside container into the outside container while retaining high specific gravity liquid in the inside container to separate said low from said high specific gravity liquid.

and a handle on the fastened containers for concurrently pouring their respective contents into separate receptacles by tipping said containers.

4. A method of separating liquids of different specific gravity comprising the steps of pouring commingled liquids into the inside one of two nested containers to cause the liquid of lower specific gravity to separate from the liquid of higher specific gravity and rise toward the top of said inside container, and continuing to pour into said inside container to overflow said liquid of lower specific gravity into the outer of said two nested containers until substantially all of said separated liquid of lower specific gravity has overflowed into said outer container, plus the step of pouring simultaneously from said one and another containers into separate receptacles for said liquids of different specific gravity.

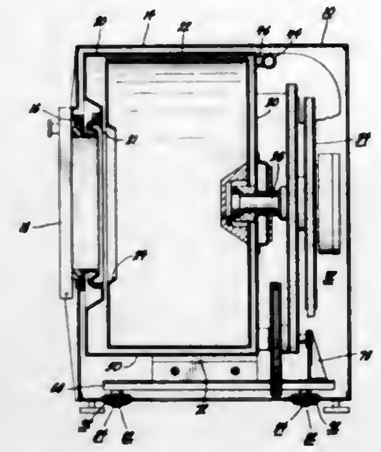
3,308,954
DOMESTIC APPLIANCE

Paul F. Powder, Southfield, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Michigan

Filed May 4, 1964, Ser. No. 364,455

7 Claims. (Cl. 210—138)

1. In a domestic appliance having a high-speed spin cycle of operation during which a rotatable receptacle spins at a relatively high speed, the combination of, an electric motor for effecting the high-speed spin of the receptacle, circuit means including first switch means for electrically connecting said motor to a source of power, first timer means in said circuit means for sequentially conditioning said first switch means to effect a predetermined sequence of operating cycles, second switch means responsive to vibrations in the appliance, second timer means operative upon a predetermined appliance vibration sensed by said second switch means for conditioning said circuit means to de-energize said first timer means to interrupt said sequence of operating cycles, third switch means responsive to operation of said second timer means for pulsatingly energizing said electric motor while said first timer means is de-energized to effect a step-wise deceleration of the rotatable receptacle to a predetermined slower speed to redistribute articles therein sufficiently to reduce the appliance vibration sensed by said second switch means.

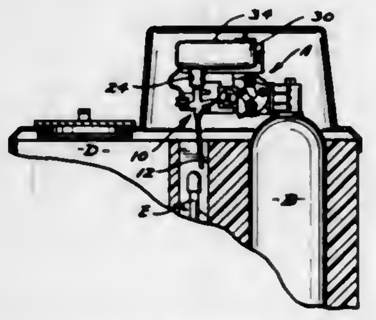


3,308,955
APPARATUS FOR INJECTING INTO WATER SOFTENING SYSTEMS

Robert E. Robarge, Minneapolis, Minn., assignor to The Meadowbrook Company, Edina, Minn., a corporation of Minnesota

Filed Feb. 4, 1964, Ser. No. 342,480

5 Claims. (Cl. 210—139)



1. In combination with a water softener having a brine supply system and a softening tank with control means for automatically regenerating the brine concentration in the softener tank, a metering valve for injecting predetermined amounts of an impurity dissolving solution into the brine system comprising:

(a) a housing member defining an inlet passage and a discharge passage with orifice means affording communication between said passages;

(b) a valve member arranged for sealing said orifice including:

  (1) a resilient for closing said orifice; and

  (2) a valve guiding and operating stem arranged for longitudinal sliding movement within the orifice and having an operating end extending outwardly from said housing and provided with a flow groove in adjacent position to said orifice and extending longitudinally along the stem such that when the sealing member is displaced the flow groove ends will be positioned respectively in the inlet passage and the discharge passage to afford communication therebetween;

(c) means associated with said softener control means for automatically actuating the operative end of said valve guide to allow a predetermined amount of fluid to flow through said metering valve; and

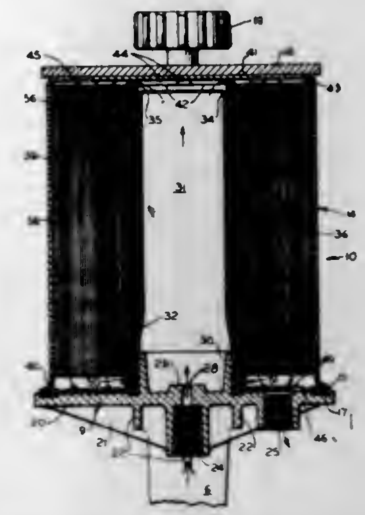
(d) fluid supply means communicating with said inlet.

3,308,956
AXIAL FLOW OIL FILTER HAVING SEALING MEANS

Skipper K. Yee, Stockton, Calif., and John M. Frantz, Dallas, Oreg., assignors to Sky Center Corporation, Stockton, Calif., a corporation of California

Filed Apr. 3, 1963, Ser. No. 270,288

5 Claims. (Cl. 210—232)



4. An oil filter assembly comprising:

(a) a tubular filter element having a plurality of layers of thin, tightly-packed fibrous material arranged circumferentially of a hollow tube and adapted to filter oil passing axially through said layers;

(b) a rigid container enclosing said element having a cylindrical sidewall and one endwall integral with said sidewall and the other endwall in sealed engagement with said sidewall at the periphery thereof;

(c) means for conducting oil axially from one end of said filter element adjacent said one endwall of said container through said layers of fibrous material to the other end of said filter element adjacent said other endwall of said container, including,

  (1) a hollow, cylindrical core extending axially through said tube from said other endwall to an open end adjacent said one endwall;

(d) sealing means interposed between said other endwall and said other end of said filter element and extending around and in frictional engagement with said core to provide an oil-tight seal at the other end of said tube, including,

  (1) a rigid backing washer having an upwardly and outwardly inclined peripheral portion; and,

  (2) an elastic sealing washer disposed on the upper side of said backing washer and around said core in sealing engagement therewith and adapted to conform to said backing washer when pressure is applied thereto, thereby increasing the sealing pressure of said sealing washer against said core.

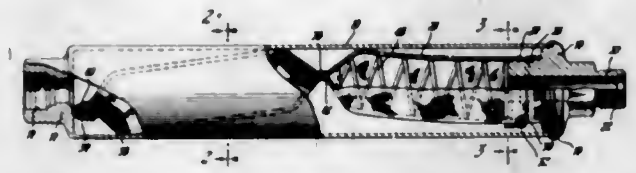
3,308,957
DESICCANT AND STRAINER ASSEMBLY

Lee F. Klein, North Tonawanda, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 28, 1964, Ser. No. 392,843

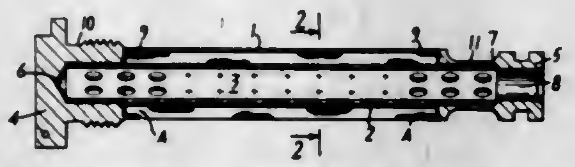
1 Claim. (Cl. 210—266)

A desiccant and strainer assembly comprising an elongated casing having connections at opposite ends whereby the assembly may be included in a refrigerant line, an elongated bag made of mesh material in said casing and extending substantially from one end to the other of the latter, one end and an intermediate portion of said bag being flattened and sealed to form a closed portion of said bag, a desiccant retained within said closed portion, the said flattened end and intermediate portion spacing much of said bag from the interior wall of said casing, the other end of said bag being in communication with one of said connections, expanding means in said bag between said other end and intermediate portion to facilitate strainer action, and said bag having a cross-section throughout its length that is smaller than that of the interior of said casing.



3,308,958
FILTER

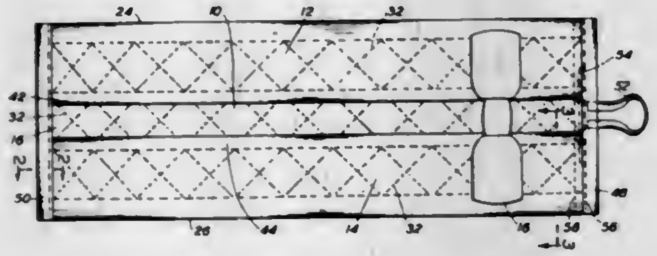
Allen L. Berger, Elmhurst, N.Y., Robert Mason, Buena Park, Calif., and David B. Pall, Roslyn Estates, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed Apr. 3, 1964, Ser. No. 357,177
9 Claims. (Cl. 210—487)



1. A filter assembly comprising a generally tubular filter element, an internal supporting core disposed within the filter element, said core having sides and ends which extend for a substantial distance beyond the extreme of each end of the filter element, and end caps bonded to and closing off the ends of the filter element in a fluid-tight seal, each of said end caps having a portion receiving said core in axial alignment therewith and closely enclosing the sides and ends of the core extending beyond the extreme ends of the filter element, and engaging such sides at a plurality of points, each of said extending sides of said core forming guide surface means for positioning each said end cap on the assembly to align said end caps with respect to said core and filter element.

3,308,959
BOW TIE HOLDER

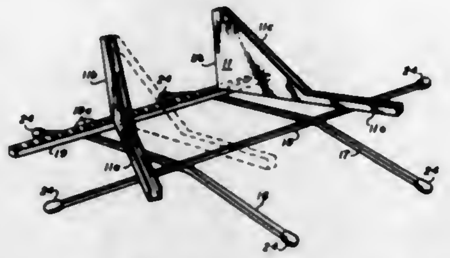
Ramona M. Repair, R.F.D. 2, Plattsmouth, Nebr. 68048
Filed Dec. 17, 1964, Ser. No. 419,166
2 Claims. (Cl. 211—13)



1. In a bow tie holder, the combination which comprises a body portion normally disposed parallel to a vertical wall, spaced strips of material positioned on said body portion and secured thereto at their outer, upper and lower edges, said spaced strips being spaced to receive clips of a bow tie, eye-forming means in an end of said bow portion, said eye-forming means having an opening therethrough extending transverse to said body portion when the latter is disposed generally parallel to a vertical wall, said holder being sufficiently flexible as to be rollable into a rolled configuration, said eye-forming means not being so large and stiff as to prevent rolling of said holder into a roll.

3,308,960
RECORD STORAGE RACK

Jack Santori, San Carlos, Calif. (1172 Brucito Ave., Los Altos, Calif. 94022), and Stanley R. Atkinson, 1084 Golden Way, Los Altos, Calif. 94022
Filed Mar. 11, 1966, Ser. No. 533,656
6 Claims. (Cl. 211—40)



1. A device for storing records and their associated record jackets comprising:

a plurality of vertically disposed record holders, each said holder having a generally L-shaped configuration including a bottom portion forming the base of the L and a back portion connected thereto forming the upright of the L;

said bottom portion and said back portion having a U-shaped cross section defining a record jacket-receiving channel in which at least two record jackets may be placed in side-by-side relation;

a frame member including only a pivot support member, a longer front support bar and a pair of leg members, said front support bar being secured to said pivot support member only by said pair of leg members; and

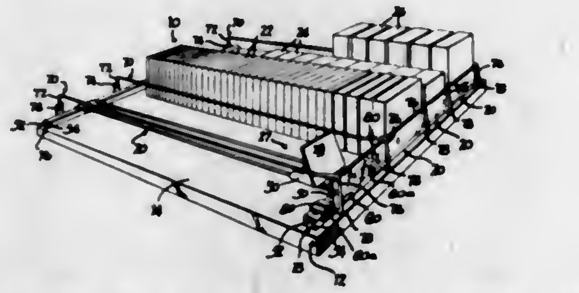
means for pivotally supporting each said holder on said pivot support member about a single point at the rear of said bottom portion to permit pivoting of each of said holders in a substantially horizontal plane for examination of the record jackets contained therein;

said pivot support member supporting said holder only at said single point on said bottom portion;

said front support bar bearing against the front of said bottom portion of each of said holders for continuously supporting said holders.

3,308,961
PACKAGE DISPLAY-DISPENSER

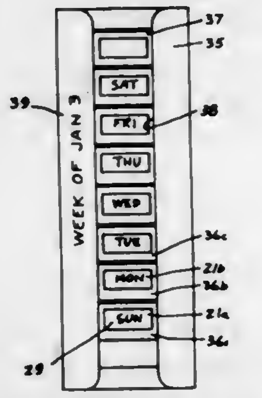
Robert G. Chesley, Farmington, Mich., assignor to Chesley Industries, Inc., Farmington, Mich., a corporation of Michigan
Filed Mar. 3, 1965, Ser. No. 436,778
11 Claims. (Cl. 211—49)



1. Merchandise display-dispensing device within which individual packages of merchandise are adapted to be stacked, the device being receiveable within a merchandise display rack, said display-dispensing device comprising a bottom, a front stationary abutment carried at the forward end of the bottom against which a forward package is biased, a pressure abutment slideably secured to the bottom, biasing means urging said slideable pressure abutment toward the front against a rear package so that as packages are dispensed from the device the remaining packages are advanced toward the front by the biased pressure abutment, said bottom serving as a rest for packages and a slide along which packages and the pressure abutment are displaced as packages are dispensed, a pair of spaced runners stationarily securable to a merchandise display rack, said runners extending generally transverse to and beneath said bottom of the device along the ends thereof, and snap-on means integral with the respective opposite ends of the bottom to releasably fasten the device to the runners.

3,308,962
PILL ORGANIZER AND METHOD

Austin U. Bryant, 2349 San Juan Ave., Walnut Creek, Calif. 94596
Filed May 10, 1965, Ser. No. 454,563
16 Claims. (Cl. 211—74)



4. A magazine for organizing, storing and dispensing dosages of medication comprising:

a plurality of individual cups of substantially identical construction,

an individual and distinct marking on each of said cups indicating the time interval during which a dosage of medication placed therein is to be taken,

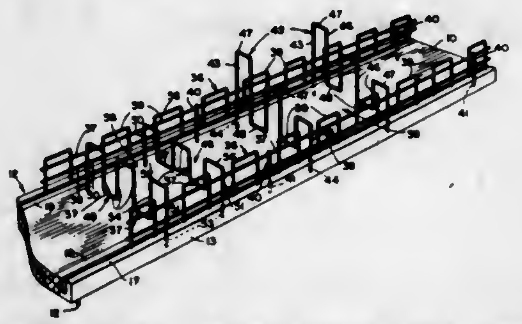
said cups being arranged in chronological order,

means provided in said magazine for frictionally retaining said cups together with sufficient force to prevent dislodgment during ordinary handling, and

means enabling successive manual removal of cups from one end of said magazine and manual replacement on the other end of said magazine.

3,308,963
SHELF EDGING AND ASSOCIATED DISPLAY STRUCTURES

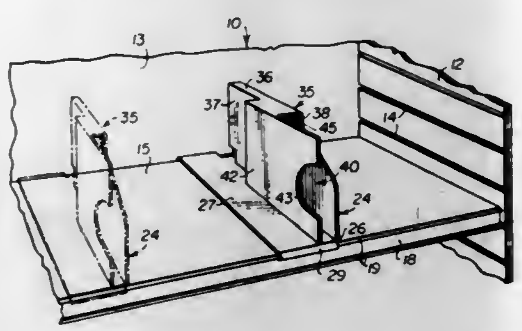
Henry Safford Peacock, Lincoln, Ill., assignor to Myers Industries, Inc., a corporation of Delaware
Filed May 12, 1965, Ser. No. 455,069
9 Claims. (Cl. 211—134)



1. Edging for display shelves and the like comprising an elongated strip, means on said strip for securing said strip along the edge of a shelf or the like, a pair of spaced, transversely corrugated, elongated walls defining the side walls of an elongated slot opening in an upward direction when said strip is mounted along said edge, an elongated, bottom wall integrally formed with the lower edges of said side walls to form the bottom wall of said slot and the concave faces of the undulations of said corrugated, side walls being oppositely disposed and forming a series of spaced, side-by-side, upwardly opening sockets adapted to receive posts of hardware members to be mounted on said shelf or the like.

3,308,964
BIN DIVIDER

Alfred T. Pistone, 3785 Grafton Road, Brunswick, Ohio 44212
Filed Dec. 17, 1964, Ser. No. 419,020
9 Claims. (Cl. 211—184)



1. In a storage bin, the combination of:

(a) a shelf having a front and back, a label holder near the front of the shelf, the label holder having a top lip;

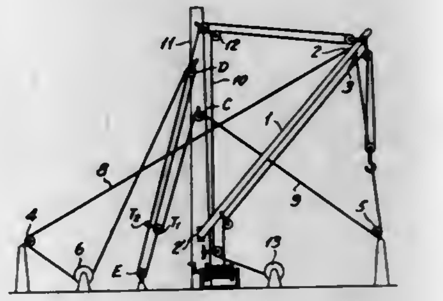
(b) a divider including a wall portion for vertical disposition when the shelf is horizontal;

(c) said divider including forward and rearward lips extending from the wall portion; and,

(d) said forward divider lip extending over the top lip of the label holder and including a tab portion projecting under said label holder lip to interlock the divider and shelf, and said rearward lip frictionally engaging the back of the shelf and maintaining the divider positioned on the shelf.

3,308,965
MARINE DERRICK ARRANGEMENT

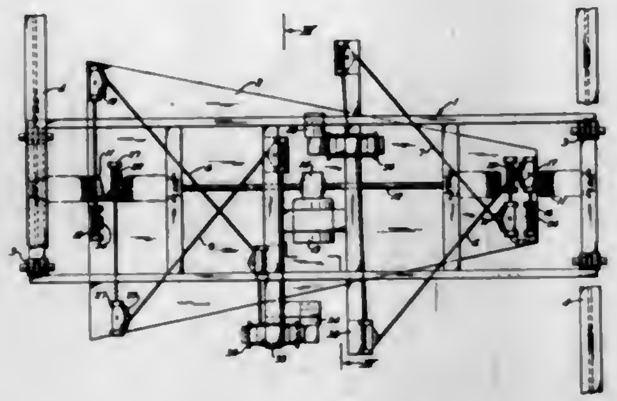
Sadatomo Kuribayashi, 21—11 2-chome Kakinokizaka, Tokyo, Japan
Filed Jan. 20, 1966, Ser. No. 521,925
Claims priority, application Japan, Nov. 24, 1965, 40/94,930
5 Claims. (Cl. 212—3)



1. A marine derrick arrangement comprising a derrick boom, a pair of guy pendant deflecting sheaves aligned with the base of said derrick boom and located at an equal distance on both sides of said base, a common winch designed for winding two guy pendants, one said guy pendant being wound around said common winch at one end thereof and led through one of said guy pendant deflecting sheaves and then being connected to the top end of said boom, the other said guy pendant being wound around said common winch at one end thereof and led through the other of said pair of guy

pendant deflecting sheaves and then being connected to the top end of said boom, elevated mounting means, and a topping lift wire extending from a winch means via said mounting means, the top end of said boom, back to said mounting means to a connection with one of said guy pendants.

3,308,966
TRAVELLING STABILIZED CRANE
Joseph E. Fawell, 1831 Brett St., Pittsburgh, Pa. 15205
Filed Sept. 3, 1965, Ser. No. 484,808
14 Claims. (Cl. 212—14)



1. A travelling crane comprising an overhead support, a vertically movable normally horizontal load frame below said support, rotatable drum means mounted on said support, two pairs of cables attached to said drum means with one pair suspended from each end of said support, a first pair of sheaves spaced transversely of the load frame and mounted thereon below each end of the support, a second pair of sheaves spaced transversely of the load frame and mounted thereon adjacent each first pair, one cable in each pair extending from the overhead support down around one of the sheaves in the underlying first pair and then across the load frame and up around the other sheave in the same pair and up across itself to a connection with said support, the other cable in each pair extending from said support down around the sheave in the underlying second pair that is adjacent said other sheave and then across the load frame and up around the other sheave in the second pair and up across itself to a connection with said support, and means for rotating the drum means to raise and lower the load frame by means of the four cables.

3,308,967
EXTENSIBLE BOOM CRANE
Byron F. Barkley and William H. Kibble, both of 717 South 4th West St., Salt Lake City, Utah 84102
Filed Oct. 6, 1965, Ser. No. 493,450
9 Claims. (Cl. 212—55)

1. An extensible boom crane comprising in combination:

a supporting base;

an extensible boom pivotally mounted on said base so that it can be raised and lowered, said boom having a plurality of boom sections interfitted for longitudinal extension and retraction to lengthen and shorten the boom, with the section extensible the greatest distance from the supporting base comprising a tip section and a section connected to the supporting base comprising a base section;

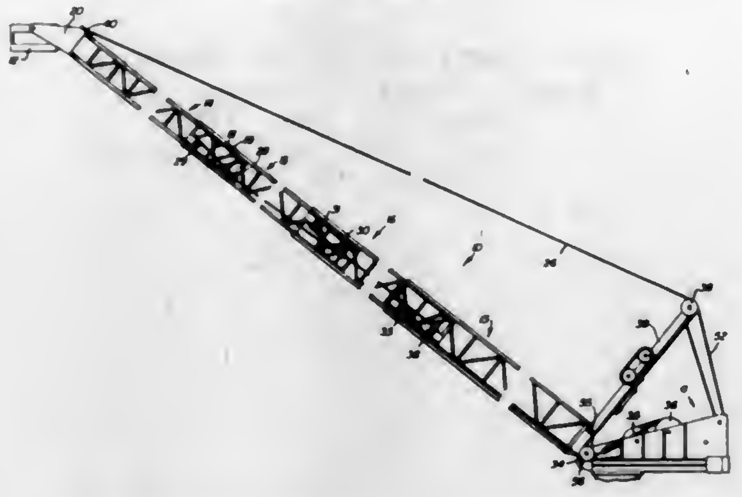
means for raising and lowering the boom and for holding it at any given angular relationship with the horizontal during use;

a normally upright gantry mast pivoted to the boom adjacent to said base;

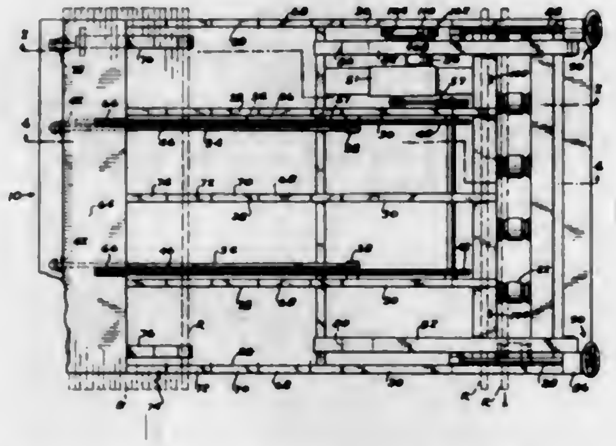
at least one drive wheel mounted on said base;

rigging for extending and retracting said boom without altering its said angular relationship with the horizontal, said rigging including at least one system of pulleys secured to the respective boom sections and a single cable for each said system of pulleys, the pulleys of each said system being arranged and its cable being wrapped around them to extend the boom sections when the cable is pulled and to permit the boom sections to retract when the cable is payed out, said cable having one of its ends anchored to the non-received end of the tip section, its other end anchored adjacent to an upper portion of said tip section, and, intermediate its said ends, being wrapped around said drive wheel and passed over said upright gantry mast;

and means for rotating said drive wheel.



3,308,968
APPARATUS FOR DELIVERING RODS ONE AT A TIME FROM A BUNDLE
Earl J. Harrington, St. Clair Shores, Mich., assignor to Spurgeon Co., Ferndale, Mich., a corporation of Michigan
Filed Mar. 22, 1965, Ser. No. 441.554
11 Claims. (Cl. 214—11)



1. Apparatus for delivering rods and the like from a bundle one at a time to a delivery point comprising,

means providing a table having a receiving zone adapted to receive and support a bundle of rods and the like,

said table having a delivery zone and having portions which extend away from said receiving zone toward said delivery zone,

said portions having surface portions disposed so that progressively diminishing downward slopes are provided between adjacent of said surface portions in the direction away from said receiving zone toward said delivery zone,

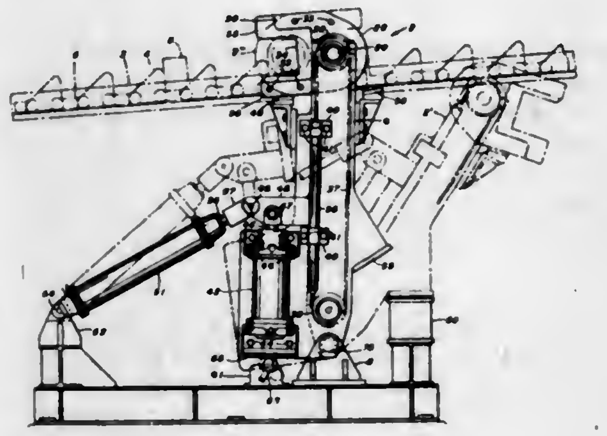
drag means mounted for movement generally in a direction away from said receiving zone toward said delivery zone, drive means operable so to move said drag means,

means mounting said drag means and table for relative movement from open relation to closed relation, said drag means in said open relation being operatively clear of rods and the like on said table,

said drag means, responsive to said relative movement, being operative to engage and urge toward said delivery zone rods and the like on said table progressively further from said delivery zone,

and motor means operative to effect said relative movement.

3,308,969
BAR TURNER
Dyke B. Orms and Leonard I. Rauch, Johnstown, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed Aug. 11, 1965, Ser. No. 478,823
5 Claims. (Cl. 214—1)



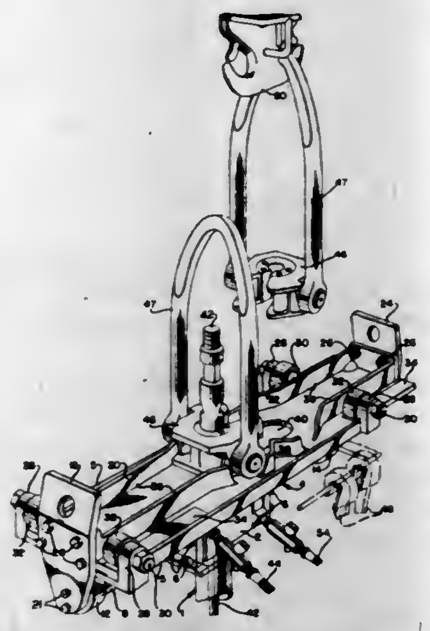
1. Apparatus for turning over bars comprising two spaced-apart stationary base supports, a main arm pivotally connected at a first pivotal axis to one of said base supports, a bar turning member extending from said arm and rotatably mounted on the arm at a second pivotal axis, a follower member mounted on said arm and movable with respect to the arm, means connecting said follower member to said bar turning member causing said bar turning member to rotate about said second pivotal axis when said follower member is moved with respect to said arm, a link having one end pivotally connected to said follower member and its other end pivotally connected to the second of said base supports, and means for moving said follower to cause the simultaneous rotation of said arm and said bar turning member about said first and second pivotal axes respectively.

3,308,970
ROD AND PIPE ELEVATOR SHIFTING MECHANISM FOR WELL SERVICING RIGS AND THE LIKE
John Hart Wilson and Leroy P. Wilson, both % Wilson Mfg. Co., P.O. Box 1031, Wichita Falls, Tex. 76307, and Frank M. Pool, P.O. Box 1940, San Angelo, Tex. 76901
Filed June 10, 1965, Ser. No. 462,861
10 Claims. (Cl. 214—2.5)

1. An elevator shifting mechanism for moving elevators transversely with respect to an elongated element within the bore hole of a well, which mechanism comprises;

(a) a base plate,
  (1) said base plate having a hole formed therein, which hole is in alignment with the bore hole of a well,

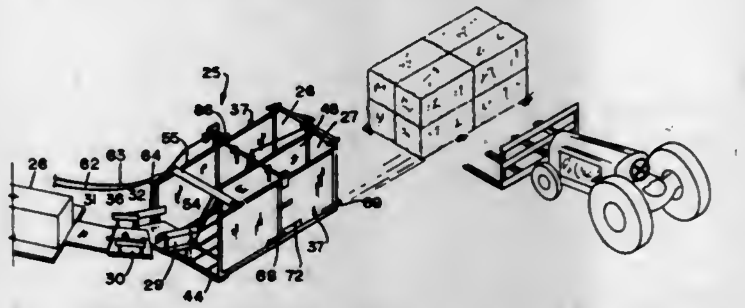
(b) a shift plate mounted on said base plate,
  (1) elevator receiving seats formed on said shift plate,



  (2) said shift plate having an elongated slot formed therein, which slot underlies a portion of each elevator receiving seat and being in register with said hole in said base plate,

(c) mechanical means associated with said shift plate for moving said shift plate relative to said base plate.

3,308,971
STACKING ATTACHMENT FOR A HAY BALER
Roland Sinden, Dean Sinden, and John Sinden, all of Craig, Colo., assignors to Roland Sinden, Dean Sinden, and John Sinden, all of Craig, Colo.
Filed Aug. 10, 1964, Ser. No. 388,520
8 Claims. (Cl. 214—6)



7. A hay bale stacker adapted to be connected with and towed by a hay baling machine to receive a group of bales of hay as they are discharged from the machine, to arrange the bales in a rectangular stack a selected number of bales high, a selected number of bales wide, and a selected number of bales long, and to release the stack when it is completed, and comprising in combination therewith:

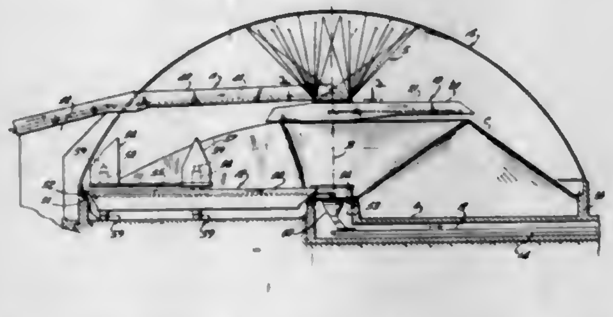
(a) a box-like body including longitudinal side walls and longitudinal intermediate walls dividing the same into a selected number of compartments, establishing the width of the stack and proportioned such that the width of each compartment is slightly greater than the width of the hay bale, the height of each compartment is sligtly greater than the height of the stack and the length is greater than the length of the stack;

(b) a floor structure adapted to support the stack within the stacker and means associated therewith adapted to permit the stack to slide rearwardly from the same after the stack is so formed;

(c) a chute at the front end of the body adapted to be normally in alignment with one compartment to receive bales from the machine and to guide the

same into the compartment, said chute being at a height adapted to permit one bale to be moved onto the top of another to the full height of the stack;
(d) a shifting means at the front end of the body adapted to shift the chute laterally across the body from alignment with one compartment to alignment with another compartment to thereby supply bales to all compartments;
(e) a holding means traversing the compartments at the rear of the body adapted to normally hold bales within the compartments, but being releasable to release bales therefrom;
(f) a trigger means in each compartment adapted to actuate responsive to movement of bales within the compartment when the compartment is filled with bales; and
(g) a control means adapted to be actuated by actuation of the trigger means to initiate shifting of the shifting means whenever one compartment is filled with hay bales and to initiate releasing of the holding means whenever all compartments are filled with hay bales to release the stack from the compartment.

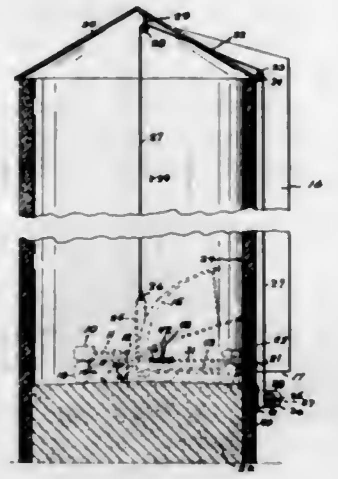
3,308,972
LOAD SUPPORTING SYSTEM
Axel G. Jensen, Little Falls, N.J., assignor, by mesne signments, to Hewitt Robins, Stamford, Conn., a corporation of Delaware
Filed Oct. 12, 1964, Ser. No. 403,298
16 Claims. (Cl. 214—10)



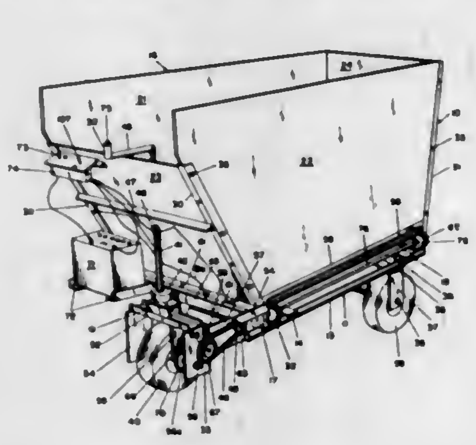
5. In combination, a stacker comprising a boom, a stationary platform, a turntable supported on said platform for rotation about a vertical axis, said boom being affixed to said turntable for rotation about said vertical axis, and a conveyor on said boom extending therealong, an enclosure for said stacker having a self-supporting circular dome roof centered with respect to said axis and defining a plurality of spaced anchor roof points, and a system for suspending said stacker from said dome roof comprising a plurality of stabilizing guy ropes extending from said dome roof to said platform supporting said platform against sideway movements, and means for dividing and distributing the stresses transmitted from a plurality of support points on said platform to said anchor roof points to allocate predetermined proportional amounts of the loads at said platform points respectively transmitted to said anchor roof points regardless of variations in said loads.

3,308,973
AUTOMATIC ELECTRICAL LEVELLING SWITCH FOR SILO UNLOADERS
Calvin D. Heltzman, Spencer, S. Dak. 57374
Filed Mar. 19, 1965, Ser. No. 441,165
1 Claim. (Cl. 214—17)

In combination with a silo unloader and a silo in which said silo unloader operates, a gravity operated switch attached to said silo unloader, a circuit connected to said switch, an electric motor operated by said switch and attached to said silo, a reel operated by said motor, a cable attached to said silo unloader and to said reel, pulleys attached to said silo over which said cable passes, said switch being actuated when portions of said silo unloader drop below a predetermined level to thereby operate said reel to cause said silo unloader to drop, said switch including a mercury contact member, said mercury contact member being positioned so as to make and break contact incidental upon positioning of said silo unloader portions on silage, means for adjustably positioning said mercury contact member to different angular positions including an arm to which said mercury contact member is attached, a bracket attached to said silo unloader to which said arm is attached, means for adjustably positioning said arm.

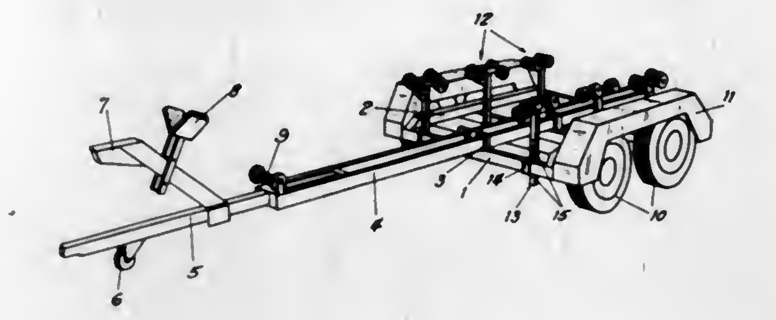


3,308,974
BULK MATERIAL CART
Augustine S. Rosenbaum, 609 N. Page St., Stoughton, Wis. 53589
Filed July 28, 1965, Ser. No. 475,339
10 Claims. (Cl. 214—83.36)



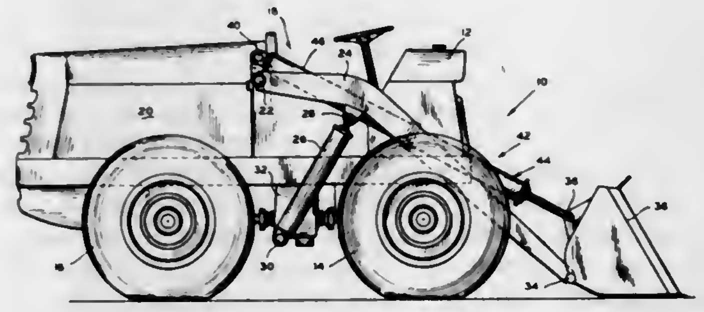
1. A self-propelled and self-unloading bulk material cart comprising:
(a) a chassis,
(b) a pair of rear wheels supporting the rear end of said chassis,
(c) a third wheel rotatably mounted at the forward end of said chassis for driving and steering said cart,
(d) means for manually steering said third wheel,
(e) a box mounted on said chassis for holding bulk material, said box having a floor and a plurality of walls, said box having a discharge opening to facilitate the unloading of bulk material from said cart,
(f) an endless conveyor chain adapted to be driven over the top surface of the floor of said box toward said discharge opening and
(g) means for driving said third wheel and for driving said conveyor chain for discharging bulk material from said cart through said discharge opening.

3,308,975
BOAT-TRANSPORTER TRAILER
Henri Jean Desfilles, Ormesson-sur-Marne, France, assignor to Le Tube Mannfacture Pour Manutention et Remorques-Nautilus, Ormesson-sur-Marne, France, a company of France
Filed Nov. 24, 1964, Ser. No. 413,485
Claims priority, application France Nov. 26, 1963, 955,008, Patent 1,386,342
4 Claims. (Cl. 214—84)



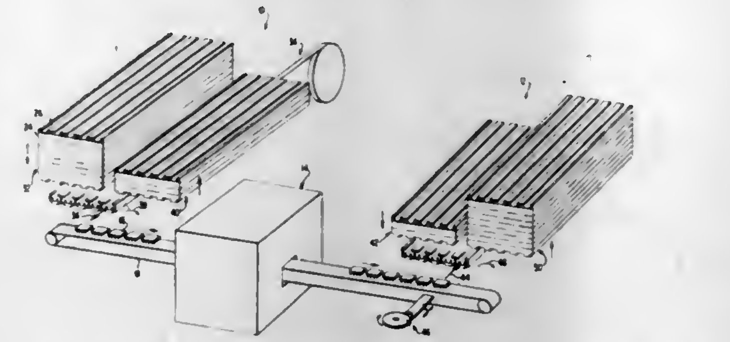
1. In a boat trailer, the combination comprising:
a longitudinal frame having laterally spaced wheels for supporting the frame on the ground;
a plurality of cradles mounted on said frame and arranged thereon for supporting a boat hull;
each cradle including an elongated roller support extending lengthwise of said frame and mounting means mounting said roller support on said frame for pivotal movement about a transverse pivot axis, two pairs of laterally spaced rollers and mounting means for rotatably mounting the pairs of rollers on said roller support and also mounting the respective pairs of rollers for pivotal movement about the longitudinal axis of said roller support independent of the other pair of rollers, the respective pairs of rollers being disposed on opposite sides of said transverse pivot axis and the rollers of each pair being disposed on opposite sides of the longitudinal axis of said roller support.

3,308,976
ADJUSTABLE SPEED MATERIAL HANDLING DEVICE
Paul F. McAdams, St. Joseph, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 24, 1964, Ser. No. 420,972
5 Claims. (Cl. 214—140)



1. In a material handling vehicle, a boom arm pivotally connected to the vehicle, a bucket pivotally connected to one end of said boom arm, and a bucket tilt assembly connected to said bucket and the vehicle, said assembly including a double-acting piston and cylinder type fluid motor, a speed control rod connected to said piston and extending outwardly through one end of said motor and a tubular extension member connected to said one motor end and connected to the vehicle.

3,308,977
AUTOMATIC TRAY HANDLER
Thomas J. Cochran, La Grangeville, and Natale J. Donato, Millbrook, N.Y., David K. Elrick, Burlington, Vt., and Walter W. Ficker, Fishkill, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 4, 1965, Ser. No. 492,472
15 Claims. (Cl. 214—301)

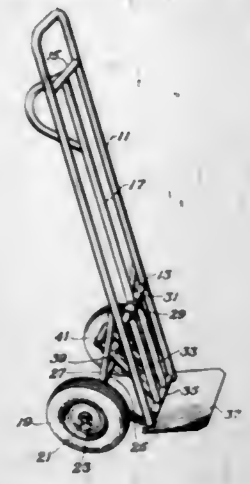


1. An automatic tray handler system for handling a plurality of trays, each tray being adapted to contain a plurality of individual articles to be worked upon at a work station, the tray handler system comprising;
(a) an automatic tray unloader on one side of the work station,
(b) tray lowering means included in the unloader to feed article loaded trays carried by the unloader one at a time to a horizontal surface including an article unloader station in the unloader,
(c) article unloading means to unload the articles from the loaded tray at the unloader station,
(d) tray stacking means in the unloader for stacking the trays after they have been unloaded,
(e) tray feeding means for feeding the trays from the tray lowering means through the unloader station to the tray stacking means,
(f) conveying means for conveying the articles unloaded at the unloader station through the work station,
(g) an automatic tray loader on the other side of the work station,
(h) tray lowering means included in the loader to lower empty trays carried by the loader one at a time to a horizontal surface including an article loader station in the loader,
(i) article loading means to load the articles from the conveying means at the loader station,
(j) tray stacking means in the loader for stacking the trays after they have been loaded, and
(k) tray feeding means for feeding trays through the loader from the tray lowering means to the tray stacking means.

3,308,978
HAND TRUCK UNLOADING APPARATUS
Connie O. Smith, Jr., 1220 Delmont, Richardson, Tex. 75080
Filed Mar. 9, 1965, Ser. No. 438,348
4 Claims. (Cl. 214—511)

1. In a hand truck of the type having an elongated frame, two wheels, and a cargo platform secured to one end portion of the frame, the improvement comprising:
(a) a horizontal cross bar connected to said elongated frame;
(b) a pair of collars rotatably connected to said cross bar;
(c) spacer means selectively positioned and secured intermediate said collars;
(d) a first set of substantially parallel legs, each having one end thereof connected to a respective collar;
(e) a cargo engaging member secured to the opposite ends of said legs;

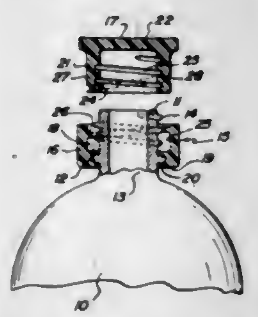
(f) a second set of substantially parallel legs having end portions secured to one of said cargo engaging member and the lower portions of said first set of legs, and extending away from said cargo and rearwardly of said frame, with the included angle between said first and second sets of parallel legs being



not greater than 45 degrees and with said second set of legs being of a length selected from a range that varies from 60 through 125 percent of the length of said first set of legs; and

(g) a foot carriage secured to the opposite end portions of said second set of parallel legs.

3,308,979
TAMPER-PROOF BOTTLE CAP
Norman J. Hailes, Rivers, Manitoba, Canada
Filed Nov. 22, 1965, Ser. No. 516,198
3 Claims. (Cl. 215—9)



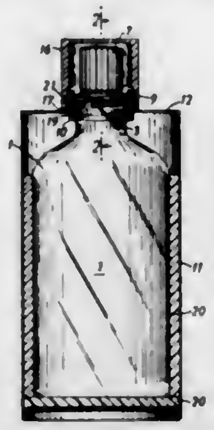
1. In a bottle having an external screw threaded neck and an annular rim around the base of said neck; a capping assembly for said neck, said capping assembly including an open ended cylindrical sleeve surrounding said neck in annular spaced relationship therewith and being rotatably secured around said rim by the base of said sleeve, and a cap for said neck, said cap being internally screw-threaded corresponding to the screw-threading of said neck and engageable with said screw-threading of said neck to seal said bottle, the wall of said cap entering between said sleeve and said neck, a screw-thread on said wall exterior of said cap and a matching screw-thread formed on the interior of the wall of said sleeve, the screw-threading characteristics of said cap and said neck being different to the characteristics of the screw-threads on the exterior of said cap and the interior wall of said sleeve.

3,308,980
SAFETY PACKAGE FOR DANGEROUS LIQUIDS
John R. Taylor, Mountain Lakes, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Nov. 19, 1965, Ser. No. 508,732
9 Claims. (Cl. 215—12)

2. A container assembly comprising in combination:

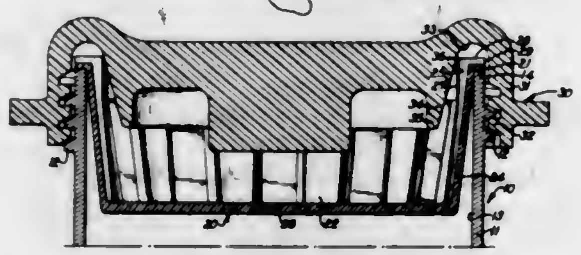
(a) an inner container comprising a main body portion terminating in a cylindrical neck, which cylindrical neck is recessed intermediate its uppermost and lowermost extremities and possesses a peripheral shoulder extending from a lower portion of the non-recessed portion of the neck,

(b) an outer protective shell surrounding the main body portion and lower neck portion of the inner container, which shell is provided with an inwardly extending annular flange at its upper extremity so dimensioned so that the neck portion of the inner container extends therethrough and so further dimensioned that it does not permit the peripheral shoulder on the container neck to extend therethrough, and



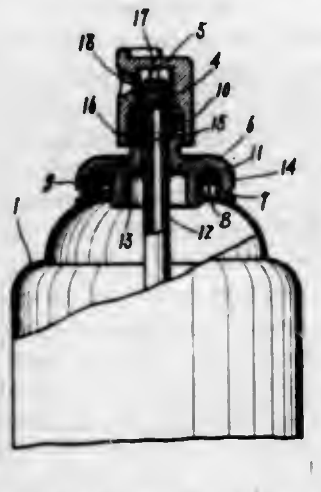
(c) an annular sealing ring surrounding the non-recessed portion of the container neck above the inwardly extending annular flange of the outer protective shell so dimensioned and positioned as to form a tight seal with the non-recessed portion of the container neck and with the inwardly extending flange of the outer protective shell.

3,308,981
VENTING CLOSURE FOR CONTAINERS
Anthony J. Starr, Wilmington, and Reese I. Savage, Jr., Newark, Del., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,468
6 Claims. (Cl. 215—56)



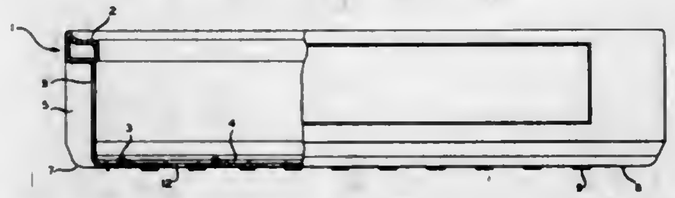
1. In a container structure, a tubular flange defining an opening in the container and constituted of flexible elastomeric material and having a seating surface at its upper end, a cup-shaped sealing member constituted of flexible elastomeric material and having at its upper end an outwardly extending flange seated on said tubular flange seating surface to support said member in depending relationship within said tubular flange, the body of said sealing member being of tubular configuration with an inner and outer side wall and a bottom wall, said outer wall being constituted of a continuous layer of elastomeric material, and said inner side wall being constituted of spaced ribs projecting inwardly from and extending up the outer wall and over the outwardly extending flange, said outer wall at its upper portion bearing against the interior surface of said tubular flange with sufficient pressure to provide a gas tight and liquid tight seal, a closure cap constituted of elastomeric material and having an outer depending wall coupled to said tubular flange, said closure cap having an inwardly tapered wall portion engageable with the inner peripheral upper edges of the spaced ribs on said sealing member to normally hold such flange seated in sealing relation on said tubular flange seating surface, and the exterior surface of the lower portion of said sealing member being spaced from said interior surface of the tubular flange to permit gas of high pressure to enter between said body and said interior surface and flex the portions of said outer wall of the body between the ribs away from the interior surface and the seating surface of said flange thereby permitting the gas to escape past the upper portion of the sealing member.

3,308,982
MOUNTING CAP MEANS FOR DISPENSER
Seiichi Kitabayashi, 2—2246 Nishisugamo, Toshima-ku, Tokyo, Japan
Filed Sept. 27, 1965, Ser. No. 490,462
Claims priority, application Japan, Sept. 28, 1964, 39/54,552
1 Claim. (Cl. 215—73)



A container having a mouth and a brim extending from said mouth, said brim having an annular cut end projecting outwardly and downwardly from said mouth, the end face of said cut end facing downward, and a cap for mounting a valve means, said cap comprising a thick disk molded of synthetic resin, said disk having an inner wall member pendant from the bottom face thereof, the outer surface of said inner wall member engaging the inner surface of said container mouth, said disk having an outer wall member concentric with said inner wall member, said outer wall member being under stress tending to move said outer wall member inwardly, said outer wall member having an annular step facing upward and engaging said end face of said cut end, said disc having a center post integrally molded therewith and rising upward on the center thereof and being provided with an axial bore opening in said disc bottom face and a through side orifice for forming a discharge valve means.

3,308,983
ARTICLE CARRYING CASE
Bill T. Morgan and Robert W. Matthews, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 6, 1964, Ser. No. 401,861
6 Claims. (Cl. 220—21)



1. A one-piece molded shell having

(a) an open top,

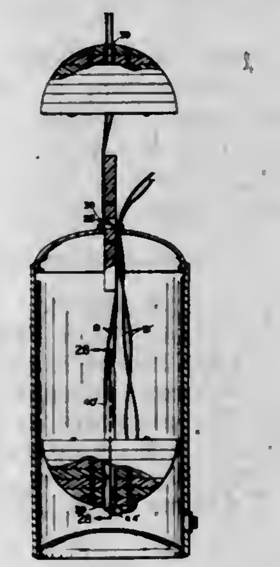
(b) four sides, at least one side having an indented channel portion extending vertically from the bottom thereof,

(c) a portion of the inner part of said channel adapted to be cut out in the upper portion thereof to facilitate gripping of said shell,

(d) a downwardly and inwardly extending flange providing reinforcement for said shell sides at the top portion thereof, and

(e) a bottom, having indented areas on the underside thereof to receive the tops of articles when shell containers are in stacked position, and having raised thin ridges to increase the sliding resistance of said shell bottoms.

3,308,984
FLOAT FOR HYDRAULIC ACCUMULATOR
John Gordon Baker, Evansville, Wis., assignor to Baker Manufacturing Company, Evansville, Wis.
Original application Sept. 8, 1961, Ser. No. 136,875, now Patent No. 3,239,928, dated Mar. 15, 1966. Divided and this application Feb. 28, 1963, Ser. No. 261,896
7 Claims. (Cl. 220—26)

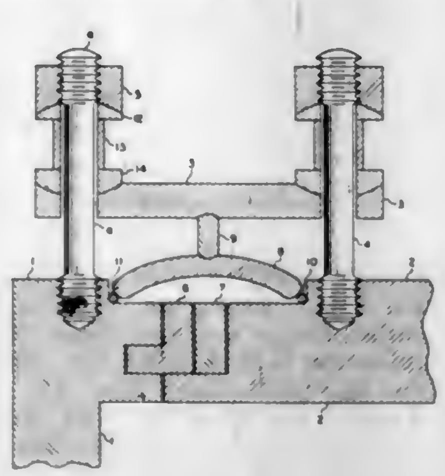


1. The combination of a liquid storage tank of constant horizontal cross-section and a float of substantially the same horizontal size and shape as said tank cross-section disposed within said tank for resting upon liquid in the tank and separating same from vapors within the tank, the top and bottom and side walls of said tank being continuous except for at least one small opening in at least one of said walls, the diameter of said opening being small relative to said horizontal cross-section of the tank, said float comprising a plurality of buoyant elongated members each of which extends from one peripheral edge of the float to another peripheral edge of the float and each of which has a hole extending laterally through it and is of substantially uniform cross-section in portions which are not at one of the peripheral edges, said cross-sections being inscribable within said opening so that said members are insertable through said opening, said members being held together to form said float by at least one tension member extending through said float, through said laterally extending hole in each member.

3,308,985
FLEXIBLE SEAL JOINT
Axel Christensen, Stamford, Conn., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 21, 1963, Ser. No. 325,287
9 Claims. (Cl. 220—46)

1. A fluid sealing joint between juxtaposed fluid retention members in circular contact which comprises an arcuate seal ring, said seal ring extending between opposed recesses in said fluid retention members, circular gaskets between each end of said seal ring and the respec-

tive recess in a fluid retention member, a cylindrical compression ring above said seal ring, said compression ring being centrally disposed in contact with the outer arcuate surface of said seal ring and being pivoted so as to continuously exert pressure on the center of the arc of said seal ring when the curvature of said seal ring is reduced under compression, a flange ring above said compression ring, and a plurality of bolts extending between said flange ring and said fluid retention members, whereby said flange ring is maintained in compressive contact with said compression ring.

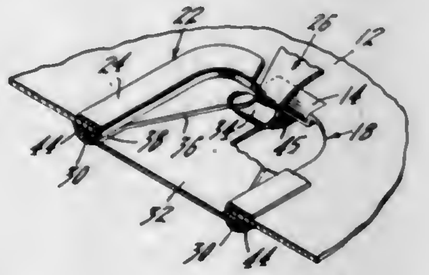


3,308,986
PLASTISOL COATINGS FOR EASY-OPEN CONTAINER ENDS

Alfred Edward Balocca, Wheaton, and Arthur Philip Zundel, Cary, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Sept. 30, 1964, Ser. No. 400,386

7 Claims. (Cl. 220—53)



1. An end closure adapted to be attached to a tubular container body, comprising:

- a substantially flat panel having an aperture therein;
- a thin relatively rigid plug within said aperture and secured to said panel along the major portion of the periphery of said plug;
- a pull tab for manually removing a tear out area in said plug, said tab extending away from said aperture at a point where said plug is free from securement to said panel;

said tear out area defined by weakened lines in said plug;

- a relatively hard sealing material sealing said plug with said panel along said major secured portion of the periphery of said plug;

and a soft pliable sealing material hermetically sealing said plug with said panel where said plug and said tab join so that when said tab is manually pulled to remove said tear out area from said plug, said soft pliable sealing material will stretch during initial rupture along the lines of weakness and said soft material will subsequently tear to reduce the tensional forces tending to fracture said pull tab from said plug when both metal rupture and sealing material tearing occur substantially simultaneously during pulling of said tab.

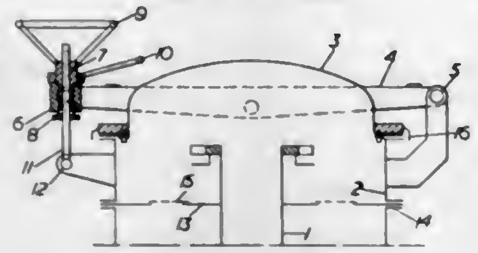
3,308,987
CLOSURE DEVICES FOR TANKS OR LIKE CONTAINERS FOR LIQUID

Marc Louis Chomel and Martial Ambroise Tiano, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

Filed Feb. 13, 1964, Ser. No. 344,663

Claims priority, application France, Feb. 15, 1963, 924,996

4 Claims. (Cl. 220—57)



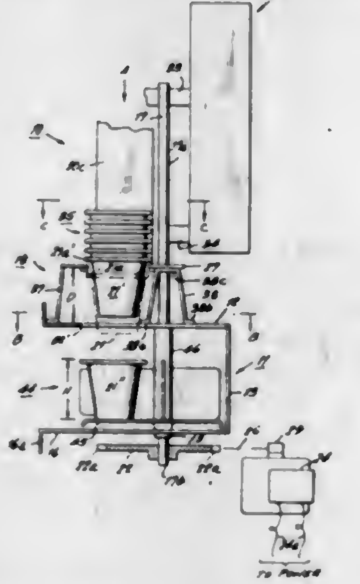
1. In a closure device for a discharge pipe on a tank adapted to contain liquid, such device comprising a dome secured gas tightly on the tank and formed by a base portion surrounding both said discharge pipe and also at least one orifice in the tank communicating the interior of the tank with the interior of the dome and by a cover portion movable relatively to said base portion to and from a closed position in which said cover portion sealingly closes said base portion over said discharge pipe and orifice, the improvement comprising, for releasably clamping said cover portion to said base portion in said closed position of the cover portion, a double beam pivotally carrying said cover portion, means mounting said beam for pivotal movement relatively to said base portion, a sleeve pivotally mounted on said beam at a position remote from said means mounting the beam, said sleeve having a bore therethrough, a nut carried captively, but rotatably, in said sleeve bore, means on said nut for rotating the latter and a bolt pivotally mounted on said base portion and threadedly engageable in said nut.

3,308,988
CUP DISPENSER AND MAGAZINE

Wallace W. Ward, 28 Long Hill Lane, Chatham, N.J. 07928

Filed Apr. 12, 1965, Ser. No. 447,176

2 Claims. (Cl. 221—113)



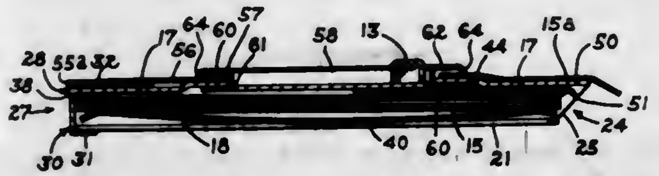
1. Dispensing means for drinking cups and the like comprising rotatably mounted magazine means for receiving and positioning a stack of cups; stationary isolating means positioned beneath said magazine means for isolating the lowermost cup in a stack of cups from the next higher cup in the stack of cups, in readiness for the delivery operation, when said magazine means rotates in alignment with said isolating means; stealth prevention means positioned beneath said stationary isolating means and comprising rotatably mounted platform means including a plurality of partition means arranged to define a plurality of compartments of similar configuration and dimensionally sufficient to receive a drinking cup in an upright position; means for rotating said rotatably mounted magazine means and said platform means to transport the compartment containing the upright drinking cup beneath said isolating means to a delivery position angularly displaced from said isolating means where the cup may be removed by the vending machine operator at the same time as said rotatably mounted magazine means is rotated to dispense a succeeding cup; said partitions being of sufficient height to prevent ingress into the magazine means through said delivery station thereby preventing the stealth of cups stored in said magazine means.

3,308,989
BUSINESS CARD DISPENSER HAVING A RECIPROCATING CARD EJECTOR MEANS

James C. Alltop and Fred C. Crowe, Dayton, Ohio, assignors to International Specialty Products, Inc., Dayton, Ohio, a corporation of Ohio

Filed Oct. 22, 1965, Ser. No. 501,344

4 Claims. (Cl. 221—232)



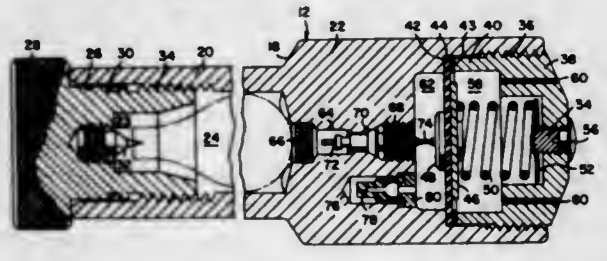
1. A business card dispenser of the character described comprising, a main frame having a flat surface with integral side walls, inwardly extending flanges on the edge of said side walls opposite said flat surface, a lip extending from said flat surface on one end thereof, a slot containing member secured to said one end of said main frame and including an end wall having four integral side walls which extend over portion of said main frame, a precisely formed rectangular slot in said end wall adjacent said flat surface, said slot having a width slightly less than the combined thickness of said lip and the thickness of two comparatively thin business cards, a pusher plate reciprocably mounted on said flat surface and having a shoulder for engaging the business card disposed against said flat surface to move such card along said flat surface and through the dispensing slot between said edge and said lip, means for urging a stack of cards toward said flat surface, cover means for said main frame except said one end, and means for actuating said pusher plate.

3,308,990
CONTAINER AND DISPENSING APPARATUS

George A. Klasson, Whitehall Township, Lehigh County, and Joseph E. McQuillen and Justin W. Mills, Macungie, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware

Filed Mar. 29, 1965, Ser. No. 443,613

5 Claims. (Cl. 222—52)



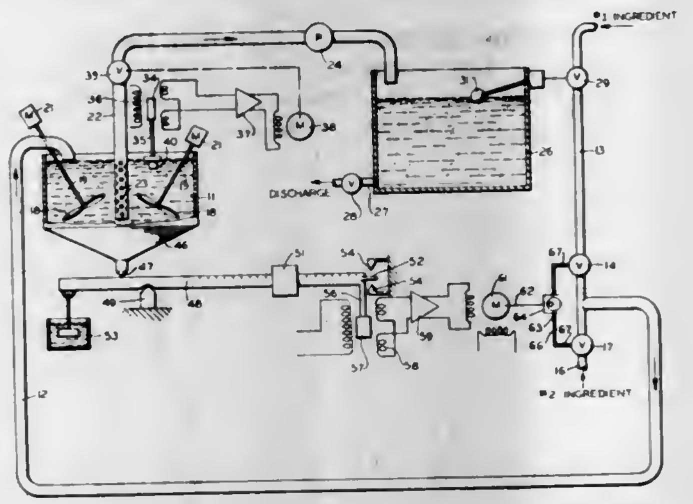
1. A dispensing unit comprising: a body containing a source of high pressure gas, a pressure regulator assembly having an inlet and an outlet, said inlet being connected to said source of high pressure gas, a stem partially received in said body having a portion extending externally of said body, a dip tube attached to the external end of said stem, a locking plate secured to said stem externally of said body, said locking plate being of noncircular configuration, gas passage means extending from the outlet of said regulator assembly to a point adjacent said locking plate, fluid passage means extending through said stem and body for conducting fluid from said dip tube to the exterior of said body, and sealing means connected to said dispensing unit and positioned for sealing engagement with the external surface of a container wall when said dispensing unit is secured to a container by said locking plate.

3,308,991
BLENDER FOR SLURRIES AND MIXTURES

Eugene A. Glassey, Los Altos, Calif., assignor to Exactel Instrument Company, Mountain View, Calif.

Filed June 14, 1965, Ser. No. 463,655

6 Claims. (Cl. 222—57)



1. In a device for controlling density of a mixture of two ingredients, a tank, a first conduit for a first ingredient having a first valve, a second conduit for a second ingredient having a second valve, said first and second conduits discharging into said tank, said conduits mechanically separated from said tank and said tank movable independently of said conduits, first means for withdrawing mixed ingredients from said tank, a balance, second means for applying the weight of said tank and its contents to said balance, a counterweight on said balance, an armature, movable with said balance, a differential transformer excited by movement of said armature, a servo-motor controlled by said differential transformer, and third means actuated by said servomotor for adjusting the relative openings of said valves to maintain the delivery of said ingredients to said tank such that the weight of a fixed quantity of mixed ingredients equals a selected value.

3,308,992
DISPENSING APPARATUS

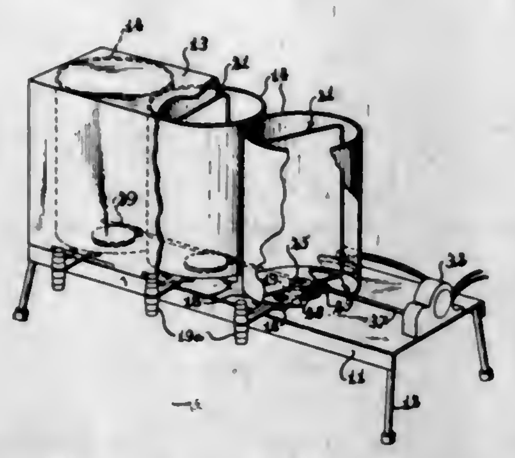
Donald J. Booty, Oak Forest, and Gregory J. Kamka, Chicago, Ill., assignors to Arnold Schechter, Chicago, Ill.

Filed May 28, 1965, Ser. No. 459,760

7 Claims. (Cl. 222—76)

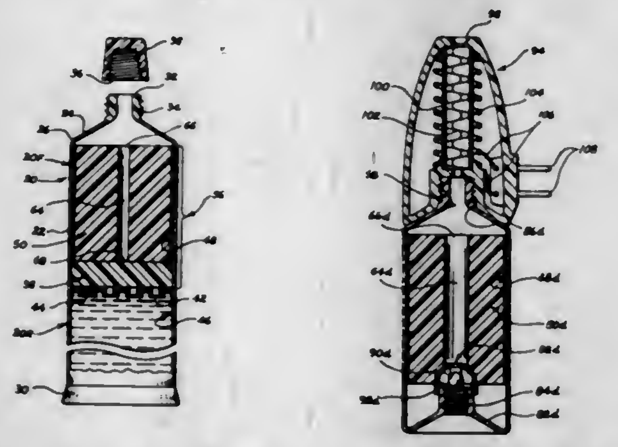
1. Dispensing apparatus comprising, in combination, a base plate, a plurality of canisters mounted on said base plate, each canister having a bottom wall and a dispensing opening in said bottom wall, separate valve means for each dispensing opening movable into open and closed positions, an agitator in each canister, common electric drive means for said agitators, and normally open electric

switches connected in parallel with said electric drive means, and means on each said valve means operable to close a selected one of said switches when a related valve means is moved into open position.



3,308,993
FOAM-PRODUCING AND FOAM-DISPENSING MEANS

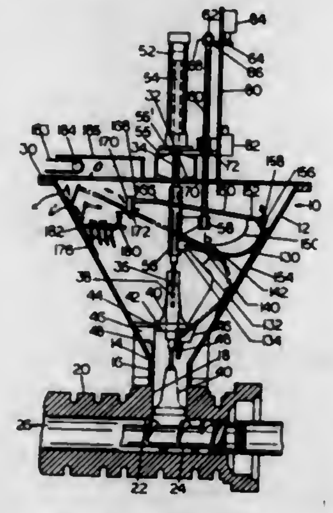
Victor M. Bruno, % P.O. Box 18948,
Los Angeles, Calif. 90018
Filed Mar. 16, 1966, Ser. No. 541,892
28 Claims. (Cl. 222—146)



1. Apparatus for effectively mixing air with a liquid and thereby producing an intimately intermixed air-liquid foam and for effectively dispensing same, comprising: hollow container means of flexible elastic material having a permanently closed rear end and a closed front end provided with a dispensing nozzle means, said container means comprising a rear hollow container means portion effectively defining liquid reservoir and supply means therein adapted to contain therein a quantity of a liquid which is to have at least a portion thereof effectively intimately mixed with a quantity of air to form a desired quantity of foam which is to be dispensed thereafter, said container means further comprising a front hollow container means portion effectively defining therein mixing chamber means having a rear end thereof in communication with a front end of said liquid reservoir and supply means for forward passage of the liquid adapted to be contained within said liquid reservoir and supply means; elastically compressible fluid-mixing baffle means mounted within said mixing chamber means and substantially completely filling said mixing chamber means and extending longitudinally from a position immediately forward of said rear-positioned liquid reservoir and supply means to a position immediately behind said closed front end and extending transversely substantially completely across said mixing chamber means whereby to substantially exteriorly fill said mixing chamber means in a manner leaving substantially no open space in the front interior cross-sectional portion of said mixing chamber means immediately behind said closed front end unoccupied by the front end of said elastically compressible fluid-mixing baffle means, said elastically compressible fluid-mixing baffle means comprising a quantity of multi-cell sponge material having interconnected elastic solid portions defining a plurality of interconnected hollow communicating cells dispersed therethrough and effectively providing a plurality of interconnected baffle passageways extending therethrough, said front container means portion defining said mixing chamber means therein having a collapsible elastic wall portion adjacent to the interior of said mixing chamber means defined therein and said elastically compressible fluid-mixing baffle means mounted therein and effectively comprising a pressure-applying means taking the form of a manually controllably operable variable-volume hand-pump means manually operable for effectively forcing liquid, which has been supplied to said elastically compressible mixing baffle means from said liquid reservoir and supply means, and air, which has been supplied to said elastically compressible mixing baffle means through said dispensing nozzle means, through said plurality of interconnected baffle passageways of said fluid-mixing baffle passageways of said fluid-mixing baffle means for effectively mixing the liquid and air and forming an intimately intermixed air-liquid foam and for subsequently dispensing same through said dispensing nozzle means as a result of said manual operation of said variable-volume hand-pump means.

3,308,994
FEEDER APPARATUS

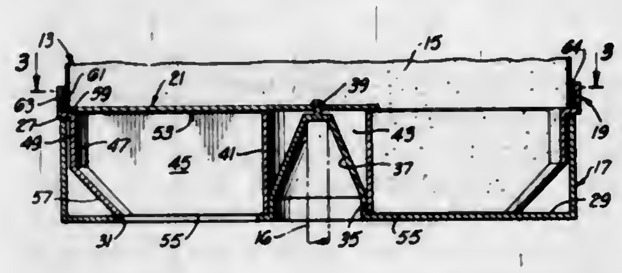
Owen W. Rohn, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Apr. 7, 1965, Ser. No. 446,357
16 Claims. (Cl. 222—245)



3. Feeder apparatus comprising hopper means having a downwardly converging side portion and an outlet means at the lower part thereof, a hollow casing in communication with the outlet means of said hopper means, conveying means within said casing, ram means mounted within said hopper means for reciprocation toward and away from said outlet means, power actuating mechanism connected with said ram means for reciprocating the ram means within the hopper means, guide means within the hopper means for guiding movement of said ram means, said guide means being mounted adjacent the outlet means of the hopper means, hoe means disposed within said hopper means and including a plurality of actuating arms each of which is pivotally interconnected at one end portion thereof with said ram means, a first plurality of wear plate means disposed on the inner surface of the side portion of said hopper means for engaging said actuating arms, said hoe means including a plurality of hoe members, each of said hoe members being elongated and being pivoted at one end thereof to one of said actuating arms and having blade means at the opposite end thereof, each of said actuating arms including limit stop means for engaging the associated hoe member and for limiting pivotal movement of the associated hoe member with respect to the actuating arm, a second plurality of wear plate means on the inner surface of the side portion of said hopper means for engaging the hoe blade means on the various hoe members, each of said actuating arms including finger means extending laterally therefrom for movement through material disposed within the hopper means to prevent bridging of the material, a plurality of hoe member guide means, each of said hoe member guide means being secured to the inner surface of the side portion of said hopper means and extending inwardly therefrom and being generally U-shaped in configuration and adapted to engage one of said hoe members, whereby upon reciprocatory movement of said ram means, said actuating arms move slidably along the associated wear plate means, and said hoe blade means are adapted to move slidably along the associated wear plate means to assure uniform and steady flow of material through the outlet means of the hopper means.

3,308,995
DISPENSING DEVICE

Robert W. Lee, 5344 Parmerton Drive, Temple City, Calif. 91780, and Bernell Schwindt, 20525 San Gabriel Valley Drive, Walnut, Calif. 91789
Filed June 1, 1965, Ser. No. 460,458
5 Claims. (Cl. 222—427)



1. A dispenser for flowable material adapted for connection to an open topped container having flowable material therein, comprising:

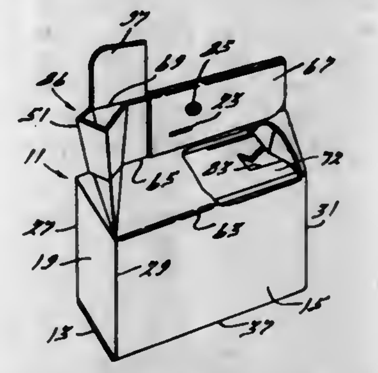
an inner member including wall means defining a generally central opening, said inner member including a plurality of compartments for retaining measured quantities of the flowable material, said compartments having open upper and open lower ends, said inner member including annular means adjacent said upper ends of said compartments for releasably and rigidly securing the open topped container thereto;

an outer shell having upper and lower ends, said upper end of said shell being open and receiving said inner member in telescoping relationship for rotation relative thereto, said shell including a lower wall partially closing said lower end thereof and said lower ends of said compartments, leaving a dispensing port registrable with at least one of said compartments, said shell including a shaft extending upwardly from said lower wall and being received by said generally central opening of said inner member, said shaft having an upwardly converging recess in its lower end; and

a cover plate secured to said shaft and rotatable with said shell for covering the open upper end of at least the flowable material flowing from the container into the others of said compartments, unidirectional rotation of said shell relative to said inner member and the container allowing said other compartments to sequentially discharge the flowable material therein through said dispensing port and permitting sequential filling of the compartments which have discharged their contents.

3,308,996
BB CARTON

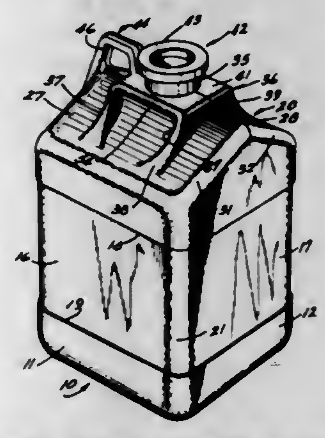
Louis B. Beck, Little Rock, Ark., assignor to Daisy Manufacturing Company, Rogers, Ark., a corporation of Nevada
Filed May 13, 1965, Ser. No. 455,427
6 Claims. (Cl. 222—456)



1. A dry materials container including a hollow body having side walls and a top and bottom, a pouring spout in said top, a liner positioned within said body having side walls and a horizontal portion connecting said side walls, said side walls and said horizontal portion being coextensive in length with said side walls of said container, said side walls of said liner lining the interior faces of said side walls, said horizontal portion located between said top and bottom and separating said body into an upper and a lower chamber, an opening in said liner horizontal portion near one side thereof away from said pouring spout, whereby dry materials in said lower chamber are delivered to said upper chamber when said body is tilted in one direction toward said opening and dry materials in said upper chamber are delivered to said pouring spout when said body is tilted toward said spout and away from said one direction.

3,308,997
PLASTIC JUG

Norman A. Kelly, Wayne Township, Kosciusko County, Ind., assignor to Crystal Preforming and Packaging, Inc., Warsaw, Ind., a corporation of Indiana
Filed Oct. 11, 1965, Ser. No. 494,522
9 Claims. (Cl. 222—475)



1. A thin-walled, plastic container, comprising:

four side walls and a bottom wall arranged to define a substantially rectangular materials compartment;

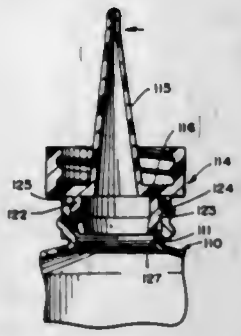
integral top wall means including a pair of sloping panels converging upwardly toward a ridge substantially parallel with said bottom wall and disposed within a plane approximately midway between and parallel with two of said side walls;

flange means integral with said panels on opposite sides of said ridge, said flange means being substantially perpendicular to said plane; and

spout means integral with and extending upwardly from said top wall between said flange means, said flange means and spout being arranged so that said flange means can be comfortably engaged by and between the thumb and forefingers of an average adult hand for raising and supporting said container when it is filled with materials.

3,308,998
DISPENSING DEVICE INCLUDING CAP ATTACHABLE FOR EITHER SEALING OR DISPENSING

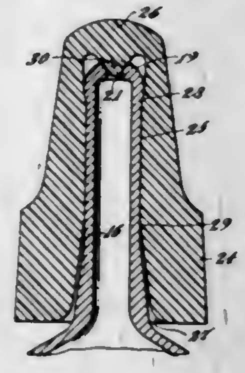
Edward F. Oppasser, Des Plaines, and Edwin R. Thiele, Melrose Park, Ill., assignors to Alberto-Culver Company, Melrose Park, Ill., a corporation of Illinois
Filed Apr. 21, 1965, Ser. No. 449,832
7 Claims. (Cl. 222—539)



1. A closure for a dispensing device having a discharge throat providing an open mouth, comprising: a unitary body adapted to be mounted in a first sealing position and a second dispensing position engaging said throat, said body including an intermediate wall defining a central aperture and first and second integral perimetric flanges extending in opposite directions from said intermediate wall said body further including an integral, closed spout about said aperture and extending in only one direction away from said intermediate wall, said first flange extending in the direction of said spout and having means for lockably engaging the exterior of said throat and sealing said device in said sealing position, said second flange having an outside surface with means for lockably engaging the interior of said throat to form a seal therewith in said dispensing position.

3,308,999
CAP CARRIED AXIAL PLUG FOR A FLUID DISPENSER

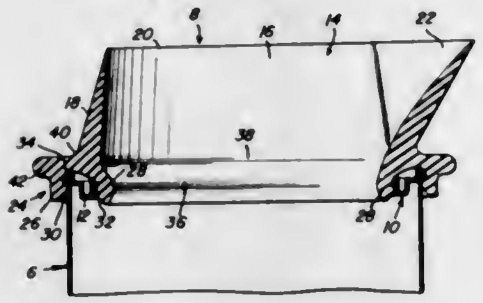
Henry S. Darlington, Jr., Media, Pa., assignor to A. H. Wirz, Inc., Chester, Pa., a corporation of Pennsylvania
Filed Sept. 27, 1965, Ser. No. 490,485
2 Claims. (Cl. 222—546)



1. In combination, a collapsible tube for a use which calls for a minimum of foreign particles, which tube has sidewalls, a shoulder at one end of the sidewalls, and, extending from that shoulder and constituting one end of the collapsible tube, a tubular neck portion with a central passage communicating with an outlet in the tip of the neck, the cross sectional area of which outlet does not exceed .002 square inch, said neck tapering inwardly along its outer surface toward the tip to an intermediate point, the neck being cylindrical from said intermediate point to a point just below the tip of the neck, the tip being bulbous in shape and having an outside diameter at least .002 inch greater than the diameter of the cylindrical portion of the neck, and a cap of flexible material and having a closed end, an open end, and a wall extending between the closed and open end of the cap, and having an inner surface circular in cross section and an outer surface and by its inner surface imperforately defining a recess whose lower end is the opening in the open end of the cap and whose upper end is the closed end of the cap, said recess-defining inner surface of said wall having a cylindrical portion at least .06 inch long positioned intermediate both ends of the cap and of less diameter than and adapted to be engaged by friction fit with at least a circumferentially continuous part of the outer surface of the aforementioned cylindrical part of the neck of the collapsible tube, said inner surface of said wall tapering outwardly in a downward direction from the lower end of the cylindrical portion of the inner surface so that the opening in the open end of the cap is wider than the intermediate cylindrical inner surface of the wall, and the inner surface of the wall tapering 1 to 5° outwardly in the upward direction from the top of the cylindrical portion of the inner surface so that by this outward upward taper the cap will be helped to be held on the tube by contact at the side toward the neck with the enlarged end in addition to the friction fit between the cylindrical portion of the inner surface of the cap and the neck of the tube, and a conical projection extending from the central portion of the closed end of the cap in the direction of the open end of the cap, the outlet in the tip of the tubular neck having a flaring outer end whose wider portion is at the outer end thereof and which is adapted to sealingly contact an intermediate portion of the conical projection while leaving free space between said tip and the closed end of the cap around the base of said cone, and the cap, when in fully "on" position on the collapsible tube, being spaced from both the shoulder of the collapsible tube and the part of the outer surface of the neck already mentioned as tapering inwardly along the outer surface toward the tip to an intermediate point.

3,309,000
CAN EXTENDER AND POURER

Virgil L. Haverstick, 400 Romero NW., Albuquerque, N. Mex. 87104
Filed Apr. 13, 1965, Ser. No. 447,836
6 Claims. (Cl. 222—569)



1. An attachment adapted to be mounted on the annular rim of a paint can, said annular rim having an outer edge secured to the wall of said paint can, an inner edge and an upwardly opening channel therebetween, said attachment comprising:

(a) a continuous annular rim portion having a continuous radially outwardly projecting reinforcing and gripping bead and a generally flat top surface,

(b) a pair of spaced annular flanges depending from the underside of said rim portion to define a downwardly opening channel to receive the annular rim

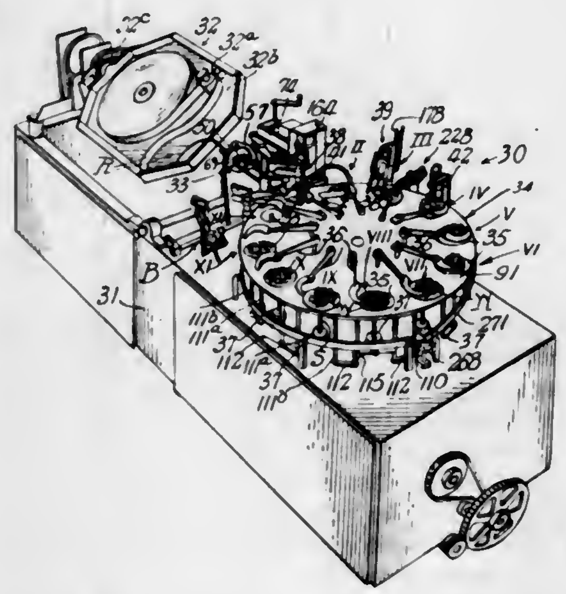
of the paint can, the outer depending annular flange being spaced inwardly of the periphery of said bead,

(c) a continuous wall extending upwardly from the top surface of the rim portion and defining the inner edge of the flat top surface, the vertical dimension of the wall being substantially greater than the combined vertical dimension of the rim portion and depending flanges, said wall tapering upwardly and radially inwardly in thickness to a relatively thin upper edge generally in alignment with the inner edge of the annular rim portion,

(d) a pouring spout in said wall with the upper edge of the spout forming a portion of the thin upper edge of the wall, said spout extending upwardly and outwardly from the lower end of the wall and terminating in a pouring lip disposed radially outwardly in relation to the periphery of the bead.

3,309,001
MACHINES AND METHODS FOR FORMING DECORATIVE ARTICLES

Josephus J. Thayer, West Lafayette, Ind., assignor to Thayer, Inc., Wolcott, Ind., a corporation of Indiana
Filed Mar. 18, 1963, Ser. No. 265,732
49 Claims. (Cl. 223—46)

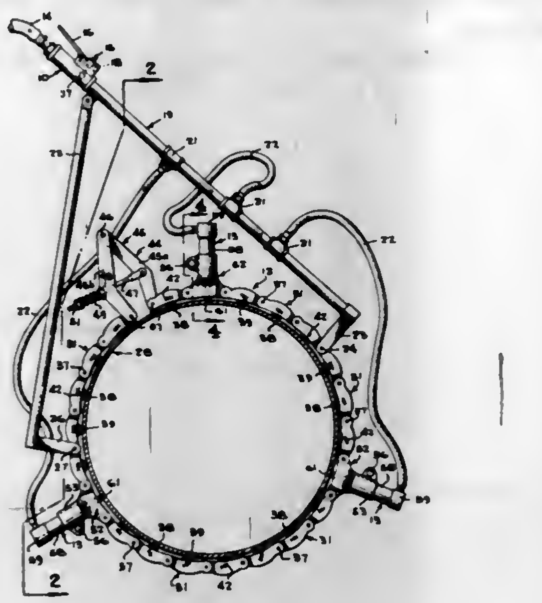


1. In a machine adapted for use in forming decorative articles from ribbon or the like, a support having a ribbon supporting surface, feed means for feeding successive lengths of ribbon onto said support surface, said feed means being rotatable about an axis generally parallel to the direction of feed of such ribbon to said support surface by said feed means, and means operable with said support and feed means for forming a series of folds of ribbon from such successively fed ribbon lengths and retaining such folds in a predetermined arrangement on said support surface.

3,309,002
PIPE CUTTING MACHINE

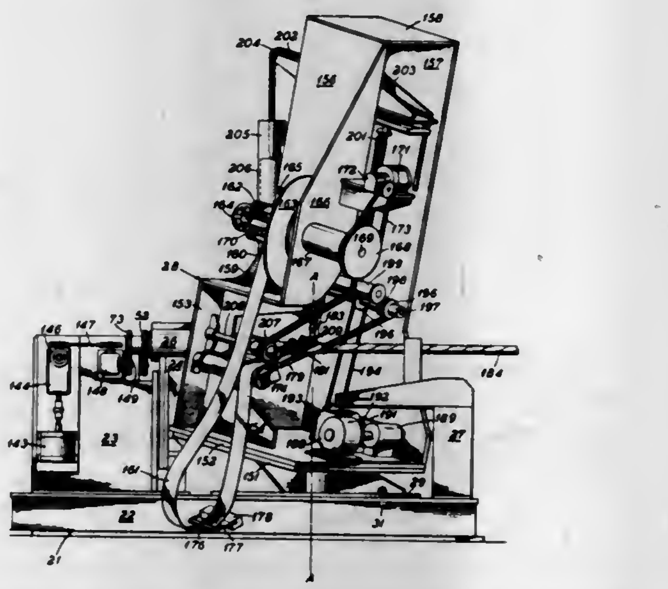
William W. Enos, 536 Blount Point Road, Newport News, Va. 23606
Filed Mar. 24, 1965, Ser. No. 442,331
9 Claims. (Cl. 225—2)

6. A method of cleaving a fracturable member comprising, mounting a flexible support about the member, securing pneumatic hammers to the flexible member, providing reciprocal chisels to the pneumatic hammers perpendicularly to the fracturable member, reciprocating the chisels in the pneumatic hammers by supplied compressed air thereby causing the chisels to impact upon the fracturable member, rotating the flexible support about the fracturable member causing the reciprocating chisels to inscribe a score line about the fracturable member, and maintaining the rotation of the flexible member until the fracturable member is cleaved.



3,309,003
APPARATUS FOR FORMING SPIRAL TUBING FROM A RIBBON OF THIN MATERIAL

Thomas J. Crawford, Bainbridge, Ga., assignor to Universal Metal Hose Company, Chicago, Ill., a corporation of Delaware
Filed May 11, 1964, Ser. No. 366,442
17 Claims. (Cl. 228—15)



1. In apparatus for forming spiral tubing from a ribbon of material,

first and second tubular, rotatable mandrels axially aligned in endwise relation;

means for guiding and continuously feeding a ribbon of material diagonally onto and around said first and second mandrels in succession;

means for rotating said first mandrel in one direction which is opposite the direction of wrap of the ribbon feeding thereon;

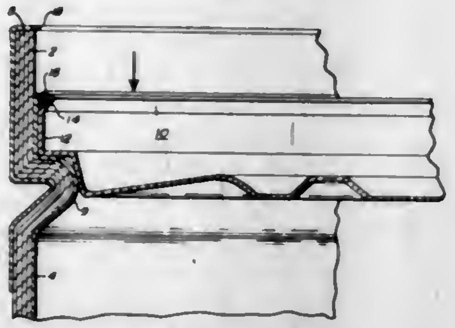
means for rotating said second mandrel opposite said first mandrel; and

securing means intermediate the ends of said mandrels for securing the meeting edges of successive wraps of said ribbon to produce spiral tubing on said second mandrel.

3,309,004
CONTAINER AND METHOD OF MAKING A CONTAINER

Sidney Dry, Chicago, Ill., assignor to National Steel Container Corporation, Chicago, Ill., a corporation of Illinois

Filed Mar. 19, 1964, Ser. No. 353,184
13 Claims. (Cl. 229—5.6)



1. A container comprising

(a) a tubular body of fibrous material having inner and outer walls, and an end portion curled inwardly to form a bead having a compacted mass of fibrous material;

(b) a chime ring having a portion thereof contiguous with said outer walls of said body and curled inwardly approximately one complete revolution to surround a major portion of said bead;

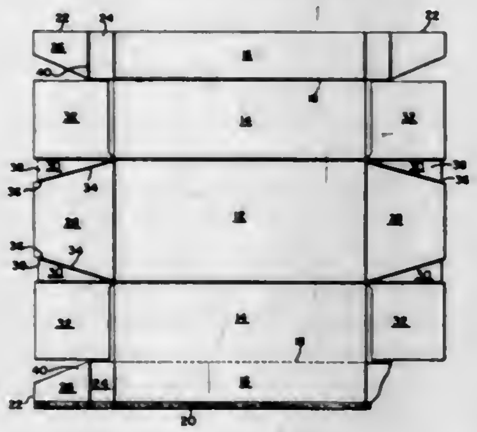
(c) an impermeable liner contiguous with the inner wall of said tubular body, said liner having an end portion embedded in said bead; and

(d) a closure member across the end of said container, said closure member having a rim portion embedded in said bead, said closure member rim portion and said liner end portion extending parallel and adjacent to the inner wall of said tubular body and then abruptly bending inwardly at approximately a same given point adjacent the end of the chime ring inside the bead where they are surrounded by said compacted mass, the inwardly bent portion of said closure member rim portion extending in a substantially straight line from said given point at an inclination which is no more than ninety degrees to the end of said chime ring inside said bead, said inclination being less than ninety degrees to the portion of said closure member rim portion which is parallel to the inner wall of said tubular body.

3,309,005
EASY OPENING CARTON CONSTRUCTION

Nicholas J. Pilger, Thousand Oaks, Calif., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Virginia

Filed June 17, 1965, Ser. No. 464,619
8 Claims. (Cl. 229—51)



1. An easy-open carton comprising

a bottom panel merging along one pair of its opposite sides into a pair of upstanding side panels, each said side panel merging in turn into a top closure flap,

upstanding end panel means connected to said bottom panel at each end thereof and to said side panels thereat, each said end panel engaging beneath said top panel thereby to provide a fully closed carton,

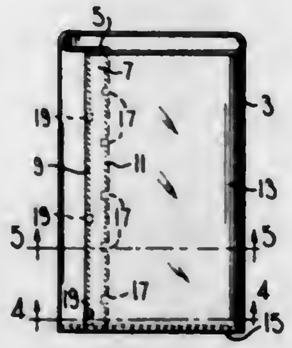
said top panel having a lift tongue extending from one end thereof and disposed in overlying relation to a said end panel means,

said end panel means having a portion thereof flexed into overlying relation with said lift tongue inwardly of the terminal end thereof thereby to releasably retain said tongue in overlying relation to said end panel, whereby said lift tongue terminal end is free to be readily grasped for pulling said tongue from its releasably retained overlying relation with said end panel and to tear said top panel from said carton.

3,309,006
PLASTIC BAGS

Ray P. Perry, Excelsior, and Arthur D. Hoeppner, Minneapolis, Minn., assignors to Bemis Company, Inc., Minneapolis, Minn., a corporation of Missouri

Filed Feb. 16, 1966, Ser. No. 527,878
6 Claims. (Cl. 229—53)



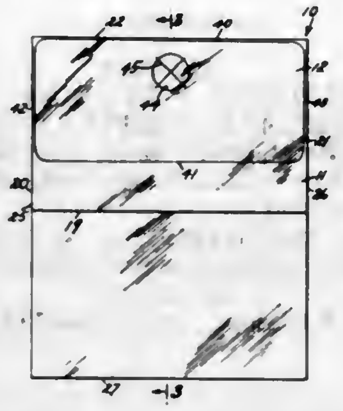
5. A vented bag comprising a tube of flexible heat-sealable sheet material having a longitudinal seam wherein margins of the tube material are overlapped and heat-sealed together on two spaced-apart lines of seal extending lengthwise of the tube, said tube being closed at least at one end, each of said lines of seal having a series of gaps therein with the gaps in one line offset with respect to the gaps in the other providing vents in one line of seal from the inside of the bag to the space between said overlapping margins bounded by said lines of seal and vents in the other line of seal from said space to the outside of the bag.

3,309,007
WASTE RECEPTACLE

Norman Rosenberg, Bayside, and Seymour Kamins, Oceanside, N.Y., assignors to C-Thru Products, Inc., Brooklyn, N.Y., a corporation of New York

Filed Oct. 4, 1965, Ser. No. 492,394
1 Claim. (Cl. 229—55)

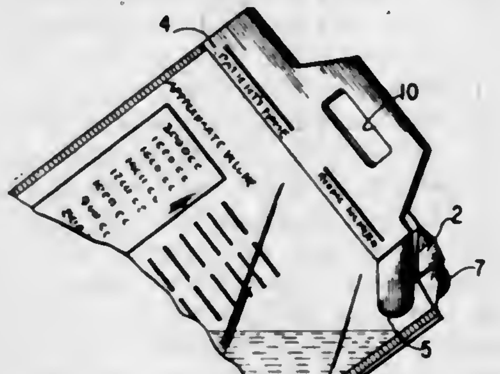
A synthetic resinous discardable waste disposal device comprising: a bag element and a stiffening and supporting member; said bag element including a first panel of generally rectangular configuration, a second panel foldably connected with said first panel at one edge thereof, and heat sealed along two edges thereof to said first panel to form a first open pocket therebetween; and a third panel hingedly connected with second panel and heat sealed at two edges thereof to form a second open pocket therewith; said first and second pockets being disposed in mutually opposite directions on either side of said second panel, said stiffening member being of fibrous planar material, of rigidity greater than the material forming said bag element, and selectively insertable into one of said open pockets; there being aligned through openings in said inserted stiffening member and pocket, whereby said device may be hung upon a supporting member penetrating said opening, said stiffening member distributing the resultant stress to the foldably connected edge bounding the pocket into which said supporting member has been inserted; said first and second pockets being disposed in partially non-overlying relation, there being aligned through openings in said inserted stiffening member and the pocket into which it is inserted, whereby said device may be hung on a supporting member penetrating said openings.



3,309,008
BEDSIDE AND PORTABLE DRAINAGE COLLECTOR

Charles M. Huck, 109 Chestnut St., Bound Brook, N.J. 08805

Filed June 23, 1964, Ser. No. 377,218
3 Claims. (Cl. 229—62)



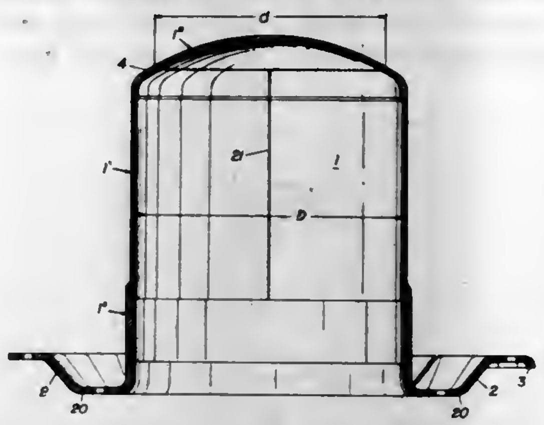
1. A drainage collector for human body fluids comprising, a bag portion composed of a double thickness of thin flexible transparent material completely closed at all edges, except at one part of its top to constitute a mouth for the entry of a drainage tube, together with a header composed of a folded relatively stiff material that is adhered to the top of the front and back of the bag portion, said header having two laterally projecting tabs, one being bendable and adhered in part to the front of the mouth for opening the same and the other being fixed, shorter than the bendable one, and adhered to the back of the mouth for cooperating with the front tab in the opening motion.

3,309,009
REFRIGERATING COMPRESSORS

Raimund Culk, Varenaweg 1, Graz XI, Styria, Austria

Filed Apr. 28, 1965, Ser. No. 451,465
Claims priority, application Austria, May 12, 1964, A 41,346/64
6 Claims. (Cl. 230—58)

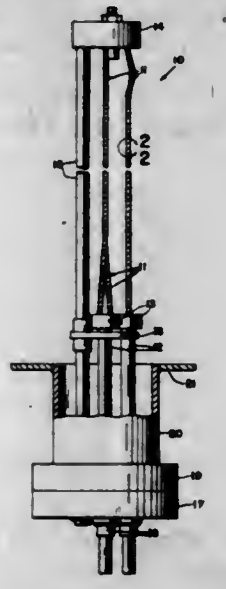
1. A refrigerating unit containing a compressor having a housing and an electric motor drivingly coupled to said compressor, said electric motor including a stator, a stator housing and a rotor, the improvement comprising a hood composed of three joined sections; the first section being a thin-walled cylindrical part made of stainless steel interposed between said stator and said rotor and having at one end an inwardly converging annular portion defining an aperture of smaller diameter than the diameter of the cylinder; the second section being a lid joined to said first section to close said aperture; the third section being a drawn annular reinforcing member joined to the other end of said first section and by which the hood and stator housing mounted on the compressor housing by securing means.



3,309,010
GETTER ION VACUUM PUMP

James S. Hetherington, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Feb. 10, 1964, Ser. No. 343,542
3 Claims. (Cl. 230—69)



2. A sublimation means comprising a length of filament, a length of getter material overwound by and loosely held within said filament, said getter being made up of a thick multiple stranded rope of reactive metal, and said filament being made up of one or more coils of a refractory metal.

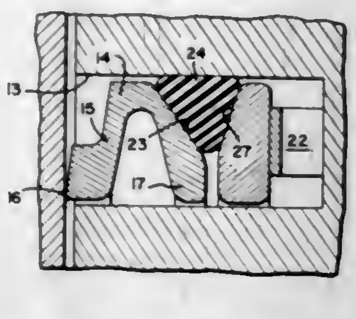
3,309,011
SEAL CONSTRUCTION FOR ROTARY COMBUSTION ENGINE

Sunao Osakada, and Tetsuo Fujiyama, Hiroshima-ken, Japan, assignors to Toyo Kogyo Company Limited, Hiroshima-ken, Japan

Filed Sept. 22, 1966, Ser. No. 581,362
Claims priority, application Japan, Sept. 22, 1965, 40/58,264
6 Claims. (Cl. 230—145)

1. An annular side seal construction for a rotary piston of a rotary combustion engine which engine has a housing composed of spaced end walls, an annular center wall interconnecting the end wall to define a cavity there-

between, a rotary piston rotatably mounted within the said housing and having end faces disposed adjacent to said outer body end walls and having a peripheral surface cooperating with the peripheral wall of the housing to define a plurality of working chambers therebetween, the piston end faces each having an annular groove therein, said annular seal construction comprising an annular seal axially slidably received in said annular groove, said seal being elastic in the axial direction and having an annular sealing tip adapted for sealing engagement with the adjacent end wall inner face, a side seal sealingly engaged with a side wall of the said annular groove and the said annular seal, and a spring means disposed in the said annular groove and urging the side seal into sealing engagement with the said annular seal and the said annular seal into engagement with the adjacent end wall inner face.

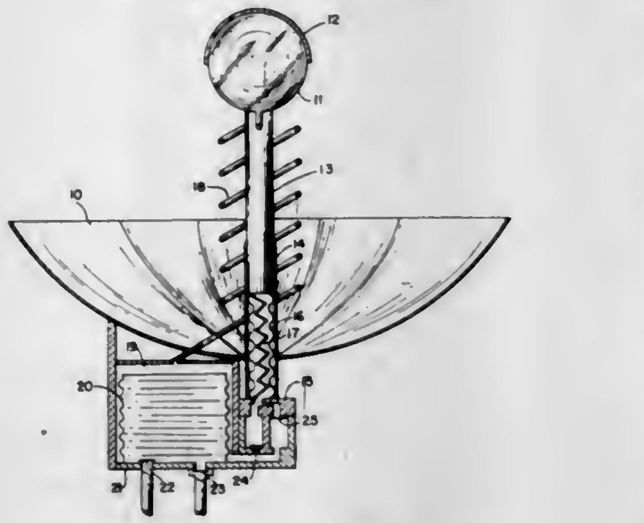


3,309,012
THERMAL PUMP-COMPRESSOR FOR SPACE USE

Franklin W. Booth, Hampton, and Hubert K. Clark, Newport News, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Apr. 2, 1963, Ser. No. 270,118

10 Claims. (Cl. 230—162)



1. A solar pump comprising: a solar reflector which concentrates in a focal plane the sun rays that strikes it; a thermal bulb containing a volatile liquid located in said focal plane to heat the volatile liquid thereby creating a gas pressure; a pumping means for producing a compression stroke when a pressure is applied to it and for producing a suction stroke when the pressure is removed; means for applying said created gas pressure to said pumping means to cause a compression stroke of said pumping means; control means for moving said thermal bulb out of said focal plane when a gas pressure is applied to it and for moving said thermal bulb back into said focal plane when the gas pressure is removed; means for applying said created gas pressure to said control means after said compression stroke to move said thermal bulb out of said focal plane thereby decreasing said created gas pressure to cause a suction stroke of said pumping means; and means for removing said created gas pressure from said control means after said suction stroke to move said thermal bulb back into said focal plane.

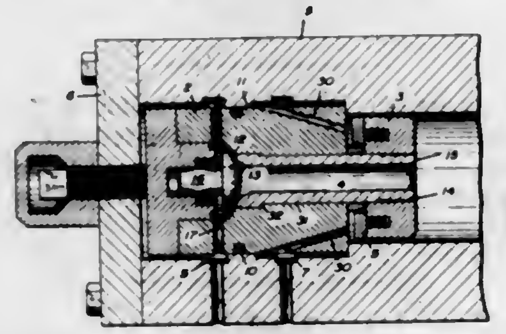
3,309,013
ARRANGEMENTS INCLUDING COAXIAL SUCTION AND DELIVERY VALVES

Helmut Bauer, Basel, Switzerland, assignor to Maschinenfabrik Burckhardt A.G., Basel, Switzerland, a corporation of Switzerland

Filed Aug. 3, 1965, Ser. No. 476,868

Claims priority, application Switzerland, Aug. 3, 1964, 10,121/64

7 Claims. (Cl. 230—231)



1. In combination with the cylinder of a fluid compressing machine operating under a high pressure, the provision of a valve-carrying body fitted fluidtightly inside said cylinder and provided with an axial delivery channel showing a shoulder facing away from the cylinder and with an annular series of suction channels extending obliquely round the axial channel and converging towards the cylinder, a delivery valve adapted to close the end of the axial channel facing away from the cylinder, an annular suction valve adapted to move axially of the body into and out of engagement with the openings of the suction channels facing the cylinder, a stroke-limiting member for the suction valve on the side of the latter facing the cylinder, an element fitted inside the axial channel of the body and provided with a longitudinal passageway and an abutment rigid with the outer surface of said element at its end facing away from the cylinder and engaging the shoulder in the axial channel, said element mechanically engaging the stroke-limiting member to form a unit with the latter, with the body and with the suction valve therebetween, and resilient means cooperating with said delivery valve and said suction valve.

3,309,014
COAXIAL SUCTION AND DELIVERY VALVE ARRANGEMENT FOR HIGH PRESSURE COMPRESSORS AND PUMPS

Helmut Bauer, Basel, Anton Leitgeb Aesch, near Basel, and Albert Strebel, Binningen, near Basel, Switzerland, assignors to Maschinenfabrik Burckhardt A.G., Basel, Switzerland, a corporation of Switzerland

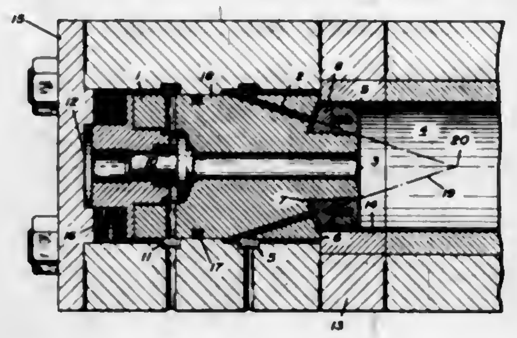
Filed Aug. 10, 1965, Ser. No. 478,716

Claims priority, application Switzerland, Aug. 11, 1964, 10,496/64

5 Claims. (Cl. 230—231)

1. In a high pressure fluid compressing machine, the combination with the machine cylinder of a valve carrying body provided with an axial channel and with a plurality of sloping channels surrounding the axial passage and converging towards the cylinder, the surface of the body facing the cylinder having a part spherical concave section into which the sloping channels open and a flat outer extension for said part spherical section, an annular suction valve having a surface matching said part spherical surface and cooperating with the openings of the sloping channels facing the cylinder, a delivery

valve cooperating with the opening of the axial channel in the body at the end thereof facing away from the cylinder, and means whereby the portion of the outer periphery of the body extending between said openings of the sloping channels and said opening of the axial channel is subjected to suction pressure over a length equal to that of the axial channel subjected to the pressure in the machine cylinder.



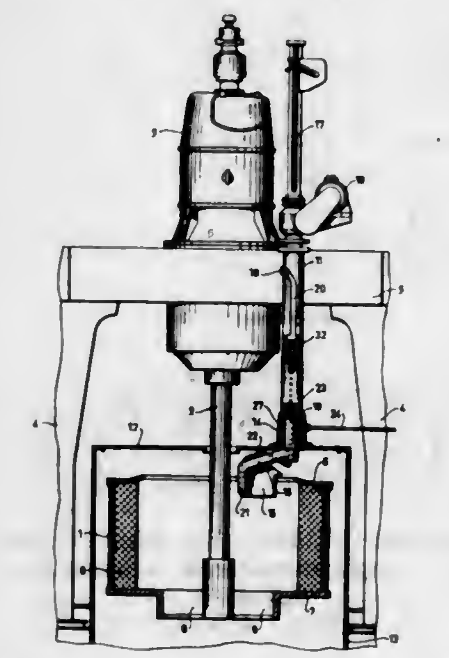
3,309,015
CENTRIFUGES

Erland Viktor Jung, Jarnvagsgatan 3, and Sven Hilding Montéus, Vengatan 11, both of Landskrona, Sweden

Filed July 17, 1964, Ser. No. 383,433

Claims priority, application Germany, July 31, 1963, 43,731

3 Claims. (Cl. 233—10)



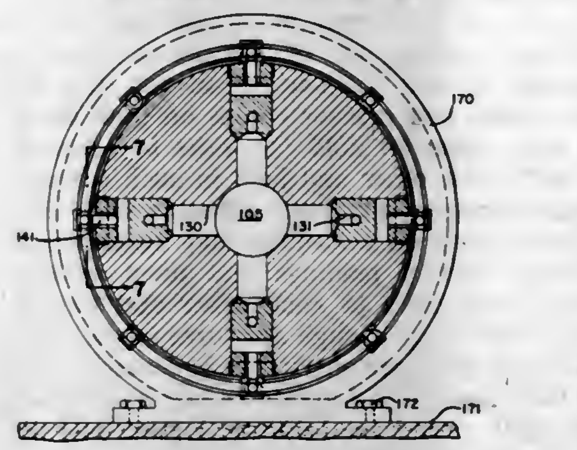
1. In a centrifuge, in combination, a rotatable centrifuge drum, a scraper for excavating pulp deposited on the inside of the drum during operation, means causing said scraper to carry out a radial and an axial excavating movement in said drum including a rotatably driven and axially slidable elongated rod carrying said scraper, said drum having outlet openings in the bottom thereof, a compressed air nozzle arranged on the scraper, said rod having a longitudinal passage provided interiorly of said rod and communicating with said nozzle, means for supplying compressed air to the nozzle to cause pulp excavated by said scraper to be discharged through said outlet openings, the last-mentioned means comprising a stationary compressed air supply conduit, and means defining a slide valve comprising said rod operated by the said axial movement of the rod to control passage of air between said stationary air supply conduit and said longitudinal passage to apply compressed air to the nozzle in predetermined axial positions of the scraper.

3,309,016
DESALINIZATION OF SALT WATER AND APPARATUS THEREFOR

Paul R. O'Brien, 2912 Brixham Drive, Richmond, Va. 23235

Filed Nov. 4, 1965, Ser. No. 506,356

4 Claims. (Cl. 233—20)



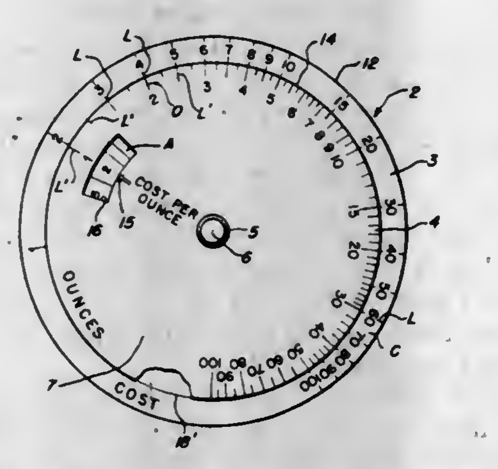
1. In a liquid purification system, a centrifugal separator adapted to exert a centrifugal force in excees of about 20,000 times the force of gravity upon a solution containing dissolved solids whereby to separate said solids from said solution, said separator comprising a rotatable body element possessed with means for high speed rotation thereof, an axially disposed charging chamber in said element for receiving said solution, equally spaced and radially disposed separating chambers interconnected with said charging chamber, said separating chambers having a radially slideable closure means therefor, said chambers including an inner radially disposed liquid receiving passageway and a radial solid slurry receiving passageway extending therefrom, a discharge slurry conduit and a liquid discharge conduit, said closure means for said liquid receiving passageway having a slurry receiving bore therein of lesser diameter than said liquid receiving passageway and adapted to be aligned with said discharge slurry conduit, means to radially move said closure means to selectively seal and open said liquid and slurry discharge conduits, and collector means circumferentially disposed about said body element to separately receive said slurry and said liquid from the respective discharge conduits thereof.

3,309,017
EDUCATIONAL CALCULATING DEVICE

Melvin A. Koskela, 2600 N. Kimball Ave., Apt. 310, Chicago, Ill. 60647

Filed June 4, 1965, Ser. No. 461,459

1 Claim. (Cl. 235—78)

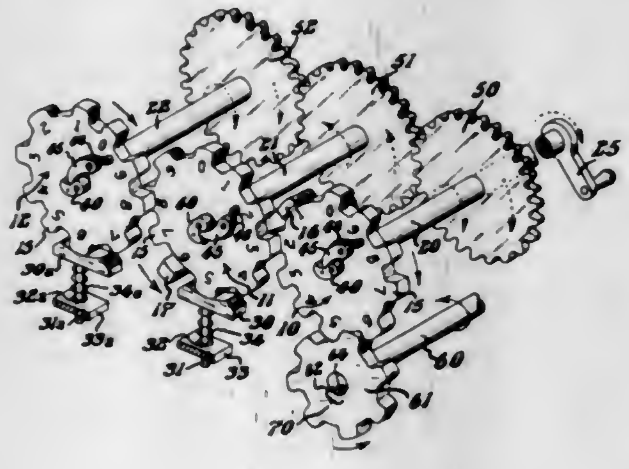


An educational computing device for establishing unit costs of items in relation to their total price and weights of several comparable items, upper and lower relatively rotatable electrostatically charged disks having temporary adherence to each other, at least one disk being made of plastic, the other of said disks being made of paper, each disk having a peripheral edge and a set of numbered graduations adjacent said edges registrable with each other, the graduations on one disk representing units of measure and the graduations on the other disk representing total cost of an item, indicia on said disks registrable to indicate cost per unit of measure in answer to selected alignment of said graduations on one disk with respect to the other, and register means on both disks alignable with each other to hold the disks in accurate relationship with each other and held in such registry pursuant to said electrostatic charges adhering said disks whereby the graduations on said disks may be accurately aligned to obtain correct readings and pivot means rotatably securing said disks to each other and having an axial portion extending through apertures in the disks and having a round outer periphery in complementary engagement with the edges of said apertures and having means at opposite ends of said axial portion biasing said disks axially into engaged position.

3,309,018
RESETTABLE COUNTER

Ronald M. Wilson, Ambler, Pa., assignor to William M. Wilson's Sons, Inc., Lansdale, Pa., a corporation of Pennsylvania

Filed July 8, 1965, Ser. No. 477,064
19 Claims. (Cl. 235—94)



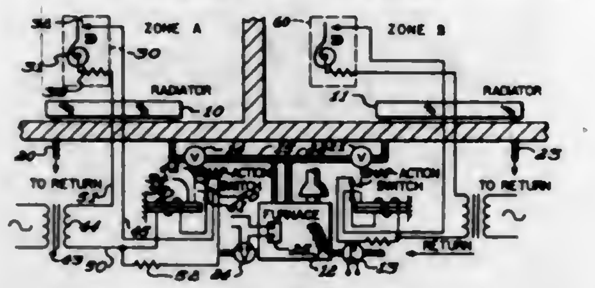
1. A resettable counter for mounting on a single shaft comprising

a hub having an axial bore for mounting on a shaft and an annular flange located at one end of the hub,
a counting dial mounted on the hub adjacent the flange and having an annular portion extending axially around the periphery of the hub flange,
a unidirectional drive means connecting the hub and the dial to cause the dial to rotate with the hub when the hub rotates in the counting direction but to allow the dial to rotate freely from the hub when the dial is driven independently in the same direction,
an input gear mounted on the hub for independent rotation thereon, said gear being driven by a source of rotary movement, and
severable connecting means joining the input gear to the hub for rotating the hub and dial in the counting direction while the dial remains able to rotate in that direction but said means being capable of disconnecting the input gear from the hub when the dial is not free to rotate.

3,309,019
TEMPERATURE CONTROL SYSTEM WITH IMPROVED HEAT ANTICIPATION

Lorne W. Nelson, Bloomington, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Feb. 23, 1965, Ser. No. 434,220
15 Claims. (Cl. 236—68)



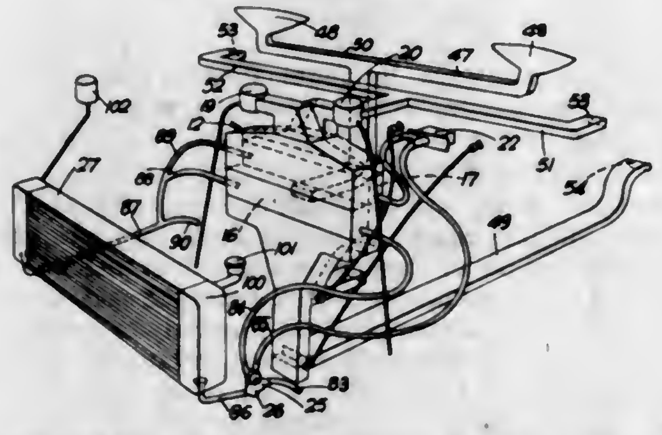
1. In a temperature control system having a thermostat wherein the "heat anticipation" decreases as the load on the system increases,

temperature responsive switch means responsive to the temperature of a space,
heating means for said temperature responsive switch means,
a source of temperature conditioned medium,
control means,
connection means including said control means for connecting said source to supply conditioned medium to said space,
a source of power,
circuit means including said switch means for connecting said control means and said heating means to said source of power to provide a first predetermined heat level of said heating means, and
means operated after a predetermined period of energization of said control means on each cycle of operation for decreasing said heat to said heating means to a lower predetermined level whereby the average heat supplied to said temperature responsive switch means is decreased as the load on said source of conditioned medium increases.

3,309,020
ENGINE COOLING AND INTERIOR HEATING SYSTEMS IN MOTOR VEHICLES

Patrick Milo Thomas Cobley, Coventry, England, assignor to Humber Limited, Coventry, England a British company

Filed Jan. 15, 1964, Ser. No. 337,953
Claims priority, application Great Britain, Jan. 16, 1963, 2,024/63
7 Claims. (Cl. 237—8)



1. An engine cooling and interior heating system in motor vehicles having a passenger compartment comprising

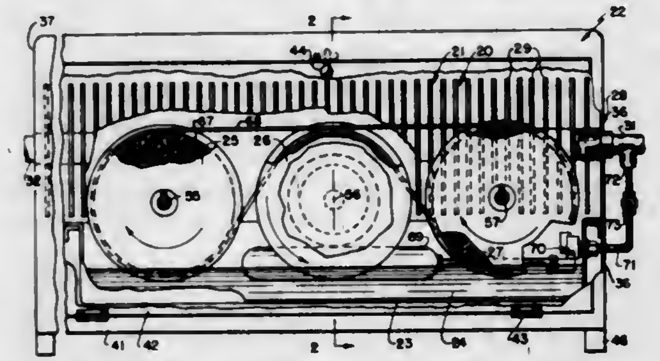
(a) a coolant jacket for cooling the engine,
(b) a radiator with coolant connections to the jacket,
(c) a first heat exchanger,
(d) a second heat exchanger,

(e) coolant connections connecting in parallel both said heat exchangers to said jacket,
(f) means to direct a flow of air over both said heat exchangers,
(g) means to direct at least some of the air flowing over the first heat exchanger into the passenger compartment,
(h) valve means for varying the flow of coolant through the first heat exchanger,
(i) means responsive to the temperature of the air flowing into the passenger compartment to control the valve means to tend to maintain the said temperature constant, and
(j) means for directing the air which flows over the second heat exchanger outside the passenger compartment.

3,309,021
BASEBOARD HUMIDIFIER

Milton A. Powers, Grosse Pointe Park, Mich., assignor to Skuttle Manufacturing Company, Milford, Mich., a corporation of Michigan

Filed Sept. 21, 1964, Ser. No. 397,998
2 Claims. (Cl. 237—78)



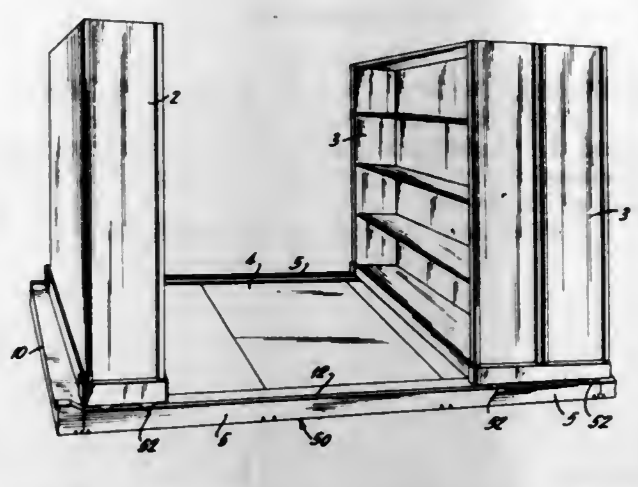
1. A combined baseboard radiator and humidifier assembly comprising a casing, a generally horizontally elongated radiator unit within said casing comprising a conduit for flow of hot water and a series of heat dissipating fins mounted along the conduit, hot water supply and return lines connecting said conduit to a source of hot water, an open top receptacle mounted within the lower part of said casing to contain a body of water extending along but at a lower level than the said fins, a water pickup rotor mounted on a shaft extending transversely of the casing at substantially right angles to said conduit, said rotor having a periphery of porous plastic material that during rotation has a minor lower area disposed in said body of water and its upper water bearing area disposed adjacent said fins, passage means directly connecting the hot water supply line to discharge water into said receptacle, a valve in said passage means responsive to the water level in said receptacle for maintaining a substantially constant water level in said receptacle, a motor on said casing drive connected to said shaft for rotating said rotor at a slow speed, an air inlet opening in the lower part of said casing, and an air outlet opening in the upper part of said casing, said openings being so located that air flowing by connection through the casing traverses said upper part of said rotor and the radiator unit fins, heat from said fins assisting in evaporating water from said adjacent rotor upper area into the moving air.

3,309,022
PORTABLE RAILWAY

Hans Ingold, Seefeldstrasse 224, Zurich, Switzerland

Filed May 21, 1963, Ser. No. 282,059
Claims priority, application Switzerland, May 24, 1962, 6,288/62
11 Claims. (Cl. 238—10)

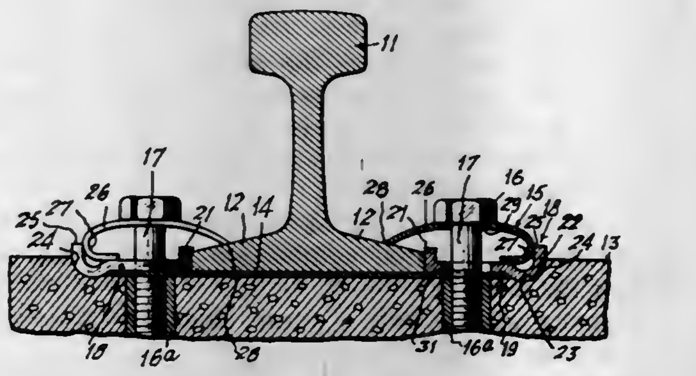
1. A frame comprising, in combination, longitudinal and transverse girders of substantially inverted U-shape cross section, the transverse girders extending substantially perpendicular to the longitudinal girders; the outer legs of the longitudinal girders being higher than the inner legs thereof, and the legs of the transverse girders being substantially equal in height; the end surfaces of the transverse girders abutting the inner surfaces of the outer legs of the longitudinal girders; the ends of the legs of the transverse girders having projections interlocking with notches in the outer legs of the longitudinal girders; the inner legs of the longitudinal girders having tabs engaged in slots in the webs of the transverse girders.



3,309,023
RAILWAY RAIL-HOLDING DEVICE

Lester T. Burwell, deceased, late of Maplewood, N.J., by Hilda N. Burwell, 26 Arcularius Terrace, Maplewood, N.J. 07040, and Joan B. Maldonado, 30 N. Ventosa Drive, Morristown, N.J. 07960, executrices, and Garwood N. Burwell, 57 Midwood Terrace, Madison, N.J. 07940, and Maplewood Bank & Trust Co., Maplewood, N.J., executors

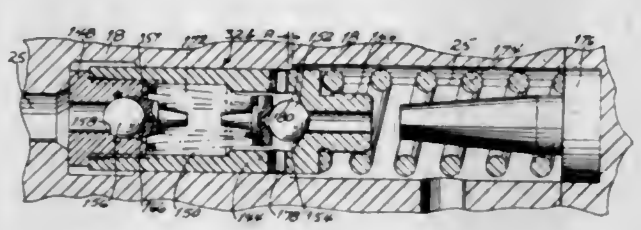
Filed Feb. 3, 1966, Ser. No. 538,525
4 Claims. (Cl. 238—349)



1. A railway rail-holding device for use with a railway tie and a rail having base flanges supported thereon, said tie having an abutment seat spaced from the edge of one rail base flange, a rigid main plate having an outer portion engageable with said abutment seat and an inner portion engageable with the adjacent edge of said one base flange, said outer portion having an engaging part for a resilient clamp plate consisting of a concavely curved upwardly facing portion merging into shoulders, a resilient clamp plate being upwardly bowed between its inner and outer ends, its inner end being engageable with the top surface of said base flange and its outer end portion being downwardly and curvedly returned toward said inner end to abut said engaging part of the main plate, there being holes in both the main plate and the clamp plate, providing for longitudinal sliding and rocking movement of said clamp plate relatively to said engaging part of the main plate and fastening means having a part

adapted to be secured in said tie and to pass through said holes and another part adapted to abut said bowed portion of the clamp plate for resiliently forcing the inner end of the clamp plate against the top of the base flange and its outer end against said engaging part of the main plate upon tightening of said fastening means.

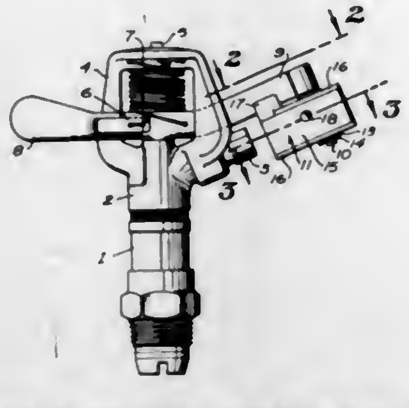
3,309,024
FUEL DELIVERY VALVE AND INJECTION APPARATUS EMPLOYING SAME
Raymond J. Maddalozzo, Chicago, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 7, 1965, Ser. No. 423,916
8 Claims. (Cl. 239—5)



1. In a fuel injection system subject to a rebounding pressure wave following injection, and including nozzle means to deliver the output and a pump chamber to supply the input of fuel thereto, and together having an interconnecting cavity with opening means therein, the method of controlling post-injection fuel flow beginning when at least one but not all opening means are open comprising:
closing the open opening means in said cavity;
drawing a void in said cavity by enlarging the internal volume thereof at the location of one closed opening means, while maintaining, at constant volume, the fuel which is immediately available as input to the nozzle means and which is in the path of the rebound wave; and
at least partially refilling the void by temporarily opening one opening means and controllably communicating thereinto the peak pressure of said rebounding wave so as to dissipate same to the maximum operating level desired.

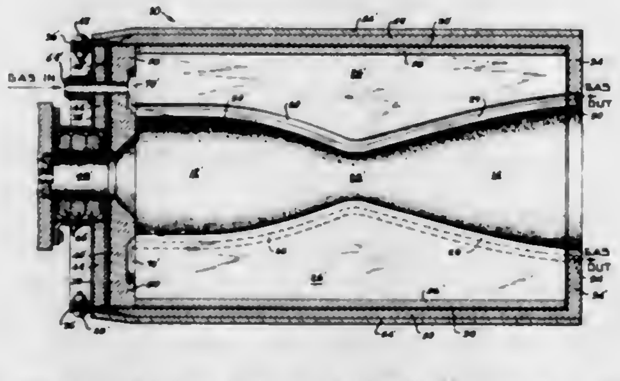
3. A fluid injection system including an injection nozzle for fueling an internal combustion engine, said system further including:
pumping means with a pump chamber for supplying fluid to the injection nozzle;
means forming a fluid delivery line interconnecting the pump chamber and the nozzle; and
an assembly of primary and secondary valves connected in the fluid line, the primary valve having guiding bore means therefor in the line wherein the valve is guided to open the bore and to shut off the bore while concurrently enlarging the internal volume of the line, said primary valve having a concentric flow cavity therein presenting separate valve seats at opposite ends;
one coaxial secondary valve within, and on the valve seat at one end of, the flow cavity in the primary valve, said secondary valve unseating in the direction away from the pump chamber or retracting in the direction thereof as to enlarge the internal volume of the flow cavity; and
one coaxial secondary valve within, and on the valve seat at the opposite end of, the flow cavity in the primary valve, and unseating in the direction of the pump chamber.

3,309,025
SELF-CLEANING SPRAY DEFLECTOR WEDGE FOR SPRINKLERS
William R. Malcolm, Glendora, Calif., assignor to Rainbird Sprinkler Mfg. Corp., Glendora, Calif., a corporation of California
Filed July 6, 1965, Ser. No. 469,492
2 Claims. (Cl. 239—230)



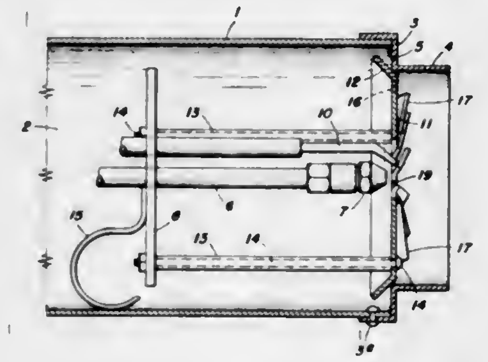
1. In a rotatable sprinkler including a sprinkler jet and an oscillatable arm projecting beyond and at one side of the jet, the arm having at its extremity, a journal shaft movable into the path of water issuing from said jet, the combination of a water deflector, comprising:
(a) a wedge-shaped body having a transverse bearing bore loosely received on said journal shaft, the wedge sides of said body converging toward said jet and, alternatively, adapted to be impinged by water issuing
(b) means for limiting said member to oscillatory movement;
(c) said body defining at least one opening intersecting one of said wedge sides in the path of water flowing thereon and intersecting said bore;
(d) said opening forming a duct for the flow of a portion of the water into said bore to lubricate said body and to wash deleterious matter from the space defined between the walls of said bore and the surface of said journal pin.

3,309,026
GAS COOLED ROCKET STRUCTURES
Joseph F. Loprete, Wayne, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,632
12 Claims. (Cl. 239—265.11)



1. In a rocket engine or the like having a multi-layer casing structure for the engine combustion chamber and combustion gas discharge nozzle with a convergent-divergent profile; said multi-layer casing structure including a first annular layer having a profile defining the inner surface of said combustion chamber and said exhaust nozzle, said first layer comprising a plurality of individual segments circumferentially disposed in side-by-side relation to form an annulus, said segments being composed of an anisotropic material with said segments being oriented so that said first layer is relatively highly thermally conductive in directions both parallel and radial relative to the rocket engine axis; and passage means between adjacent segments of said first layer with said passage means being disposed adjacent the inner surface of said rocket engine at least in the throat region of the discharge nozzle and means for passing a coolant through said passage means so that said segments of said first layer are cooled by said coolant passing through said passage means.

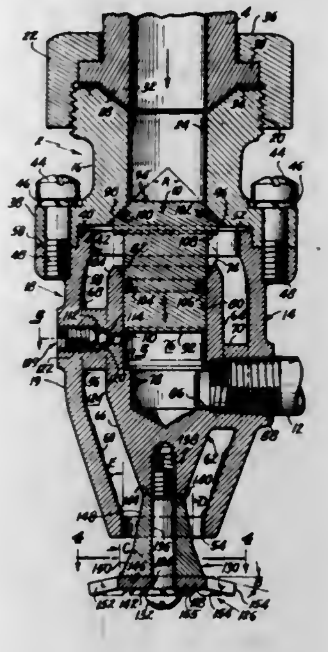
3,309,027
OIL BURNER
Abraham B. Chadwick, Jeffersontown, and Jack N. Tutterrow, Louisville, Ky., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 18, 1964, Ser. No. 419,474
2 Claims. (Cl. 239—406)



1. In an oil burner, an air tube, fuel nozzle means in said air tube, a nose tube at the discharge end of said air tube having a diameter less than that of the air tube to thereby provide an annular shoulder, a spinner plate having a substantially planar peripheral flaring portion seating against such shoulder so as to center said spinner plate relative to said nose tube, said spinner plate having radially extending vane members and cooperating openings to spin air discharging therefrom, said spinner plate also having a series of apertures radially out board of said vanes forming a substantial cylindrical air discharge opening, said apertures providing a cylindrical curtain of air which confines the oil spray issuing from said fuel nozzle, said nose tube having a cylindrical wall portion extending forwardly of said spinner plate, said wall portion providing a surface to deflect radial components of air leaving said vane members towards the center of the nose tube thereby creating eddy currents and creating a low pressure adjacent the inner surface of the nose tube tending to pull oil droplets radially outwardly from the fuel nozzle through the turbulent area in front of the spinner plate so that there is thorough mixing of air and oil resulting in combustion taking place across the face of the spinner plate.

3,309,028
SPRINKLER HEADS HAVING VALVES ACTUATED BY SEPARATE PRESSURE LINES
Clifford V. Zieg, Costa Mesa, Calif., and Robert G. Fike, Fairfax, Va., assignors to Donald G. Griswold, Corona Del Mar, Calif.
Filed July 31, 1964, Ser. No. 386,509
19 Claims. (Cl. 239—498)

1. A sprinkler head, comprising: body means having a fluid inlet and a valve seat aligned with the said inlet, said body means having an exit for said fluid and also having a control chamber, said control chamber having a passage for connection to a source of pressurized operating fluid; flow-controlling piston means partially received within said control chamber and being movable in response to operating fluid pressure within said control chamber from a sprinkler "OPEN" position spaced from said valve seat, to a sprinkler "CLOSED" position in which a portion of said piston means is in sealing engagement with said valve seat; and a deflector positioned at said exit and disposed to have fluid impinge thereon when said piston means is in its sprinkler "OPEN" position.



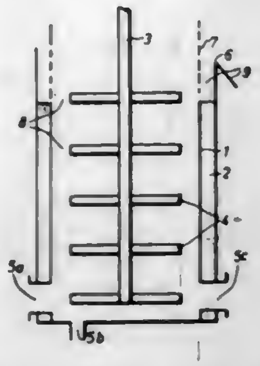
3,309,029
ACTIVATION OF SULFIDE ORES FOR FROTH FLOTATION
George A. Frame, Copper Cliff, Ontario, Canada, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 7, 1964, Ser. No. 365,822
Claims priority, application Canada, Sept. 9, 1963, 884,147
5 Claims. (Cl. 241—20)

3. An improved bulk flotation process for separating gangue from a sulfide ore of a metal from the group consisting of nickel, copper and iron which comprises grinding said ore in water which contains activating amounts of ammonia and copper sulfate to form a pulp, said ammonia being present, on a weight basis, in amounts of at least about twice the amount of copper sulfate to provide an aqueous solution of a copper ammonium sulfate complex and free ammonia and thereafter subjecting said pulp to a froth flotation operation in the presence of at least one frothing agent and at least one collecting agent while maintaining said pulp alkaline to recover sulfide minerals therefrom.

3,309,030
PROCESS AND DEVICE FOR THE CONTINUOUS PRODUCTION OF DISPERSIONS
Hans Heinz Mölls and Reinhold Hörnle, Cologne-Flittard, Hans Raab, Cologne-Stammheim, Franz Bechlars, Leverkusen-Schlebusch, and Günther Steinmetz, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Dec. 29, 1964, Ser. No. 421,976
Claims priority, application Germany, Jan. 22, 1964, F 41,803
11 Claims. (Cl. 241—21)

1. The method of preparing a dispersion having a finely divided state by suspending and subdividing a solid in a liquid medium in an enclosed system which comprises passing in continuously under pressure the solid being in a non-pumpable state and simultaneously the liquid medium in an agitated layer of spherical grinding elements having a particle diameter in the range of 0.3

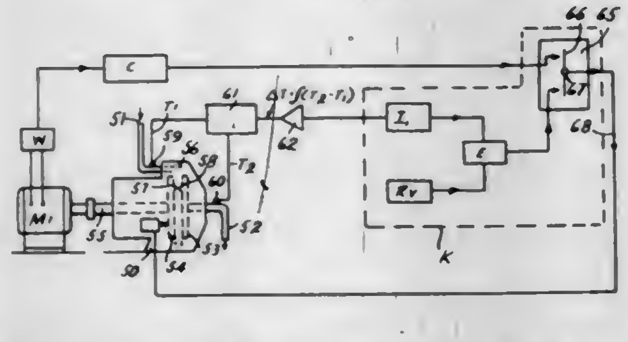
to about 10 mm., passing thru said agitated layer the solid together with the liquid medium and separating



continuously the formed dispersion from the grinding elements of said agitated layer.

3,309,031
MATERIAL WORKING APPARATUS

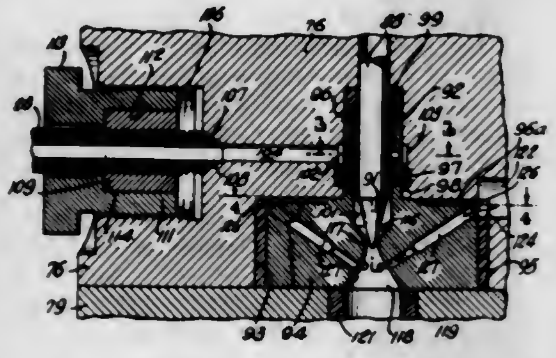
Richard F. McMahon, Dalton, and Reno M. Tonsi, Lenox, Mass., assignors to Jones Division, Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Dec. 9, 1964, Ser. No. 417,073
13 Claims. (Cl. 241—37)



1. A control system for a material working device comprising:
   means for measuring a change in temperature rise of the material, and
   means for measuring a change in work absorbed by the material and means responsive to said change in temperature rise and said change in work absorbed for adjusting the effect of the material working device on the material toward a predetermined value.

3,309,032
CELL FRACTIONATOR APPARATUS

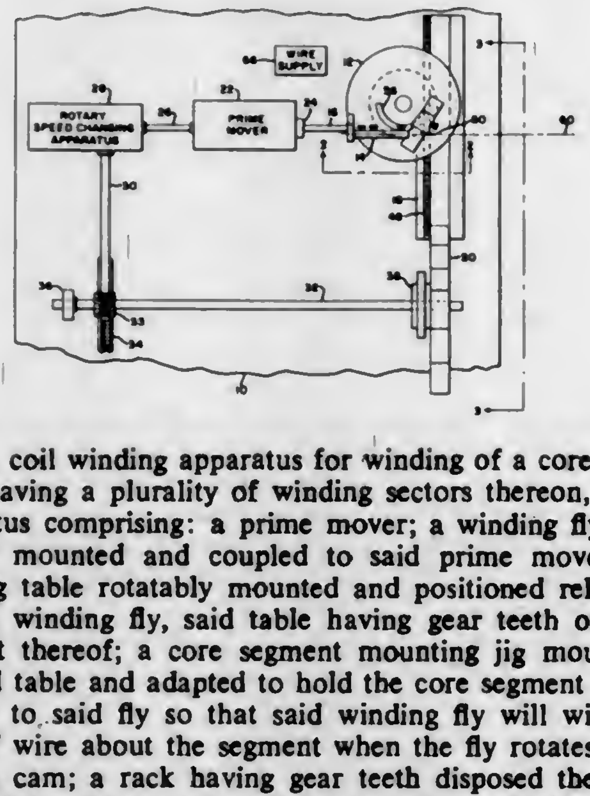
Charles J. Filz, Weston, and Josef Blum, Norwalk, Conn., assignors to Ivan Sorvall, Inc., Norwalk, Conn., a corporation of Connecticut
Filed Mar. 23, 1964, Ser. No. 353,836
14 Claims. (Cl. 241—301)



1. Cell fractionating apparatus comprising a block, a compression chamber in said block, and expansion chamber in said block axially aligned with said compression chamber, a valve seat between said compression chamber and said expansion chamber, a valve member movable longitudinally within said compression chamber and cooperating with said valve seat, the entry portion of said expansion chamber being conical in shape and the apex thereof terminating in said valve seat, means for introducing biological specimens under high pressure into said compression chamber, a plurality of radially arrayed channels in said block, the inner ends of said channels communicating in a circular array with the conical portion of said expansion chamber near said valve seat and means for passing a cooling medium simultaneously through all of said channels into said expansion chamber.

3,309,033
CORE INDEX COIL WINDING APPARATUS

Charles W. Carson, East Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 15, 1963, Ser. No. 281,081
2 Claims. (Cl. 242—9)

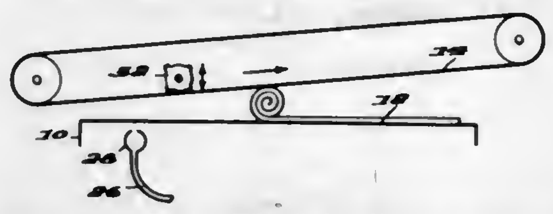


1. A coil winding apparatus for winding of a core segment having a plurality of winding sectors thereon, said apparatus comprising: a prime mover; a winding fly rotatably mounted and coupled to said prime mover; a winding table rotatably mounted and positioned relative to said winding fly, said table having gear teeth on an element thereof; a core segment mounting jig mounted on said table and adapted to hold the core segment with respect to said fly so that said winding fly will wind a turn of wire about the segment when the fly rotates one turn; a cam; a rack having gear teeth disposed thereon and positioned for engagement of said teeth with the teeth of said winding table; a cam follower coupling said rack to said cam; rotary speed reduction means coupling said cam to said prime mover for rotating said cam one revolution for a desired number of rotations of said winding fly; said cam having a cam travel surface to provide progressive rotation of said winding table and surface segments to provide rotary oscillation of said table during a cycle of progressive rotation, said oscillation of said table causing said winding fly to wind overlapping turns of wire within a first sector of the core segment and said progressive rotation of said table causing said winding fly to wind turns of wire within a sector of the core segment adjacent to the first sector.

3,309,034
PROCESS AND APPARATUS FOR FORMING ROLLED SLIVERS

David Shepard Alles, Cambridge, Mass., and Robert Lee Craven, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 10, 1964, Ser. No. 410,243
11 Claims. (Cl. 242—55)

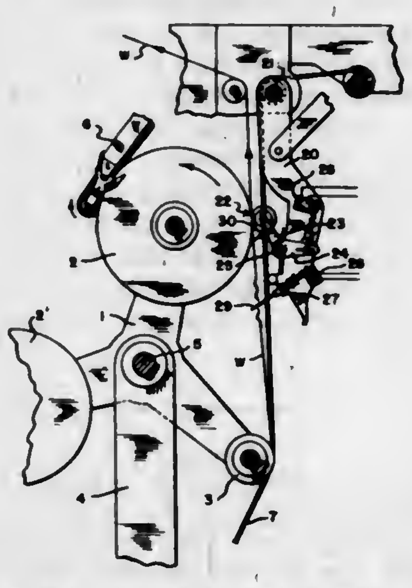
8. Apparatus for forming rolled slivers from web sections of fibers having orientation predominantly in one direction which comprises means forwarding said web sections in said direction of orientation, means causing one longitudinal edge of said web section to be directed upwardly, means contacting said upwardly directed edge to roll said web section upon itself in the direction of travel and at an angle in the range of from about 20° to about



75° transversely to said direction of orientation and means vibrating said web section throughout the rolling in a direction substantially perpendicular to the axis of said rolling web section.

3,309,035
WEB SPLICING DEVICE

Anthony C. Degutis, Basking Ridge, N.J., assignor to Wood Newspaper Machinery Corporation, Plainfield, N.J., a corporation of Virginia
Filed Dec. 1, 1964, Ser. No. 415,023
5 Claims. (Cl. 242—58.1)

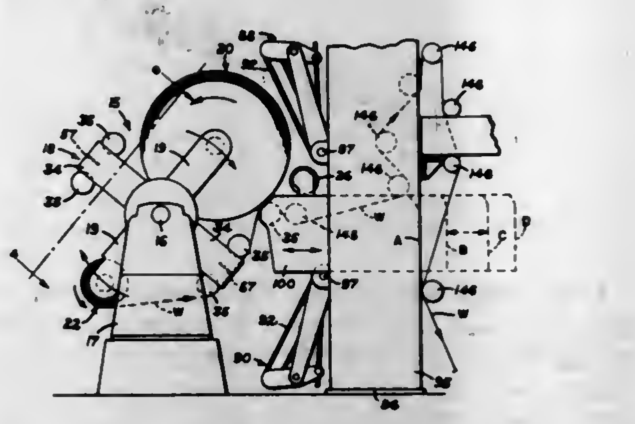


3. A web splicing apparatus for splicing a web from a web reserve roll onto a moving web running from a web supply roll wherein a portion of the surface of the web of the reserve roll has adhesive thereon, said apparatus comprising means for rotating said reserve roll so that its peripheral speed is substantially equal to the linear speed of the moving web, at least one movable web splicing roller adjacent said running web, a yieldable cover on said roller having a characteristic that force per unit area transmitted by the cover when subjected to a compression force is constant regardless of the compression force applied to the cover, means for moving said roller to a positon whereby said cover will press said running web into splicing contact with the adhesive portion of the web on the reserve roll, and means for cutting the running web between the point of splice and the supply roll; said cover comprising a polyurethane foam material.

3,309,036
PAPER MACHINERY

Maurice J. Anderson, Fulton, N.Y., assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed Mar. 29, 1965, Ser. No. 443,314
10 Claims. (Cl. 242—58.3)

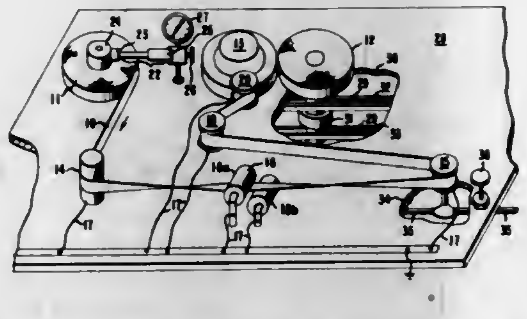
1. An improved apparatus for continuously unwinding and splicing web materials wherein either side of the web from an unwinding roll can be spliced selectively to the lead end of a web from the new roll regardless of the extent of web material remaining on the unwinding roll, comprising a reel including means for supporting a plurality of rolls of web materials, web severing means on said reel, speed-up means for rotating the new roll until its peripheral speed is substantially the same as the unwinding web speed, a pressure roll positioned on each side of the unwinding web, means for selectively moving each of said pressure rolls generally toward said supporting means from a retracted position



to provide pressure contact selectively between either side of the unwinding web and the outside web surface of the new roll according to whichever side of the web from the new roll is desired to be positioned on top, and means for actuating said severing means in timed relationship with the contact between the new roll and the unwinding web to effect cut-off and splicing of the web with the end of the new roll.

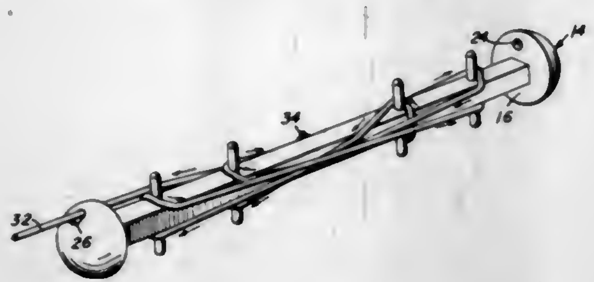
3,309,037
WEB REWINDER

Stephen Earl Amos, Circleville, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 8, 1964, Ser. No. 402,537
3 Claims. (Cl. 242—67.3)



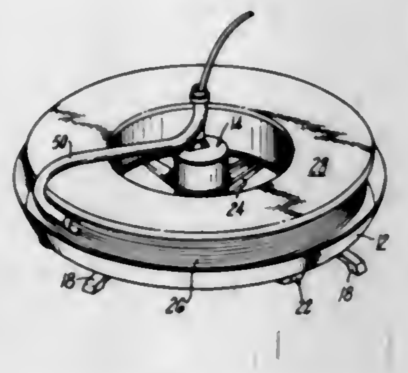
3. An apparatus for handling a running web comprising, in combination: a web supply roll; a windup roll adapted for surface wind; a rubber covered driven transport roller about which said web partially wraps and in peripheral driving contact with said windup roll; means connected to the axis of said windup roll to linearly recede said windup roll from said transport roller as the diameter of said windup roll increases upon winding; first and second spaced apart, gas permeable, metal surface web guides coupled to a ground, positioned between said supply roll and said transport roller; a pair of gas permeable, metal surface web guides positioned between said first and second web guides adapted for passage of said web therebetween free of partial wrap around contact and adapted to rotate said web through a substantially right angle with an axis of rotation coinciding with the intended center line of said web between said first and second web guides; and a source of compressed gas coupled to said web guides to float said web in spaced relationship thereto.

3,309,038
STRING WINDING DEVICE
Harry D. Greaney, 26 Pearl St., and John E. Sullivan, 46 Clinton Ave., both of Holyoke, Mass. 01040
Filed Nov. 25, 1964, Ser. No. 413,824
7 Claims. (Cl. 242—85.1)



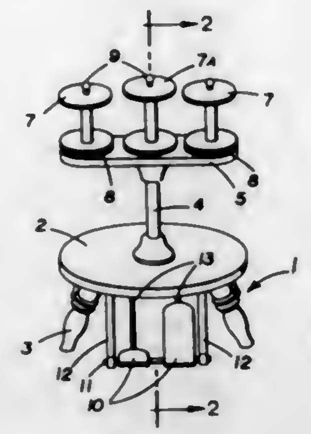
1. A string winding device comprising an elongated rigid bar, said bar having a transverse string anchoring passage extending centrally therethrough, string-retaining means projecting laterally from said bar at longitudinally spaced points therealong, said string-retaining means being located on opposite sides of the central passage and projecting laterally beyond opposite sides of said bar, enlarged heads fixed to the opposite ends of said bar, said heads being semi-spherical in shape, and an elongated string anchoring passage extending through each semi-spherical head generally parallel to the bar and laterally outward therefrom.

3,309,039
DISPENSING REEL
Edward C. Rutty, Portland, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Dec. 27, 1965, Ser. No. 516,450
11 Claims. (Cl. 242—128)



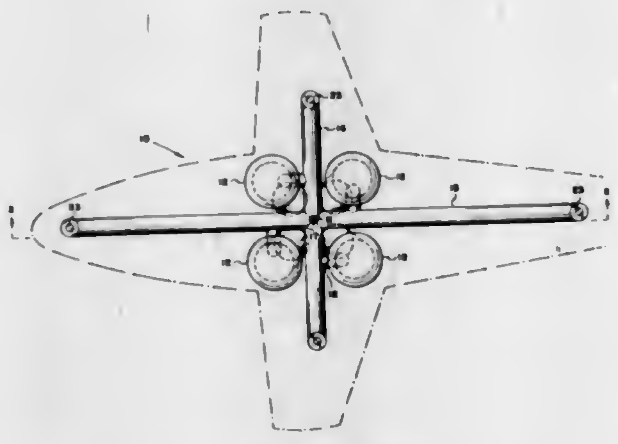
1. A stock dispensing reel comprising a base, a basket rotatably mounted on the base for supporting a coil of stock for rotation in one angular direction for paying-out the stock from the coil, a stock guide mounted on the base for feeding the stock generally radially inwardly from the coil and axially from the reel, the stock guide being rotatably mounted on the base coaxially with the rotatable basket for assisting in paying-out the stock from the coil, and control means for limiting the angular displacement of the stock guide in the opposite angular direction from a starting angular position thereof while stock is being payed out, control means permitting sufficient rotation of the stock guide in said opposite angular direction to assist in paying-out stock during acceleration of the basket while precluding rotation of the stock guide beyond a predetermined angular displacement from said starting position thereby to maintain the stock guide substantially stationary to minimize twisting of the stock while it is being payed out.

3,309,040
REVERSIBLE SPOOL UNIT FOR KNITTING YARN
Dimple Dee Stancil, 4404 E. 3rd St., Stockton, Calif. 95206
Filed Oct. 18, 1965, Ser. No. 497,260
3 Claims. (Cl. 242—139)



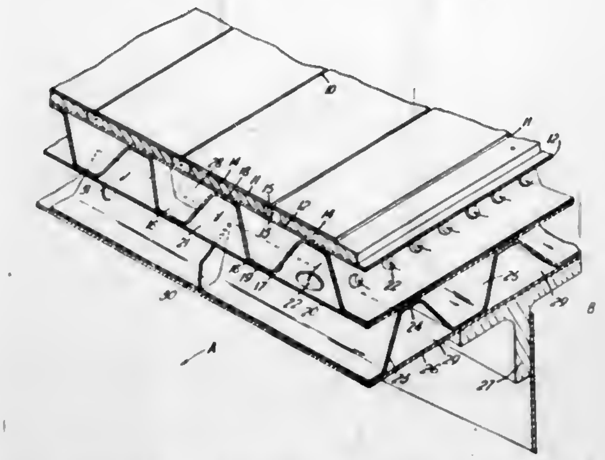
1. A reversible spool unit for knitting yarn comprising a base, a post upstanding from the base, a cross bar mounted on the upper end of the post, a pair of spindles to rotatably support spools of yarn mounted on the cross bar in diametrically opposed relation to and substantially equal distances from the post, the cross bar being fixed on the post for rotation therewith, the base including a horizontal platform raised relative to a supporting floor, means turnably mounting the post in the platform with the post projecting therebelow and foot actuated means mounted on and below the platform and applied to the post below said platform to rotate the post through an arc of 180 degrees.

3,309,041
JET LIFT ARRANGEMENT FOR VTOL AIRCRAFT
Frank R. Etchberger, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Los Angeles, Calif.
Filed Apr. 5, 1965, Ser. No. 445,595
18 Claims. (Cl. 244—23)



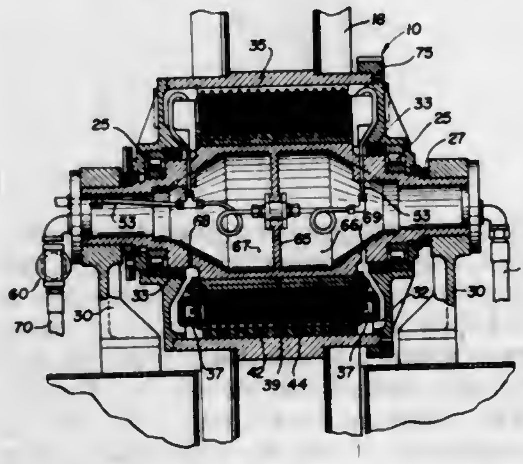
1. In a VTOL aircraft, the combination of a jet lift producing device mounted on said aircraft with its exhaust outlet disposed concentric with the center of gravity of the aircraft, a plenum chamber, a fluid passage connecting said device adjacent its exhaust outlet aforesaid to said plenum chamber whereby a predetermined percentage of the exhaust gases from said device is delivered to said chamber, and exhaust nozzles extending from said plenum chamber in a vertically downward direction and symmetrically disposed with respect to the aircraft center of gravity.

3,309,042
AIRCRAFT AERODYNAMIC STRUCTURES
Joseph Brien Edwards, London, England, assignor to Hanley Page Limited, London, England, a corporation of Great Britain
Filed Oct. 15, 1965, Ser. No. 496,390
Claims priority, application Great Britain, Oct. 20, 1964, 42,806/64
8 Claims. (Cl. 244—42)



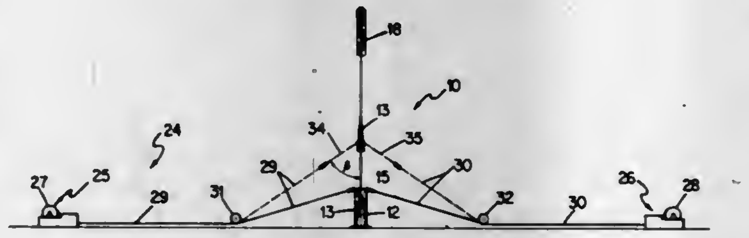
1. An aircraft aerodynamic structure outer wall comprising an outer skin, a series of porous elements disposed in spanwise lines in said outer skin, wall elements disposed beneath said outer skin, spanwise ducts in said wall, a series of spanwise chambers in said wall elements each in register on the inner face of said skin with at least one porous element and communicating with said ducts, transverse suction-tight elements dividing said ducts into elongated compartments, a plurality of chordwise ducts in said wall communicating with said spanwise ducts through a plurality of passages and means for controlling air flow through said chordwise ducts, each of said chordwise ducts having its end disposed for connection to at least one main duct leading to a source of suction within the aircraft, the arrangement being such that when suction is applied to the chordwise ducts through the main duct or ducts said control means for the chordwise ducts can be adjusted to provide the required sub-pressure in the compartments and thereby to vary the suction applied through the porous elements to each of the outer areas of the outer skin above the different compartments.

3,309,043
RAPID CYCLE ARRESTING SYSTEM
John S. Strance, Drexel Hill, and Robert W. Cruger, Springfield, Pa., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,560
8 Claims. (Cl. 244—110)



1. In combination with a rotary pay-out reel aircraft arresting gear having a purchase tape wound thereon which is pulled by the aircraft and unwound from the reel during arrestment,
a friction brake for retarding reel rotation during arrestment and
a recirculating cooling system therefor to permit rapid rewinding of the tape,
said brake comprising a rotatable tubular hub upon which the tape and reel are mounted,
a nonrotatable mounting drum rotatably supporting the hub in radially spaced relationship so as to define an annular brake chamber therebetween,
rotary sealing means between the hub and drum for sealing said brake chamber,
a plurality of friction stator discs attached to the drum,
a plurality of friction rotor discs attached to the hub and interleaved with the stator discs on the drum and
fluid actuator means for urging the discs in rotary braking engagement and wherein
said recirculating cooling system comprises
a reservoir of liquid coolant,
a coolant passageway from the reservoir to the brake chamber,
a return coolant passageway from the brake chamber to the reservoir and
means causing recirculation of the coolant to and from the brake chamber through said passageway so as to flow in intimate contact with said friction discs whereby a rapid succession of arrestments can take place without overheating the brake.

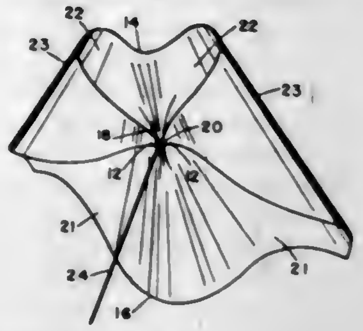
3,309,044
METHOD AND APPARATUS FOR ARRESTING A MISSILE
John S. Strance, Drexel Hill, Arthur G. Condodina, Philadelphia, and Floyd Silver, Secane, Pa., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed July 27, 1965, Ser. No. 475,164
7 Claims. (Cl. 244—110)



1. An apparatus for arresting a missile while in free flight within a prescribed distance comprising
a rotatable reel,
a linear purchase tape considerably wider than it is thick so as to permit coiling upon itself about the reel in ever increasing convolutions having its running end releasably anchored adjacent the path of flight of the missile,
means carried by the missile for engaging said running end of the purchase tape after a period of sustained free flight carrying it aloft with the missile,
the tape being woven of synthetic yarns having a sufficiently low modulus of elasticity so that the portion paid out between the reel and missile will stretch longitudinally and maintain engagement with the missile until the reel can accelerate at the demand rate per second required in order to keep the imposed stress and strain within safe limits in said tape,
braking means attached to the reel for reducing the rate of tape payout thus slowing the missile to a stalling speed, and
speed sensing control means arranged to program the retarding force of the braking means so that energy stored in the tape as stretch, is relieved prior to bringing the missile to a controlled stop at its apogee.

3,309,045
FLYING WING

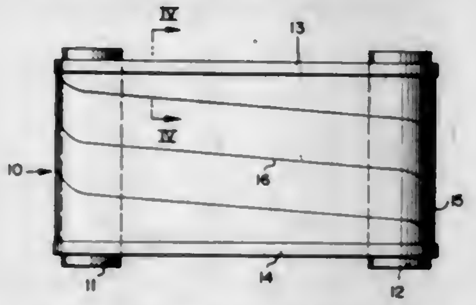
Raymond E. Kinney, 12171 Gilbert,
Garden Grove, Calif. 92641
Filed Jan. 11, 1965, Ser. No. 424,659
9 Claims. (Cl. 244—153)



1. A flying wing, comprising:
a central portion;
lifting panels extending on opposite sides of said central portion;
said wing having longitudinally extending airflow conducting tunnels integral with the forward portions of said panels to conduct airflow over the panels; and the major portions of said lifting panels extending rewardly immediately behind said tunnels.

3,309,046
TUBULAR SIEVE

Wilhelm Uhrig, Mannesmann Str. 11,
Wuppertal-Elberfeld, Germany
Continuation of application Ser. No. 250,888, Jan. 11, 1963. This application May 31, 1966, Ser. No. 554,202
Claims priority, application Germany, Jan. 12, 1962, P 28,592; Aug. 21, 1962, P 30,059
6 Claims. (Cl. 245—10)



1. A sieve for papermaking machines and the like comprising, in combination:

(a) two elongated rim members extending in substantially parallel, laterally spaced, closed loops defining a closed surface therebetween;

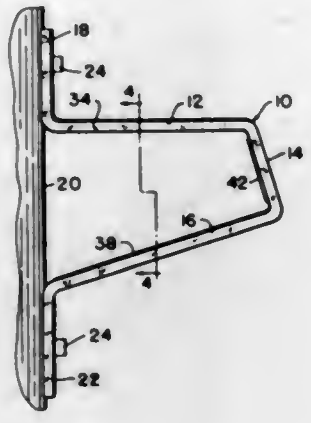
(b) an elongated, flat, woven continuous band extending in said surface in at least three laterally juxtaposed parallel continuous turns, said band having two end portions respectively fastened to said rim members and said turns having longitudinal edges obliquely inclined relative to said loops; and

(c) fastening means connecting the edges of each turn to a respective edge of an adjacent turn,
  (1) the band being formed with mesh openings therethrough transversely of said surface.

3,309,047
STAND-OFF INSULATOR BRACKET

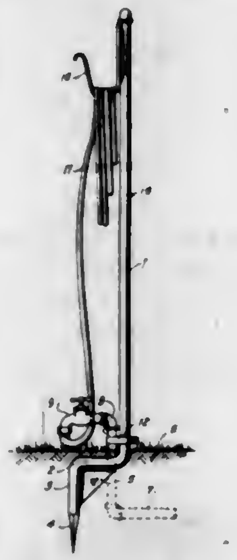
John W. Kane, Pontiac, Mich., assignor to The Detroit Edison Company, Detroit, Mich., a corporation of New York
Filed Aug. 29, 1966, Ser. No. 575,793
15 Claims. (Cl. 248—65)

1. An elongated insulator body having means for attaching an electrical conductor thereto intermediate the ends of the body, a stand-off insulator bracket adapted to be mounted to a side of a pole to extend laterally therefrom, said bracket being an elongated continuous member having a tranverse cross-section throughout whose width is at least several times its thickness, and disposed with the said width dimension horizontal, said bracket consisting of a pair of vertically spaced outwardly extending arms having means at their inner ends for attachment to the side of a pole, and a generally upright insulator support portion intermediate the outer ends of said arms, said bracket being formed entirely of electrically insulating material, the upper surface of the upper one of said arms being transversely convexly curved to facilitate removal of contaminants by precipitation, said insulator body being secured at one end to the outer surface of said insulator support portion to extend generally outwardly therefrom.



3,309,048
SUPPORT DEVICE

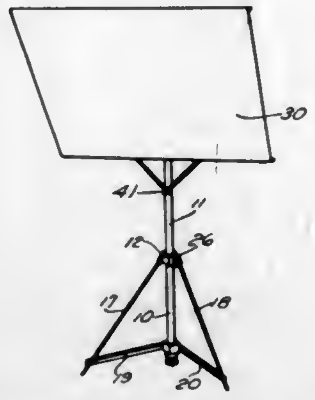
Leroy H. Rousselet, Dallas, Tex., assignor to Pogo Tool Corporation, a corporation of Texas
Filed Mar. 15, 1965, Ser. No. 439,880
7 Claims. (Cl. 248—87)



1. In a support device, an elongated body, the upper portion of the body providing a support portion, said body being deflected laterally near its lower end ti provide a horizontally extending portion, and being further deflected vertically at the outer end of the horizontally extending portion to provide a ground penetrating portion; a ground penetrating stabilizer member extending downwardly from the horizontal portion intermediate the ends thereof, arranged to penetrate the ground and resist lateral rotation of the support device; and a support member attached to the upper end of the support portion.

3,309,049
STAND FOR PROJECTION SCREEN

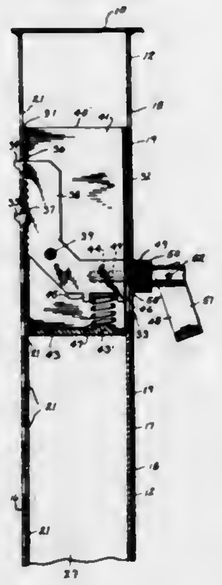
Percy Frederick Albee, Jr., Barrington, R.I., assignor to Q-Panel Corporation, a corporation of Rhode Island
Filed Apr. 19, 1965, Ser. No. 449,231
4 Claims. (Cl. 248—171)



1. A mounting stand adapted to be maintained in an upright position upon a generally horizontal supporting surface comprising a vertical post, a first collar slidably mounted on said post, two legs pivoted to said collar at an angle other than a straight angle, a second collar below and spaced from the first collar and slidably received on the post, a pair of arms each pivoted to said second collar and to each leg, and a stop means at the base portion of said post to limit movement of the second collar, said legs and said post forming a three-point contact with a horizontal supporting surface.

3,309,050
ADJUSTABLE TABLE LEGS

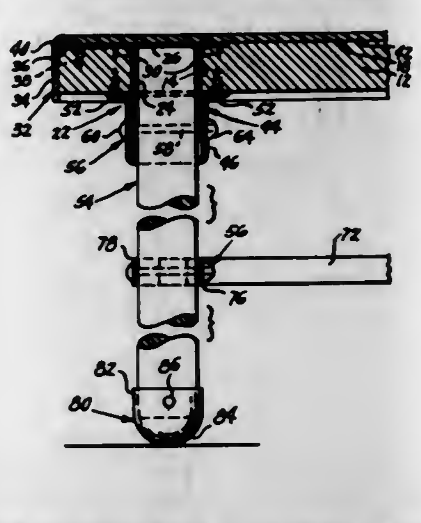
Robert O. Blink, Milwaukee, Frederick H. Holz, Wauwatosa, and William C. Lutzke, Milwaukee, Wis., assignors to Mitchell Manufacturing Company, Milwaukee, Wis., a corporation of a Wisconsin
Filed May 6, 1965, Ser. No. 453,698
6 Claims. (Cl. 248—188.2)



1. A table-supporting leg, comprising: a vertical tube member depending from a table top, said tube member having a plurality of vertically-spaced openings, and having an elongated vertical slot; an inner tubular member slidably carried within and projecting telescopically from the lower end of said outer tube and having ground-engaging means on its lower end, said inner tubular member having an opening therein selectively registrable with the spaced openings in said outer tubular member, and said inner tubular member having an opening registrable with said outer tube slot; a pawl pivotally carried in said inner tubular member, said pawl having a tooth thereon adapted to be projected into said registering inner and outer tube openings to prevent relative movement of said telescopic tubes, said pawl being pivotal to a retracted, non-projecting position; and means projected through said outer tube slot and registering inner tube opening operable to pivot said pawl to its non-projecting position when it is desired to slidably adjust said telescopic tube members to adjust the height of the table.

3,309,051
ADJUSTABLE LEG ASSEMBLY FOR FURNITURE OR THE LIKE

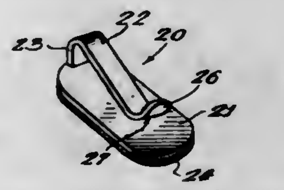
Raymond George Pina, 643 California St.,
Broderick, Calif. 95605
Filed Apr. 26, 1965, Ser. No. 450,604
3 Claims. (Cl. 248—188.5)



1. An article of furniture comprising a platform having an upper and lower surface and having an opening extending therethrough, an upper sleeve mounted in said opening and extending downwardly therethrough, a lower sleeve secured to said lower surface of said platform coaxial with said opening and receiving said upper sleeve, an elongated leg member received in said upper and lower sleeves, and means fixedly securing said leg member to said sleeves, said upper surface of said platform being cut away to provide a planar indentation, said upper sleeve including a plate secured to said upper surface of said indentation and a tube secured to said plate and extending downwardly through said opening beyond the lower surface of said platform, said lower sleeve comprising an apertured flange secured to said lower surface of said platform coaxial with said opening, and a depending tube secured on said flange coaxial with said opening and receiving therein the exposed portion of said tube of said upper sleeve.

3,309,052
PLASTIC CLIP AND METHOD OF AND APPARATUS FOR MAKING SAME

Bernard Borisof, Chicago, Ill., assignor to Lectro-Stik Company, Chicago, Ill., a partnership
Filed Jan. 17, 1966, Ser. No. 521,074
12 Claims. (Cl. 248—205)

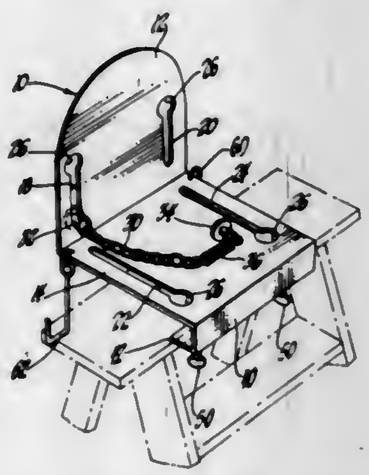


1. An adhesive clip for wall mounting comprising a base, adhesive means overlying said base for securing same to a supporting surface, a flexible leaf integral with said base, said flexible leaf being prestressed toward said base, with the outer end of said leaf in contact with said base, and means at the outer end of said leaf providing

a V-shaped entry for sheet material inserted between said leaf and said base, said clip being made of a synthetic resin, and said prestressed characteristic being a post solidification shrinkage stress on the inner surface of said flexible leaf.

3,309,053
HOLDER FOR PAINT CANS

Stephen C. Baker, Detroit, Mich., assignor to Su-Ev, Inc., Birmingham, Mich., a corporation of Michigan
Filed Apr. 12, 1965, Ser. No. 447,323
5 Claims. (Cl. 248—210)

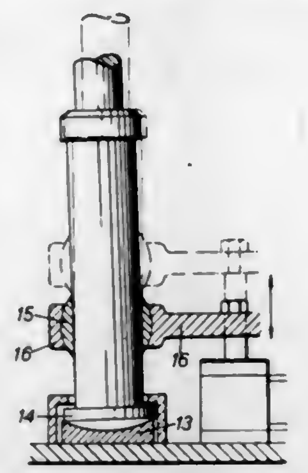


1. A support for a paint can, and comprising:
- a member having a pair of panel walls formed at right angles to each other and interchangeably adapted to serve as a bottom wall for receiving and supporting a paint can thereon and a back wall for receiving the paint can in retained engagement therewith,
- said panel walls each including a pair of relatively spaced elongated solts which are enlarged near the outer disposed ends of the panel walls,
- one of the panel walls having the outer disposed terminal edge thereof turned back under said one panel wall and spaced apart therefrom for receiving the rung of a ladder therein,
- said one panel wall having a length, as disposed to serve as the back panel wall, of less than the distance between an adjacent pair of ladder rungs and substantially that required to dispose the other of said panel walls in supported engagement and horizontally disposed on the lower rung of said ladder rungs when engaged to the upper thereof and when the ladder has its rungs angularly disposed for use,
- means detachably engaged in said panel wall slots at the enlarged ends thereof for holding a paint can to the back wall thereof,
- and means engaged to said panel walls near the junction thereof and laterally extendable for engagement with the side rail of a ladder for holding the paint can supporting bottom panel wall horizontal and fixed against the upsetting movement force of the weight of the paint can thereon.

3,309,054
PIVOTAL SUPPORTING DEVICES PARTICULARLY FOR MINE ROOF SUPPORTS

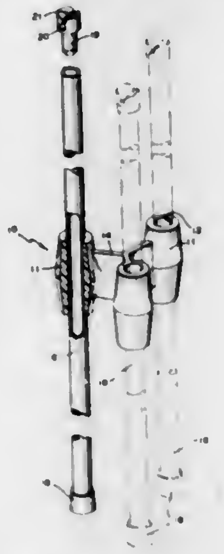
Peter Derek Davis-Ratcliffe, Penketh, Warrington, England, assignor to Gullick Limited, Wigan, England, a British company
Filed Aug. 2, 1965, Ser. No. 476,333
Claims priority, application Great Britain, Aug. 11, 1964, 32,595/64
11 Claims. (Cl. 248—354)

7. A mine roof support comprising at least one pressure-fluid extensible prop member and two pivotal supports for said prop member spaced apart along the length thereof, at least one of said pivotal supports being movable with respect to the other so that they have a position in which their pivotal centres coincide, whereby said prop member is pivotally supported, and a position in which said centres are out of coincidence whereby the prop member is held against pivotal movement.



3,309,055
FOLDING LEG STRUCTURE

Robert Sefcik, Cherry Hill, N.J., assignor to J. Chein & Company, Burlington, N.J.
Filed Feb. 21, 1966, Ser. No. 529,099
6 Claims. (Cl. 248—431)

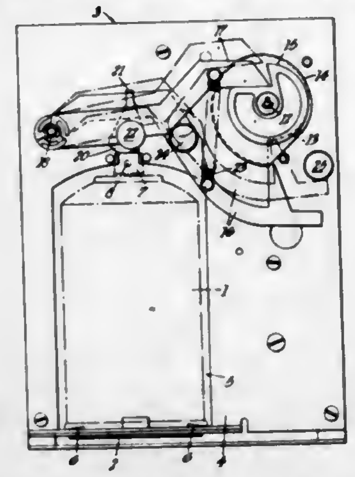


1. A supporting leg structure for a table top or the like and including a plurality of tubular legs and resilient leg-connecting means for joining the legs intermediate their ends and retaining the same in generally parallel relation when in non-top-supporting position and for twisting the legs under a bending stress to a double tripod position while the upper ends are supporting said top, said means including a plurality of sockets, one for each leg, with through bores receiving the legs, and webs connecting said sockets and normally retaining the legs in said parallel relation.

3,309,056
DOSING MECHANISMS

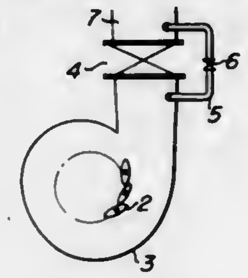
Peter Flanagan and Ronald Harvey David Frank Lee, Berkhamsted, England, assignors to Cooper McDougall & Robertson Limited, Berkhamsted, England
Filed Mar. 25, 1963, Ser. No. 267,648
Claims priority, application Great Britain, Mar. 30, 1962, 12,241/62
6 Claims. (Cl. 251—75)

1. A driven dosing mechanism for intermittently actuating the discharge valve of a pressure-packed container, comprising an operating arm for actuating the discharge valve, a pivotal mount for said operating arm, a release arm for disengaging the operating arm from the discharge valve, a pivotal mount for said release arm, cam mechanism embraced between said arms arranged to provide for sequential movement of the arms with a snap action and with a predetermined interval therebetween, means biasing each said arm about its pivotal mount to bear against said cam mechanism, and means on said release arm for striking said operating arm to displace said operating arm from its valve-actuating position.



3,309,057
METHOD OF STARTING OPERATION OF PUMPS AND PUMP TURBINES

Hidenori Tonooka, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 11, 1964, Ser. No. 351,143
2 Claims. (Cl. 253—1)

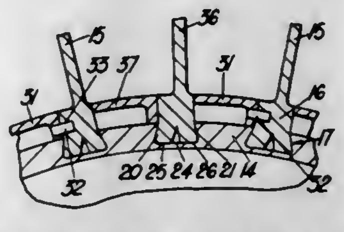


1. A method of starting operation of a pump of the type including a row of adjustable guide vanes around a pump runner and a discharge valve in the outlet comprising: first closing said guide vanes and the discharge valve, second forcing down the level of water by compressed air to a minimum level with respect to the pump runner to free said pump runner for easier rotation, third rotating the pump runner and bringing it up to desired operating speed with the guide vanes and the discharge valve held closed, fourth partially opening the guide vanes to an appropriate intermediate extent while keeping the discharge valve held closed whereby the pressure in the space between the guide vanes and the valve is gradually equalized with the pressure in the space on the runner side of the guide vanes, and fifth subsequently opening the discharge valve to a required extent while opening the guide vanes the remainder of the way to their required extent.

3,309,058
BLADED ROTOR

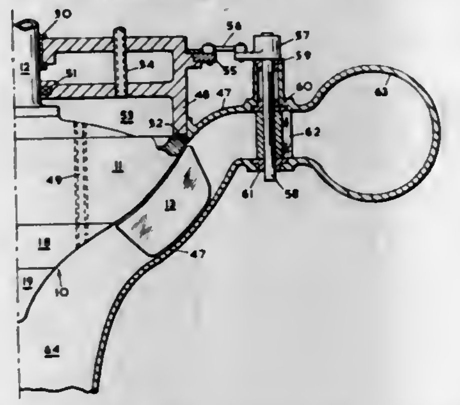
Robert Vaughan Blackhurst, Ripley, and Harold James Harrison, Borrowash, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed June 8, 1966, Ser. No. 556,212
Claims priority, application Great Britain, June 21, 1965, 26,208/65
8 Claims. (Cl. 253—77)

1. A rotor comprising a rotor disc having a peripheral annular groove and a plurality of angularly spaced apart slots which intersect said groove and each of which extends radially inwardly from the periphery of the rotor disc; a plurality of angularly spaced apart aerofoil-shaped blades each of which has a root portion which is located in one of said slots, each of said slots having walls which slidably engage the respective root portion and which prevent both angular and radial movement of the respective blade with respect to the rotor disc; a plurality of spacer members each of which is mounted and retained in said groove and extends between the root portions of adjacent blades, the groove having walls which slidably engage the spacer members and which prevent radial and axial movement of the latter with respect to the rotor disc, each spacer member being prevented from moving circumferentially of the rotor disc by being engaged by the root portions of an adjacent pair of blades; and a projection on each spacer member, each root portion having a recess therein in which is located a said projection which prevents movement of the respective blade axially of the rotor disc.



3,309,059
HYDRAULIC TURBINES

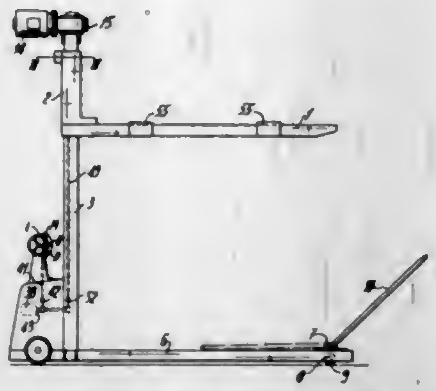
Michael Braikevitch, Netherton, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Nov. 30, 1964, Ser. No. 414,636
Claims priority, application Great Britain, Dec. 5, 1963, 48,074/63
24 Claims. (Cl. 253—117)



1. A hydraulic machine comprising a stator; a shaft rotably mounted in said stator; a hollow runner hub fixed to said shaft so as to rotate therewith; a plurality of runner blades; a plurality of trunnions connected to said runner blades and mounted on said hollow runner hub to rotate about non-coplanar axes which meet at a common point on the axis of rotation of said hollow runner hub; a plurality of operating levers, one connected to each trunnion inside said hollow runner hub; crosshead means movable along the axis of rotation of said hollow runner hub and spaced below said operating levers; means to control the movement of said crosshead means; a plurality of link members; universal joint means at each end of said link members, and connecting said link members to said operating levers and to said crosshead means respectively; a plurality of ports in the surface of said hollow runner hub downstream of said runner blades; means defining a source of air above said hollow runner hub; a plurality of ducts, each of said ducts passing between an adjacent pair of link members and having an upper and a lower end, the lower end of each of said ducts terminating in one of said ports and means connecting the upper end of each of said ducts to said source of air.

3,309,060
LIFT FOR MOTOR VEHICLES

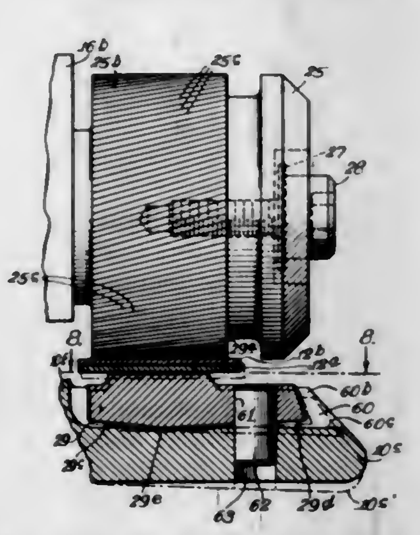
Julio Villars, Versoix, Geneva, Switzerland
Filed Sept. 8, 1965, Ser. No. 485,721
Claims priority, application Switzerland, July 22, 1965, 10,270/65
9 Claims. (Cl. 254—7)



1. A lift comprising: at least one column, a slide member movable vertically on said column, a lifting arm assembly cantilevered from said slide member, means for elevating said slide member on said column, and vertically spaced upper and lower guide blocks mounted on said slide member, said lower blocks being positioned to engage said column on the side thereof adjacent to said lifting arm assembly whereas said upper block is positioned to engage the opposite side of the column so that the guide blocks develop a couple reaction on a transverse axis through the column, said guide blocks being formed of a material having a coefficient of friction which under the forces of the couple reaction effects a slow descent of said assembly and the load thereon in the event said elevating means fails to carry the weight of said assembly and load.

3,309,061
STRAPPING TOOL

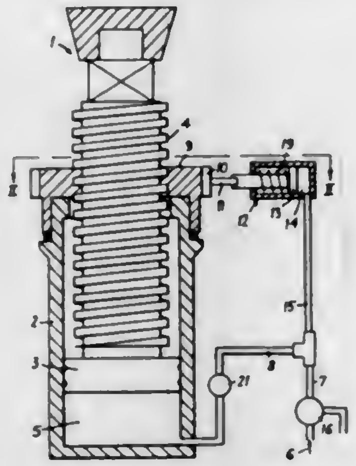
Robert F. Plattner, Park Forest, Ill., assignor to Interlake Steel Corporation, a corporation of New York
Filed Apr. 9, 1959, Ser. No. 805,173
2 Claims. (Cl. 254—51)



1. A tool for applying tension to associated strapping encircling an object to be bound, said tool comprising in combination a frame having a laterally extending foot adapted to engage the object and provided with a recess on the surface thereof disposed away from the object, a clamping member carried by said foot and disposed in said recess and adapted frictionally to engage a first longitudinally extending run of strapping in overlying relation with respect thereto, said clamping member being mounted upon said foot for rocking movements laterally of the longitudinal axis of the first run of strapping, a tensioning wheel carried by said frame and positioned opposite said clamping member and adapted to overlie a second longitudinally extending run of strapping disposed in overlying sliding contact with the first run of strapping, said tensioning wheel having a substantially cylindrical outer surface adapted frictionally to engage the adjacent surface of the second run of strapping, said tensioning wheel being mounted upon said frame for rotation about its own axis extending laterally of the second run of strapping, said mounting of said tensioning wheel upon said frame accommodating movement of said tensioning wheel toward said clamping member and into clamping position with both runs of strapping disposed between said tensioning wheel and said clamping member and accommodationg movement of said tensioning wheel away from said clamping member and into releasing position with the runs of strapping, means for rotating said tensioning wheel in a strapping tensioning direction when it occupies its clamping position, whereby the outer surface of said tensioning wheel in frictional engagement with the second run of strapping slides the same longitudinally along the adjacent surface of the first run of strapping in order to effect tightening of the strapping around the encircled object, said mounting of said clamping member upon said foot accommodating rocking movements of said clamping member laterally of the runs of strapping in order to maintain the parallelism between the facing surfaces of said clamping member and said tensioning wheel when said tensioning wheel occupies its clamping position and is rotated in the tensioning direction, and a pin interconnecting said clamping member and said foot to hold said clamping member in said recess while accommodating the rocking momevents thereof, the surface of said clamping member disposed toward said foot and the surface of said foot disposed toward said clamping member having cooperating rocking parts within said recess to accommodate the rocking movements of said clamping member laterally of the runs of strapping, wherein said pin is resilient and yields readily to accommodate the rocking movements of said clamping member with respect to said foot.

3,309,062
HYDRAULIC JACK WITH SAFETY MEANS

Joost Werner Jansz, The Hague, Netherlands, assignor to Richard Costain Limited, London, England, a British company
Filed May 10, 1965, Ser. No. 454,367
Claims priority, application Netherlands, May 8, 1964, 64/05158
4 Claims. (Cl. 254—93)

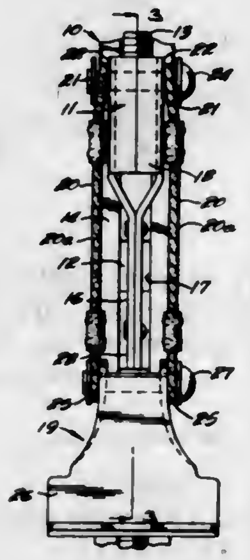


1. Hydraulic jack comprising a jack cylinder having an inlet for hydraulic pressure fluid, a piston movable in said cylinder, a nut rotatably mounted on a screw thread provided on a rod movable with the piston, drive means for turning said nut, as the jack is raised, in a direction to urge the nut against a part which is fixed relative to

the cylinder, means for interrupting the supply of hydraulic pressure fluid to said inlet, and means responsive to the turning of the nut through an angle corresponding to a predetermined increment of lift for actuating said interrupting means to interrupt the supply of hydraulic pressure fluid to said inlet.

3,309,063
AUTOMOBILE BUMPER JACK

Stanton Cole, 1750 Cromwell Drive, Akron, Ohio 44313
Filed Jan. 28, 1965, Ser. No. 428,819
3 Claims. (Cl. 254—99)

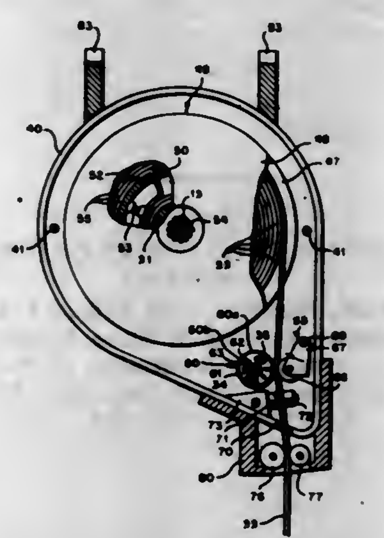


1. A vehicle bumper jack comprising: an elongated support having means by which the same is vertically supported on a surface and having a vertically movable lifting carrier and means for vertically moving the same; said lifting carrier having a relatively narrow, vertically elongated rigid extension protruding forwardly of the support and having an aperture laterally through the top end thereof; a pair of flexible, inextensible elements each formed at opposite ends to provide top and bottom closed loops; and a rigid hook having an apertured top end portion; and top and bottom pivot pins received laterally through the apertured top end of said extension and laterally through said apertured hook portion, respectively; said top and bottom pins having retaining means at opposite end extensions thereof freely pivotally receiving said top and bottom loops, respectively of said pair of elements normally to suspend the elements freely from the top pivot pin in embracing relation to said protruding extension, whereby the hook is swingable with the elements toward and from a retracted position against said support; said elements thereby being independently variously flexible to conform to contoured portions of the bumper and support said hook is hooked supporting engagement with the bumper.

3,309,064
WINCH MECHANISM WITH DUAL DRIVE

Wolf Muller, New York, N.Y., Eugene W. Kulesh, Wayzata, Minn., and Reginald S. Lanier, deceased, late of Bal Harbour, Fla., by Doris L. Lanier, administratrix, Wayzata, Minn.; said Muller and said Kulesh assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 18, 1964, Ser. No. 419,617
6 Claims. (Cl. 254—168)

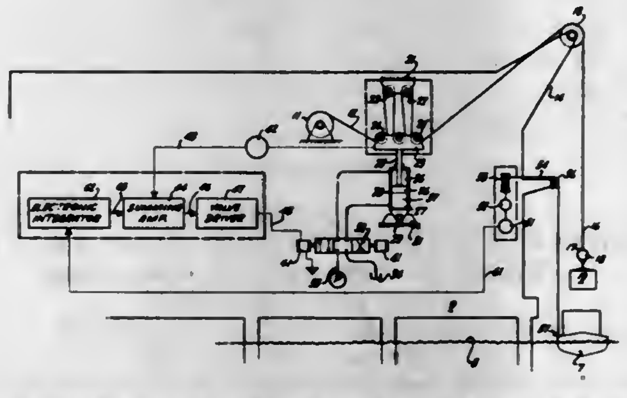
1. A winch mechanism comprising:
a first open-ended housing,
a second mutually abutting open-ended housing substantially identical to said first housing and forming an enclosed container when placed in the abutting position, said second housing having an exit aperture formed thereon,
fastening means associated with said housings for releasably joining the same,
hydraulic motor means secured to said first housing and having a motor shaft extending within said first housing,
brake means secured to said first housing and operatively engaging said motor shaft,
a reel shaft rotatably secured to said first housing,
gear reduction means operatively engaging said motor shaft and said reel shaft,
a drive shaft journaled for rotation within said first housing and having driving means secured thereto,



gear train means operatively engaging said reel shaft and said drive shaft,
a reel unit for receiving a flat cable journaled for rotation within said second housing, said reel unit including a drive socket for operatively receiving said reel shaft,
roller means journaled for rotation within said second housing between said reel unit and said exit aperture for abutting engagement with the cable as the same passes through said exit aperture, said roller having means thereon for receiving said driving means,
and spring-biased means pivotally connected to said second housing for urging the cable into engagement with said roller means.

3,309,065
TRANSLOADER

John W. Prud'homme, Kensington, James R. Robertson, Lafayette, and Richard C. Fisher, Concord, Calif., assignors to The Rucker Company, a corporation
Filed Aug. 24, 1965, Ser. No. 482,205
1 Claim. (Cl. 254—172)



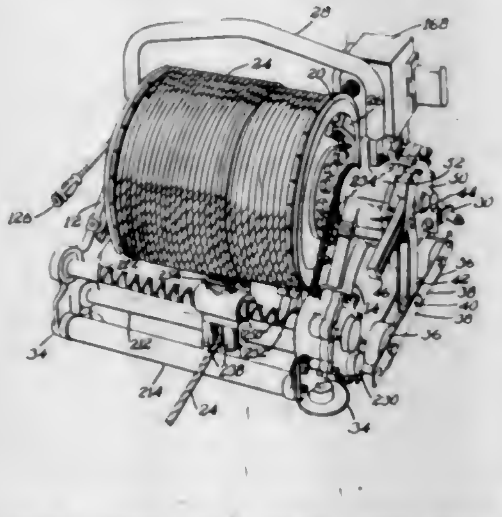
A transloader for use with a relatively stationary first support and a second support moving vertically with respect to said first support comprising a winch on said first support, a line extending from said winch and having an end disposed above said second support, a first sheave block engaging said line between said winch and said end and fastened on said first support, a second sheave block engaging said line between said winch and said end and movable with respect to said first support, a fluid-actuated expansible mechanism arranged to move said second sheave block, means responsive to relative vertical movement between said first support and said second support for controlling the operation of said expansible mechanism, said responsive means including a valve for controlling said expansible mechanism, a valve driver for actuating said valve, a summing amplifier for operating said valve driver, means responsive to the position of said second sheave block relative to the position of said first sheave block for supplying an indication thereof to said summing amplifier, an integrator, means responsive to the position of said second support relative to said first support for supplying an indication thereof to said integrator, and means for feeding the output of said integrator to said summing amplifier.

3,309,066
WINCHES HAVING OVERLOAD CONTROL MEANS

John H. Carlson, Danvers, and Alfred J. Kotek, Ipswich, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed May 6, 1965, Ser. No. 453,614

11 Claims. (Cl. 254—173)



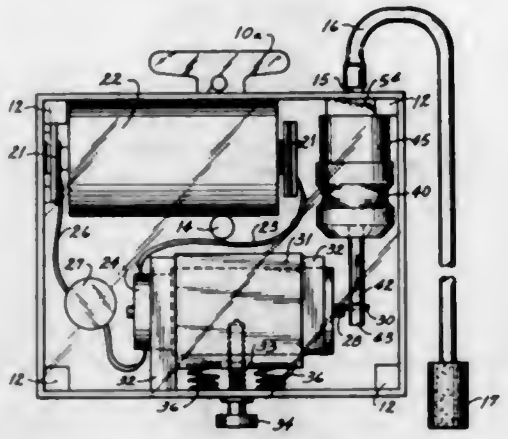
1. A winch comprising a main frame provided with a rigid cross beam, a cable-carrying drum rotatably mounted on the cross beam, motor means including a mechanically effective and electrically releasable brake for regulating rotation of the drum, speed reducer mechanism operatively connected between the motor means and the drum, a member in the drum yieldingly displaceable with respect to the beam, upon operation of said speed reducer mechanism, from a zero or low input torque position according to output torque being exerted by the drum, and a control circuit for said brake including a switch adjustably secured to the cross beam for selectively limiting said output torque, said switch being disposed for actuation by said member.

3,309,067
PORTABLE SELF-CONTAINED TANK AERATOR

William R. Brewster, 1222 Range Ave., Clearwater, Fla. 33515

Filed Apr. 22, 1964, Ser. No. 361,658

7 Claims. (Cl. 261—30)



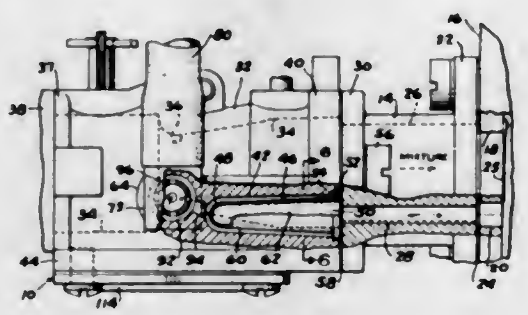
1. A portable self-contained tank aerator, including a casing, a rotary electric motor within said casing, a variable displacement air pump within said casing, air inlet means communicating with said pump for supplying air thereto, an air outlet conduit connected to said pump for delivering to a remote location air discharged by said pump, and mechanism for actuating said pump by said motor, said air pump comprising a reciprocable piston having a bifurcated driven end, said mechanism comprising an eccentrically driven pin extending outwardly of the rotary output shaft of said motor and transversely received within said bifurcated driven end, and means mounting said motor for slidable movement on an axis parallel to the axis of movement of said pump piston.

3,309,068
FUEL PUMPING AND CHARGE FORMING APPARATUS

Armin E. Nierode and Robert E. Perlewitz, Grafton, Wis., assignors to Tecumseh Products Company, Tecumseh, Mich., a corporation of Michigan

Continuation of application Ser. No. 221,147, Sept. 4, 1962. This application Aug. 21, 1964, Ser. No. 391,081

12 Claims. (Cl. 261—35)



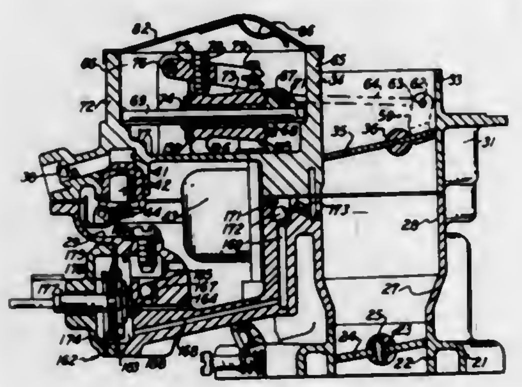
2. A combination carburetor and fuel pump for an internal combustion engine serving as a source of fluid pulsations such as occur in the engine crankcase and engine intake passageway while the engine is running, said carburetor comprising a casing having a mounting face for mounting the carburetor in fuel-air mixture supplying relation with the engine, said casing also having a fuel-air mixture passageway therethrough terminating at an outlet opening in said mounting face and a cavity extending inwardlly from a second opening in said mounting face said outlet opening of said mixture passageway and said second opening of said cavity being juxtaposed at said mounting face, said cavity being closely adjacent and generally parallel to said mixture passageway, inlet and outlet ports in said casing for connecting said cavity with a source of fuel and for supplying fuel to the fuel mixture passageway, a flexible diaphragm in the form of a closed end tube positioned in said cavity with the closed end remote from said second opening and the open end adjacent said second opening whereby when the carburetor is mounted in fuel mixture supplying relation with said engine fluid pulsations from said engine are communicated to the diaphragm through the open end thereof to cause said diaphragm to pulsate and pump fuel from the source of fuel and supply the same to the fuel mixture passageway.

3,309,069
MECHANISM FOR A CONSTANT METERING FORCE CARBURETOR

Paul E. Braun, Birmingham, and Ernest J. Obermeyer, Jr., Detroit, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed May 13, 1964, Ser. No. 367,097

6 Claims. (Cl. 261—39)



1. A carburetor for an internal combustion engine comprising an induction passage, a throttle valve for controlling the flow of combustible mixture through said induction passage, air valve means in said induction passage anterior to said throttle valve, said air valve means being movable in response to pressure variations in said induction passage for maintaining a substantially constant pressure between said air valve and said throttle valve, a fuel source, a fuel discharge circuit for discharging fuel from said fuel source into the portion of said induction passage between said air valve and said throttle valve, a fuel metering valve for controlling a rate of fuel flow through said fuel discharge circuit, a metering cam, means interconnecting said metering cam and said air valve means for simultaneous movement, follower means in engagement with said metering cam for movement upon movement of said metering cam, means interconnecting said follower means and said fuel metering valve for operating said fuel metering valve upon movement of said air valve means, said metering cam having a first portion providing a decreasing rate of fuel discharge during a first range of movement of said air valve means from a fully opened to a partially opened, normal idle position and a second portion providing a greater rate of fuel discharge than the discharge at said normal idle position when said air valve means moves to a fully closed position.

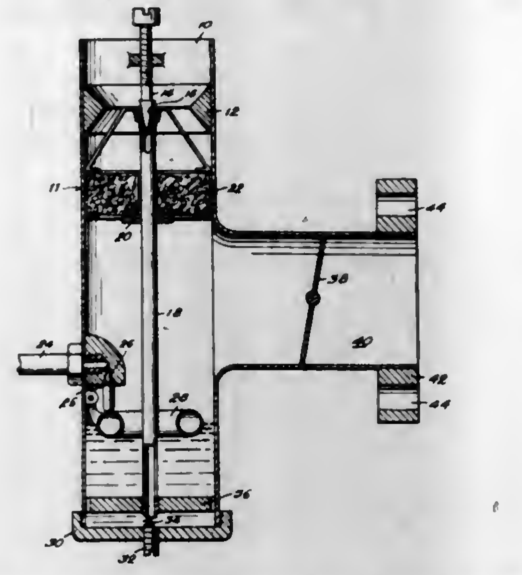
3,309,070
CARBURETOR

Curtis L. Wilson, Box 1094, Sierra Vista, Ariz. 85635

Filed Sept. 23, 1964, Ser. No. 398,815

7 Claims. (Cl. 261—60)

1. A carburetor comprising: an air intake passage; means forming a dashpot including a combination float bowl and dashpot chamber; means to admit a vaporizable fuel to said float bowl and dashpot chamber; a fuel-air mixture passage leading from said carburetor and connectable to an intake passage of an internal combustion engine; means to admit fuel from said float bowl and dashpot chamber to said intake passage; atomizer means responsive to increased fluid flow in said fuel-air mixture passage; said atomizer means comprising a fibrous atomizer mounted in said air intake passage past the location where fuel is admitted to said passage; and an immersion tube connected to the dashpot and supporting said atomizer in a basket in the air intake passage; a valve operatively connected to said immersion tube and communicating with said air intake passage to vary the quantity of fuel in proportion to the rate of air flow in the air intake passage and to minimize fuel pulsations admitted through said valve.



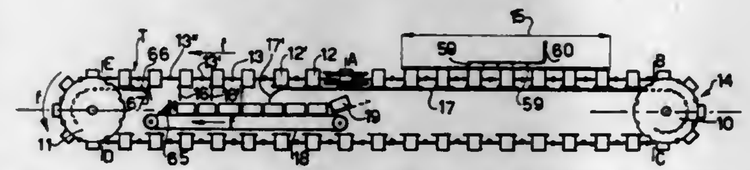
3,309,071
DEVICE FOR AUTOMATIC PREPARATION AND ACCOMMODATION OF SOLDERED SETS OF PLATES FOR STORAGE BATTERIES

Leonida Federici, Via Monte S. Michele 61, Sesto San Giovanni, Milan, Italy

Filed May 4, 1964, Ser. No. 364,639

Claims priority, application Italy, May 8, 1963, 34,792/63, Patent 695,355

4 Claims. (Cl. 263—8)



1. A device for preparation of sets of plates for storage batteries comprising an endless conveyor consisting of a plurality of uniform links forming a conveyor chain, each link comprising a box having three fixed vertical walls and being closed laterally by a displaceable fourth vertical wall, each link of said conveyor being hingedly joined together, two of said fixed walls of said box being lateral walls lying parallel to the motion of the conveyor with the third wall interconnecting said lateral walls and lying transverse to the motion of the conveyor, said conveyor further having at least two drums with horizontally disposed axes, at least one of said drums being a driving drum which exerts tension on the lower portion of said conveyor chain, means disposed along the upper path of said chain for exerting a braking force thereon, bottom means on said boxes hingedly pivoted to the leading edge thereof, means for closing said bottom of box between the driving drum and said braking point, means for inserting into said boxes sets of plates for storage batteries, and heating means disposed above said chain between said driving drum and said braking point.

3,309,072
RECUPERATOR TUBES

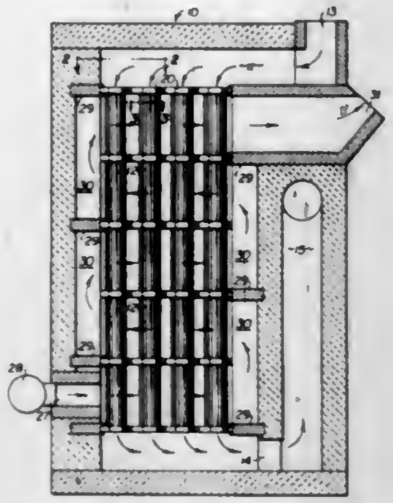
Howard B. Cummings, New Castle, Pa., assignor, by mesne assignments, to Shenango Ceramics, Inc., New Castle, Pa., a corporation of Delaware

Filed June 4, 1962, Ser. No. 199,692

4 Claims. (Cl. 263—20)

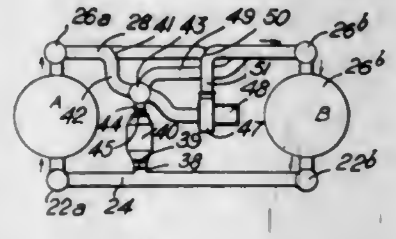
1. A refractory ceramic recuperator tube having a deeply corrugated wall of substantially uniform thick-

ness and extending parallel to the tube axis throughout the major portion of its length to a spigot end, an integral bell formed at the opposite end of the tube, the inner wall surface of the bell being of a diameter sufficient to fit the spigot end of a similar tube, and detent means carried on the inner wall of said bell to fit in the corrugations of a spigot end received therein to key the corrugations of the internal surfaces of joined tubes into alignment.



3,309,073
APPARATUS FOR HEAT TREATING SPOOLS OF OPEN-WOUND METAL STRIP

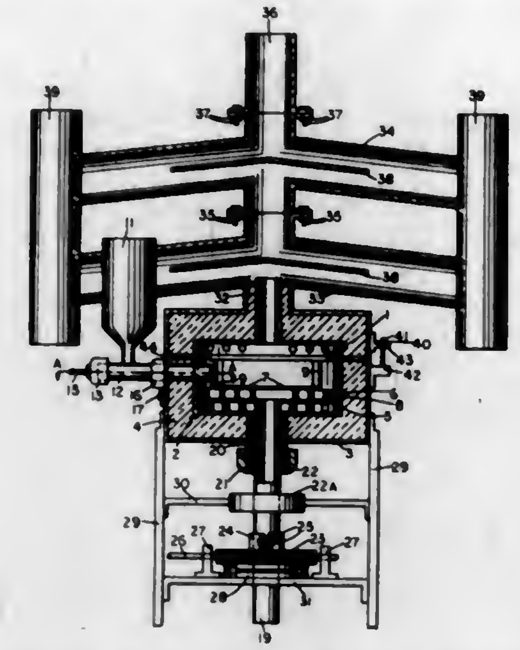
Jean Raymond Guingand, Paris, France, assignor to Societe Anonyme Heurtey, Paris, France
Filed Mar. 4, 1963, Ser. No. 262,576
Claims priority, application France, Mar. 14, 1962, 890,981, Patent 1,325,011
6 Claims. (Cl. 266—5)



1. Apparatus for heat treating open coils of metal strips in individual cells comprising, at least a pair of cells, heating means externally disposed with respect to each cell for supplying heat thereto, a pair of manifolds in each cell having orifices opening thereinto, said orifices being situated in the vicinity of respective spaces through which a gas can be internally circulated in said cell, ventilating means for internally circulating said gas in said spaces and through the turns of said open coils, and conveying means between each pair of said cells, said conveying means comprising a duct system and a blower fan having both inlet and outlet connections in said duct system, said duct system comprising, for each manifold of one cell, a connecting duct to a corresponding manifold of a second cell, one of said ducts including two branch portions for conveying gas from said one duct, a distributor coupled to said branch portions for receiving gas therefrom, said distributor being further connected to the inlet of the fan, a further branch portion coupled to the outlet of the fan and said one duct at a location between the first said two branch portions, said distributor controlling flow of gases between said branch portions and said fan, a first valve at the junction between the first branch portion and said one connecting duct and a second valve at the junction between the further branch portion and said one connecting duct.

3,309,074
DRYING, DISTILLING AND CALCINING MACHINE

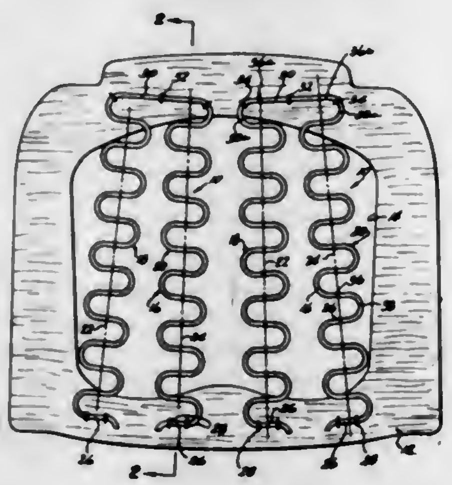
George E. Carlson, Oakville, Iowa 52646
Filed Sept. 8, 1964, Ser. No. 394,745
3 Claims. (Cl. 266—16)



1. A drying, distilling and calcining machine comprised of a furnace, heating elements located in the furnace, a screw feed protruding into the furnace, a hopper attached to the screw feed, a rotatable table in the furnace having a lip at its outer edge, a spiral in sliding contact wtih the surface of the table and the lip of the table, a discharge pipe at the center of the table, a vapor pipe connecting the furnace with condenser pipes, collecting tubes that slide onto the ends of the condenser pipes, means to turn the table and the screw feed.

3,309,075
SEAT SPRING

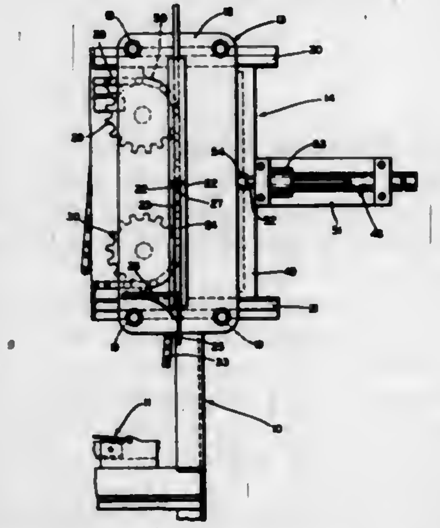
Walter V. Slominski, Lexington, Ky., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Mar. 8, 1966, Ser. No. 532,759
2 Claims. (Cl. 267—110)



1. A seating structure comprising a frame having a front side and a rear side and an opening therebetween, a pair of seat springs each of which is comprised of a single length of wire having a straight center section and a pair of straight end portions and return bent upon itself so that said end portions are spaced apart in a direction lengthwise thereof and are adjacent each other, said return bent length of wire forming a body having a pair of ends one of which is formed by said end portions of said length of wire and the other one of which is formed by said center section, said body having two side-by-side longitudinally extending sinuous portions extending between said ends thereof, each of said sinuous portions being formed by transversely extending torsion bars opposite ends of which are connected by connecting bars, a pair of said torsion bars at one end of said body forming said wire end portions and a pair of torsion bars at the opposite end of said body being formed integral with and constituting extensions of opposite ends of said center section, means mounting said springs on said frame so that the springs extend rear to front of said frame and arch across said opening, said springs being arranged in a relatively diverging relation rear to front on said frame and the sinuous portions of each spring being relatively diverged in the same direction so as to concentrate the wire in said springs at the rear area of said frame where the greatest seating load is supported.

3,309,076
GATHERING CARRIAGE WITH CUSHIONING MEANS

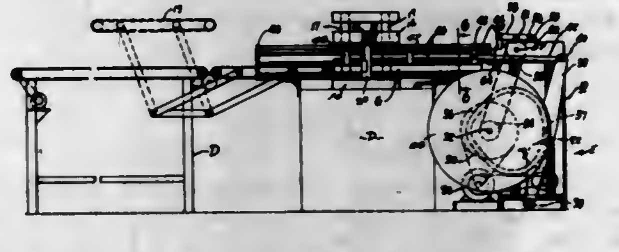
William E. Miller, Salem, Ohio, assignor to The Church-Budget Envelopment Company, Salem, Ohio, a corporation of Ohio
Filed June 25, 1965, Ser. No. 466,933
7 Claims. (Cl. 270—58)



1. Collating machine construction for collating envelopes and the like of the type in which a series of adjacent envelope positioning means are mounted aligned between a starting and a finishing end, in which a gathering carriage is mounted movable continuously along the envelope positioning means from the starting to the finishing end in one direction of movement and back to the starting end in the reverse direction of movement, in which there is means operably connected to the gathering carriage for driving the gathering carriage continuously in the directions of movement, and in which gathering means is operably connected to the gathering carriage for gathering and stacking progressively in order envelopes positioned on the series of envelope positioning means as the gathering carriage moves continuously from the starting to the finishing end in the one direction of movement and for discharging the stack of envelopes as the gathering carriage reaches the finishing end; the improvements including resilient cushioning means mounted at the finishing positioned aligned for engagement by the gathering carriage immediately prior to the gathering carriage reaching the finishing end during movement of the gathering carriage from the starting to the finishing end in the one direction of movement and remaining engaged with the gathering carriage in the latter stages of movement of the gathering carriage in the one direction of movement and during the initial stages of movement from the finishing end to the starting end in the reverse direction of movement, and the resilient cushioning means being constructed and arranged for resiliently opposing the movement of the gathering carriage in the latter stages of movement of the gathering carriage in the one direction of movement and resiliently urging the gathering carriage in the reverse direction of movement during the initial stages of movement of the gathering carriage in the reverse direction of movement.

3,309,077
FEEDING, GRIPPING AND REGISTERING MECHANISM AND METHOD THEREFOR

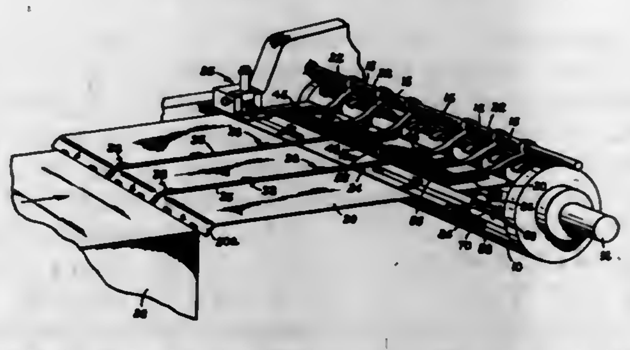
Gerald Myatt, Parma Heights, Ohio, assignor to Pearce, Incorporated, Berea, Ohio, a corporation of Ohio
Filed Oct. 1, 1964, Ser. No. 400,658
8 Claims. (Cl. 271—3)



1. In a sheet feeding apparatus, the combination comprising:
  frame means;
  conveyor means on said frame means;
  a press including a bed and a platen adjacent to one end of said conveyor means; and
  gripping means slidably mounted in said frame means for gripping at least one edge of a sheet to be fed including means gripping an edge which is parallel to the direction of feed, said gripping means feeding said sheet between said bed and said platen and including means for releasing said sheet only after said bed and said platen engage said sheet, said gripping means further including means for subsequently gripping said sheet before said bed and said platen release said sheet.

3,309,078
CONTINUOUS SHEET FEEDING DEVICE HAVING REGISTERING MEANS

Elmer Dale Nash, Dayton, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed July 1, 1964, Ser. No. 379,605
10 Claims. (Cl. 271—12)

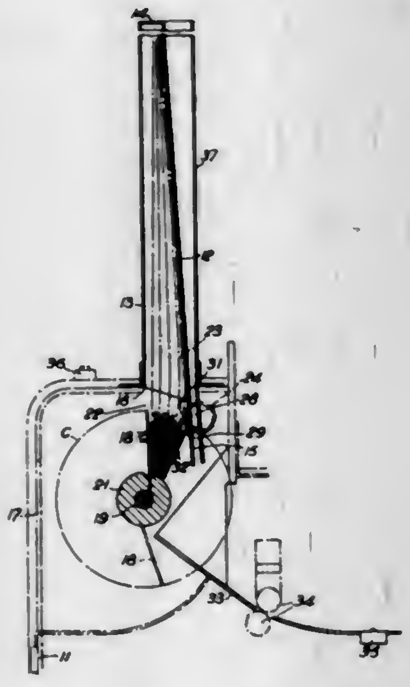


9. Sheet handling apparatus comprising means forming a supply source of sheets, mechanism for operating on the sheets individually, means defining a sheet path between said supply means and said operating mechanism, a plurality of movable sheet-retaining members arranged across said path to engage the leading edge of a sheet moving toward said operating mechanism and to retain the sheet for registration, sheet conveying means extending from said supply means to said retaining members and operative to convey sheets in stream fashion from said supply means to said retaining members, means

operative to withdraw and sheet-retaining members from said path to permit passage of the sheet to said operating mechanism, accelerating mechanism operating in timed relation to said operating mechanism to move the registered sheets to said operating mechanism while maintaining registration, said accelerating mechanism including means defining a vacuum chamber located beneath said sheet conveying means adjacent said retaining members and having an opening facing upward, at least one perforate belt member mounted across said opening to support the sheets, means for selectively connecting said chamber to a source of vacuum in timed relation to movement of said retaining members to cause the underside of registered sheets to be gripped by said belt member, and means for moving said belt member over said chamber toward said operating mechanism with an accelerating motion while said chamber is connected to the vacuum source to carry the registered sheets to the operating mechanism while maintaining registration of the sheets.

3,309,079
FEEDING OF CUT FILMS

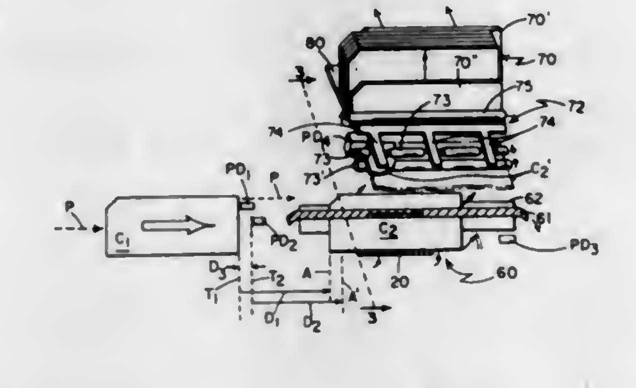
Edward Cecil Woodcock, Willesden Green, London, England, assignor to Williamson Manufacturing Company Limited, Willesden Green, London, a British company
Filed Mar. 25, 1965, Ser. No. 442,637
10 Claims. (Cl. 271—18)



1. Apparatus for the processing of flexible material in cut sheets which in addition to a main casing in which the processing proper takes place, comprises a generally vertical, open-bottomed storage compartment mounted on the main casing, an external opening being provided through which access can be obtained to the bottom of the compartment, a plurality of flaps continuously rotatable on a common axis below the storage compartment and of such length that when swung into upwardly directed position their upper edges come between the front and rear walls of the compartment but clear of the lower edge of the front wall and sufficiently below the lower edge of the rear wall, thus enabling the flaps to swing past the front wall and leaving a slot at the rear through which the flaps can be swung manually and cut sheets can be loaded manually into the compartment with the sheets alternating with the flaps, an escapement for releasing that flap nearest the front wall of the compartment from its upwardly directed position, the axis on which the flaps rotate being disposed so that gravity urges the flaps towards the front wall of the compartment and as each flap is released it continues to rotate by gravity and the cut sheet behind it is also released, a power driven feed device in front of and below the storage compartment, a guide which directs each cut sheet as it is released to the feed device, means beyond the feed device engaged by a cut sheet to actuate the escapement and thus release the next flap at an interval adequate to prevent overlap of cut sheets within the processing operations, and means enabling the escapement to be actuated when the compartment has been loaded and before any cut sheet has been released.

3,309,080
COMPUTER SUB-SYSTEM

Earl E. Masterson, Newtonville, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed May 27, 1965, Ser. No. 459,299
14 Claims. (Cl. 271—71)



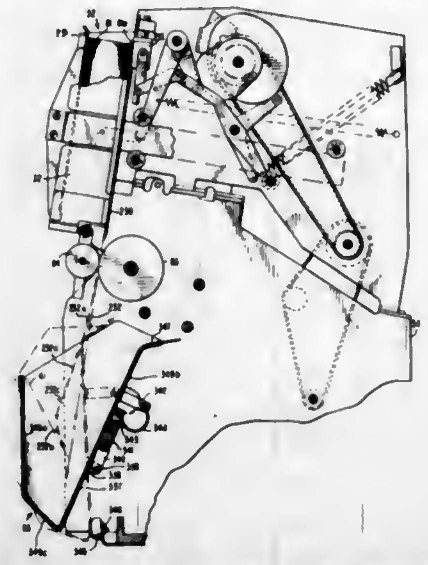
1. In a data processing system including input means for presenting computer unit records along a prescribed path and a record advancing station located adjacent said path, the combination therewith of intermediate record diversion means comprising:

record transport means for advancing said records along said path at a prescribed speed and along a prescribed reference surface adjacent said station, said transport means being adapted to engage said records resiliently so that at least a portion thereof projects transverse said path opposite said station; asynchronous ejector means disposed adjacent said surface so as to thrust said projecting portion of said records transverse to said path, "on-the-fly," and into engagement with said station; and document detector means disposed along said path intermediate said input means and said ejector means, said detector means being connected to apply control signals to said ejector means for initiation thereof in response to the passage of records adjacent said detector means.

3,309,081
TABULATING CARD READER OUTPUT HOPPER STRUCTURE

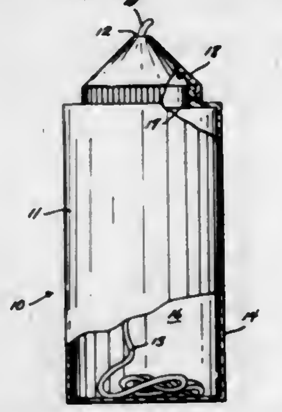
Warren T. Van Buskirk, Rochester, N.Y., assignor to Friden, Inc., a corporation of Delaware
Filed Feb. 11, 1965, Ser. No. 431,905
9 Claims. (Cl. 271—86)

1. A hopper for receiving tabulating cards fed successively from above and stacking the said cards selectively into either of two orders, each of said orders being the reverse of the other, comprising an upwardly open bin having a first panel and a second panel arranged into a general V-shape; means for maintaining said bin in either of two positions, a first said position being defined by said first panel being approximately vertical and said second panel being slanted, and a second said position being defined by said second panel being approximately vertical and said front panel being slanted, said cards being normally directed edgewise in a downward direction which, when said bin is in said first position, is toward said second panel; and means adjacent the top portion of said bin adapted to intercept and deflect said cards toward said front panel when said bin is in said second position.



3,309,082
STRIP PROJECTING SQUEEZE TOY

Frederick E. Hindman, Omaha, Nebr., assignor to H. Fishlove and Co., Chicago, Ill., a corporation of Illinois
Filed May 5, 1964, Ser. No. 364,898
4 Claims. (Cl. 272—8)

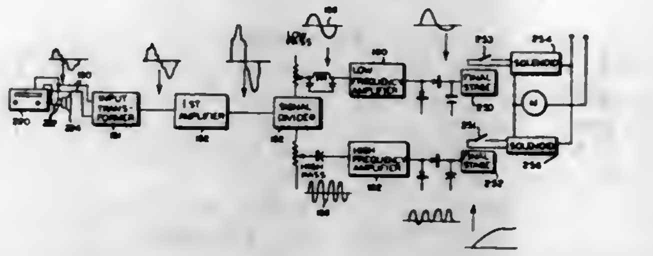


4. An amusement device comprising a hollow body having a wall with opening means therein, a thin elongated means slidably extending through said opening means and movable between a first position in which substantially all of said elongated means is hidden from view relative to the exterior of said hollow body, and a second position in which a substantial portion of said elongated means extends from said hollow body, manually operable means operatively associated with said hollow body for compressing air therewithin, said opening means being cooperable with said elongated means whereby actuation of said manually operable means to compress air within the hollow body will force a stream of said compressed air through said opening means to impinge on said elongated means with said stream of impinging air moving said elongated means from said first position to said second position.

3,309,083
SELECTIVE SOUND RESPONSIVE AMUSEMENT OR EXERCISING DEVICES

William B. George, R.F.D. 4, Box 18, St. Clairsville, Ohio 43950; John C. Hill, National Road W., St. Clairsville, Ohio 43950; David Lee Snider, R.D. 5, Cadiz, Ohio 43907; and Anthony Gumienny, 45 W. Maynard Ave., Columbus, Ohio 43202
Filed Feb. 27, 1961, Ser. No. 92,071
3 Claims. (Cl. 272—53.1)

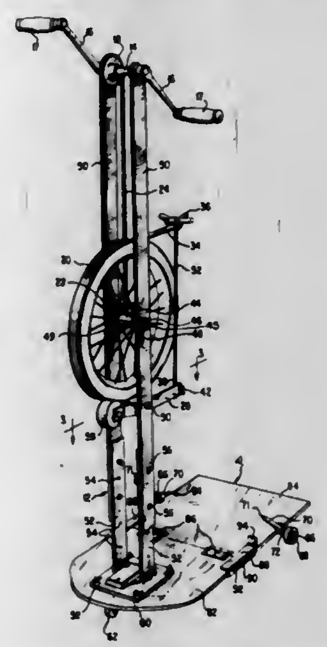
1. An electrical sound producing communications system emitting at least two sets of electric intelligence signals representative of high frequency and low frequency auditory sound respectively, circuit means responsive to said electric signals, means for effecting signal splitting of said two sets of signals, means including a relay for each set of signals, a solenoid responsive to each relay, a first and a second means for imparting the



sense of movement to a body; said first and second means being independently responsive to said first and second signals to effect a first mode of movement to said body in coordination with one portion of said intelligence signal and a second mode of movement to said body in coordination with another portion of said intelligence signal.

3,309,084
HAND CRANK-OPERATED PORTABLE EXERCISER

Henry Charles Simmons, 1070 Dawn View Lane NW., Atlanta, Ga. 30327
Filed Feb. 11, 1964, Ser. No. 344,028
1 Claim. (Cl. 272—79)



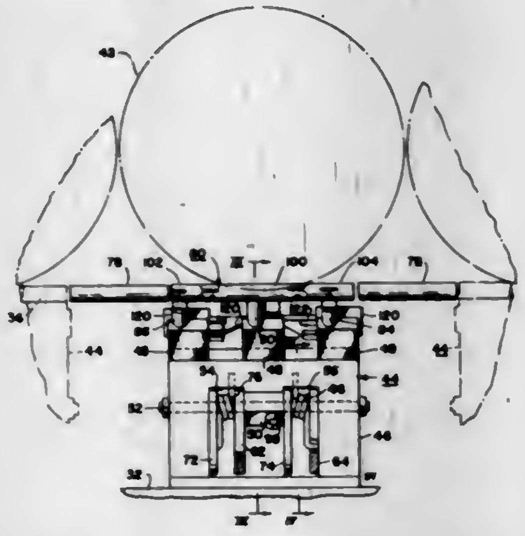
A compact portable exerciser comprising:
a lightweight, flat platform of a size to accommodate the feet of a standing operator;
a substantially vertical upright attached at its bottom only to one end of said platform;
a flywheel on said upright;
crank means for hand operation journalled on said upright above the flywheel;
gearing connecting said means to said flywheel;
retarding means mounted on said upright and engaging said flywheel;
said upright comprising a first parallel spaced pair of bars extending perpendicularly from said platform;
a second parallel spaced pair of bars supporting said flywheel, crank means and retarding means;
means for releasably securing said second pair of bars to and in alignment with said first pair of bars at one of a number of selected elevations;
said retarding means including a lever pivotally mounted between said second pair of bars;

a roller journalled on one end of said lever for engagement with said flywheel; and

means for regulating the pressure of said roller on said flywheel and including a rod rotatably supported by said upright and having a threaded portion and a nut having threaded engagement with said rod and pivotally connected with the opposite end of said lever.

3,309,085
COLLAPSIBLE RAIL SECTION FOR DIRECTING BOWLING BALL INTO STORAGE POCKET

Stephen C. Peplin, North Olmsted, and Ernest C. Webb, Bay Village, Ohio, assignors to Cleveland Trust Company, Cleveland, Ohio, trustee
Filed Aug. 5, 1963, Ser. No. 299,927
5 Claims. (Cl. 273—49)

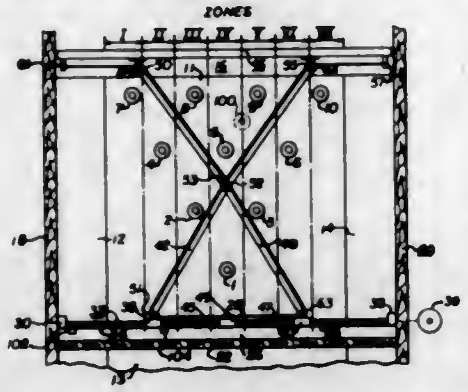


1. In combination with a bowling alley having a main ball return track terminating at a storage rack which includes a pair of spaced parallel rail devices on which the balls roll; the improvement of means for directing a ball from said rail devices into ball storage pockets adjacent the rack comprising collapsible rail sections spaced along said rail devices with each rail section being adjacent an associated one of said storage pockets, each of said collapsible rail sections comprising first, second and third rail members, the first and central rail member being pivotally connected at its opposite ends to said second and third rail members, and means pivotally connecting said second and third rail members to fixed points whereby upward movement of the central rail member will move all of said rail members into alignment with an associated one of said rail devices while downward movement of the central rail member will cause said second and third rail members to assume downwardly-extending angular positions relative to said associated rail device with the first rail member being generally parallel to said associated rail device at all times.

3,309,086
PINFALL DETECTING APPARATUS

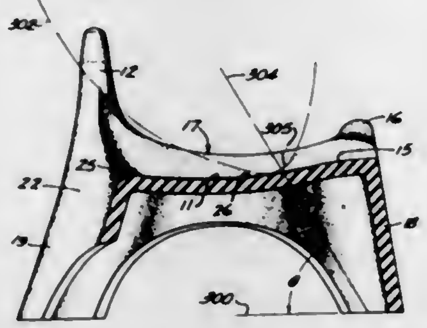
Harry A. Viets, 34301 Puth Drive, Avon, Ohio 44011, and Stephen C. Peplin, 5071 Evergreen Drive, North Olmsted, Ohio 44070
Filed Apr. 13, 1964, Ser. No. 359,147
9 Claims. (Cl. 273—54)

1. In pinfall detecting apparatus of the type in which a bar member having standing pin detecting means thereon is moved across the tops of standing pins on a bowling alley pin deck; the improvement in means for moving said member across the tops of standing pins comprising a pair of elongated members pivotally connected intermediate their ends in a scissors-like arrangement, means pivotally connecting one end of each of said elongated members to said bar member at spaced points thereon, means for moving the other ends of said elongated members toward or away from each other along a fixed straight-line path of travel at one edge of the pin deck whereby the bar member will be caused to move outwardly over the tops of the pins upon movement of said other ends toward each other and will be caused to move in the opposite direction over the tops of the pins upon movement of said other ends away from each other, and means associated with said elongated members for insuring that the bar member remains in a central location and does not change angles as it traverses the pin deck.



3,309,087
FOOTBALL KICKING TEE

Richard Emmet Cullity, La Mirada, Calif., assignor to W. J. Voit Rubber Corporation, a corporation of California
Filed Apr. 17, 1964, Ser. No. 360,584
2 Claims. (Cl. 273—55)



1. A football kicking tee comprising a main central body of the tee, said central body including a downwardly concave upper surface having a plurality of downwardly concave ribs conforming to the configuration of the upper surface positioned therealong, a single front leg and two spaced rear legs extending downwardly from said body, said front leg also comprising the front wall of said tee and said ribs being positioned in a direction substantially parallel to the front wall, two front football supports and two inwardly concave rear football supports extending upwardly from said body, and an inwardly concave rear wall interconnecting said two rear legs, the lower portions of said two rear legs extending rearwardly and beyond said concave rear wall and said rear wall also extending inwardly beyond a plane passing through the longitudinal axes of said two rear supports to facilitate kicking a football therefrom.

3,309,088
BUBBLE PIN BALL GAME

Philip H. Knott, Sausalito, Calif.
(P.O. Box 543, Crystal Bay, Nev. 89402)
Filed Feb. 12, 1965, Ser. No. 432,264
20 Claims. (Cl. 273—110)

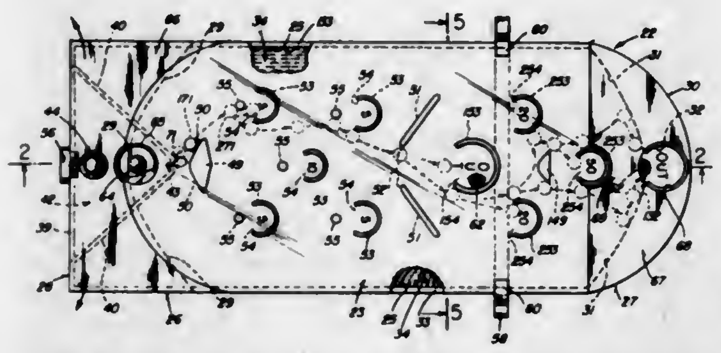
1. A game of the pin ball type employing bubbles of gaseous medium as play pieces comprising, in combination,

(a) frame means defining an elongated chamber cantable longitudinally to an oblique play position and having a lower bubble supply end section and an upper end section in such oblique position with the chamber housing a body of liquid of appreciable quantity,

(b) said frame means including an elongated see-through panel closing the top of the chamber and having an inside planar face cantable longitudinally with the chamber, and a chamber bottom closing means

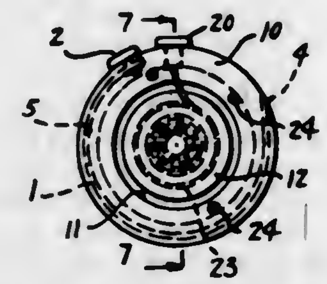
(c) gaseous medium supply means located at the lower end of said frame means and communicating with the bubble supply end section of the chamber through a relatively small passage for successive delivery to the body of liquid of segregated relatively small quantities of the gaseous medium each to form a separate play piece bubble in the liquid that will travel upward longitudinally along the obliquely canted inside face of said see-through panel, and

(d) means defining a plurality of bubble-catching and score-indicating pockets distributed in the chamber and mounted adjacent the inside face of said see-through top panel beneath the surface of the liquid in the chamber for selectively catching and holding bubbles that travel upwardly along said face.



3,309,089
GOLFER'S AID INCLUDING BALL MARKER, PLUMB, AND TURF REPAIR TOOL

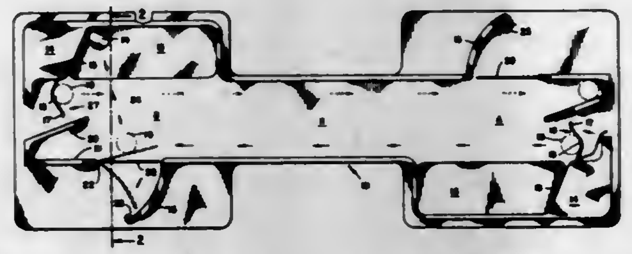
Robert V. Doyle, 5124 Southwest Ave., Sacramento, Calif. 95824
Filed Nov. 6, 1964, Ser. No. 409,460
5 Claims. (Cl. 273—32)



1. A golfer's accessory comprising in combination, a circular hollow case having opposed faces and an annular wall, a recess on one face of said case, a flat marker removably secured in said recess, a spring biased winding drum in said case, a nylon line wound on said drum, said annular wall having a first opening through which one end of said line extends, a first knob on said one end of said line normally seating in said opening, said case having a peripheral slot in one edge thereof, a resilient elongated normally straight member adapted to be coiled interiorly of said annular wall, a stud on one end of said member extending through said slot, a second knob on said stud, a second opening in said annular wall adjacent the other end of said member through which said other end of said member is extended upon movement of said second knob, and hence said stud in said slot, a point on said other end of said elongated member, and guide means in said casing for directing said point through said second opening to the exterior of said case when extended.

3,309,090
SPRING PROPELLED MAGNETIC DISK GAME DEVICE

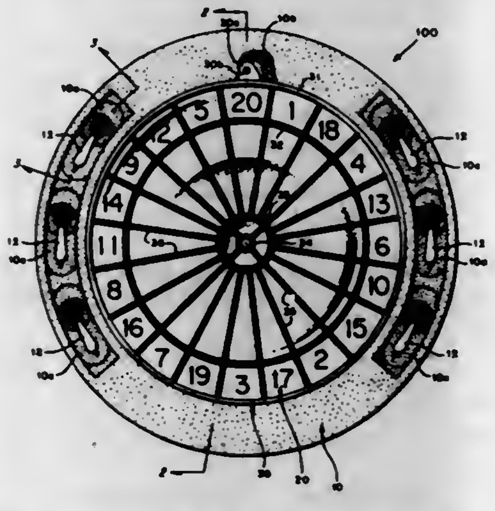
Edouard M. Sire, 69 W. 9th St., New York, N.Y. 10011
Filed Apr. 7, 1964, Ser. No. 357,968
3 Claims. (Cl. 273—89)



2. A game comprising a substantially flat, elongated board, a playing area at each end of said board and an elongated runway connecting the areas, a propelling arm mounted in each area so as to be respectively diagonally opposite each other, each of said propelling arms being fabricated of a ferrous, flat spring material and being formed with a substantially central concave portion, a disk fabricated of permanent magnet material and being of a size whereby said concave portion may receive and seat said disk by magnetic attraction, said propelling arm being bendable and adapted to forcefully fling said disk along a trajectory straight forwardly along one side of said runway when said propelling arm is bent and is thereafter released from its bent position, and a batting arm at each end of said board, each of said batting arms comprising a spring member one end of which is fixedly mounted in respect to said board, and a U-shaped catching enclosure at each end of said board for receiving a propelled disk if it is not struck by said batting arm and diverted from its trajectory, the respective trajectories of said disk when propelled by the diagonally opposite propelling arms being along opposite sides of said runway, and said batting arms being diagonally opposite each other at the respective ends of the board.

3,309,091
DARTBOARD WITH DIVIDING LATTICE

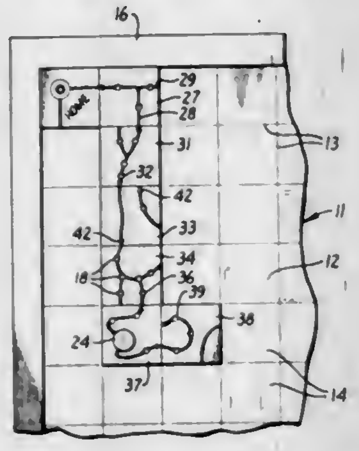
Ernest Haecker, 8014 Bridle Road, Philadelphia, Pa. 19111
Filed Dec. 7, 1964, Ser. No. 416,415
4 Claims. (Cl. 273—102)



1. A dart board comprising (a) a relatively thin circular disk target section having a central aperture, and (b) a

cage comprising a plurality of radially extending arms, a plurality of concentric circular elements, a rim, each of said arms joined to said rim and at least one of said concentric circular elements, said concentric circular elements and said arms lying in a plane, said rim being extended perpendicularly to said plane to form a flange, said flange snugly surrounding the circumference of said target section disk, and said cage being affixed to said target section by a coating of adhesive on touching surfaces, and (c) a base of foamed plastic, said base having an annular shape and a central aperture extending from one surface thereof only partly through said base, and a concentric smaller diameter circular aperture extending from the other surface thereof and intersecting first circular aperture to form a step, and said target section and cage being seated on said step and affixed thereto with adhesive.

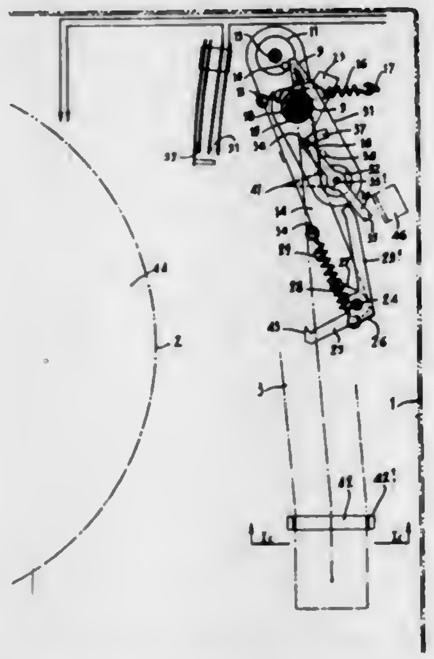
3,309,092
COMPETITIVE ROAD BUILDING AND TRAVEL GAME
Floyd W. Hardesty and Irvin W. Schenck, both of 40 Steiner St., San Francisco, Calif. 94117
Filed June 17, 1963, Ser. No. 288,310
3 Claims. (Cl. 273—134)



1. A competitive, combined road building and travel game comprising, in combination, a playing board having a substantially square playing surface marked into a plurality of smaller squares and having starting and finishing positions indicated thereon, a plurality of thin road building tiles having a square-shaped surface and matching size to said smaller squares of the playing surface and adapted to be positioned successively on the board to define sections of a roadway thereon, each of said tiles containing indicia on one square face thereof to define at least one segment of a roadway extending between two different positions on the perimeter of the tile, each road segment being formed to terminate in one of the eight positions one-third of a side distant from the nearest corner, with each road segment terminating at a different position than its start, and at least some of the tiles having two road segments terminating on the same side, said road segments being provided with stop positions, and indicators representative of the respective players and adapted to be placed selectively on the stop positions of the road segments of the tiles.

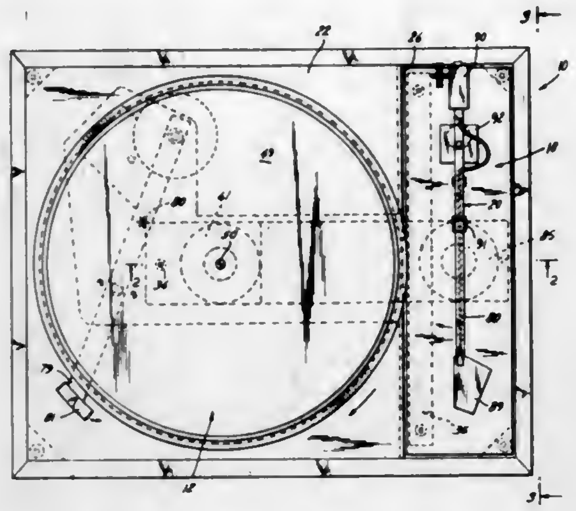
3,309,093
DEVICES FOR AUTOMATIC RETURN OF THE PICK-UP ARM TO THE NORMAL POSITION IN RECORD PLAYERS
Marcel Jules Hélène Staar, 4 Ave. Sylviane, Rhode-Saint-Genese, Belgium
Filed Mar. 10, 1964, Ser. No. 350,754
Claims priority, application Belgium, Mar. 12, 1963, 629,470
11 Claims. (Cl. 274—15)

1. A record player having a base, a turntable mounted on said base and a pick-up arm pivotally mounted on the base for horizontal and vertical movement, said player comprising first means coupled to the arm for common horizontal pivotal movement therewith, second means pivotally mounted on the base for horizontal movement and engageable with the pick-up arm and the first means, third means engaged with said second means and with the pick-up arm for acting on the latter to selectively enable raising and lowering thereof, said pick-up arm having a normal rest position and an operative position for playing a record on the turntable, said pick-up arm being horizontally pivotable in a direction away from the turntable to produce pivotal movement of the second means to a lock position through the action of the first means, spring means acting on said second means and energized by the movement of the second means to said lock position, switch means for controlling the turntable drive positioned relative to the second means for being activated by the second means in said lock position, said first means releasing the second means from the lock position thereof when the pick-up arm is at the end of a record on the turntable, said spring means acting on said second means and the pick-up arm engaged therewith to return the latter towards its normal rest position, and abutment means for engaging the pick-up arm and retain the same in an angular position corresponding to said rest position, said third means being engaged by the second means when the pick-up arm is initially moved away from the turntable to permit free vertical pivotal movement of the pick-up arm, whereas when the second means is released from its lock position it acts on the third means to raise the pick-up arm and prevent downward movement thereof, said second means further acting on the third means when the pick-up arm has been returned to said angular position to cause lowering of the pick-bp arm to its rest position in a state in which the arm is free to be raised when a subsequent record is to be played.

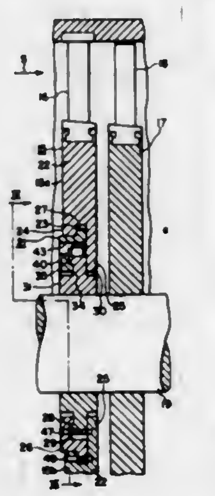


3,309,094
PHONOGRAPHIC TURNTABLE ASSEMBLY
Walter O. Stanton, Laurel Hill Road, Laurel Hollow, N.Y. 11101
Filed May 18, 1964, Ser. No. 368,015
6 Claims. (Cl. 274—39)

1. An improved phonograph turntable assembly for record discs comprising: a supporting base; a platen for supporting a record disc; a bearing assembly supporting the platen for rotary motion; a mounting member for the bearing assembly having a longitudinally extending arm engaging and supporting a portion of the bearing assembly adjacent one end thereof and having a transverse arm adjacent its opposite end, said mounting member being supported on said supporting base at three triangularly arranged spaced points by means of resilient supports extending between the mounting member and the supporting base adjacent the said one end of the mounting member and adjacent respectively opposite ends of the transverse arm; and a tone arm mounted adjacent one end of the transverse arm of the mounting member.

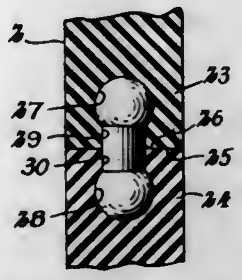


3,309,095
SEALING ARRANGEMENT FOR A ROTATABLE SHAFT
James M. Gate, Broomall, and David A. Hart, Jr., Marple Township, Springfield, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 11, 1964, Ser. No. 350,987
4 Claims. (Cl. 277—154)



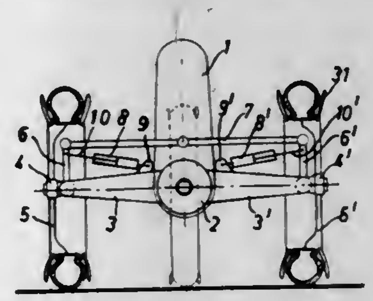
1. A sealing arrangement for a rotatable shaft comprising
- an annular array of arcuately segmental seal members disposed in encompassing relation with said shaft,
- an annular partition member disposed in encompassing relation with said shaft and divided diametrically into semi-circular halves,
- said partition member having a centrally disposed annular recess,
- a retaining ring having an annular flange portion received in said recess,
- said retaining ring being diametrically divided into semi-circular halves and jointly with said partition member defining an annular keyway,
- said seal members having radially outwardly extending keying portions received in said keyway, and
- means for biasing said seal members in radially inwardly direction into sealing relation with said shaft.

3,309,096
SPLIT CIRCULAR SEALING ELEMENT
Egons Inka, 317 N. Menard, Chicago, Ill. 60644
Filed Feb. 26, 1964, Ser. No. 347,490
1 Claim. (Cl. 277—222)



A circular sealing element for effecting a seal between substantially concentric cylindrical surfaces comprising a length of resilient deformable sealing material of circular cross-section adapted to be inserted between said surfaces with its ends in abutting relation to one another, and means for connecting and holding said ends in said abutting relation, said means comprising a pin having a substantially cylindrical central section and spherical ends, and the ends of said length of material each having a socket adapted to receive a spherical end of said pin and a cylindrical opening connecting the socket to the exterior, the diameter of the cylindrical opening being smaller than the diameter of the socket, and the combined lengths of the cylindrical openings in said ends being greater than the length of the cylindrical central section of the pin.

3,309,097
AXLE ARRANGEMENT FOR CROSS COUNTRY VEHICLES
Fritz Seeber, Helmbach, near Elmstein, Germany, assignor to Karl Peschke, Kapitalverwaltungs-Gesellschaft Karl Peschke m.b.H., Zweibrucken, Pfalz, Germany, a firm
Filed Aug. 6, 1965, Ser. No. 477,813
2 Claims. (Cl. 280—6.11)

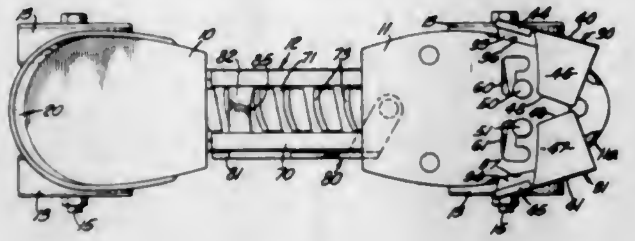


1. Axle arrangement for cross country vehicle having a longitudinal axis and of the type having at least one transverse axle pivotable about said longitudinal axis, and having at least one pair of wheels each including a hub shank and a pivot axle extending in the direction of travel, each said pivot axle supporting a wheel by its hub proximate an end of said transverse axle, each said hub shank having a guide arm extending at an angle relative to the shank, a linkage rod pivotally mounted at its mid portion on said vehicle and having opposite ends each pivotally connected to one said guide arm, hydraulic means operable to move said shanks and wheels relative to said transverse axle and a pendulum system operative to control said hydraulic means, said pendulum system comprising a first pendulum having a pivot axis parallel to and in vertical alignment with the longitudinal axis of said vehicle and a second pendulum disposed in upright position as a counter weight for said first pendulum having a pivot support above said pivot axis and said pivot support each having a rigid arm extending at a right angle therefrom, and a coupling bar pivotally connecting said rigid arms, said hydraulic means comprising two double acting cylinders each connected at one

end to said transverse axle and at the other end to one said guide arm and a control valve having a fluid intake opening for each double acting cylinder, a slide member movable to open and close said openings and a rod connected to one said pendulum for moving said slide member.

3,309,098
SKATE

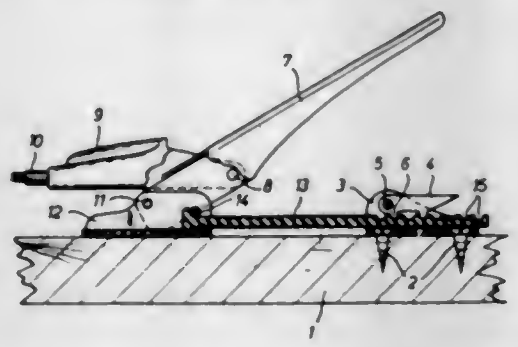
Merle S. Parker, Torrance, Calif., assignor to The Toy Development Center, Inc., Beverly Hills, Calif., a corporation of California
Filed Oct. 13, 1964, Ser. No. 403,494
5 Claims. (Cl. 280—11.26)



1. A skate comprising the combination of a heel plate and a toe plate, ground-contacting means attached to said plates, and means for connecting together said plates for longitudinal adjustment of the spacing therebetween, said means comprising a channel member on one of said plates and provided with a plurality of spaced abutment members, and a lever pivotally connected to the other of said plates and carrying a cam member adapted to be inserted between a pair of said abutment members for locking said plates against relative motion therebetween, said abutment members being provided with mutually parallel portions, each inclined at an angle in positions to be connected by said cam member for movement of said channel member and its plate toward the other of said plates.

3,309,099
FRONT TIGHTENER FOR SAFETY SKI BINDINGS

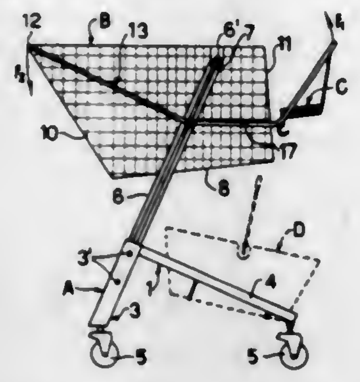
Hannes Marker, Alpspitzstrasse 37, Garmisch-Partenkirchen, Germany
Filed May 8, 1964, Ser. No. 365,983
Claims priority, application Germany, May 18, 1963, M 56,886
8 Claims. (Cl. 280—11.35)



1. A front tightener for ski bindings comprising a first bracket which is adjustable in the longitudinal direction of the ski, a tightener lever pivotally mounted on said first bracket, heel engaging means pivotally connected to said lever for adjustment thereby in the longitudinal direction of the ski, a retaining bracket secured to said ski at a point spaced forwardly of said first bracket, an adjusting element attached to and extending forwardly of said first bracket and being supported at its forward end by said retaining bracket, said adjusting element being flexible, and means for securing the adjusting element in interlocking engagement with said retaining bracket.

3,309,100
CARRIAGE FOR THE CONVEYANCE OF GOODS IN BULK, CHIEFLY INTENDED FOR SUPERMARKETS AND THE LIKE

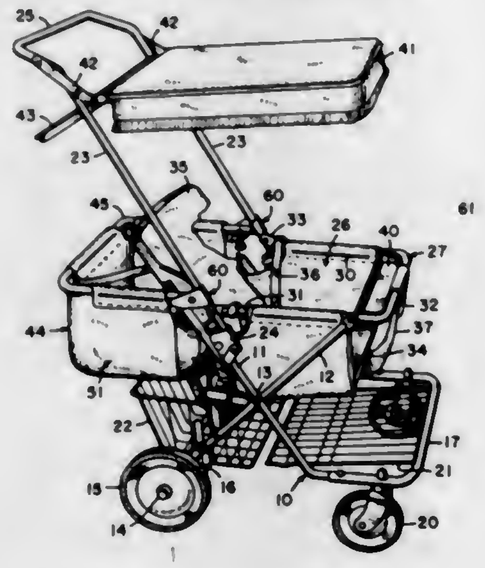
Renzo Barbuti, Milan, Italy, assignor to Karl Steiner S.p.A., Milan, Italy, a company of Italy
Filed Oct. 5, 1964, Ser. No. 401,355
Claims priority, application Italy, Oct. 10, 1963, 20,710/63, Patent 706,540
6 Claims. (Cl. 280—33.99)



1. A carriage for conveying goods in bulk, chiefly in supermarkets, comprising a wheeled body, two rearwardly sloping uprights secured to the body symmetrically of the axis of said body, an upwardly flaring basket having a horizontal cross-section of a rectangular shape and a longitudinal vertical cross-section in the shape of a trapezoid, said basket having a normally vertical rear end and an upwardly sloping forward end, pivots connecting points of the basket near the upper longer base of said trapezoid with the upper ends of the uprights and round which said basket is adapted to be angularly shifted between a substantially horizontal position and a downwardly directed collapsed position, and a yoke-shaped handle controlling the carriage and including two arms pivotally secured to the corresponding ends of the front transverse upper edge of the basket and extending as a guard outside the corresponding longitudinal sides of the basket and a rear section interconnecting said arms clearly to the rear of the basket and adapted to be operated by the user.

3,309,101
TANDEM TWO-SEAT STROLLER

Cletus Romay, St. Louis, Mo., assignor to Welsh Co., St. Louis, Mo., a corporation of Missouri
Filed Feb. 8, 1965, Ser. No. 430,810
8 Claims. (Cl. 280—47.38)

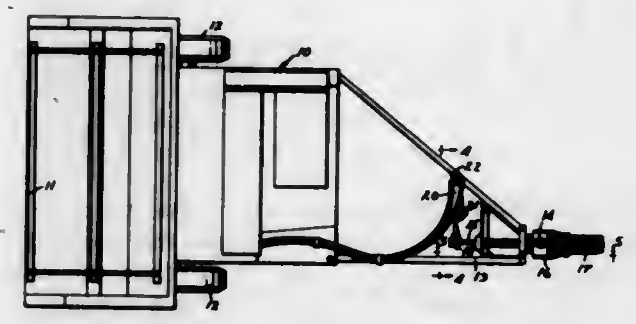


1. A child's seat adapted for attachment to a support member, comprising:
(a) a frame including side arms,
(b) a seat carried by the frame,

(c) a bracket having a flange extending outwardly therefrom pivotally connected to each side arm,
(d) the bracket flange and the end of the side arm providing a space therebetween to receive the support member, the bracket and side arm being relatively pivoted to reduce the space and to clamp the support member between the bracket and the end of the side arm, and
(e) adjustable means interconnecting the bracket and side arm to adjust the space between the bracket and the end of the side arm for accommodation of the support member and to maintain the frame in position to carry a child in the seat.

3,309,102
STABILIZING WHEEL APPARATUS

John H. Doneen, Farmington, Wash. 99128
Filed May 12, 1965, Ser. No. 455,093
3 Claims. (Cl. 280—80)

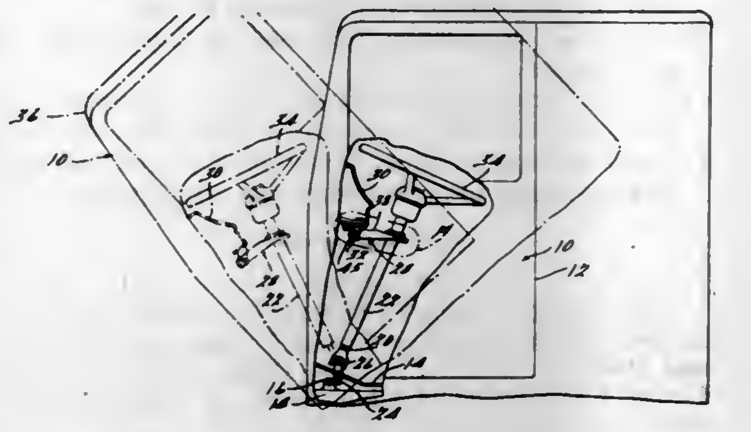


1. A stabilizing wheel apparatus for farm implements having a rigid mobile framework and forwardly positioned ground engaging wheels, comprising:
a bracket pivotally mounted on the framework at the rear end thereof for rotational motion about a longitudinal axis parallel to the intended direction of movement of said framework relative to the ground;
a wheel support pivotally mounted on said bracket for free pivotal motion about an upright axis perpendicular to an intersecting said longitudinal axis;
a ground engaging wheel carried on said wheel support for rotation about a central transverse axis positioned rearwardly of said upright axis;
means operatively connected between the framework and said bracket to selectively fix the angular position of said bracket relative to the framework about said longitudinal axis;
said last-named means comprising:
a radially extended crank arm fixed to said bracket;
and an extensible hydraulic cylinder assembly pivotally connected at its respective ends to said crank arm at a location radially spaced from said longitudinal axis and to the framework, both connections being about axes parallel to said longitudinal axis.

3,309,103
STEERING COLUMN SUPPORT MECHANISM

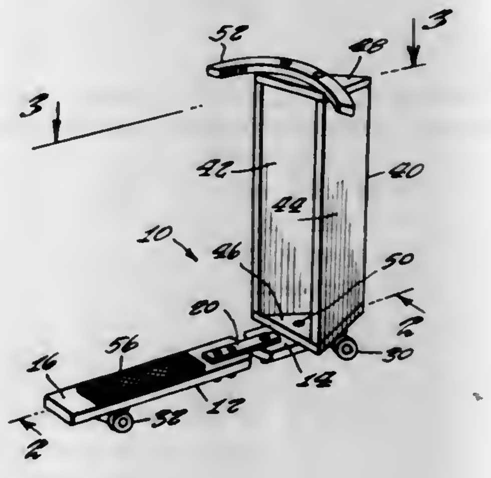
Gilbert H. Newbury, Utica, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed July 7, 1965, Ser. No. 470,084
15 Claims. (Cl. 280—87)

1. In a vehicle having a tiltable steering column mounted in a passenger compartment, support means secured to an interior portion of said compartment and supportingly engaging said steering column, said support means comprising a support assembly having deflectable bushing means contacting said steering column and retainer means engageable with but normally spaced from said steering column so as to allow said steering column to swivel within said support assembly in a plane extending substantially longitudinally of said passenger compartment while limiting sliding axial motion of said support assembly relative to said steering column during tilting of said steering column.



3,309,104
SCOOTER

Abe Gold, 1630 New York Ave., Brooklyn, N.Y. 10010
Filed July 6, 1965, Ser. No. 469,687
1 Claim. (Cl. 280—87.04)

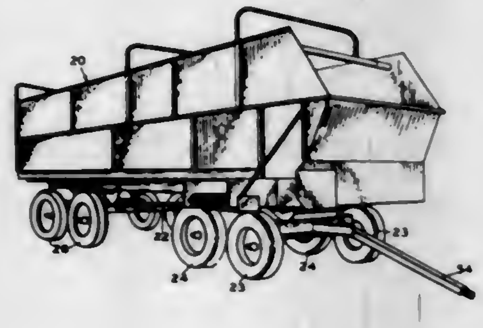


A scooter comprising:
(a) a two-part platform including a front part and a rear part,
(b) upper and lower flat strap elements secured respectively to the upper and lower sides of the rear part longitudinally medially thereof and extending forwardly beyond the front end of said rear part,
(c) said upper and lower straps being of equal width and length and of a width less than the width of said rear and front parts,
(d) said front part having its rear end portion positioned between the extended portions of said upper and lower strap elements,
(e) a vertical bolt means extending through the extended portions of said upper and lower flat strap elements and through said rear end portion of said front part providing a vertical axis about which said front part turns to effect steering of the scooter,
(f) said front and rear parts being co-planar, with the rear end of the front part and the front end of the rear part being reversely arcuate and closely adjacent to each other,
(g) a pair of wheels mounted on the underside of each said front and rear parts supporting the same in a horizontal plane with the pair of wheels on the front part lying forwardly of the forward terminal end of said strap elements,
(h) a vertical column comprising a pair of forwardly

converging vertical walls, a bottom wall and a top wall all rigidly secured together,
(i) said column bottom wall being seated on said front part and secured thereto by fastener means,
(j) a handle bar fixedly positioned on the top wall of said column,
(k) a foot engaging pad having a non-slip upper surface secured to the upper side of said rear parts, and
(l) said vertical column being open at its rear end and providing an article receiving compartment.

3,309,105
STEERING APPARATUS FOR VEHICLES

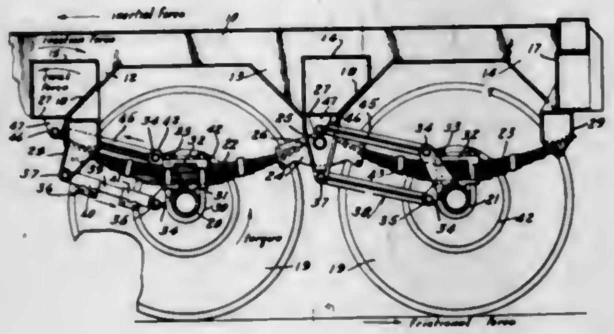
Charles F. Clark, Sandusky, Everett L. Messenger, Galion, and Harry E. Arter, Crestline, Ohio, assignors to The Cobey Corporation, Galion, Ohio, a corporation of Ohio
Filed Oct. 22, 1964, Ser. No. 405,772
6 Claims. (Cl. 280—99)



1. A vehicle comprising, in combination, body means; frame means supporting said body means; wheel means connected to said frame means including a first and second pair of front wheels disposed in tandem alignment on each side of said body means and one or more pair of rear wheels in alignment with but spaced from said front wheels; and steering means connected to said frame means and including a tongue portion for steering said vehicle; a longer lever pivotably mounted on said frame means and including a front end pivotably connected to said tongue and a rear end; a shorter lever pivotably connected to said frame and including a first end pivotably connected to said rear end of longer lever and a second end; and means connecting said second end of said shorter lever to said second pair of front wheels.

3,309,106
SUSPENSION FOR VEHICLE BODY

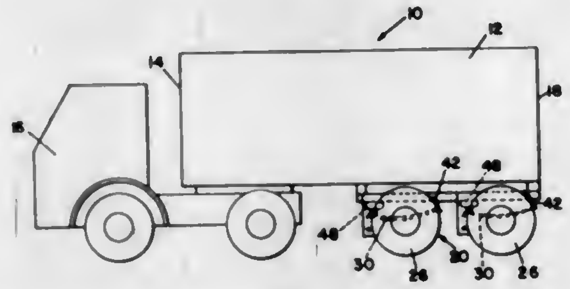
John R. Spence, San Pedro, Calif., assignor to Pike Trailer Co., Los Angeles, Calif., a co-partnership
Filed Jan. 19, 1965, Ser. No. 426,646
9 Claims. (Cl. 280—104.5)



1. Suspension means for a vehicle body, comprising:
(a) a body frame structure including a pair of transverse extending torsion members in spaced apart relation longitudinally of the vehicle body, each of said members having its opposite ends rigidly anchored; and
(b) a transversely extending axle spring supported from said torsion members in a position therebetween at points on said torsion members inwardly spaced from their anchored ends, said axle mounting road engaging wheel structures at its ends.

3,309,107
AIR-SINGLE LEAF SPRING WHEEL SUSPENSION FOR TRAILER

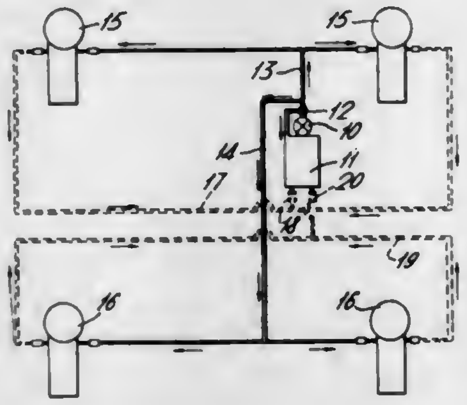
George Chieger, Birmingham, Mich., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 14, 1963, Ser. No. 323,705
8 Claims. (Cl. 280—124)



1. In a vehicle having a body including a rear end portion and a front portion adapted for connection to a tractor, a spring suspension for a wheeled unit comprising a chassis connected to the rear end portion of the body, an axle mounting wheels and extending transversely beneath said chassis, elongated leaf springs extending longitudinally of said chassis, means suspending said axle centrally from said leaf springs, means mounting the rear end of each leaf spring on said chassis for longitudinal flexing movement relative thereto, a rigid bridging member extending transversely beneath said chassis, means clamping said bridging member on said leaf springs intermediate their front ends and said axle, and air bags interposed between said bridging member and said chassis.

3,309,108
VEHICLE SUSPENSION SYSTEMS

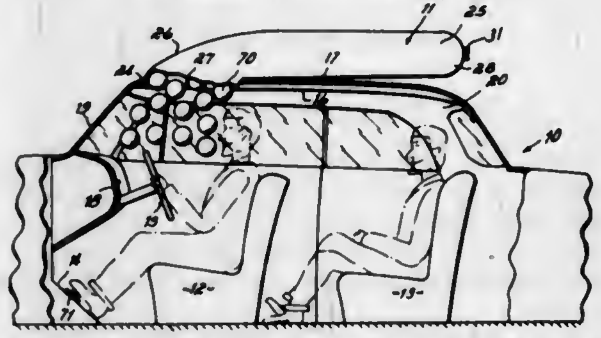
Douglas Bryan Wilkins, Solihull, and Eric David Hopkins, Birmingham, England, assignors to Girling Limited, Birmingham, England, a British company
Filed July 31, 1964, Ser. No. 387,555
Claims priority, application Great Britain, July 31, 1963, 25,354/63; Mar. 3, 1964, 8,867/64
2 Claims. (Cl. 280—124)



1. An hydro-pneumatic suspension assembly for connection between an axle and a frame of a vehicle comprising a cylinder having an end closure, a piston reciprocable in said cylinder and forming with the cylinder and with said end closure a working chamber, a pressure chamber to receive gas under pressure, means defining a passage intercommunicating said working chamber and said pressure chamber, a valve operating member, means permitting reciprocating movement of said piston relative to said valve operating member, means yieldably holding said valve operating member relative to said piston, means in said end closure forming an inlet to and an outlet from said working chamber, a valve controlling said inlet and outlet and engageable by said valve operating member, said valve including a passage interconnecting said working chamber and said outlet and being closable by said valve operating member on engagement with said valve, resilient means biassing said valve to a first position in which said inlet is closed and said outlet is open, and said resilient means yielding on engagement of said valve by said valve operating member on entry of said piston into said working chamber to allow said valve to move into a second position in which said outlet is closed and said inlet is open, said means yieldably holding said valve operating member yielding as said valve approaches said second position and when said piston moves relatively to said valve operating member.

3,309,109
PROTECTIVE DEVICE

Richard A. Baughman, Cincinnati, Ohio
(2305 Kenwood Drive, Boulder, Colo. 80302)
Filed Feb. 23, 1965, Ser. No. 434,312
9 Claims. (Cl. 280—150)

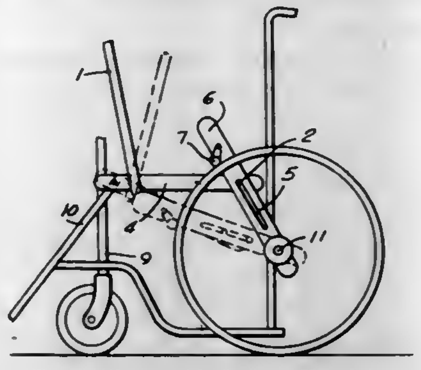


1. Means for restraining matter movably disposed within a compartment against sudden impact comprising,
a vessel adapted to withstand internal pressure and having a discharge port, a releasable closure sealingly fitted to said vessel to close said discharge port,
release means engaging said releasable closure and restraining said closure against pressure exerted thereon from within said vessel, means for actuating said release means to release said closure substantially entirely upon actuation thereof, thereby opening said port, and
a large plurality of free volumetrically compressible resilient elements within said vessel, said elements having a total volume at atmospheric pressure conditions which is many times the internal volume of said vessel but being compressed by gas pressure within said vessel to conform to the volume of said vessel, the said elements being of a size and shape permitting them to move freely through said port when said closure is released therefrom,
the compression of said gas and said elements within said vessel being sufficient that upon release of said closure said elements are expelled from said vessel.

3,309,110
OCCUPANT-PROPELLED WHEELCHAIR

Donald L. Bulmer, Westminster, Calif.
(5052 500 Ave. E., Oak Harbor, Wash. 98277)
Filed Sept. 13, 1965, Ser. No. 487,097
5 Claims. (Cl. 280—242)

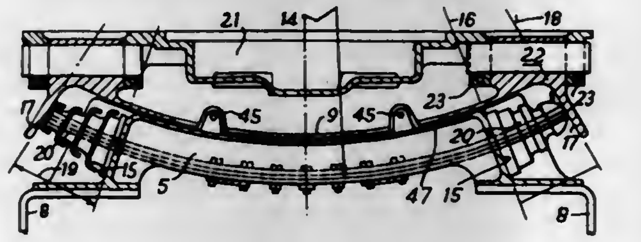
1. A device to be mounted upon the axle and support structure of a wheelchair allowing an incapacitated person to apply force to the wheel of a wheelchair comprising:
(a) a horizontal member mounted upon the wheelchair support structure;
(b) a center pin mounted upon the horizontal member;
(c) a propelling bar attached to the horizontal member to which the incapacitated person applies a force;
(d) a drive bar member having an elongated aperture along its longitudinal axis for engaging said center pin and allowing said center pin to travel generally downward, and having a pivotal mounting aperture at its lower end for mounting the drive bar member upon the axle of the wheelchair; and



(e) a reversible dog mounted upon said drive bar member and coming into contact with the wheel of the chair to transmit the applied force to the wheel.

3,309,111
SEMI-TRAILER COUPLING

Alexandre Vaugoyeau, Saint Marcel, Marseille, France
Filed Nov. 16, 1964, Ser. No. 411,362
Claims priority, application France, Sept. 3, 1964, 20,679
2 Claims. (Cl. 280—438)



1. In a semi-trailer coupling for a tractor-trailer vehicle comprising:
(a) a cradle for mounting on a tractor vehicle;
(b) a seating for coupling to the trailer and engageable with said cradle and slidable angularly with respect to said cradle about a common axis;
(c) interengaging means on said cradle and seating controlling longitudinal movement thereof;
(d) first spaced pressing elements on said cradle; and
(e) second spaced pressing elements on said seating,
the improvement comprising:
buffer blocks of resiliently compressible material having a reduced cross sectional shape along the line of thrust, disposed between said pressing elements to resist relative angular movement of said cradle and seating, such that under increasing compression successively greater cross sections come into action.

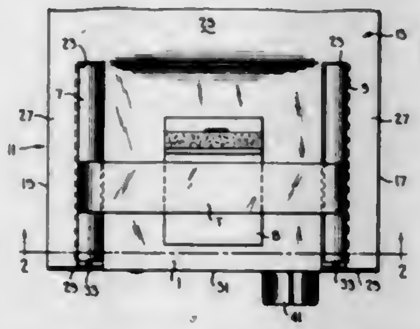
3,309,112
AUTOGRAPHIC DEVICE

Lionel J. Kaiser, Creve Coeur, Mo., assignor to Universal Match Corporation, Ferguson, Mo., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 497,150
4 Claims. (Cl. 282—1)

1. An autographic device for use in transfer-writing on wedge-shaped articles such as match books comprising

a housing having a top provided with a horizontal portion toward one end constituting its rearward end and an inclined table portion angled downward toward its other end constituting its forward end, said inclined table portion being adapted for reception of a wedge-shaped article thereon with the top surface of the article generally horizontal and generally in the same plane as said horizontal portion of the top of the housing,

horizontal guide rollers extending endwise of the housing in front-to-rear direction at opposite sides of said inclined table portion having their upper portions generally flush with said horizontal portion of the top of the housing,



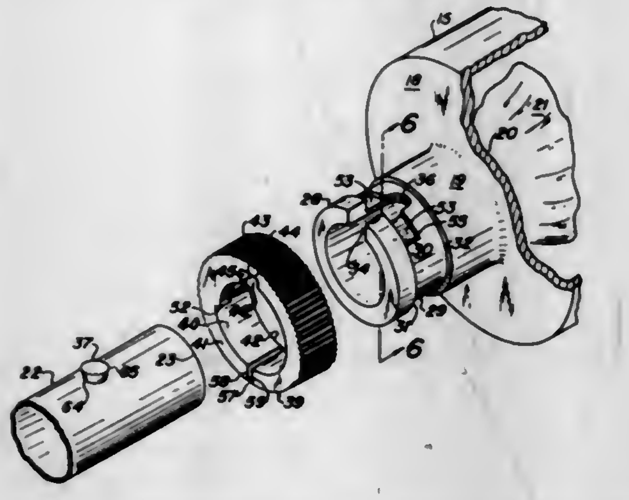
means in the housing for holding a supply roll of pressure-transfer tape for being withdrawn from the roll and trained around said guide rollers extending horizontally across said inclined table portion and above the latter,

a take-up spindle for said tape in said housing,

and means on the outside of the housing at the front for turning said take-up spindle.

3,309,113
COUPLING FOR SUCTION CLEANER ATTACHMENTS

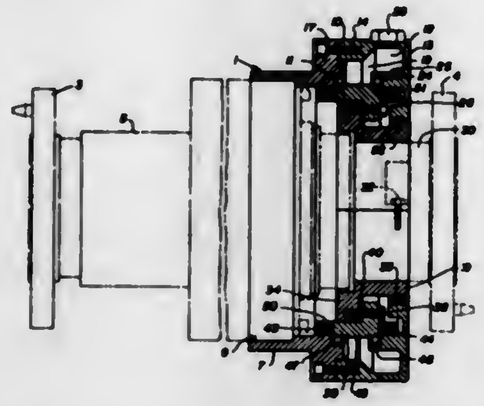
Justice H. Beach, Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 529,767
2 Claims. (Cl. 285—7)



1. A coupling adapted for use with a suction cleaner comprising:
- (a) a tubular member,
- (b) an elongated member telescoped into one end of said tubular member,
- (c) an externally facing recess in said tubular member adjacent said one end,
- (d) a locking collar mounted in said recess for rotation in opposite directions to locked and unlocked positions,
- (e) said collar being split longitudinally of said tubular member so that the ends of said split may be spread apart to telescope said collar over said one end of said tubular member into said recess to assemble said collar in the latter,
- (f) means defining a slot in said tubular member extending from said one end thereof into said recess and terminating in an end wall integral with said tubular member, and arcuate recesses formed in the bottom wall of said externally facing recess on opposite sides of said slot, said arcuate recesses having end walls which limit the rotation of said collar in both directions,
- (g) a locking lug on said elongated member movable through said slot and transversely of said recess into abutting engagement with said end wall on said tubular member during telescopic connection of said members,
- (h) means defining a groove in said collar extending longitudinally of said members and adapted to receive said lug when said collar is in its unlocked position,
- (i) a cam surface on said collar depending into said external recess and arranged at one side of said groove adjacent said one end of said tubular member,
- (j) said collar when rotated to its unlocked position having its groove in alignment with said slot for receiving said lug on said elongated member and upon rotation of said collar to its locked position said cam surface engaging said lug to effect movement of said elongated member inwardly of said tubular member with said lug abutting said end wall on said tubular member.

3,309,114
ROTATABLE JOINT FOR A WAVEGUIDE

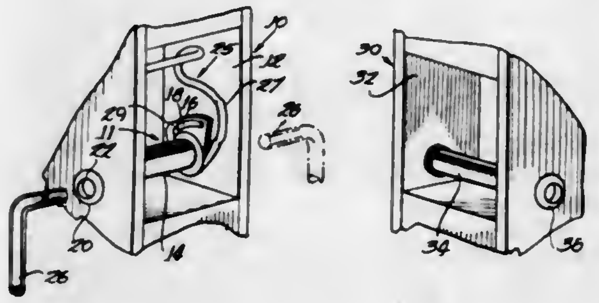
Geoffrey William Morton, Bells Corners, Ontario, Canada, assignor to Her Majesty the Queen in right of Canada as represented by Canadian Patents and Development Limited, Ottawa, Ontario, Canada
Filed May 28, 1964, Ser. No. 371,045
Claims priority, application Canada, May 29, 1963, 876,716
1 Claim. (Cl. 285—11)



A rotatable joint for a waveguide comprising interconnected, relatively rotatable male and female joint members, said female member including a first, annular joint member, a second, annular joint member including a base, said second joint member being secured to said first joint member by means of bolts threaded into said base, an annular chamber coaxially located in said second joint member, a liquid filler plug and a vent plug in said second joint member providing access to said chamber and a liquid at least partially filling said chamber, an annular chamber inlet coaxial with said chamber and disposed radially inwardly from the outermost wall of said chamber and defined by portions of said first and second members, a first recess in said first joint member adjacent said inlet and a second recess in said second joint member adjacent said inlet, and bearings, one being mounted in each of said first and second recesses; said male member including a third annular joint member provided with an annular flange and an annular groove, an O-ring mounted in said groove and sealingly engaging said groove and a portion of said second member, a fourth annular joint member secured to said annular flange by means of bolts threaded into said flange, said fourth annular joint member extending across said annular chamber inlet and having a pair of grooves, said pair of annular grooves containing O-rings in sealing relationship with said fourth joint member and said first and second members, said fourth joint member being rotatably mounted in said bearings, and means maintaining said male and female joint members in assembled relationship.

3,309,115
MECHANISM FOR REMOVABLY SECURING PANELS

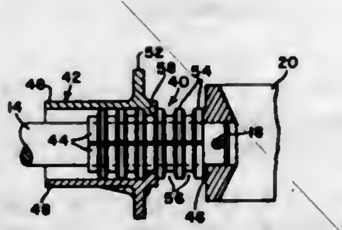
Alfred C. Lauger, Pleasant Rise,
Brookfield, Conn. 06804
Filed Mar. 16, 1964, Ser. No. 352,104
14 Claims. (Cl. 287—20.927)



11. Fastening means for removably securing together two panel members each of which has an opening for said fastening means in an end thereof and inner faces formed by said opening comprising, anchor means secured hidden within the opening in one of said panel members, eccentric means secured hidden within the opening in the other one of said panel members, said eccentric means comprises a pair of actuator means each having a pivot, a pawl radially extending from said pivot and a shaft extending between said actuators and secured to said pawls so that it is offset from said pivot to provide an eccentric movement to said shaft, latching means having one end thereof secured to said eccentric means, and rotating means for rotating said eccentric means and said attached latching means through their arc of excursion, said latching means engaging said anchor means and being tensioned to resiliently and forcibly urge said ends of said panel members together, said latching means having means thereon for engaging said inner faces of said two panel members to forcibly urge said two panel members in lateral alignment.

3,309,116
SPLIT SLEEVE ASSEMBLY

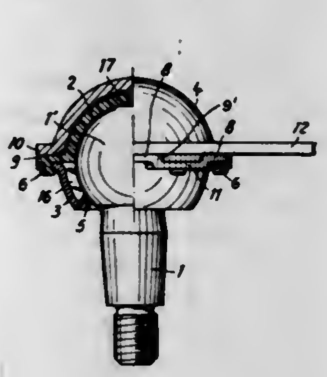
Glen A. Johnson, Waterloo, and Arvid G. Waschek, Cedar Falls, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Sept. 10, 1964, Ser. No. 395,514
1 Claim. (Cl. 287—52.04)



A selective stop assembly for mounting on a rod or the like, comprising; inner and outer concentric, relatively axially adjustable sleeve structures, said inner structure including complementary radially separable rod-embracing parts of generally arcuate cross-section and said outer structure including complementary radially separable parts of generally arcuate cross-section embracing said inner structure; means interengageable between the exterior of the inner structure and the interior of the outer structure for setting said outer structure in selected axial positions relative to the rod-embracing inner structure comprising a plurality of uniformly axially spaced apart abutments on one structure and a complementary interfitting abutment on the other structure to provide a first series of axial adjustments of uniform increment, said uniformly axially spaced abutments being arranged in a set that is axially offset in different amounts from the opposite ends of said one structure by having the first abutment of said set located on one end of said one structure and the last abutment of said set spaced from the other end of said one structure so that said one structure may be turned end-for-end relative to the other structure to thereby provide a second series of axial adjustments; and releasable securing means cooperative between the outer structure parts for securing said parts together in embracing relationship to the rod-embracing inner structure.

3,309,117
BALL-AND-SOCKET JOINTS

Rudolf Gottschald, Meererbusch, Germany, assignor to Langen Viktor, sole responsible partner of the firm A. Ehrenreich & Cie, Dusseldorf-Oberkassel, Germany
Filed Nov. 15, 1962, Ser. No. 237,802
Claims priority, application Germany, Nov. 25, 1961
E 22,016
5 Claims. (Cl. 287—87)



1. A ball-and-socket joint assembly comprising in combination
- a stud,
- a ball head connected to said stud,
- a housing extending around said ball head and consisting of an upper housing part and a lower housing part,
- a bearing liner mounted in said housing between said ball head and said housing,
- said upper housing part and said lower housing part having a radial outwardly extending flange,
- at least one housing flange having a plurality of projections facing the other housing flange,
- a circumferential flange on said bearing liner extending radially between said upper and lower housing flange,
- said circumferential flange having a plurality of recesses for receiving said projections on said one housing flange,
- said projections on said one housing flange extending through said recesses into contact with said other housing flange.

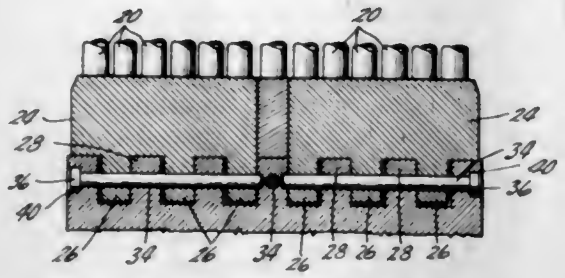
3,309,118

COUPLING JOINT FOR NUCLEAR REACTOR CONTROL ROD ARRANGEMENT

Andrew J. Anthony, Tariffville, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed May 24, 1965, Ser. No. 458,330

1 Claim. (Cl. 287—103)



A coupling joint for joining a pair of members which are of similar cruciform transverse configuration with the four laterally extending branches of the cruciform being centrally joined, said members being axially aligned with their cruciform branches co-planar, the branches of one of said members being provided at one extremity with a plurality of depending projections with each branch having at least two such projections and with the projections being in spaced relation, an extremity of the branches of the other member being similarly formed with the projections on said one and other members being so related that they intermesh, said one member being comprised of a material the co-efficient of thermal expansion of which is substantially greater than that of said other member, said members being adapted to be subjected to wide temperature variations between a lower and an upper limit, the projections forming part of said one member and disposed intermediate the projections of said other member having their innermost region juxtaposed the outermost region of the projections of said other member when said members are at a temperature corresponding to said lower limit and, when at this temperature, the outer region of the projections of said one member being spaced from the inner region of the projections of said other member a sufficient distance to accommodate the thermal expansion that takes place when the temperature of said members is raised from said lower limit to said upper limit with the outermost region of the projections of said one member being adjacent the innermost region of the projections of said other member when at said upper limit, aligned openings in said projections, pin means snugly disposed in and extending through said aligned openings of each of the branches from the outer region inward and the pin means being welded in place whereby a joint or optimum strength is produced with the width of the intermeshed projections being the maximum permissible and still accommodate the required differential thermal expansion.

3,309,119

BOLT BLOCK FOR FASTENING EXPANDED METAL

David Phillips, Dahlgren, Va., assignor to the United States of America as represented by the Secretary of the Navy

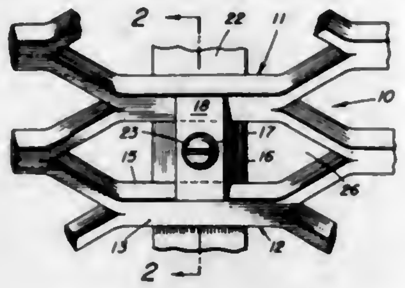
Filed June 23, 1964, Ser. No. 377,428

2 Claims. (Cl. 287—189.35)

1. Fastening means for removably securing an expanded metal plate to a support member, which plate is characterized by grid elements inclined to the plane of the plate and which grid elements define substantially uniform apertures in the plate, comprising:

a retaining block having a cross-sectional shape defined by extending the upper surface of a rhomboid beyond the obtuse vertex of said upper surface to form the hypotenuse of a right triangular projection, said block being insertable into an aperture of the plate defined by the grid elements thereof;

whereby when said retaining block is inserted into an aperture of the plate and seated therein, it abuts the grid element portions of the plate which define the extremities of such aperture in substantially surface to surface relationship, and said retaining block upper surface lies substantially flush with the plate upper surface.



3,309,120

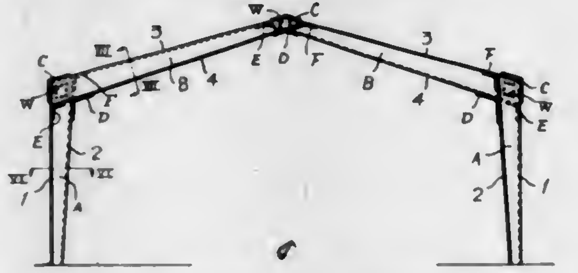
BUILDING CONSTRUCTION STRUCTURAL MEMBERS JOINT

Goichi Wada, Fukuoka, Japan, assignor to Kabushiki Kaisha Kyusyu Ataka Consultant, Fukuoka, Japan, a corporation of Japan

Filed Nov. 15, 1963, Ser. No. 324,077

Claims priority, application Japan, Nov. 22, 1962 (utility models), 37/70,001, 37/70,002

1 Claim. (Cl. 287—189.36)



In a building construction, a joint between two metallic members each having a Z section with first and second flanges protruding in opposite directions from a central web, said joint comprising the intersection of end portions of said two members in overlapping configuration with the webs of said members lying adjacent one another and the flanges of said members lying in opposing relationship relative to the web center line of the adjacent members, and means to secure said members comprising four strap members each of which has a plurality of apertures therein, said apertures being in alignment with apertures in said flanges, a first strap member being secured to the first flange of both said first and second members, a second strap member being secured to said second flanges of both said first and second members, a third strap member being secured to the first flange of said first member and the second flange of said second member, and a fourth strap being secured to the second flange of said first member and the first flange of said second member.

3,309,121

KEYWAY TYPE CONNECTOR

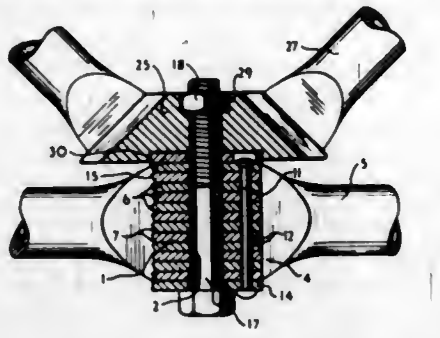
Arthur E. Fentiman, Stittsville, Ontario, Canada, assignor to Triodetic Structures Limited, Ottawa, Ontario, Canada

Filed Aug. 7, 1964, Ser. No. 388,154

3 Claims. (Cl. 287—189.36)

1. A connector for slidingly receiving the formed ends of divergent members with angularly spaced keyway slots open to at least one end, said connector comprising a

plurality of disks arranged in a stack, each of said disks being preformed with peripheral keyway slots corresponding one with the other, and a turned tooth formed on the periphery of each disk to facilitate the positioning of the disks, one with the other, and to hold the same against angular turning relative to each other, and means to secure the disks together in stacked position.



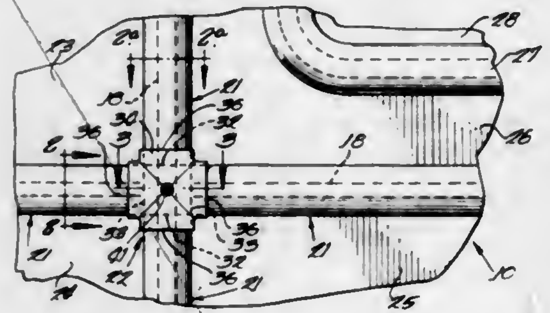
3,309,122

LOCKING DEVICE FOR MOULDINGS

William Van Der Sluys, Homewood, and Alexander Traska, Chicago, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed Jan. 4, 1965, Ser. No. 422,895

9 Claims. (Cl. 287—189.36)



1. A moulding-joint locking device comprising a cover provided with a central portion having a centrally disposed aperture and four radial arms, a screw bolt extending through said aperture having a head portion on the exposed side of said cover, and a latch bar having a threaded aperture midway between the opposite ends thereof, said screw bolt engaging said threaded aperture and at least partially rotating said latch bar relative to said radial arms.

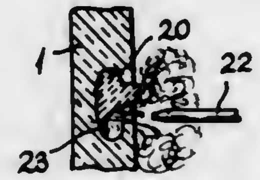
3,309,123

ATTACHMENT OF INSERTS AND FIXING DEVICES TO PIECES OF VITREOUS SILICA, GLASS AND SUCH MATERIAL

Frederick J. Edwards, Jesmond, Newcastle-upon-Tyne, England, assignor to The Thermal Syndicate Limited, Wallsend, England, a British company

Filed May 21, 1963, Ser. No. 282,013

6 Claims. (Cl. 287—189.365)



4. A method of mounting a fastener in vitreous material, comprising the steps of pressing a quantity of vitreous material in plastic state about an insert member to at least partially embed the same therein; destroying at least a portion of said insert member whereby to obtain in the vitreous material a cavity; and introducing a fastener into said cavity.

3,309,124

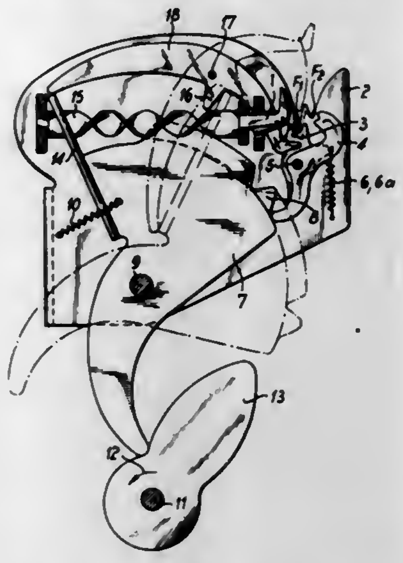
METHOD AND DEVICE FOR JOINING TWO OPPOSINGLY DIRECTED YARN ENDS BY A WEAVER'S KNOT

Stefan Furst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany

Filed Jan. 18, 1965, Ser. No. 426,716

Claims priority, application Germany, Jan. 18, 1964, R 37,002

5 Claims. (Cl. 289—1.5)



1. The method of joining two opposingly directed yarn ends by a weaver's knot with the aid of a tie beak, which comprises first engaging only one of the yarn ends with the tie beak and forming an annular loop in the yarn end, then additionally engaging the other yarn end with the tie beak and knotting both yarn ends to a weaver's knot by rotation of the beak.

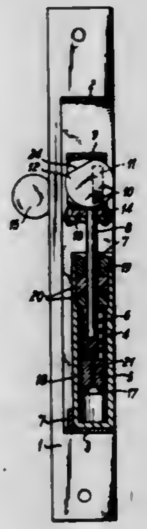
3,309,125

AUTOMATIC DOOR LOCK

Herwig Neveling, 148 Honnetalstrasse, Dellinghofen, Westphalia, Germany

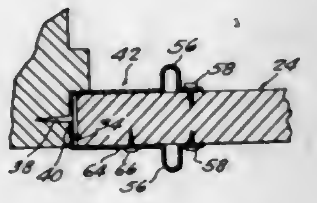
Filed Sept. 22, 1964, Ser. No. 398,314

1 Claim. (Cl. 292—78)



An automatic door lock comprising means defining a chamber, a piston mounted for rectilinear reciprocal movement in said chamber means, a piston rod coupled to said piston and having an end portion projecting outwardly of said chamber means, an eccentric, means coupling the eccentric to the piston rod end portion, said eccentric being mounted for movement between overcenter and non-overcenter positions whereby said piston rod is moved in at least one direction, said coupling means including a member carried by said piston rod end portion, said member having a portion in underlying relationship to said eccentric, pivot means coupled to said eccentric and mounting said eccentric for swinging movement about a fixed axis, a latch carried by said pivot means whereby movement imparted to said latch in a first direction causes said eccentric to move to the overcenter position thereof while movement imparted to said latch in a second opposite direction causes said eccentric to move to the undercenter position thereof, means for reducing the frictional contact between said member and said eccentric, and said reducing means being defined by resilient means underlying said eccentric.

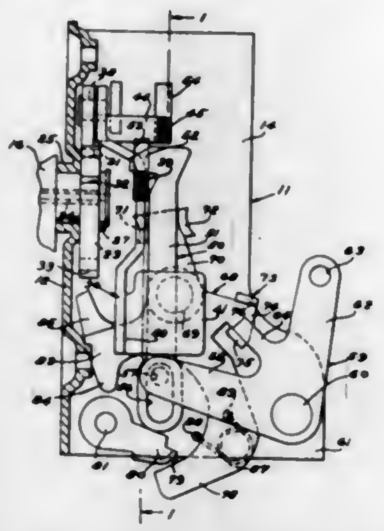
3,309,126
CHILD-SAFE DOOR CATCH ASSEMBLY
Clarence E. Schnette, 817 S. Lormann Circle,
Longwood, Fla. 32750
Filed Aug. 28, 1964, Ser. No. 392,795
2 Claims. (Cl. 292—175)



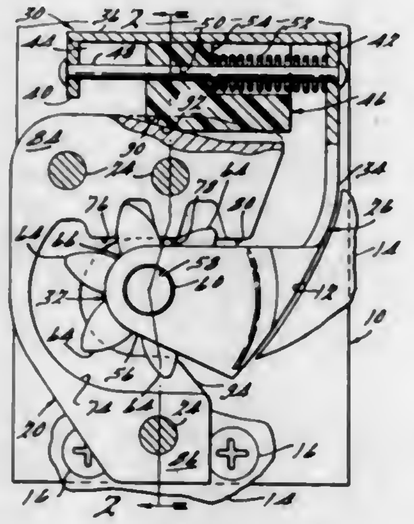
1. The combination with a door frame having a jamb face, a door hinged in the frame and having a free edge adapted to confront said jamb face in the closed position of the door, a catch pin mounted on the jamb face and having a projecting head, a catch mounted on the door in line with the catch pin head, said catch member comprising a resilient U-shape having a cross member lying along and normally spaced outwardly from the free edge of the door and arms engaged with opposed surfaces of the door, said arms having free inner ends, said cross member being formed with a catch pin head receiving opening, said cross member normally being in a plane containing the catch pin head and being adapted to be flexed by initial contact with said head to provide for retentive reception of the head into said opening as the door is closed, means securing the arms of the catch to the related surfaces of the door at the inner ends of the arms, and said arms including compressible and resilient lateral loops intermediate their ends, said loops being adapted to be manually compressed to effectively contract the arms and move the cross member toward the free edge of the door for disengaging the opening of the cross member from the catch pin head.

3,309,127
AUTOMOBILE DOOR LOCK
Joseph Pickles, Dearborn, Mich., assignor to Ferro Manufacturing Corporation, Detroit, Mich., a corporation of Michigan
Continuation of application Ser. No. 302,910, Aug. 19, 1963. This application Jan. 28, 1966, Ser. No. 530,762
17 Claims. (Cl. 292—216)

14. A door lock comprising a support, a latch pivotally mounted on said support, a detent member mounted on said support for movement into and out of position to hold said latch in a door latching position, an outside-operated actuator mounted for movement on said support to move said detent member out of said latch-holding position, a further member mounted for movement on said support in a direction to move said detent member out of said latch-holding position, a locking contactor movably mounted by one of said members and movable with the same in force-transmitting engagement with said detent member to shift the latter out of said latch-holding position, said contactor being engageable by said outside-operated actuator to transmit thrust from the latter to said detent member to shift said detent member out of said latch-holding position, and means for shifting said contactor into and out of a position in which it is engaged by said outside actuator to transmit thrust from the latter, whereby said contactor does not transmit thrust from said outside-operated actuator to said detent member when said contactor is out of its said last named position.

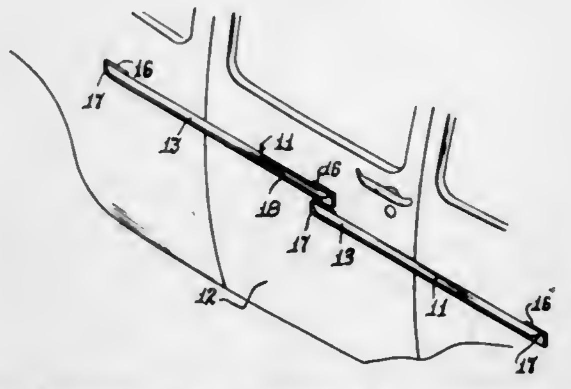


3,309,128
DOOR LOCK MECHANISM
Culver R. Nash, Royal Oak, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 352,801
1 Claim. (Cl. 292—280)



In combination, a rotatable latch device mounted on the edge wall of a swinging door, said latch device comprising a rotary latch gear having circumferentially spaced radiating substantially uniform gear teeth, a shaft portion projecting from an axial end of said gear, said shaft portion projecting in a direction so as to have said latch gear located generally between said projecting shaft portion and said edge wall of said swinging door, a support arm carried by said latch device and extending about said latch gear so as to provide a bearing support for said projection shaft portion, a striker for said latch device comprising a body of generally C-like configuration, a generally medially located slot-like opening formed in said body for the reception therein of said rotary latch gear, said slot-like opening providing upper, lower and end surfaces with said end surface forming a generally closed end in said body and joining said upper and lower surfaces, a plurality of tooth-like projections formed integrally with said body and depending downwardly from said upper surface for coaction with said gear teeth, a wall formed on one side of said body integrally therewith and integrally joining said tooth-like projections to each other, and a second slot-like opening formed through said wall permitting the reception therethrough of said rotary latch gear, said second slot-like opening being of a length and width which results in a portion of said wall extending continuously along each of said surfaces in a manner so as to be generally normal to said surfaces, said wall portion and said surfaces generally defining a chamber for the reception and containment of said rotary latch gear, projecting shaft portion and a portion of said support arm, and said wall portion presenting a continuous abutment against which said gear teeth can abut in order to prevent separation of said rotary latch gear and said striker in a direction axially of said rotary latch gear, said continuous wall portion being effective to abut all of said gear teeth which are engaged with said tooth-like projections as well as such of said gear teeth as are in close proximity to said end surface and said lower surface.

3,309,129
DETACHABLE VEHICLE DOOR BUMPER
Harry Newman, 2231 E. 67th St., and Richard Newman, 7256 S. Euclid Ave., both of Chicago, Ill. 60649
Filed Mar. 30, 1965, Ser. No. 443,939
1 Claim. (Cl. 293—1)



A bump protector for automobiles comprising: an elongated rigid bar, magnet means connected to an external surface of said bar, said magnet means projecting outwardly from said external surface and adapted to detachably mount said bar on an automobile wall and in spaced relationship therewith, said magnet means comprising a permanent magnet connected to said external surface adjacent each end of said bar, and a resilient spacer positioned between each of said magnets and said bar whereby said bar ends are capable of limited rocking movement with relation to said magnets.

3,309,130
REVERSIBLE TUBING ELEVATOR
Hubert L. Arrowood, 3731 E. Virgin St.,
Tulsa, Okla. 74115
Filed Feb. 19, 1965, Ser. No. 434,042
2 Claims. (Cl. 294—90)

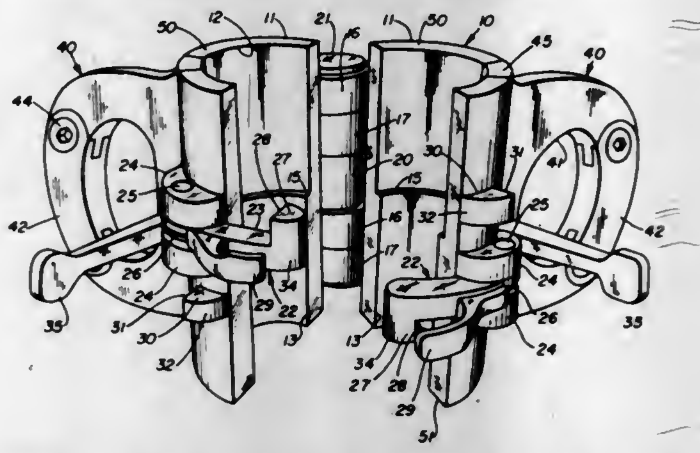
1. A reversible pipe elevator comprising:

a generally tubular body formed from complementary semi-circular segments generally symmetrical with respect to a transverse central plane, the ends of said body defining annular load-bearing surfaces;

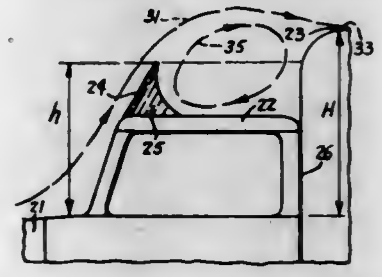
hinge means pivotally connecting the segments at one side for opening and closing movement relative to each other, said hinge means including laterally extending cooperating hinge members on each segment having vertically registering bores, a free floating hinge pin extending through the several bores, and means closing the outer ends of the bores in the outermost hinge members to confine the hinge pin therein, said hinge means including means biasing said segments in a normally open position;

cooperating latch means mounted on the sides of the segments opposite the hinge means for releasably securing the segments to each other in closed position, said latch means including a pair of latches of identical construction positioned on one of the body segments and a cooperating latching lug on the other body segment, each of said latches including a latch arm pivoted on the same body segment, said arm and said lug having substantially flat mutually engaging surfaces extending radially outwardly from said body; and

hoisting ears extending oppositely from the segments, said segments when closed defining an axial bore through the body comprising coaxial larger and smaller diameter portions opening to the opposite ends of the body whereby to accommodate pipe having external upset end portions.

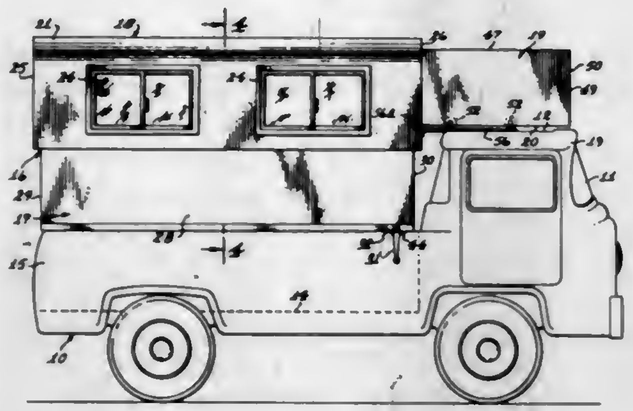


3,309,131
MEANS FOR REDUCING LINEAR WIND RESISTANCE IN SINGLE CHASSIS TYPE VEHICLES
Walter Selden Saunders, 24 S. Chester Road,
West Chester, Pa. 19380
Filed Feb. 11, 1966, Ser. No. 526,799
11 Claims. (Cl. 296—1)



1. A means for reducing linear wind resistance in combination with a single chassis vehicle including a cab having a windshield, an engine compartment having its top terminating below said windshield and a body having a height in excess of the height of said cab and having its front edge closely juxtaposed to the rear of said cab leaving no appreciable air gap therebetween, said means comprising an upstanding baffle mounted adjacent the forward edge of the cab at the top of the windshield so dimensioned as to deflect the airstream impacting the windshield and baffle over the top of said front edge of the body, the airstream reattaching to the top of the body at a point rearwardly of said forward edge in a smooth linear flow defining a low pressure air eddy on the cab roof between said baffle and said front edge of said body, the height of the windshield plus the height of the baffle being equal to between 0.6 and 0.8 of the height of said body above said engine compartment.

3,309,132
MOBILE CAMPER CONSTRUCTION
Howard A. Kimes, Phoenix, Ariz., assignor to Small Business Administration
Filed Jan. 25, 1965, Ser. No. 427,560
2 Claims. (Cl. 296—23)



1. A mobile camper construction comprising in combination:

(A) a top enclosure member,

(B) a bottom enclosure member,

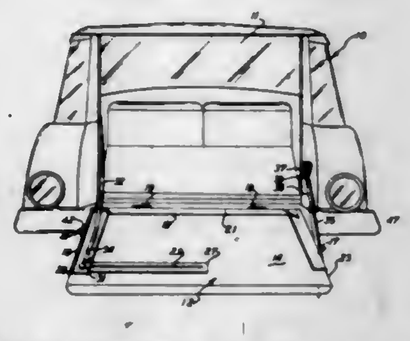
(C) means for selectively elevating said top enclosure member relative to said bottom enclosure member to enlarge the enclosure space mutually defined by said top and bottom enclosure members,

(D) a front enclosure member telescopically received within said enclosure member, means for selectively forwardly extending the front enclosure member, when said top enclosure member is hoisted by said first mentioned means, to further enlarge the enclosure defined by said top, bottom and front enclosure members,

(E) a mattress supporting means carried within and relatively vertically movable in said front enclosure member,

(F) upwardly extending means on said bottom enclosure member adapted to supportingly engage said mattress supporting means in raised position when said front enclosure member is within said top enclosure member and said top enclosure member moves downwardly relative to said bottom enclosure member.

3,309,133
SLIDING TAIL GATE
Roy T. Butler, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 8, 1964, Ser. No. 394,888
4 Claims. (Cl. 296—51)

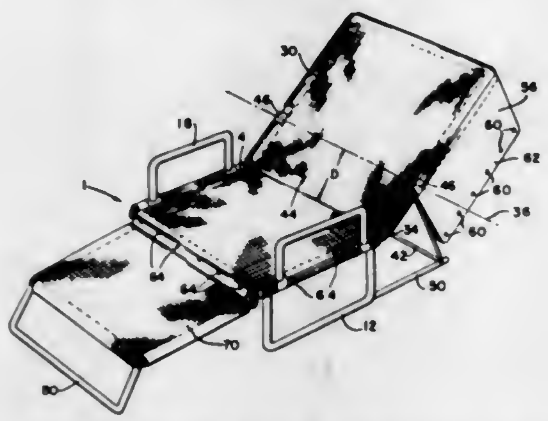


1. In a vehicle body of the station wagon type having a cargo carrying area and a frame structure in one wall providing an access opening to said cargo carrying area, a tail gate forming closure for said opening,

frame means hinging said tail gate to said body for swinging movement about a horizontal hinge axis, said closure being swingable from a substantially upright closed position in which said tail gate is seated in said frame structure through an intermediate inclined position in which said tail gate is clear of interference with said frame structure to a substantially horizontal open position in which said tail gate forms an extension of said cargo carrying area,

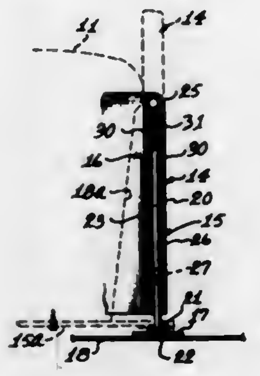
and coacting track and follower means on said frame means and said tail gate guiding the latter when in said intermediate inclined position or therebeyond for movement laterally of said opening in a direction to provide access to said cargo carrying area between one end of said tail gate and the adjacent edge of said frame structure.

3,309,134
INTERCHANGEABLE LUGGAGE-CHAIR STRUCTURE
Arthur H. Roberts, Brooklyn, N.Y.
(12 Lynwood Drive, Westbury, N.Y. 11590)
Filed Apr. 8, 1965, Ser. No. 446,623
4 Claims. (Cl. 297—17)



1. In an article usable in one configuration as a beach-chair and usable in another configuration as a luggage-carrier having top and bottom faces and side faces, the combination comprised of a seat portion having obverse and reverse sides and a frame structure, first support means secured to and extending from said frame structure for supporting said seat portion above a surface, support securement means attaching said first support means to said frame structure for lockingly positioning said first support means in either vertically upward or vertically downward relation with respect to said seat portion, arm-rest means secured to and extending from said frame structure for supporting the arms of a person seated upon said article, arm-rest securement means attaching said arm-rest means to said frame structure for lockingly positioning said arm-rest means vertically upward or vertically downward with respect to said seat portion, said arm-rest and first support means being in substantially the same planes, respectively, when in the vertical upward or downward locked positions, a back portion having a frame structure, the frame structures of said seat and back portions being pivotally connected, said back portion frame structure being foldable along a line intermediate the ends thereof, the distance between said line and pivotal connection of said seat and back portion frame structures defining a separate section, said distance being slightly greater than the space between said seat portion and said surface when the former is standing upon the latter, locking means for restraining said back portion frame structure against folding along said line, said locking means being selectively positionable to accomplish such restraint against folding, second support means extending from said back portion frame structure, said second support means being pivotally connected to said back portion and capable of assuming parallelism with respect thereto, said second support means, when in its extended position, being capable of supporting said back portion in a desired angular position when said article is in its chair configuration, curtain members depending peripherally of said back portion frame structure, said curtain members having first fastener means located adjacently the edges thereof, extensible means telescopically associated with said first support means, said extensible means, when extended being adapted to reach beneath said back portion and in spaced relation therewith, an end of said second support means being removably securable to said extensible means for supporting said back portion when the article is in its chair configuration, a leg-rest portion having a frame structure, the frame structures of said seat and leg-rest portions being pivotably connected, said leg-rest portion being foldable into parallel superposition with respect to either said obverse or reverse sides of said seat portion, said seat and back portions serving as the top and bottom faces of said article when in its luggage configuration, said separate section of said back portion serving as a side face of said article when in its luggage configuration and said curtain members serving as the remaining side faces of said article when in its luggage configuration, second fastener means provided on said seat portion frame structure, said first and second fastener means being cooperable to retain said curtain members in position when serving as said remaining side faces.

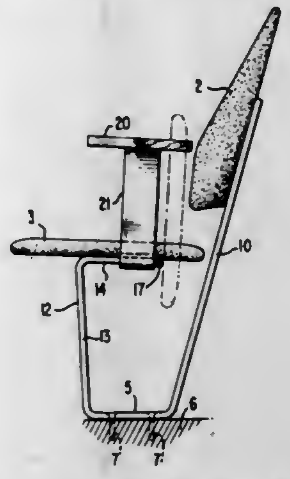
3,309,135
PACKAGE RETAINING RACK APPARATUS
John Jannetto, 2832 La Cienega, Tucson, Ariz. 85716
Filed Oct. 28, 1964, Ser. No. 406,986
8 Claims. (Cl. 297—188)



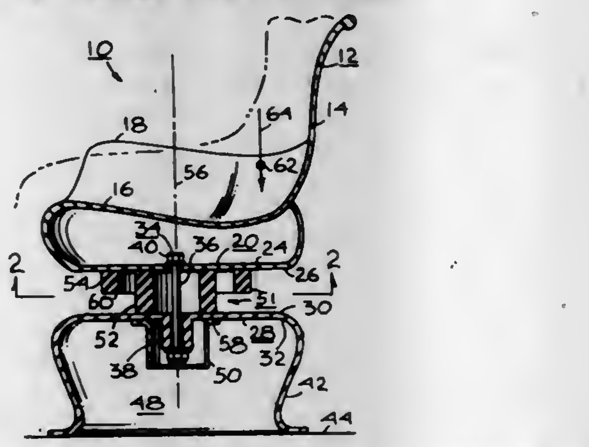
1. In combination with a passenger seat of an automobile, said passenger seat including a seat portion and a back portion: A stationary supporting frame assembly mounted in fixed relation to said seat; a movable retaining wall assembly connected in movable relation with said stationary supporting frame assembly, said movable retaining wall assembly having a first stable position adjacent and above the front and side portion of said seat portion and a second stable position such as not to impede the use of said seat for passenger seating, said movable retaining wall assembly consisting essentially of a three-sided retaining wall enclosure adapted to extend directly adjacent and above the front and sides of said seat portion of said seat in said first stable position.

3,309,136
CHAIR
Frank E. Kehoe, 1498 W. California Ave., St. Paul, Minn. 55108
Filed Dec. 27, 1965, Ser. No. 525,003
6 Claims. (Cl. 297—296)

1. A chair structure comprising a single standard supporting a backrest and a seat, said standard being formed from an elongated resilient structural member and including a substantially horizontal base portion intermediate its ends for fixedly supporting the chair on a floor surface, a first cantilevered portion on one end of said horizontal base portion and projecting upwardly and rearwardly from said base portion, means fixedly supporting said backrest on the upper free end of said first cantilevered portion for limited resiliently resisted movement therewith, a second cantilevered portion on the other end of said horizontal base portion and projecting upwardly and slightly forwardly from said base portion in a generally vertical direction, and hinge means mounting said seat on said second cantilevered portion for pivotal movement between a substantially horizontal seating position and a raised non-use position, said second cantilevered portion supporting said seat for resiliently resisted substantially horizontal movement forwardly from said base portion in a direction outward and away from said backrest, said first cantilevered portion supporting said backrest for resiliently resisted movement rearwardly from said base portion, the movement of said seat and said backrest permitting a person occupying the chair to assume a substantially reclined seating position.



3,309,137
SEATING ARRANGEMENT
Aaron A. Wiebe, 10 Lassen Place, Santa Barbara, Calif. 93105
Filed May 13, 1966, Ser. No. 550,039
10 Claims. (Cl. 297—302)



1. An improved seating arrangement comprising, in combination:

a chair means having a back portion and a seat portion;

an upper plate having an upper surface spaced from seat portion of said chair means and coupled thereto, and a lower surface;

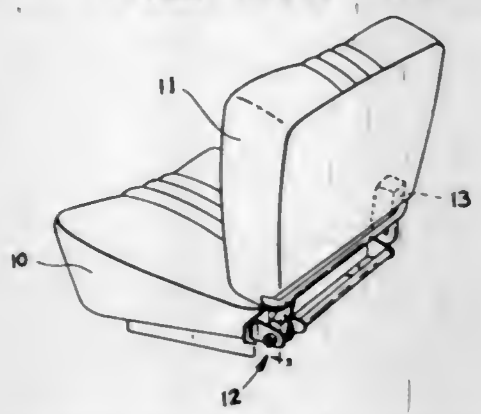
a lower plate having an upper surface spaced from said lower surface of said upper plate, and a lower surface;

pivot means for pivotally coupling said upper plate to said lower plate to allow pivotal motion of said chair means about the axis of said pivot means relative to said lower plate;

a flexible, resilient, compressible, elastic deformable means intermediate said lower surface of said upper plate and said upper surface of said lower plate and having at least one friction surface for frictionally engaging one of said upper plate and said lower plate to resist said relative pivotal motion.

3,309,138
RECLINING SEAT CONSTRUCTION

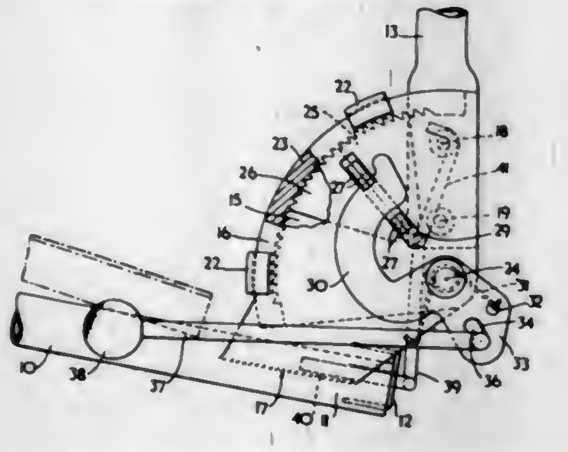
Ernest Byczkowski, Detroit, and Henry J. Tischler, Bloomfield Hills, Mich., assignors to Young Spring & Wire Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 19, 1965, Ser. No. 498,029
7 Claims. (Cl. 297—355)



1. In a reclining seat comprising a base and seat back, the combination comprising
- a first bracket fixed to said base,
- a second bracket fixed to said seat back,
- a bushing,
- means for mounting said bushing on said seat back,
- a pivot pin extending through said bushing,
- a torsion spring having one end thereof connected to said base and the other end thereof connected to said pin,
- axially engageable means between said pin and said bushing whereby when said axially engageable means are engaged, said pin and said bushing are fixed with relation to said seat back,
- and a nut threaded on said bushing and adapted to urge said interengaging means into engagement when said nut is threaded on said bushing.

3,309,139
VEHICLE SEATS

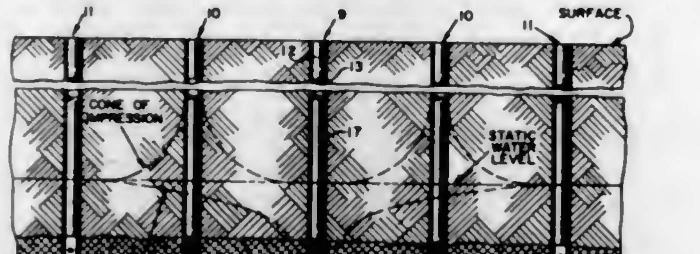
Harold Roy Turner and Joseph Pallant, Willenhall, England, assignors to H. R. Turner (Willenhall) Limited, Willenhall, England, a British company
Filed Sept. 11, 1964, Ser. No. 395,791
Claims priority, application Great Britain, Nov. 6, 1963, 43,752/63
5 Claims. (Cl. 297—367)



1. Seat back-rest adjusting mechanism comprising:
- (i) a pair of plate-like parts which are
  - (a) each of generally quadrant shape,
  - (b) are located face-to-face and generally parallel,
  - (c) are fixed together about a hinge axis
  - (d) and are respectively adapted for attachment to the seat and seat back-rest,
  - (e) said hinge axis being located at the apices of said quadrants and with the arcuate edges of said quadrants concentric to the said axis;
- (ii) an arcuate rack fixed to one of said quadrant parts
  - (a) said rack having its teeth directed towards said hinge axis,
  - (b) said rack lying between said quadrant parts;
  - (c) and said rack extending along the whole length of the arcuate edge of said one quadrant part;
- (iii) a toothed locking plate which is:
  - (a) located between said quadrant parts and is slidable freely therebetween;
  - (b) is disposed between the hinge axis and the rack and has its teeth outwardly directed for mesh with the rack;
- (iv) a cam which is:
  - (a) pivoted on said hinge axis,
  - (b) has a cam edge eccentric to said axis,
  - (c) and said cam edge is disposed to operate on said locking plate so that in movement of the cam about the axis the locking plate is carried into or out of mesh with the rack;
- (v) spring means operatively associated with said cam and urging the latter into the position in which said teeth are meshed;
- (vi) and lever means for moving said cam against said spring.

3,309,140
LEACHING OF URANIUM ORE IN SITU

John Gardner, Los Altos, Calif., and Malcolm I. Ritchie, Riverton, Wyo., assignors to Utah Construction & Mining Co., San Francisco, Calif., a corporation of Delaware
Filed Nov. 28, 1962, Ser. No. 240,576
6 Claims. (Cl. 299—4)

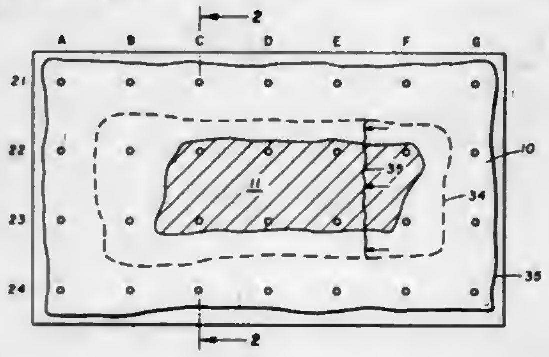


1. The method of recovering uranium from an underground deposit of uranium mineral in situ and located in an existing reservoir of fluid which comprises drilling a recovery well and a plurality of injection wells in a pattern determined by the permeability, porosity and water bearing characteristics of the underground deposit, casing and sealing said wells, introducing an acidic leach solution into said underground deposit through said injection wells in an amount sufficient to displace the existing reservoir fluids in the area defined by the predetermined pattern and to form an island of leach solution about said injection wells and said recovery well and at a pressure below formation fracture pressures so that said leach solution is substantially confined thereabout by the surrounding reservoir of fluid, and subsequently recovering the solution through the recovery well and recovering uranium from the solution.

3,309,141
METHOD OF LEACHING SUBSURFACE MINERALS IN SITU

John L. Fitch and Billy George Hurd, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed June 4, 1963, Ser. No. 285,291
3 Claims. (Cl. 299—5)

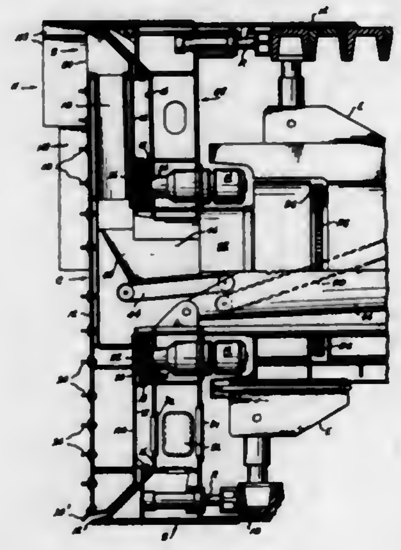
1. A method for recovering subsurface minerals comprising:
- (a) locating a pod of ore in a subterranean formation,
- (b) performing a geological survey to determine the direction of greatest fluid flow in the pod of ore,
- (c) drilling a plurality of wells into the formation wherein at least one well penetrates the pod of ore,
- (d) flooding the pod of ore and the adjacent surrounding formation by injecting an inert fluid through one or more of the wells,
- (e) injecting an inert fluid via some of the wells into the formation adjacent to and surrounding the pod of ore contemporaneously with injecting a slug of leaching solvent via a well into the pod of ore at an extremity of the pod of ore aligned with the direction of greatest fluid flow from the remainder of the pod of ore,



- (f) miscibly displacing the leaching solvent through the pod of ore by injecting an inert fluid through a well into said extremity of the pod of ore,
- (g) removing the leaching solvent when pregnant from the pod of ore and replacing same with an equivalent amount of an inert fluid, and
- (h) adjusting the injection of the inert fluid into the formation, the leaching solvent into the pod of ore, and the inert fluid following the leaching solvent into the pod of ore at rates sufficient to establish a pressure gradient in the formation about the pod of ore adequate to prevent the flow of the leaching solvent out of the pod of ore into the surrounding formation.

3,309,142
CUTTERHEAD ASSEMBLY FOR A SHIELD-TYPE TUNNELING MACHINE

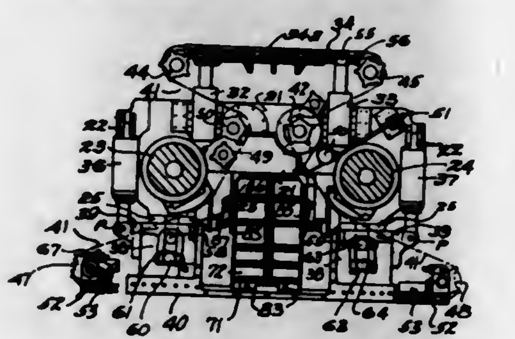
Douglas F. Winberg, Bellevue, Wash., assignor to James S. Robbins and Associates, Inc., Seattle, Wash., a corporation of Washington
Filed May 31, 1963, Ser. No. 284,709
31 Claims. (Cl. 299—33)



27. In a cutterhead assembly for an earth boring machine; a reversible cutterhead, cutterhead support means mounting said cutterhead for rotation about a center axis, reversible drive means for selectively rotating the cutterhead in either direction about said axis, and means for moving the cutterhead assembly axially forwardly into an earth formation, said cutterhead comprising a forward wall, forwardly directed cutter means on said wall for cutting and dislodging the earth formation during cutterhead rotation, in either direction, at least one peripheral bucket having an axially forwardly directed inlet opening and a scoop which opens in one direction of cutterhead rotation, and scoops up earth formation cuttings during cutterhead rotation in such direction, at least one other peripheral bucket having an axially forwardly directed inlet opening and a scoop which opens in the opposite direction of cutterhead rotation, and scoops up earth formation cuttings during cutterhead rotation in such direction, each said scoop occupying a fixed position on the cutterhead and including wall means for turning and directing the scooped earth formation cuttings generally radially inwardly, and an elongated material chute extending generally radially inwardly from each said bucket.

3,309,143
CONTINUOUS MINER HAVING ANGULARLY ADJUSTABLE TRIMMER BARS

Jerry Karlovsky, Jr., Clifford C. Conway, and John M. Cookson, all of Nashville, Ill., assignors to National Mine Service Company, Pittsburgh, Pa., a corporation of West Virginia
Filed July 13, 1964, Ser. No. 382,065
12 Claims. (Cl. 299—57)



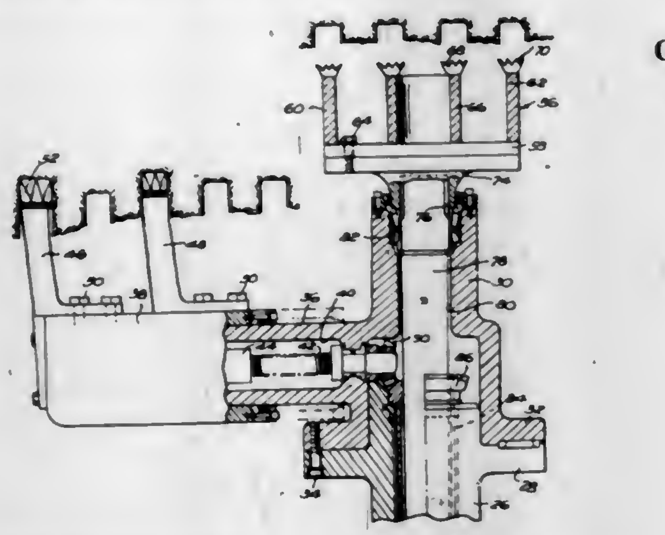
6. In a mining machine having a running gear, a subframe carried thereby, a main frame having a gear case extending forwardly therefrom, said main frame mounted on the subframe to tilt transversely of the length of the machine, guide elements slidable vertically on the gear case at opposite sides of the machine, a bottom trimmer bar extending from side to side of the machine and slidable horizontally on said guide elements, and support devices mounted on the gear case at opposite sides of the machine and connected to said cutter bar and operable selectively to raise and lower the corresponding ends of said trimmer bar independently of the inclination of the gear case.

3,309,144
BORING HEAD HAVING EXTENSIBLE ARM AND RELATIVELY ROTATED CONCENTRIC CUTTER

Jerry Karlovsky, Jr., Nashville, Ill., assignor to National Mine Service Company, Pittsburgh, Pa., a corporation of West Virginia
Filed Mar. 22, 1965, Ser. No. 441,458
7 Claims. (Cl. 299—60)

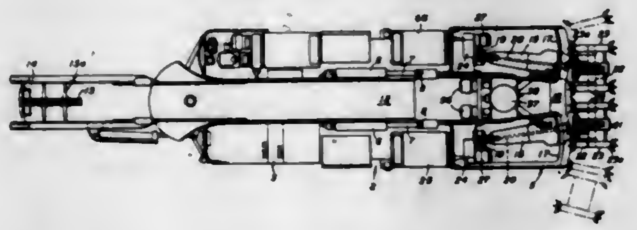
1. In a boring type continuous mining machine the combination comprising,
- a frame member supporting drive means for a plurality of boring heads,
- a drive gear housing supported on the front portion of said frame member,
- a plurality of boring heads extending forwardly from said drive gear housing,
- said boring heads each having an outer portion and

an inner central portion, said inner central portion arranged coaxially with said outer portion, said inner and outer portions being rotatable relative to each other,
said outer portion having arm members extending radially therefrom,
sleeve members positioned on said arm members, said sleeve members being adjustable radially on said arm members, said sleeve members having cutting elements extending forwardly therefrom and arranged to cut annular kerfs,
said inner central portion having cutting elements extending forwardly therefrom arranged to cut annular kerfs concentric with said kerfs cut by said cutting elements on said outer portion sleeve members,



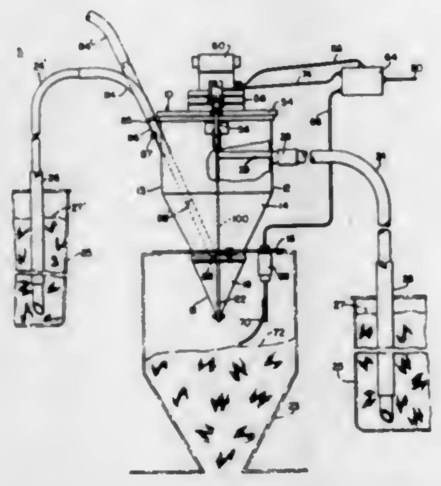
said outer portion connected to a tubular shaft extending rearwardly into said drive gear housing the portion of said tubular shaft positioned within said drive gear housing having an external gear thereon,
said inner central portion connected to a shaft member extending rearwardly through said tubular shaft into said drive gear housing, said shaft member having a gear member secured thereto, and
driving connections including gear means within said drive gear housing connecting said drive means to said gear on said tubular shaft and to said gear on said shaft member, said gear means arranged to rotate said boring head inner central portion and outer portion in opposite directions at different angular velocities.

3,309,145
MINING MACHINE HAVING INDEPENDENT MEANS TO ROTATE AND OSCILLATE CUTTERS
Einar M. Arentzen, Charleroi, Pa., assignor to Lee-Norse Company, Charleroi, Pa., a corporation of Delaware
Filed Mar. 8, 1965, Ser. No. 437,825
11 Claims. (Cl. 299—71)



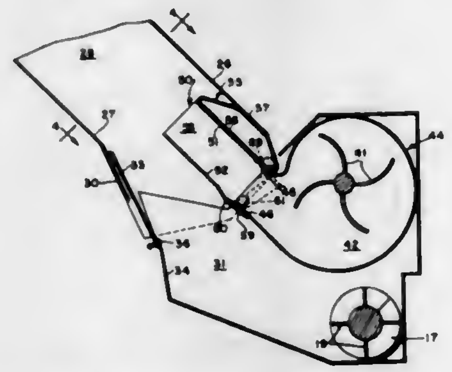
10. In a mining machine of the ripper type having a boom with two arcuately movable arms mounted thereon for arcuate movement toward and away from each other, each arm having a power-driven cutter head extending forwardly from the boom, the invention comprising means for oscillating said arms comprising
a housing mounted on the boom,
a vertical shaft in the housing,
means for driving the vertical shaft,
a pair of eccentric disks on said shaft and fixed thereto,
a separate collar encircling each disk within which the disk is rotatably fitted, each collar being at one end of a link, one link having its opposite end pivotally attached to one of the arms, the disks being so disposed with relation to each other as to effect equal and opposite oscillatory movement to the arms whereby they move toward and away from each other in substantial unison.

3,309,146
METHOD OF TRANSPORTING MATERIAL AND DEVICE THEREFOR
John D. Russell, Franklin, Pa., assignor to Conair, Incorporated, Franklin, Pa.
Original application Dec. 11, 1962, Ser. No. 243,825. Divided and this application June 9, 1966, Ser. No. 564,460
9 Claims. (Cl. 302—17)



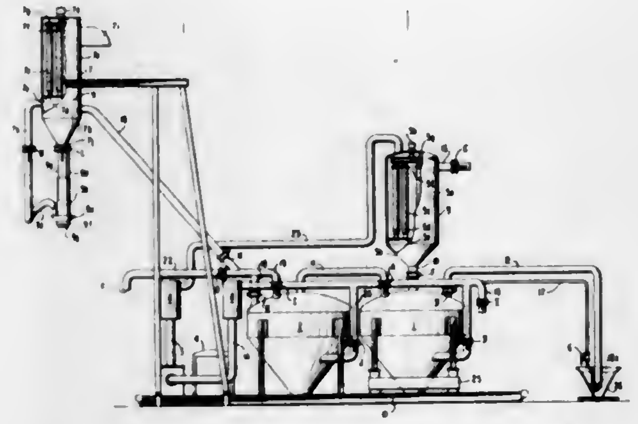
1. A method of proportioning a plurality of granular or pulverant materials deposited in a chamber comprising, delivering a plurality of materials into a chamber through separate inlet lines, respectively, and positioning at least one of said inlet lines in said chamber to become ineffective for said delivering by deposit of material within said chamber prior to the discontinuance of said delivering by the remainder of said inlet lines.

3,309,147
ELEVATOR
Richard Wayne Hook and Leon Franklin Sanderson, Des Moines, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 16, 1966, Ser. No. 534,777
7 Claims. (Cl. 302—51)



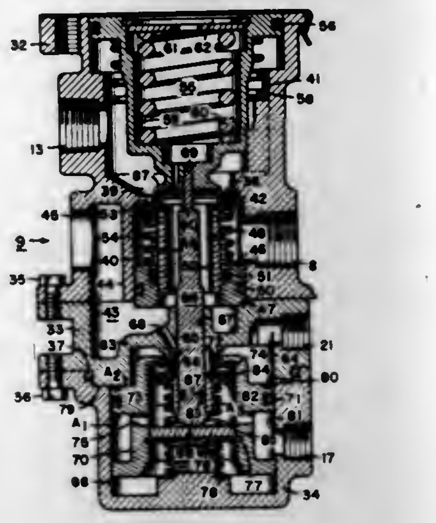
1. A conveying mechanism comprising an elongated housing composed of wall structure on four sides and extending from a material intake to a material discharge; a material base adjacent and opening into the intake for passing material into the housing; a blower supported on the base with a blower discharge outlet directed into the housing; a blower discharge duct fixedly attached to and internally of the elongated housing adjacent its material intake and having one end thereof in communication with the blower discharge and extending therefrom into the housing to a discharge end beyond the material intake for directing a stream of air longitudinally in the housing toward the material discharge; and means mounting the housing on the base for adjustment in unison of the housing and duct in respect to the base and blower discharge.

3,309,148
COMBINATION VACUUM-PRESSURE, PARTICULATE MATERIAL CONVEYING AND BLENDING SYSTEM
Lee N. Wilder, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Feb. 25, 1966, Ser. No. 529,978
10 Claims. (Cl. 302—53)



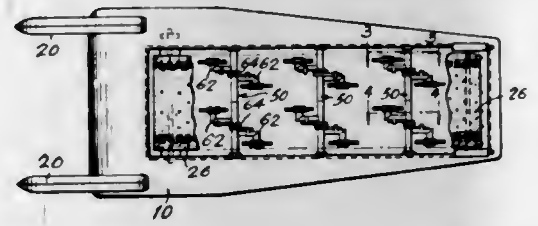
1. An apparatus for handling particulate material, said apparatus comprising:
closed receptacle means;
gas pump means;
first conduit means adapted to discharge particulate material from the interior of said receptacle means;
second conduit means adapted to supply particulate material to the interior of said receptacle means;
pressurizing means within said receptacle means for discharging pressurized gas thereinto;
a first filter carried by and on top of said receptacle means;
a second filter;
third conduit means connected with said first filter and adapted to provide communication with the atmosphere;
fourth conduit means connected with said gas pump means so as to receive the discharge thereof and additionally connected with said pressurizing means so as to convey gas discharged from said pump means to said pressurizing means;
fifth conduit means communicating with said fourth conduit means and adapted to provide communication with the atmosphere;
sixth conduit means extending from said receptacle means to said first filter;
additional conduit means in consecutive gas transmitting communication with the intake of said gas pump means, said second filter, and said first filter;
first valve means in said first conduit means;
second valve means in said second conduit means;
third valve means in said third conduit means;
fourth valve means in said fourth conduit means;
fifth valve means in said fifth conduit means; and
sixth valve means in said sixth conduit means.

3,309,149
COMBINED SERVICE AND EMERGENCY BRAKE SYSTEM
Richard C. Bueler, Glendale, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Dec. 3, 1965, Ser. No. 511,860
19 Claims. (Cl. 303—13)



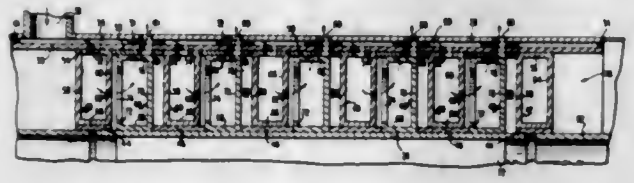
1. A control valve comprising a housing having a pair of ports therein, application means movable in said housing between one position effecting the application of fluid pressure from one of said ports to the other of said ports and another position isolating the fluid pressure at said one port and metering the applied fluid pressure at said other port to the atmosphere, and opposed effective areas on said application means respectively responsive to the isolated and reduced applied fluid pressures at said one and other ports to establish a force urging said application means toward the one position when said application means is in the other position thereof.

3,309,150
SNOWMOBILE SUSPENSION
Gaston Marier, Montreal, Quebec, Canada (1819 Rue Capitol, Laval, Montreal, Quebec, Canada)
Filed Sept. 21, 1964, Ser. No. 397,842
3 Claims. (Cl. 305—27)



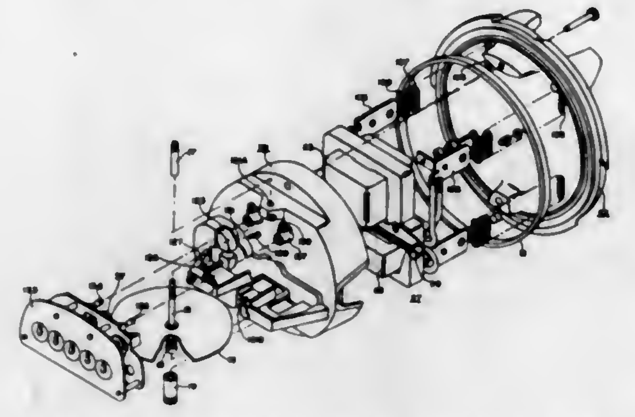
1. In an endless track vehicle, an endless flexible belt having a flat inner surface and upper and lower vertically spaced runs, a suspension assembly having resilient biased rolling support on the lower inner surface of said endless belt, said suspension assembly comprising a main bearing shaft mounted beneath said vehicle transversely above the lower inner surface of said endless belt, a plurality of wheel-supporting assemblies mounted on said shaft, each wheel-supporting assembly having bearing sleeve means journaled on said shaft, said bearing sleeve means comprising a plurality of colinear tubular sleeve sections extending the length of said shaft, said bearing sleeve means being disposed in opposed pairs longitudinally of said endless belt and on opposite sides of the midpoint of said shaft with adjacent ends of said sleeve sections being in substantially abuting, coaxial engagement, a lever arm extending from an intermediate portion of each of the respective sleeve sections and spaced inwardly from the outer edge of said flexible belt, said lever arms terminating in at least one lateral axle, at least one wheel journaled on each lateral axle, and at least a pair of torsion springs each circumposed about abutting ends of the sleeve sections and including oppositely directed end portions extending along said respective levers, said levers including lateral abutment portions engaged by the respective ends of said torsion springs, said wheels being transversely spaced with respect to each other and disposed in pairs on opposite sides of the longitudinal center of said endless belt, each of said wheel-supporting assemblies being identical and interchangeable.

3,309,151
GAS BEARING
Irving R. Sherman, 131 Magazine St.,
Cambridge, Mass. 02139
Filed Feb. 5, 1965, Ser. No. 430,582
5 Claims. (Cl. 308—9)



1. A gas bearing for withstanding axial thrust normally in one direction comprising a fixed member having peripheral cylindrical surface means, a rotating member having peripheral cylindrical surface means coaxial with and radially spaced from the peripheral cylindrical surface means on the fixed member, a series of axially spaced annular hollow fins on each member extending radially towards the cylindrical surface means on the other member, each of said fins having a base wall affixed to its respective member, axially-spaced radially-extending side walls affixed to said base wall, and a cylindrical free end wall affixed to said side walls and disposed close to the peripheral cylindrical surface means on the other member, the fins on the rotating member being axially spaced and interdigitating between the fins on the fixed member whereby to provide chambers defined between opposite side walls of the fins and the peripheral surface means on said members, means for supplying gas under pressure to the hollow interiors of the fins on the fixed member save for a last one of the series, an annular series of restricted orifices through those side walls of the fins on the fixed members, save for said last of the series, which face counter the normal direction of thrust, the other side walls of the last-named fins being blank, those side walls of the fins on the rotating member facing in the direction of thrust having an annular series of openings therein larger than said restricted orifices, the other side walls of the last-named fins axially intermediate portions of the free end walls of the fins on the rotating member each having an annular series of ports therethrough, that portion of each free end wall of the last-named fins which is disposed between said ports and that side which faces counter to the normal direction of thrust being blank, the peripheral cylindrical surface means on said fixed member having axially spaced annular rows of angularly spaced outlets therethrough communicating with the atmosphere, the arrangement of said ports and blank portions on the free end walls of the fins on the rotating member and said outlets being such that said blank portions move across said outlets upon axial movement of the rotating member, relative to the fixed member, in the direction of thrust and said ports move across said outlets upon movement of the rotating member relative to the fixed member counter to the direction of thrust.

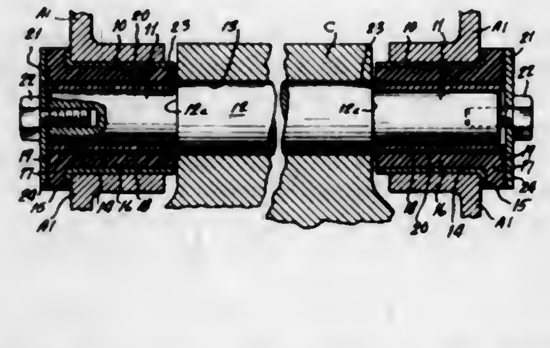
3,309,152
MAGNETICALLY-SUPPORTED-ROTOR DEVICES
James E. Ramsey, Jr., Raleigh, and David F. Wright, House Creek Township, Wake County, N.C., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 9, 1963, Ser. No. 301,000
7 Claims. (Cl. 308—10)



1. In an alternating current induction motor device, a stator structure and a rotor structure mounted for rotation relative to the stator structure, said rotor structure comprising a vertical shaft having a vertical axis, an electroconductive disc armature mounted concentrically on the shaft intermediate the ends of the shaft, first guide means mounting a first end of the shaft for rotation about the axis relative to the stator structure, second guide means mounting a second end of the shaft for rotation about the axis relative to the stator structure, each of said guide means comprising a ring bearing on one of said structures and a resilient pin having a first terminus secured to the other of said structures received in said ring bearing, said ring bearing and pin being concentric relative to said axis for permitting rotation of said shaft relative to the stator structure while resiliently opposing deflection of the shaft in a transverse direction relative to the axis, said guide means and armature being so positioned and proportioned that a force applied transversely to said shaft at the position of said armature substantially equally deflects both ends of said shaft in the direction of said force relative to the stator structure; a first permanent magnet carried by said rotor structure, a second permanent magnet carried by said stator structure adjacent and below said first permanent magnet, said permanent magnets being concentric about said axis and being polarized to develop a repulsion magnetic force acting vertically therebetween to support magnetically the rotor structure relative to the stator structure while leaving the structures substantially free for relative excursion in a horizontal direction, electroresponsive drive means carried by said stator structure and effective when energized for applying to the armature a shifting magnetic field which produces a driving torque acting between the armature and the stator structure to produce relative rotation therebetween about the axis, and a C-shaped permanent magnet straddling the edge of the armature at a position displaced less than 180° from the drive means angularly about the axis to produce an eddy-current damping force acting between the armature and the stator structure, said C-shaped permanent magnet constituting the only damping magnet acting on the armature.

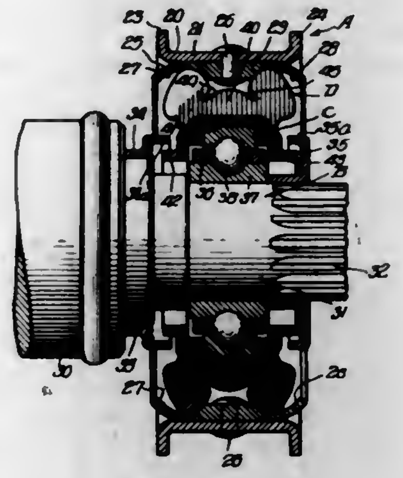
3,309,153
SNUBBER BEARING ASSEMBLY
William P. Kelley, Penfield, and Edward J. Messenger, Fairport, N.Y., assignors to Garlock Inc., Palmyra, N.Y., a corporation of New York
Filed Dec. 26, 1963, Ser. No. 333,307
4 Claims. (Cl. 308—36.1)

1. The combination of a shaft element, an outer element formed with a bore within which said shaft element is angularly slideable, and a snubber bearing assembly, said assembly comprising a rigid, cylindrical outer shell member, tightly fitted within said bore, a cylindrical snubbing sleeve member of elastomer material bonded within said shell member, a cylindrical lining sleeve member of self-lubricating, plastic, bearing material bonded within said snubbing sleeve member and adapted to slide rotationally upon said shaft element, a rigid end plate fixed upon an end of said shaft element in interfering relationship to the remainder of said assembly to limit axial shifting of said remainder on said shaft element in one direction, said shell member having at one end thereof a radially outwardly extending flange overlying said outer element, limiting axial shifting of said remainder on said shaft element in the opposite direction, said elastomer sleeve member having a radially outwardly extending end flange intimately overlying the mentioned flange of the shell member, said lining sleeve member having a radially outwardly extending end flange intimately overlying the mentioned flange of the elastomer sleeve member and bearing in low-friction, sliding engagement against said end plate, said flange of the lining sleeve member being of an outer diameter at least as great as the inside diameter of said shell member, the thrust forces to which the assembly is subjected being imposed upon said end plate at an annular area of the latter which is in engagement with said flange of the lining sleeve member whereby the latter flange provides low-friction, angular sliding action between the end plate and the remainder of the assembly, said elastomer sleeve being formed with sealing lips at the outer margin of its said flange and with sealing lips adjacent the elastomer sleeve's end opposite to its said flange, and said first-mentioned sealing lips overlying the radially outermost end portions of said lining sleeve member flange and being in sealing engagement with said rigid end plate.

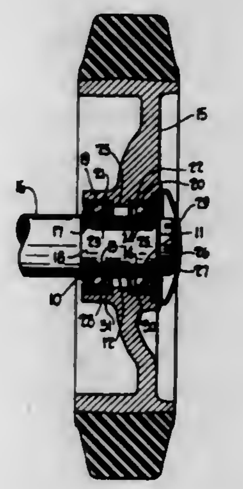


3,309,154
RESILIENT CENTER BEARING MOUNT
Raymond E. Stokely, Rockford, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 8, 1964, Ser. No. 373,200
7 Claims. (Cl. 308—184)

1. A bearing support, for a shaft comprising: bearing means adapted to rotatably journal said shaft therein, an annular retainer surrounding said bearing means in radially spaced relationship, a bracket fixedly supporting said retainer, and annular insulating means disposed between said retainer and bearing means effective to maintain uniform transmissibility therebetween while accommodating axial and angular displacement of said bearing means relative to said retainer, said insulating means particularly comprising a plurality of flexible ears extended generally. radially, outwardly and arranged in axially spaced pairs, each pair of ears cooperating as a single column of rubber to support radial loads between said retainer and bearing means, each pair of ears having free rocking contact with said retainer which permits ears to shift contact relative to their retainer during displacement of said bearing means relative to said retainer.



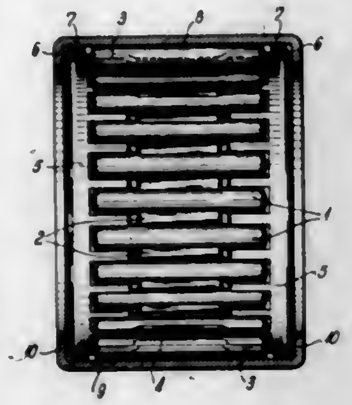
3,309,155
WHEEL BEARING
Robert E. Palmer, Bay Village, Ohio, assignor to Palmer, Incorporated, Bay Village, Ohio, a corporation of Ohio
Filed Apr. 16, 1964, Ser. No. 360,295
4 Claims. (Cl. 308—191)



1. In combination with a vehicle axle of the type having a right cylindrical wheel mounting spindle, said spindle being shouldered at its inner end and threaded at its outer end to receive a wheel retaining nut; a wheel bearing mount, comprising, a vehicle wheel having a hub bore therethrough, an annular spacer ring centered in the hub bore and projecting therein; a pair of ball-bearing assemblies mounted in the hub bore in spaced relation on either side of the hub spacer ring, through press fits, with the outer races thereof seated thereagainst; and, a cylindrical sleeve, having an outwardly projecting annular spacer ring centered thereon, slidably mounted in the inner races of the so mounted ball-bearing assemblies with its spacer ring centered therebetween, the width of the hub and sleeve spacer rings being identical, the cylindrical sleeve of the so journaled wheel being adapted to be slidably fitted over the aforesaid axle spindle, after which a retaining nut is screwed on to the threaded end of the spindle and drawn up tightly against the inner races of the bearing assemblies to lock same to the axle spindle by pressing them against the sleeve spacer ring and spindle shoulder in continuous metal-to-metal engagement.

3,309,156
THIN-WALLED CAGE FOR CYLINDRICAL ROLLERS

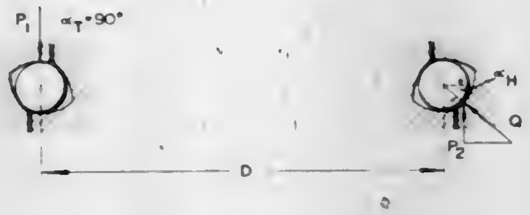
Karl-Albert Eckstein, Herzogenaurach, near Nurnberg, Germany, assignor to Industriewerk Schaeffler, Herzogenaurach, Germany, a corporation of Germany
Filed Aug. 3, 1964, Ser. No. 387,128
Claims priority, application Germany, Aug. 13, 1963, J 24,238
2 Claims. (Cl. 308—217)



1. A thin-walled cage for cylindrical rollers accommodated in an outer race comprising apertures for accommodating cylindrical rollers bounded by cross-bars connected at both axial ends by end rings, the end rings being provided with radially outwardly-directed rims which merge into flanges directed axially towards one another, and the said radially outwardly-directed rims having a low enough height that the said flanges bear directly against the end rings and guiding the cage concentrically on the roller raceway of said outer race by said flanges.

3,309,157
ONE-ROW RADIAL AND THRUST BALL BEARING

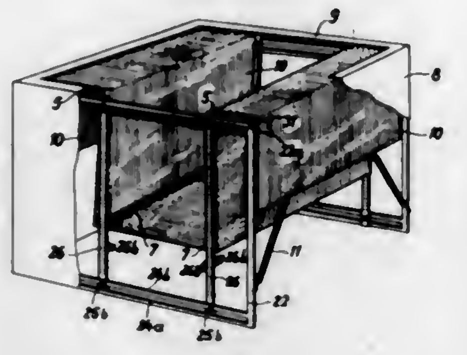
Wilhelm Schlueter, Dortmund, Germany, assignor to Eisenwerk Rothe Erde G.m.b.H., Dortmund, Germany
Filed Jan. 13, 1965, Ser. No. 425,352
Claims priority, application Germany, Jan. 13, 1964, E 26,212
4 Claims. (Cl. 308—230)



1. A one-row radial and thrust ball bearing comprising, in combination, an outer race ring; an inner race ring, each of said race rings having a concavely curved carrying race surface and a concavely curved holding race surface; and a single row of balls located between said race rings and engaging said race surfaces, the race surfaces of each ring intersect any radial plane including the axis of the bearings along portions of a circle having respectively a radius of curvature greater than that of the balls so that each of said balls engages each of said race surfaces substantially at a point, the centers of the circles of curvature of the carrying race surfaces of the inner and outer race rings being respectively located on circles concentric with the axis of the bearing and having a diameter equal to that of the circle at which the centers of the balls are located.

3,309,158
ADJUSTABLE HOLDER FOR FILING CARDS AND THE LIKE

Daniel Boulanger, Croix, Nord, France, assignor to Societe "Pratic-Buro," a corporation of France
Filed Oct. 21, 1965, Ser. No. 499,135
Claims priority, application France, Mar. 13, 1962, 890,881, Patent 1,324,990; Sept. 3, 1962, 908,459, Patent 1,340,262
9 Claims. (Cl. 312—205)

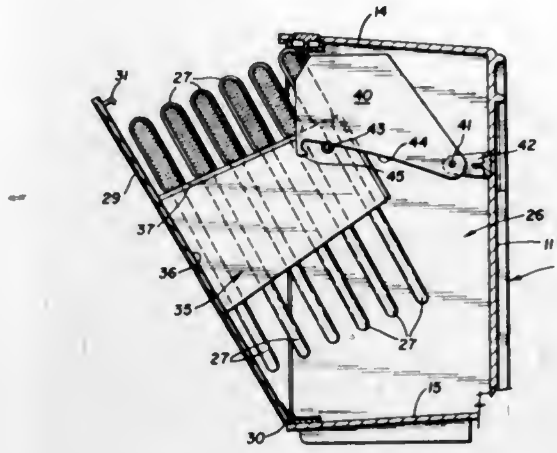


1. In an assembly for the storage of flat stackable articles, the combination of a prismatic housing with a prismatic frame structure removably fitting into said housing, said frame structure comprising:
- a pair of flat, parallel, upstanding members defining opposite sides of the prism;
- at least two upper bars extending across said members;
- at least two lower bars extending across said members underneath said upper bars;
- means on said members forming a horizontal track along which at least one of said upper bars is displaceable;
- positioning means for releasably securing said displaceable upper bar at a selected location along said track;
- and fastening means for releasably securing said lower bars to said members at a selected level and at selected locations with a mutual separation less than that of said upper bars whereby a stack of articles to be accommodated by said holder can be supported on said lower bars and laterally confined by said upper bars while projecting above the latter; said track including at least one slot extending longitudinally across a major part of each of said members, said positioning means comprising at least one upright adjacent each of said members and mounting means traversing said slot for immobilizing said upright at a selected location, said fastening means including coacting formations on said upright and one of said lower bars for securing the latter to said upright at a selected level.

3,309,159
ELECTRIC TOOTHBRUSH SANITIZER AND CHARGER

Robert C. Le Sueur, River Forest, and Richard J. Hughes, Des Plaines, Ill., assignors to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Nov. 12, 1965, Ser. No. 507,489
6 Claims. (Cl. 312—206)

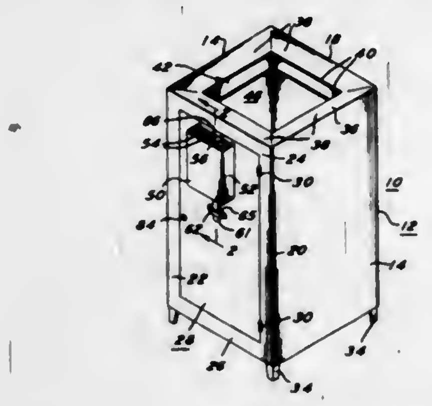
1. A toothbrush sanitizer comprising:
- (a) a housing having a chamber for holding a toothbrush and an adjacent chamber communicating with the first chamber for holding a light bulb,
- (b) a door hingedly connected to the housing for closing the front of the brush chamber,
- (c) bracket means on the door and movable therewith for supporting a toothbrush in the brush chamber in position wherein the brush bristles face the light bulb when the door is closed,
- (d) an occulter swingingly mounted in the housing between the brush chamber and light bulb chamber normally disposed in unobstructing position relatively to the bulb, and



- (e) means movable with the door for engaging the occulter and moving it to light ray obstructing position when the door is open.

3,309,160
CONTAINER APPARATUS

Linford H. Lewis, 3408 Ashville St., Philadelphia, Pa. 19136
Filed Oct. 11, 1965, Ser. No. 494,656
12 Claims. (Cl. 312—308)

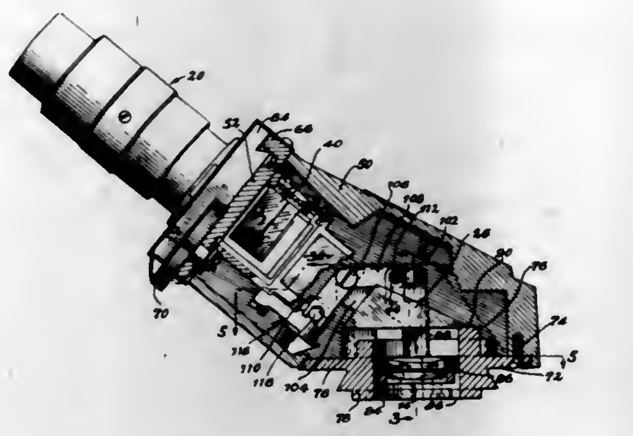


1. A container apparatus comprising a body providing a chamber for collecting refuse therein, a door secured on said body with open and closed positions for access to said chamber, and a cigarette and ash receptacle unit supported by and detachably secured on said door when said door is in said open position and locked in position on said door when said door is in said closed position.

3,309,161
VARIABLE INTERPUPILLARY DISTANCE BINOCULAR MICROSCOPE WITH FOCUS COMPENSATION

Olin W. Boughton, Williamsville, N.Y., assignor to American Optical Company, Southbridge, Mass.
Filed Feb. 19, 1963, Ser. No. 259,670
4 Claims. (Cl. 350—35)

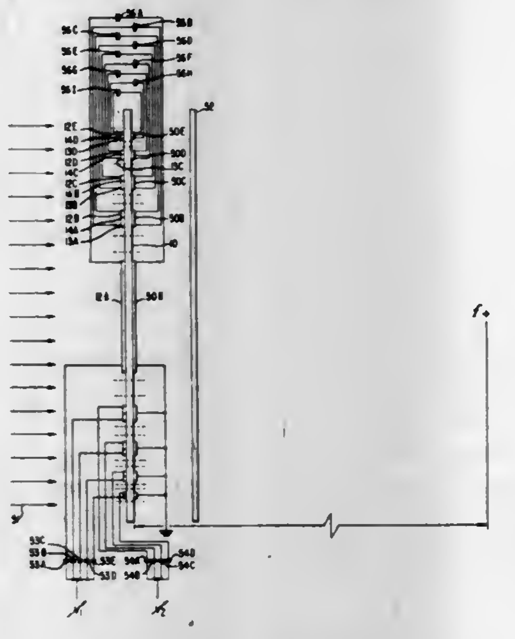
1. In a microscope having a pair of eyepieces mounted for movement toward and away from each other for accommodation to different interpupillary distances,
- an optical system for focusing the image from a single objective in the focal planes of said eyepieces,
- said optical system including a telescope objective for receiving substantially parallel light from an objective and focusing same in the focal planes of said eyepieces, said telescope objective being mounted for movement along its axis, and a beam-splitting system for directing light from the telescope objective to the individual eyepieces, said beam-splitting system including light-deviating elements for presenting images to the respective eyepieces and movable therewith so that variations in the optical path length



- of the optical system occur by reason of the movement of said light-deviating elements,
- and means for simultaneously moving said telescope objective and said eyepieces to maintain the light from said telescope objective focused in the focal planes of said eyepieces.

3,309,162
ELECTRO-OPTICAL HIGH SPEED ADJUSTABLE FOCUSING ZONE PLATE

Kurt M. Kosanke and Werner W. Kulcke, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 291,393
14 Claims. (Cl. 350—160)



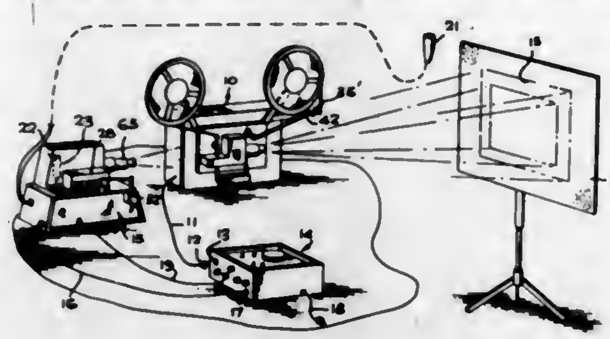
1. An adjustable focusing system comprising:
- a source of collimated, high frequency electromagnetic radiation,
- an electro-optic substance which will exhibit a birefringent electro-optic effect at points displaced from the center of an electric field a distance proportional to the magnitude of the electric field,
- electric potential means to impress an electric field in a pattern across said electro-optic substance at such locations and of such magnitude that birefringent effects occur which define a first Fresnel zone plate to said radiation,

and means to vary said electric field pattern so that the birefringent effects define a second Fresnel zone plate to said radiation which causes focusing at a point different from said first Fresnel zone plate.

3,309,163
SYNCHRONIZED MOTION PICTURE AND SLIDE PROJECTOR SYSTEM

Harry Warren White, 715 Wilson Court,
Burbank, Calif. 91501
Filed Mar. 13, 1964, Ser. No. 351,663
17 Claims. (Cl. 352—131)

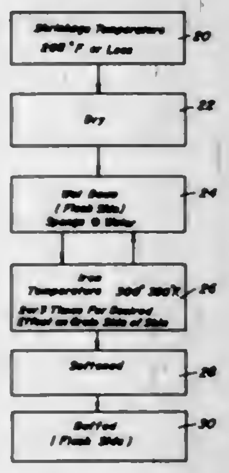
1. Apparatus comprising slide projecting means for projecting onto a screen a series of slides received in a holder having a series of slide receiving locations, motion picture projecting means for projecting onto a screen a series of sequences from a motion picture film interspersed in a predetermined pattern with said slides, and a common interlocking control system for said two projecting means operable to shift between said two means at times to intersperse said slides and said motion picture sequences in said predetermined pattern, said control system including means responsive to the absence of a slide at one of said locations in said holder to automatically shift to said motion picture projecting means for the next sequence.



CHEMICAL

3,309,164
PEBBLE GRAINING MOIST LEATHER BY IRONING

Henry Rose, Gloversville, N.Y. (Continental Villa, R.D. 1, P.O. Box 12E, San Juan, Puerto Rico)
Filed Oct. 26, 1962, Ser. No. 233,331
5 Claims. (Cl. 8—94.2)



1. A process for producing an attractive artificial grain effect upon the grain side of a goatskin comprising the steps of increasing to about 30% to 50% by weight the moisture content of a skin by applying moisture to the flesh side thereof, allowing the skin to remain for a sufficient period of time for the applied moisture to penetrate into the cellular structure of the skin, then partially shriveling the moistened skin by ironing it at a temperature of about 300° to 350° F., increasing the extent of shriveling by repeating the consecutive steps of moistening 30% to 50% moisture content and ironing until a pronounced pebbled grain effect by shriveling of the skin has been obtained.

3,309,165
PROCESS OF IMPROVING THE TENSILE STRENGTH AND INCREASING RESISTANCE TO MICROBIOLOGICAL DETERIORATION OF CELLULOSE TEXTILE CONTAINING CURED AMINOPLAST RESIN BY STEAMING

Morris R. Rogers, Framingham, and Arthur M. Kaplan, Waban, Mass., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Mar. 20, 1964, Ser. No. 353,631
4 Claims. (Cl. 8—116.3)

1. The process which comprises treating cellulose textile material with an aminoplast textile resin and an acidic catalyst, dry curing said textile resin on the textile material at high temperatures whereby the cellulose textile is cross-linked with said resin, the original tensile strength of the cellulose textile material is reduced and said resin cured textile is resistant to microbiological deterioration and weather; heating said resin cured textile material with steam at a temperature of about 252° to about 255° F. at a pressure of about 16 to 18 lbs. per sq. in. for a period of about 2 to 20 minutes whereby said resin cured textile has its original loss in tensile strength decreased and its resistance to loss of tensile strength through microbiological deterioration is further increased.

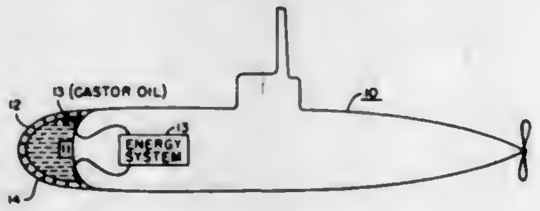
3,309,166
METHOD OF PURIFYING DRY CLEANING SOLVENTS

Alfonso Moncada, 21 3rd Place, Brooklyn, N.Y. 11231, Vincenzo Moncada, 4015 5th Ave., Brooklyn, N.Y. 11232, and John Moncada, 150 21st St., Brooklyn, N.Y. 11232
No Drawing. Filed Aug. 23, 1963, Ser. No. 304,266
4 Claims. (Cl. 8—142)

1. A method of treating dirty dry cleaning fluid to remove contaminants therefrom which comprises contacting said dirty dry cleaning fluid with an admixture, consisting essentially of 1–7 parts by weight of bone char and 1–5 parts by weight of an active material selected from the group consisting of activated carbon and an adsorptive clay.

3,309,167
ANTI-FOULING APPARATUS

Sidney Galler, 6242 Woodcrest Ave.,
Baltimore, Md. 21209
Filed May 21, 1963, Ser. No. 282,184
1 Claim. (Cl. 21—61)



An apparatus for preventing the settlement of organisms in sea water onto the exposed surface of the walls of submerged objects, comprising:

a heating element mounted internally of said submerged object in heat transfer relationship to said walls,

an electrical source for energizing said heating element coupled thereto,

a water temperature sensing means operative to control said electrical source in response to temperature changes in the sea water, and

deactivating means external to said object for disabling said electrical source through activation of said deactivating means in response to the flow of sea water relative to said walls of said object and said deactivation means.

3,309,168
PEROVSKITES

Gerhard Bayer, Hinteregg, Zurich, Switzerland, assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed May 6, 1963, Ser. No. 278,485
12 Claims. (Cl. 23—50)

1. A crystalline perovskite having the general formula

$$A_2^{2+}BTeO_6$$

where A^{2+} is at least one member selected from the group consisting of Ca^{2+}, Sr^{2+}, Ba^{2+} and Pb^{2+}, and B is at least one member selected from the group consisting of Ca^{2+}, Cd^{2+}, Zn^{2+}, Co^{2+}, Cu^{2+}, Ni^{2+} and Mg^{2+}, with the proviso that there is present, for each atom of Te, (1) not more than two atoms of Ca and (2) not more than one atom of Ca for each atom of Cd.

3,309,169
PEROVSKITES

Gerhard Bayer, Hinteregg, Zurich, Switzerland, assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Continuation of applications Ser. No. 278,486 and Ser. No. 278,487, May 6, 1963. This application Oct. 25, 1966, Ser. No. 589,229
8 Claims. (Cl. 23—50)

1. A new perovskite type crystalline compound of the formula

$$B^{2+}B^{3+}B^{1+}Te^{6+}O_6$$

where B^{2+} is selected from the group consisting of Ca^{2+}, Sr^{2+}, Ba^{2+}, and Pb^{2+}; B^{3+} is selected from the group consisting of Bi^{3+} and La^{3+}; and B^{1+} is selected from the group consisting of Li^{1+} and Na^{1+}; with the provision that Ca^{2+} is not selected when Bi^{3+} is selected.

6. A new perovskite type crystalline compound of the formula

$$C^{1+}C^{3+}C^{2+}Te^{6+}O_6$$

where C^{1+} is selected from the group consisting of Na^{1+}, K^{1+} and Rb^{1+}; C^{3+} is selected from the group consisting of Bi^{3+} and La^{3+}; and C^{2+} is selected from the group consisting of Mg^{2+}, Ni^{2+}, Co^{2+}. Cu^{2+}, Zn^{2+}, Cd^{2+} and Ca^{2+}; with the proviso that Na^{1+} is not selected when Bi^{3+} is selected.

3,309,170
METHOD OF CALCINING AND CLASSIFYING BORATE

William T. Griswold, Belvedere, Calif., assignor to Kern County Land Company, San Francisco, Calif., a corporation of California
Filed Mar. 21, 1963, Ser. No. 266,877
4 Claims. (Cl. 23—59)

1. The method of simultaneously calcining and classifying a borate of the group including borax, colemanite and tincalconite comprising the steps of subjecting the borate to a temperature at least as high as that at which the borate decrepitates into fine particles and less than that at which the borate agglomerates, simultaneously passing an upwardly directed stream of gas through the particles of decrepitation whereby the finer particles are carried upward by the stream of gas and the larger particles fall under the force of gravity to thereby classify the finished product, and recovering said finer particles.

3,309,171
DENSIFICATION OF SODA ASH BY VAPOR HYDRATION

Alan B. Gancy, West Acton, Mass., assignor to Intermountain Research & Development Corporation, Cheyenne, Wyo., a corporation of Wyoming
Filed Feb. 11, 1966, Ser. No. 536,500
6 Claims. (Cl. 23—63)

1. A process of densifying soda ash without changing its crystalline structure which comprises treating a soda ash obtained by calcining a precursor selected from the group consisting of sodium sesquicarbonate and sodium bicarbonate with completely gaseous water vapor in an amount of from about 1 mol to about 1.3 mols of water for every mol of sodium carbonate at a temperature of from 70° C. to 125° C. for a time sufficient to hydrate said soda ash without recrystallization to sodium carbonate monohydrate whereby the soda ash retains its original external crystal morphology, calcining said hydrated soda ash and recovering a densified soda ash having a crystalline structure pseudomorphic with its precursor.

3,309,172
PRODUCTION OF CHROMIC CHLORIDE

Winslow H. Hartford, Manlius, and Ernest B. Hoyt, Geddes, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 28, 1964, Ser. No. 407,222
8 Claims. (Cl. 23—87)

1. The process for the production of high purity chromic chloride which comprises subjecting chromic oxide substantially free of other metals forming metal chlorides to reaction in a fluidized bed with a gas containing at least about a 10% excess of chlorine and at least about a 100% excess of carbon monoxide in the presence of an inert particulate material in a ratio of said particulate material to chromic oxide of at least 1:1 at a temperature above 920° C. up to about 1100° C. to convert the chromic oxide by reaction with the chlorine and carbon monoxide as essentially the sole reactants to chromic chloride, and recovering chromic chloride of at least 98% purity.

3,309,173
PROCESS FOR RECOVERING INORGANIC MATERIALS

Sterling N. Vines, Memphis, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 7, 1964, Ser. No. 388,256
4 Claims. (Cl. 23—97)

4. A process for the recovery of copper values from used anhydrous acrylonitrile catalyst mixture containing cuprous chloride dissolved in benzonitrile and non-volatile tarry by-products from the synthesis of acrylonitrile which comprises

(1) vaporizing said benzonitrile from said catalyst mixture to provide a copper-containing desolvated residue,
(2) heating the desolvated copper-containing residue in the range of from about 1000° to 1800° C. to effect the combustion of organic components present in said copper-containing residue,
(3) recovering the products resulting from step (2), quenching said products at a temperature in the range of from 300° to 100° C., and
(4) treating the solid product recovered from said quenching step with HCl at a temperature of from 50° to 150° C.

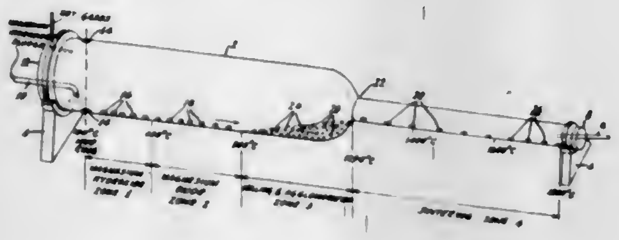
3,309,174
ALKALI METAL TRIPOLYPHOSPHATE PRODUCT

Raimond Pals, Farmingdale, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 29, 1962, Ser. No. 241,059
6 Claims. (Cl. 23—107)

1. A method for increasing the assay of an alkali metal tripolyphosphate, selected from the group consisting of sodium tripolyphosphate and potassium tripolyphosphate in a product mixture containing at least about 85% of said alkali metal tripolyphosphate, produced by heating a mixture of the corresponding alkali metal salts of monohydrogen orthophosphate and dihydrogen orthophosphate which comprises heating said product mixture in an atmosphere containing water vapor in an amount sufficient to yield a partical pressure of at least about 50 mm. of mercury, at a temperature of from about 350° to about 550° C. for a period of from about 30 to about 180 minutes.

3,309,175
PRODUCTION OF A HIGH-POROSITY REFRACTORY

Kenneth M. Berg, Coral Gables, Fla., and James A. Robertson, Levittown, Pa., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 320,250
5 Claims. (Cl. 23—201)



1. Process of producing a refractory magnesium oxide particle comprising introducing brine derived magnesium hydroxide into a rotary heating zone, said rotary heating zone having a constriction therein, heating said magnesium hydroxide to a temperature of from about 450–900° C. to form magnesium oxide particles, passing said magnesium oxide particles into a milling and agglomerating zone within said kiln, said milling and agglomerating zone being formed by the hold-up of magnesium oxide particles by said constriction within said rotary heating zone, crushing said magnesium oxide particles and agglomerating the crushed magnesium oxide particles into porous balls of magnesium oxide having a silica content not above 4% and a crystallite size of from about 1–40 microns within said milling and agglomerating zone, said agglomerating of the crushed magnesium oxide particles being carried out at temperatures of from about 900–1050° C., sintering said magnesium oxide porous balls at temperatures of from about 1600–1800° C. and recovering magnesium oxide particles having an open porosity of from about 25–50%, said porosity being formed by pores substantially all of which have an effective diameter above about 5 microns.

4. A refractory particle consisting essentially of at least about 95% by weight magnesium oxide, and not more than about 4% SiO_2, made up of magnesium oxide crystallites having a size of from about 1 to about 40 microns, said particle having an open porosity of from about 30 to about 50% in which the pores of said particle have an effective diameter of from about 5 to about 100 microns.

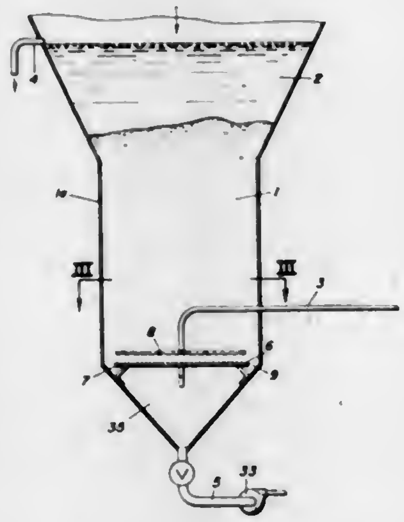
3,309,176
LOW TEMPERATURE SYNTHESIS OF COMPOUND SEMICONDUCTORS

Alfred Mayer, Plainfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
No Drawing. Filed Mar. 29, 1961, Ser. No. 99,029
4 Claims. (Cl. 23—204)

1. The method of synthesizing a compound selected from the group consisting of gallium arsenide, gallium phosphide, indium arsenide and indium phosphide comprising providing an intimate mixture of powdered elements of one of said compounds in approximately stoichiometric proportions but with the more volatile element of said compound in excess, within a closed system, evacuating said system, introducing into said system a small amount of a halogen from the group consisting of chlorine, bromine and iodine, heating a portion of said closed system which contains said powdered elements to a temperature and for a time sufficient to completely react said powdered elements to form said compound, utilizing said halogen as a catalyst, while maintaining another portion of said system at a somewhat lower temperature such that excess of said more volatile element is condensed therein, said heating temperatures being substantially below the melting point of said compound.

3,309,177
COUNTERCURRENT WASHING OF SOLIDS WITH LIQUIDS

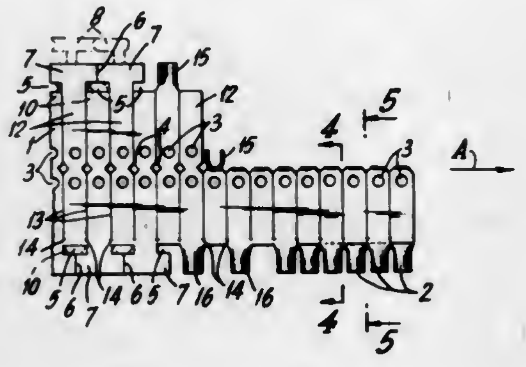
Alfred Goerg, Blonay, Vaud, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
Filed Aug. 5, 1963, Ser. No. 300,017
Claims priority, application Switzerland, Aug. 6, 1962, 9,371/62
4 Claims. (Cl. 23—270)



1. Apparatus for continuously washing mother liquor out of solid products by means of a washing liquid, which comprises a vertically mounted washing vessel having an inlet opening in the upper portion thereof for mixture of solid product and mother liquor, at least one inlet conduit for washing liquid having at least one discharge spout situated within the lower portion of the washing vessel, the said discharge spout having a distributor disposed immediately above a settling bottom and having openings to direct washing liquid downwardly onto said settling bottom, a lower outlet opening in the lower portion of the vessel below the settling bottom for the solid product and washing liquid, an upper outlet opening in the upper portion of the vessel for a mixture of mother liquor and washing liquid, the settling bottom for the solid product being situated within the lower portion of the washing vessel, which settling bottom covers the greater part of the cross-sectional area of the vessel including the central area, the washing vessel being cylindrical in shape at an intermediate portion of said vessel between the settling bottom and the inlet opening for the mixture of mother liquor and solid product, said settling bottom comprising a horizontally disposed baffle within the vessel at the lowermost extremity of the cylindrical portion.

3,309,178
WIDE CRIMP BLADE

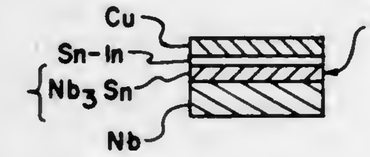
Ferdinand Klumpp, Jr., Union, and Louis Pfeifer, Springfield, N.J., assignors to Heyman Manufacturing Company, Kenilworth, N.J., a corporation of New Jersey
Filed Feb. 12, 1964, Ser. No. 344,473
9 Claims. (Cl. 29—193.5)



1. A plurality of adjacent electric contact blades comprising a first blade portion, a second blade portion folded over said first portion, and a crimping portion extending from one of said blade portions and said crimping portion being of a width greater than said blade portion.

3,309,179
HARD SUPERCONDUCTOR CLAD WITH METAL COATING

Daniel F. Fairbanks, Winchester, Mass., assignor, by mesne assignments, to National Research Corporation, a corporation of Massachusetts
Filed May 3, 1963, Ser. No. 277,899
3 Claims. (Cl. 29—194)

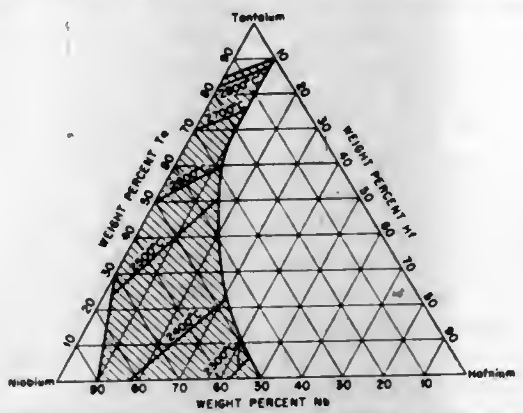


1. An article of manufacture comprising a ribbon with a central flat layer of niobium having opposed outer faces, two thin layers of Nb_3Sn compound overlaying the outer faces of the niobium ribbon and being secured thereto by intermetallic bonding, two thin layers of an electrically conductive tin base solder metal which has a melting point no greater than that of tin overlaying the outer faces of Nb_3Sn and secured thereto by an intermetallic bond and two thin layers of copper overlaying the outer faces of the solder and secured thereto by an intermetallic bond.

3,309,180
BRAZING ALLOYS FOR TANTALUM

Ronald H. Mueller and James C. Marshall, both of Cincinnati, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 28, 1964, Ser. No. 348,921
2 Claims. (Cl. 29—198)

1. A composite body comprising at least two members selected from the group consisting of tantalum and alloys containing a predominant portion of tantalum joined to one another by a brazing alloy falling within the shaded area of the ternary diagram of the accompanying drawing, the joint formed from said members and said brazing alloy being characterized in having a remelt temperature higher than the melting temperature of the selected brazing alloy.



3,309,181
TRANSESTERIFICATION PRODUCT

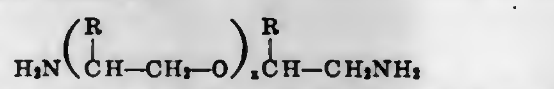
Leonard Berkowitz, Elizabeth, and John E. Engelhart, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Apr. 13, 1964, Ser. No. 359,478
7 Claims. (Cl. 44—62)

1. A hydrocarbon composition of improved pour and improved stability comprising a hydrocarbon oil boiling in the range from about 250 to 750° F. and an effective amount of an additive which is a transesterification reaction product between a copolymer of ethylene and a vinyl fatty acid ester, having a molecular weight of from 1,000–3,000 with a hydrocarbon amino acid.

3,309,182
POLYETHER DIAMINE AS STABILIZER FOR PETROLEUM DISTILLATE FUELS

Richard P. Crowley, Milton, Mass., and William E. Lovett, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Apr. 13, 1966, Ser. No. 542,226
4 Claims. (Cl. 44—72)

1. An improved petroleum distillate fuel boiling in the range of from 75° to 900° F. having incorporated therein a minor stabilizing amount of a polyalkoxy diamine having the general formula:

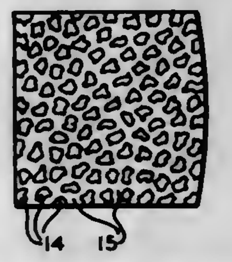


$$H_2N\left(\overset{R}{\overset{|}{C}}H-CH_2-O\right)_x\overset{R}{\overset{|}{C}}H-CH_2NH_2$$

wherein R is a hydrogen or an alkyl group of from 1 to about 3 carbon atoms and wherein subscript *x* represents a positive integer in the range of from 1 to about 200.

3,309,183
ABRASIVE TOOLS AND METHODS OF MAKING SUCH TOOLS

George T. Sermon, Essexville, and Toivo Joseph Lescelius, Saginaw, Mich., assignors to Carbond Corporation, Bay City. Mich., a corporation of Michigan
Filed Aug. 13, 1965, Ser. No. 482,026
18 Claims. (Cl. 51—298)

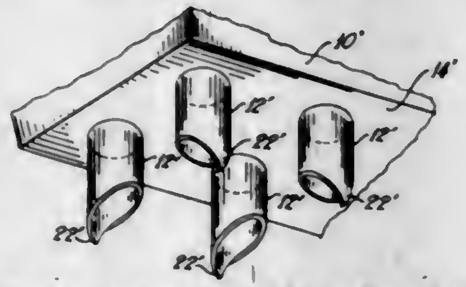


1. A method of preparing an abrasive tool having a uniformly wearing, strongly bonded carbon matrix and

about 10 to 90 weight percent abrasive grains which are also uniformly dispersed in the matrix and are of greater hardness than the matrix comprising: tumbling the grains with particulate silicon to adhere the silicon to the grains by molecular attraction; applying to the grains a sugar solution which can be devolatized by baking to a state in which it does not affect the performance of the tool; coating the grains with solid particulate hydrocarbon derived from pitch by distillation therefrom of liquid hydrocarbons at a temperature of about 165° C. to form composite particles having the grains coated with solid hydrocarbon; compressing the mix into a rigid body; and slowly baking the body in an inert atmosphere at a temperature to dehydrogenize the hydrocarbon and devolatize the sugar solution to form a carbon matrix and bond the grains in the matrix.

3,309,184
METHOD AND APPARATUS FOR FLOWING STREAMS OF HEAT-SOFTENED MATERIAL FROM A SUPPLY

Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation of application Ser. No. 167,497, Jan. 22, 1962. This application Aug. 24, 1964, Ser. No. 391,466
15 Claims. (Cl. 65—1)

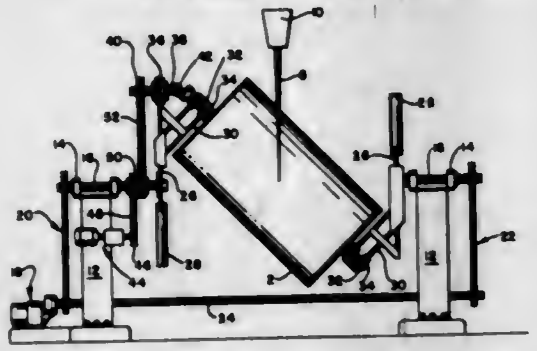


1. The method of processing heat-softened mineral material including flowing the material from a supply through a tubular zone, engaging the material as it flows from the tubular zone with a surface terminating in an apex, conducting heat away from the material by the surface, and flowing a stream of the material from the apex.

9. Apparatus for processing heat-softened mineral material including, in combination, a feeder adapted to contain a supply of heat-softened material, tubular means provided on the receptacle through which material is delivered from the feeder, said tubular means being formed with a wall portion defined by curved edge regions converging to an apex from which flows a stream offset from the axis of the tubular means.

3,309,185
METHOD FOR MAKING FILAMENTOUS MATS

George K. Weber, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Sept. 10, 1962, Ser. No. 222,403
6 Claims. (Cl. 65—2)



1. The method of making a portion of a filamentous mat comprising:

(a) rotating a cylinder about its longitudinal axis;

(b) feeding filaments from filament feeding means to said rotating cylinder;

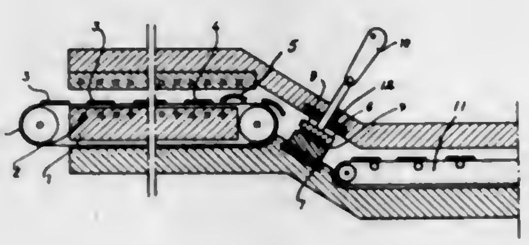
(c) collecting all of said filaments on a circumferential surface of said cylinder between the ends thereof;

(d) rotating the ends of said cylinder about a second axis so the longitudinal axis of said cylinder generates opposite right cones of selected equal apex angles on opposite sides of the mid-point of said cylinder so the speed, relative to said feeder means, of the incremental portions of said cylindrical surface receiving said filaments from said feeder is comparatively constant whereby a cylindrical filamentous mat is formed on said cylinder wherein the width of said mat is determined by said angles and the spacing between adjacent filaments laid on said surface is determined by the relative speed of rotation of said drum about said first axis and the speed of rotation of said ends around said second axis; and,

(e) removing said cylindrical, filamentous mat as a whole in sheet form from said cylinder.

3,309,186
METHOD OF MANUFACTURING KILN TREATED ARTICLES

Tibor Pietsch, Santo Domingo de Siles 8, Madrid, Spain
Filed July 29, 1965, Ser. No. 475,707
Claims priority, application Spain, Aug. 8, 1962, 279,900
1 Claim. (Cl. 65—102)



A process for improving the form of ceramic and vitreous articles which have been formed in a kiln comprising heating said articles to a softened state, then passing said heated ceramic articles to a press while heated to a temperature not more than 10% lower than the softening temperature of said ceramic articles, then repressing said articles and then cooling said articles at a controlled rate to anneal said articles.

3,309,187
METHOD OF RESHAPING FABRICATED INFRARED-GENERATING DEVICES SUCH AS ELECTRIC LAMPS AND THE LIKE

Sivert M. Drangeid, Nutley, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 30, 1963, Ser. No. 334,116
8 Claims. (Cl. 65—103)

1. The method of altering the configuration of a fabricated electrical device that has a sealed vitreous envelope, is in operative usable condition, and generates infrared radiation when energized, which method comprises:

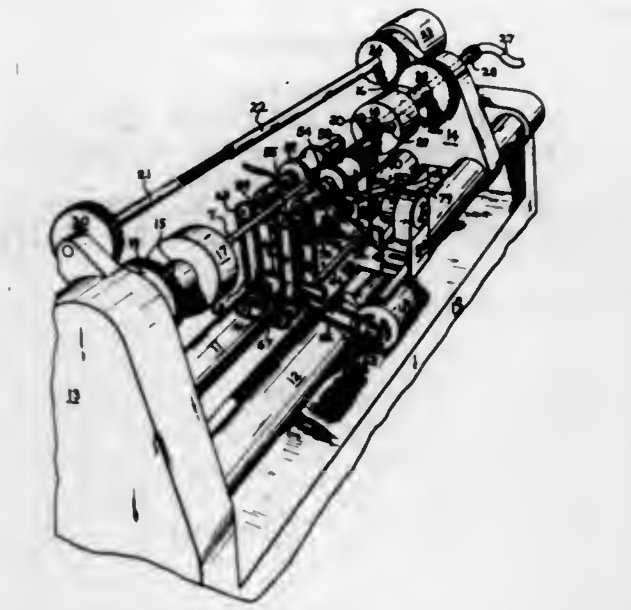
covering a preselected portion of said envelope with non-combustible insulating material,

operating said device with a power input and for a period of time such that the covered portion of said envelope is softened solely by the heat generated by said device and retained by said covering of insulating material, and then

bending the heat-softened portion of said envelope into the desired configuration.

3,309,188
METHOD AND APPARATUS FOR MANUFACTURING PIPETTES

Charles A. Porter and Wilbur A. Schreiner, Vineland, N.J., assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed Sept. 3, 1963, Ser. No. 306,024
6 Claims. (Cl. 65—109)

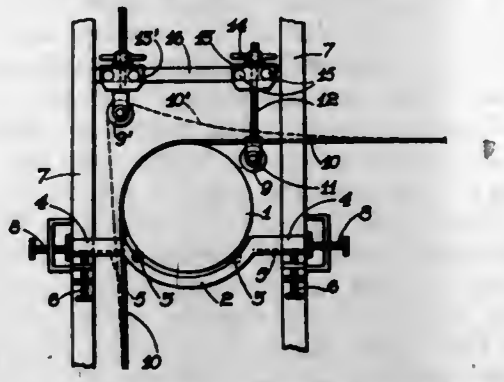


1. A method of forming a pipette from a length of glass tubing comprising, the steps of supporting the tube at the ends only and rotating said length of tubing about its longitudinal axis, applying heat to a predetermined length of said tubing to render a circumferential portion thereof plastic, moving a pair of opposed concave members into close proximity to the heated portion of said tubing, expanding the heated portion against the members by introducing air at a controlled pressure into the tubing, discontinuing the introduction of air into the pipette after expansion is complete, moving the concave members apart and removing the formed pipette.

2. Apparatus for forming a pipette from a length of glass tubing comprising, means for mounting the glass tube only at the ends thereof, means for rotating said length of tubing about its longitudina laxis in a horizontal plane, a pair of concave roller dies, means mounting said roller dies for rotation about their axes and with their axes parallel to and on opposite sides of the axis of the tubing, means supporting said die mounting means for movement toward and away from each other, means connected to said dies for rotating same at the same peripheral velocity and in the same direction, means connected between said die supporting means for biasing same toward each other, means positioned between said die supporting means for controlling the movement of said dies toward and away from each other and into close proximity to said tubing, a motor connected to said means for controlling the movement of the dies, means associated with said die mounting means for limiting movement of said dies toward each other, a heater positioned beneath the tubing for heating the tubing in the area between the roller dies and means in engagement with one end of said tubing for introducing fluid into the interior of said tubing under a controlled pressure to expand said heated area into engaging and forming relation with said dies.

3,309,189
APPARATUS FOR THE RAPID REPLACEMENT OF THE BENDING ROLL IN SHEET GLASS DRAWING MACHINES

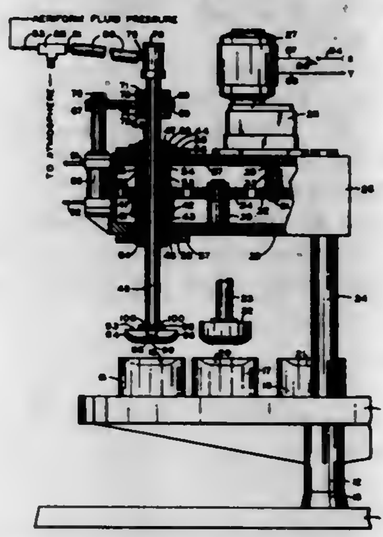
Gustave Javaux, Brussels, Belgium, assignor to Glaverbel, Brussels, Belgium, a Belgian company
Filed Sept. 12, 1963, Ser. No. 308,381
Claims priority, application Belgium, Oct. 31, 1962, 499,157, Patent 624,382
8 Claims. (Cl. 65—172)



1. In apparatus for manufacturing sheet glass by vertical drawing, the combination of a bending roll about which the vertically drawn sheet of glass is bent into a substantially horizontal plane, first means supporting said bending roll for rotatable movement about a horizontal axis, an auxiliary roll for supporting the glass sheet out of contact with the bending roll to permit replacement of the latter, and second means for supporting said auxiliary roll in an inactive position spaced downstream from said bending roll and beneath the substantially horizontally bent portion of the glass sheet, said second supporting means being so constructed and arranged that it is operable to move said auxiliary roll up into engagement with the substantially horizontal portion of the glass sheet and over said bending roll in an upstream direction without disturbing the latter so as to lift the glass sheet out of contact with said bending roll to permit replacement of the latter, and to return said auxiliary roll downstream over the new bending roll to its inactive position whereby the glass sheet is redeposited on the bending roll.

3,309,190
FLUID IMPINGING GLASS FORMING APPARATUS

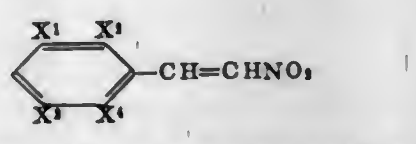
Yilmaz C. Belentepe, Arieh Carmi, Harry R. Kiehl, and Harris G. Rodgers, all of Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Original application June 19, 1963, Ser. No. 288,962. Divided and this application May 18, 1966, Ser. No. 551,034
1 Claim. (Cl. 65—229)



In an apparatus including a mold and plunger for pressing articles of a thermoplastic material and having a dish-like configuration, the combination therewith of an aeriform fluid forming device for maintaining the pressed form of a pressed article still in a semi-plastic condition following the pressing thereof by said mold and plunger and the withdrawal of the plunger from the mold, said device comprising, a plurality of hollow arms extending radially from one end of a center shank portion provided with an aeriform fluid passage connected with the hollow portion of said arms, the surface of each said arm opposite the shank portion having a convex contour corresponding to the contour of the concave surface of said article and a slotted orifice leading from the hollow portion of said arms and extending for at least part of the length of each respective arm; means for mounting said forming device for movement of the arms thereof into an operating position with the concave portion of said article and in close proximity with the exposed surface thereof and, thereafter, out of said portion of the article; driving means connected to said forming device for moving said arms into and out of said concave portion of said article; aeriform fluid supply means connected to supply aeriform fluid under pressure to said aeriform fluid passage and, when said device is in its operating position, through the slotted orifice in each said arm towards the exposed surface of said article, and motor means connected to said shank portion for rotation thereof and the associated arms to direct the aeriform fluid supplied to said passage against said exposed surface with a brushing impingement of said surface by said fluid to press said article while simultaneously cooling such surface.

3,309,191
HERBICIDAL METHOD AND COMPOSITION
Edward D. Weil, Lewiston, and Jerome Linder, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Nov. 26, 1963, Ser. No. 326,208
6 Claims. (Cl. 71—2.3)

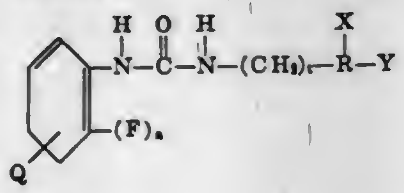
1. A method for the control of weeds which comprises applying to a locus to be treated a growth controlling amount of at least one herbicidal compound of the structure



wherein X^1 is selected from the group consisting of hydrogen and halogen, and wherein X^2, X^3 and X^4 are halogen atoms.

3,309,192
METHOD OF CONTROLLING SEEDLING WEED GRASSES
Raymond W. Luckenbaugh, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 2, 1964, Ser. No. 415,484
17 Claims. (Cl. 71—2.6)

1. Method of selectively controlling seedling weed grasses growing in the presence of other vegetation comprising applying to the locus of growth of said seedling weed grasses in an amount sufficient to retard their growth without corresponding effect on other vegetation a compound of the formula



wherein

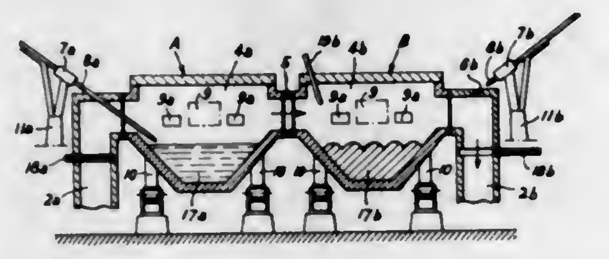
R is selected from the group consisting of saturated cycloalkyl of 5 through 8 carbon atoms and saturated bicycloalkyl of 7 through 8 carbon atoms;

X and Y are each separately selected from the group consisting of hydrogen, halogen, methyl and ethyl;

a and t are each separately selected from the group consisting of 0 and 1;

Q is selected from the group consisting of hydrogen and methyl; and with the limitation that when R is selected from the group consisting of cyclopentyl, cycloheptyl, cyclooctyl, and bicycloalkyl, Q must be in the meta position if methyl and X and Y must be separately selected from the group consisting of hydrogen, halogen and methyl.

3,309,193
PROCESS OF REFINING IRON
Franz Bartu, 10 Tagerhalde, Kusnacht, Zurich, Switzerland
Filed Jan. 26, 1965, Ser. No. 428,083
Claims priority, application Austria, Jan. 27, 1964, A 602/64
2 Claims. (Cl. 75—43)

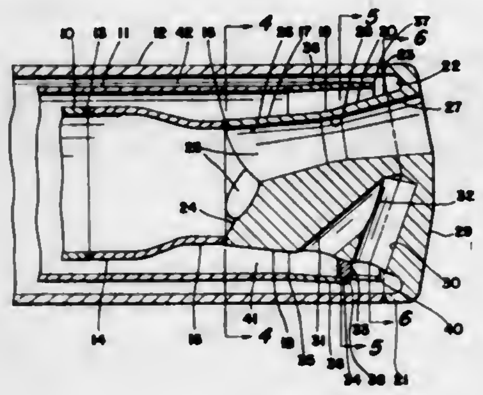


1. A process of refining iron with an oxidizing gas in a double furnace, said furnace comprising two vessels connected in series by a connecting duct, said process comprising refining a ferrous charge with formation of carbon monoxide in one of said vessels, during said refining successively patching the other of said vessels, placing an input into the same and burning carbon monoxide from said one vessel in said other vessel with the aid of a combustion-agent to preheat said input in said other vessel, then tapping said one vessel, charging said other vessel and refining the charge in said other vessel, during said refining successively patching said one vessel, placing an input into the same and burning carbon monoxide from said other vessel in said one vessel with the aid of a combustion-agent to preheat said input in said one vessel, in which process carbon monoxide being formed in the one vessel while the other vessel is being patched is burnt in said one vessel, and the combustion of said carbon monoxide in said one vessel in which it is formed, while the other vessel is being patched, is supported by air which has been sucked in and preheated in the other vessel which is being patched.

3,309,194
PURIFICATION OF ALLOYS
Edward J. Dunn, Jr., Library, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Dec. 24, 1964, Ser. No. 421,114
7 Claims. (Cl. 75—52)

1. In a process for producing an alloy having low sulfur, oxygen and carbon content wherein the alloy is selected from the group consisting of iron-base and nickel-base alloys, the steps comprising adding to the molten alloy from 0.5% to 2%, by weight, of calcium, whereby calcium compounds of sulfur and oxygen are formed and permitted to segregate and thus effect a reduction in the sulfur and oxygen content of the molten alloy, lowering the temperature of the alloy to below about 1755° K., but above the melting point of the alloy, while free calcium is present in the alloy and introducing oxygen into said alloy while at said temperature whereby a reaction between the calcium, carbon and oxygen occurs and results in the reduction of the carbon content of the alloy, and separating and removing free calcium and calcium compounds from the molten alloy.

3,309,195
METHOD OF DELIVERING OXYGEN TO BASIC OXYGEN FURNACES, AND OXYGEN LANCES THEREFOR
Leland H. Hutton, University Heights, Ohio 44106
Filed May 5, 1965, Ser. No. 453,398
16 Claims. (Cl. 75—60)



1. In a method of producing steel in a basic oxygen furnace, the steps which comprise inserting an oxygen lance into the furnace substantially perpendicularly to the bath level in the furnace, with the nozzle of the lance at a predetermined point above the level of the bath, and flowing oxygen through the lance while causing the oxygen to pass through a plurality of Venturi passageways in the lance nozzle disposed at an angle of from 7 to 12 degrees to the axis of the nozzle, whereby a desired pattern of penetration of oxygen into the steel is provided.

3,309,196
FLUXING AGENT
Thomas M. Kaneko, Trenton, and Erwin C. Handwerk, Grosse Ile, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed Oct. 28, 1964, Ser. No. 407,217
9 Claims. (Cl. 75—94)

1. Pellets of agglomerated particulate material suitable for metallurgical fluxing consisting essentially of by weight about 20 to 35 percent lime, about 20 to 35 percent alumina, about 5 to 20 percent soda, and about 5 to 25 percent silica.

3,309,197
NODULAR GRAPHITE CAST IRON CONTAINING CALCIUM AND MAGNESIUM
Kazuji Kusaka, 16—20 3-chome Honkugenuma, Fujisawa, Japan
Filed June 18, 1963, Ser. No. 288,806
Claims priority, application Japan, Oct. 16, 1962, 37/44,791
10 Claims. (Cl. 75—130)

1. A method of making nodular graphite cast iron, comprising adding to molten iron sufficient of a mixture of at least one magnesium containing desulphurizing compound and at least one calcium containing desulphurizing compound for desulphurizing the molten iron to a sulphur content less than .015%, then adding to the desulphurized molten iron a spheroidizing agent comprised of a mixture of at least a magnesium halide compound and a reducing agent for said magnesium halide compound, said reducing agent including at least a major portion of Ca-Si, whereby there is produced an excellent nodular graphite cast iron, danger of flashing during adding of the spheroidizing agent is substantially eliminated, and the effective spheroidizing time is more than 20 minutes.

3,309,198
POSITIVE TO POSITIVE REPRODUCTION PROCESS AND COPY SHEET FOR USE THEREIN
Jean J. A. Robillard, Waltham, Mass.
(B.P. 137, Paris XIII, France)
Filed Sept. 30, 1965, Ser. No. 491,786
17 Claims. (Cl. 96—1)

1. A process of producing a substantially permanent visible photographic record characteristic of a radiation image which comprises (a) exposing to said image the surface of a photoconductive recording medium supported on an electrically conductive backing, said photoconductive recording medium comprising a layer of photoconductive material which exhibits a change in conductivity in those areas of said photoconductive recording medium exposed to said radiation image and forming as a result of exposure of said photoconductive recording medium to said image a latent image in terms of local variations of conductivity in said photoconductive recording medium, (b) contacting the surface of said photoconductive recording medium with the surface of an electrosensitive medium comprising an electrolyte and an oxidizable metallic electrically conductive backing, (c) impressing an electric field through said photoconductive recording medium and said electrosensitive medium to obtain a thin highly resistive oxide film in selected areas on the surface of the electrically conductive backing of said electrosensitive medium, said current flow between said photoconductive recording medium and said electrosensitive oxidizable medium being substantially proportional to the change in conductivity in said photoconductive recording medium according to the previous exposure of said medium to said radiation image, (d) placing a solid metal catalyst source in contact with the surface of a semiconductor material layer having at least two oxidation states of substantially contrasting color with the lower oxidation state being intensely colored, said semiconductor material being substantially in a higher oxidation state and said semiconductor material being doped with a donor impurity compatible with the energy band of said semiconductor material, said semiconductor material layer being also in contact with said oxide film on said electrically conductive backing and (e) impressing an electric field through said solid metal catalyst source, said semiconductor material layer and said electrically conductive backing on which said oxide film is formed to inject metal ions of said catalyst into said semiconductor material layer, said current that flows upon the impression of said electric field being modulated according to the distribution of said oxide film on the surface of said electrically conductive backing, said oxide film offering a higher resistance to the passage of current and said metal ions into said semiconductor material layer than those areas on the surface of said electrically conductive backing free of said oxide film, whereby the injection of said metal ions into said semiconductor material layer causes said semiconductor material to convert into a lower oxidation state in selected areas of said layer thereby producing a photographc record of the image.

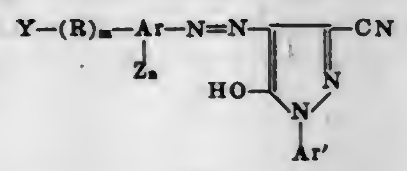
10. An electrosensitive coating comprising a semiconductor oxide having two oxidation states of different color, said oxide being substantially in the higher state of oxidation and doped with an impurity in a quantity to render the coating sensitive to the introduction of a relatively small number of ions of a solid catalyst upon the applica-

tion of an electric field to change said oxide by catalytic action from the higher to a lower state of oxidation, and a dry electrolyte mixed with said semiconductor oxide and dispersed in an organic binder.

3,309,199
PHOTOGRAPHIC PRODUCTS, COMPOSITIONS AND PROCESSES UTILIZING 3-CYANO-4-AZO-5-PYRAZOLONE DYE DEVELOPERS

Daniel L. Ross, Cambridge, Mass, assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
No Drawing. Filed Dec. 31, 1962, Ser. No. 248,240
29 Claims. (Cl. 96—29)

18. In a process of forming a photographic image in color, the steps which comprise developing an exposed silver halide emulsion with an aqueous alkaline solution containing an azo dye developer of the formula:



wherein Y is selected from the group consisting of p-dihydroxyphenyl, o-dihydroxyphenyl radicals and alkyl and halogen nuclear substituted p-dihydroxyphenyl and o-dihydroxyphenyl radicals; Ar is an aryl nucleus selected from the group consisting of benzene and naphthalene nuclei, said —N=N— group being directly attached to a ring carbon of said aryl nucleus, Ar; R is a divalent alkylene group directly attached to said aryl nucleus Ar and to said phenyl ring of Y; each Z is selected from the group consisting of halogen, alkoxy and alkyl radicals; *n* is from 0 to 2, inclusive; *m* is from 0 to 1, inclusive; and Ar' is a phenyl radical, to provide in said emulsion an imagewise distribution of unoxidized dye developer in undeveloped areas of said emulsion, and transferring at least part of said imagewise distribution of unoxidized dye developer by imbibition from said emulsion to an image-receiving layer in superposed relationship with said emulsion to impart a transfer image in color to said image-receiving layer.

3,309,200
DATA REPRODUCTION PROCESS

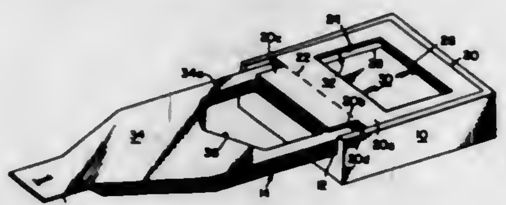
Elliot Berman, Braintree, and Hollis E. French, Woburn, Mass., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware
No Drawing. Filed June 3, 1963, Ser. No. 284,803
13 Claims. (Cl. 96—49)

1. In a data reproduction process for producing a positive copy of an original having image areas and non-image areas in a copy medium comprising a heat- and light-sensitive composition and a carrier therefor, said composition comprising a diazosulfonate salt and a coupling agent reactive therewith under the influence of heat, which process comprises exposing said copy medium to heat in those of its portions corresponding with image areas of the original, whereby color is formed in the heat struck portions of said copy medium by reaction of said diazosulfonate salt and said coupling agent, and densensitizing said copy medium in those of its portions corresponding with non-image areas of the original by exposing said medium to ultraviolet light, whereby said diazosulfonate salt is decomposed and rendered incapable of reaction with said coupling agent, the improvement of further adding to said composition a diazonium salt supplying a diazonium cation to said composition.

3. In a data reproduction process for producing a positive copy of an original having image areas and non-image areas in a copy medium comprising heat- and light-sensitive composition and a carrier therefor, said composition comprising a diazosulfonate salt and a coupling agent reactive therewith under the influence of heat, which process comprises exposing said copy medium to ultraviolet light through said original, whereby portions of said medium corresponding with non-image areas of the original are desensitized by decomposition of said diazosulfonate salt which is rendered incapable of reaction with said coupling agent, and then heating said copy medium to form color by reaction of said diazosulfonate salt and coupling agent in those unexposed areas of said medium corresponding with image areas of the original, the improvement of including in said composition a diazonium salt supplying a diazonium cation to said composition.

3,309,201
PHOTOGRAPHIC MINIATURE TRANSPARENCY FILM PRODUCT

Melvin Friedman, Watertown, Mass., and Frank W. Knight, Jr., Salem, N.H., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 28, 1962, Ser. No. 248,093
24 Claims. (Cl. 96—76)



1. A photographic film unit adapted to be exposed and processed in a camera which includes processing means cooperating with said film unit for effecting a diffusion transfer method of forming an image therewithin, said film unit comprising a substantially rigid mount suitable as a slide mount for projection of said image and having an opening formed therein for exposure and viewing purposes, a film component including in superimposed relation at least an image-receiving surface and a photosensitive material comprising at least one silver-halide emulsion so mounted in said mount as to be coextensive with at least the area of said opening, container means releasably carrying a processing liquid positioned in said film unit so as to overlap an edge of said film component which lies adjacent to a given side of said opening and permit release of said liquid across a surface of said film component, and a cover sheet releasably attached to said mount along at least a leading edge thereof and superimposed with both said film component and said liquid container, said cover sheet including an opaque portion coextensive with at least said mount opening which provides both a barrier relative to the light of said exposure and a barrier for confining said processing liquid, when released, to the vicinity of said film component.

3,309,202
PRINTING PLATE COATING COMPOSITIONS

Julius L. Silver, Somerset, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Sept. 10, 1964, Ser. No. 395,559
20 Claims. (Cl. 96—85)

1. A coating composition consisting essentially of (1) an association product of a heat-fusible condensation product of a phenol with an aldehyde and from about 0.2 to 3.0 parts by weight of a water soluble ethylene oxide polymer having an average molecular weight in the range of from 50,000 to about 10,000,000 per part phenolic resin, (2) from about 0.006 to about 0.05 part by weight per part phenolic resin of an organic sulfonic acid containing from 1 to 12 carbon atoms inclusive, (3) from about 0.025 to about 0.2 part by weight per part phenolic resin of a water soluble, inorganic bichromate of the formula $(M)_2Cr_2O_7$ where M is an alkali metal or an ammonium ion, (4) from about 0.025 to about 0.13 part by weight per part phenolic resin of a polyhydric phenol selected from the group consisting of phloroglucinol and resorcinol, and (5) a suitable solvent.

8. A planographic printing plate base comprising a substrate having coated on at least one of its surfaces a photosensitizable composition consisting essentially of (1) an association product of a heat-fusible condensation product of a phenol with an aldehyde and from about 0.2 to 3.0 parts by weight of a water soluble ethylene oxide polymer having an average molecular weight in the range of from 50,000 to about 10,000,000 per part phenolic resin, (2) from about 0.006 to about 0.05 part by weight per part phenolic resin of an organic sulfonic acid containing from 1 to 12 carbon atoms inclusive, (3) from about 0.025 to about 0.2 part by weight per part phenolic resin of a water soluble, inorganic bichromate of the formula $(M)_2Cr_2O_7$ wherein M is an alkali metal or an ammonium ion, and (4) from about 0.025 to about 0.13 part by weight per part phenolic resin of a polyhydric phenol selected from the group consisting of phloroglucinol and resorcinol.

3,309,203
METHOD FOR REDUCING FERMENTATION TIME OF BREAD DOUGH

Carl J. Jensen, Cedar Grove, N.J., assignor to Shield Laboratories, Inc., Montclair, N.J., a corporation of New Jersey
No Drawing. Filed Aug. 8, 1963, Ser. No. 300,924
5 Claims. (Cl. 99—91)

1. A method for reducing fermentation time in making leavened bread and bread-like products consisting essentially of mixing with the bread dough from about 0.1 to about 5.0 grams of substantially pure methionine for each one hundred pounds of flour in said dough and then allowing the mixture to ferment.

3,309,204
METHOD OF PREPARING A STABLE SAUSAGE EMULSION

Richard L. Helmer and William L. Brown, Ottumwa, Iowa, assignors to John Morrell & Co., Ottumwa, Iowa, a corporation of Maine
No Drawing. Filed Feb. 14, 1964, Ser. No. 344,840
6 Claims. (Cl. 99—109)

1. The method of preparing a stable sausage emulsion without the accumulation of surface grease caused by emulsion breakdown which consists of comminuting suitable sausage meats, mixing said comminuted meats with water, incorporating comminuted fat ingredients into the meat-water mixture, adding a vegetable oil in the proportion of 3% to 30% based upon the total weight of the meat material in the sausage emulsion and thereafter thoroughly mixing said resultant mixture to produce said stable sausage emulsion.

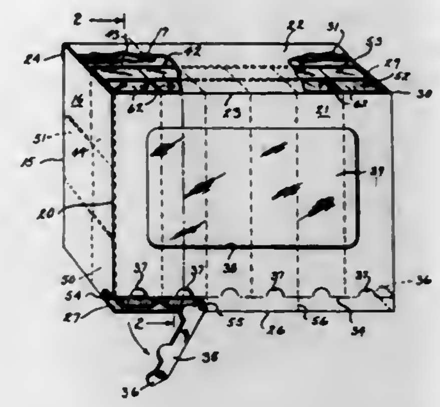
3,309,205
FOOD PRODUCTS AND PROCESS FOR ENHANCING FLAVOR OF FOOD WITH N,N'-DI-o-TOLYLETHYLENEDIAMINE

Richard L. Hughes, West Roxbury, Theodore E. Dickelman, Arlington, David A. Kendall, West Newton, and Douglas E. Melzard, Georgetown, Mass, assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
No Drawing. Filed Dec. 23, 1964, Ser. No. 420,799
2 Claims. (Cl. 99—140)

1. A process for enhancing the flavor of food comprising blending betweeen about 5×10^{-16} and 1×10^{-8} parts of N,N'-di-o-tolylethylenediamine with one part of food.

3,309,206
DISPENSING CARTONS FOR STACKED FOOD ITEMS

Paul J. Daniels, 880 Siesta Drive, Sarasota, Fla. 33581
Filed June 17, 1965, Ser. No. 464,682
4 Claims. (Cl. 99—192)



1. In a dispensing carton having a bottom and having foldably connected upright front, rear and side panels, a plurality of elongated trays within said carton having sides and ends and positioned upright on end in said carton against said front panel and each containing superimposed pats of a food spread which are separated by paper separators having projecting margins, said pats and separators projecting in horizontal position forwardly beyond the sides of the tray, there being a horizontal dispensing slot across the lower portion of the front wall and having an upper margin in approximate alignment with the separator papers of the bottom-most pats, said slot also having a plurality of spaced finger recesses communicating with its upper margin, there being one recess for each upright tray, the height of the slot and size of said finger recesses being such as to permit the gripping of a projecting margin of a separator paper of a bottommost pat between two fingers when one of said fingers is in a finger recess and when the other is in the slot, and said slot height being such that only the bottommost pat can be withdrawn from the tray and carton.

3,309,207
PRECOOKED DEHYDRATED VEGETABLE CASSEROLE AND METHOD OF MAKING SAME

Justin M. Tuomy, Framingham, Mass., and Rosario Busceml, Niles, Ill., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Oct. 30, 1963, Ser. No. 320,229
9 Claims. (Cl. 99—207)

1. A process of preparing a dehydrated, precooked vegetable casserole meal which comprises
(a) mixing from 0 to 50 parts by weight of comminuted meat, from 40 to 95 parts by weight of at least one sliced vegetable of the group consisting of white potatoes, sweet potatoes and squash, from 3 to 10% by weight of pregelatinized corn flour, and sufficient liquid for processing,
(b) cooking said mixture until the ingredients test done,
(c) freeze-vacuum-dehydrating the cooked mixture to a moisture content below 4%; whereby an instantly rehydratable, storage-stable product is obtained which upon rehydration has the appearance, texture and flavor of the freshly prepared product.

3,309,208
METHODS FOR CONTROLLING THE THERMAL EXPANSION PROPERTIES OF CERAMICS

Robert H. Arlett, New Brunswick, Sam Di Vita, West Long Branch, and Edward J. Smoke, Metuchen, N.J., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Apr. 23, 1965, Ser. No. 450,559

1 Claim. (Cl. 106—39)

A method for controlling the thermal expansion of a ceramic material consisting of 61.0% frit and 39.0% clay; said method comprising dry mixing 0.5–9.0% MgO, 11.5–3% Li_2O, 8% Al_2O_3 and 80% SiO_2, the total of MgO plus Li_2O being 12%; melting said dry mix into a glass, pouring said glass into water to quench and retain the glass structure, thereby forming said frit; air drying said frit; reducing said frit to a powder by milling; mixing said powder with water and said clay; fabricating said powdered frit, water and clay into a specimen; air drying said specimen; and firing said specimen in an electric kiln at a temperature of 1200° to 1400° C.

3,309,209
REFRACTORY

Jacques R. Martinet, San Jose, and Merton L. Van Dreser, Campbell, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,685

11 Claims. (Cl. 106—57)

1. A refractory composition adapted to form the lining of a high temperature metallurgical furnace, consisting essentially of at least one refractory grain material chosen from the group consisting of chromite, magnesia and magnesia spinel, and from 20% to 60% of a refractory bonding component substantially entirely passing 35 mesh screen, said bonding component including from 10% to 35% of periclase particles, said bonding component including in intimate dispersion a zirconium compound in amount sufficient to provide from 0.2 to 2.0% ZrO_2 based on the total weight of the refractory composition, the remainder of said bonding component being chromite, said refractory composition containing at least 10% chromite and not over 6 percent silica and not over 2 percent CaO.

3,309,210
INSULATING FIREBRICK

Charles L. Norton, Jr., William C. Bohling, and Avitus Daniel Fentzke, all of Augusta, Ga., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 14, 1964, Ser. No. 359,775

4 Claims. (Cl. 106—64)

1. A method for manufacturing a refractory article, essentially free of ingredients which are reducible in a high temperature hydrogen atmosphere having a low dew point, comprising the steps of forming a raw batch consisting essentially of a dry mix plus sufficient water to render the batch flowable, said dry mix being a mixture, by weight, of about from 61% to 82% alumina, from 8% to 30% plaster of Paris, from 10 to 25% wood flour, up to 10% aluminum fluoride, and ⅛ to 2% crystalline quartz, forming the article into a shape from said raw batch, and then firing the shape, the aluminum fluoride being present in an effective amount sufficient to prevent excessive shrinkage during firing.

3,309,211
METHOD OF TREATING CLAY AND CLAY PRODUCED THEREBY

Armin Weiss and Werner Thielepape, Heidelberg, Germany, assignors to Erbsloh & Co. Geisenheimer Kaolinwerke, Geisenheim (Rhine), Germany

No Drawing. Filed Mar. 4, 1964, Ser. No. 349,451

Claims priority, application Germany, Mar. 5, 1963, E 24,433

16 Claims. (Cl. 106—72)

1. A process of treating kaolinite containing clay which comprises mixing the clay with at least one chemical compound in liquid form, said compound being selected from the group consisting of

(a) ammonium acetate;
(b) hydrazine;
(c) urea;
(d) formamide;
(e) acetamide;
(f) dimethylsulfoxide and
(g) ammonia,

said liquid form being at least a concentrated solution of said compound, whereby said chemical compound is introduced between the individual layers of the clay, the weight ratio of the clay to said compound being between about 100 to 4 to 100 to 20, and subjecting the clay to a mechanical treatment which exerts a shearing force in a direction substantially parallel to the clay layers, whereby said layers perform a sliding action relative to each other, an intercalation product between said clay and said chemical compound is obtained in which the distance between the clay layers is enlarged and the lattice structure of the clay is distended.

3,309,212
MANUFACTURE OF CERAMIC SHAPES OR BODIES

Irwin J. Lubalin, Rockville Centre, N.Y., assignor to Avnet-Shaw Corporation, Plainview, N.Y., a corporation of New York

No Drawing. Filed Apr. 18, 1962, Ser. No. 188,539

13 Claims. (Cl. 106—84)

1. In the manufacture of ceramic objects formed from slurries comprising ceramic particles distributed in a gelable binder and a gelling accelerator, the improvement which comprises combining: (1) a first slurry comprising a portion of the ceramic particles and the binder with (2) a second slurry comprising the balance of the ceramic particles and the gelling accelerator, and allowing the combined slurries to gel.

3,309,213
PIGMENTING WITH CERTAIN DIOXAZINES

André Pugin, Riehen, near Basel, and Kurt Burdeska, Basel, Switzerland, assignors to S.J.R. Geigy A.-G., Basel, Switzerland

No Drawing. Filed June 25, 1963, Ser. No. 290,342

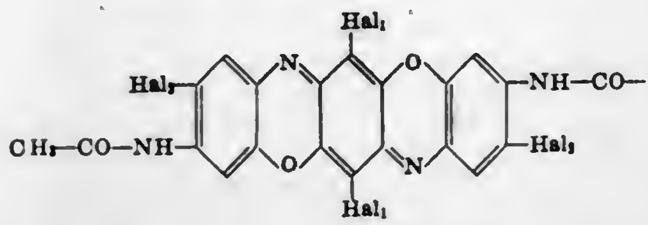
Claims priority, application Switzerland, July 3, 1962, 8,003/62

17 Claims. (Cl. 106—193)

2. A pigmented composition comprising an intimate admixture of a substrate selected from the group consisting of

(a) polyvinylchloride, polyvinyl acetate, polyacrylonitrile, polymers of lower alkyl esters of acrylic and methacrylic acid, polyethylene, polypropylene, polystyrene, rubber and chlorinated rubber, synthetic polyamide, polyethylene glycol terephthalate, acetylcellulose, viscose, nitrocellulose, shellac, phenol formaldehyde lacquer resin, melamine formaldehyde lacquer resin, urea formaldehyde lacquer resin, unmodified alkyd resins, alkyd resins modified with monostyrene, alkyd resin modified with a fatty acid, alkyd resin modified with a resinic acid, alkyd resin modified with a mixture of a resinic and a fatty acid, alkyd resin modified with urea formaldehyde lacquer resin, oil-modified alkyd resin, polyvinylacetal, unsaturated liquid polyester resin modified with monostyrene, saturated liquid polyester resin, epoxide resin, unsaturated liquid polyester resin, oil-reactive alkyl phenol resin, mixtures of the two latter resins, drying oil capable of forming varnishes, and ketonic resins, and

(b) as a pigment, a compound of the formula



wherein one of the pairs of substituents Hal_1 and Hal_2 is a pair of chlorine atoms and the other pair is a member selected from the group consisting of a pair of chlorine atoms and a pair of bromine atoms in an amount of from about 0.001 to 30% by weight calculated on the weight of the material being pigmented.

3,309,214
CALCINED PIGMENTS FROM KAOLIN

Ernst Podschus, Leverkusen, and Werner Joseph, Cologne-Mulheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 25, 1964, Ser. No. 370,038

Claims priority, application Germany, May 30, 1963, F 39,875

7 Claims. (Cl. 106—288)

1. A process for the production of calcined pigments from kaolin which consists of dehydrating kaolin clay by shock calcination at a temperature between 600 to 1000° C. for a period of time not in excess of about 1 second in a hot gas stream and thereafter partially crystallizing the shock calcined product into gamma-Al_2O_3 and mullite by calcining said product in a stream of hot combustion gases at a temperature of between 800 to 1100° C. for a period of time of at least ten minutes.

3,309,215
YELLOW COLORED CELLULOSIC ARTICLE AND METHOD OF COLORING THE SAME

Wilbur T. Brader, Jr., Swarthmore, Pa., and Edward B. Jaynes, Wilmington, Del., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

No Drawing. Filed July 3, 1963, Ser. No. 292,717

6 Claims. (Cl. 117—7)

6. A method of preparing a clear regenerated cellulose film having a stable, bright yellow color which comprises treating said film, in the wet gel state, with an aqueous solution of about 5% by weight of cadmium chloride, removing excess solution from the film, then immersing said film in an aqueous solution of about 2% by weight of sodium sulfide for a period of at least 2 seconds, washing the film, and curing the film under tension for at least several minutes at an elevated temperature.

3,309,216
ORIENTED POLYOXYMETHYLENE COATED WITH ORIENTED POLYETHYLENE CRYSTALS

Jakob Willems, Krefeld, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 1, 1963, Ser. No. 312,885

Claims priority, application Germany, Oct. 16, 1962, W 33,133/64

3 Claims. (Cl. 117—7)

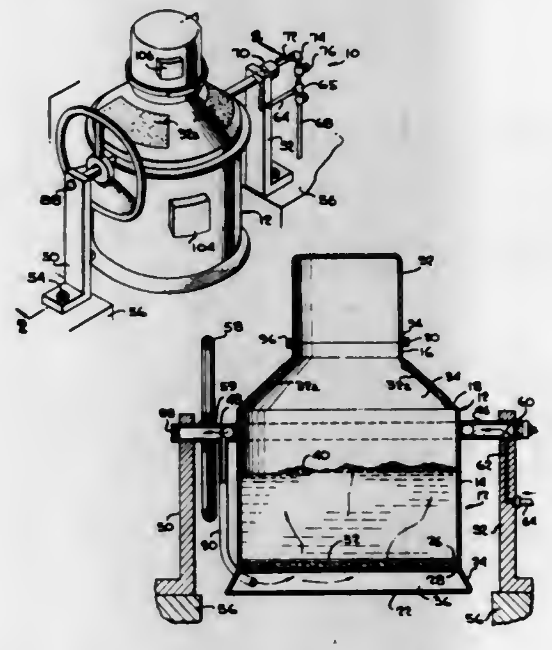
1. Oriented polyoxymethylene coated with polyethylene crystals, the longitudinal axes of said crystals being arranged perpendicular to the direction of orientation of said polyoxymethylene.

3,309,217
COATING METHOD AND APPARATUS

Fritz J. Nagel, Reading, Pa., assignor, by mesne assignments, to The Polymer Corporation, a corporation of Pennsylvania

Filed July 18, 1963, Ser. No. 295,977

14 Claims. (Cl. 117—18)



2. The process of coating the interior surfaces of a hollow, open-ended container, which comprises the steps of:

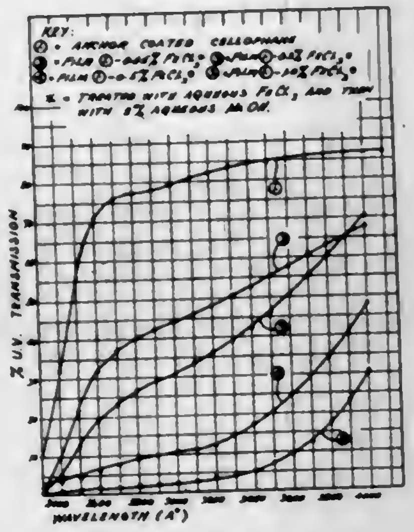
fluidizing a bed of pulverulent, heat-fusible coating materials contained within an open-topped fluidization vessel by passing a stream of fluidizing gases upwardly through said coating materials;
heating said container to a temperature in excess of the fusion temperature of said coating materials but below the melting point of said article;
discontinuing said stream of fluidizing gases;
securing the open end of said heated article to the open top of said fluidization vessel so that the interiors of said article and said vessel are in open communication with each other;
inverting said vessel to enable the coating materials to flow into and substantially fill the article by gravity;
maintaining said coating material in said article for a sufficient length of time to cause a portion of said coating materials to fuse onto the interior surfaces of said article;
returning said vessel and said article to their original positions whereby unfused coating materials are returned by gravity to the interior of said vessel; and
removing said article from said vessel.

3,309,218
FLEXIBLE CELLULOSIC ARTICLES HAVING ULTRA-VIOLET LIGHT SHIELDING PROPERTIES AND METHOD OF PRODUCING THEM

Wilbur T. Brader, Jr., Swarthmore, Pa., and Thomas E. Bradley, Wilmington, Del., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Dec. 28, 1962, Ser. No. 247,954

10 Claims. (Cl. 117—33.3)



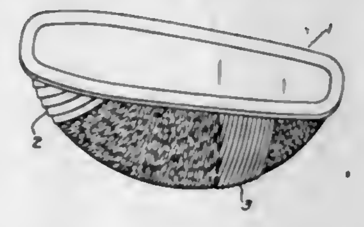
1. A wrapping material for an ultra-violet light sensitive article comprising a clear, non-fibrous regenerated cellulose sheet uniformly impregnated with ferric hydroxide in an amount sufficient to improve the ultraviolet light shielding properties of said sheet.

3,309,219
METHOD OF PRODUCING AN ULTRAVIOLET RESISTANT POLYCARBONATE ARTICLE

Theodore L. Etherington, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York

Filed July 12, 1963, Ser. No. 294,517

7 Claims. (Cl. 117—33.3)



1. A process for the manufacture of an article consisting essentially of polycarbonate resin having a high resistance to degradation by ultraviolet light which comprises the steps of forming polycarbonate resin into an article and then dipping said article into an oil bath containing an ultraviolet absorbing compound selected from the group consisting of substituted derivatives of benzophenone and substituted derivatives of benzotriazole, said bath being maintained at a temperature of about 100° C. to about 200° C.

3,309,220
METHOD OF PRODUCING AN ULTRAVIOLET RESISTANT POLYCARBONATE ARTICLE

Mitchell M. Osteen, Zirconia, N.C., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Apr. 10, 1964, Ser. No. 358,921

5 Claims. (Cl. 117—33.3)

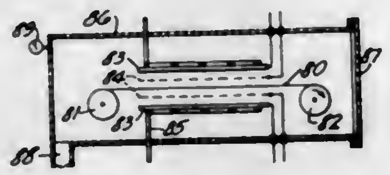
1. A process for the manufacture of an article consisting essentially of polycarbonate resin having a high resistance to degradation by ultraviolet light which comprises the steps of forming polycarbonate resin into an article and then dipping said article into a bath consisting essentially of an aqueous solution and dispersion of an ultraviolet absorbing compound selected from the group consisting of substituted derivatives of benzotriazole and substituted derivatives of benzophenone, said bath being maintained at a temperature of about 90° C. to about 100° C.

3,309,221
SURFACE ACTIVATION OF PASSIVE POLYMERS AND ARTICLES PRODUCED THEREBY

Gordon R. Smith, Stillwater, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Mar. 25, 1963, Ser. No. 268,856

6 Claims. (Cl. 117—47)



1. The method of activating a passive hydrogen-free fluorocarbon polymer surface to provide increased receptivity of said surface to adhesion with adhesives and other overcoatings which comprises subjecting said polymer surface to a vacuum induced low-pressure electrical glow discharge generated at a current density range of 10^{-3} and 10^{-1} amperes per square cm. with pressure-distance values between electrodes of about 2 to 20 mm. Hg cm., said discharge emitting ultraviolet irradiation of wavelengths of about 1800 A. and shorter, said polymer surface being in the path of said irradiation and in an oxygenated atmosphere having insufficient oxygen present to absorb said short wave ultraviolet irradiation before impingement thereof on said polymer surface, said irradiation being for a period of time sufficient to activate said polymer surface.

3,309,222
POLYESTERS OR POLYCARBONATES COATED WITH CURED UNSATURATED POLYESTER RESINS CONTAINING NITROGEN

John Richard Caldwell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,303

13 Claims. (Cl. 117—138.8)

1. A coated object comprising (A) a shaped object consisting essentially of a high-melting crystalline linear polyester selected from the group consisting of bisphenol polycarbonates and polyesters of (a) diols and (b) dicarboxylic bifunctional compounds consisting essentially of hexacarbocyclic nuclearly attached dicarboxylic bifunctional compounds wherein the carboxy radicals are nuclearly situated in a para relationship or dicarboxylic bifunctional naphthalene compounds, and (B) a cured unsaturated polyester resin coating on said shaped object having a composition consisting essentially of a polyhydric alcohol constituent, a polycarboxylic acid constituent and a nitrogen containing constituent having two functional radicals selected from the group consisting of hydroxy, carboxy and amino groups attached to an organic radical whereby said unsaturated polyester resin has carboxyamide groups or tertiary amino groups in its structure in an amount such that the unsaturated polyester resin contains from 0.4 to 5% nitrogen by weight, as to which unsaturated polyester constituents any unsaturated acid constituent constitutes at least 30 mole percent of the polycarboxylic acid consituent and any unsaturated alcohol constituent constitutes a least 40 mole percent of the polyhydric alcohol constituent.

3,309,223
TREATMENT OF SHAPED ARTICLES WITH A SULPHONIUM COMPOUND AND A REACTIVE POLYMERIC SUBSTANCE

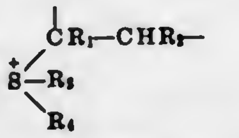
John Bryn Owen and Harold Sagar, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,523

Claims priority, application Great Britain, Dec. 3, 1962, 45,466/62

9 Claims. (Cl. 117—139.5)

1. Process for the treatment of shaped articles composed of a major proportion of hydrophobic polymeric material whereby the hydrophobicity and tendency to soil and acquire electrostatic charges of the said material are reduced, comprising contacting said articles in the presence of an alkali, with a sulphonium compound which liberates the following sulphonium cation with two free valences.



$$\overset{+}{S}(-\overset{|}{C}R_1-CHR_2-)(-R_3)(-R_4)$$

where R_1 and R_2 independently represent hydrogen and lower alkyl group and R_3 and R_4 independently represent the group

$$\overset{|}{C}R_1-CHR_2-$$

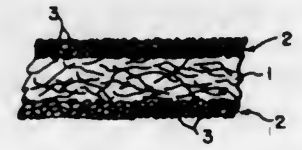
and an alkyl, substituted alkyl, alicyclic, aralkyl, aromatic and heterocyclic residue, and with an aqueous solution of a reactive film-forming polymeric substance, said substance being soluble in an aqueous media and having at least one reactive —OH, =NH and —SH group in each molecule, the increase in the dry weight of the shaped article resulting from the treatment being from 0.2% to 3%.

3,309,224
METHOD OF COATING PAPER WITH PIGMENTED PROTEIN CONTAINING OIL-IN-WATER EMULSIONS HAVING EPOXY RESIN DISPERSED IN OIL PHASE

Robert E. Weber, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Mar. 7, 1963, Ser. No. 263,660

4 Claims. (Cl. 117—155)



1. In the production of pigmented coated paper having a cellular structure and protein as the essential binder constituent, the steps of:

(a) applying to a paper web a coating composition which is an oil-in-water emulsion, said emulsion having in the continuous aqueous phase dispersed mineral pigment and solubilized protein, said emulsion having in the discontinuous phase an oil of a lower vapor pressure than water and an uncured epoxy resin dispersed in the oil, said epoxy being reactive with the protein and present to the extent of between about 2% to 20% by weight of the protein and the ratio of protein to oil by weight being between about 1:1 to 1:2.25;

(b) heating the web with the coating composition thereon to break the emulsion;

(c) evaporating the water and oil by the heating step to dry the composition and produce a multiplicity of minute light dispersing cells in the coating composition on the web and to cause the epoxy resin to coat and penetrate the walls of the cells; and

(d) reacting the epoxy resin with the protein on the dried web to strengthen the structure of the cell walls, harden the coating and provide for uniform light reflectance from the coated web.

3,309,225
PAPER COATED WITH ETHYLENE/HYDROXYALKYL VINYL ETHER INTERPOLYMERS

Harry P. Holladay, Creve Coeur, and John D. Calfee, Des Peres, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 29, 1963, Ser. No. 269,165

8 Claims. (Cl. 117—155)

1. Paper coated with an interpolymer of ethylene and an hydroxyalkyl vinyl ether in which the interpolymer is composed of 2 to 12 molar percent of hydroxyalkyl vinyl ether, has a number average molecular weight of 1000 to 10,000, a 2500 to 40,000 centipoise viscosity at 125° C., and a melting point in the range of 60 to 105° C.

3,309,226
PHOTORESISTORS AND PHOTOELEMENTS HAVING INCREASED SENSITIVITY IN THE SHORTWAVE REGION OF THE SPECTRUM

Roland Weisbeck, Cologne-Poll, and Andreas Brockes, Cologne-Mulheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Nov. 10, 1964, Ser. No. 410,127

Claims priority, application Germany, Nov. 22, 1963, F 41,334

6 Claims. (Cl. 117—201)

1. Photoconductive element with high sensitivity which comprises a semiconductive material being in optical contact with at least one layer of a colorless binder, said binder containing in homogeneous distribution 0.01 to 2% by weight of a dyestuff selected from the group consisting of sodium salicylate and 4 - amino - 1:8 - naphthal - p - xenylimide, 1 - p - sulfonamido - phenyl - 3 - p - Cl - phenylpyrazoline, 3-[2″ - Cl - 4″ - diethylamino - triazinyl - (6″) - aminophenyl] - coumarin, 3 - phenyl - 7 - [2′ - Cl - 4′ - diethylamino-triazinyl-(6′)]-coumarin, a condensation product of 1 mol of terephthalic aldehyde+2 mols of cyanic ethyl ester, 4-amino-1:8-naphthal-p-xenylimide, 1-phenyl-3-styrylpyrazoline, 2:2′-dihydroxy-naphthaldazine, 2:2′-dioxybenzaldazine-salicylaldazine, the ethyl ester of meta-monoethylaminophenol-phthalein hydrochloride, anthrapyrimidine and the condensation products of 1 mol of perylene-tetracarboxylic acid+2 mols of 4:5-dichloro-orthotoluidine and meta-diethylaminophenol-phthalein hydrochloride.

3,309,227
WAX MASKING PROCESS

Gerald E. McTeague, Sun Valley, Calif., assignor to General Precision, Inc., a corporation of Delaware

No Drawing. Filed June 17, 1963, Ser. No. 288,532

1 Claim. (Cl. 117—212)

A method of forming upon a substrate discrete thin film infrared detector elements of deposited lead selenide, the detection properties of which are deleteriously affected by the halogenated solvents of photo resist processes, said method comprising the steps of:

roughening the surface of the substrate with a fine abrasive material,

- affixing to said roughened substrate a template having the configuration of the detector elements, placing said substrate in a vacuum of between 1×10^{-4} and 5×10^{-4} microns of mercury,
- evaporating Carnauba wax at a temperature of approximately 300° C. onto the surface of said substrate in said vacuum,
- removing said template from said substrate,
- applying the lead selenide detector material to the surface of said substrate, said material applied at a temperature below the melting point of said Carnauba wax, and,
- removing said Carnauba wax by immersing said substrate in toluene.

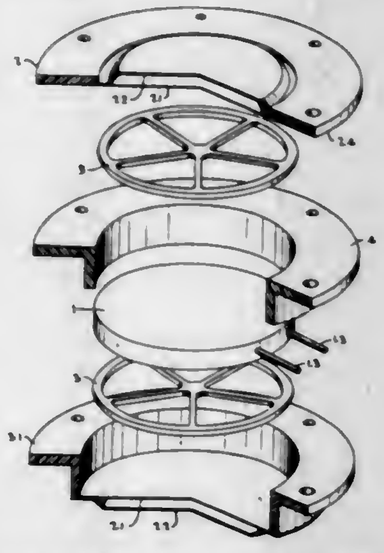
3,309,228
GRID FOR POSITIVE PLATES FOR LEAD ACID BATTERIES

Vance H. Dodson, Needham, Mass., and Joseph L. Rooney, Sylvania, Ohio, assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
No Drawing. Filed Apr. 2, 1963, Ser. No. 269,856
4 Claims. (Cl. 136—56)

1. In a lead-acid type storage battery having in its operational combination a positive grid comprising elemental lead and active material comprising lead dioxide within and supported by said grid, the improvement which comprises a layer of cadmium between said grid and said dioxide and covering a significant portion of the surfaces of said grid which except for intervention of said layer would be in contact with said lead dioxide, said layer being of sufficient depth and extent in grid coverage to prevent significant solid state reaction of said grid with said lead dioxide before said battery is charged with electrolyte and insufficient to significantly interfere with the normal function of said grid, said active material and said battery, when said battery is charged with a sulfuric acid electrolyte.

3,309,229
FUEL CELL MODULE

Joseph C. Delfino, Mamaroneck, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed June 18, 1962, Ser. No. 203,057
5 Claims. (Cl. 136—86)



1. A self-contained fuel cell module suitable for cascading containing two complete cells comprising a two-piece outer housing, a first electrode having a first polarity, a second electrode having a second and opposite polarity from said first polarity, a third electrode having said second polarity, a fourth electrode having said first polarity, said electrodes being spacially arranged in the aforesaid order, insulating means separating said electrodes from each other and from said housing, an electrolyte space defined between the electrodes of opposite polarity, a reactant compartment adjacent to the surface not in contact with the electrolyte space of each of said first and fourth electrodes, said compartments being defined by the module housing and electrode and having opposed inlet and outlet means and a third reactant compartment having inlet means defined between said second and third electrodes, the pair of electrodes having a positive polarity comprising non-porous palladium/silver alloy hydrogen diffusion membranes.

3,309,230
AMMONIA CELL

Achille L. Almerini, New Monmouth, and Howard R. Knapp, Red Bank, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Sept. 29, 1964, Ser. No. 400,284
1 Claim. (Cl. 136—90)

An electric current producing cell comprising a magnesium anode, a cathode including an expanded metallic grid structure having a mixture pressed on both sides thereof wherein said mixture is of sulfur and cuprous chloride the sulfur content varying from equal amounts up to a 2 to 1 ratio with respect to the cuprous chloride thoroughly mixed with non-reactive conductive material selected from the group consisting of graphite and carbon black, and an electrolyte consisting of a liquid anhydrous ammonia solution containing 35 percent by weight of the solution of potassium thiocyanate, said anode and cathode being separated by a plastic spacer.

3,309,231
METHOD OF FORMING A FUEL CELL ELECTRODE

Richard A. Hess, Claymont, Del., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware, and Northern Natural Gas Company. Omaha, Nebr., a corporation of Delaware
No Drawing. Filed Apr. 5, 1962, Ser. No. 185,192
9 Claims. (Cl. 136—122)

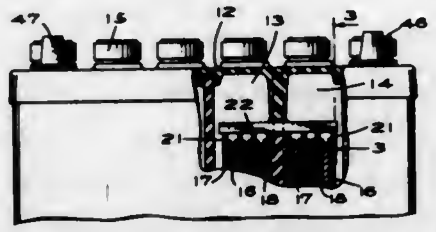
1. The method of forming a fuel cell electrode which comprises the steps of:

(a) impregnating a porous, electro-conductive, baked carbon support with aqueous solutions of both a platinum compound and a compound of another noble metal selected as a promoter metal from Groups I–B and VIII of the Periodic Table of the Elements, in a ratio of approximately between 1:2 and 2:1 molar, said platinum and promoter metal compounds being supplied to said support in such amounts as to provide up to about 1.5 milligrams of each metal per square centimeter of the carbon support, and said impregnation continuing for a period of time sufficient to effect the optimum distribution of said compounds throughout the pores of said support;
(b) drying said impregnated support to remove the water;
(c) chemically reducing said noble metal compounds to precipitate the corresponding pure metals upon the outer surface and throughout the pores of said support;
(d) and washing the resultant metal-impregnated support.

3,309,232
ELECTRICAL STORAGE BATTERY

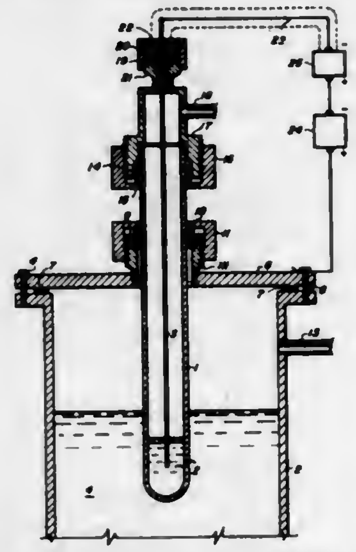
Harland D. Wilson, Toledo, Ohio, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 8, 1964, Ser. No. 381,059
5 Claims. (Cl. 136—134)

1. An electrical storage battery comprising, a casing, a partition wall dividing said casing into a first compartment and a second compartment, a plurality of battery plates positioned in said first compartment, a plurality of battery plates positioned in said second compartment, a deep notch having a flat bottom positioned in said partition wall, said flat bottom being positioned slightly below the tops of said battery plates positioned in said first compartment and said second compartment, a combination plate strap and intercell connector comprising a straight flat bottomed bar of conductive material positioned on the tops of the battery plates in said first and said second compartments and passing through said deep notch in said partition wall, said straight flat bottomed bar of conductive material being electrically connected to the tops of said battery plates in said first and said second compartments, said straight flat bottomed bar of electrically conductive material being positioned below the normal battery electrolyte level in said first and said second compartments, a cover for said casing, and a sealing means integral with said cover enveloping said straight flat bottomed bar of conductive material for forming a fluid tight intercell connection through said partition wall.



3,309,233
SOLID ELECTROLYTE ELECTROCHEMICAL CELL

Charles C. McPheeters, Los Alamos, Joseph C. McGuire, White Rock, and Renato Tercovich, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 30, 1964, Ser. No. 422,472
6 Claims. (Cl. 136—153)



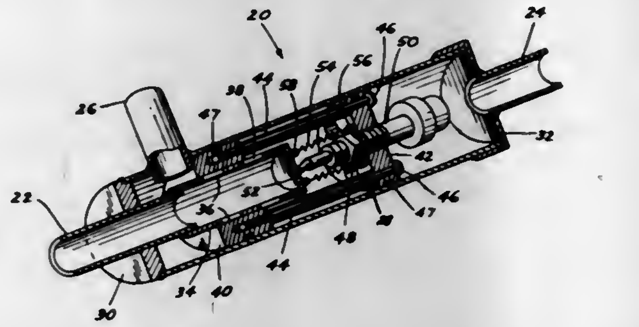
1. A solid electrolyte electrochemical cell wherein the solid electrolyte consists essentially of yttria.

3,309,234
BATTERY HEAT CONTROL BY-PASS VALVE

Don H. Rundles, Roseville, Mich., assignor to the United States of America as represented by the Secretary of the Army
Filed Nov. 20, 1964, Ser. No. 412,889
3 Claims. (Cl. 136—161)

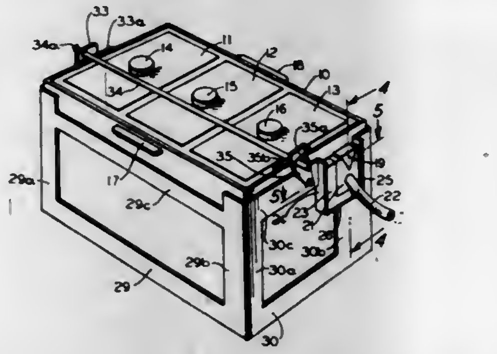
1. In a thermostatically controlled by-pass valve, an elongated valve body having inlet and outlet ports at opposite ends of said body and a by-pass port on the periphery thereof, support means within said body supporting a movable valve element and a thermostatic element between said inlet and said outlet ports, apertures in said movable valve element for directing fluid entering said inlet port to either said by-pass port or said outlet port depending upon the position of said movable valve element, and means attached to said thermostatic element for determining the position of said movable valve element.

2. In an apparatus for maintaining a predetermined temperature of the electrolyte in a storage battery, the combination of a compartment closely fitting said battery, means in said compartment for allowing the passage of a heated fluid through said compartment, and a thermostatically controlled by-pass valve comprising an elongated valve body having inlet and outlet ports at opposite ends of said body and a by-pass port on said body, fluid flow means connecting said outlet port with said compartment fluid passage means and for connecting said inlet port with a fluid heating means, support means within said body supporting a movable valve element and a thermostatic element between said inlet and outlet ports, said thermostatic element being sensitive to the temperature of fluid at said outlet port and moving said movable valve element in response to changes in temperature of the fluid, apertures in said movable valve element which direct the fluid to said outlet port or to said by-pass port depending upon the position of said movable valve element relative to said thermostatic element.



3,309,235
STORAGE BATTERY AND SUPPORTING CONTAINER

William L. Teeple, Sr., 19151 Dagmar Drive, Saratoga, Calif. 95070
Filed Oct. 11, 1962, Ser. No. 229,942
3 Claims. (Cl. 136—171)

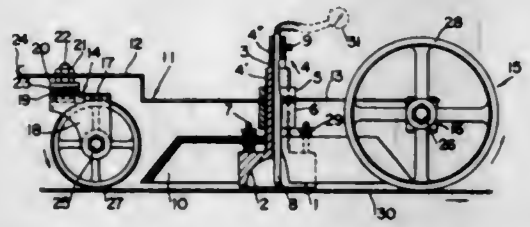


1. In storage battery and supporting container for use in motor vehicles to facilitate rapid installation or changing of the battery, the combination of a storage battery, said storage battery having wedge-shaped terminals projecting from opposite sides thereof well below the top surface thereof, a supporting container formed of metal, said battery being positioned in said container, said container having a V-shaped bracket formed in the top portion of one side thereof by bending parts of the metal of said container outward, said bracket being aligned with one of said wedge-shaped terminals, said last-mentioned wedge-shaped terminal lodged in said V-shaped bracket thereby making positive electrical contact there-

with, an electrical contactor having a V-shaped recess making electrical contact with the other of said wedge-shaped terminals, insulation means attached to said electrical contactor, another bracket formed in the top portion of the opposite side of said container receiving said insulation means and supporting said electrical contactor on said container, said other bracket being formed by bending parts of the metal of said container outward, and an electric cable attached to said electrical contactor for connecting the battery to an output circuit.

3,309,236
APPARATUS FOR CONTINUOUSLY MEASURING TEMPERATURES OF ADVANCING METAL STRIPS

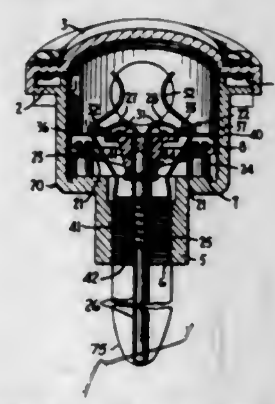
Reizo Gunji, Kitakyushu, Japan, assignor to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Aug. 26, 1964, Ser. No. 392,204
Claims priority, application Japan, Aug. 27, 1963, 38/45,714
1 Claim. (Cl. 136—230)



An apparatus for continuously measuring temperatures of a running metal strip comprising a heat-collecting part in the form of a paraboloid-shaped concave mirror for collecting the radiant heat from the running metal strip to the focus of the concave mirror, a temperature sensitive part consisting of a thermocouple, said thermocouple extending into said heat-collecting part and a pointed end of said thermocouple being positioned almost at the focus of the concave mirror, a shielding hood enclosing said heat collecting part for shielding the heat-collecting part, and a truck on which said heat collecting part, said temperature sensitive part and said hood are mounted and having a front wheel part and a pair of rear wheel parts, said front wheel part being horizontally turnable around a vertical axis.

3,309,237
QUICKLY REMOVABLE THERMOCOUPLE ASSEMBLIES

Jay R. Kelchner and Marcel G. Verrando, Cortland, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed May 22, 1964, Ser. No. 369,443
10 Claims. (Cl. 136—221)



1. A quickly removable thermocouple assembly comprising, in combination, a mounting block; a temperature sensing element mounted thereon; bias means operatively connected to the mounting block; and retaining means on the bias means, biased thereby to engage a matching retaining portion in a thermocouple housing, the retaining means being movable into and out from engagement with the matching portion of the housing in a quick snap action by application of force to the bias means against the biasing action thereof, to permit quick attachment of the assembly to the housing, biased resilient retention of the assembly in the housing, and quick removal therefrom.

3,309,238
DEEP DRAWING OF STAINLESS STEELS, AND STEEL THEREFOR

Alfred Randak and Hans Lentzen, Geisweid, Kreis Siegen, Germany, assignors to Stahlwerke Sudwestfalen Aktiengesellschaft Geisweid, Kreis Siegen, Germany, a corporation of Germany
No Drawing. Filed May 14, 1963, Ser. No. 280,438
Claims priority, application Germany, May 16, 1962, St 19,249
9 Claims. (Cl. 148—12)

1. Production of a deep drawn product of ferritic steel containing about 14–2% chromium and substantially free of stretch strains which comprises:

(a) cold rolling the steel to the drawing thickness;
(b) annealing the steel at a temperature and for a time sufficient to impart thereto, upon cooling a minor proportion of martensite or bainite structure and a major proportion of ferrite structure and to provide the steel amenable to deep drawing without the occurrence of Lüders' lines;
(c) subjecting the steel to deep drawing to form said product.

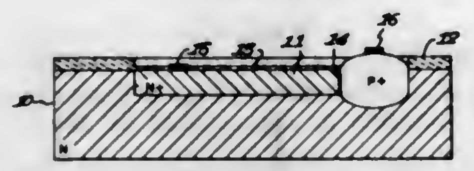
3,309,239
METAL PASTES FOR USE IN BRAZING

Edward Percival Harris, Mannings Heath, Horsham, England, assignor to Edwards High Vacuum International Limited, Crawley, England, a British Company
No Drawing. Filed Jan. 27, 1964, Ser. No. 340,500
Claims priority, application Great Britain, Feb. 5, 1963, 4,693/63
5 Claims. (Cl. 148—24)

1. A brazing paste consisting of a mixture containing about 86 percentage parts by weight of a metal powder and about 14 percentage parts by weight of a binding medium, said binding medium consisting essentially of about 0.5 percentage parts by weight of ethyl hydroxyethyl cellulose, about 0.3 percentage parts by weight of a plasticiser, about 0.2 percentage parts by weight of a preservative, about 0.4 percentage parts of an adhesive material adapted to increase the adhesion of the paste to the surfaces to be brazed, and the balance of about 12.6 percentage parts by weight of water, all weights being based on the total weight of the mixture.

3,309,240
TUNNEL DIODES

James David Zook, Savage, and Helmut J. Hornung, Excelsior, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 2, 1964, Ser. No. 379,971
3 Claims. (Cl. 148—33.1)

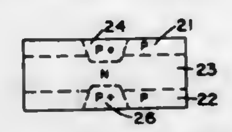


1. A tunnel diode comprising:

(a) a body of single crystal semiconductor material of a first conductivity type having an impurity concentration of less than 10^{16} atoms per cc.,
(b) an elongated region of highly doped first conductivity type material located in a portion only of one surface of said body,
(c) and a region of highly doped opposite conductivity extending entirely across and completely through a terminal end portion of said elongated region such that the tunnel diode junction area is determined solely by the width and depth of the elongated region.

3,309,241
P-N JUNCTION HAVING BULK BREAKDOWN ONLY AND METHOD OF PRODUCING SAME

Donald C. Dickson, Jr., 4932 E. Calle del Norte, Phoenix, Ariz. 85018
Filed Mar. 21, 1961, Ser. No. 97,299
1 Claim. (Cl. 148—33.5)



A transistor type semi-conductor element having substantially zero temperature coefficient, said semiconductor element comprising a doped semi-conductor wafer having diffused layers on opposite sides thereof, forming a center layer of one conductivity type and outside layers of an opposite conductivity type, with P-N junctions between said layers, and a re-growth region of the same conductivity type as said outside layers, said re-growth region alloyed through one such outside layer to form a P-N junction isolated from side edges of said first mentioned junction, said last mentioned junction between the re-growth region and center layer and said diffused layer junction opposite said re-growth region having temperature coefficient of breakdown voltage substantially cancelling each other, one being negative and one positive.

3,309,242
HIGH-CARBON PRECIPITATION-HARDENING AUSTENITIC STEEL ALLOY

Horace Pops, Wilkinsburg Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed Oct. 1, 1964, Ser. No. 400,907
4 Claims. (Cl. 148—38)

2. A precipitation-hardening austenitic iron alloy consisting essentially of, by weight percent

Carbon	0.51 to 0.60
Chromium	10.0 to 20.0
Nickel	15.0 to 25.0
Zirconium	2.0 to 4.0
Titanium	2.0 to 4.0
Molybdenum	2.0 to 4.0
Tungsten	2.0 to 4.0
Cobalt	2.0 to 4.0
Boron	Up to .008

with the balance iron and incidental residuals.

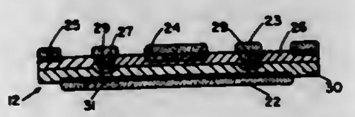
3,309,243
GAS-SHIELDED ARC WELDING OF 18% NICKEL STEEL

Donald A. Corrigan, Cambridge, Mass., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 26, 1964, Ser. No. 355,085
2 Claims. (Cl. 148—127)

1. The method for joining by welding base members made of a maraging steel composition containing nominally about 18% nickel, about 8.5% cobalt, about 3.2% molybdenum, about 0.1% aluminum, about 0.2% titanium and the balance essentially iron which comprises melting in an inert gas-shielded arc, a filler material consisting essentially of about 17.5% to 18.5% nickel, about 1% to about 5% molybdenum, at least about 0.35% to about 1% titanium, up to about 1.2% cobalt, up to about 0.5% aluminum, not more than 0.1% carbon and the balance essentially iron to form a weld deposit joining said members and subjecting the weld assembly to a maraging heat treatment at about 850° F. to about 1000° F. for up to about three hours to provide a weld assembly having a high combination of strength and toughness wherein the weld has essentially about 90% of the strength of the base members.

3,309,244
ALLOY-DIFFUSED METHOD FOR PRODUCING SEMICONDUCTOR DEVICES

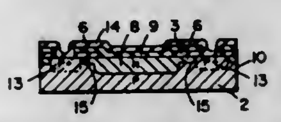
Charles B. Ackerman and Daniel J. Sullivan, Phoenix, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 22, 1963, Ser. No. 267,220
4 Claims. (Cl. 148—178)



1. A method of making transistor structures, comprising the steps of alloying impurity-bearing metal with a semiconductor wafer at one side thereof to form a thin alloy regrowth layer in said wafer in which impurity material of one conductivity type predominates, fusing an impurity element containing both donor and acceptor impurity materials to said regrowth layer to form an alloyed electrode including a regrowth region which extends through said layer, the impurity material in said element of the conductivity type opposite to that predominating in said regrowth layer having a higher segregation coefficient and a lower diffusion constant than the other impurity material in said element so that said regrowth region of said electrode is of said opposite conductivity type, diffusing impurities from said regrowth region into said layer and into the material of said wafer adjoining said regrowth region under said layer to form there a thin diffused base region in which said other impurity material predominates and which merges into said regrowth layer, and providing electrical connections respectively to said regrowth layer and to said electrode and to the bulk material of said wafer.

3,309,245
METHOD FOR MAKING A SEMICONDUCTOR DEVICE

John C. Haenichen, Scottsdale, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Original application Aug. 23, 1962, Ser. No. 218,904, now Patent No. 3,226,611, dated Dec. 28, 1965. Divided and this application June 18, 1965, Ser. No. 465,012
6 Claims. (Cl. 148—187)

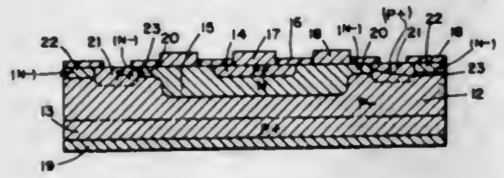


1. A method of making a semiconductor element for use in a semiconductor device to give such device high voltage breakdown and low reverse current characteristics, comprising growing an insulating coating on a surface of the element, opening a first area in the insulating coating, selectively diffusing an impurity through said area into the semiconductor body beneath a surface thereof to form a first region and a junction in said body which extends from within said body back toward the surface thereof, forming a layer of phosphosilicate glass over the insulat-

ing coating and over said first area on the surface of the element, opening a second area through said insulating coating and said layer of phosphosilicate glass, said second area completely surrounding said first area and spaced laterally away from and separated from the first area on said surface, with said second area completely surrounding said first region in the body of the element, and diffusing an impurity into said body through said second area to form a channel-interrupting region which is laterally spaced outside said first region, is of opposite conductivity type to that of said first region and extends to a depth in said body which is deeper than any channel region formed in said body immediately under the insulating coating so as to physically interrupt such a channel and direct the junction at the inside interface of the interrupting-channel region toward the surface of the element.

3,309,246
METHOD FOR MAKING A HIGH VOLTAGE SEMICONDUCTOR DEVICE

John C. Haenichen, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Original application Nov. 4, 1963, Ser. No. 321,070, now Patent No. 3,226,614, dated Jan. 25, 1966. Divided and this application Oct. 24, 1965, Ser. No. 504,813
10 Claims. (Cl. 148—187)



1. In the method of fabricating a semiconductor device which has desired reverse current and breakdown voltage characteristics,
- (a) providing a silicon semiconductor element having a first region containing a first impurity which imparts a predetermined resistivity and a predetermined conductivity type to said region,
- (b) forming a channel region at the top surface of said first region with one face of said channel region contiguous with said first region, such channel region having a second impurity therein which imparts a conductivity type opposite to that of said first region and a resistivity higher than that of said first region, and which has a segregation coefficient such that said second impurity segregates to at least as high a concentration in a silicon dioxide insulating coating that is grown over the entire top surface of said element as in the silicon of said channel region, with said channel region preventing oxidation of the portion of the first region contiguous with said channel region during the growth of an insulating oxide coating on said top surface to maintain the original resistivity of said first region,
- (c) growing an insulating coating of silicon dioxide over the entire top surface of said semiconductor element immediately above said channel region,
- (d) forming an opening in said coating down to the semiconductor element,
- (e) diffusing through said opening and said channel region into said first region a second region containing a third impurity and extending upwardly to the insulating coating and being of opposite conductivity type to that of said first region, with a junction being formed at the interface of said first and second regions,
- (f) growing an insulating coating of silicon dioxide over the entire top surface of said semiconductor element,
- (g) forming an opening in said latter insulating coating down to the semiconductor element, and
- (h) forming a channel-interrupting region through said latter mentioned opening which extends downwardly from said top surface through said channel region into said first region to structurally block and interrupt said channel region over the entire depth thereof from said top surface, with said channel-interrupting region spaced laterally away and separated from said second region and completely surrounding said second region, and being of the same conductivity type as the first region and of lower resistivity than the same.

3,309,247
AMMONIUM NITRATE EXPLOSIVE WITH POLYURETHANE RESIN PREPARED FROM NITRIC ACID PARTIAL ESTERS

Harold F. Bluhm, Tamaqua, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Original application Sept. 17, 1962, Ser. No. 224,244, now Patent No. 3,256,214. Divided and this application Apr. 13, 1966, Ser. No. 565,342
2 Claims. (Cl. 149—8)

2. An explosive material comprising particulate ammonium nitrate coated with a polyurethane resin composition compounded by condensing a reaction mixture of a polyisocyanate and a member of the group consisting of nitric acid partial esters of polyhydroxy compounds, wherein the reaction mixture includes a component containing at least two radicals supplying hydrogen reactive with isocyanate.

3,309,248
SOLID PROPELLANTS CONTAINING HYDRAZONIUM AZIDE AND BORON COMPOUNDS

Douglas A. Rausch, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Jan. 24, 1962, Ser. No. 169,181
6 Claims. (Cl. 149—19)

1. A solid propellant which comprises a solid boron containing fuel selected from the group consisting of solid boron hydride, complex borohydrides, boron hydride·ammonia adducts and elemental boron and a solid oxidizing nitrogen source member selected from the group consisting of hydrazonium azide, hydrazonium azide hydrazide and mixtures thereof, the ratio of said boron fuel to said nitrogen oxidizer ranging from about 0.9 to about 1.0 of the stoichiometric quantities needed to produce boron nitride as determined from the elemental boron and nitrogen content of said fuel and oxidizer.

2. The propellant composition as defined in claim 1 wherein the fuel and oxidizer are bound by a high nitrogen containing organic polymer having an N/C atom ratio of greater than 2.

3,309,249
THERMITE-RESIN BINDER SOLID FUEL COMPOSITION

Paul L. Allen, Santa Clara, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Mar. 15, 1965, Ser. No. 440,998
6 Claims. (Cl. 149—19)

1. A solid fuel composition having a high regression rate for a hybrid rocket engine comprising a mixture of
a fuel-binder and discrete particles of a thermite composition;
said fuel-binder being a member selected from the group the group consisting of butadiene-styrene, butadiene-acrylate rubber, polyesters, polyamids, polystyrenes, polysulfides, polyurethanes and vinyl acetate resins; and
said composition being selected from the group consisting of the following reactants magnesium-potassium permanganate, aluminum-ferric oxide, aluminum-ferrous oxide, manganese-strontium nitrate, magnesium-polytetrafluoroethylene and boron - potassium nitrate.

3,309,250
TEMPERATURE RESISTANT EXPLOSIVE CONTAINING TITANIUM AND ALKALI METAL PERCHLORATE

Charles W. Falterman, China Lake, William J. Griffith, Inyokern, and Harold J. Gryting, Ridgecrest, Calif., assignors to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Mar. 24, 1965, Ser. No. 442,554
5 Claims. (Cl. 149—42)

1. A temperature resistant explosive comprising
one mole of titanium and
two moles of oxidizer;
said oxidizer being a member selected from the group consisting of potassium perchlorate and sodium perchlorate.

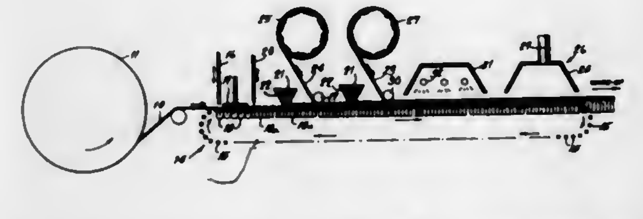
3,309,251
LIQUID EXPLOSIVE MIXTURE CONTAINING NITROMETHANE AND ETHYLENEDIAMINE

Ludwig F. Audrieth, 1005 W. California Ave., Urbana, Ill. 61801, and Leonard H. Eriksen, 29 Dartmouth Road, and William R. Tomlinson, 117 Morris Ave., both of Mountain Lakes, N.J. 07046
No Drawing. Continuation of application Ser. No. 738,596, Apr. 1, 1947. This application Aug. 12, 1966, Ser. No. 572,149
3 Claims. (Cl. 149—89)

1. A liquid organic explosive consisting essentially of mono-nitromethane and from about 1 to about 20 percent by weight of ethylene diamine.

3,309,252
METHOD AND APPARATUS FOR PRODUCING PILE FABRIC

Solomon Adler, Kew Gardens, N.Y., assignor to Adler Process Corp., New York, N.Y., a corporation of New York
Filed Aug. 12, 1963, Ser. No. 301,425
12 Claims. (Cl. 156—72)



1. A method for producing a pile fabric, such as carpeting, rugs and the like, which comprises disposing yarns over loop-forming members, said loop-forming members being disposed transversely with respect to said yarns and spaced from each other, depressing said yarns between said loop-forming members to form loops of yarn therebetween while maintaining said loops of warp material between said loop-forming members by pressing said warp material onto and against the top of said loop-forming members, cutting said loops of yarn formed between said loop-forming members at the bottom of the loop portion thereof which is depressed between said loop-forming members while maintaining said loops of yarn in position between said loop-forming members, applying adhesive material onto the yarn portions supported on said loop-forming members, said yarn portions making up the bases of the thus-formed and cut loops and applying backing material to the adhesive coated yarn portions to bind the thus-formed and cut loops to said backing material.

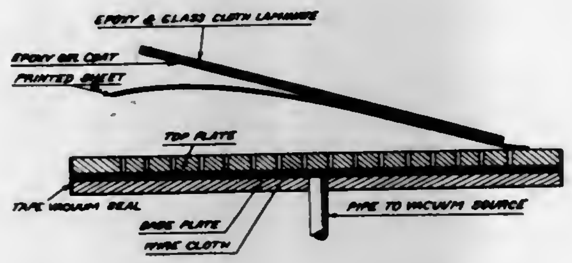
3,309,253
PROCESS FOR SECURING CONNECTION BETWEEN TWO SOLID SURFACES BY MEANS OF A POLYDIMETHYL SILOXANE

Karl Schnurrbusch Cologne-Flittard, and Walter Noll, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed May 2, 1962, Ser. No. 191,710
Claims priority, application Germany, May 6, 1961, F 33,881
6 Claims. (Cl. 156—92)

1. In a process for securing connections of two solid surfaces against relative movement under conditions of shock and sudden vibration by means of an extremely viscous polydimethyl siloxane, the step which comprises producing the latter in situ by applying a mixture consisting essentially of a readily flowing polydimethyl siloxane of a viscosity of less than 100,000 cst. at 20° C. selected from the group consisting of α,ω-dihydroxy-polydimethyl siloxanes and permethyl-cyclopolysiloxanes, and a portion of between 0.1 and 5 percent by weight of a catalyst for polymerization of said readily flowable polydimethyl siloxane, active at room temperature, to at least one of said surfaces, and thereafter connecting said surfaces.

3,309,254
PROCESS FOR TRANSFER OF INK OR DYE PRINTED IMAGES TO EPOXY RESIN SURFACES

James Walker Rowe, 600 Dean Drive, Rockville, Md. 20851
Filed Feb. 3, 1961, Ser. No. 87,046
5 Claims. (Cl. 156—240)



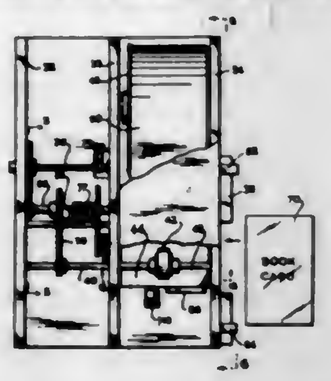
1. A transfer process comprising the steps of printing an informational pattern on a plastic sheet with a printing material, said sheet being selected from the group consisting of vinyl halide polymers, cellulose acetates, cellulose acetate butyrates, polyester resins and polyethylene and said print material being selected from the group consisting of vinyl base inks, pigmented bichromated casein inks and oil soluble dyes; coating the printed side of said plastic with a resin of a glycidyl ether of polyhydric phenol in the presence of a primary aliphatic amine, said coating material having greater affinity for the printing material than for the sheet; curing the coating; and physically stripping the coating from the aforesaid sheet.

3,309,255
APPARATUS FOR HANDLING BOOK BORROWING TRANSACTIONS

Arthur Brody, 465 Melrose Place, South Orange, N.J. 07079
Original application June 21, 1961, Ser. No. 118,573, now Patent No. 3,135,641, dated June 2, 1964. Divided and this application Mar. 10, 1964, Ser. No. 350,715
11 Claims. (Cl. 156—386)

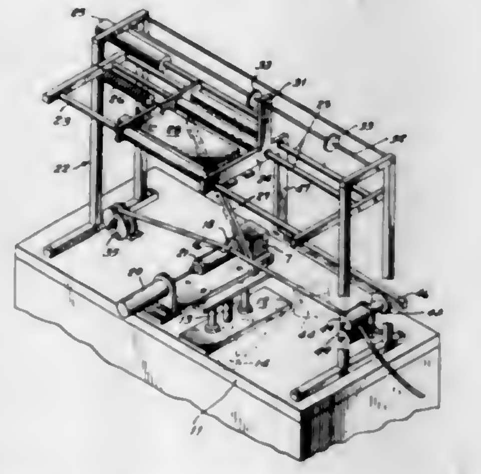
1. In an apparatus for handling book-borrowing transactions, a printing head and platen mounted for relative movement toward and away from each other to define a printing stroke as they come together and a return stroke

as they move apart, a supply of adhesive-coated imprintable material and means for interposing successive bands thereof between said printing head and platen with the adhesive side facing the platen, a holder on said printing head for temporarily accommodating a borrower card bearing data transferrable to said band during the printing operation, a dating mechanism carried by said printing head adapted to imprint a selected due-date designation upon said band, and means for accommodating a book card on the platen beneath said band so that the latter is pressed into adhesive contact with said card during the printing operation.



3,309,256
APPARATUS FOR SURFACE DECORATING OF ARTICLES

**Rubin Warsager, 502 Summer Ave.,
Newark, N.J. 07104
Filed May 7, 1965, Ser. No. 453,943
14 Claims. (Cl. 156—542)**



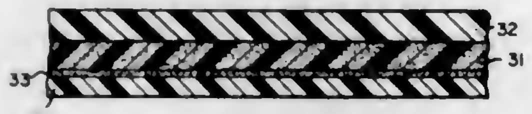
1. Apparatus for decorating the circumferential surface of a cylindrical object in which such surface has irregularities therein, said apparatus comprising a die, pneumatic means for maintaining said surface in contact with said die, a holder mounting a transfer tape to be interposed between said surface and said die whereby as said die is pressed against said surface material is transferred from said transfer tape to said surface, and regulating means for maintaining the contact pressure between said surface and said die uniform regardless of irregularities in said surface whereby said surface is uniformly decorated.

3,309,257
COLOR CHANGEABLE EMBOSSABLE LAMINATE

**Joseph Borack, Beverly Hills, Calif., assignor to Tapeprinter, Inc., a corporation of Delaware
Filed Oct. 22, 1963, Ser. No. 317,918
1 Claim. (Cl. 161—6)**

Strip material of the type which when subjected to embossing pressures sufficient to effect cold flow deformation changes color and is adaptable for use as a label, said strip material comprising:

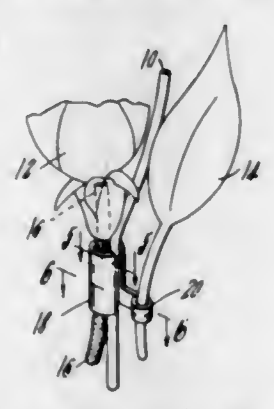
(A) first and second layers of thermoplastic solid sheet material permanently fuse bonded together solely by the application of heat and pressure thereto to form an integral member,
  (1) said first layer consisting of a layer of transparent rigid thermoplastic solid sheet material,
  (2) said second layer consisting of a layer of plasticized thermoplastic solid sheet material which is substantially flexible as compared to said first layer thereby to control the overall flexibility of said strip material to prevent a label formed therefrom from separating from a surface to which it is applied;



(B) a pressure sensitive adhesive coated on the exposed surface of said second layer for affixing said strip material after embossing to a desired surface; and
(C) a detachably releasable protective backing material covering said adhesive coating, said first and second layers and said backing material being cold flow deformable without rupturing.

3,309,258
FLOWER CHAIN HOLDER

**Joseph S. Gallo, Walpole, Mass., assignor to Lion Ribbon Company, Inc., New York, N.Y., a corporation of New York
Filed July 12, 1965, Ser. No. 471,186
1 Claim. (Cl. 161—26)**



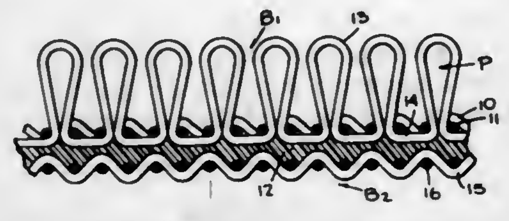
A flower chain holder supporting in spaced relation flower bud and leaf spray units for use as flower bud chain garlands, rosaries and the like florist items having, in combination, a supple supporting strand, and a series of flower bud and leaf stem supporting units on said strand, each said unit comprising a short bud supporting stem of stiff wire having a rough holding surface texture, and a soft metal clip of substantial width comprising a relatively wide metal strip clinched solely around said strand and said bud supporting stem, said wide metal strip having a narrow strip extension to be wrapped about a said leaf stem providing a leaf spray holder adjustable relatively to said clinched wide metal strip for positioning said leaf spray with relation to said clinched flower bud.

3,309,259
DOUBLE BACKED CARPET

**Bernard L. Schwartz, Scarsdale, N.Y., assignor to Patchogue-Plymouth Company, New York, N.Y., a joint venture of Patchogue-Plymouth and Avisun Corporation
Filed Oct. 29, 1963, Ser. No. 319,712
2 Claims. (Cl. 161—67)**

1. A double-backed tufted carpet comprising:
(a) a first fabric backing,

(b) carpet pile yarns tufted in said first backing and projecting from the top face thereof to form a carpet tread, the connecting loops of the pile yarns appearing on the rear face of said first backing, and
(c) a second fabric backing adhesively secured to the rear face of the first backing and incorporating inexpensive yarns of natural woven material interwoven with a small portion of synthetic yarns of a material having relatively high tensile values and relatively low elongation values to impart dimensional stability to the carpet, said inexpensive yarns being selected from a group consisting of jute and Kraftcord, said synthetic yarns being contained only in the warp direction of said second backing and being selected from a group consisting of nylon, polypropylene and fiberglass material having tensile values in the order of at least 15 pounds and elongation values of about 2 to 10%.



3,309,260
COMPOSITE FILM-FABRIC ELECTRICAL INSULATING SHEET

**Alvin W. Boese, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Feb. 19, 1960, Ser. No. 9,674
12 Claims. (Cl. 161—150)**

1. A composite film-fabric sheet comprising (1) a heat-pressed tissue-like fabric of heterogeneously interlaced drawn and undrawn staple unplasticized polyester fibers, said undrawn fibers being formed of the same polyester as said drawn fibers and having been converted from an initial relatively low softening amorphous state to a crystalline state affording substantially the same softening temperature range as that of the drawn fibers, said crystallized undrawn fibers being autogenously interbonded at their crossing points to form a network within which said drawn fibers are interlaced without being interbonded to each other, said fabric having a ream weight of about 15 to 60 pounds, and (2) a film of electrical insulating resin inseparably united to said fabric.

3,309,261
ADHESION OF URETHANE ADHESIVES TO METALS

**Arthur Maurice Schiller, Stamford, George Albert Tanner, Norwalk, and Armand Francis Lewis, Fairfield, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Apr. 21, 1966, Ser. No. 544,085
10 Claims. (Cl. 161—190)**

1. A novel metal bonding adhesive composition comprising a uniform mixture of
(a) a polyurethane resin,
(b) about 25% to about 200% of the stoichiometric equivalent of the NCO content of (a), of a diamine curing agent and,
(c) from about 0.10% to about 4.0%, by weight, based on the weight of (a), of an aminoalkyllower-alkoxysilane wherein the alkyl group contains from 3 to 4 carbon atoms, inclusive.

6. A unitary structure composed of at least two metal layers, said layers being bonded with the adhesive composition of claim 1.

3,309,262
FLUIDIZED BED OXIDATION OF WASTE LIQUORS RESULTING FROM THE DIGESTION OF CELLULOSIC MATERIALS FOR PAPER MAKING

**George G. Copeland, Wheaton, and John E. Hanway, Jr., Naperville, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,468
9 Claims. (Cl. 162—30)**

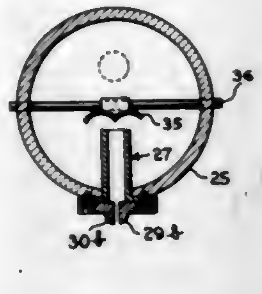
1. A process of treating waste pulping liquor containing organic and inorganic materials in a reacting vessel containing a lower fluidized bed of solid particles consisting substantially entirely of residual inorganic materials derived from the waste pulping liquor, with the vessel having an upper freeboard area, said process comprising:
(a) concentrating said waste pulping liquor by evaporation until the solids portion of the liquor, as distinguished from the liquid portion of the liquor, is approximately 20 to 45 percent and has a combustible content of heating value sufficient to support autogenous combustion;
(b) spraying said concentrated liquor into the freeboard area of said vessel in an atomized form such that substantial evaporation of the liquor is achieved in the freeboard area of the vessel and the remaining atomized additionally concentrated liquor spray flows into the fluidized bed area;
(c) maintaining said bed fluidized by introducing into the fluidized bed area of said vessel, at a linear velocity of approximately 1 to 5 feet per second, fluidizing gas containing oxygen sufficient to effect substantially complete elimination of the organic materials of said liquor as gaseous products by substantially total oxidative autogenous combustion between the oxygen and the organic materials in the liquor, said combustion being effected primarily in the fluidized-bed area with little combustion in the freeboard area;
(d) maintaining said fluidized bed at a nonsmelting temperature below the eutectic temperature of the residual chemical mixture of the bed but in the temperature range of approximately 1,000° to 1,800° F. during said spraying and combustion to form in the fluidized bed, from the residual inorganic materials of said liquor, agglomerates having sufficient weight to prevent substantial entrainment thereof in the fluidizing gas and gaseous products of combustion above the fluidized bed;
(e) discharging said agglomerates directly from the fluidized-bed area of the vessel; and
(f) discharging said gaseous products of combustion directly from the freeboard area of the vessel.

3,309,263
WEB PICKUP AND TRANSFER FOR A PAPERMAKING MACHINE

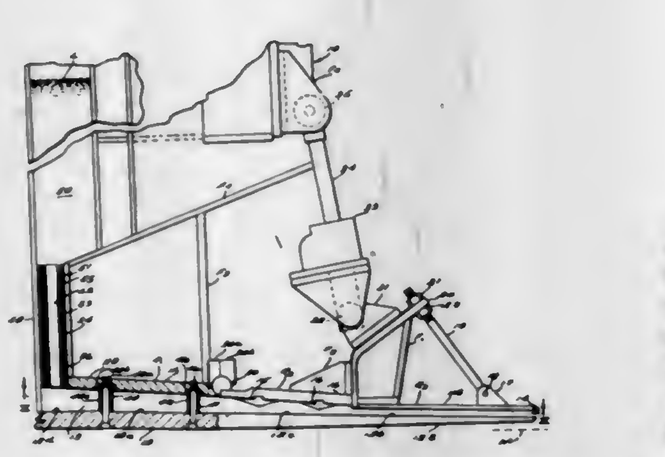
**Ralph E. Grobe, Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Dec. 3, 1964, Ser. No. 415,654
2 Claims. (Cl. 162—306)**

1. In a papermaking machine, an endless perforate belt for draining a slurry of fibers and water deposited on the belt to form a moist paper web on the belt, a plurality of rolls for movably supporting the belt and including a pair of rolls providing an unsupported stretch of the belt between them, an endless felt, a plurality of rolls for movably supporting the felt, a guide member extending transversely across the felt holding the felt substantially in a line of contact with said unsupported stretch of said perforate belt, said guide member having a curved peripheral surface with a small radius in contact with the felt and being provided with a slot extending through said curved surface to be closed by the felt, and means

for applying a suction onto said slot whereby the moist web is relatively cleanly picked up by the felt from the perforate belt and transfers at said line of contact to the felt.

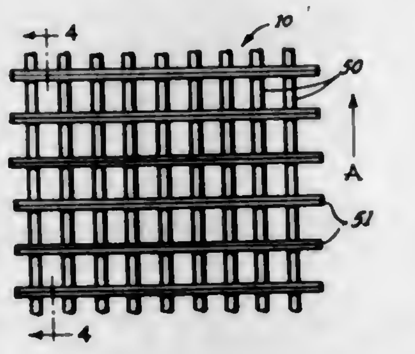


3,309,264
FLOW DISTRIBUTOR FOR A PAPERMAKING MACHINE
Joseph D. Parker, Beloit, Wis., Malcolm R. Jones, Millinocket, Maine, and John F. Schmaeng, Rockton, Ill., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Jan. 17, 1964, Ser. No. 338,424
19 Claims. (Cl. 162—336)



1. In a paper machine stock inlet of substantial transverse dimension for flowing stock in a longitudinal direction onto a forming surface traveling longitudinally at a predetermined speed, means defining a multiplicity of apertures positioned in generally transversely uniform pattern for generating a multiplicity of high speed stock jets lying generally in transverse alignment, means at the on-coming side of said apertured means for delivering stock at a substantially uniform pressure to the on-coming sides of said apertures for generation of substantially uniform stock jet speeds therethrough, transverse baffle means positioned at the immediate off-running side of said apertures receiving and turning the stock jets impinging thereagainst to impart transverse stock flow components thereto in a chamber having a transverse cross-sectional area substantially greater than the total aperture transverse cross-sectional area to effect substantial diminution of primary longitudinal stock flow velocity, a thin stock flow channel of substantially the transverse dimension of said chamber and having closely spaced walls merging smoothly with said chamber gradually converging longitudinally therefrom toward a slice outlet to effect a primary stock flow velocity increase toward the slice and stationary means in said channel defining a plurality of sequences of alternating minimum and maximum transverse cross-sectional areas for sequentially super-imposing distinct secondary stock flow velocity changes upon the primary stock flow to impart to the stock flowing in the channel small scale turbulence in a condition of partial decay at the slice, each such sequence having a longitudinal dimension extending from a maximum to and through the adjacent minimum and to the next maximum of such cross sectional areas, the upstream-most plurality of said sequences each being defined by a transversely extending bank of transversely spaced abutments with abruptly terminating downstream sides for vortex turbulence generation substantially upstream of the slice, there being a turbulence decay section of said channel of substantially the cross-sectional area of and immediately upstream from the slice, such section being defined by smooth wall portions extending longitudinally beyond the downstream sequence a substantially greater distance than the longitudinal dimension of such sequence.

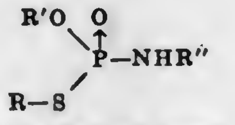
3,309,265
FABRIC BELT FOR PAPERMAKING MACHINE
Kenneth V. Krake, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Sept. 27, 1963, Ser. No. 312,045
7 Claims. (Cl. 162—348)



1. An endless fabric belt for Fourdrinier type papermaking machines which is adapted to be supported by and to travel in a certain direction over a plurality of spaced rotatable rolls and to receive and drain a fluent mass of fibers and water to form a paper web on the belt, said belt comprising a first set of filaments extending parallel to each other and longitudinally of the belt and a second set of filaments all disposed on the same side of the belt and extending parallel to each other and crosswise of the belt in contact with and all at a certain angle to the filaments of said first set, the filaments of each of said sets being solid in cross section and being equal in transverse dimension and being equally spaced and the filaments of said two sets being bonded together at intersections of the filaments, the filaments of said second set being non-round in cross section and having substantially plane surfaces which lie at acute angles with respect to the plane of the belt.

3,309,266
INSECTICIDAL COMPOSITIONS CONTAINING O-ALKYL-S-ALKYL PHOSPHOROAMIDOTHIOATES AND METHODS FOR KILLING INSECTS THEREWITH
Philip S. Magee, San Rafael, Calif., assignor to Chevron Research Company, a corporation of Delaware
No Drawing. Filed July 1, 1965, Ser. No. 468,930
9 Claims. (Cl. 167—22)

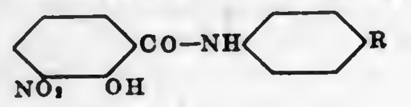
1. A method for killing insects which comprises applying to the immediate environment of a host plant subject to attack by said insects a toxic amount of a compound of the formula:



wherein R and R′ are alkyl of from 1 to 6 carbons and R″ is selected from the group consisting of hydrogen and alkyl of from 1 to 4 carbons.

3,309,267
CONTROLLING BULLHEADS WITH 3-NITROHALOSALICYLANILIDES
Roland J. Starkey, Jr., Cleveland Heights, Ohio, assignor to Ben Venue Laboratories, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed July 6, 1965, Ser. No. 469,853
8 Claims. (Cl. 167—30)

1. The method of controlling bullheads comprising contacting the bullheads with a lethal, to bullheads, amount of a 3-nitrohalosalicylanilide having the formula



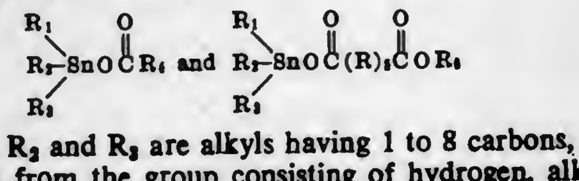
wherein R is a halogen.

3,309,268
COMPOSITION AND METHOD FOR PRODUCING SMOKE
Louis M. Sherman, Ocean City, N.J., assignor to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Dec. 16, 1964, Ser. No. 418,928
2 Claims. (Cl. 167—39)

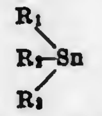
2. A method of producing a high volume of obscuring smoke which comprises, mixing triethyl aluminum with a smoke oil and heating the mixture for the initial production of smoke where the reaction of triethyl aluminum with oxygen from the atmosphere results in an increased production of smoke only by the additional heat generated in the exothermic reaction and a greater volume of smoke is generated in a shorter period of time.

3,309,269
PROCESS COMPRISING EMPLOYING TRIALKYLTIN CARBOXYLATES FOR REPELLING RODENTS
Paul F. Thompson, Deer Park, Ohio, assignor to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio
No Drawing. Filed July 11, 1963, Ser. No. 294,248
9 Claims. (Cl. 167—46)

1. A process of repelling rodents comprising applying to the environment from which the rodents are to be repelled an effective amount of a rodent repellent selected from the group consisting of



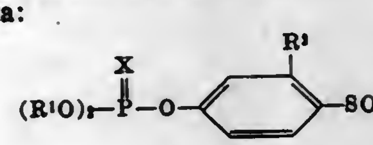
where R_1, R_2 and R_3 are alkyls having 1 to 8 carbons, R_4 is selected from the group consisting of hydrogen, alkyl, hydroxyalkyl, alkenyl, phenyl, methylphenyl, naphthyl, chlorophenyl, phenyl methyl and haloalkyl, R_5 is selected from the group consisting of $-(CH_2)_n-$, $-CH{=}CH-$, and phenylene, R_6 is selected from the group consisting of an alkyl group and R_1



and *n* is 0 or a positive integer up to 10.

3,309,270
ORGANIC PHOSPHORUS ANTHELMINTICS AND METHOD OF USING THE SAME
Milon W. Bullock and Irwin B. Wood, Hopewell, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Feb. 11, 1963, Ser. No. 257,760
10 Claims. (Cl. 167—53)

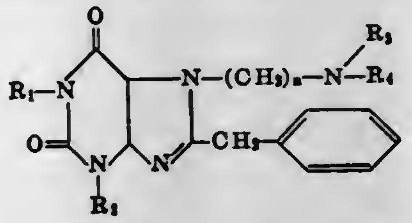
1. A method for controlling helminths in warm blooded animals which comprises treating said animals with an anthelmintic composition comprising an inert carrier and an anthelmintically effective amount of a compound of the formula:



wherein R^1, R^2 and R^3 are lower alkyl and X is a member selected from the group consisting of sulfur and oxygen.

3,309,271
METHODS AND COMPOSITION FOR INDUCING CHOLERESIS
Andre Henri Eugene Georges, Ottignies, Belgium, assignor to Manufacture de Produits Pharmaceutiques A. Christiaens, Societe Anonyme, Brussels, Belgium
No Drawing. Filed Aug. 24, 1964, Ser. No. 391,735
Claims priority, application Belgium, Aug. 30, 1963, 510,328, Patent 636,828
6 Claims. (Cl. 167—55)

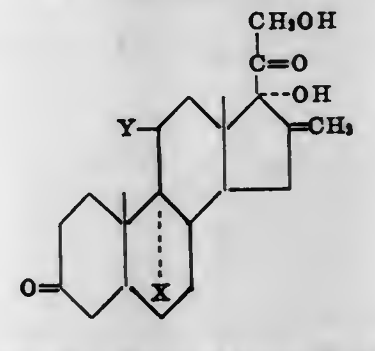
1. A method of inducing choleresis in the biliary duct of an animal which comprises administering to an animal in need of such treatment a choleretically effective amount of a member selected from the group consisting of the compounds of the formula



and pharmaceutically acceptable acid addition salts thereof, wherein each of R_1 and R_2 is lower alkyl, *n* is an integer not greater than 4, each of R_3 and R_4 independently, is a member selected from the group consisting of lower alkyl, phenyl lower alkyl and hydroxy lower alkyl, and wherein R_3 and R_4 when taken together form with the adjacent nitrogen atom a member selected from the group consisting of morpholino, pyrrolidino, hexamethyleneimino and piperazino.

3,309,272
16-ALKYLENE PREGNENE DERIVATIVES
David Taub, Metuchen, Norman L. Wendler, Summit, and Robert D. Hoffsommer, Jr., Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Apr. 24, 1961, Ser. No. 104,319
6 Claims. (Cl. 167—65)

1. A compound selected from the group consisting of:



and the Δ^1 derivative thereof wherein X is selected from the group consisting of hydrogen and α-halogen, Y is selected from the group consisting of keto and β-hydroxy; 21-position esters and acid esters thereof derived from mono and dicarboxylic acids containing only carbon, hydrogen and oxygen up to a total of twenty carbon atoms.

2. A pharmaceutical composition comprising a compound as claimed in claim 1 together with a pharmaceutically acceptable carrier.

3,309,273
ANTIBIOTIC STEFFISBURGENSIMYCIN AND METHOD OF PRODUCING

Malcolm E. Bergy and John H. Coats, Kalamazoo, and Fritz Reusser, Portage, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Filed Dec. 29, 1965, Ser. No. 527,634
8 Claims. (Cl. 167—65)

1. A composition of matter assaying at least 8.8 bio units/ml. of steffisburgensimycin, a compound which

(a) is effective in inhibiting the growth of various Gram-positive bacteria; and in its essentially pure crystalline form;
(b) is soluble in methanol, ethanol, isopropanol, methylene chloride, chloroform, ethylene dichloride, acetone, and methyl ethyl ketone;
(c) has the following elemental analysis: C, 58.31; H, 5.52; 0, 35.89;
(d) has an optical rotation of $[\alpha]_D^{25}$ +85° (c., .054%, methanol);
(e) has a characteristic infrared absorption spectrum as shown in FIGURE 1 of the accompanying drawing; and
(f) has a characteristic paper chromatographic pattern as shown in FIGURE 2 of the accompanying drawing.

3,309,274
USE OF FLUORESCENT DYES IN DENTAL DIAGNOSTIC METHODS

Herbert Brilliant, Philadelphia, Pa.
(191 Presidential N. Blvd., Bala-Cynwyd, Pa. 19004)
No Drawing. Filed July 23, 1962, Ser. No. 211,874
5 Claims. (Cl. 167—84.5)

1. A method of making visible to the naked eye the presence of disease-causing foreign matter in the oral cavity of a living human being, comprising, applying a composition containing a non-toxic, pharmaceutically acceptable fluorescent dye to the areas suspected of having disease-causing foreign matter and to the areas adjacent thereto having relatively no such foreign matter, and bathing both areas in light whose wave length has a frequency within the range of between about 3000 and 5200 Angstrom units, whereby the two areas are sharply delineated as the one of said areas which contains the foreign matter is caused to glow with the color of the fluorescent dye while the other remains substantially un-illuminated.

3,309,275
SEROLOGICAL INHIBITION TEST FOR PREGNANCY

Margaret Treacy, Somerville, N.J., assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey

No Drawing. Filed Aug. 23, 1963, Ser. No. 304,275
20 Claims. (Cl. 167—84.5)

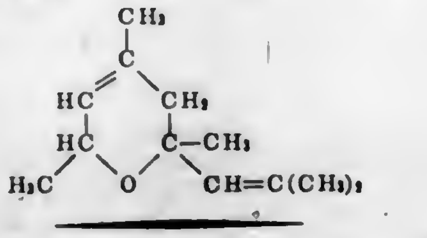
1. In a reagent for the detection of HCG in urine in which HCG antiserum is used, the reagent comprising a suspension of synthetic resin particles having HCG adsorbed thereon, said particles having an average diameter of from about 0.07 to about 0.90 micron, the improvement which comprises the HCG being altered as to its physical characteristics while retaining its immunological characteristics, said alteration of the HCG being accomplished by subjecting said HCG to treatment with heat, enzymes or a combination of heat and enzymes, the concentration of said particles being within the range of from about 0.5 to about 1.5% by weight and the amount of said HCG adsorbed on said particles being within the range of from about 36 to about 45 international units per milligram of particle weight.

3,309,276
PERFUME COMPOSITION CONTAINING 2-(2-METHYL-1-PROPENYL)-2,4,6-TRIMETHYLDIHYDRO-4,5-PYRAN

Arno Cahn, Pearl River, N.Y., and Donald Ross Winnegrad, West Englewood, and Allan H. Gilbert, Cresskill, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,779
4 Claims. (Cl. 167—94)

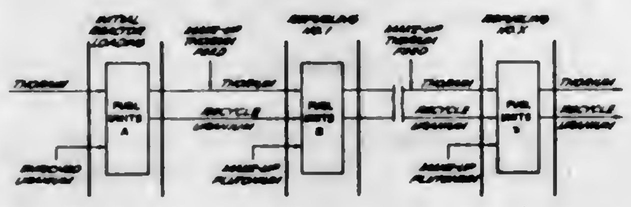
4. A perfume composition comprising 400 parts citronellol, 100 parts benzoylphenone, 60 parts phenyl ethyl acetate, 10 parts artificial musk and 200 parts of a perfume having the structure:



3,309,277
NUCLEAR REACTOR AND METHOD OF FUEL MANAGEMENT THEREFOR

Seymour Jaye and Dana H. Lee, Jr., Solana Beach, and John R. Triplett, Rancho Santa Fe, Calif., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

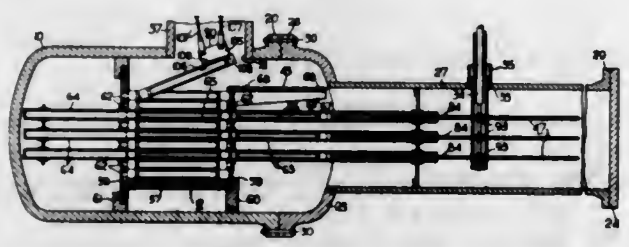
Filed May 17, 1965, Ser. No. 456,583
7 Claims. (Cl. 176—16)



1. A method of fuel management for a nuclear reactor utilizing a thorium-uranium^{233} breeding cycle for a plurality of fuel recycles, which method comprises charging the reactor with fuel units containing uranium and thorium, operating the reactor for the desired reactivity life of at least a selected portion of said fuel units, removing said selected portion of fuel units from the nuclear reactor, reprocessing said selected fuel units to eliminate fission products and to recover bred uranium, and refueling the nuclear reactor with bred uranium, thorium and make-up plutonium for a subsequent reactor cycle.

3,309,278
NUCLEAR REACTOR CONTROL MEANS

James J. Dickson, Silver Spring, Md., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Original application Jan. 5, 1961, Ser. No. 80,774, now Patent No. 3,208,914, dated Sept. 28, 1965. Divided and this application Nov. 24, 1964, Ser. No. 419,625
1 Claim. (Cl. 176—36)

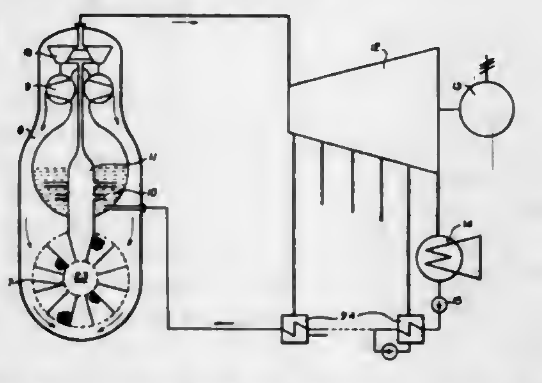


In a nuclear reactor of the type having a core including fuel element assemblies and a plurality of control rods reciprocable endwise relative to said fuel element assemblies, a mechanism for simultaneously moving a plurality of said control rods to predetermined positions to endwise adjustment, said mechanism comprising a plurality of gear racks fixedly connected in lengthwise extending relation with said control rods, respectively; a cross shaft rotatably mounted to extend transversely of said gear racks and having a plurality of axially spaced drive pinions secured thereto in meshing engagement, respectively, with said racks; an auxiliary drive pinion mounted on said shaft in torque transmitting relation thereto; an auxiliary reciprocable gear rack in mesh with said auxiliary drive pinion, torque transmitting means connected with said shaft and operable to selectively rotate the latter in opposite directions; and thrust transmitting means operatively connected with said auxiliary gear rack for moving the latter endwise from one predetermined position to another.

3,309,279
GAS COOLED NUCLEAR REACTOR CORE AND STEAM GENERATOR PLANT EMBODYING SAME

Ludolf Ritz, Karlsruhe, Germany, assignor to Gesellschaft fuer Kernforschung m.b.H., Karlsruhe, Germany, a corporation of Germany

Filed Sept. 12, 1963, Ser. No. 318,135
Claims priority, application Germany, Sept. 15, 1962, K 47,734, K 47,735; Sept. 25, 1962, K 47,809
19 Claims. (Cl. 176—40)



1. A gaseous fluid cooled nuclear reactor core which comprises:

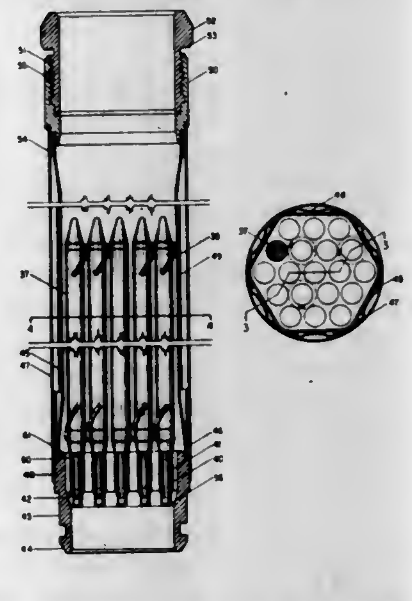
(a) A plurality of fuel elements packed together so as to have voids which define a plurality of passages extending from the exterior boundary of said packed fuel elements into the central interior portion thereof, and form an open region thereat which passages decrease in size progressively inwardly to said open region.
(b) Means for introducing a gaseous fluid coolant into said passages through their terminations at the exterior boundary of said packed fuel elements; and
(c) A radially disposed coolant discharge duct extending through the exterior boundary of said packed fuel elements and into the central interior portion thereof, said duct having an entrance communicating with the open region thereat, whereby the gaseous fluid coolant flows radially inward from the boundary of said packed fuel elements, into said open region and out through said coolant discharge duct, thereby providing a manner of cooling for said fuel elements wherein the heat transfer rate and coolant flow velocity increase in a radially inward direction from said exterior boundary and are maximum at the entrance to the coolant discharge duct.

14. A nuclear powered steam generator comprising:

(a) A common pressure vessel;
(b) A reactor core disposed within said pressure vessel, said reactor core including a plurality of fuel elements packed together so as to have voids which define a plurality of passages extending from the exterior boundary of said packed fuel elements into the central interior portion thereof and form an open region thereat, which passages decrease in size progressively inwardly to said open region, means for introducing a gaseous fluid coolant into said passages through their terminations at the exterior boundary of said packed fuel elements, and a radially disposed coolant discharge duct extending through the exterior boundary of said packed fuel elements and into the central interior portion thereof, said duct having an entrance communicating with the open region thereat, to accommodate the discharge of gaseous fluid coolant which flows radially inward from the boundary of said packed fuel elements through said passages, into said open region and out through the coolant discharge duct to provide a manner of cooling said fuel elements wherein the heat transfer rate and coolant flow velocity increase in a radially inward direction from said exterior boundary and are maximum at the entrance to the coolant discharge duct; and,
(c) An evaporator, also disposed within said pressure vessel, said evaporator having a condensate water chamber, means for introducing condensate into said chamber, and a superheated steam distributor extending through said chamber, said distributor having an inlet which communicates with the coolant discharge duct of the reactor core, an outlet which communicates with the exterior of said pressure vessel, and means for diverting superheated steam into the condensate chamber to evaporate the condensate within, and said condensate chamber having an outlet communicating with the interior of the pressure vessel, whereby condensate evaporated within said chamber in response to heat generated by nuclear reactions within the reactor core passes through said chamber outlet, into the interior of the pressure vessel, and thence through the reactor core, cooling said core and emerging therefrom as superheated steam, through the coolant discharge duct, and into the distributor wherein a portion of said superheated steam is diverted to further evaporate the condensate within said chamber, and the remaining portion of said superheated steam passes out through the distributor outlet, thus providing for the continuous generation of superheated steam from condensate by the heat produced by nuclear reactions within the core.

3,309,280
PRESSURE-TUBE NUCLEAR REACTOR INCLUDING FUEL ASSEMBLY WITH THERMAL BAFFLE

Leonard J. Balog, Irwin, Pa., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 24, 1964, Ser. No. 421,133
3 Claims. (Cl. 176—61)

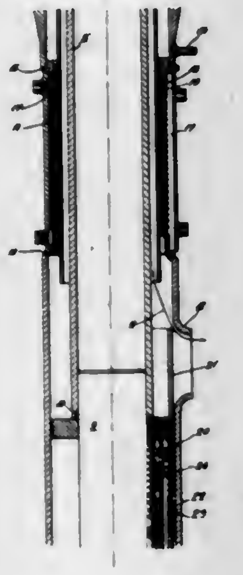


1. In a nuclear reactor wherein U-shaped pressure-tubes are suspended within a tank of liquid moderator, fuel assemblies are disposed within the legs of the pressure-tubes,

and primary coolant is circulated through the pressure-tubes, an improved fuel assembly comprising a flow baffle of tubular shape with a plurality of flat sides, a hollow cylindrical thermal baffle surrounding said flow baffle in spaced relationship thereto, an upper guide ring and a lower guide ring to which the upper and lower ends of said flow baffle and said thermal baffle are attached, a grid member extending across the coolant flow path defined by said flow baffle and said guide rings, a plurality of fuel rods positioned by said grid member in parallel relationship and held nested together by said flow baffle, spacing means provided on said fuel elements of such a size as to maintain proper spacing therebetween when in nested relationship within said flow baffle, and apertures near the inlet end of said flow baffle to provide stagnant primary coolant between said baffles.

3,309,281
TIGHT PASSAGE AT THE END OF A CHANNEL OF A NUCLEAR REACTOR COOLED BY AN ORGANIC LIQUID

Paul Cogez, Montrouge, France, and Lino Guiducci, Leval, Belgium, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium
Filed Mar. 2, 1964, Ser. No. 348,421
Claims priority, application Belgium, Mar. 13, 1963, 503,802
1 Claim. (Cl. 176—64)

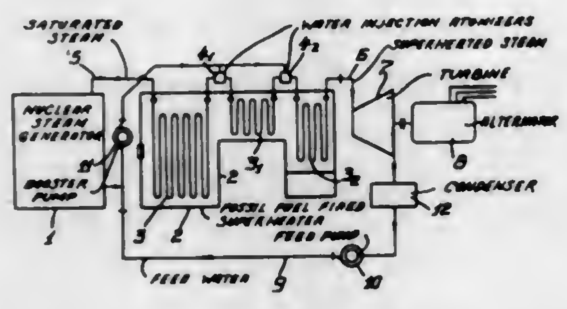


A tight passage at the end of a channel of a nuclear reactor having a moderator tank and cooled by an organic liquid, said passage comprising:

- a calandria tube in said tank, having an extension thereof projecting out of the tank and secured thereto;
- a pressure tube within said calandria tube;
- a first tightness joint, including a packing material capable of a change in the solidification thereof at ambient temperature; said first joint being mounted at the base of said power tube secured to the said calandria tube extension, between the said two tubes;
- fuel elements within said power tube and support means at the base of said pressure tube for supporting said fuel elements in said pressure tube; said support means including a vertical rod at least partly outside said pressure tube and in said calandria tube extension; and
- a second tightness joint, including a packing material capable of a change in the solidification thereof at ambient temperature; said second joint being movable between said vertical rod and said calandria tube extension, an outlet provided through said calandria tube extension below said pressure tube and between said first and second joint for the flow of a heat-carrying organic fluid, said second joint being provided with a hatch for controlling the flow of the said fluid.

3,309,282
METHODS FOR THE OPERATION OF NUCLEAR POWER GENERATING STATIONS

Pierre Edmond Jules Marie Maldague, 232 Ave. Winston Churchill, Brussels, Belgium
Continuation of application Ser. No. 796,824, Mar. 3, 1959. This application Nov. 2, 1964, Ser. No. 420,465
Claims priority, application Luxembourg, Aug. 4, 1958, 36,316
2 Claims. (Cl. 176—65)

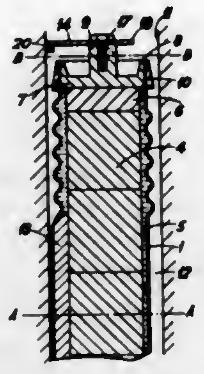


1. In the method of operating a power generating system of the type comprising a steam generator including a nuclear reactor having a predetermined normal output; a superheater fired by fossil fuel and connected to receive steam from said generator, said superheater comprising a plurality of serially connected sections; and a load connected to receive and utilize superheated steam from said superheater at predetermined full load rate, said superheater, when operating under normal load conditions, adequately superheating the full normal output of said generator; the improvement which comprises the steps of: initially operating said generator to deliver a steam output less than said normal output and insufficient to supply said load at said full load rate, the full normal output of said generator being sufficient therefor; injecting water into said superheater at a junction between two of said sections; initially operating said superheater under overload conditions to vaporize said injected water in addition to superheating the steam received by said load; subsequently increasing the output of said generator; thereupon reducing said water injecting step; and thereupon operating said superheater under decreased load conditions, said step of increasing the output of said generator being performed by the substitution of cores in said nuclear reactor, the replacement cores having an increased output with respect to the cores used in initially operating said generator.

3,309,283
FUEL PENCILS HAVING A THIN FLEXIBLE CAN FOR NUCLEAR REACTORS

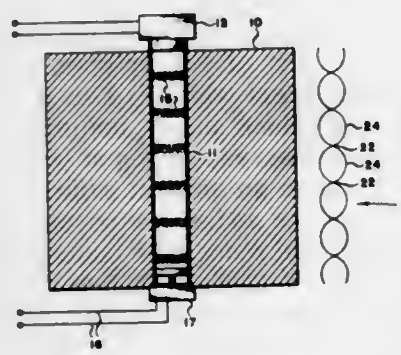
Lucien Alfille, Paris, France, and Jean-Claude Charrault, Rasco-Upanne, Varese, and François Lafontaine, Ispra, Varese, Italy, assignors to European Atomic Energy Community—Euratom, Brussels, Belgium
Filed July 19, 1965, Ser. No. 472,972
Claims priority, application Belgium, Aug. 12, 1964, 1,732/64
13 Claims. (Cl. 176—72)

2. A fuel pencil for use in nuclear reactors including pressure fluid cooled power reactors in which said pencil is placed in a guiding channel in close fitting relationship, said pencil comprising a cylindrical sheath, said sheath comprising terminal enclosure receiving zones at each end portion thereof and a central portion, a plurality of parallel longitudinal corrugations formed in said central portion and permitting radial distortion, at least one end zone of said sheath having therein corrugations permitting axial distortion, fissile materials placed within said sheath and having radial and longitudinal clearance therewith, a low neutron absorbing material which is a good heat conductor filling the clearance between said fissile material and said sheath, said material preferably being plastic at the working temperatures of the pencil within the reactor, plug means for closing said sheath end, said plug means carrying thereon means for centering said sheath within the guiding channel, means disposed within said sheath and arranged within said longitudinal corrugations for strengthening said sheath, said strengthening means contacting said fuel element.



3,309,284
METHOD AND MEANS FOR CONTROLLING REACTIVITY WITHIN A NUCLEAR REACTOR

Chester M. Bennett, Mountain View, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Mar. 16, 1965, Ser. No. 440,156
10 Claims. (Cl. 176—86)



1. The method for controlling the reactivity within a nuclear reactor consisting of placing a column of compressible neutron absorbing substance in the core of the reactor, producing a compressional wave of preselected wavelength at one end of said column, reflecting said compressional wave at the other end of said column, and varying the wavelength of said compressional wave.

3,309,285
PREPARATION OF 5'-GUANYLIC ACID BY FERMENTATION

Kazuo Uchida, Choshi-shi, Kenkichi Miyauchi, Hasaki-machi, Kashima-gun, and Masao Fujimoto, Choshi-shi, Japan, assignors to Yamasa Shoyu Co., Ltd., Choshi-shi, Japan, a corporation of Japan
No Drawing. Filed July 27, 1965, Ser. No. 475,241
Claims priority, application Japan, Aug. 10, 1961, 36/28,346
1 Claim. (Cl. 195—28)

A process for the production of 5'-guanylic acid which comprises growing Kurthia ATCC 14757 in an aqueous nutrient medium consisting of:

Glucose	g./l.	80
Casein hydrolysate	g./l.	20
K_2HPO_4	g.	7.0
KH_2PO_4	g.	3.0
$(NH_4)_2SO_4$	g.	1.0
$MgSO_4 \cdot 7H_2O$	g.	0.2
Sodium citrate	g.	0.5
Thiamine		100γ
Riboflavin		100γ
Pyridoxine		200γ
Ca-pantothenate		20γ
Nicotinic acid		20γ
p-Aminobenzoic acid		1γ
Biotin		0.5

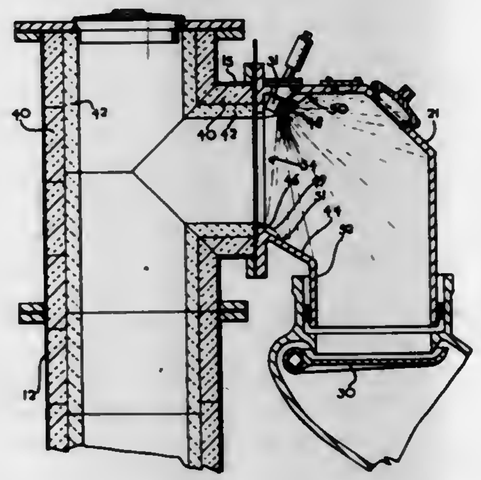
at an initial pH of from 6.8 to 7.2 under aerobic conditions for a period of from 3 to 8 days to excrete and accumulate 5'-guanylic acid in the medium at an acid pH and recovering said guanylic acid from said medium.

ERRATUM

For Class 202—153 see:
Patent No. 3,309,295

3,309,286
COKE OVEN ASCENSION PIPE OFFTAKE MEANS

Lewis Alderman, Romiley, England, assignor to Simon-Carves Limited, Stockport, England, a British company
Filed Aug. 2, 1965, Ser. No. 476,634
Claims priority, application Great Britain, Apr. 13, 1962, 14,295/62
1 Claim. (Cl. 202—258)

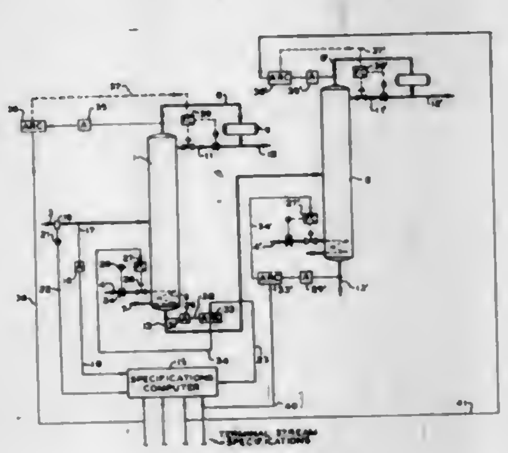


In combination with a coke oven ascension take off pipe, means defining a lateral gas outlet in said pipe, and a refractory lining at the inner surface of said pipe and said outlet and having sufficiently low heat conductive properties that heat loss through said lining, pipe, and outlet is low enough to prevent deposition of tar upon the internal surface of said lining, an unlined conduit bend adapted to connect said pipe to a collector means and having angularly related inlet and outlet openings, said conduit bend being connected to said pipe with its outlet opening facing downwardly and with its inlet opening in aligned, direct communication with said gas outlet to provide a continuation of the gas flow passage defined by said gas outlet, means providing an annular, radially extending step at the interface between said gas outlet and said inlet opening, surface means formed in said conduit bend and cooperating with said annular step to provide an abrupt radial enlargement of said gas flow passage, said enlargement being in the direction of gas flow through said gas outlet and said conduit bend to provide for the initial peripheral impingement of the main gas stream flowing through said conduit bend at a region on the conduit bend internal wall surfaces that is spaced a predetermined distance downstream of said inlet opening, said surface means, said annular step, and the periphery of said gas stream before it impinges on said internal wall surfaces delimiting an annular pocket, liquor spray nozzle means disposed entirely within said pocket immediately adjacent to said annular step for providing a liquor spray cone (a) which peripherally impinges on the internal wall surfaces of said conduit bend at a region upstream from the region where said gas stream initially impinges on said internal wall surfaces and (b) which wets all of the interior conduit bend wall surface extending downstream from its region of initial impingement, and further surface means cooperating with said annular step for directing the sprayed liquor away from said gas outlet to prevent access of said sprayed liquor to said refractory lining.

3,309,287
CONTROLLING THE OPERATION OF A TRAIN OF DISTILLATION COLUMNS

Dale E. Lupfer and Minor W. Oglesby, Jr., Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 27, 1962, Ser. No. 219,606
4 Claims. (Cl. 203—1)

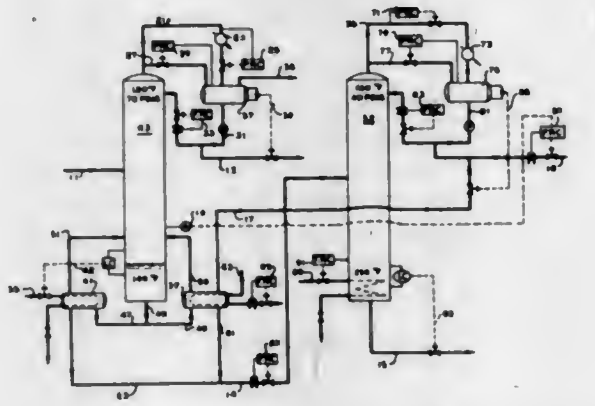


1. In a process wherein a multicomponent feed stock is separated in a train of fractional distillation columns to produce a plurality of terminal product streams each of which possesses a specified purity, an improved control method therefor comprising the steps of measuring a process variable indicative of the flow rate of said feed stock entering the first of said columns in said train; producing in response thereto a signal representative of the flow rate of said feed stock; analyzing said feed stock to determine the concentration of key components present in the feed stock; producing in response thereto signals representative of concentrations of said key components; combining said signals in material balance equations with signals representative of predetermined concentrations of said key components desired in the terminal product streams of the individual distillation columns in said train; analyzing at least one stream exiting from said first column in said train which forms a feed to the next column located in said train to determine the concentration of specified key components therein; producing a feedback signal responsive to the concentration of said specified key component in said exit stream; biasing the signal representative of the concentration of said specified key component which can be tolerated in the said exit stream from said first column with said feedback signal; and controlling in response to said biased signal the flow rate of at least one stream selected from the group of streams comprising a bottoms product stream, a distillate product stream, an external reflux stream, a reboiler steam stream of each of said columns within said train so as to produce an exit stream used as a feed stream by a downstream column having a specified concentration of a predetermined key component therein; and repeating said control method for each of said columns in said train thereby assuring that each of the terminal product streams produced in the train of columns will possess predetermined purities.

3,309,288
FRACTIONAL DISTILLATION OF A COMPONENT FROM A FEEDSTOCK BY THE ADDITION OF HIGHER BOILER VAPORS TO THE REBOILER

William H. Butterbaugh III, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 2, 1962, Ser. No. 234,987
6 Claims. (Cl. 203—1)



1. A method for the concentration by fractional distillation of 1,3-butadiene from a feed stock rich in 1,3-butadiene and having a narrow boiling range without overheating the kettle product in process comprising introducing said feed stock into a fractional distillation column, and fractionally distilling said feed stock by adding reboiling heat to the kettle section of the column and refluxing the head section of the column, adding to the kettle section a component which is also a component of said feed stock and which has a boiling point slightly higher than 1,3-butadiene, vaporizing at least a portion of the added component in an amount sufficient to increase the flow of vapors of the added component and 1,3-butadiene up the column and reduce the concentration of 1,3-butadiene in the kettle material, removing this latter material lean in 1,3-butadiene as a kettle product, and removing an overhead product having an increased concentration of 1,3-butadiene as product of the operation.

3,309,289
RECOVERY OF BENZOIC ACID BY DISTILLATION IN PRESENCE OF EXCESS WATER

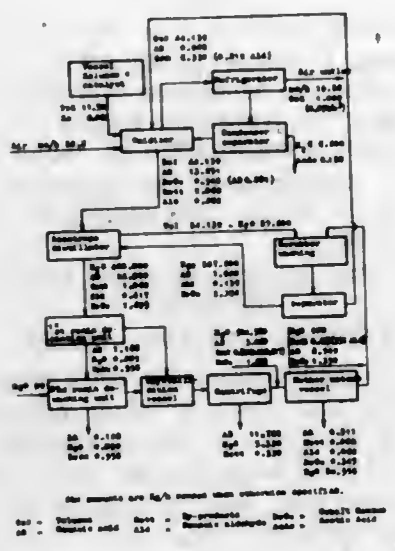
Giuseppe Messina, Limbiate, Werner Muench, Cesano Maderno, and Roberto Mattone, Seveso, Italy, and Luigi Notarbartolo, deceased, late of Milan, Italy, by Enza Pascalino, administratrix, and Paola Notarbartolo, heiress, assignors to Snia Viscosa Societá Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, a company of Italy

Filed Oct. 8, 1962, Ser. No. 229,234
Claims priority, application Italy, Oct. 11, 1961, 18,287/61
7 Claims. (Cl. 203—48)

1. A process for recovering benzoic acid in purified form from a raw material obtained by partial oxidation of toluene, and which includes benzoic acid in solution in toluene, comprising the steps

(a) of adding water to said raw material in an amount in excess of that required to form at atmospheric pressure an azeotrope with toluene,

(b) distilling said mixture at a temperature higher than the boiling point of an azeotropic mixture of water and toluene to obtain vapors richer in water than an azeotropic vapor of water and toluene, and



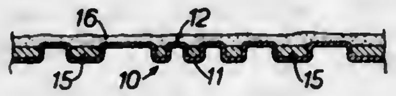
to leave as residue an aqueous solution of benzoic acid, and

(c) crystallizing the benzoic acid in the last-named solution to separate solid purified benzoic acid therefrom.

3,309,290
METHOD OF FORMING ELECTROTYPES

Roy Clifford Blackmore, Esher, England, assignor to Purnell & Sons Limited, Paulton, near Bristol, Somerset, England, a British company

Filed Mar. 20, 1963, Ser. No. 266,748
Claims priority, application Great Britain, Mar. 22, 1962, 11,084/62
4 Claims. (Cl. 204—17)



1. A method for the production of an electrotype from an electrotype shell which comprises placing a pre-selected amount of alloy in the form of strips and having a melting point in the range of 65–200° C. over the sharp depressions in the non-printing side of said electrotype shell, heating said shell and alloy strips to melt the strips and cause the molten alloy to flow into said sharp depressions said pre-selected amount of alloy being insufficient to completely fill the depressions and crevices, and then electroplating a layer of a mixture of metals containing lead onto the non-printing partially-filled side of the shell to form an electrotype.

3,309,291
METHOD OF ELECTROPLATING SELECTED PORTIONS OF AN ELECTRICALLY CONDUCTIVE OBJECT

Jean Jacques George Icxi, Paris, France, assignor to Laboratoires Dalic, Paris, France, a limited-liability company of France

No Drawing. Filed July 5, 1962, Ser. No. 207,778
Claims priority, application France, July 7, 1961, 867,298, Patent 1,301,433; May 17, 1962, 897,892
3 Claims. (Cl. 204—1.5)

1. A method of electroplating selected portions of an electrically conductive object which comprises providing a cathodically electrodeposited thin layer of a metal oxide on portions of the object, electrolytically depositing a metallic layer on the portions of the object not coated with the layer of metal oxide and anodically removing the cathodically deposited metal oxide layer.

3,309,292
METHOD FOR OBTAINING THICK ADHERENT COATINGS OF PLATINUM METALS ON REFRACTORY METALS

Richard L. Andrews, Hyattsville, Stephen D. Cramer, College Park, Charles B. Kenahan, Silver Spring, and David Schlain, Greenbelt, Md., assignors to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Feb. 28, 1964, Ser. No. 348,308
20 Claims. (Cl. 204—39)

1. A method for depositing an adherent coating of a metal on a metal substrate by electrodeposition of the metal from an aqueous solution of a compound of the metal comprising forming an initial coating of a platinum metal on the metal substrate by electrodeposition from a fused salt bath containing ions of the platinum metal and subsequently subjecting the thus coated metal substrate to electrodeposition of the metal from aqueous solution.

3,309,293
COPPER CYANIDE ELECTROPLATING BATH

Barnet D. Ostrow and Fred I. Nobel, Roslyn, N.Y., assignors to Elechem Corp., Jersey City, N.J., a corporation of New Jersey

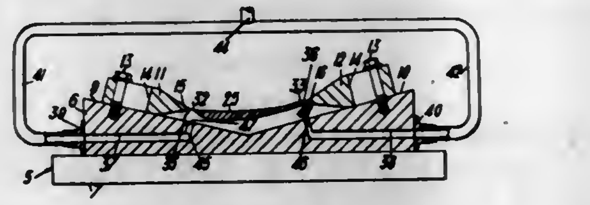
No Drawing. Filed Nov. 16, 1964, Ser. No. 411,543
4 Claims. (Cl. 204—52)

1. In an aqueous alkaline cyanide copper plating bath, the improvement which comprises the addition to said bath of $RNH(CH_2)_ySO_3X$; in the amount of 0.001 g/l. to the limit of solubility and wherein R is a radical selected from the group consisting of alkyl radicals having 6 to 20 carbon atoms, X is H or alkali metal, and y is 1 to 6.

3,309,294
ELECTROLYTIC SHAPING OF METALLIC AEROFOIL BLADES

Frederick Lewis Goodwin, Derby, England, assignor to Rolls-Royce Limited, Derbyshire, England, a company of Great Britain

Filed Apr. 29, 1963, Ser. No. 276,541
Claims priority, application Great Britain, May 7, 1962, 17,560/62
4 Claims. (Cl. 204—143)



1. A method of manufacturing a metallic aerofoil blade having a longitudinal edge, comprising the steps of: removing metal from said edge by a machining process so that it has an elongate flat surface substantially perpendicular to the mean camber line of said blade; clamping the machined blade blank with said elongate flat surface extending parallel to an elongate electrode and spaced therefrom by a narrow gap; placing said blank and said electrode at substantially different electrical potentials; directing electrolyte through said gap; and removing metal electrolytically from said elongate flat surface so as to radius it by passing current between said blade blank and the electrode.

to provide for the initial peripheral impingement of the main gas stream flowing through said conduit bend at a region on the conduit bend internal wall surfaces that is spaced a predetermined distance downstream of said inlet opening, said surface means, said annular step, and the periphery of said gas stream before it impinges on said internal wall surfaces delimiting an annular pocket, liquor spray nozzle means disposed entirely within said pocket immediately adjacent to said annular step for providing a liquor spray cone (a) which peripherally impinges on the internal wall surfaces of said conduit bend at a region upstream from the region where said gas stream initially impinges on said internal wall surfaces and (b) which wets all of the interior conduit bend wall surface extending downstream from its region of initial impingement, and further surface means cooperating with said annular step for directing the sprayed liquor away from said gas outlet to prevent access of said sprayed liquor to said refractory lining.

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Filed Aug. 27, 1962, Ser. No. 219,606
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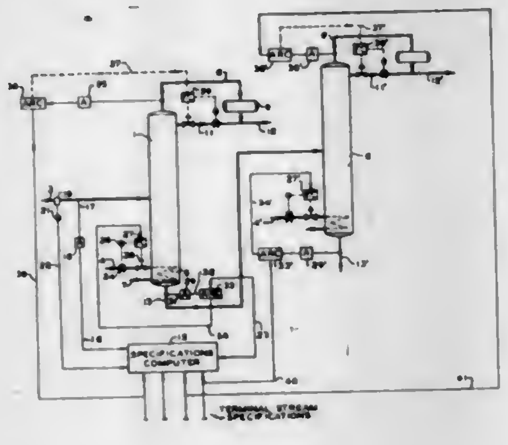

1. In a process wherein a multicomponent feed stock is separated in a train of fractional distillation columns to produce a plurality of terminal product streams each of which possesses a specified purity, an improved control method therefor comprising the steps of measuring a process variable indicative of the flow rate of said feed stock entering the first of said columns in said train; producing in response thereto a signal representative of the flow rate of said feed stock; analyzing said feed stock to determine the concentration of key components present in the feed stock; producing in response thereto signals representative of concentrations of said key components; combining said signals in material balance equations with signals representative of predetermined concentrations of said key components desired in the terminal product streams of the individual distillation columns in said train; analyzing at least one stream exiting from said first column in said train which forms a feed to the next column located in said train to determine the concentration of specified key components therein; producing a feedback signal responsive to the concentration of said specified key component in said exit stream; biasing the signal representative of the concentration of said specified key component which can be tolerated in the said exit stream from said first column with said feedback signal; and controlling in response to said biased signal the flow rate of at least one stream selected from the group of streams comprising a bottoms product stream, a distillate product stream, an external reflux stream, a reboiler steam stream of each of said columns within said train so as to produce an exit stream used as a feed stream by a downstream column having a specified concentration of a predetermined key component therein; and repeating said control method for each of said columns in said train thereby assuring that each of the terminal product streams produced in the train of columns will possess predetermined purities.

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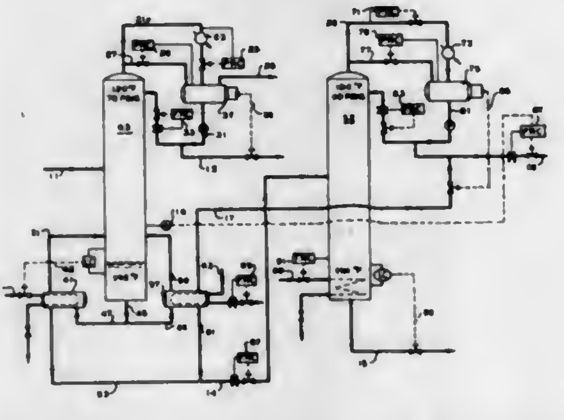

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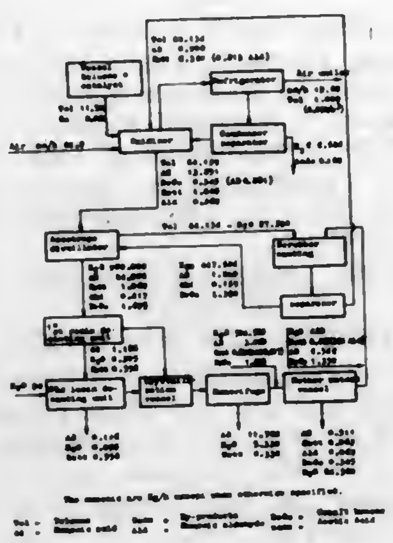

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3,309,290

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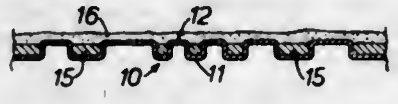

1. A method for the production of an electrotype from an electrotype shell which comprises placing a pre-selected amount of alloy in the form of strips and having a melting point in the range of 65–200° C. over the sharp depressions in the non-printing side of said electrotype shell, heating said shell and alloy strips to melt the strips and cause the molten alloy to flow into said sharp depressions said pre-selected amount of alloy being insufficient to completely fill the depressions and crevices, and then electroplating a layer of a mixture of metals containing lead onto the non-printing partially-filled side of the shell to form an electrotype.

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No Drawing. Filed Feb. 28, 1964, Ser. No. 348,308
20 Claims. (Cl. 204—39)

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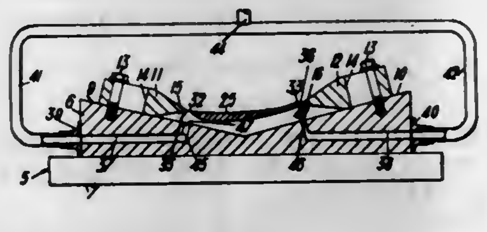
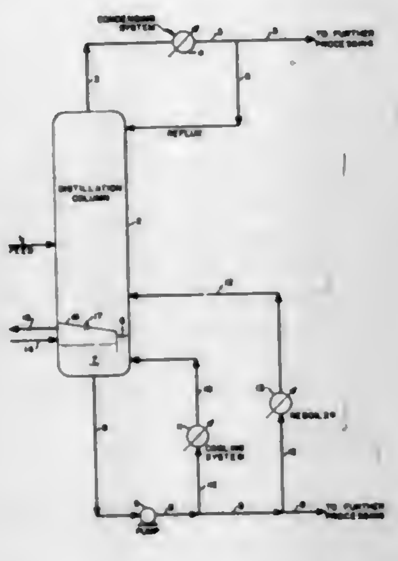


1. A method of manufacturing a metallic aerofoil blade having a longitudinal edge, comprising the steps of: removing metal from said edge by a machining process so that it has an elongate flat surface substantially perpendicular to the mean camber line of said blade; clamping the machined blade blank with said elongate flat surface extending parallel to an elongate electrode and spaced therefrom by a narrow gap; placing said blank and said electrode at substantially different electrical potentials; directing electrolyte through said gap; and removing metal electrolytically from said elongate flat surface so as to radius it by passing current between said blade blank and the electrode.

3,309,295
DISTILLATION OF HEAT SENSITIVE COMPOUNDS

Robert P. Cahn, Millburn, and Frank J. Herrmann, Morris Township, Morris County, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Jan. 12, 1962, Ser. No. 165,756
1 Claim. (Cl. 202—153)



A distillation apparatus comprising a vertical shell, means for withdrawing vaporous materials from the upper section of said shell, a plate supported internally in the lower section of said shell, said plate substantially separating the distillation apparatus into an upper distillation section and a lower reservoir, conduit means for passing liquid materials from said distillation zone to the reservoir, said liquid materials forming a pool in said reservoir and being separated from said plate by means of a vapor space, means for introducing an inert gas into said vapor space, the flow of said inert gas being controlled by a pressure differential controller connected to said upper distillation zone and said vapor space, means for withdrawing liquid materials from said reservoir, means for passing a first portion of said withdrawn liquid materials to a cooling section, means for cooling said first portion of withdrawn liquid material and returning it to said reservoir, means for passing a second portion of said withdrawn liquid material to a heating section, means for heating said second portion of said withdrawn liquid material and returning it to the distillation zone, and means for removing a third portion of said withdrawn liquid materials as a product stream.

3,309,296
POLYMERIZATION OF FORMALDEHYDE BY IONIZING RADIATION IN THE PRESENCE OF AN ACID ANHYDRIDE

Kenichi Fukui and Tsutomu Kagiya, Kyoto, Akira Segawa, Nishinomiya-shi, Hisao Yokota, Kobe, Masatsune Kondo, Ikeda-shi, and Seizo Nakashio, Nishinomiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., and Sumitomo Atomic Energy Industries, Ltd., both of Higashi-ku, Osaka, Japan, both corporations of Japan

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,123
Claims priority, application Japan, Feb. 13, 1963, 38/7,756
8 Claims. (Cl. 204—159.21)

1. A method for producing a high molecular weight formaldehyde polymer, which comprises initially mixing formaldehyde monomer and a monomer stabilizing amount of at least 0.01 mol of an acid anhydride per mol of formaldehyde, polymerizing the formaldehyde monomer in the mixture by ionizing radiation to produce high molecular weight polyoxymethylene polymer, and substantially completely separating the thus formed polyoxymethylene polymer from the initially present acid anhydride.

3,309,297
POLYMERIZATION OF VINYL ESTERS

Gozo Takayama, Takatsuki, Koichi Takakura, Hirakata, and Junji Ukida and Masakazu Matsumoto, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Japan, a corporation of Japan

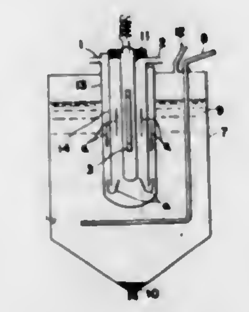
No Drawing. Continuation of application Ser. No. 133,300, Aug. 23, 1961. This application July 20, 1965, Ser. No. 473,495
Claims priority, application Japan, Sept. 12, 1960, 35/37,651
2 Claims. (Cl. 204—159.23)

1. A method of polymerizing a vinyl ester which comprises subjecting said ester to photo-polymerization in the presence of an organic solvent therefor and in the presence of 2,2'-azobisbutyramide, said solvent being methanol or acetic acid, said photo-polymerization being effected at a temperature from −30° C. to 30° C. with radiation having a wave length of 3000–4500 A., and said azobis-amide being present in the polymerization system in the amount of 0.001 to 5%, said solvent being admixed with 5–10% of water and said solvent being present in the amount of about 15 to 85 parts per hundred parts by weight of the combined vinyl ester and solvent.

3,309,298
PREPARATION OF HYDROCHLORIDE SALTS OF CYCLOALKANONE OXIMES

Yoshikazu Ito, Mizuho-ku, Seiichi Torimitsu, Minato-ku, and Yoichi Shimokawa, Fumio Nishikawa, and Yoichiro Hara, Minami-ku, Nagoya, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Jan. 8, 1963, Ser. No. 250,133
Claims priority, application Japan, Jan. 12, 1962, 37/1,179; Jan. 30, 1962, 37/2,574; June 8, 1962, 37/23,168
7 Claims. (Cl. 204—162)

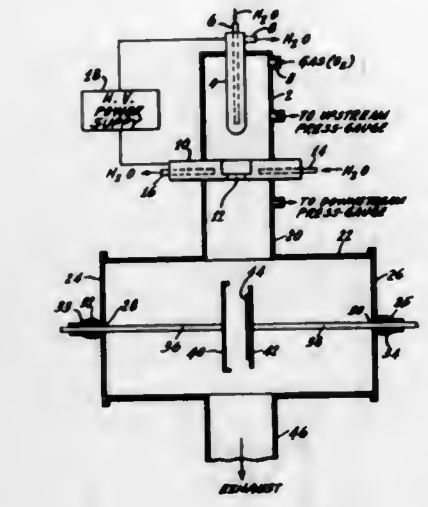


5. A method of producing cycloalkanone oxime hydrochlorides photochemically which comprises effecting the nitrosation of a cycloalkane with a nitrosating agent while irradiating with light in the presence of hydrogen chloride in excess of its equivalent, based on the nitrosating agent, preferably from 7 to 100 times equivalent, providing between the light source and the reaction system a light absorption zone adapted to absorb substantially completely all light of a wavelength shorter than 400 millimicrons from the light emitted by said light source, said light absorption zone being an aqueous solution of at least one compound selected from the group consisting of nitrous acid and the water-soluble metal salts thereof.

3,309,299
METHOD OF TREATING SYNTHETIC RESINOUS MATERIAL TO INCREASE THE WETTABILITY THEREOF

Russell M. Mantell, Princeton, N.J., assignor to Aerochem Research Laboratories, Inc., a corporation of Maryland

Filed Aug. 22, 1963, Ser. No. 303,733
9 Claims. (Cl. 204—165)

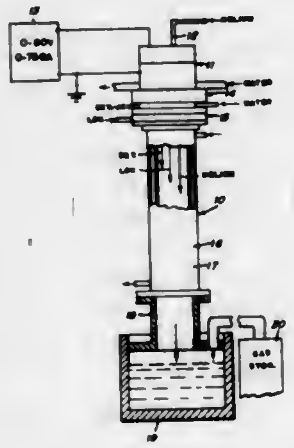


1. A method of treating a surface of a synthetic resinous material selected from the class consisting of polyolefins, polyesters and polyamides to increase the wettability of said surface, comprising exposing said first-mentioned surface to a gaseous mixture including a monatomic gas selected from the class consisting of oxygen and nitrogen for at least a small fraction of a second, said exposure being in the absence of other forms of energy.

3,309,300
METHOD FOR THE PRODUCTION OF OZONE USING A PLASMA JET

Aristid V. Grosse, Haverford, and Charles S. Stokes, Willow Grove, Pa., assignors to The Welsbach Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Aug. 21, 1963, Ser. No. 303,550
12 Claims. (Cl. 204—176)

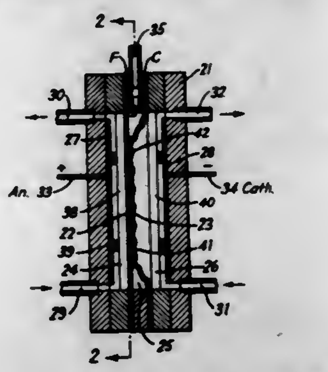


1. A method of producing ozone in a solution of liquid oxygen comprising the steps of: subjecting a flow of inert gas to an arc discharge, introducing liquid oxygen into said arc discharge whereby said liquid oxygen is partly dissociated, quenching the arc discharge with the excess liquid oxygen and passing the reaction products of said arc discharge to a storage chamber.

3,309,301
METHOD FOR PRODUCING A DEIONIZED LIQUID PRODUCT BY ELECTRODIALYSIS

Paul Kollsman, 100 E. 50th St., New York, N.Y. 10022

Filed Apr. 16, 1962, Ser. No. 187,747
25 Claims. (Cl. 204—180)

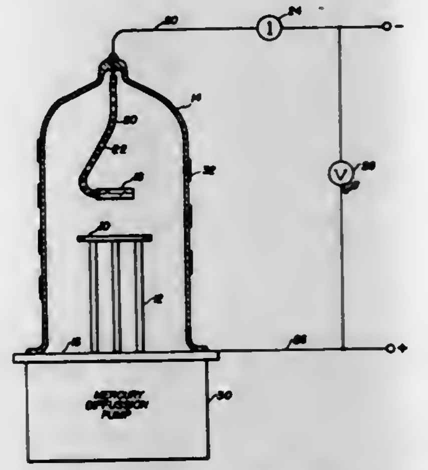


1. The process of extracting solvent from an ionic solution of a certain ionic concentration by the action of an electric current passing through the solution in a membrane cell, the process comprising the steps of driving ions of one polarity of the solution by the electric current through a first membrane contacted on one side by the solution; driving said ions by the said electric current through a second membrane into an electrolyte liquid on the far side of the second membrane, in which a hydraulic pressure relationship is maintained on opposite sides of the first membrane such that, in the absence of an electric current, there is substantially no hydraulic flow from said one side through the first membrane to its other side, and in which the first membrane is of larger effective pore size than the second membrane, and in which the second membrane has a pore liquid of a higher ionic concentration than the said ionic solution, whereby ions of said one polarity pass through the first membrane in more highly solvated condition than through the second membrane; restricting the flow of ions of the opposite polarity through at least the membrane of smaller pore size; and removing solvent product accumulating between the two membranes as a result of the difference in the ionic solvent transport through the two membranes.

3,309,302
METHOD OF PREPARING AN ELECTRON TUBE INCLUDING SPUTTERING A SUBOXIDE OF TITANIUM ON DIELECTRIC COMPONENTS THEREOF

Oskar Heil, San Mateo, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California

Filed Oct. 7, 1963, Ser. No. 314,182
7 Claims. (Cl. 204—192)

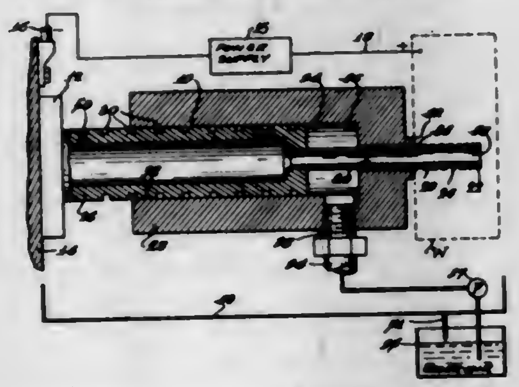


1. In the manufacture of an electron tube having a dielectric body and in which operation of the tube causes the surface of the dielectric body to be bombarded by electrons, the improvement comprising the steps of sput-

tering onto said surface a dotted coating of a suboxide of titanium.

3,309,303
ELECTROLYTIC CAVITY SINKING APPARATUS

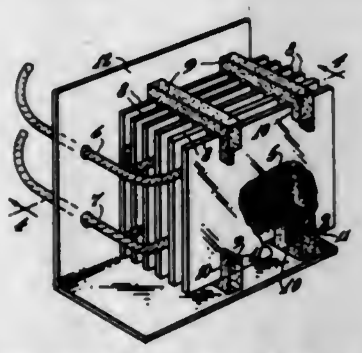
Joseph L. Bender, Wheeling, and Lynn A. Williams, Winnetka, Ill., assignors to Anocut Engineering Company, Elk Grove Village, Ill., a corporation of Illinois
Original application June 21, 1960, Ser. No. 37,766, now Patent No. 3,214,360, dated Oct. 26, 1965. Divided and this application June 15, 1965, Ser. No. 464,045
7 Claims. (Cl. 204—224)



1. In electrolytic cavity sinking apparatus having a hollow conductive electrode advanced toward and into an electrically conductive and electrochemically erodable workpiece, means for passing a low voltage, high density direct current between the workpiece and the electrode in a sense to make the workpiece anodic and the electrode cathodic, and means for pumping an electrolyte from a source to the work gap between the electrode and the workpiece under high pressure and at a high velocity in the work gap, the combination therewith of an insulated bushing surrounding the electrode and sealing against the entry face of the workpiece to form an electrolyte passage with the exterior of the electrode, said bushing having a cylindrical bore therein, a tubular piston-like mount connected to the electrode and slidable in said bore in sealing relationship therewith, said tubular mount being connected to the interior of the electrode to form an electrolyte outlet passage from the work gap, and means connecting said electrolyte outlet passage to said electrolyte source.

3,309,304
OZONE GENERATORS

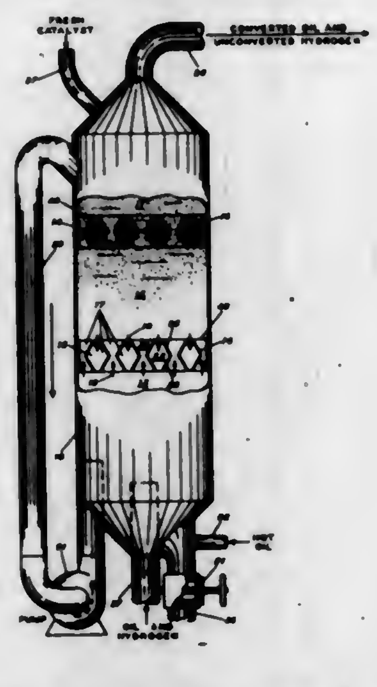
Benjamin Caplan, 5519 Walnut St., Philadelphia, Pa. 19139
Filed Apr. 30, 1963, Ser. No. 276,871
3 Claims. (Cl. 204—313)



1. An ozone generator comprising rectangular stainless steel screens as electrodes, connected alternately to alternate poles of an alternating current source, dielectric material separating said electrodes as dividers between alternate electrodes and elongated transversely extending holding devices having teeth extending inwardly between adjacent dividers, said teeth being provided with opposed notches receiving the corners of said electrodes, whereby said dividers and electrodes are maintained in assembled position.

3,309,305
FLUIDIZED HYDROCRACKING OF RESIDUAL HYDROCARBONS

John W. Scott, Ross, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,444
8 Claims. (Cl. 208—111)

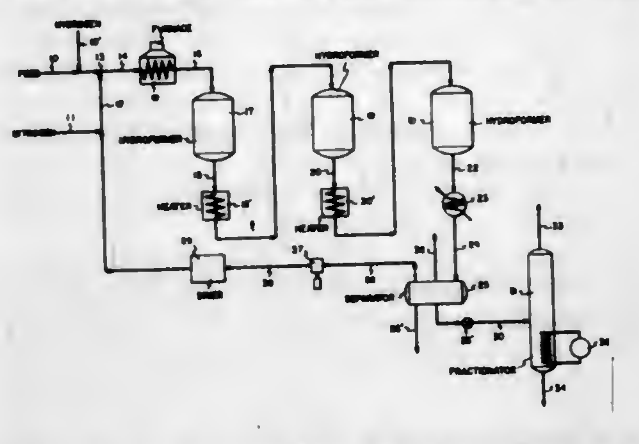


1. Process for hydrocracking crude oil fractions and residua which comprises introducing into the lower end of a reaction vessel hydrogen and a hydrocarbon stream containing a substantial portion of hydrocarbons boiling above 1000° F. and containing betero-organic contaminants such as nitrogen, sulfur, oxygen and organo metallic compounds at a temperature from 700° F. to 950° F. and pressure of 500 to 5000 pounds per square inch, said hydrogen being present and flowing concurrently with said stream at a rate of from about 2,000 to 50,000 s.c.f./barrel of hydrocarbon, introducing into the upper portion of said reaction vessel a catalytic solid having a particle size of 20 to 200 mesh, continuously flowing upwardly through said vessel said hydrocarbon stream and continuously flowing downwardly through said vessel said catalyst particles, the counterflow of said hydrocarbon stream and said particles being through a plurality of alternately arranged mixing zones and velocity-modifying zones, each of said velocity-modifying zones comprising a plurality of substantially unobstructed vertical passageways for said continuous flow, each of said passageways being equally accessible to said catalyst and said hydrocarbon stream, some of said passageways having a central portion larger in cross-sectional area than either end thereof and the remaining of said passageways having a central portion of smaller cross-sectional area than either end, said enlarged central portions preferentially permitting said catalyst to flow downwardly therethrough and said passageways with a smaller cross-sectional area permitting said hydrocarbon stream to pass preferentially therethrough and withdrawing a product stream from the top of said vessel.

3,309,306
POWERFORMER STARTUP PROCEDURE USING NITROGEN-HYDROGEN MIXTURES

Donald D. MacLaren, Plainfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Oct. 16, 1963, Ser. No. 316,748
10 Claims. (Cl. 208—138)

1. In the hydroforming of a naphtha feed fraction at conversion conditions of hydrogen recycle, temperature and pressure in a hydroforming zone, and in the presence of an active hydroforming catalyst selected from the group consisting of supported platinum and supported palladium, the improvement which comprises the increasing of catalyst efficiency by adding a mixture of gaseous nitrogen and hydrogen to the hydroforming zone before the addition of the naptha feed, heating and circulating the nitrogen and hydrogen through said hydroforming zone and over said hydroforming catalyst thereby forming ammonia and then adding naphtha feed to said ammonia-containing hydrogen for passage to the said hydroforming zone at a time when the ammonia present is equal to between 50 and 100 parts per million by weight based on the gas circulating through said hydroforming zone.



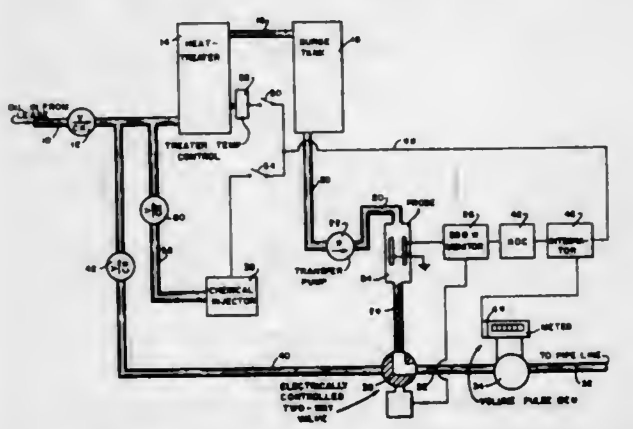
3,309,307
SELECTIVE HYDROGENATION OF HYDROCARBONS

Howard S. Bryant, Jr., Beaumont, Tex., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Feb. 13, 1964, Ser. No. 344,544
15 Claims. (Cl. 208—144)

1. A process for the selective nondestructive hydrogenation of hydrocarbons which comprises treating an essentially hydrocarbon mixture containing a conjugated diolefin and an olefin with hydrogen at hydrogenation temperatures below desulfurization temperatures in the presence both of a catalyst containing palladium and of a sulfide of the group consisting of carbon disulfide and hydrogen sulfide wherein said sulfide substantially increases the selectivity of said catalyst for hydrogenating said diolefin.

3,309,308
METHOD OF CONTROLLING THE LEVEL OF CONTAMINATION IN CRUDE PETROLEUM

Charles A. Schad, 6547 E. 27th St., Tulsa, Okla. 74129
Filed June 17, 1963, Ser. No. 288,139
3 Claims. (Cl. 208—178)



3. A method of controlling the BS and W level in petroleum comprising:

passing the petroleum through a BS and W detector to obtain an analog electrical measurement proportional to the level of BS and W thereof;

converting the analog signal thus obtained to a contaminate digital signal;

measuring the petroleum passing through the said BS and W detector and generating a volume digital signal proportional to the volume thereof;

integrating the contaminate digital signal with the volume digital signal to obtain a total volume contaminate digital signal;

and treating said petroleum before said petroleum passes through said BS and W detector for reduction of BS and W in proportion to the said obtained total volume contaminate digital signal.

3,309,309
DENITRIFICATION OF HYDROCARBONS

Fritz Karl Hess, Pointe Claire, Quebec, Canada, assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed May 27, 1965, Ser. No. 459,428
18 Claims. (Cl. 208—254)

1. A process for treating hydrocarbon feed which comprises contacting said feed with a solution comprising an organic sulfoxide and a nitrophenol, and recovering a hydrocarbon phase having a substantially reduced nitrogen content.

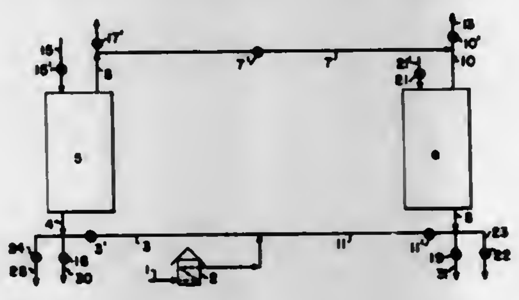
3,309,310
PROCESS FOR THE REMOVAL OF DEPOSIT FORMERS

Blanchard L. Mickel, Munster, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Apr. 30, 1964, Ser. No. 364,015
8 Claims. (Cl. 208—255)

1. A process for the removal of deposit formers from a reformate which comprises the passing of said reformate through a bed of small inert particles at conditions which permit at least 98–99% of said reformate to exist in the vapor phase as it passes through said bed, the temperature of the surface of said particles being less than the condensation temperature of said deposit formers and greater than the vaporization temperatures of the other constituents in said reformate.

3,309,311
MOLECULAR SIEVE SEPARATION PROCESS

William R. Epperly, New Providence, and William J. Asher, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Oct. 28, 1964, Ser. No. 407,111
20 Claims. (Cl. 208—310)



1. A molecular sieve separation process wherein a feed stream is passed into a molecular sieve separation zone and at least a portion of said feed is adsorbed in said zone and the remaining nonadsorbed portion of said feed stock passes out of the said zone as sievate which comprises: (a) passing a hydrocarbon feed stream, at least a portion of which is adsorbable, into a molecular sieve separation zone whereby the said adsorbable portion is adsorbed on the said sieve; (b) displacing said adsorbed hydrocarbon with a displacing agent whereby said displacing agent is adsorbed on said bed; (c) stripping said displacing agent from said bed by passing sievate over

said bed until a substantial portion of said displacing is removed.

3,309,312
STABILIZATION OF SILICONE FLUIDS

Fritz A. Buehler, Erlton, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed July 14, 1965, Ser. No. 472,010
12 Claims. (Cl. 252—18)

1. A high temperature stabilized composition comprising a major proportion of a polysiloxane fluid having the unit formula:

$$R_nSiO_{4-n/2}$$

wherein *n* has a value from about 1.1 to about 2.9 and R represents an organyl radical selected from the group consisting of alkyl and aromatic radicals and halogenated derivatives thereof R containing from 1 to about 20 carbon atoms and a minor proportion sufficient to stabilize said fluid of (1) an iron compound selected from the group consisting of iron oxide and iron carboxylate salts soluble in said polysiloxane fluid and (2) an amino mono-carboxylic acid.

3,309,313
HIGH-TEMPERATURE LUBRICATING COMPOSITION

Francis J. Callahan, Jr., Chagrin Falls, Ohio, assignor to Kenmore Research Company, Framingham, Mass., a corporation of Ohio
No Drawing. Filed Aug. 23, 1961, Ser. No. 133,311
8 Claims. (Cl. 252—26)

1. A high temperature anti-friction composition consisting essentially of a lubricating oil thickened to a gel with an organophilic bentonite clay and containing from about 10 to 40 percent by weight of silver flakes, 1 to 20 percent by weight of a metal oxide selected from the group consisting of magnesium oxide and aluminum oxide, and 1 to 10 percent by weight of powdered talc.

3,309,314
LUBRICANT COMPOSITIONS

James R. Price, Robert C. Spillman, and Kenneth T. Wendler, all of Alton, Ill., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 29, 1964, Ser. No. 371,184
6 Claims. (Cl. 252—32.5)

1. A lubricant composition comprising a major amount of a synthetic ester lubricating oil and

(1) 0.01 to 5% by weight of a salt of an alkyl amine selected from the group consisting of alkyl primary and alkyl secondary amines having from 8 to 30 carbon atoms and a mono- to per-haloalkyl phosphonic acid, wherein the haloalkyl radical contains 1 to 2 carbon atoms, and

(2) 0.01 to 10% by weight of 2,2′-dipyridylamine.

3,309,315
SULPHURIZED CUTTING OIL AND PROCESS OF MAKING SAME

John Hanna J. Tarazi and Herbert D. Ivey, Jr., Pasadena, Calif., assignors to Lubrication Company of America, Los Angeles, Calif.
No Drawing. Filed Aug. 14, 1963, Ser. No. 301,986
21 Claims. (Cl. 252—42.4)

9. A mineral oil base, cutting fluid containing homogeneously and stably dispersed therein, an anti-weld quantity of the organic, oil-soluble reaction product formed between a normally liquid, sulfur halide and a naphthenic-base mineral oil having a viscosity index below about 70; said reaction product being formed by treating said mineral oil with about 0.1% w. to about 10% w. of sulfuric acid, such amount of sulfuric acid being less than the maximum amount required to react completely with the oil, removing the sludge formed thereby with the sulfuric acid and neutralizing the remaining oil, and then reacting the neutralized oil with said normally liquid sulfur halide and separating the resulting precipitate and hydrogen halide therefrom, thereby leaving an organic, oil-soluble reaction product containing up to about 13% w. active sulfur and having consequent anti-weld properties, said reaction product remaining dissolved in the mineral oil in which it was formed, which oil forms the bulk of said cutting fluid.

13. A fluid composition having lubricant and anti-weld properties and characterized by a beneficial quantity of the reacted mineral oil of claim **9** generally uniformly dispersed in a lubricant vehicle.

18. The composition of the preceding claim **13** wherein said vehicle comprises refined mineral oil and a grease-forming quantity of metallic soap.

3,309,316
LOW CORROSIVITY NITROGEN AND SULFUR-CONTAINING DETERGENT FOR LUBRICANT OIL FORMULATIONS

Herbert A. McNinch, Portage, and Robert E. Karll, Munster, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed July 2, 1964, Ser. No. 380,039
11 Claims. (Cl. 252—47.5)

1. A mineral oil-soluble sulfur containing acylated amine product obtained from the acylation reaction of 0.5 to 1.0 mole of a polyalkylene polyamine selected from the class consisting of polyethylene polyamines and polypropylene polyamines having 1 to 4 of said alkylene groups and from 2 to 5 nitrogens per mole of sulfurized alkenyl succinic anhydride whose alkenyl group before sulfurization has at least 50 carbon atoms and whose sulfur content corresponds to from 0.5 to 2.0 gram atom of sulfur per mole of the alkenyl succinic anhydride under acylation conditions favoring imide formation.

9. A lubricant mineral oil composition having dissolved therein as its essential detergent-dispersant and anti-corrosion agents from 1 to 10 percent by weight of the total composition a sulfurized acylated amine product of claim **1**.

3,309,317
LUBRICATING COMPOSITION

Eugene Wittner, Florissant, Mo., and Bobby W. Malone, East Alton, Ill., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 8, 1964, Ser. No. 373,512
3 Claims. (Cl. 252—49.9)

1. A lubricating oil composition comprising a major amount of lubricating oil and from 0.01% to about 10% each of:

(1) an amino-imide of a mono C_{20-300} polymeric hydrocarbyl succinic anhydride;

(2) a compound selected from the group consisting of a bis(ditertiaryalkyl - 4 - hydroxyphenyl)methane wherein each of the tertiary alkyl radicals has from 4 to 8 carbon atoms and a bis(N,N-dialkylaminophenyl)methane wherein each of the alkyl radicals has from 1 to 8 carbon atoms; and

(3) a bis(alkylphenyl)phosphoramide wherein each alkyl radical has from 4 to 14 carbon atoms.

3,309,318
BLENDS OF ESTER LUBRICANTS

Robert D. Aylesworth and Raymond H. Boehringer, Cincinnati, Ohio, assignors to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Apr. 30, 1965, Ser. No. 452,377
8 Claims. (Cl. 252—56)

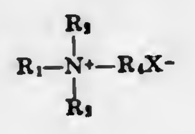
1. A lubricant base fluid comprising a blend of fully esterified polyol esters having as essential constituents

from 30 to 60% of a neopentyl glycol ester of at least one monocarboxylic alkanoic acid having from 7 to 10 carbon atoms and from about 40–70% of at least one other ester of a fully hindered polyol selected from the group consisting of pentaerythritol esters formed from monocarboxylic alkanoic acids having from 5 to 10 carbon atoms, trimethylol propane, trimethylol ethane, and trimethylol butane esters formed from monocarboxylic normal alkanoic acids having from 5 to 10 carbon atoms, said percentages being by weight of the total quantity of fully hindered polyol ester.

3,309,319
DETERGENT-WHITENER COMPOSITIONS

Todd L. Coward, Cincinnati, Ohio, and Norman R. Smith, Konigsbach, Germany, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 23, 1965, Ser. No. 489,726
10 Claims. (Cl. 252—137)

1. A detergent composition, especially suitable for cleaning and whitening nylon consisting essentially of (1) a mixture of (a) an anionic, non-soap, organic synthetic detergent having in its molecular structure an alkyl radical containing from 8 to 22 carbon atoms and a radical selected from the group consisting of sulfonic acid and sulfuric acid ester radicals and (b) a detergent selected from the group consisting of zwitterionic and semi-polar synthetic detergents and (2) 4,4′-bis[4,6-dianilino-s-triazin-2-yl)amino]-2,2′-stilbene disulfonate; wherein: the weight ratio of (a) to (b) ranges from about 3:1 to about 1:3 in the case of zwitterionic and sulfoxide semi-polar detergents and is about 1:3 in the case of amine oxide and phosphine oxide semi-polar detergents; the amount by weight of said disulfonate ranges from about 0.05% to about 2.0% of the said mixture of (a) and (b); said zwitterionic detergent has the formula



$$R_1-\overset{\displaystyle R_2}{\underset{\displaystyle R_3}{\overset{|}{\underset{|}{N^+}}}}-R_4X^-$$

wherein R_1 is an alkyl radical having from 10 to 18 carbon atoms, R_2 and R_3 are each alkyl radicals having from 1 to 3 carbon atoms, R_4 is selected from the group consisting of alkylene and hydroxyalkylene radicals having from 1 to 4 carbon atoms and X is selected from the group consisting of $SO_3^=$, $SO_4^=$ and $COO^=$; said semi-polar detergent is selected from the group consisting of amine oxide, phosphine oxide and sulfoxide detergents, said amine oxide having the formula

$$R_5R_6R_7N\rightarrow O$$

wherein R_5 is selected from the group consisting of alkyl and hydroxyalkyl radicals having from 10 to 18 carbon atoms and R_6 and R_7 are each selected from the group consisting of methyl, ethyl and hydroxyethyl radicals, said phosphine oxide having the formula

$$R_8R_9R_{10}P\rightarrow O$$

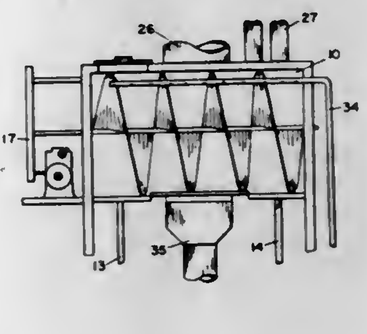
wherein R_8 is selected from the group consisting of alkyl, alkenyl and hydroxyalkyl radicals having from 10 to 18 carbon atoms and R_9 and R_{10} are selected from the group consisting of alkyl and monohydroxyalkyl radicals having 1 to 3 carbon atoms, and said sulfoxide having the formula

$$R_{11}R_{12}S\rightarrow O$$

wherein R_{11} is selected from the group consisting of methyl and ethyl and R_{12} is selected from the group consisting of alkyl, hydroxyalkyl and alkoxy radicals having from 10 to 18 carbon atoms.

3,309,320
PROCESS FOR THE PREPARATION OF DRY CONCENTRATED ACID

Ronald M. Helmer, 222 35th Ave. NE., Calgary, Alberta, Canada
Filed Feb. 3, 1964, Ser. No. 341,932
Claims priority, application Canada, Apr. 29, 1963, 874,322
5 Claims. (Cl. 252—145)



1. A process for the preparation of a dry concentrated acid which comprises the steps of:

(a) feeding a predetermined amount of a highly surface active finely divided absorbent material selected from the group consisting of synthetic and naturally occurring silicas and silicates, aluminas and aluminates and diatomaceous earths to a confined reaction zone equipped with agitation means and cooling means;

(b) continuously spraying a predetermined amount of a concentrated acid selected from the group consisting of sulphuric acid, phosphoric acid and acetic acid onto said absorbent material;

(c) intermittently mixing said absorbent material with said acid while continuously cooling said mixture and correlating each mixing cycle with each "at rest" cycle to restrict the temperature of said absorbent material to below about 212° F.;

(d) continuously mixing said absorbent material with said acid at a temperature of said absorbent material below about 212° F. while continuously cooling said mixture until all said predetermined amount of said acid has been added; and

(e) continuously mixing said absorbent material with said added acid and continuously cooling said mixture; said dry concentrated acid containing at least 80% by weight of said sprayed concentrated acid.

3,309,321
WINDSHIELD CLEANER

Wardley D. McMaster, Southfield, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
No Drawing. Filed May 14, 1964, Ser. No. 367,569
9 Claims. (Cl. 252—152)

1. A windshield cleaning composition containing ingredients in the proportion of 0.1 to 3.0 parts by weight of an amine selected from the group consisting of monoethanolamine, diethanolamine, diethylenetriamine, ethylenediamine, and isobutylamine, 0.015 to 0.25 part by weight sodium mercaptobenzothiazole, small but effective amounts up to about 0.1 part by weight of a nonionic surface active agent compatible in said solution, and 0 to 0.2 part by weight of a compound taken from the group consisting of tetrasodium salt of ethylenediaminetetraacetic acid and trisodium nitrilotriacetate.

3,309,322
URANIUM MONOCARBIDE-PLUTONIUM MONONITRIDE NUCLEAR FUEL

Francois Anselin, Paris, and Roger Pascard, Issy-les-Moulineaux, France, assignors to Commissariat à l'Energie Atomique, Paris, France
No Drawing. Filed Oct. 27, 1964, Ser. No. 406,899
Claims priority, application France, Nov. 5, 1963, 952,657
6 Claims. (Cl. 252—301.1)

1. Method of preparation of fuel material having a plutonium and uranium base for utilization in nuclear reactors, the steps of mixing plutonium mononitride with carbon and uranium hydride in suitable respective proportions, heating the mixture and producing a mixture of plutonium mononitride and uranium monocarbide and sintering the mixture of plutonium mononitride and uranium monocarbide to a density in the vicinity of theoretical density.

3,309,323
THORIUM OXIDE OR THORIUM-URANIUM OXIDE WITH MAGNESIUM OXIDE

Edwin R. Russell, Columbia, and William E. Prout and Harold J. Groh, Aiken, S.C., and George W. Watt, Austin, Tex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 19, 1965, Ser. No. 498,172
3 Claims. (Cl. 252—301.1)

1. An oxide particle composition having improved dissolution properties in nitric acid media consisting essentially of an oxide selected from the group consisting of thorium oxide and thorium-uranium oxide and between about 0.5 and 1.6 weight percent magnesium oxide, said magnesium oxide being intimately dispersed throughout said composition.

3,309,324
CORROSION INHIBITED AMMONIUM SULFATE SOLUTIONS AND COMPOSITIONS USEFUL FOR MANUFACTURING THEM

Robert P. Langguth, St. Louis, and William W. Morgenthaler, Bridgeton, Mo., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Dec. 23, 1963, Ser. No. 332,845
23 Claims. (Cl. 252—387)

1. An aqueous diammonium sulfate composition, in contact with a material selected from the group consisting of copper and copper alloys, which contains dissolved therein, in addition to said diammonium sulfate, a water soluble copper corrosion inhibiting material selected from the group consisting of alkali metal-, ammonium-, magnesium- and calcium-iodides, thiocyanates, ferricyanides, ferrocyanides, and thiosulfates, and 8-hydroxyquinoline, the weight ratio between said diammonium sulfate and said corrosion inhibiting material being from about 6000:1 to about 30:1.

3,309,325
PREPARATION OF AN ANTIMONY OXIDE-TIN OXIDE CATALYST COMPOSITION AND THE PRODUCT THEREOF

Edward James Gasson, Epsom Downs, Surrey, and David Gordon Stewart, Epsom, Surrey, England, assignors to The Distillers Limited, Edinburgh, Scotland, a British company
No Drawing. Filed Mar. 12, 1964, Ser. No. 351,517
Claims priority, application Great Britain, Apr. 5, 1963, 13,575/63
6 Claims. (Cl. 252—461)

1. A catalyst consisting essentially of a material selected from the group consisting of antimony tetroxide in combination with stannic oxide and antimony oxide in admixture with stannic oxide, said catalyst being prepared by the successive addition first of tin and then of antimony metals to an aqueous solution of nitric acid followed by heat treatment of the resulting precipitate at a temperature in the range 550 to 1100° C. in the presence of molecular oxygen.

2. A process for the preparation of a catalyst consisting essentially of a material selected from the group consisting of antimony tetroxide in combination with stannic oxide and antimony oxide in admixture with stannic oxide which comprises the successive addition first of tin and then of antimony metals to an aqueous solution of nitric acid and then heat treating the resulting precipitate at a temperature in the range 550 to 1100° C. in the presence of molecular oxygen.

3,309,326
PRODUCTION OF ELECTRICALLY CONDUCTING CARBON

Harry Lister Riley, Sparken Hill, Worksop, England, assignor to United Coke & Chemicals Company Limited, Yorkshire, England, a British company
No Drawing. Filed Feb. 18, 1964, Ser. No. 345,596
Claims priority, application Great Britain, Feb. 22, 1963, 7,300/63
17 Claims. (Cl. 252—503)

1. A method for producing an electrically conducing article composed substantially of graphitized carbon, comprising, forming a coherent body of an intimate mixture comprising carbon, a binder, and a metal in finely divided form, said metal being selected from the group consisting of iron, nickel and cobalt and being present in an amount capable of significantly lowering the temperature required for graphitization, but at least in more than 5% by weight of the initial mixture, and heating said coherent body at a temperature in the range of 1300° to 1700° for at least ten hours to substantially graphitize the carbon.

3,309,327
METHOD OF STABILIZING COATING COMPOSITIONS AND PRODUCT THEREOF

Frederick H. Gayer, Chicago, Ill., assignor to Pyroxylin Products Inc., Chicago, Ill., a corporation of Illinois
No Drawing. Continuation of application Ser. No. 803,551, Apr. 2, 1959. This application Sept. 13, 1963, Ser. No. 308,659
14 Claims. (Cl. 260—21)

1. A de-catalyzed coating composition comprising thermosetting resin, a quantity of acid catalyst, said acid catalyst being ineffective to lead to gelation in a predetermined short period of time, and organic salt, said salt being the reaction product of an additional quantity of said acid catalyst and neutralizing amine for said catalyst added to the corresponding thermosetting resin composition catalyzed with said two quantities of said acid catalyst, said acid catalyst being selected from the group consisting of monoalkyl phosphates, toluene sulfonic acids, alkane sulfonic acids, hydrochloric acid and phosphoric acid, said corresponding thermosetting resin composition being normally unstable and slowly reactive to advance the catalyzed resinification.

3,309,328
HIGH STRENGTH ADHESIVE FOR BUILDING MATERIALS

Felix P. Carroll, Chatham, and Robert J. Hoelzer, Westfield, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed June 3, 1964, Ser. No. 372,393
5 Claims. (Cl. 260—23)

1. An adhesive composition especially adapted for high strength bonding of building materials comprising an aqueous paste-like emulsion of: (A) about 15 to 30% by weight of polyvinyl acetate; (B) about 2 to 8% by weight of plasticizer for said polyvinyl acetate; (C) about 0.3 to 3% by weight of a polyacrylate salt selected from the group consisting of alkali metal salts, ammonium salts and mixtures thereof; (D) about 25 to 50% by weight of finely divided filler of which at least 40% thereof is a refined kaolin having particle size distribution such that at least 85% is greater than 1 micron, at least 70% greater than 2 microns and average particle size less than about 10 microns; and (E) water in an amount sufficient to give a solids content between about 55–75% by weight; said composition characterized by thinning on application on shear forces.

3,309,329
BITUMINOUS COMPOSITIONS CONTAINING AMORPHOUS POLYPROPYLENE AND AN ETHYLENE-VINYL ACETATE COPOLYMER

Gerhart Schultz, Frankfurt am Main, and Guido Max Rudolf Lorentz, Oes, near Butzbach, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Dec. 3, 1962, Ser. No. 241,560
Claims priority, application Germany, Dec. 7, 1961, F 35,492
6 Claims. (Cl. 260—28.5)

1. Composition of matter consisting essentially of a bituminous binding agent, 1–10 percent by weight, calculated on the bituminous binding agent, of an amorphous cracked polypropylene having a viscosity in the melt after cracking of 120 centipoises at 180° C. and 1–10 percent by weight, calculated on the bituminous binding agent, of an amorphous copolymer of ethylene and vinyl acetate having a vinyl acetate content of 25–50 percent by weight, calculated on the copolymer.

3,309,330
COATED PARTICLES OF VINYLIDENE CHLORIDE COPOLYMERS

Paul H. Settlage, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,701
5 Claims. (Cl. 260—29.6)

1. A composition comprising an aqueous dispersion of polymeric particles, each particle having a core portion and a coating portion on the core portion, the core portion constituting from 60 to 90% by weight of the two portions and comprising essentially a copolymer of the following monomers, where the percentages are by weight based on the total weight of these three monomers:

(A)

	Percent
Vinylidene chloride	88 to 96
An alkyl acrylate wherein the alkyl group has 1 through 3 carbon atoms	2 to 9
and	
Acrylic acid	1 to 10

and the coating portion on the core portion constituting from 10 to 40% by weight of the two portions and comprising essentially a copolymer of the following monomers, where the percentages are by weight based on the total weight of these three monomers:

(B)

	Percent
Vinylidene chloride	60 to 88
A compound selected from the group consisting of acrylonitrile, an alkyl methacrylate wherein the alkyl group has 1 through 3 carbon atoms	11 to 39
and	
A compound selected from the group consisting of acrylic acid and methacrylic acid	1 to 10

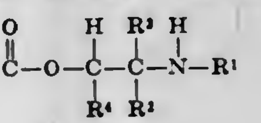
3,309,331
FREEZE-THAW STABLE AQUEOUS PAINTS CONTAINING CARBOXYL, AMINOESTER AND HYDROXYAMIDE RADICALS

Maurice J. McDowell, Media, Pa., and Trevor B. Hill, Williamsburg, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 4, 1965, Ser. No. 506,413
6 Claims. (Cl. 260—29.6)

1. A pigmented freeze-thaw aqueous paint composition containing a pigment in a pigment volume concentration of about 10–50% and a water insoluble vinyl addition polymer having an overall negative charge which consists essentially of

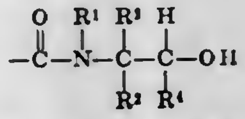
- (A) about 0.3–5% by weight of units of an α,β-unsaturated monovinylidene carboxylic acid,
- (B) units of a methacrylic acid ester, and
- (C) units of acrylic acid ester, said esters (B) and (C) being of a C_1–C_8 saturated aliphatic monohydric primary alcohol,

and having attached to the carbon atoms in the polymer backbone about 0.03–3%, by weight of said vinyl addition polymer, pendent monovalent radicals selected from the group consisting of radical A of the formula



$$-\overset{\overset{\displaystyle O}{\|}}{C}-O-\underset{R^4}{\overset{H}{C}}-\underset{R^2}{\overset{R^3}{C}}-\overset{H}{N}-R^1$$

radical B of the formula



$$-\overset{\overset{\displaystyle O}{\|}}{C}-\overset{R^1}{N}-\underset{R^2}{\overset{R^3}{C}}-\underset{R^4}{\overset{H}{C}}-OH$$

and a mixture of radicals A and B wherein R^1 is selected from the group consisting of hydrogen, benzyl and C_1–C_5 alkyl radicals, R^2 and R^3 are each selected from the group consisting of hydrogen, benzyl, aryl and C_1–C_5 alkyl radicals, and R^4 is selected from the group consisting of hydrogen and C_1–C_5 alkyl radicals; said composition having a pH between 7 and 10 and containing 0.3–10% by weight based on the weight of said vinyl addition polymer of at least one non-ionic surfactant.

3,309,332
N-ACYL DERIVATIVES OF CYCLIC IMINES AS POLYVINYL CHLORIDE POLYMER PLASTICIZERS

Evald L. Skau, Robert M. Mod, and Frank C. Magne, New Orleans, La., assignors to the United States of America as represented by the Secretary of the Agriculture
No Drawing. Original application Sept. 4, 1964, Ser. No. 394,636. Divided and this application Dec. 16, 1964, Ser. No. 438,140
16 Claims. (Cl. 260—30.2)

1. A vinyl chloride resinous composition comprising a mixture of a vinyl chloride resin selected from the group consisting of homopolymers of vinyl chloride and copolymers of vinyl chloride with vinyl acetate in which the vinyl chloride is in a predominant amount and a plasticizer therefor which plasticizer is N-decanoyl-2-methylpiperidine.

12. A vinyl chloride resinous composition comprising a mixture of a vinyl chloride resin selected from the group consisting of homopolymers of vinyl chloride and copolymers of vinyl chloride with vinyl acetate in which the vinyl chloride is in a predominant amount and a plasticizer therefor which plasticizer is N-decanoyl-3-aza-bicyclo[3.2.2]nonane.

13. A vinyl chloride resinous composition comprising a mixture of a vinyl chloride resin selected from the group consisting of homopolymers of vinyl chloride and copolymers of vinyl chloride with vinyl acetate in which the vinyl chloride is in a predominant amount and a plasticizer

therefor which plasticizer is N-oleoyl-N′-carbethoxypiperidine.

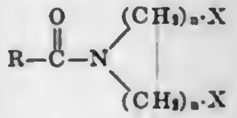
15. A vinyl chloride resinous composition comprising a mixture of a vinyl chloride resin selected from the group consisting of homopolymers of vinyl chloride and copolymers of vinyl chloride with vinyl acetate in which the vinyl chloride is in a predominant amount and a plasticizer therefor which plasticizer is N-oleoylhexamethylenimine.

16. A vinyl chloride resinous composition comprising a mixture of a vinyl chloride resin selected from the group consisting of homopolymers of vinyl chloride and copolymers of vinyl chloride with vinyl acetate in which the vinyl chloride is in a predominant amount and a plasticizer therefor which plasticizer is N,N′-sebacoyldipiperidine.

3,309,333
N,N-DISUBSTITUTED AMIDES AND THEIR USE AS PLASTICIZERS IN VINYL CHLORIDE RESINS

Robert R. Mod, Frank C. Magne, and Evald L. Skau, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Aug. 26, 1964, Ser. No. 392,354
18 Claims. (Cl. 260—32.6)

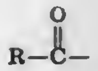
1. A plasticized vinyl chloride-type resin composition comprising at least one vinyl chloride-type resin selected from the group consisting of a polyvinyl chloride homopolymer and a vinyl chloride-vinyl acetate copolymer containing a major portion of vinyl chloride by weight, plasticized with a plasticizer consisting of a compound represented by the formula



$$R-\overset{O}{\overset{\|}{C}}-N\begin{matrix}(CH_2)_n\text{-}X\\ |\\ (CH_2)_n\text{-}X\end{matrix}$$

wherein

(a)



$$R-\overset{O}{\overset{\|}{C}}-$$

is an acyl group having from 8 to 22 carbon atoms and may be saturated, unsaturated, normal, branched, aliphatic, cyclic, alicyclic, epoxy, naphthenic, terpenic, terpene-derived, and mixtures thereof,

(b) *n* is an integer from 1 to 4 inclusive, and

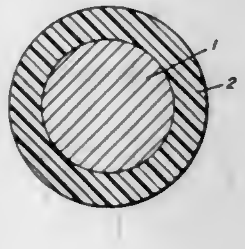
(c) X is a member selected from the group consisting of

$—OR'$, $—CN$, $—O(CH_2)_mCN$, and $—O(CH_2)_mCOOR'$

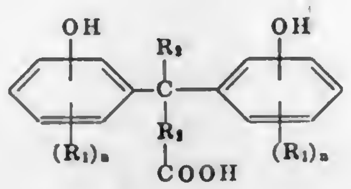
where R′ is an alkyl group containing from one to eight carbon atoms and *m* is an integer from 1 to 2 inclusive.

3,309,334
POLYMERIC COPOLYESTERS OF PHTHALIC ACIDS, A BIS-(HYDROXYPHENYL)ALKANE AND A DIPHENOLIC ACID

Fred F. Holub, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 12, 1963, Ser. No. 294,511
10 Claims. (Cl. 260—33.2)



1. A polymeric copolyester of (1) a phthalic acid comprising 50 to 100 mole percent isophthalic acid and 50 to 0 mole percent terephthalic acid, (2) a bis(hydroxyphenyl)alkane wherein the phenyl nucleus has from 0 to 2 lower alkyl substituents and the alkane group contains from 1 to 5 carbon atoms, and (3) a diphenolic acid in an amount of from 1 to 15 mole percent based on the total moles of bis(hydroxyphenyl)alkane and diphenolic acid, said diphenolic acid having the formula



where *n* is one of the integers 0, 1, 2, each R_1 is a lower alkyl radical, R_2 is an alkyl radical, R_3 is an alkylene radical containing at least two carbon atoms and the hydroxyl group is in the para position when *n* is 0.

7. An extrudable composition comprising from 10 to 40 percent by weight of a compound selected from the group consisting of biphenyl and diphenyl ether and from 90 to 60 percent by weight of a polymeric copolyester of claim 1.

3,309,335
POLYESTER COATING MATERIALS

Henry M. Walton, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware
No Drawing. Filed Feb. 20, 1963, Ser. No. 260,073
19 Claims. (Cl. 260—40)

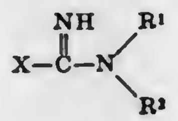
1. A polyester of (1) dicarboxylic acid component, (2) monohydric alcohol, which provides from 0.5 to 15% of the hydroxyl groups available for esterification, (3) dihydric alcohol, which provides from 65 to 97.5% of the hydroxyl groups available for esterification, and (4) polyhydric alcohol containing at least 3 hydroxyl groups, which provides from 2 to 20% of the hydroxyl groups available for esterification, wherein (1) at least 80 mole percent of said dicarboxylic acid component comprises an alpha, beta-ethylenically unsaturated alpha, beta-dicarboxylic acid, (2) said monohydric alcohol comprises a compound selected from the group consisting of tetrahydrofurfuryl alcohol and tetrahydropyranyl-2-methanol, (3) at least 75 mole percent of said dihydric alcohol conforms to the structure $HO(CH_2CH_2O)_nH$ wherein *n* is a number from 3 to 6 inclusive.

3,309,336
VINYL FLOOR TILES AND COMPOSITIONS THEREFOR

Stanley P. Turel, Highland Park, N.J., assignor to Carlisle Chemical Works, Inc., Reading, Ohio
No Drawing. Filed Feb. 12, 1962, Ser. No. 172,764
5 Claims. (Cl. 260—41)

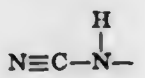
1. A plastic composition suitable for floor tiles comprising (1) a vinyl chloride resin consisting of at least 60 percent by weight of vinyl chloride polymer, the balance being an ethylenically unsaturated organic compound copolymerizable with vinyl chloride, (2) asbestos, and (3) a stabilizer comprising

(a) a compound of the formula

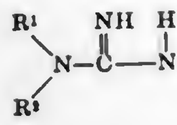


$$X-\overset{NH}{\overset{\|}{C}}-N\begin{matrix}R^1\\ \\ R^2\end{matrix}$$

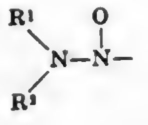
wherein X is a member of the group consisting of



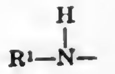
$$N\equiv C-\overset{H}{\overset{|}{N}}-$$



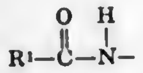
$$\begin{matrix}R^1\\ \\ R^2\end{matrix}N-\overset{NH}{\overset{\|}{C}}-\overset{H}{\overset{|}{N}}-$$



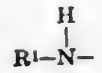
$$\begin{matrix}R^1\\ \\ R^2\end{matrix}N-\overset{O}{\overset{|}{N}}-$$



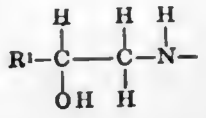
$$R^1-\overset{H}{\overset{|}{N}}-$$



$$R^1-\overset{O}{\overset{\|}{C}}-\overset{H}{\overset{|}{N}}-$$



$$R^1-\overset{H}{\overset{|}{N}}-$$



$$R^1-\underset{OH}{\overset{H}{C}}-\underset{H}{\overset{H}{C}}-\overset{H}{\overset{|}{N}}-$$

and R^1 and R^2 in all said formulas are members of the group consisting of hydrogen, alkyl, and aryl, said stabilizer being present in an amount of 1 to 10 percent by weight of the resin,

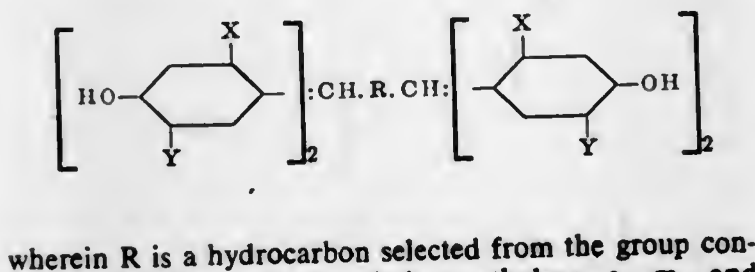
(b) at least one salt of a member of the group consisting of alkaline earth metals, zinc, cadmium, lead, and tin, with an organic acid selected from the group consisting of fatty acids having 6 to 18 carbon atoms, benzoic acids, and substituted benzoic acids, in an amount of about 0.05 to 5 percent by weight of the resin and

(c) an alkali metal sulfate in an amount of 0.5 to 5 percent by weight of the resin.

3,309,337
POLYETHYLENE AND POLYPROPYLENE STABILIZED WITH TETRAPHENOLIC COMPOUNDS

Ronald James Hurlock and Kenneth Marsden, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing Filed June 7, 1962, Ser. No. 200,677
Claims priority, application Great Britain, June 12, 1961, 21,101/61; July 3, 1961, 23,914/61
8 Claims. (Cl. 260—41)

1. A composition comprising a hydrocarbon polymer selected from the group consisting of polyethylene and polypropylene having incorporated therein as a stabilizer, a tetraphenolic compound having the formula



wherein R is a hydrocarbon selected from the group consisting of methylene, trimethylene, ethylene, o-, m-, and p-phenylene and 2:2′-diphenylene and X and Y are alkyls having from 1 to 8 carbon atoms, said stabilizer being present in amounts from 0.001% to 5% based on the weight of said hydrocarbon polymer.

8. Stabilised hydrocarbon polymers as claimed in claim 1 containing carbon black.

3,309,338
STABILIZED POLYVINYL HALIDE COMPOSITIONS

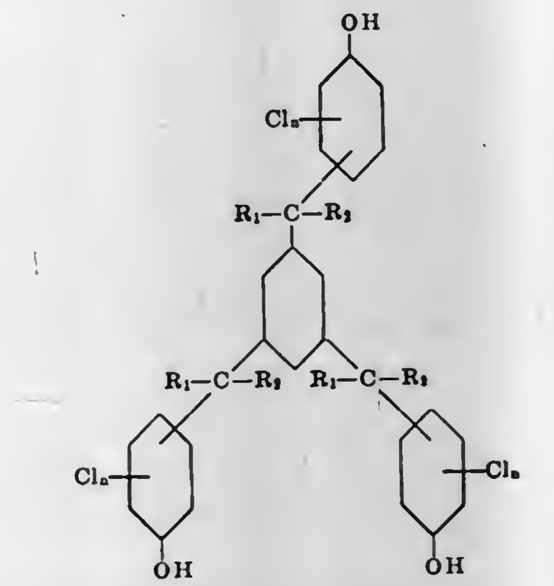
James P. Scullin, Pompton Lakes, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Filed Dec. 17, 1963, Ser. No. 331,111
7 Claims. (Cl. 260—41)

1. The method for the prevention of the evolution of lachrymatory gases during the heating at a temperature in the range of approximately 200° F. to 350° F. of a resinous composition comprising a vinyl halide homopolymer, asbestos, and a polyhydric alcohol selected from the group consisting of pentaerythritol, dipentaerythritol, and mixtures thereof which comprises adding a stabilizing amount of dicyandiamide to said resinous composition prior to said heating step.

3,309,339
NEW TRISPHENOLS AND EPOXIDE RESINS PREPARED THEREFROM

Alfred O. Barton, Florham Park, William D. Griffin, Morris Township, Morris County, Richard B. Lund, Whippany, Zalik Oser, Morristown, and John Vitrone, Troy Hills, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 12, 1963, Ser. No. 323,067
20 Claims. (Cl. 260—47)

16. An epoxide resin comprising a reaction product of epichlorohydrin and at least one trisphenol of the formula:

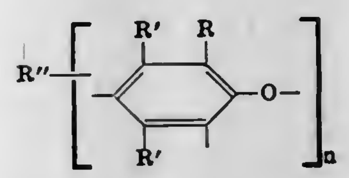


wherein R_1 and R_2 are members selected from the group consisting of hydrogen and alkyl having 1 to 2 carbon atoms and *n* is an integer of 0 to 2.

3,309,340
POLYPHENYLENE ETHER PURIFICATION PROCESS

Willem F. H. Borman, Dalton, Mass., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Mar. 26, 1964, Ser. No. 355,094
4 Claims. (Cl. 260—47)

1. A method for purifying a polymer formed of recurring units of the formula



where R is a monovalent substituent selected from the group consisting of hydrogen, hydrocarbon radicals, and halohydrocarbon radicals having at least two carbon atoms between the halogen atoms and phenol nucleus, hydrocarbonoxy radicals, and halohydrocarbonoxy radicals having at least two carbon atoms between the halogen atoms and phenol nuclus; R′ and R″ are the same as R and, in addition, halogen radicals; and *n* is an integer and is at least 10; said polymer having having been polymerized in an oxidative polymerization with a copper-amine catalyst, comprising dissolving the polymer in a compound selected from the group consisting of substituted and unsubstituted hydrocarbons and substituted and unsubstituted oxygenated hydrocarbons each having a loosely-bound radical selected from the group consisting of chlorine, bromine, and iodine, heating the solution to reflux for a time sufficient to lower the amine content of the polymer to a desired level, adding a percipitant, and separating the precipitated polymer from the solution.

3,309,341
AMINE-MODIFIED URON RESINS

David H. Abrahams, New Rochelle, and Leo Goldberg, Bayside, N.Y., assignors to Dexter Chemical Corporation, a corporation of New York

No Drawing. Filed June 19, 1963, Ser. No. 288,904

16 Claims. (Cl. 260—70)

1. In making N,N'-bis(alkoxymethyl) uron resin compositions by condensing 1 mol of urea with at least approximately 4 mols of formaldehyde, removing water from the resulting condensate, admixing an aliphatic alcohol with the dehydrated condensate and acidifying the solution so made so as to etherify said condensate and form N,N'-bis(alkoxymethyl) uron resin composition, the improvement which comprises adjusting the pH of said uron resin composition to at least about 7, then introducing into said uron resin composition from about 0.04 to about 0.8 amine equivalent per mol of condensed urea of a water soluble amine selected from the group consisting of aliphatic amines and cycloalkyl amines, said amine having from one to six carbon atoms and causing said amine to react with said uron resin composition until the pH thereof ceases to fall appreciably and remains substantially constant.

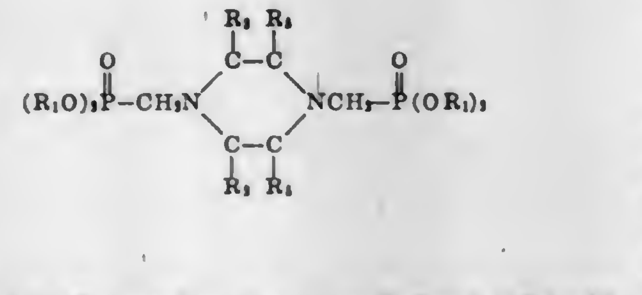
3,309,342
POLYURETHANES PREPARED FROM PHOSPHORUS CONTAINING MANNICH CONDENSATION PRODUCTS

Lester Friedman, Beachwood, Ohio, assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Original application May 21, 1963, Ser. No. 282,118. Divided and this application Aug. 23, 1965, Ser. No. 491,070

8 Claims. (Cl. 260—77.5)

1. A polyurethane comprising the reaction product of a compound having the formula



where R_1O is the residue of an oxyalkylated polyhydric alcohol having 2 to 8 hydroxyl groups from which one of the alcoholic hydrogen atoms has been removed from one group, and R_5 is selected from the group consisting of hydrogen and alkyl, not over two of R_5 being alkyl, said oxyalkylated polyhydric alcohol consisting essentially of carbon, hydrogen and oxygen, the reactive groups of said alcohol being hydroxyl groups and an organic polyisocyanate.

3,309,343
MONOMERIC ε-CAPROLACTAM COMPOSITIONS

Walter T. Darnell, Vienna, W. Va., Charles F. Fisher, Wilmington, Del., and Robert E. Maier, Northbrook, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 22, 1964, Ser. No. 405,825

17 Claims. (Cl. 260—78)

1. Solid substantially anhydrous ε-caprolactam compositions, polymerizable at temperatures of from about 150° to 190° C., storable at room temperature, consisting essentially of ε-caprolactam containing, as anionic catalyst, the caprolactam anion and an associated basic metallic cation, and a cocatalyst which is capable of causing polymerization of anionically catalyzed caprolactam upon fusion and heating to temperatures in the range of from about 150° to 190° C.

3,309,344
FLUORINE-CONTAINING POLYMER

James W. Dale, Winchester, and Gerald J. O'Neill, Boston, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 9, 1963, Ser. No. 307,348

4 Claims. (Cl. 260—79)

1. The polymeric product of the reaction of an aromatic oxalate ester which is a di-aryl ester of oxalic acid where the esterifying aryl group is a carbocyclic aromatic hydrocarbon including at least one benzene ring, with at least 2 moles of sulfur tetrafluoride per mole of said oxalate ester, under superatmospheric pressure sufficient to liquefy the said sulfur tetrafluoride at the reaction temperature.

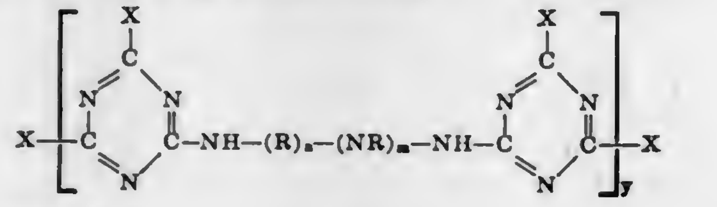
3,309,345
POLYMERIC s-TRIAZINES

Ralph Lutwack, La Canada, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

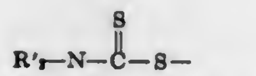
No Drawing. Original application Nov. 20, 1961, Ser. No. 153,757, now Patent No. 3,206,407, dated Sept. 14, 1965. Divided and this application Mar. 22, 1965, Ser. No. 441,907

3 Claims. (Cl. 260—79)

1. As a new polymer an oil-soluble polymeric derivative of s-triazine having the formula:



where X is



$$R'_2N-\overset{\overset{S}{\|}}{C}-S-$$

and where R' is an alkyl radical; R is a bivalent organic radical selected from the group consisting of C_{2-20} alkylene and phenylene radicals, *n* is 1, *m* is an integer varying from zero to 1, *y* is an integer of from 1 to 20, said polymer having a molecular weight of from about 1,000 to about 50,000.

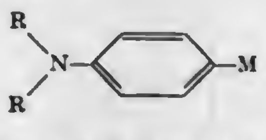
3,309,346
POLYMERIZATION PROCESS EMPLOYING CATALYST CONTAINING METAL COMPOUNDS

Harry W. Coover, Jr., and Marvin A. McCall, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,350

14 Claims. (Cl. 260—93.7)

1. In the polymerization of olefinic hydrocarbon containing at least 3 carbon atoms to form solid, crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalyst mixture consisting essentially of (1) a compound of a transition metal from Group IVB–VIB of the Periodic Table and (2) a compound having the formula:



where each R is a lower alkyl radical and M is a member selected from the group consisting of an alkali metal, AlR'_2 and $Li \cdot AlR'_3$, where each R' is an alkyl radical.

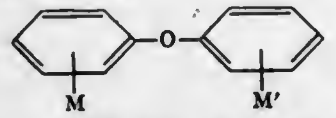
3,309,347
POLYMERIZATION PROCESS USING CATALYST CONTAINING SUBSTITUTED ETHERS

Harry W. Coover, Jr., and Marvin A. McCall, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,380

14 Claims. (Cl. 260—93.7)

1. In the polymerization of olefinic hydrocarbon containing at least 3 carbon atoms to form solid, crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalyst mixture consisting essentially of (1) a compound of a transition metal from Group IVB–VIB of the Periodic Table and (2) a compound having the formula:



where M is a member selected from the group consisting of alkali metals, AlR_2 and $Li \cdot AlR_3$ where each R is an alkyl radical and M' is a member selected from the group consisting of hydrogen, alkali metal, AlR_2 and $Li \cdot AlR_3$ where each R is an alkyl radical.

3,309,348
PURIFICATION OF CARBOXY-TERMINATED POLYMERS

Charles A. Wentz, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 5, 1963, Ser. No. 270,880

4 Claims. (Cl. 260—94.7)

1. In a process for the purification and recovery of an HCl-free carboxy-terminated polymer from a solution of said polymer and a hydrocarbon diluent also containing an alkali metal halide by admixing the polymer solution with sufficient methanol which will form a methanol phase and a diluent phase upon standing, and which will remove from the solution into the resulting methanol phase said residue, and wherein the two phases are separated, the improvement comprising, before the methanol addition, adding to said solution anhydrous hydrogen chloride in an amount ranging between 0.01 to 0.14 gram HCl per gram of said polymer, and recovering the polymer substantially free from said catalyst residue from the resulting diluent phase.

3,309,349
CAULKING COMPOUND COMPRISING MIXED LATICES OF ELASTOMERIC AND RESINOUS POLYMERS

Harry Greenberg, Cincinnati, Ohio, assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Mar. 20, 1958, Ser. No. 722,655

4 Claims. (Cl. 260—94.9)

1. A polymerization process consisting essentially of polymerizing ethylene at a temperature of from about —20° C. to about 150° C. at a pressure of from about 25 to about 500 pounds per square inch with a polymerization catalyst consisting essentially of finely divided sodium, the particles of which are not substantially in excess of about 3 microns in diameter and titanium tetrachloride.

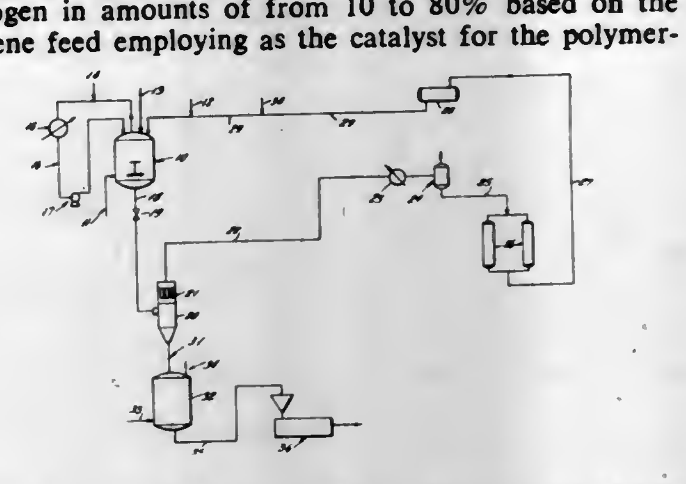
3,309,350
PROCESS FOR POLYMERIZING ETHYLENE

Joseph M. Kelley, Westfield, John J. Miskel, Jr., Ramsey, and Paul J. Marinacclo, Dumont, N.J., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed July 31, 1963, Ser. No. 299,028

7 Claims. (Cl. 260—94.9)

1. A high catalyst efficiency process for preparing an ethylene polymer having a density of at least 0.955 which comprises reacting ethylene in a polymerization reactor at pressures of at least 800 p.s.i.g. and temperatures of from 50° to 100° C. in the presence of an inert hydrocarbon diluent boiling below 10° C., in liquid form and hydrogen in amounts of from 10 to 80% based on the ethylene feed employing as the catalyst for the polymerization a crystalline cocrystallized titanium trichloride having the formula $nTiCl_3 \cdot AlCl_3$ where *n* is a digit of 1 to 5 activated with an aluminum trialkyl, the aluminum to titanium ratio of said catalyst employed being at least 25:1, the ethylene polymer being produced with a catalyst efficiency of at least about 60,000 pounds of polymer per pound of catalyst based on titanium metal.



3,309,351
PHOTODEHYDROGENATION OF RESIN ACIDS

Walter H. Schuller and Ray V. Lawrence, Lake City, Fla., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,985

8 Claims. (Cl. 260—98)

1. A process for the photodehydrogenation of gum resin acids which comprises:

(a) dissolving a gum resin acid in at least one solvent selected from the group consisting of 90% ethanol, methanol, benzene, alcohol-aqueous alkali, aqueous alkali, and carbon disulfide-alcohol,

(b) incorporating into the resin acid solution about 0.003 to 0.03 mole, per mole of resin acid, of an oxidation-type sensitizer selected from the group consisting of erythrosin, eosin, 9,10-phenanthrenequinone, and 9,10-anthraquinone, and about 1 to 10 moles per mole of resin acid of a hydrogen acceptor selector from the group consisting of nitromethane, benzil and sulfur,

(c) irradiating the solution of resin acid, oxidation-type sensitizer, and hydrogen acceptor with visible light in an oxygen-free atmosphere to dehydrogenate the resin acid,

(d) continuing the irradiation of the solution until the optical activity, $[\alpha]_D$ reaches a constant value, and

(e) thereafter recovering the dehydrogenated product.

3,309,352
ALKYLOLAMINE PHOSPHATED ALKYLOLAMIDES PREPARED BY HEATING A MIXTURE OF FAT, PROTEIN, AN ALKYLOLAMINE AND PHOSPHORIC ACID

Harland H. Young, Western Springs, and Kurt H. Spitzmueller, Clarendon Hills, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

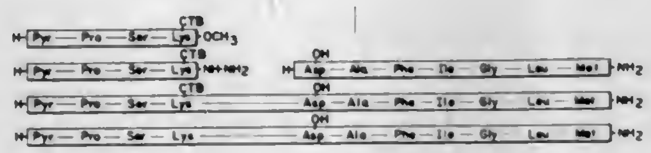
No Drawing. Original application Oct. 19, 1959, Ser. No. 847,057, now Patent No. 3,151,137, dated Sept. 29, 1964. Divided and this application Mar. 31, 1964, Ser. No. 356,059

1 Claim. (Cl. 260—112)

Surface active compositions comprising alkylolamines bridged by means of a phosphate ester linkage to an alkylolamide, said compositions being prepared by heating a mixture of fat, protein, phosphoric acid, and alkylolamine to an elevated temperature under vacuum with removal of water until the reaction product is soluble in saturated salt solution.

3,309,353
L - PYROGLUTAMYL - L - PROLYL - L - SERYL - L-LYSYL - L - ASPARTYL - L - ALANYL - L - PHENYLALANYL - L - ISOLEUCYL - GLYCYL - L - LEUCYL-L-METHIONINAMIDE AND ITS ACID ADDITION SALTS WITH PROTECTIVE GROUPS ON THE ε-AMINO RADICAL OF LYSINE

Roger Boissonnas, Bottmingen, Basel-Land, and Edmond Sandrin, Basel, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland, a Swiss firm
Filed July 11, 1962, Ser. No. 209,811
Claims priority, application Switzerland, July 14, 1961, 8,264/61
8 Claims. (Cl. 260—112.5)

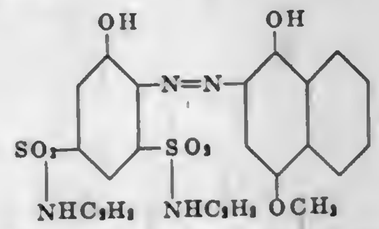

CTB
H-Pyr—Pro—Ser—Lys-OCH3
CTB
H-Pyr—Pro—Ser—Lys-NH-NH2
OH
H-Asp—Ala—Phe—Ile—Gly—Leu—Met-NH2
CTB
OH
H-Pyr—Pro—Ser—Lys——Asp—Ala—Phe—Ile—Gly—Leu—Met-NH2
OH
H-Pyr—Pro—Ser—Lys——Asp—Ala—Phe—Ile—Gly—Leu—Met-NH2

1. A peptide selected from the group consisting of L-pyroglutamyl - L - prolyl - L - seryl - L-lysyl-L-aspartyl-L-alanyl-L-phenylalanyl - L - isoleucyl - glycyl- L -leucyl-L-methionine amide and its acid addition salts, said peptide having a protective groupy on the ε-amino radical of the lysine radical:

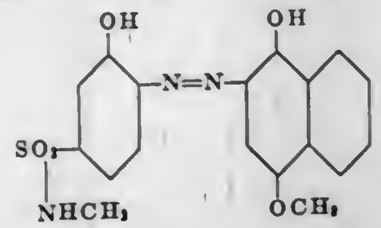
3,309,354
METALLIZED MONOAZO COMPLEXES

Ugo Moiso, Cesano Maderno, Milan, and Sisto Sergio Papa, Milan, Italy, assignors to Aziende Colori Nazionali Affini-Acna S.p.A., Milan, Italy
No Drawing. Filed May 27, 1963, Ser. No. 283,597
Claims priority, application Italy, May 30, 1962, 10,700/62
2 Claims. (Cl. 260—145)

1. A cobalt-monoazo mixture complex, the molar ratio of cobalt to said monoazo mixture being 1:2, said monoazo mixture comprising from about 20 to 50 mole percent of the monoazo



and correspondingly from about 80 to 50 mole percent of the monoazo



3,309,355
LEVOGLUCOSAN PRODUCTION BY PYROLYSIS OF CELLULOSIC MATERIAL

Clark C. Heritage, Tacoma, and Arnulf K. Esterer, Longview, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Nov. 22, 1963, Ser. No. 325,657
5 Claims. (Cl. 260—209)

1. The process of producing a product rich in levoglucosan which comprises

(a) introducing into a reaction zone small pieces of cellulosic material and either superheated steam, nitrogen, carbon dioxide, or a noncondensible gas product of the reaction,
(b) heating the suspended pieces to a temperature of from 600–1500° F., thereby forming a pyrolyzed product comprising char, condensible gases and non-condensible gases,
(c) rapidly cooling the pyrolyzed product after exposure of the gaseous components to a heating period not exceeding 30 seconds,
(d) condensing the condensible gases,
(e) separating the non-condensible gases from the condensed gases and char, thereby forming a product comprising aqueous and non-aqueous phases,
(f) and separating from the non-aqueous phase an aqueous phase rich in levoglucosan.

3,309,356
SEPARATING LEVOGLUCOSAN AND CARBOHYDRATE ACIDS FROM AQUEOUS MIXTURES CONTAINING THE SAME—BY SOLVENT EXTRACTION

Arnulf Karl Esterer, Longview, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed July 6, 1965, Ser. No. 471,504
12 Claims. (Cl. 260—209)

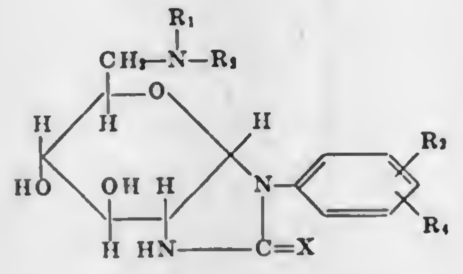
1. The process of separating aqueous mixtures containing dissolved levoglucosan and carbohydrate derived acids, the process comprising:

(a) removing the water content of the aqueous mixture,
(b) adding to the resulting mixture of levoglucosan and carbohydrate derived acids a selective organic solvent for the levoglucosan,
(c) separating the resulting solution of levoglucosan from the resulting residue of carbohydrate derived acids,
(d) crystallizing the levoglucosan from the solvent, and
(e) separating the crystalline levoglucosan product from the resulting mother liquor.

3,309,357
D-GLUCOPYRANO-IMIDAZOLIDINES

Charles J. Morel, Arlesheim, Basel-Land, and Oskar Wasker, Binningen, Basel-Land, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed June 4, 1965, Ser. No. 461,548
Claims priority, application Switzerland, Mar. 18, 1963, 3,376/63, 3,377/63; June 11, 1964, 7,641/64; Sept. 16, 1964, 12,039/64
18 Claims. (Cl. 260—211.5)

1. A member selected from the group consisting of a compound of the formula



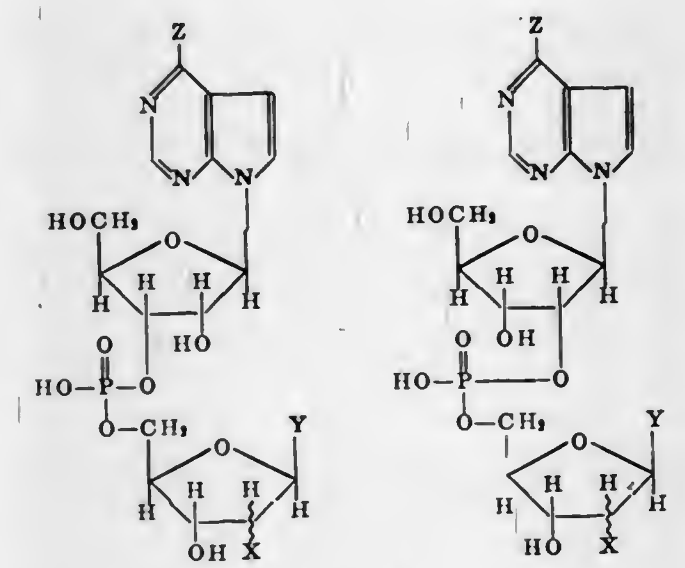
and the non-toxic, pharmaceutically acceptable acid addition salts thereof, in which formula,

each of R_1 and R_2 is a member selected from the group consisting of hydrogen and lower alkyl, and
R_1 and R_2 taken together with the nitrogen atom to which they are linked, form a member selected from the group consisting of morpholino, piperidino, pyrrolidino and hexamethyleneimino,
R_3 is a member selected from the group consisting of lower alkyl, lower alkoxy, chlorine, bromine, fluorine, trifluoromethyl and nitro,
R_4 is a member selected from the group consisting of hydrogen, lower alkyl and chlorine, and
X is a member selected from the group consisting of oxygen and sulfur.

3,309,358
7-DEAZAADENINE 2′,5′- AND 3′,5′-DINUCLEOSIDE PHOSPHATE AND PROCESS THEREFOR

Arthur R. Hanze, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Sept. 20, 1965, Ser. No. 488,799
24 Claims. (Cl. 260—211.5)

1. A compound selected from the group consisting of 2′,5′ and 3′,5′-dinucleoside phosphates having the formulae:



wherein X is selected from the group consisting of hydrogen, α-hydroxy and β-hydroxy, wherein Z is selected from the group consisting of hydrogen, hydroxy, amino, acylamino, in which the acyl group is of a hydrocarbon carboxylic acid containing from 2 to 12 carbon atoms, inclusive, thio and alkylthio in which the alkyl group has from 1 to 4 carbon atoms, inclusive, wherein Y is selected from the group consisting of cytosin-1-yl, uracil-1-yl, thymin-1-yl, adenin-9-yl, guanin-9-yl, 6-mercaptopurin-9-yl, uracil-3-yl, 5-fluorouracil-1-yl, 5-chlorouracil-1-yl, 5-bromouracil-1-yl, 5-iodouracil-1-yl, 5-trifluoromethyluracil-1-yl, hypoxanthin-9-yl, xanthin-9-yl, 5-methylcytosin-1-yl, 3-methylcytosin-1-yl, 2,6-diaminopurin-9-yl, 5-hydroxymethylcytosin-1-yl, 7-deazaadenin-9-yl, 6-mercapto-7-deazapurin-9-yl, 7-deazahypoxanthin-9-yl, and 6-azauracil-1-yl.

3,309,359
N-MONO-ACYL-5-FLUOROCYTOSINE DERIVATIVES AND PROCESS

Robert Duschinsky, Essex Fells, and Max Hoffer, Nutley, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,586
13 Claims. (Cl. 260—211.5)

1. N-lower alkanoyl-5-fluorocytosine.

3,309,360
REACTION PRODUCTS OF STARCH WITH DIMETHYL SULFOXIDE AND ALCOHOLS

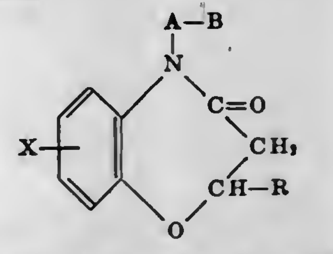
Luciano Nobile and Tullio La Noce, Milan, Italy, assignors to Miles Italiana Derivati Amidi—M.I.D.A. S.p.A., Naples, Italy
No Drawing. Filed Mar. 4, 1963, Ser. No. 262,334
Claims priority, application Italy, Mar. 23, 1962, 5,716/62
20 Claims. (Cl. 260—233.3)

1. A process for preparing dialdehyde starch acetals, which comprises reacting one mole of dialdehyde starch of a degree of oxidation of about 96%, with 2 to 8 moles of dimethyl sulfoxide at a temperature of 40–100° C., and reacting the adduct so obtained with 5 to 30 moles of an alcohol selected from the group consisting of lower aliphatic saturated and unsaturated alcohols, aryl-lower alkanols and cinnamyl alcohol, at a temperature of 40–100° C., in the presence of an acid catalyst under anhydrous conditions.

3,309,361
BENZOXAZEPINES

John Krapcho, Somerset, and Chester F. Turk, Elizabeth, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 4, 1963, Ser. No. 328,048
9 Claims. (Cl. 260—239.3)

1. A compound selected from the group consisting of bases of the formula



and pharmaceutically-acceptable acid addition salts thereof, wherein X is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, amino, nitro, halo and trifluoromethyl; R is selected from the group consisting of hydrogen, lower alkyl, X-substituted phenyl lower alkyl, X-substituted phenyl, furyl, thienyl, pyridyl and piperonyl; A is lower alkylene; and B is a basic nitrogen-containing radical of less than twelve carbon atoms.

3,309,362
PREGNANE GUANYL HYDRAZONES AND DERIVATIVES THEREOF

Karlheinz Meyer and Siegismund Schütz, Wuppertal-Elberfeld, Kurt Stoepel, Wuppertal-Vohwinkel, and Hans-Günther Kroneberg, Haan, Rhineland, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Feb. 17, 1965, Ser. No. 433,479
Claims priority, application Germany, Feb. 19, 1964, F 42,053
12 Claims. (Cl. 260—239.5)

1. A pregnane-20-guanyl hydrazone in which the 20 keto-pregnane compound prior to its conversion to the 20-guanyl hydrazone contains a member selected from the group consisting of hydrogen, O-alkyl, O-cycloalkyl, halogen, alkyl, cycloalkyl, aryl, alkinyl, COOR wherein R is H or alkyl, O-phosphonyl, CN, NH-acyl, oxime, hydrazone, semicarbazone, thiosemicarbazone, thiourea, and non-basic guanyl hydrazone in the 3-position, and which compound can be saturated and unsaturated as well as a 3,5-cyclo-compound, and such compound in which there is a heterocycle in the 2,3-position selected from the group consisting of pyrazole, isoxazole, thiazole, pyrrole, triazole and epoxy rings.

3. The compound 3-pyrrolidino-3,5-pregnadiene-20-guanyl hydrazone.

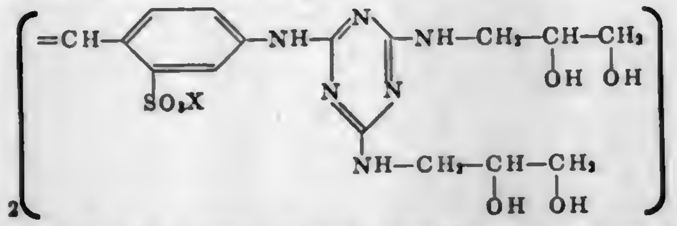
3,309,363
DAS TRIAZINE BRIGHTENER

Bennett George Buell, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 11, 1964, Ser. No. 366,635

1 Claim. (Cl. 260—240)

A compound of the formula:



wherein X is a member selected from the group consisting of hydrogen, ammonium, sodium and potassium.

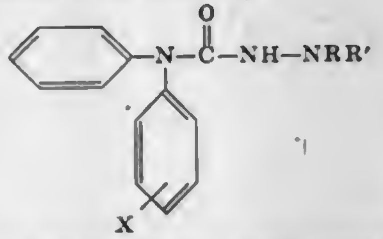
3,309,364
N,N-DIPHENYLCARBAMOYL DERIVATIVES OF N-AMINO(CYCLIC AMINES)

Calvin H. Lovell, Morton Grove, Harman S. Lowrie, Glenview, and Peter Yonan, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

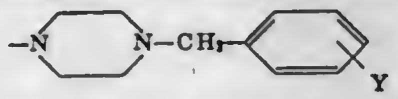
No Drawing. Filed Nov. 6, 1964, Ser. No. 409,587

5 Claims. (Cl. 260—247.2)

1. A compound of the formula



wherein X is selected from the group consisting of hydrogen and chlorine and —NRR′ is selected from the group consisting of morpholino, 4-methyl-1-piperazinyl and



wherein Y is selected from the group consisting of hydrogen, methyl, and chlorine.

2. 1,1-diphenyl-3-morpholinourea.

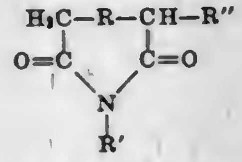
3,309,365
ALKYLATED CYCLIC IMIDES AND PROCESSES FOR THEIR PRODUCTION

Ashot Merijan, Rahway, and Frederick Grosser, Midland Park, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 9, 1964, Ser. No. 402,964

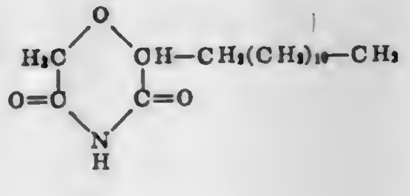
16 Claims. (Cl. 260—247.7)

11. An alkyl-substituted cyclic imide of the formula:



wherein R represents a member selected from the class consisting of a single bond, an oxy and methylene group, R′ represents a member selected from the class consisting of hydrogen and methyl, and R″ represents an alkyl group of from 8 to 42 carbon atoms.

16. 3-dodecyl diglycolylimide having the following formula:



3,309,366
IMIDAZOLE(1,2)-s-TRIAZINES

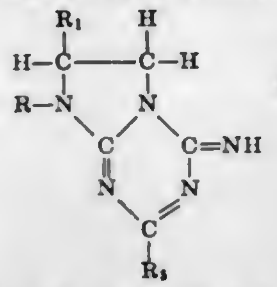
Hans Schläpfer, Basel, and Jakob Bindler, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,152

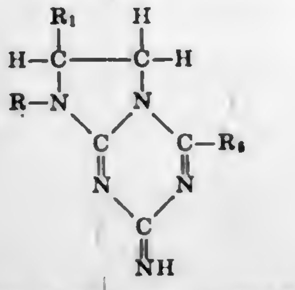
Claims priority, application Switzerland, Apr. 5, 1963, 4,401/63

13 Claims. (Cl. 260—249.6)

1. A compound selected from the group consisting of compounds of the formulas



and



wherein R represents a member of the group consisting of hydrogen, alkyl of from 1 to 12 carbon atoms, phenyl, chlorophenyl, benzyl and cyclohexyl, R_1 represents hydrogen or lower alkyl, and R_5 represents a member of the group consisting of amino, phenyl and alkyl of from 1 to 20 carbon atoms.

3,309,367
DERIVATIVES OF BENZAMIDOBENZANILIDE

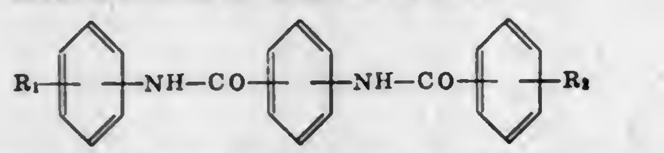
Rudolf Hirt, Muri, near Bern, Switzerland, assignor to Dr. A. Wander, S.A., Bern, Switzerland, a corporation of Switzerland

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,200

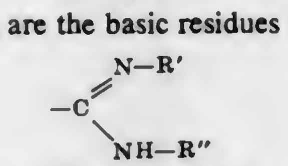
Claims priority, application Switzerland, Feb. 15, 1963, 1,903/63

4 Claims. (Cl. 260—256.4)

1. A member of the class consisting of (A) benzamidobenzanilide derivatives of the formula:



wherein R_1 and R_2 are the basic residues of the formula



R′ and R″ representing, when R′ and R″ are taken together a member of the group consisting of ethylene, propylene, and ethylene and propylene wherein at least one hydrogen atom thereof is replaced by lower alkyl and thereby adding a total of not more than 4 carbon atoms to said ethylene and propylene; and (B) therapeutically useful acid addition salts of (A).

2. 4′ - (1,4,5,6-tetrahydro - 2 - pyrimidinyl) - 4 - (p-[1,4,5,6-tetrahydro - 2 - pyrimidinyl]benzamido)benzanilide.

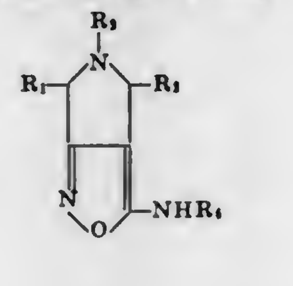
3,309,368
SUBSTITUTED ISOXAZOLES AND METHODS OF PREPARING THE SAME

Shreekrishana Manmohan Gadekar, Valley Cottage, and Elliott Cohen, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 19, 1965, Ser. No. 508,820

10 Claims. (Cl. 260—256.4)

1. A pyrroloisoxazole of the formula:



wherein R_1 and R_3 are selected from the group consisting of hydrogen and lower alkyl; R_2 is selected from the group consisting of lower alkanoyl, carbo(lower)alkanoyloxy, trimethoxybenzoyl, 5-chloro-2-pyrimidinyl and carbobenzyloxyl; and R_4 is selected from the group consisting of hydrogen, lower alkanoyl, trifluoroacetyl and trimethoxybenzoyl.

4. The compound in accordance with claim 1 wherein the pyrroloisoxazole is 3-amino-5,6-dihydro-5-(5-chloro-2-pyrimidinyl)-4H-pyrrolo[3,4-c]isoxazole.

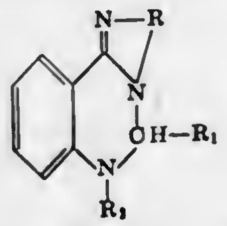
3,309,369
IMIDAZO- AND PYRIMIDO-QUINAZOLINES

Othmar Schindler, Gurzelen (Gurbetal), im Einschlag, Switzerland, assignor to Dr. A. Wander, S.A., Bern, Switzerland, a Swiss corporation

No Drawing. Filed Apr. 11, 1966, Ser. No. 551,820

7 Claims. (Cl. 260—256.4)

1. A compound selected from the class consisting of A: 2,3,5,6-tetrahydro-imidazo[1,2-c]quinazoline and 2,3,6,7-tetrahydro-4H-pyrimido[1,2-c]quinazoline derivatives of the formula:



wherein R denotes alkylene with 2 or 3 carbon atoms; R_1 is a member of the group consisting of cycloalkyl with from 5 to 7 carbon atoms, furyl, thienyl, phenyl, benzyl, substituted phenyl, and substituted benzyl, the substituent in said substituted phenyl and substituted benzyl being selected from the group consisting of halogen, trifluoromethyl, lower alkyl, lower alkoxy, and lower alkylthio; and R_2 is a member of the group consisting of hydrogen and lower alkyl; and B: acid addition salts of A.

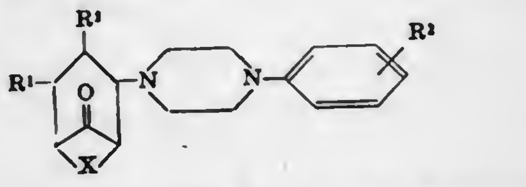
3,309,370
BICYCLOALKYL PIPERAZINE DERIVATIVES AND PROCESS

Robert Norman Schut, Edwardsburg, Mich., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed July 16, 1964, Ser. No. 383,239

11 Claims. (Cl. 260—268)

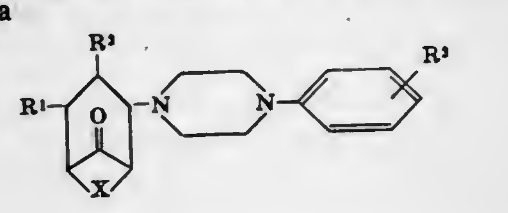
1. A compound selected from the group consisting of compounds of the formula



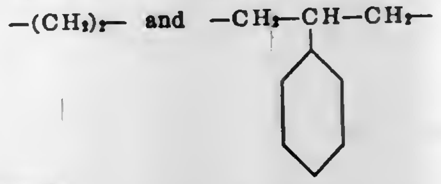
wherein R^1 is a member selected from the group consisting of hydrogen and phenyl, R^2 is a member selected from the group consisting of hydrogen and methyl, R^3 is a member selected from the group consisting of hydrogen, halogen and trifluoromethyl and X is a member selected from the group consisting of lower alkylene and cyclohexyl lower alkylene

and salts of said compounds with pharmacologically acceptable anions.

11. A process for the preparation of a compound of the formula

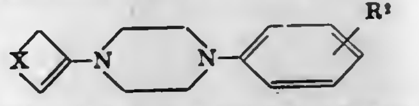


wherein R^1 is the group consisting of hydrogen, R^2 is a member selected from the group consisting of hydrogen and methyl, R^3 is a member selected from the group consisting of hydrogen, halogen and trifluoromethyl and X is a member selected from the group consisting of

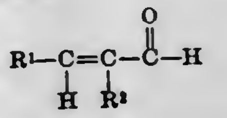


which comprises

reacting a compound of the formula

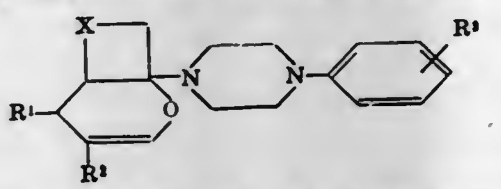


wherein R^3 and X are as above defined, with a compound of the formula



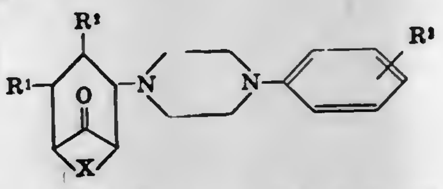
$$R^1-\underset{H}{C}=\underset{R^2}{C}-\overset{O}{\overset{\|}{C}}-H$$

wherein R^1 and R^2 are as above defined in a non-polar solvent at room temperature, to produce an isolatable crystalline intermediate of the formula



wherein R^1, R^2, R^3 and X are as above defined,

and heating said intermediate with triethylamine and dimethylformamide to produce a compound of the formula



wherein R^1, R^2, R^3 and X are as above defined.

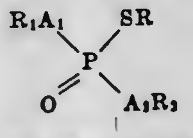
3,309,371
ORGANOPHOSPHOROTHIOATE COMPOUNDS AND METHOD OF PREPARING SAME

Shirley DuBreuil Curry, Pennington, N.J., Richard W. Young, Wellesley Hills, Mass., and Gerald Berkelhammer, Trenton, and David E. Ailman, Pennington, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

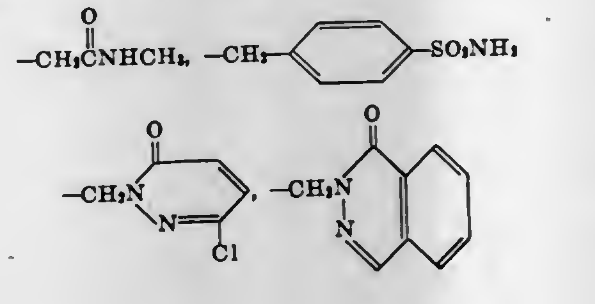
No Drawing. Filed Oct. 16, 1963, Ser. No. 316,541

16 Claims. (Cl. 260—925)

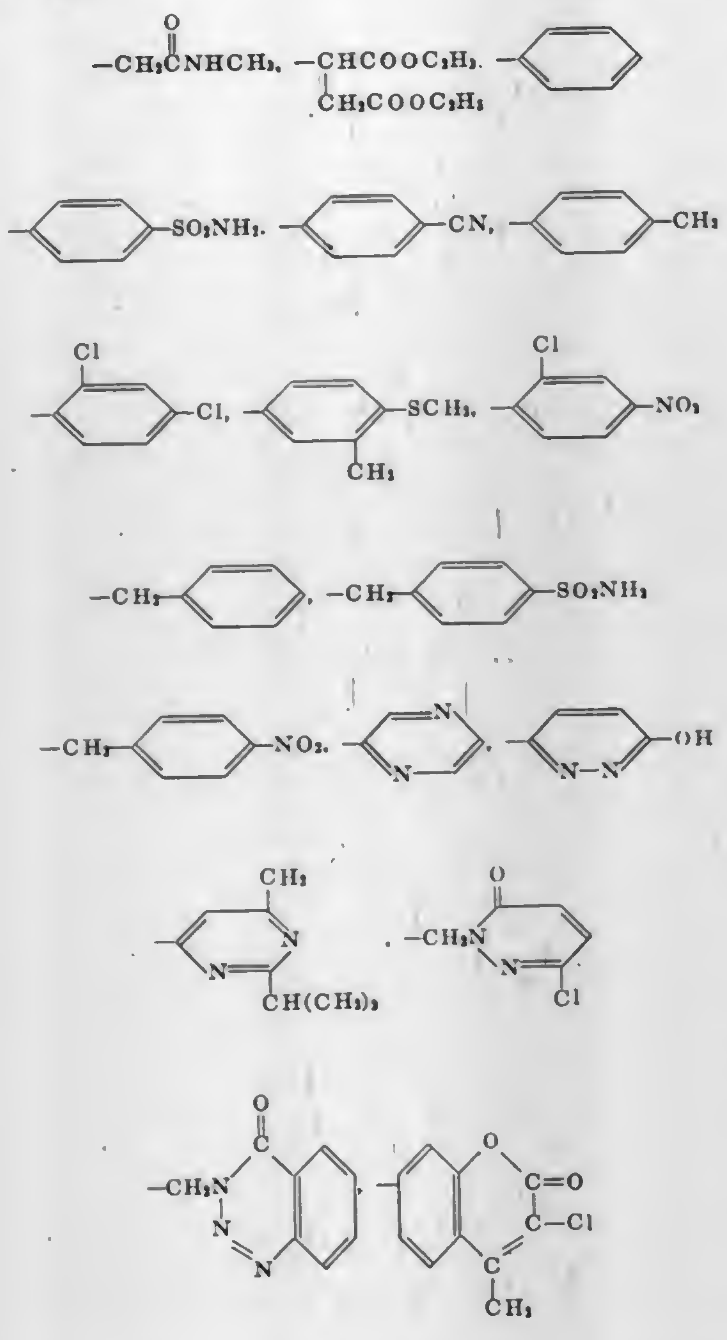
1. An organophosphorothioate ester of the formula



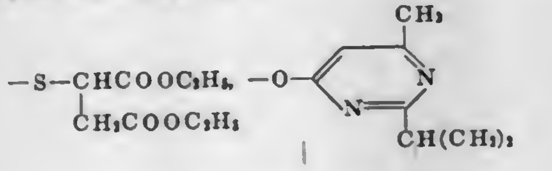
wherein A_1 and A_2 represent a member selected from the group consisting of oxygen and sulfur; R_1 represents a member selected from the group consisting of lower alkyl and phenyl; R represents a member selected from the group consisting of lower alkyl



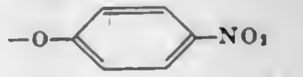
R_2 represents a member selected from the group consisting of



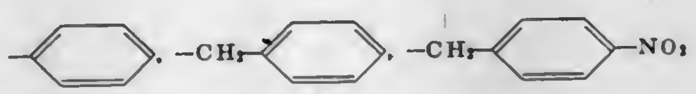
however, when A_2R_2 is a member selected from the group consisting of lower alkoxy,



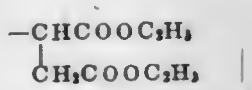
and



R is a member of the group above given other than lower alkyl, and when R is lower alkyl and R_2 is a member selected from the group consisting of



and



$\underset{\displaystyle \mathrm{CH_2COOC_2H_5}}{-\mathrm{CHCOOC_2H_5}}$

A_2 is S.

3,309,372

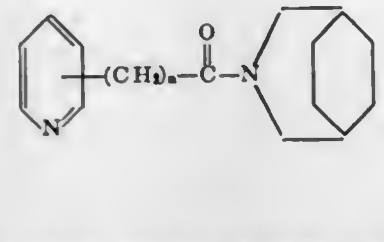
PYRIDINECARBOXYLIC ACID DERIVATIVES OF 3-AZABICYCLO-[3.2.2] NONANE

Carl Peter Krimmel, Wauconda, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 5, 1964, Ser. No. 365,165

5 Claims. (Cl. 260—295)

1. A compound of the formula



wherein *n* is a whole number between 0 and 3 inclusive.

3,309,373

N-NITROSO DERIVATIVES OF AROMATIC AMINES AND A METHOD FOR THEIR PREPARATION

Morris J. Danzig, Springfield, Pa., assignor to Lord Corporation, a corporation of Pennsylvania

No Drawing. Filed May 31, 1961, Ser. No. 113,635

20 Claims. (Cl. 260—296)

1. The method of forming a nitroso-substituted salt which comprises reacting, under a substantially oxygen-free atmosphere, an oxime compound selected from the group consisting of aldoximes and quinone oximes with at least one equivalent, per NOH group of said oxime compound, of nitric oxide, in the presence of at least one equivalent, per NOH group of said oxime compound, of a base selected from the group consisting of alkali metal and ammonium bases and amines capable of forming salts with oximes.

3,309,374

PROCESS FOR THE PREPARATION OF AMIDINE SALTS

Frederic Charles Schaefer, Darien, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 21, 1964, Ser. No. 361,584

10 Claims. (Cl. 260—296)

1. In a process for preparing amidine salts the improvement which comprises: reacting

(1) a nitrile represented by the formula R(CN)$_x$ where x is an integer from 1 to 2 and R is a radical selected from the group consisting of aliphatic, aryl, araliphatic and pyridyl,

(2) ammonia, and

(3) an ammonium salt selected from the group consisting of ammonium chloride and ammonium bromide,

in a mol ratio of from 1:1–30:1–8, respectively, under a superatmospheric pressure ranging from about 350 p.s.i.g. to about 6500 p.s.i.g. and at a temperature of from 120° C. to 180° C., and thereafter recovering so-formed amidine salt.

8. The process according to claim 1 in which the nitrile is 3-cyanopyridine and the ammonium salt is ammonium chloride.

3,309,375

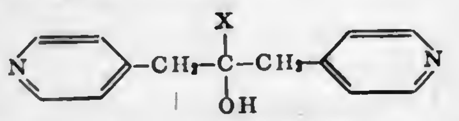
2-CYCLOALKYL-1,3-DI(4-PYRIDYL)-2-PROPANOLS

Bernard Brust, Parsippany, Troy Hills, Rodney Ian Fryer, North Caldwell, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed June 21, 1965, Ser. No. 465,755

4 Claims. (Cl. 260—296)

1. A compound selected from the group consisting of a member having the formula:



in which X is a cycloalkyl group having from 3 to 8 carbon atoms and salts of such compounds with medicinally acceptable acids.

3,309,376

BIS-QUATERNARY AMMONIUM SALTS

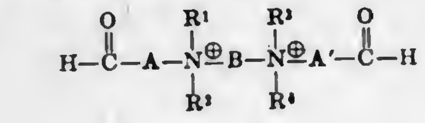
Howard C. Haas, Arlington, and Lloyd D. Taylor, Everett, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed July 27, 1965, Ser. No. 475,261

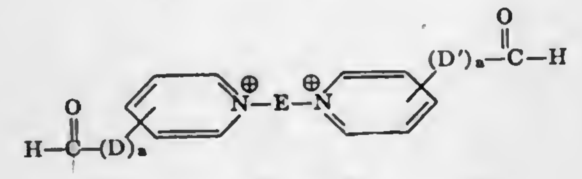
4 Claims. (Cl. 260—296)

1. A compound selected from the group consisting of compounds represented by the formula:

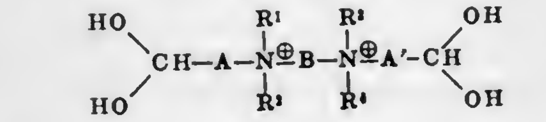
(a)



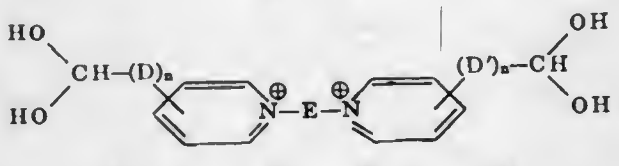
(b)



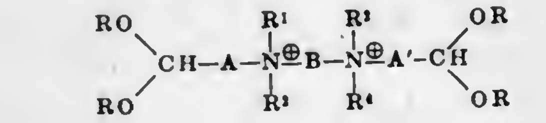
(c)



(d)

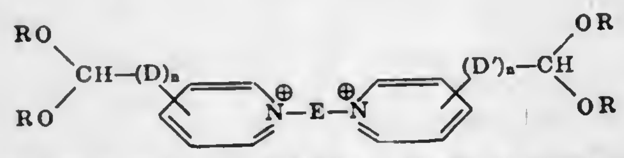


(e)



and

(f)



wherein each of R, R^1, R^2, R^3, and R^4 is a lower alkyl group; *n* is an integer from 0 to 1, inclusive; and each of A, A′, B, D, D′, and E is a divalent radical selected from the group consisting of lower aliphatic hydrocarbon radicals, phenylene, and a single radical consisting of phenyl and at least one lower aliphatic hydrocarbon group.

2. p-Xylylene-bis-4-formylpyridinium dibromide.

3,309,377

3-[(2-OXAZOLIDINONE-3-YL)-ALKYL]-4-THIAZOLIDINONES AND THEIR PREPARATION

Alexander R. Surrey, Albany, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 19, 1964, Ser. No. 404,927

15 Claims. (Cl. 260—301)

1. A composition of a molecular structure in which 4-thiazolidinone is connected, by its ring-nitrogen atom, through polycarbon-(lower-alkylene) having its connecting linkages on different carbon atoms, to the ring-nitrogen atom of 2-oxazolidinone.

3,309,378

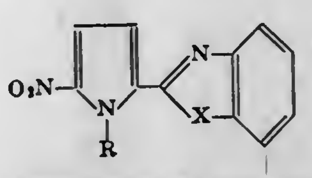
NOVEL NITROPYRRYLHETEROCYCLIC DERIVATIVES

George L. Dunn, Levittown, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 22, 1963, Ser. No. 325,788

7 Claims. (Cl. 260—304)

1. A compound of the structure:



in which R is a member selected from the group consisting of hydrogen, lower alkyl and hydroxy lower alkylene; and X is a member selected from the group consisting of —O—. —S— and —NH—.

5. 2-(N′-methyl-5′-nitro-2′-pyrryl)-benzthiazole.

3,309,379

PYRAZOLE DERIVATIVES

Tomoyoshi Toyosato, Kyoto, Michihiko Ochiai, Suita, Hiroshi Hagimoto and Hiroshi Tamura, Kyoto, and Toshiya Kamikado, Suita, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Aug. 9, 1963, Ser. No. 301,201

Claims priority, application Japan, Aug. 10, 1962, 37/34,645

16 Claims. (Cl. 260—310)

1. 1-(2-chlorophenoxyacetyl)-3,5-dimethylpyrazole.

4. 1-(2-methyl-4-chlorophenoxyacetyl)-3,5-dimethylpyrazole.

6. 1-[α-(2,4-dichlorophenoxy)propionyl]-3,5-dimethylpyrazole.

12. 1-(4-nitrophenoxyacetyl)-3,5-dimethylpyrazole.

15. 1-(2,3,4,5,6-pentachlorophenoxyacetyl)-3,5-dimethylpyrazole.

3,309,380

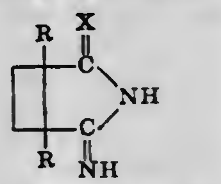
1,2-CYCLOBUTANE DICARBOXIMIDINES, DICARBOXIMINOIMIDES AND PROCESSES FOR THEIR PRODUCTION

Janice L. Greene, Warrensville Heights, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio a corporation of Ohio

No Drawing. Filed Aug. 4, 1964, Ser. No. 387,479

7 Claims. (Cl. 260—326.5)

1. A composition having the formula



wherein R is a member selected from the group consisting of hydrogen and a methyl radical and X is a member of the group consisting of O and NH.

2. The composition of claim 1 wherein R is hydrogen and X is O.

3,309,381

VINYL THIOPHENE PRODUCTION

Charles R. Adams, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 27, 1963, Ser. No. 326,386

7 Claims. (Cl. 260—329)

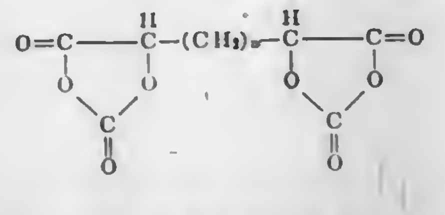
1. A process for the production of a 3-vinyl thiophene which comprises reacting an aliphatic hydrocarbon selected

from the group consisting of 3-methyl penetane, 3-methyl-1-pentene and 3-ethyl-1-pentene with sulfur dioxide in the presence of a metal phosphate catalyst at a temperature of from about 450° C. to about 600° C.

3,309,382
ORGANIC CARBONATING AGENT

Jacob R. Feldman, New City, N.Y., and Rodger L. Foltz, Columbus, Ohio, assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 30, 1965, Ser. No. 452,332
7 Claims. (Cl. 260—340.2)

1. A bis-O-carboxy anhydride having the structural formula:

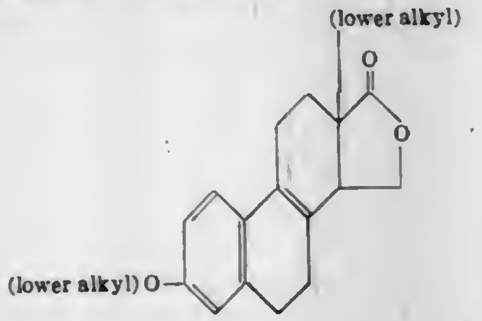


wherein *n* is a whole integer having a value from 0 to 1.

3,309,383
PROCESS AND INTERMEDIATES FOR MANUFACTURE OF 16-OXA STEROIDS

Raphael Pappo, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Feb. 17, 1966, Ser. No. 528,104
14 Claims. (Cl. 260—343.3)

7. A compound of the formula



3,309,384
PREPARATION OF LOW VISCOSITY EPOXIDE RESINS

David A. Shimp and John E. Kuhn, Louisville, Ky., assignors, by mesne assignments, to Celanese Coatings Company, a corporation of Delaware
No Drawing. Filed June 15, 1965, Ser. No. 464,220
7 Claims. (Cl. 260—348.6)

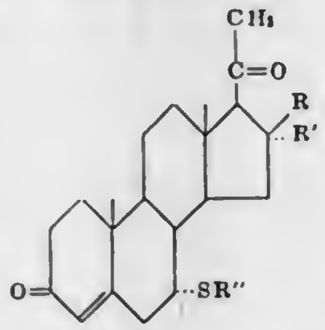
1. In the process for the preparation of monomeric glycidyl polyethers of bis(4-hydroxyphenyl) dimethylmethane which consists of reacting an epihalohydrin and bis(4-hydroxyphenyl) dimethylmethane through a catalytic condensation reaction and a dehydrohalogenation reaction to form the monomeric glycidyl polyethers using epihalohydrin in excess in an epihalohydrin-bis(4-hydroxyphenyl) ratio of at least 10:1, 2 mols of caustic alkali per mol of bis(4-hydroxyphenyl) dimethylmethane and at least a trace of water, the improvement for preparing said monomeric glycidyl polyhydric ethers having viscosities of less than about 10,000 centipoises of 25° C. which consists essentially of the two-step process of

(1) maximizing the catalytic condensation reaction while concomitantly minimizing the accompanying caustic alkali dehydrohalogenation by
  (a) maintaining the reaction temperature in the range of 62° C. to 85° C.,
  (b) uniformly adding the caustic alkali at a rate of 1.5 to 16% of the total caustic per hour during a 2 to 5 hour reaction period, uniformly being at least two additions per hour including continuous additions,
  (c) controlling the caustic alkali consumed by dehydrohalogenation during a given 2 to 5 hour reaction period by regulation of the catalyst addition rate in inverse relation to the temperature within the temperature range to form an intermediate reaction product,
  (d) removing the water from the intermediate reaction product, and
(2) completing the dehydrohalogenation by reacting said intermediate reaction product in the presence of the excess epihalohydrin using the unadded portion of the total caustic alkali as the dehydrohalogenating agent.

3,309,385
7α-ACYLTHIOPROGESTERONES

Patrick A. Diassi, Westfield, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 12, 1965, Ser. No. 455,322
12 Claims. (Cl. 260—397.3)

1. A compound of the formula

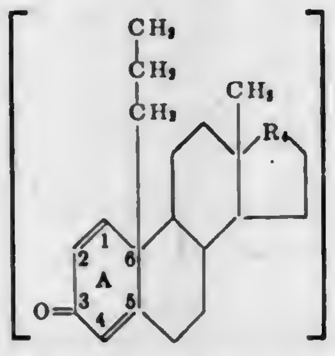


wherein R is hydrogen, R' is selected from the group consisting of hydroxy, lower alkoxy, the acyloxy radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms, and the acylthio radical of a hydrocarbon thiocarboxylic acid of less than twelve carbon atoms, and together R and R' is oxo; and R'' is the acyl radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms.

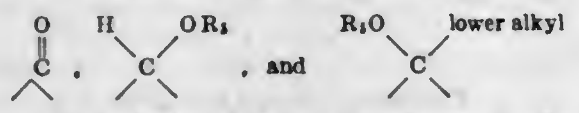
3,309,386
10-ALKYL STEROIDS AND PROCESSES FOR THEIR PREPARATION

Arthur Boller, Binningen, and Andor Fürst and Ernst Gerhard Herzog, Basel, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawng. Filed Feb. 18, 1965, Ser. No. 433,774
Claims priority, application Switzerland, May 9, 1962, 5,541/62
7 Claims. (Cl. 260—397.3)

1. A compound selected from the group consisting of (*a*) a compound of the formula



wherein R_4 is selected from the group consisting of

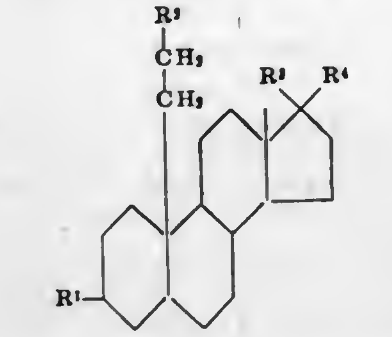


wherein R_5 is selected from the group consisting of hydrogen and lower alkanoyl.

3,309,387
19-LOWER ALKYL ANDROSTANES AND PREGNANES

Andor Fürst and Ernest Gerhard Herzog, Basel, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed July 1, 1964, Ser. No. 379,709
Claims priority, application Switzerland, July 19, 1963, 8,513/63
4 Claims. (Cl. 260—397.5)

1. A compound of the formula



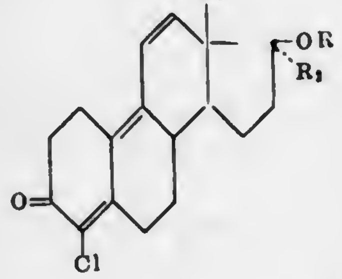
wherein R^1 is selected from the group consisting of hydroxy, lower alkanoyloxy, and lower alkoxy; R^2 is lower alkyl; R^3 is selected from the group consisting of hydroxy, lower alkanoyloxy, and lower alkoxy; and R^4 is selected from the group consisting of hydrogen, $-CH_3$, $-C_2H_5$, $-CH=CH_2$, $-CH\equiv CH$, $-COCH_3$, and $-COCH_2R^1$, wherein R^1 has the above meaning.

3. 19-ethyl-5β-androstan-3β,17β-diol.

3,309,388
NOVEL 4-CHLORO-Δ^{4,9,11}-GONATRIENES

Robert Bucourt, Clichy-sous-Bois, Andre Pierdet, Noisy-le-Sec, and Germain Costerousse, Montrouge, France, assignors to Roussel—UCLAF, Paris, France, a corporation of France
No Drawing. Filed Apr. 6, 1965, Ser. No. 446,096
Claims priority, application France, Apr. 23, 1964, 972,025
4 Claims. (Cl. 260—397.45)

1. A 4-chloro-Δ^{4,9,11}-gonatriene of the formula



wherein R is selected from the group consisting of hydrogen and an acyl radical of an organic carboxylic acid having 1 to 18 carbon atoms, R_1 is the methyl radical, R_2 is selected from the group consisting of hydrogen and a lower alkyl radical.

3,309,389
DECOLORIZING OF BEESWAX

Jonathan W. White, Jr., Ambler, Pa., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Aug. 26, 1963, Ser. No. 304,743
6 Claims. (Cl. 260—424)

1. A process for reducing the color of beeswax containing a metal compound comprising contacting said beeswax as a liquid with an aqueous solution of a metal sequestrant until the sequestrant has reacted with said metal compound, and separating beeswax of a color lighter than that of the original beeswax from the reaction mixture.

3,309,390
PREPARATION OF HYDROXY-ENDBLOCKED SILOXANE FLUIDS

George M. Omietanski, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 1, 1963, Ser. No. 292,147
17 Claims. (Cl. 260—448.2)

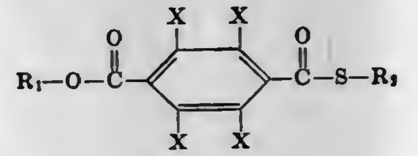
1. A process for the production of hydroxy-endblocked linear diorganopolysiloxanes which comprises contacting a cyclic diorganopolysiloxane trimer with water in the presence of an ion-exchange catalyst, and recovering a hydroxy-endblocked linear diorganopolysiloxane product from the reaction mixture.

8. A process for the production of hydroxy-endblocked linear dimethylpolysiloxanes which comprises contacting cyclic dimethylpolysiloxane trimer with water in the presence of an ion-exchange catalyst and a water miscible inert organic solvent, and recovering a hydroxy-endblocked linear dimethylpolysiloxane product from the reaction mixture.

3,309,391
METHYL S-ALLYL- AND METHYL S-PROPARGYL-2,3,5,6 - TETRAHALOMONOTHIOTEREPHTHALATE

Sidney B. Richter, Chicago, and Alfred A. Levin, Skokie, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Oct. 13, 1964, Ser. No. 403,630
5 Claims. (Cl. 260—455)

1. Compounds of the general formula:



wherein R_1 is selected from the group consisting of methyl and ethyl; R_2 is selected from the group consisting of allyl and propargyl; and X is halogen.

3,309,392
PREPARATION OF SULFATE ESTERS OF FATTY ALCOHOLS OR ETHYLENE OXIDE CONDENSATES THEREOF

Pieter Roele, Vlaardingen, Netherlands, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed Oct. 10, 1963, Ser. No. 315,279
Claims priority, application Great Britain, Oct. 12, 1962, 38,816/62
5 Claims. (Cl. 260—459)

1. A process for the sulphation of fatty alcohols or ethylene oxide condensates thereof having at least 8 carbon atoms with a mixture of sulphur trioxide and an inert gas, characterised in that the process is carried out in two stages, in which the first stage, with a relatively long residence time of the order of about ½ to 2 hours and a stoichiometric deficiency of sulphur trioxide, during which the reaction mass is being cooled, the alcohols are sulphated in the order of about 70% conversion and hence to such an extent that a decomposition takes place of less than 5% of the sulphuric acid monoester reaction product, and in which the second stage the sulphation is completed with a stoichiometric excess of sulphur trioxide as quickly as possible with a relatively short residence time of the order of about 1 to 15 minutes followed by immediate neutralisation of the reaction mixture, the sulphur trioxide to inert gas ratio in the second stage being lower than that in the first stage.

3,309,393
TELOMERIZATION OF ACRYLONITRILE

Kunio Nakagawa, Hyogo, and Tadashi Nakata, Osaka, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan
No Drawing. Filed Jan. 21, 1963, Ser. No. 252,554
Claims priority, application Japan, Jan. 25, 1962, 37/2,749
5 Claims. (Cl. 260—465)

1. A process for the telomerization of acrylonitrile as a taxogen with a telogen selected from the group consisting of halogenoalkanes, halogenoalkenes, halogenoalkanoic acids, halogenoalkanoic esters, halogenoalkanols, hydrochloric acid, cyanogen chloride, sulfuryl chloride, alkanes, alkanols, alkanals, acetone, alkanoic acids, alkanoic acid esters, ethylmercaptan and propylmercaptan to produce addition product thereof, which comprises reacting the acrylonitrile with the telogen in the presence of nickel peroxide at a temperature from ambient temperature to the decomposition temperature of one of the acrylonitrile, the telogen and their addition product, the said nickel peroxide being the product of the treatment of a salt of nickel selected from the group consisting of nickel chloride, nickel bromide, nickel sulfate, nickel carbonate and nickel nitrate with an oxidizing agent selected from the group consisting of alkali hypohalite and alkali persulfate in aqueous alkaline medium at a temperature between 10° and 25° C., and containing about 0.3 to 0.4×10^{-2} gram-atom of active oxygen per gram.

3,309,394
PROCESS FOR THE SEPARATION OF ACRYLONITRILE AND ACETONITRILE

Arnold Hausweiler, Cologne-Flittard, and Bernhard Scherhag and Rudolf Haupt, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Oct. 22, 1963, Ser. No. 318,115
Claims priority, application Germany, Oct. 27, 1962, F 38,174
3 Claims. (Cl. 260—465.3)

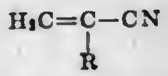
1. A method for the separation of acrylonitrile from a gaseous substantially ammonia free mixture comprising acrylonitrile and acetonitrile produced by the catalytic oxidation of propylene or acrolein in the presence of ammonia which comprises:

(a) contacting the mixture with water at a temperature in the range of from 20° C. to 60° C. and at a pressure of 1.2 to 2 atm.;
(b) extracting the acetonitrile; and
(c) recovering the acrylonitrile from the acetonitrile extracted mixture.

3,309,395
PRODUCTION OF ACRYLONITRILE OR METHACRYLONITRILE

Heinz Nohe, Ludwigshafen (Rhine), and Christof Palm and Rolf Platz, Mannheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed May 28, 1964, Ser. No. 371,090
Claims priority, application Germany, June 1, 1963, B 72,152
11 Claims. (Cl. 260—465.3)

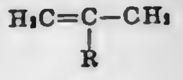
1. A process for the production of a nitrile of the formula



$$H_2C=\underset{\substack{|\\R}}{C}-CN$$

in which R denotes a substituent selected from the group consisting of hydrogen and methyl, said process comprising the step of reacting in the vapor phase at a temperature of about 400° C. to 580° C. a mixture of

(A) a hydrocarbon of the formula



$$H_2C=\underset{\substack{|\\R}}{C}-CH_3$$

in which R has the same meaning as above,
(B) ammonia, and
(C) oxygen

in the presence of a catalyst consisting essentially of 10 to 100% by weight of the tin salt of boromolybdic acid and 0 to 90% by weight of a compound selected from the group consisting of boric acid, molybdic acid, boronmolybdate, tin borate and tin molybdate, wherein the ratio by weight of tin to molybdenum in said catalyst calculated as their oxides is from 10:1 to 1:10 and wherein the ratio by weight of boron to molybdenum in said catalyst calculated as their oxides is from 1:2 to 1:50.

3,309,396
1,1,3,3-TETRAMETHYL BUTYLAMINOMETHYLENEMALONITRILE

Alexander T. Shulgin, Lafayette, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 13, 1961, Ser. No. 123,650
2 Claims. (Cl. 260—465.5)

1. Allylaminomethylenemalononitrile.

2. 1,1,3,3 - tetramethylbutylaminomethylenemalononitrile.

3,309,397
PRODUCTION OF PENTAERYTHRITOL TRINITRATE

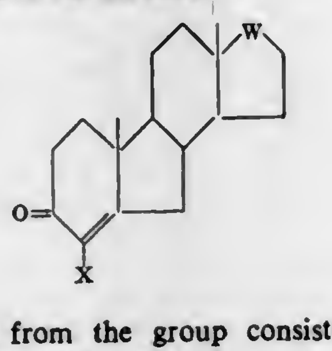
Henry Martin Brennecke, Woodstown, and Donald Nixon Thatcher, Pitman, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 9, 1959, Ser. No. 818,965
6 Claims. (Cl. 260—467)

1. A process for preparing pentaerythritol trinitrate which comprises dissolving pentaerythritol in aqueous sulfuric acid having a concentration in the range of from 60% to 75% by weight, mixing therewith methylene chloride, reacting the mixture thus formed with sufficient nitric acid to provide from five to nine moles of nitric acid per mole of pentaerythritol and sufficient sulfuric acid to provide from 1.5 to 3 parts by weight of sulfuric acid per part of total water present in the reaction medium thus formed, including water formed in the esterification of the pentaerythritol by the nitric acid, the methylene chloride being present in an amount equal to at least 60% by weight of the total reaction medium, the temperature of said reaction medium being maintained between −5° C. and +40° C., and thereafter separating the organic liquid phase from the remainder of the reaction medium and recovering pentaerythritol trinitrate from said organic liquid phase.

3,309,398
4-HALO AND 4-OXYGENATED-B-NORTESTOSTERONES AND B-NORPROGESTERONES

James F. Kerwin, Broomall, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 31, 1964, Ser. No. 393,365
13 Claims. (Cl. 260—488)

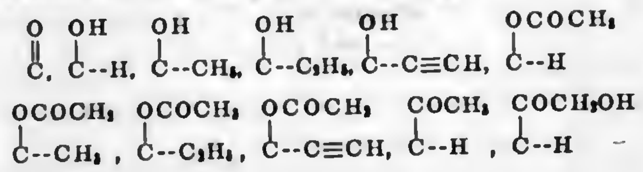
1. A compound of the formula:



wherein:

X is selected from the group consisting of chloro, bromo, hydroxy, acetoxy; and

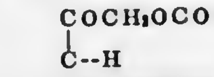
W is selected from the group consisting of



$$\overset{\text{O}}{\overset{\|}{\text{C}}},\ \overset{\text{OH}}{\overset{|}{\text{C}}}\text{--H},\ \overset{\text{OH}}{\overset{|}{\text{C}}}\text{--CH}_3,\ \overset{\text{OH}}{\overset{|}{\text{C}}}\text{--C}_2\text{H}_5,\ \overset{\text{OH}}{\overset{|}{\text{C}}}\text{--C}\equiv\text{CH},\ \overset{\text{OCOCH}_3}{\overset{|}{\text{C}}}\text{--H}$$

$$\overset{\text{OCOCH}_3}{\overset{|}{\text{C}}}\text{--CH}_3,\ \overset{\text{OCOCH}_3}{\overset{|}{\text{C}}}\text{--C}_2\text{H}_5,\ \overset{\text{OCOCH}_3}{\overset{|}{\text{C}}}\text{--C}\equiv\text{CH},\ \overset{\text{COCH}_3}{\overset{|}{\text{C}}}\text{--H},\ \overset{\text{COCH}_2\text{OH}}{\overset{|}{\text{C}}}\text{--H}$$

and



$$\overset{\text{COCH}_2\text{OCOCH}_3}{\overset{|}{\text{C}}}\text{--H}$$

3,309,399
TERTIARY AMINE OXIDES

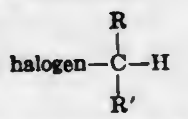
Mitchell Frank Zienty, Elkhart, Ind., and Harold Charles Stalter, Edwardsburg, Mich., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Apr. 15, 1964, Ser. No. 360,084
4 Claims. (Cl. 260—490)

4. N,N-dibenzyl-N-beta-acetoxyethylamine-N-oxide.

3,309,400
PROCESS FOR THE PRODUCTION OF PHTHALOYLPYRROCOLINES

Walter Jenny, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Apr. 6, 1964, Ser No. 357,803
Claims priority, application Switzerland, Apr. 11, 1963, 4,661/63; Oct. 2, 1963, 12,113/63; Mar. 9, 1964, 2,990/64
15 Claims. (Cl. 260—295)

1. A process for the production of phthaloylpyrrocolines, which comprises reacting a 2:3-dihalo-1:4-naphthoquinone with a pyridine base, in which the carbon atoms adjacent to the nitrogen atom are unsubstituted, and with a member selected from the group consisting of a halomethyl compound of the formula



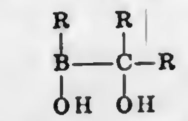
$$\text{halogen}-\overset{\substack{R\\|}}{\underset{\substack{|\\R'}}{C}}-H$$

and the corresponding pyridinium salt, in which R signifies an electron acceptor selected from the group consisting of a carboxylic acid ester, carbamido, carbanilido, cyano, acyl, α-pyridyl and 2-quinolyl groups, R′ a member selected from the group consisting of a hydrogen atom, lower alkyl, a phenyl and a carboxylic acid ester group.

3,309,401
ALPHA-HYDROXYBORINIC ACIDS

Tillmon H. Pearson, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed July 2, 1962, Ser. No. 207,056
12 Claims. (Cl. 260—500)

1. Alpha-hydroxyborinic acids having the formula



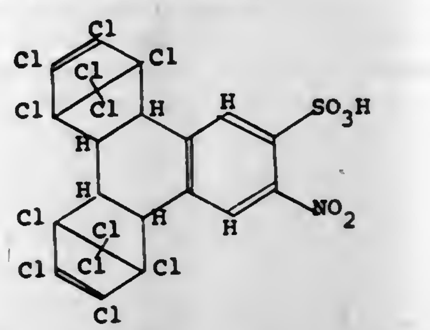
$$\overset{\substack{R\\|}}{\underset{\substack{|\\OH}}{B}}-\overset{\substack{R\\|}}{\underset{\substack{|\\OH}}{C}}-R$$

wherein the groups designated by R are hydrocarbon radicals individually containing up to about 18 carbon atoms.

3,309,402
3-NITRO-2-SULFONIC ACID SUBSTITUTED DERIVATIVE OF THE DIELS-ALDER ADDUCT OF TWO MOLECULES OF HEXACHLOROCYCLOPENTADIENE AND ONE MOLECULE OF NAPHTHALENE

Weldon M. Padgett II, Berkeley, Calif., assignor to Fundamental Research Company, Berkeley, Calif., a partnership
No Drawing. Filed Nov. 15, 1963, Ser. No. 323,885
1 Claim. (Cl. 260—505)

The 3-nitro-2-sulfonic acid substituted derivative of the Diels-Alder adduct of two molecules of hexachlorocyclopentadiene and one molecule of naphthalene, said derivative having the structural formula

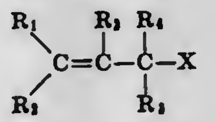


having the empirical formula $C_{20}H_7Cl_{12}NO_5S$, and having a molecular weight of 799.

3,309,403
CARBONYLATION OF ALLYLIC HALIDES

Irving L. Mador, Cincinnati, Ohio, and John A. Scheben, Erlanger, Ky., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Oct. 16, 1963, Ser. No. 316,550
17 Claims. (Cl. 260—544)

1. A process which comprises the reaction of carbon monoxide with an allyl halide having the formula



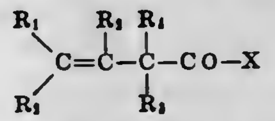
$$\begin{matrix}R_1\\ \quad\diagdown\\ \quad\diagup\\R_2\end{matrix}C=\overset{\substack{R_3\\|}}{C}-\overset{\substack{R_4\\|}}{\underset{\substack{|\\R_5}}{C}}-X$$

wherein

X is selected from the group consisting of chlorine and bromine, and

R_1, R_2, R_3, R_4, and R_5 are independently selected from the group consisting of hydrogen, halogen, alkyl, aryl, and cycloalkyl,

in the presence of a platinum group catalyst at an elevated temperature and pressure, to produce the corresponding acyl halide having the formula



$$\begin{matrix}R_1\\ \quad\diagdown\\ \quad\diagup\\R_2\end{matrix}C=\overset{\substack{R_3\\|}}{C}-\overset{\substack{R_4\\|}}{\underset{\substack{|\\R_5}}{C}}-CO-X$$

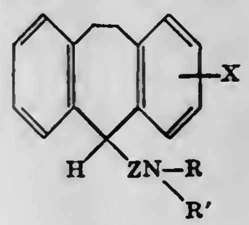
wherein R_1, R_2, R_3, R_4, R_5, and X have the meaning above defined.

3,309,404
DERIVATIVES OF DIBENZOCYCLOHEPTENES AND A PROCESS FOR THEIR PREPARATION

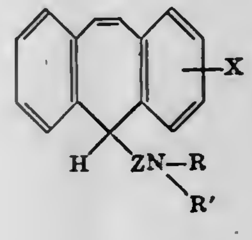
Edward L. Engelhardt, Gwynedd Valley, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Aug. 1, 1963, Ser. No. 299,155
16 Claims. (Cl. 260—556)

11. 3-dimethylsulfamoyl - 5 - (3-dimethylaminopropyl) 5H-dibenzo[a,d]cycloheptene.

13. A compound selected from the group consisting of

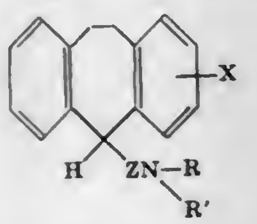


and

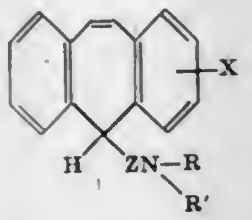


and acid addition salts thereof; wherein Z is the radical —C≡CCH$_2$—, which radical may be further substituted with an alkyl radical having from 1 to 4 carbon atoms; R and R′ are each alkyl having up to 6 carbon atoms, cycloloweralkyl, phenyl or benzyl, provided that when R and R′ are other than alkyl the total number of carbon atoms in R and R′ does not exceed 9 and provided further that when R and R′ are both alkyl they may form together with the nitrogen atom attached thereto the radical 1-piperidyl, 4-morpholinyl, 1-pyrrolidyl or 1-loweralkyl-4-piperazinyl; and X is hydrogen, halogen, loweralkyl, lower alkenyl, perfluoroloweralkyl, loweralkylmercapto, loweralkylsulfonyl or diloweralkylsulfamoyl.

14. A compound selected from the group consisting of



and



and acid addition salts thereof; wherein Z is the radical —CH$_2$CH$_2$CH$_2$—, which radical may be further substituted with an alkyl radical having from 1 to 4 carbon atoms; R is cycloloweralkyl, phenyl or benzyl; R′ is alkyl having up to 6 carbon atoms or cycloloweralkyl provided that the total number of carbon atoms in R and R′ does not exceed 9; and X is hydrogen, halogen, loweralkyl, loweralkenyl, perfluoroloweralkyl, loweralkylmercapto, loweralkylsulfonyl, or diloweralkylsulfamoyl.

3,309,405

1,2-BIS-AMINOMETHYL-CYCLOBUTANE

Otto Bayer, Burscheid, and Rudolf Schroter, Werner Siefken, and Kuno Wagner, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Nov. 23, 1964, Ser. No. 413,355
Claims priority, application Germany, Sept. 22, 1959, F 29,433
1 Claim. (Cl. 260—563)

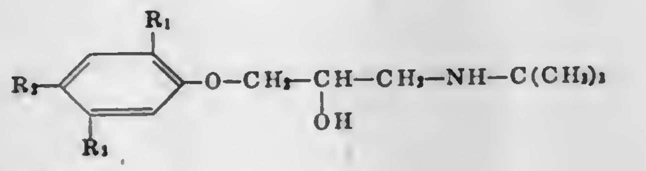
1,2-bis-aminomethyl-cyclobutane.

3,309,406

1-t-BUTYLAMINO-3-PHENOXY-2-PROPANOLS

Wilhelm Kunz, Frohnkamp 17, and Haireddin Jacobi, Frohnkamp 13, both of Monheim, Rhineland, Germany; Conrad Koch, Pannenbackerstrasse 9, Dusseldorf-Urdenbach, Germany; and Raymond J. Geus, 409 Kennerly Road, Springfield, Pa. 19064
No Drawing. Filed Mar. 24, 1965, Ser. No. 442,476
9 Claims. (Cl. 260—570.7)

1. A chemical compound selected from the group consisting of a free base and its nontoxic salts formed with pharmaceutically acceptable acids, said free base having the structure:



wherein:

R$_1$ is a member selected from the group consisting of chlorine, bromine and lower lakyl of from 1 to 4 carbon atoms;

R$_2$ is a member selected from the group consisting of hydrogen, chlorine and bromine;

R$_3$ is a member selected from the group consisting of hydrogen and lower alkyl of from 1 to 4 carbon atoms; and

R$_1$ and R$_3$ are not both methyl, and R$_2$ and R$_3$ are not both hydrogen.

3,309,407

PROCESS OF PURIFYING METHYL ETHYL KETONE

Sammy Carpenter, Wallace E. Taylor, and William T. McNair, Jr., Corpus Christi, and Frank T. Talbert, Bay City, Tex., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
No Drawing. Original application Dec. 27, 1961, Ser. No. 163,010, now Patent No. 3,228,985, dated Jan. 11, 1966. Divided and this application Aug. 20, 1965, Ser. No. 505,440
2 Claims. (Cl. 260—593)

1. The process of purifying a main stream containing methyl ethyl ketone and ethyl acetate mixed with impurities which include methyl lower alkenyl ketones, lower alkyl alkanoates, lower alkanols, biacetyl, methyl isopropyl ketone and acetic acid which process comprises:

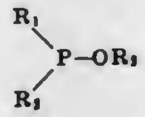
(1) subjecting said mixture to extractive distillation with an aqueous sodium carbonate solution;
(2) drying the extractive mixture;
(3) oxidizing the mixture with an oxidant selected from the group consisting of ozone and alkaline potassium permanganate; and
(4) distilling the oxidized mixture to recover said methyl ethyl ketone in substantially purer form than said original mixture.

3,309,408

PREPARATION OF PHOSPHINE OXIDE COMPOUNDS

Kurt Moedritzer, Webster Groves, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed May 23, 1963, Ser. No. 282,596
12 Claims. (Cl. 260—606.5)

1. In the method for preparing tertiary phosphine oxides wherein a phosphinite of the following formula



$$\mathrm{R_1R_2P{-}OR_3}$$

wherein R$_1$ and R$_2$ are selected from the group consisting of substituted and unsubstituted aliphatic hydrocarbon groups, substituted and unsubstituted aryl groups, substituted and unsubstituted alkaryl groups, substituted and unsubstituted aralkyl groups, substituted and unsubstituted alicyclic groups, and substituted and unsubstituted heterocyclic groups, and R$_3$ is selected from the class consisting of substituted and unsubstituted aliphatic hydrocarbon groups and substituted and unsubstituted alicyclic groups containing 5 or more carbon atoms, and substituted and unsubstituted alkaryl groups containing 8 or more carbon atoms, and wherein the substituents of said substituted groups are selected from the class consisting of hydroxy groups, amino groups, amide groups, ether groups, ester groups, carboxy groups, sulfonyl groups, sulfo groups and nitro groups; is isomerized to the corresponding oxide, the improvement comprising carrying out said isomerization under non-oxidizing conditions whereby the yield of said oxide is improved.

3,309,409

PURIFICATION OF ACIDIC CHLOROPHENYLSULFONES

Edward L. Steiger, Toledo, Ohio, assignor to Stauffer Chemical Company, Weston, Mich., a corporation of Delaware
No Drawing. Filed Apr. 10, 1964, Ser. No. 358,950
3 Claims. (Cl. 260—607)

1. The method of improving the purity of crude acidic 4,4′-dichlorodiphenylsulfone which comprises heating a mixture of the crude material and a basic aqueous solution having a pH greater than 7 at a temperature ranging from about 80° C. to about 90° C. for at least 30 minutes and recovering the resulting white precipitate from the mixture, the base in said solution being such as to produce a water soluble sulfate and being employed in an amount sufficient to neutralize the said material.

3,309,410

ISOMERIZATION PROCESS

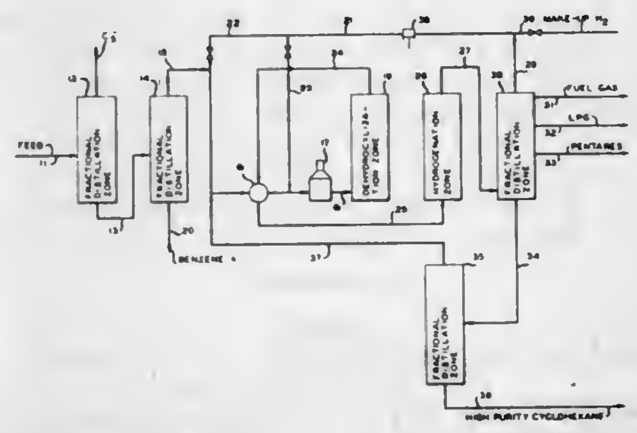
Alan Schriesheim, Berkeley Heights, and Charles A. Rowe, Jr., Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Oct. 6, 1964, Ser. No. 402,019
13 Claims. (Cl. 260—666)

1. A method of converting nonconjugated cyclic diolefins to cyclic conjugated diolefin isomers wherein both the nonconjugated and conjugated diolefins contain one double bond within the cyclic structure and one double bond on a substituent side chain, in high selectivities and yields which comprises maintaining a nonconjugated cyclic diolefin in contact with a base-solvent system wherein said solvent is an aprotic, dipolar, nonhydroxylic organic liquid having a dielectric constant in excess of 15 debyes at 25° C. and said base is selected from the group consisting of alkali metal hydrides, inorganic amides, alkoxides, hydroxides, and alkyls at temperatures of from about 10 to 300° C. and for a period sufficient to convert the same principally to conjugated diolefin isomers.

3,309,411

PROCESS FOR THE PRODUCTION OF HIGH PURITY CYCLOHEXANE

Roy M. Waldby, New York, N.Y., and Edwin N. Windler, Sweeny, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 417,980
5 Claims. (Cl. 260—666)


FEED
11
FRACTIONAL DISTILLATION ZONE
FRACTIONAL DISTILLATION ZONE
DEHYDROCYCLIZATION ZONE
HYDROGENATION ZONE
FRACTIONAL DISTILLATION ZONE
MAKE-UP H₂
FUEL GAS
LPG
PENTANES
BENZENE
FRACTIONAL DISTILLATION ZONE
HIGH PURITY CYCLOHEXANE

1. A method of producing a cyclohexane product stream having a purity of at least 99 volume percent from a feedstream containing C$_5$ to C$_7$ hydrocarbons, including 2,2-dimethylpentane and 2,4-dimethylpentane, without incurring the necessity of solvent extraction, which comprises fractionating said feedstream to produce a C$_6$ concentrate stream containing less than 5 volume percent of material boiling above 160° F. and being substantially free of 2,2-dimethylpentane and 2,4-dimethylpentane, heating said concentrate stream to a temperature in the range of 900° F. to 1100° F., contacting the thus heated concentrate stream with a suitable dehydrocyclization catalyst in the presence of hydrogen in a dehydrocyclization zone at a pressure in the range of 0 to 450 p.s.i.g. to convert a portion of the C$_6$ hydrocarbons into benzene, withdrawing the reaction effluent from said dehydrocyclization zone, cooling the thus withdrawn reaction effluent to a temperature in the range of 300° F. to 700° F., contacting the thus cooled reaction effluent with a suitable hydrogenation catalyst in the presence of hydrogen in a hydrogenation zone at a pressure in the range of 150 to 450 p.s.i.g. to convert the benzene to cyclohexane, withdrawing the reaction effluent from said hydrogenation zone, fractionally distilling the thus withdrawn hydrogenation reaction effluent to provide a cyclohexane stream containing at least 99 volume percent cyclohexane.

3,309,412

METHOD OF PREVENTING THE POLYMERIZATION OF BUTADIENE

Taketami Sakuragi and Yoshio Jyo, Tokyo, Tsuneo Yomo, Fujisawa-shi, and Yoshinobu Asano, Yokohama, Japan, assignors to The Japanese Geon Company, Ltd., Minato-ku, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Mar. 5, 1965, Ser. No. 437,591
Claims priority, application Japan, Apr. 17, 1964, 39/21,527
10 Claims. (Cl. 260—666.5)

1. A method of reducing the tendency of butadiene to polymerize in solutions exposed to elevated temperatures, or elevated temperatures and iron rust, which comprises adding to the solution, as a polymerization inhibitor, furfural in an amount of 0.01 percent to 10 percent by weight based on the solvent.

3. A method of reducing the tendency of butadiene to polymerize in solutions exposed to elevated temperatures, or elevated temperatures and iron rust, which comprises adding to the solution, as a polymerization inhibitor, an aromatic nitro compound in an amount of 0.01 percent to 10 percent by weight based on the solvent.

3,309,413

AROMATIC DESULFURIZATION

John M. Ferrara, Chicago, and Robert R. Burns, Naperville, Ill., assignors to Howe-Baker Engineers, Inc., Tyler, Tex., a corporation of Texas
No Drawing. Filed Mar. 4, 1963, Ser. No. 262,322
8 Claims. (Cl. 260—674)

1. A process for purifying a mixture of benzene, toluene and xylene to a residual sulfur content of less than one p.p.m. which comprises mixing with a mixture of benzene, toluene and zylene, said mixture containing a small amount of carbon disulfide and a member selected from the group consisting of thiophene and homologs of thiophene, 0.2 to 0.6 volume percent, based on said mixture, of dimethylamine and 0.25 to 6 volume percent, based on said mixture, of a member selected from the group consisting of 98–100% sulfuric acid and oleum of up to 30% strength, applying to the formed mixture an electric current between electrodes spaced 1–12 inches apart at a field of about 2000–6000 volts per inch, and separating the acid phase and the benzene, toluene and xylene phase, the latter containing less than one p.p.m. residual sulfur.

6. A process for removing carbon disulfide from a member selected from the group consisting of benzene, toulene, xylene and mixtures thereof which comprises mixing said member with about 0.2–0.6 volume percent, based on said member, of dimethylamine and 1–6 volume percent, on the same basis, of sulfuric acid, and separating the acid phase and the organic phase comprising said member.

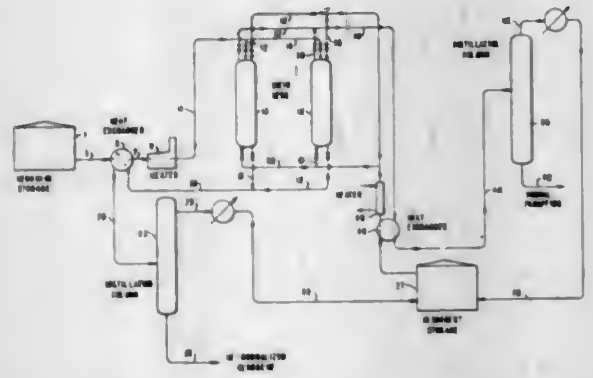
3,309,414
SEPARATION OF XYLENE ISOMERS

David A. McCaulay, Homewood, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Filed Apr. 18, 1963, Ser. No. 273,889
3 Claims. (Cl. 260—674)

1. A process for separating meta-xylene from a mixture of C_8 aromatics which process comprises charging to a first extraction zone a feed comprising meta-xylene admixed with at least one other C_8 aromatic and a complex of HF-BF_3-methylnaphthalenes maintaining a temperature of 0 to 125° F. in the first extraction zone, withdrawing from said extraction zone an extract comprising a complex of HF-BF_3-meta-xylene, charging methylnaphthalenes and said extract to a second extraction zone and maintaining a temperature of 0 to 125° F. in the second extraction zone, and removing therefrom a raffinate comprising meta-xylene having a meta-xylene content greater than that of said feed.

3,309,415
n-PARAFFIN SEPARATION PROCESS

Eldred E. Young, Concord, and George C. Blytas, Albany, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 27, 1964, Ser. No. 340,248
7 Claims. (Cl. 260—676)



1. In a vapor phase process for the recovery of normal C_{11}–C_{15} paraffin from a kerosene fraction feed by periodic contact of the feed with a molecular sieve to effect adsorption of the normals followed by desorption of the normals by contact with n-octane, the improvement which comprises effecting said adsorption and desorption at substantially the same temperature and wherein said temperature is at least 40° C. above the dew point temperature of the feed.

3,309,416
PREPARATION OF ALPHA-OLEFINS

Ronald L. Poe and Eugene F. Kennedy, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Jan. 18, 1962, Ser. No. 167,042
11 Claims. (Cl. 260—677)

1. A process for the production of alpha-olefins which comprises oxidizing a mixture comprising alpha-olefins containing 2 to 40 carbon atoms and aluminum trialkyl having alkyl groups containing 2 to 4 carbon atoms with a free oxygen-containing gas to convert the aluminum trialkyl to aluminum trialkoxide without affecting significantly the alpha-olefins and separating the alpha-olefins from the oxidation product.

2. A process for the production of alpha-olefins which comprises reacting high molecular weight aluminum trialkyl having alkyl substituents, each of which contains about 2 to 40 carbon atoms with a mono-olefin containing about 2 to 4 carbon atoms in the presence of a catalytic amount of a displacement catalyst to produce a first product including alpha-olefins containing about 2 to 40 carbon atoms and aluminum trialkyl having alkyl groups containing 2 to 4 carbon atoms, oxidizing the first product with a free oxygen-containing gas to convert the aluminum trialkyl to aluminum trialkoxide without affecting significantly the alpha-olefins and separating alpha-olefins from the oxidation product.

3,309,417
CATALYTIC DEHYDROGENATION OF ALIPHATIC MONO-OLEFINS TO CONJUGATED DIOLEFINS

Arnold N. Wennerberg, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Aug. 16, 1963, Ser. No. 302,745
11 Claims. (Cl. 260—680)

1. A method of dehydrogenating a mono-olefin hydrocarbon feed having only 4 to 5 chain carbon atoms to the corresponding diene hydrocarbon without substantial skeletal rearrangement which comprises contacting in a catalytic conversion zone said mono-olefin hydrocarbon at a temperature above 400° C. with a solid catalyst consisting essentially of oxides of three different metals which comprise alumina and one each from alkaline earth metal oxide and from oxides of metals selected from the class consisting of cadmium and zinc each in the range of from 0.1 to 10 weight parts for each 10 weight parts of alumina.

3,309,418
PROCESS FOR PRODUCING HEXADIENES

Go Hata, Kamakura-shi, Japan, assignor to Toyo Rayon Kabushiki Kaisha, Chuo-ku, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Nov. 17, 1964, Ser. No. 411,695
Claims priority, application Japan, Nov. 22, 1963, 38/62,514; Jan. 18, 1964, 39/2,177; Feb. 12, 1964, 39/7,155; Mar. 17, 1964, 39/14,583; May 26, 1964, 39/29,323
22 Claims. (Cl. 260—680)

1. A process for producing hexadienes which comprises reacting a conjugate diolefinic hydrocarbon with ethylene in the presence of a catalytic amount of a composition consisting of the two components of:

(1) an iron compound and
(2) an organoaluminum compound selected from the group consisting of
  (a) the compounds of the formula

$$R_2AlZ$$

wherein R is a monovalent hydrocarbon group, and Z is a group selected from the class consisting of hydrogen and the monovalent hydrocarbon and hydrocarbonoxy groups; and
  (b) the compounds of the formula

$$R'_4AlM$$

wherein R′ is a monovalent hydrocarbon group, and M is an alkali metal.

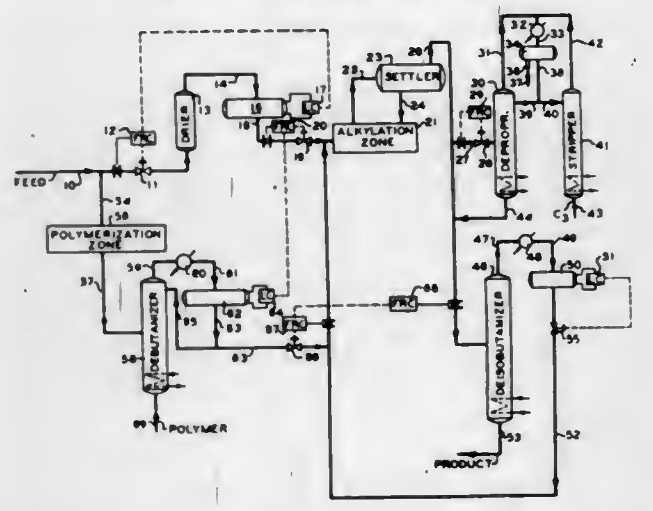
3,309,419
PARAFFINIC HYDROCARBON DEHYDROGENATION PROCESS

Robert B. Regier, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Feb. 17, 1964, Ser. No. 345,090
11 Claims. (Cl. 260—683.3)

1. A process which comprises bubbling a mixture consisting of an oxygen-containing gas and a paraffinic hydrocarbon having at least 4 carbon atoms per molecule through a medium consisting of a completely molten salt in a dehydrogenation zone, said molten salt medium selected from the group consisting of (1) silver chloride, (2) a mixture of potassium chloride and silver chloride, (3) a mixture of potassium chloride and lithium chloride, (4) at least one alkali metal nitrate, and (5) mixtures of at least two of (1), (2), (3) and (4), and maintaining the temperature in said dehydrogenation zone in the range of 300–550° C.

3,309,420
CONTROLLING A COMBINED ALKYLATION POLYMERIZATION PROCESS TO INCREASE THE ALKYLATE

Joe Van Pool, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 23, 1962, Ser. No. 189,332
3 Claims. (Cl. 260—683.15)

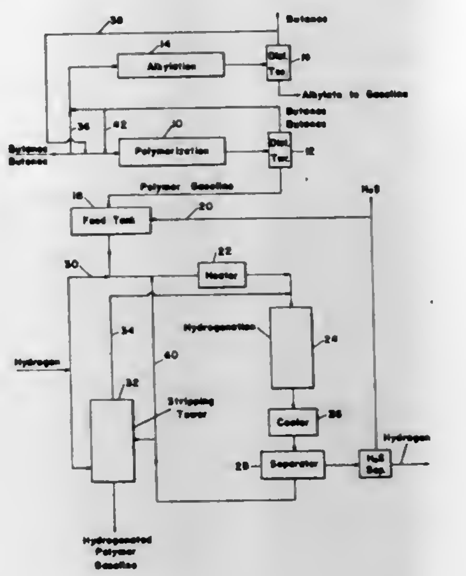


1. A process which comprises passing at least a portion of a hydrocarbon feed to an alkylation zone, said hydrocarbon feed comprising isobutane and an olefin selected from the group consisting of butylenes and propylene, passing the remainder of said hydrocarbon feed to a polymerization zone, passing a hydrocarbon effluent from said alkylation zone to a first fractionation zone, recycling an isobutane stream from said first fractionation zone to said alkylation zone, withdrawing an alkylate product stream from said first fractionation zone, passing a hydrocarbon effluent from said polymerization zone to a second fractionation zone, withdrawing a polymer product stream from said second fractionation zone, passing an isobutane stream from said second fractionation zone to a storage zone, passing an isobutane stream from said storage zone to said alkylation zone, measuring the rate of flow of hydrocarbon effluent to said first fractionation zone, comparing the thus measured rate of flow with a signal representative of the desired rate of flow of said hydrocarbon effluent to said first fraction zone, manipulating the rate of flow of isobutane from said storage zone to said alkylation zone responsive to said comparison to maintain the actual rate of flow of said hydrocarbon effluent to said first fractionation zone substantially equal to said desired rate of flow, and varying the quantity of said portion of said hydrocarbon feed passed to said alkylation zone responsive to the liquid level in said storage zone.

3,309,421
PRODUCTION OF HYDROGENATED POLYMER GASOLINE

Merritt C. Kirk, Jr., Claymont, Del., Albert T. Olenzak, Media, and Henry E. Reif, Bryn Mawr, Pa., and William D. Thomas, Maumee, Ohio, assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Dec. 23, 1965, Ser. No. 515,966
11 Claims. (Cl. 260—683.15)

1. A process for producing an improved polymer feedstock for a hydrogenation unit to produce improved gasoline components which comprises polymerizing C_4 feedstock containing butenes and butanes at a temperature in the range from 280 to 400° F., at a pressure of about 400 to 600 p.s.i.g. and a liquid hourly space velocity in the range from 0.6 to 1.2 gallons of fresh feed per pound of catalyst per hour with the further provision that said conditions are selected to obtain 5 to 20 volume percent conversion of any butene-2 in the feed, 40 to 90 volume percent conversion of any butene-1 in the feed, and 60 to 90 volume percent conversion of any isobutylene in the feed.



3,309,422
PROCESS FOR PREPARING INTERPOLYMERS OF STYRENE AND RUBBERY DIOLEFIN POLYMERS

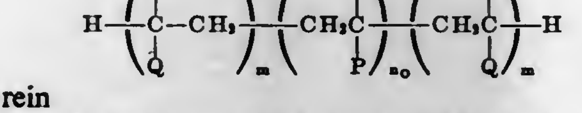
Kenneth W. Doak and Frederick E. Carrock, Wyckoff, N.J., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Sept. 3, 1963, Ser. No. 306,349
12 Claims. (Cl. 260—880)

1. In a process for preparing an interpolymer which comprises the steps of prepolymerizing a reaction mixture comprising styrene and a rubbery polymer of a conjugated diolefin to from about 10 to 45% conversion, suspending the resulting reaction product mixture in an aqueous medium containing a suspension stabilizer, polymerizing to substantial completion, and recovering interpolymer beads from said suspension, the improvement which comprises employing cyclohexanone peroxide as a prepolymerization initiator and an initiator selected from the group consisting of t-butyl perbenzoate, dicumyl peroxide and t-butyl peracetate in the aqueous medium.

3,309,423
BLOCK COPOLYMERS OF POLYMERIC DIANIONS

Gaetano F. D'Alello, South Bend, Ind., assignor, by mesne assignments, to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed Aug. 8, 1963, Ser. No. 300,899
17 Claims. (Cl. 260—885)

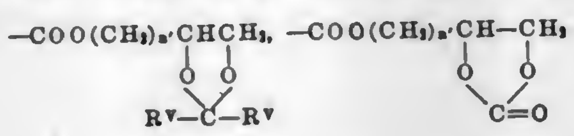
1. A linear block copolymer having the formula



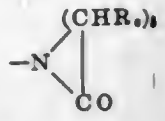
$$H-\left(\overset{R}{\underset{Q}{C}}-CH_2\right)_m-\left(CH_2\overset{R}{\underset{P}{C}}\right)_{n_0}-\left(CH_2\overset{R}{\underset{Q}{C}}\right)_m-H$$

wherein
  n_0 represents a numerical value of at least 4,
  m represents a numerical value of at least 1,
  R is selected from the group consisting of —H, —CH_3, and —CN,
  P is selected from the group consisting of —Ar, —Ar—Y′, —CO—Y″,

Q is selected from the group consisting of —Ar—D, —CO—D', —Ar—NCO, —Ar—NCS,



and

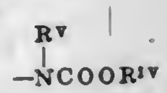


in which

—Ar is selected from the class consisting of aryl radicals containing 6 to 12 carbon atoms and derivatives thereof, and the derivatives thereof selected from the class of alkyl, cycloalkyl and aryl groups containing no more than 12 carbon atoms,

—Ar— is selected from the class consisting of arylene radicals containing 6 to 12 carbon atoms and derivatives thereof and the derivatives thereof selected from the class consisting of alkyl, aryl, cycloalkyl, alkoxy, aryloxy, thioalkyl, and thioaryl containing no more than 12 carbon atoms,

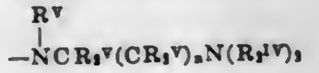
—Y' represents a radical selected from the class of —OR^{IV}, —SR^{IV}, —COOR^{IV}, —CN, —O(CR$_2^{V}$)$_n$COOR^{IV}, —S(CR$_2$)$_n{}^{V}$COOR^{IV}, —(CR$_2^{V}$)$_n$COOR^{IV}, —(CR$_2^{V}$)$_n$OR^{IV}, —(CR$_2^{V}$)$_n$SR^{IV}, —N(R^{IV})$_2$, —CON(R^{IV})$_2$, —(CR$_2^{V}$)$_n$N(R^{IV})$_2$, —(CR$_2^{V}$)$_n$CON(R^{IV})$_2$, —O(CR$_2^{V}$)$_n$CON(R^{IV})$_2$, —NR^{V}(CR$_2^{V}$)$_n$COOR^{IV}, —(OCR$_2^{V}$CR$_2^{V}$)$_n$OR^{IV}, —CO(OCR$_2^{V}$CR$_2^{V}$) —N(COOR^{IV})$_2$,



$-\overset{R^{V}}{\overset{|}{N}}COOR^{IV}$

—N[CR$_2^{V}$)$_n$COOR^{IV}]$_2$ and —SO$_2$OR^{IV},

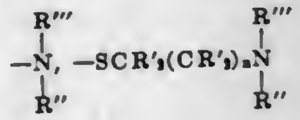
—Y'' is selected from the group consisting of —OR^{IV}, —SR^{IV}, —O(CR$_2^{V}$)COOR^{IV}, —S(CR$_2^{V}$)COOR^{IV}, —O(CR$_2^{V}$)$_n$OR^{IV}, —N(R^{IV})$_2$, —O(CR$_2^{V}$)$_n$CON(R^{IV})$_2$, —OCR$_2^{V}$(CR$_2^{V}$)$_n$N(R^{IV})$_2$, —S(CR$_2^{V}$)$_n$CON(R^{IV})$_2$, —SCR$_2^{IV}$(CR$_2^{IV}$)$_n$N(R$_2^{IV}$)$_2$,



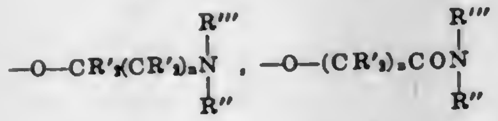
$-\overset{R^{V}}{\overset{|}{N}}CR_2^{V}(CR_2^{V})_nN(R_2^{IV})_2$

—(OCR$_2^{V}$CR$_2^{V}$)$_n$OR^{IV},

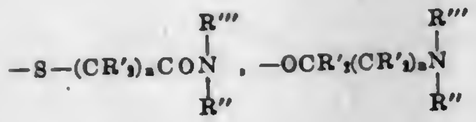
—CO—D' represents a radical in which D' is selected from the class consisting of —OR'', —SR'', —(OCR'$_2$)$_n$COOR'', —S(CR'$_2$)$_n$COOR'', —O(CR'$_2$)$_n$OR'',



$-\underset{R''}{\overset{R'''}{N}},\ -SCR'_2(CR'_2)_n\underset{R''}{\overset{R'''}{N}}$



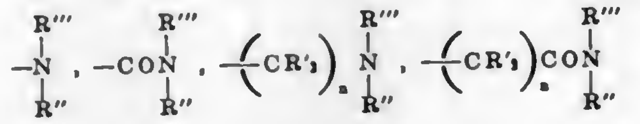
$-O-CR'_2(CR'_2)_n\underset{R''}{\overset{R'''}{N}},\ -O-(CR'_2)_nCO\underset{R''}{\overset{R'''}{N}}$



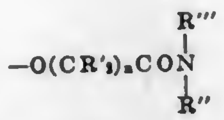
$-S-(CR'_2)_nCO\underset{R''}{\overset{R'''}{N}},\ -OCR'_2(CR'_2)_n\underset{R''}{\overset{R'''}{N}}$

—(OCR'$_2$CR'$_2$)$_n$OR'';

—D represents a radical in which D' is selected from the class consisting of —(CR'$_2$)$_n$R'', —OR'', —SR'', —O(CR'$_2$)$_n$COOR'', —S—(CR'$_2$)$_n$COOR'', —COOR'', —(CR'$_2$)$_n$COOR'', —(CR'$_2$)$_n$OR'', —(CR'$_2$)$_n$SR'',

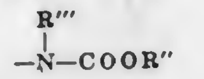


$-\underset{R''}{\overset{R'''}{N}},\ -CO\underset{R''}{\overset{R'''}{N}},\ -\left(CR'_2\right)_n\underset{R''}{\overset{R'''}{N}},\ -\left(CR'_2\right)_nCO\underset{R''}{\overset{R'''}{N}}$



$-O(CR'_2)_nCO\underset{R''}{\overset{R'''}{N}}$

—NR'''(CR'$_2$)$_n$COOR'', —N[(CR'$_2$)$_n$COOR'']$_2$,



$-\overset{R'''}{\overset{|}{N}}-COOR''$

—(OCR'$_2$CR'$_2$)$_n$OR'', —CO(OCR'$_2$CR'$_2$)$_n$OR'', —N(COOR'')$_2$, and —SO$_2$OR''', wherein

R' is a radical selected from the class consisting of hydrogen and hydrocarbon radicals containing 1 to 10 carbon atoms and R'',

R'' is a radical selected from the class of alkenyl, alkenyloxy alkyl, and alkenyl thioalkyl radicals, said radicals containing 2 to 10 carbon atoms and possessing a terminal

$$CH_2{=}C<$$

group,

R''' is a radical selected from the class consisting of hydrocarbon radicals containing 1 to 12 carbon atoms and R'',

R^{IV} is a hydrocarbon radical selected from the class consisting of saturated aliphatic and cycloaliphatic radicals and aryl radicals, and containing 1 to 12 carbon atoms,

R^{V} is a radical selected from the class consisting of hydrogen and —R^{IV},

R$_c$ represents a radical selected from the group consisting of —H and —CH$_3$,

n represents a numerical value of 1 to 4.

3,309,424

METHYL METHACRYLATE SYRUP COMPOSITION CONTAINING POLY-α-METHYL STYRENE

Hitoshi Abe and Kiyokazu Imai, Kurashiki, Japan, assignors to Kurashiki Rayon Company, Limited, Kurashiki, Japan, a corporation of Japan
No Drawing. Filed May 11, 1964, Ser. No. 366,613
Claims priority, application Japan, May 23, 1963, 38/26,932; July 25, 1963, 38/39,484; July 26, 1963, 38/39,642
6 Claims. (Cl. 260—885)

1. A methyl methacrylate syrup composition characterized by high storage stability, adapted and arranged for preparation of shaped articles and laminated products, comprising a syrup containing a minor proportion of α-methylstyrene polymer dissolved in at least 30% by weight of methyl methacrylate monomer based on the weight of the syrup, said syrup having a viscosity of between 0.1 and 50 poises at 25° C.

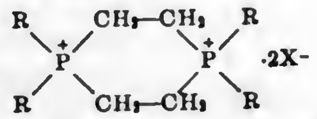
3,309,425

THERMOPLASTIC RESINS CONTAINING PHOSPHONIUM SALTS AS FLAME-RETARDANT AGENTS

Helen Currier Gillham, Stamford, and Allan Ellis Sherr, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed July 30, 1963, Ser. No. 298,577
11 Claims. (Cl. 260—893)

1. A flame-retardant composition comprising a thermoplastic polymer produced from at least one ethylenically unsaturated monomer and a flame retarding amount of a phosphonium salt selected from the group consisting of

(A) those having the formula



wherein R is an alkyl radical of from 1 to 8 carbon atoms, inclusive, and X is selected from the group consisting of bromine and iodine radicals and

(B) 1,3,5,7,10,10 - hexamethyl - 2-6,9 - trioxa-10-phosphonia-tricyclo[3·3·1·1^{3,7}]decane iodide.

3,309,426

POLYETHYLENE STABILIZATION OF VINYL HALIDE RESINS

Csaba K. Hunyar, 1043 N. Sierra Bonita, Los Angeles, Calif. 90046
No Drawing. Filed Apr. 19, 1962, Ser. No. 188,868
4 Claims. (Cl. 260—897)

1. The process for stabilizing a vinyl thermoplastic resin against heat decomposition, the resin being selected from the group consisting of vinyl halide homopolymers and vinyl halide-vinyl acetate copolymers, that includes intimately blending said resin with solid polyethylene as the only stabilizer to form a mix, and physically processing said mix at an elevated temperature within the range of about 300°–325° F., the amount of said polyethylene stabilizer being within the range of about 0.5 to 2.0% by weight of said mix, and being sufficient to inhibit charring and blistering of the resin at said elevated temperature.

3,309,427

POLYHYDROXY PHOSPHATE ESTERS

John D. Zech and Ernest C. Ford, Jr., Wilmington, Del., assignors to Atlas Chemicals Industries, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 15, 1963, Ser. No. 251,502
8 Claims. (Cl. 260—929)

1. A process for making a polyhydroxy phosphate ester which comprises a first stage of forming an acidic partial ester by reaction of a polyphosphoric acid containing at least 80% by weight of phosphoric anhydride with a polyhydric alcohol and a second stage of reacting the said acidic partial ester with sufficient of an alkylene oxide having from 2 to 4 carbon atoms to substantially neutralize the acidity, wherein the said polyhydric alcohol is a polyhydric alcohol selected from the group consisting of base polyols having from 2 to 9 hydroxyl groups per mol and hydroxyl numbers of from about 1250 to about 1850, and their condensates with up to twice their own weight of 2-to-4 carbon alkylene oxides, and wherein, in the first stage, the ratio of the sum of the mols of said polyhydric alcohol and the mols of water of composition in the polyphosphoric acid to mols of P_2O_5 in the reacting mixture is no greater than 2.75 when the said polyhydric alcohol is a diol and is no greater than 3 when the said polyhydric alcohol is of functionality greater than 3 but, in any case, is at least sufficient to convert all the phosphorus present to the orthophosphate form.

3,309,428

OIL-SOLUBLE BIS(METHYLPHOSPHONO-DISULFIDES

George M. Calhoun, Cleveland, Ohio, and Hyman Diamond, Sacramento, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Original application Dec. 23, 1960, Ser. No. 77,817, now Patent No. 3,238,131, dated Mar. 1, 1966. Divided and this application July 16, 1965, Ser. No. 472,663
5 Claims. (Cl. 260—932)

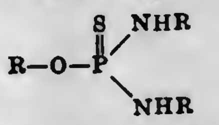
1. An oil-soluble bis(mono-C_{1-8} alkyl phosphonomethyl)disulfide.

3,309,429

O-ALKYL N,N'-DIALKYL PHOSPHORODIAMIDOTHIOATES

Herman O. Senkbeil, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Original application Dec. 28, 1961, Ser. No. 162,954, now Patent No. 3,251,675, dated May 17, 1966. Divided and this application June 14, 1965, Ser. No. 478,502
6 Claims. (Cl. 260—959)

1. A compound corresponding to the formula



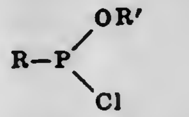
wherein each R represents lower alkyl.

3,309,430

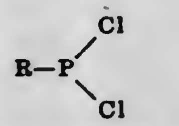
SYNTHESIS OF MONOHALOPHOSPHONITES

Erwin Steininger, Hachenburgerstrasse 3, 623 Frankfurt am Main-Sossenheim, Germany
No Drawing. Filed July 10, 1963, Ser. No. 294,146
7 Claims. (Cl. 260—972)

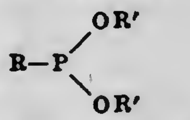
1. Method for the synthesis of monohalophosphonites of the formula



wherein R and R' are radicals selected from the group consisting of alkyl, and phenyl, comprising reacting in an inert solvent molar quantities of a dichlorophosphine of the formula



with a phosphonite of the formula



wherein R and R' have the meaning defined above.

3,309,431

METHOD FOR THE PREPARATION OF TRI-TERTIARY ALKYL PHOSPHITES

Victor Mark, Olivette, and Theodor Reetz, Webster Groves, Mo., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Filed Feb. 21, 1963, Ser. No. 260,318
6 Claims. (Cl. 260—976)

1. Method for the preparation of tri-tertiary alkyl phosphites having from 4 to 20 carbon atoms in each alkyl radical, which comprises mixing and contacting phosphorus trichloride in the proportion of one mole thereof with at least three molar proportions of tertiary alcohol having from 4 to 20 carbon atoms in the presence of at least a similar molar proportion of an acid acceptor selected from the group consisting of tertiary saturated aliphatic amines having from 3 to 20 carbon atoms, the said mixing and contacting being concluded at a temperature of from 20° C. to 50° C.

3,309,432

PROCESS FOR UPGRADING THIOPHOSPHATES

Jackson Pollard English, Princeton, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,182
10 Claims. (Cl. 260—989)

1. A method for the upgrading of an untreated, malodorous, mercaptan-containing thiophosphate pesticide which comprises the steps of: treating said malodorous,

mercaptan-containing thiophosphate with between about 0.5% and about 5%, by weight, of an aldehyde, whereby a high boiling mercaptan-aldehyde compound is formed, and, thereafter, recovering an odor-improved, storage-stable thiophosphate.

3,309,433

METHOD OF MAKING GRAPHITE ARTICLES

Fred Roberts, Newbury, England, assignor to United Kingdom Atomic Energy Authority, London, England
No Drawing. Filed July 10, 1964, Ser. No. 381,891
Claims priority, application Great Britain, July 17, 1963, 28,371/63
7 Claims. (Cl. 264—.5)

1. A method for the production of graphite artefacts comprising the steps of mixing a powder of a carbon-containing material selected from the group comprising graphite and graphitisable carbon with a binder, a major portion of said binder being selected from the group consisting of dibenzanthrene and dibenzanthrone, pressing such mix to form a shaped green body, heating the shaped green body to a carbonising temperature in the absence of air to obtain a baked body and subjecting such baked body to a further heat treatment at a temperature in excess of the carbonising temperature.

6. The method of claim 1 for the production of a fuel body for a nuclear reactor wherein particles of a nuclear fuel are mixed with a graphite powder and the said binder, the mixture is pressed to form a compact body, the compact body is baked in the absence of air and the baked body is heat treated to a temperature in excess of that at which baking is effected.

3,309,434

PROCESS FOR THE FABRICATION OF BODIES FORMED BY DISPERSION OF REFRACTORY MATERIAL WITHIN A PYROCARBON MATRIX WHICH IS IMPERVIOUS TO GASES

Pierre Blum and Louis Bochirol, Grenoble, and Claude Moreau, Seyssinet-Pariset, France, assignors to Commissariat a l'Energie Atomique, Paris, France
No Drawing. Filed Oct. 6, 1964, Ser. No. 401,986
Claims priority, application France, Oct. 17, 1963, 950,932; Aug. 14, 1964, 985,295
6 Claims. (Cl. 264—.5)

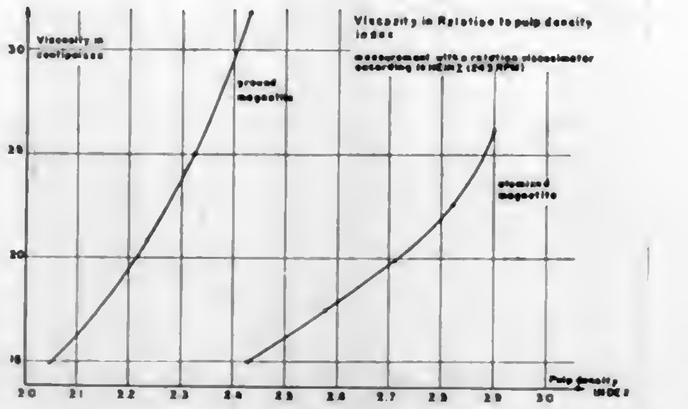
1. In a process for the fabrication of an article formed by dispersion of a refractory material within a carbonaceous matrix which is impervious to gases, the stages which consist in mixing with a powder containing said refractory material and having a particle size which is preferably smaller than 400μ at least one binder which is chosen from the group consisting of polysaccharides, gums, mucilages, starches and alginates which are dispersed in water to form a paste, pressing said paste into a compact cohesive article, removing the water, and then impregnating and sealing said compact with carbon and forming said matrix by maintaining said article in a gaseous hydrocarbon atmosphere at a temperature within the range of 800 to 1,000° C.

3,309,435

PROCESS FOR THE MANUFACTURE OF ROUNDED POWDERED MAGNETITE PARTICLES

Klaus Feldmann, Hermulheim, near Cologne, Heinz Harnisch, Lovenich, near Cologne, Joachim Kandler, Bruhl, near Cologne, and Wilfried Gerhardt, Knapsack, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
Filed Nov. 17, 1964, Ser. No. 411,927
Claims priority, application Germany, Nov. 18, 1963, K 51,396
6 Claims. (Cl. 264—12)

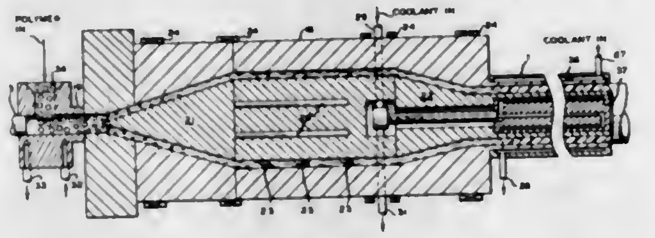
1. A process for the manufacture of smooth rounded powdered magnetite particles which comprises spraying and atomizing molten magnetite having a temperature ranging from about 1200 to 1800° C. under a pressure ranging from about 2 to 13 atmospheres using a substance selected from the group consisting of water, steam, air and nitrogen as the atomizing agent.



3,309,436

EXTRUSION METHOD

Olaf E. Larsen, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,242
3 Claims. (Cl. 264—25)



1. A method of producing an article of indefinite length from a thermoplastic material comprising the steps of:

introducing a thermoplastic material in particulate form into a chamber having an outlet in the form of a die;

applying impulse forces to said thermoplastic material in particulate form to plasticize a portion thereof to form a partially plasticized mass and to transmit forces through said partially plasticized mass downstream in said chamber;

moving the partially plasticized mass through said chamber by means of said impulse forces to form a substantially totally plasticized mass of thermoplastic material, a substantial portion of the heat required to complete plastification being obtained from said impulse forces; and

forcing the substantially totally plasticized mass of thermoplastic material through said chamber and the outlet thereof, wherein the mass solidifies, in a continuous manner by said impulse forces applied to said material in particulate form to produce said article of indefinite length.

3,309,437

METHOD OF PRODUCING BODIES FROM RAW PETROLEUM COKE

John P. Harnett, Chicago, Ill., assignor to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 28, 1961, Ser. No. 134,154
5 Claims. (Cl. 264—29)

5. A process for manufacturing a graphitized carbon body which comprises

(1) placing a particulate starting material consisting essentially of raw petroleum coke into a container which is adapted to be subjected to baking conditions and which is also adapted to form the coke placed therein into a mass of desired configuration for subsequent utilization,

(2) heating said container under substantially non-oxidizing conditions to a temperature exceeding 600° C., and

(3) further subjecting the formed and baked mass, under substantially non-oxidizing conditions, to graphitizing temperatures between about 2000° C. and about 3000° C.,

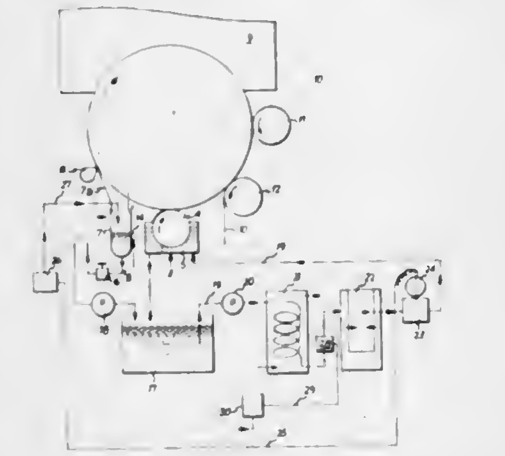
the entire baking process being carried out with substantially no extraneous binder or plasticizer, and without substantial mechanical pressure,

the said starting raw petroleum coke having a volatile content in the range of about 8% to about 25% by weight, and being further characterized by forming a hard, strong, not easily abraded agglomerated coke when heated under substantially non-oxidizing conditions, to about 950° C.

3,309,438

METHOD AND MEANS FOR CONTROLLING THE CONSISTENCY OF CASTING COMPOSITIONS DURING CASTING

Frank D. Bergstein, Wyoming, and Alfred B. Kleingers, Jr., and Leonard Back, Middletown, Ohio, assignors to Bergstein Packaging Trust, Middletown, Ohio, a corporation of Ohio
Filed Feb. 14, 1966, Ser. No. 526,993
8 Claims. (Cl. 264—37)



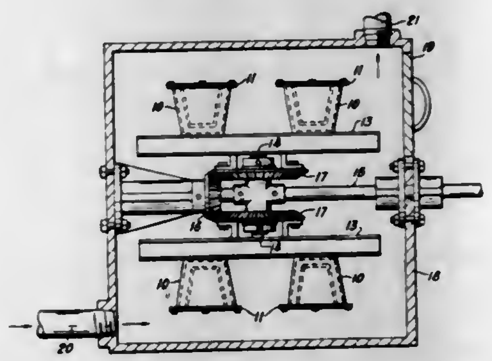
1. A method for controlling the consistency of a mineral coating composition during a casting operation wherein the mineral coating composition is applied to a heated casting surface and the applied coating doctored to a predetermined thickness, and wherein the mineral coating composition comprises an aqueous slurry containing from 70–90 parts mineral pigment and from 30–10 parts adhesive binder and has a solids content of from 50–65 percent, which method comprises collecting the excess mineral coating composition doctored from the casting surface, recirculating the said collected coating composition and, as an incident of such recirculation, removing foam and entrained air bubbles therefrom, cooling the coating composition as it is being recirculated to maintain its temperature between about 70 to 100° F., and selectively adding sufficient liquid thereto as required to maintain the viscosity of the coating composition from between 100 and 300 centipoise seconds.

4. In a system for circulating an aqueous casting composition used in conjunction with a casting operation wherein the aqueous casting composition is applied to a heated casting surface by means of an applicator and wherein an air knife is employed to doctor excess coating composition from the casting surface, a supply tank for the casting composition, collection means positioned to collect excess coating composition doctored from said casting surface and deliver the same to said supply tank, said collection means including a blow-off pan and means operative to dissipate foam and entrained air bubbles in the collected casting composition, a heat exchanger, a first conduit connecting the inlet side of said heat exchanger to said supply tank, a second conduit connecting the outlet side of said heat exchanger to said applicator, a temperature controller in said second conduit, a control valve for introducing a fluid coolant into said heat exchanger, said control valve being operatively connected to said temperature controller so as to regulate the flow of coolant through said heat exchanger in accordance with the temperature of the coating composition as it is delivered to said applicator, a viscosity probe interposed in said second conduit, valve means for introducing a liquid into said blow-off pan for delivery to said supply tank along with the casting composition doctored from said casting surface, and means operatively connecting said viscosity probe to said last named valve means, whereby the addition of liquid into the system is controlled in accordance with the viscosity of the coating composition being delivered to said applicator.

3,309,439

METHOD OF PRODUCING AN EXPANDED POLYSTYRENE FOAM HAVING A DENSE SURFACE

Richard A. Nonweiler, Oshkosh, Wis., assignor to Lakeside Plastics Corporation, Oshkosh, Wis., a corporation of Wisconsin
Filed Nov. 6, 1964, Ser. No. 409,545
5 Claims. (Cl. 264—45)



1. A method of manufacturing an expanded polystyrene foam product comprising:

charging a free-flowing molding composition into a casting mold having heat-conducting walls, with said composition comprising:

expandable polystyrene beads,

0.33–3 parts by weight, per part beads, of a non-expandable thermoplastic resin powder, and

3–40 percent by weight, based on the weight of beads, of retained water in the form of a hydrate containing at least 25 percent by weight chemically bound water,

moving the mold in a source of heat to cause movement of the denser non-expandable thermoplastic resin to a position against the mold walls and fusion thereagainst in the form of an external coating while causing expansion of the polystyrene beads and fusion of the latter together and to said coating.

3,309,440

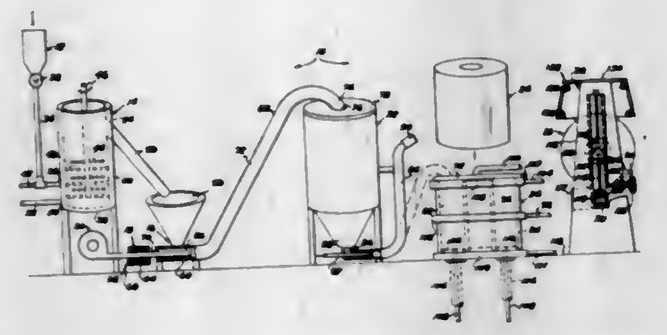
PROCESS OF PRODUCING FLEXIBLE FOAM POLYSTYRENE PLASTIC SHEETING

Gerhard Kracht, Allen Park, Mich., assignor to Swedish Crucible Steel Company, Detroit, Mich., a corporation of Michigan
Filed Feb. 8, 1963, Ser. No. 257,224
14 Claims. (Cl. 264—53)

1. A process of producing flexible resilient foam polystyrene plastic material, comprising

pre-expanding granules of expansible styrene polymer plastic material containing an expanding agent by applying steam thereto within a vertically-unconfined pre-expansion space at an elevated temperature substantially higher than 212° F. into particles larger than said granules and of much lower density than said granules yet possessing further expansibility,

applying to the thus pre-expanded particles a substantially dry heat at a drying temperature of 100° F. to 300° F. whereby to remove condensed steam from said particles and cause air to enter therein while also preventing condensation of the expanding agent therein,



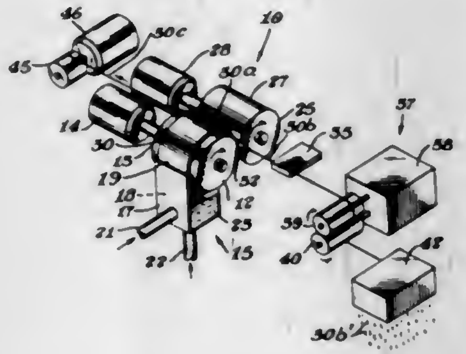
further expanding and molding the thus pre-expanded heated particles in a closed molding chamber at a pressure higher than atmospheric pressure and at a temperature higher than 212° F. into a molded foam plastic body of predetermined configuration,

removing the thus molded foam plastic body from the molding chamber while said body remains at a hot temperature of 100° F. to 200° F.,

and severing foam plastic sheeting from said body while said body remains at said hot temperature of 100° F. to 200° F.

3,309,441
PROCESSING OF POLYMERS AND APPARATUS THEREFOR

Casimir A. Burczyk and Douglas S. Chisholm, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 3, 1965, Ser. No. 511,368
16 Claims. (Cl. 264—85)



1. A method for fabricating powdered, heat-sensitive thermoplastic resinous material comprising

applying a powdered, heat-sensitive thermoplastic resinous material to a first heated rotating configuration,

maintaining a synthetic resinous material on the surface of the rotating configuration for a sufficient period to render it thermoplastic,

rotating a second configuration adjacent the first configuration in a like direction;

causing the heat plastified resinous material to form a rolling bank in a space defined between the first and second rotating configurations, and

removing the heat plastified resinous material in a direction away from the rolling bank and generally parallel to the surface of the configurations, the material being in the form of at least one continuous strand.

11. An apparatus for the processing of heat sensitive particulate synthetic resinous material comprising in cooperative combination

a first drum,

a second drum,

a particulate resin supply means,

a strand takeaway means;

the first and second drums being rotatably mounted and having their axes of rotation generally parallel; each of the drums having an external surface of rotation, the surfaces of the drums being disposed is closely spaced adjacent relationship to each other,

the resin supply means being so constructed and arranged so as to supply particulate resin to the surface of the first drum,

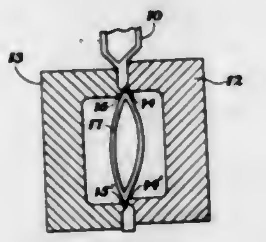
means to heat the first drum to a temperature sufficient to heat plastify a particulate resin,

means to rotate the first drum and the second drum in like directions about their axes, and

means to remove a continuous strandular article from a space defined by the surface of the first drum and the second drum, the means adapted to remove a strandular article in a direction generally parallel to the axes of rotation and the adjacent surfaces of the first and second drums while maintaining the longitudinal axis of the article generally parallel to the axes of the drums.

3,309,442
BLOW MOLDING PROCESS

Charles H. Stanley, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 17, 1963, Ser. No. 295,637
5 Claims. (Cl. 264—98)



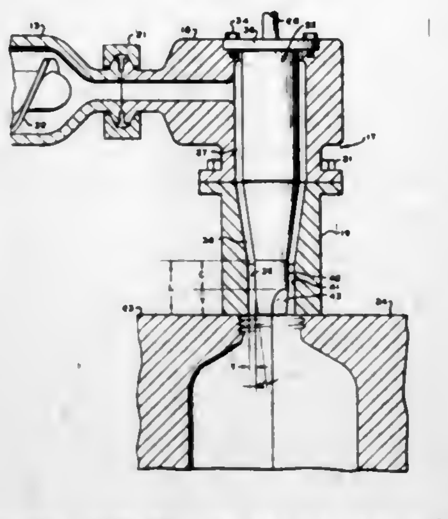
1. A process for producing blow-molded hollow articles comprising extruding a parison of softened plastic material between an open mold having at least two complementary sections, closing the mold sections in a misaligned relationship, shearing an embryonic article from the parison by properly aligning the complementary mold sections, and expanding the embryonic article into a finished article by injecting a fluid substance therein.

3,309,443
PLASTIC MOLDING

John N. Scott, Jr., and Donald L. Peters, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,430
7 Claims. (Cl. 264—98)

1. A method for blow-molding an object having a non-circular cross-section with substantially uniform wall thickness which comprises the steps of:

extruding a parison having non-uniform wall thickness, each relatively thick portion of said parison corresponding with a locus of above average elongation during molding, by forming a moldable plastic material into a circular first cross-section having substantially uniform wall thickness by forming into a die and continuing forming said material through said die while gradually enlarging the first cross-section

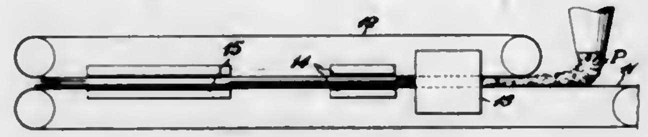


into a second cross-section having non-uniform wall thickness, and extruding said material from said die in said second cross-section; and

forming said object by molding said parison by blowing in a mold having said non-circular cross-section.

3,309,444
METHOD OF PRODUCING PARTICLE BOARD

George Berthold Edward Schneler, The Old College, Tideswell, near Buxton, England
Filed May 31, 1963, Ser. No. 284,698
Claims priority, application Great Britain, June 7, 1962, 22,036/62
10 Claims. (Cl. 264—109)



1. A method of producing a substantially rigid product from a preparation of substantially dry fibrous material in divided form having thermoplastic material dispersed therethrough and also having thermosetting material curable by heat, which method comprises the steps of shaping a quantity of the preparation to its desired form whilst being heated and then cooled, the heat being applied so that some curing of the thermosetting material takes place at least at the surface regions of the article before solidification of the thermoplastic material commences.

3,309,445
METHOD OF MOLDING AN ELONGATED POWDERED MATERIAL COMPOSITE COMPACT

John Haller, 18500 Sheldon Road, Northville, Mich. 48167
Original application Oct. 12, 1961, Ser. No. 144,798, now Patent No. 3,200,442, dated Aug. 17, 1965. Divided and this application Sept. 29, 1964, Ser. No. 399,978
3 Claims. (Cl. 264—111)

1. A method of molding an elongated powdered material composite compact, comprising

molding from powdered material a plurality of relatively short compacts,

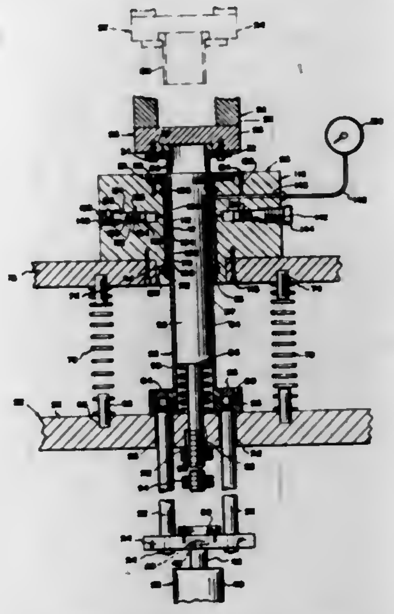
confining the said short compacts end-to-end in a mold cavity,

forming a composite compact by applying molding pressure to the thus-confined short compacts during such confinement to force the said short compacts into end-to-end connection with one another,

applying greater pressure to a portion of the composite compact remote from its outer ends that at said outer ends,

terminating the application of said molding pressure to said confined composite compact,

widening the mold cavity in the vicinity of said remote portion in a continuous zone around the entire cir-

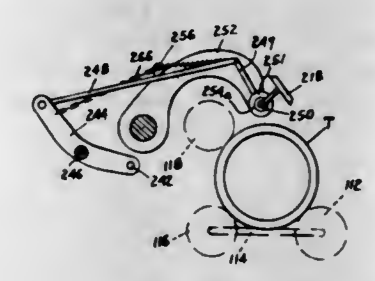


cumference of the mold cavity following such termination of said molding pressure and consequently reducing the frictional engagement of said remote portion with the walls of the mold cavity prior to ejection of the composite compact from the mold cavity,

and ejecting the composite compact from the mold cavity while the mold cavity is so widened.

3,309,446
METHOD FOR PRODUCING AND HANDLING ELONGATED TUBULAR ITEMS

Ray E. Diller and Carl Steiner, Orrville, Ohio, assignors to Orrville Tile Company, Orrville, Ohio, a corporation of Ohio
Original application Sept. 10, 1962, Ser. No. 222,722, now Patent No. 3,242,548, dated Mar. 29, 1966. Divided and this application May 27, 1965, Ser. No. 474,532
10 Claims. (Cl. 264—150)



1. A method of producing drain tile comprising,

(a) moving a rotary cutter with a continuous moving tubular extrusion of clay material and as a unit and during such movement,

(b) rotating the cutter about its axial center of rotation which extends in the same direction as the lengthwise axis of said continuous tubular extrusion to sever a predetermined length of clay material from said continuous extrusion,

(c) providing at least three power driven rotatable rounder rolls wherein the axes of rotation of said rolls are disposed in parallel to the axis of said predetermined length of material,

(d) rounding said predetermined length of material into symmetrical form by engaging in supporting relation said predetermined length with said rolls at three circumferentially spaced locations on said predetermined lengths perimeter and rotating said rolls to cause rotation of said predetermined length in generally horizontal condition about its lengthwise axis while maintaining the last mentioned axis substantially stationary against sidewise movement during said rounding,

(e) cutting said predetermined length into a plurality of shorter length sections, and

(f) stacking said shorter length sections in superimposed condition on a receiving platform.

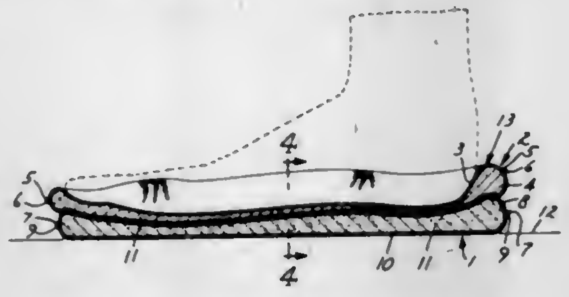
3,309,447

METHOD FOR MAKING FOOT SUPPORTS

Earle J. Wegley, Minneapolis, Minn., assignor of one-half to James E. Wegley, Golden Valley, Minn.

Filed Feb. 17, 1964, Ser. No. 345,185

3 Claims. (Cl. 264—223)



1. A method of making a foot support, said method comprising:

(a) placing a pair of generally flat flexible bags filled with a plastic hardenable material in generally flat face-to-face relation with one of said bags on top of the other,

(b) taking the impression of the bottom portion of a person's foot in the upper bag to form a female mold with the lower bag acting as a cushion for and being deformed generally with the impressed upper bag,

(c) transferring the impression of said female mold to a foot support of thin generally rigid material formed to the configuration of said female mold.

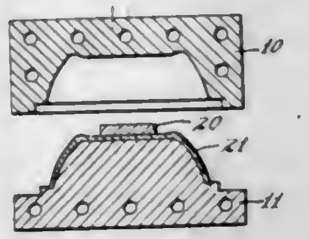
3,309,448

METHOD OF PRODUCING TWO TONE DISHES AND THE LIKE

Paul K. Schilling, St. Paul, Minn., assignor to Plastics Inc., St. Paul, Minn., a corporation of Minnesota

Filed Oct. 8, 1962, Ser. No. 228,875

3 Claims. (Cl. 264—245)



1. A method of forming two-toned thermosetting articles of concavo-convex form having a base portion and an encircling concave wall terminating in a marginal lip, by the use of a mold including a male die and a female die providing, when closed, a mold cavity therebetween, the female die having a base area and an encircling peripheral concave wall surface having a cross-sectional area normal to the vertical axis which continually increases from the base area toward the end of the female die, and the wall surface, on a section through the vertical axis of the female mold, curving toward parallel relation with the vertical mold axis toward the end of the female mold, the method including the steps of:

placing a first amount of thermosetting resin power of one color between the mold dies, the amount of powder being sufficient to fill the mold cavity,

compressing the first amount of powder between the dies, filling the mold cavity under heat and pressure for a time sufficient to produce a formed article having a surface hardness sufficient to withstand a second casting operation with additional thermosetting resin powder but which time is insufficient to set the resin,

opening the mold cavity,

overfilling the mold cavity by adding additional thermosetting resin powder of a color contrasting with the first-mentioned powder and in an amount sufficient to completely cover the convex surface of the formed article but substantially less than said first amount of powder used to produce the formed article,

closing the mold to bring the surfaces of the molded article wall and the female die closer together adjacent the lip of the formed article than adjacent the base portion of the formed article, thereby flowing a layer of plastic over the surface of the formed article which is relatively thick at the base portion of the formed article and which is relatively thin at the lip end of the formed article.

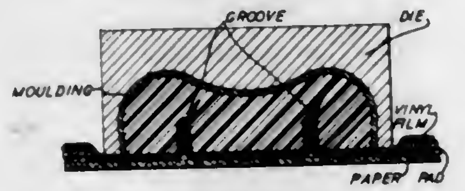
3,309,449

METHOD OF MOLDING A GROOVED PLASTIC STRIP

Kelton E. Jansen and James K. Pope, Mount Clemens, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Aug. 19, 1963, Ser. No. 302,971

4 Claims. (Cl. 264—248)



1. The process of securing a longitudinally grooved plastic strip to a supporting substrate comprising inserting the longitudinally grooved plastic strip into a complementary impression in a die with a portion of the longitudinally grooved plastic strip extending beyond the plane of the die, pressing the longitudinally grooved face of the plastic strip against the substrate by means of the die and applying heat to the longitudinally grooved plastic strip to cause a portion of the plastic strip to soften and flow transversely inwardly into the longitudinal grooves and to secure the plastic strip to the substrate.

3,309,450

METHOD OF LAMINATING REINFORCED PLASTICS

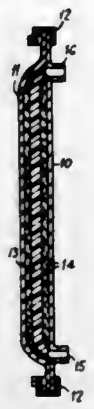
William Rodgers, 15 Sefton Ave., Clayfield, Brisbane, Australia

Filed July 2, 1962, Ser. No. 206,590

Claims priority, application Great Britain, July 5, 1961, 24,381/61

1 Claim. (Cl. 264—257)

A method of manufacturing a synthetic resin molding forming a heat insulating panel or wall structure, which comprises the steps of placing in a mold a core layer of heat insulating material having grooves along the opposite surfaces thereof and two layers of reinforcing fibrous material disposed against said surfaces respectively, said heat insulating material being of closed cell structure and relatively non-porous so as to provide greater resistance to resin flow therethrough than said layers of fibrous material do, introducing synthetic resin in liquid form into the mold and causing the said liquid resin to flow along said grooves and thereby to impregnate said layers of reinforcing fibrous material, and allowing the resin to set sufficiently for the molding to be removed from the mold.



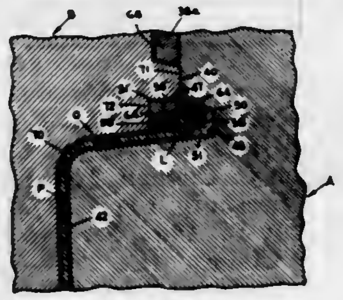
3,309,451

LUGGAGE MANUFACTURE

Samuel J. Holtzman, 8201 Symphony Drive, Baltimore, Md. 21208

Filed Nov. 1, 1963, Ser. No. 320,636

11 Claims. (Cl. 264—258)



5. A method of making a textile fabric lined and textile fabric outer surface covered concavely shaped molded shell for luggage or the like comprising providing a mold assembly having a cavity to furnish the molded shell when the mold is closed, providing a preformed textile fabric conforming substantially in shape and dimensions to the inner side of the finished molded shell, positioning the preformed textile fabric in the mold and maintaining the fabric against the mold member of the assembly which furnishes the inner side of the finished shell, providing a preformed textile fabric conforming substantially in shape and dimensions to the outer side of the finished molded shell, positioning the preformed textile fabric in the mold and maintaining the fabric against the mold member of the assembly which furnishes the outer side of the finished shell, closing the mold, injecting a heated thermoplastic resin material into the closed mold through edge gates between said fabrics, the mold being maintained at a temperature substantially less than the melting point of the plastic material injected into the mold, whereby the preformed textile fabrics are directly bonded to the plastic material of the shell by the plastic material itself, the adhesion of each fabric to the plastic material being confined to the surface of the fabric adjoining the molded plastic material, the exposed surface of the fabrics having the texture and appearance of textile fabrics.

3,309,452

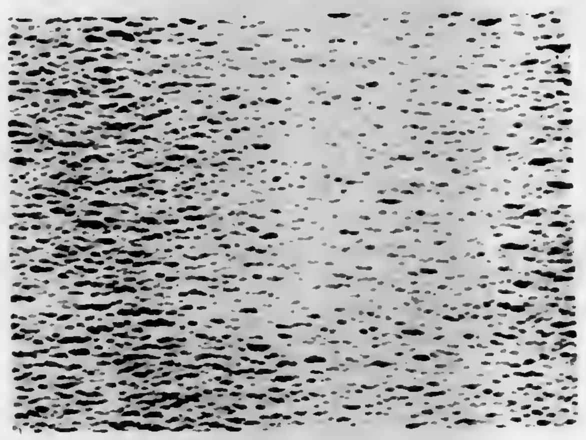
THERMOPLASTIC FILM AND ITS PROCESS OF MANUFACTURE

Hirosuke Yumoto, Kazuya Harada, and Masaaki Itoga, Shizuoka-ken, and Koichi Kato, Shiga-ken, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Sept. 3, 1963, Ser. No. 306,387

Claims priority, application Japan, Sept. 11, 1962, 37/38,990

5 Claims. (Cl. 264—284)



1. In the process for manufacturing thermoplastic film which has been stretched uniaxially in one direction, the improvement in further stretching the film in the perpendicular direction to said one direction which comprises radiantly heating the interior of said film to the orientation temperature while maintaining at least one surface of the film at a temperature less than the orientation temperature of said film.

ELECTRICAL

3,309,453

TONE SUSTAINING SYSTEM FOR ELECTRIC MUSICAL INSTRUMENT

Donald M. Park, Raleigh, N.C., assignor to Park-Baker Electronic Development Corporation, Raleigh, N.C., a corporation of North Carolina

Filed June 15, 1964, Ser. No. 375,095

1 Claim. (Cl. 84—1.13)

In an electric organ, a tone circuit comprised of

(a) a direct current voltage source;

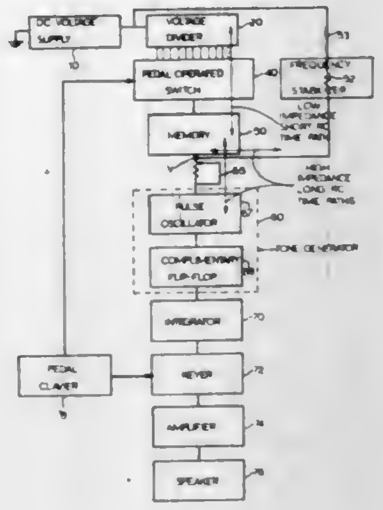
(b) a normally operating tone generator having a voltage responsive pulse oscillator connected to and driven by a steady state voltage obtained from said source;

(c) a voltage divider connected to said source;

(d) a keyer connected to the output of said tone generator;

(e) a keyboard having manually operated played control members operatively connected to said divider and said keyer, each said control member being adapted to open said keyer and connect a particular voltage point on said divider with said oscillator whereby to drive said oscillator with said particular voltage obtained from said divider thereby causing a tone of frequency corresponding to said particular voltage to pass said keyer;

(f) circuit means providing a high impedance in the path between said source and oscillator and a low impedance in the path between said divider and oscillator and including a memory connected between said divider and oscillator, said memory being operative when a said control member is closed to rapidly rise or fall from said steady state voltage to said particular voltage and when the same said control member is subsequently opened to hold the said particular voltage so obtained substantially constant while said particular tone decays thereby sustaining the frequency of said particular tone during said decay; and



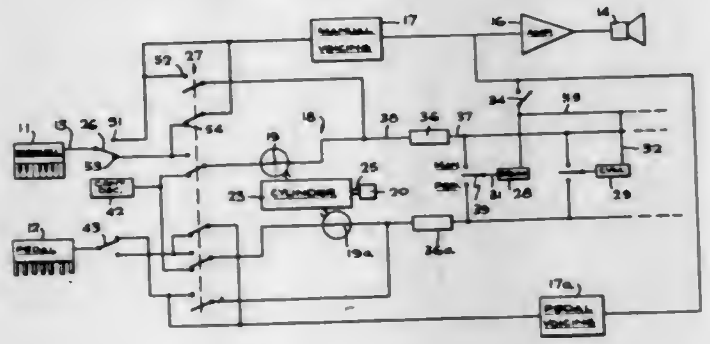
(g) including a feedback circuit between said oscillator and divider and so connected as to provide on one side of said oscillator a voltage which varies as the source voltage varies whereby to maintain a long term frequency stability.

3,309,454
ELECTRICAL MUSICAL INSTRUMENT AUTOMATICALLY PRODUCING SELECTED RHYTHMS

Stanley Cutler, Van Nuys, Clyde L. Tichenor, Sepulveda, and Leroy J. Malmsten, Santa Monica, Calif., assignors to Warwick Electronics Inc., Sepulveda, Calif., a corporation of California

Filed July 2, 1964, Ser. No. 379,854

18 Claims. (Cl. 84—1.18)



1. In an electric music system having tone signal means, electro-acoustic transducing means, and circuit means connecting said signal means to said transducing means, the combination of:

light sensitive electric means interposed in said circuit means,

light means directed upon said light sensitive electric means,

modulation means comprising at least one group of aperiodic light intensity varying means interposed in the light path between said light sensitive electric means and said light means,

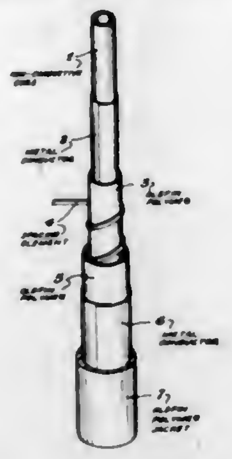
and means for cyclically and repetitively moving said modulation means with respect to said light path to iterate and reiterate aperiodic modulation of tone signals passing from said tone signal means to said transducing means.

3,309,455
COAXIAL CABLE WITH INSULATING CONDUCTOR SUPPORTING LAYERS BONDED TO THE CONDUCTORS

Raymond C. Mildner, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Sept. 21, 1964, Ser. No. 397,707

15 Claims. (Cl. 174—29)



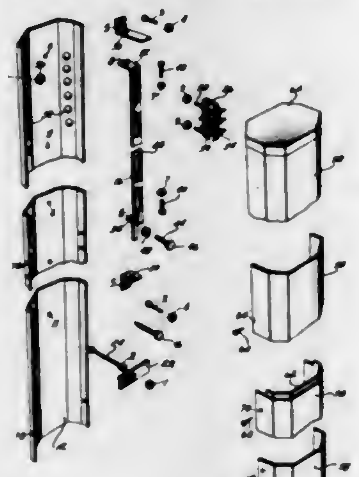
1. An electric cable for high frequency currents composed of concentric cylindrical elements comprising inner and outer cylindrical tubular metal conductors separated by air-spaced annular insulation, at least one of the metal conductors being a thin metal tubular cylinder adhesively bonded with an adhesive thermoplastic material on at least one side to an adjacent close-fitting supporting cylindrical element of non-conducting plastic material.

3,309,456
ABOVE GROUND TERMINAL TAP ENCLOSURE FOR SUBTERRANEAN CABLES

Clayton C. Connell, P.O. Box 999, Leesburg, Fla. 32748

Filed July 14, 1964, Ser. No. 382,510

9 Claims. (Cl. 174—38)



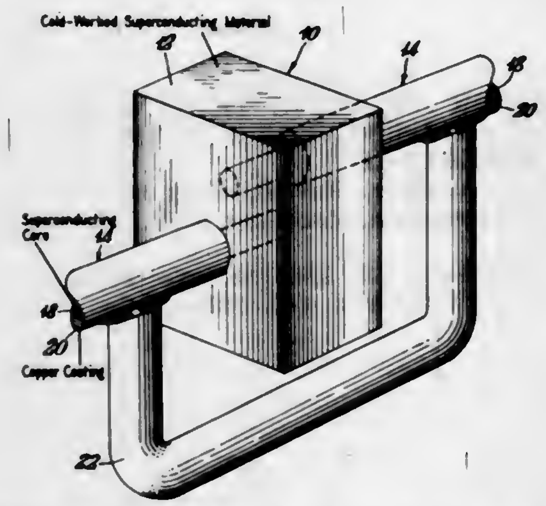
1. An above ground terminal tap enclosure for subterranean cables comprising an elongated channel-shaped member adapted to be mounted on a supporting post, an elongated bracket having a horizontal portion at both of its upper and lower ends with a hole in each horizontal portion, and having not less than one elongated, vertical slot therein and being mounted on the inside surface of the upper portion of the said channel-shaped member by a spaced pair of L-shaped brackets each of which has a hole in the horizontal portion thereof, a pin extending through each of the two aligned holes thus connecting the two L-shaped brackets to the elongated, vertical bracket for pivotal movement about a vertical axis, at least one terminal block of insulative material mounted on said bracket which block has terminal contacts for connecting underground cables to a service line, and a removable cover for said channel-shaped member for telescopically engaging the same, said channel-shaped member having angulated surfaces with holes in an angulated surface thereof for receiving service lines.

3,309,457
JOINT FOR COPPER-COATED SUPERCONDUCTIVE WIRES

Clare H. Emery, Jr., Tonawanda, and Royal C. Mortensen, Buffalo, N.Y., assignors to Union Carbide Corporation, a corporation of New York

Filed Apr. 8, 1964, Ser. No. 358,306

1 Claim. (Cl. 174—94)



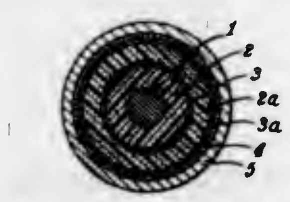
A superconducting joint for joining ends of superconducting wires which comprises wires of a copper-coated superconducting material having the ends thereof free of said copper coating, a contact member constructed of cold-worked superconducting material and having at least one aperture therein into which the copper coating-free ends of the superconducting wires are positioned, said contact member being compressed sufficiently to lock the superconducting wire ends in place, and a copper shunt electrically connected to and between the copper coating of each wire thereby bypassing said contact member.

3,309,458
COAXIAL CABLE WITH FOAMED RESIN DIELECTRIC BOUND BY A THIN FILM OF SOLID RESIN DIELECTRIC

Masamichi Yoshimura and Akira Nato, both of Tokyo-to, Japan, assignors to Fujikura Densen Kabushiki Kaisha, Tokyo-to, Japan

Filed Mar. 1, 1966, Ser. No. 530,983

4 Claims. (Cl. 174—107)



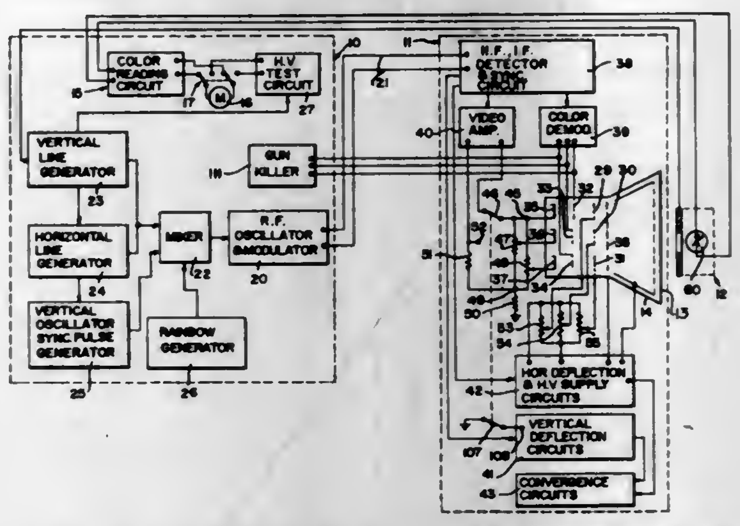
1. A coaxial cable comprising an inner conductor, an insulator circumferentially of said inner conductor, said insulator comprising a brittle foamed synthetic resin and an outer layer of a synthetic resin pliable in comparison with said foamed resin, having a melting point no higher than the melting point of said foamed resin and bonded intimately with said foamed resin, an outer tubular electrical conductor disposed coaxially and circumferentially of said inner conductor, said insulator being disposed internally of said outer conductor and extending coextensively with said inner and outer conductors, and an outer insulating cover circumferentially of said outer conductor.

3,309,459
COLOR TELEVISION SERVICING INSTRUMENT

Donald S. Donigian, 6016 W. Fullerton, Chicago, Ill. 60639

Filed May 20, 1965, Ser. No. 457,413

20 Claims. (Cl. 178—5.4)



1. In an instrument for servicing a color television receiver which includes a kinescope of the type having three electron guns and a masked tri-colored-phosphor screen, means for supplying operating voltages to said guns, means for applying a luminance signal to all of said guns, and means for applying individual chrominance signals to said guns, photocell means arranged for disposition adjacent a portion of said screen, measuring means responsive to the output of said photocell means and arranged for indicating the respective light outputs from said phosphors, and calibration means associated with said measuring means for permitting adjustment of said operating voltages of said guns to obtain predetermined light outputs from the respective phosphors while no chrominance signals are applied to said guns, said predetermined light outputs being such that a black-and-white reproduction is obtained in response to application of a luminance signal alone to said guns.

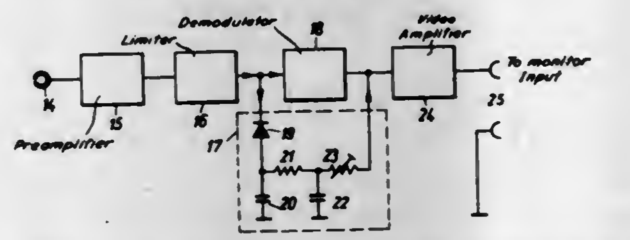
3,309,460
PLAYBACK OF HIGH-FREQUENCY SIGNALS RECORDED ON A MAGNETIC TAPE

Wolfgang Rank, Kronach, Upper Franconia, Germany, assignor to Loewe Opta G.m.b.H., Berlin, Germany, a company of Germany

Filed Nov. 2, 1964, Ser. No. 408,419

Claims priority, application Germany, Nov. 6, 1963, L 46,255

3 Claims. (Cl. 178—6.6)



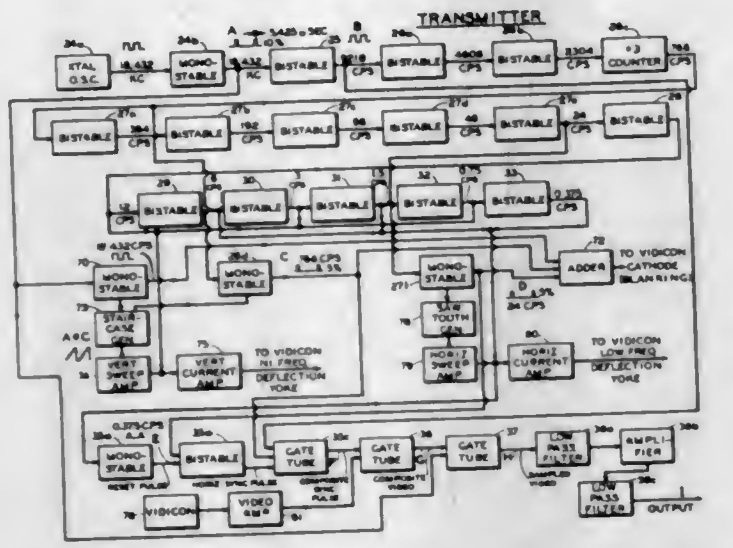
1. A device for reproducing television signals recorded in a frequency-modulated form in parallel tracks obliquely or transversally on a magnetic tape comprising a rotatable mounted reproducing head, a preamplifier, a limiter, a demodulator, and a video amplifier, said reproducing head, said preamplifier, said limiter, said demodulator and said video amplifier being connected in series, the output of said video amplifier being connected with a monitor input, the output and input of said demodulator being connected by a peak-responsive rectifier circuit, generating a compensating D.C. voltage in case of deep fades of said limited FM-television signal, in series with an adjustable resistance.

3,309,461
PSEUDO-RANDOM ELECTRON BEAM SCANNING SYSTEM FOR NARROW BANDWIDTH IMAGE TRANSMISSION

Sid Deutsch, Roslyn Heights, N.Y., assignor, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

Filed Aug. 1, 1962, Ser. No. 214,102

15 Claims. (Cl. 178—6.8)



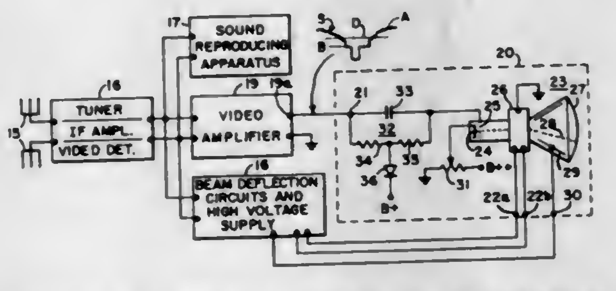
1. In an electron beam scanning system of successive fields comprising substantially equally spaced lines of substantially equally spaced dots, at a spacing between adjacent lines of substantially 2^m deflection units and at a spacing between adjacent dots on the lines of substantially 2^n deflection units (m and n being integers), apparatus for deflecting successive fields such that 2^{m+n} successive fields together provide a dot in each unit deflection area between the dots in a given field by providing periodic deflections additively in the direction of said lines and in a direction substantially perpendicular thereto, comprising respective means for providing at least one deflection of each of the amplitudes 1, 2, 4, . . . 2^{m-1} deflection units in the direction substantially perpendicular to the lines, and respective means for providing at least one deflection of each of the amplitudes 1, 2, 4, . . 2^{n-1} deflection units in the direction of the lines, at respective harmonically related frequencies such that the combined deflections comprise at least one deflection of each successive field, of every second field, of every fourth field, . . . of every 2^{m+n-1}th field.

3,309,462
TELEVISION RECEIVER CIRCUIT MEANS FOR STABILIZING BLACK LEVEL ON SCENES OF LOW AVERAGE BRIGHTNESS AND FOR SUPPRESSING BLACK LEVEL ON HIGH BRIGHTNESS SCENES

Bernard D. Loughlin, Huntington, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois

Continuation of application Ser. No. 215,968, Aug. 9, 1962. This application Mar. 28, 1966, Ser. No. 538,099

9 Claims. (Cl. 178—7.5)


SOUND REPRODUCING APPARATUS
TUNER IF AMPL. VIDEO DET.
VIDEO AMPLIFIER
BEAM DEFLECTION CIRCUITS AND HIGH VOLTAGE SUPPLY
B+
15
16
17
18
19
20
21
22a
22b
23
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1. An image-reproducing system in a television receiver adapted to receive a television signal including an image-representative signal having alternating-current components representative of variations in instantaneous brightness and a direct-current component representative of average scene brightness which may vary from scene to scene, and having a level intended to correspond to black in the reproduced image, comprising:

means for supplying said image-representative signal;

means, including a cathode-ray tube, for reproducing the image;

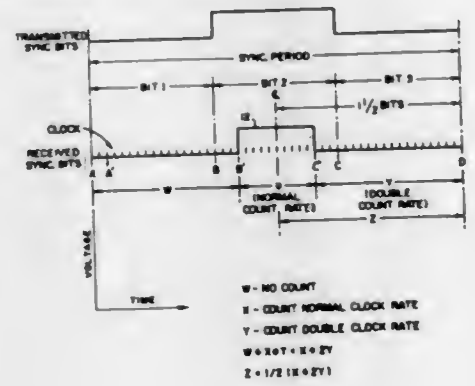
and means for coupling said image signal to said cathode-ray tube and for controlling the grid-to-cathode voltage of said tube in accordance with variations in the average scene brightness of said image-representative signal to stabilize black level in the reproduced image on scenes of low average brightness and to suppress black level in the reproduced image on scenes of high average brightness.

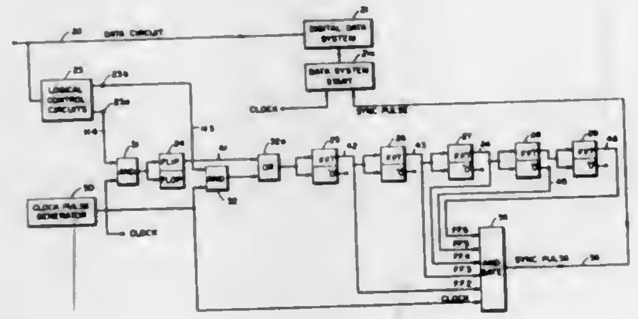
3,309,463
SYSTEM FOR LOCATING THE END OF A SYNC PERIOD BY USING THE SYNC PULSE CENTER AS A REFERENCE

Kurt Roedl, Anahola, Hawaii, assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed Apr. 25, 1963, Ser. No. 275,584

8 Claims. (Cl. 178—69.5)





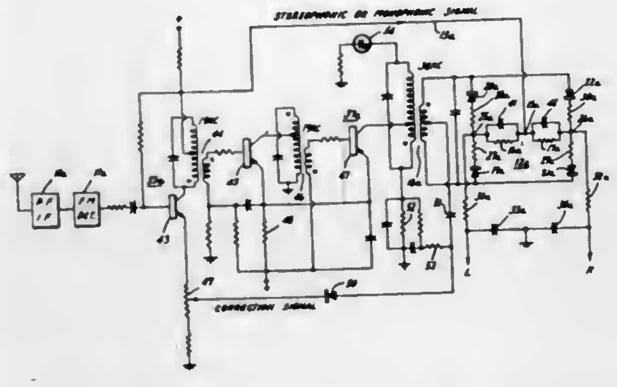
1. The method of generating a sync pulse with the aid of a train of bit signals at least one of which occurs within a sync period, the center of said one bit signal occurring in fixed time relation with respect to the nominal center of said sync period, said method comprising generating clock pulses of fixed repetition rate, then accumulating and counting said pulses at one rate during the interval of said one bit signal, then accumulating and counting said pulse at another rate twice said one rate after the termination of said one bit signal until a predetermined number has been counted, said predetermined number corresponding to the duration in terms of clock pulses of said sync period, and finally gating out said sync pulse when said predetermined number is reached.

3,309,464
STEREOPHONIC RECEIVER HAVING CROSS-TALK COMPENSATION MEANS

John P. Pietrolewicz, Pennsauken, N.J., and Abram Hopengarten, Lafayette Hills, Pa., assignors to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Jan. 3, 1964, Ser. No. 335,650

14 Claims. (Cl. 179—15)



1. In a radio receiver adapted to receive a composite stereophonic signal including a phase reference signal and stereophonic signals capable of being derived by sampling of said composite signal under control of said phase reference signal, a sampling bridge circuit, means for supplying said composite signal to said circuit, means responsive to said phase reference signal and including a transformer having a center-tapped secondary winding connected to said circuit for supplying sampling voltages thereto, stereo output channels extending from said circuit in which there tends to be undesired cross-talk, means for deriving a cross-talk correction signal from said composite signal, and means for supplying said correction signal to the center-tap of said winding and thence to said circuit to cancel the undesired cross-talk.

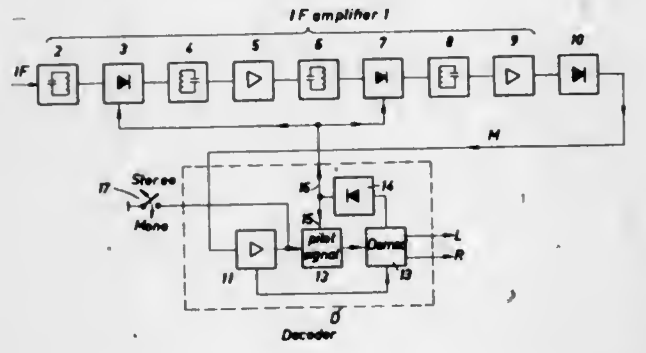
3,309,465
STEREOPHONIC BROADCAST RECEIVER CIRCUIT ARRANGEMENT FOR SYSTEMS OPERATING WITH PILOT SIGNALS

Egon Frank, Berlin, Germany, assignor to Loewe Opta G.m.b.H., Berlin, Germany, a company of Germany

Filed Mar. 12, 1965, Ser. No. 439,485

Claims priority, application Germany, Mar. 21, 1964, L 47,360

4 Claims. (Cl. 179—15)



1. FM multiplex stereophonic receiver for systems operating with pilot signals comprising an IF-amplifier, electronic coupling elements followed by filter circuits in said IF-amplifier, a decoder connected in series to said IF-amplifier, means for producing automatically a control voltage dependent on the presence of a pilot signal within said decoder and for applying said control voltage to said electronic coupling elements, said control voltage being adapted to change over the band width of said filter circuits, thus enabling the transmission of a widened frequency band in case of stereo signals.

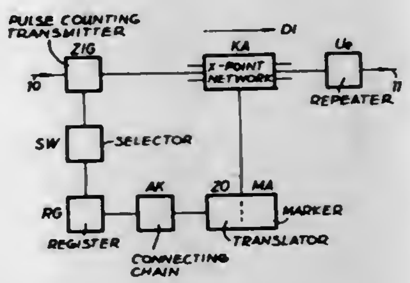
3,309,466
FAST RELEASING MARKER FOR TELEPHONE SWITCHING SYSTEM

Rudolf Fambach, Freiburg, and Nikolaus Lewen, Tamm, Kreis Ludwigsburg, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 5, 1963, Ser. No. 297,993

Claims priority, application Germany, July 21, 1962, St 19,506

3 Claims. (Cl. 179—18)



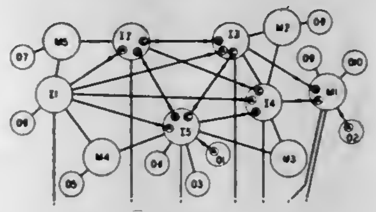
1. A testing circuit for a two-stage cascaded array of crosspoint switching matrices, means comprising a marker and a common control circuit for operating said matrices, means comprising said marker circuit for selecting a path through said matrices, means in said marker responsive to said selection of said path for performing a high-speed test to identify said path and determine whether said path is busy or idle, means for immediately releasing said marker after said test, and means responsive to said high speed test comprising said common control circuit for thereafter conducting a low-speed test of said path to complete ensuing switching functions.

3,309,467
SWITCHING SYSTEM WITH ROUTING CONTROL

John W. Gorgas, Marlboro Township, Monmouth County, N.J., and Eugene D. Masucci, Columbus, Ohio, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 20, 1963, Ser. No. 332,044

9 Claims. (Cl. 179—18)



1. In combination in a communication switching system, a first switching station, a second switching station, signaling routes extending from said switching stations, means at said first station for transmitting over said signaling routes extending from said first station different alternate route signals in addition to call selecting signals, and switching means at said first station responsive to the selection of one of said routes between said stations to control the character of alternate route signals to designate different ones of said alternate routes at said second station with which said selected route between said stations may be interconnected at said second station, said switching means including means for determining particular alternate route signals independently of the availability of said alternate routes at said second station.

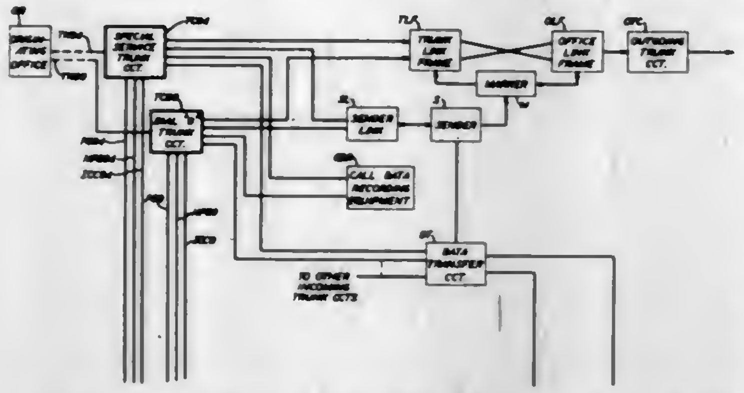
3,309,468

PRIORITY SERVICE CONTROL EQUIPMENT FOR OPERATOR POSITIONS

Norman L. Laefer, Brooklyn, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 23, 1963, Ser. No. 318,355

15 Claims. (Cl. 179—27)



1. In combination, a plurality of operator positions, groups of calling circuits, each one of said circuits having means for initially requesting routine connections to any of said positions upon the receipt of a call and means for subsequently requesting priority connections to any of said positions during said call and after said one circuit has been disconnected from said position, means responsive to the receipt of routine connection requests and priority connection requests from said circuits in each of at least two of said groups for registering said requests, and means activated by said registering means for connecting each of said priority requesting circuits to one of said positions before any of said routine connection requesting circuits.

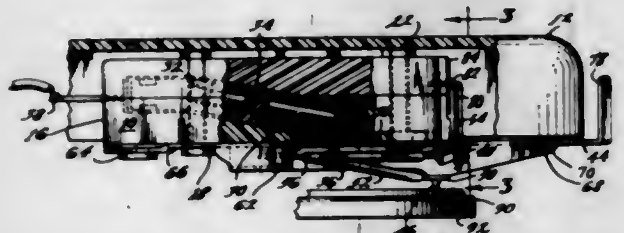
3,309,469

PHONOGRAPH PICKUP

John A. Tourtellot, Merchantville, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Feb. 27, 1958, Ser. No. 717,859

2 Claims. (Cl. 179—100.41)



1. A stereophonic phonograph pickup for use with 45-45 stereophonic phonograph records including support means, an elongated stylus arm carrying a record engaging stylus at one end, and a two-channel discriminating energy-transforming system including a coupling member and two electrostrictive transducer means both having a longitudinal axis, said coupling member including at least two flexurally compliant longitudinally extending elements joined to provide a reentrant central portion at their one ends and having remote portions extending divergently away from said reentrant central portion, the respective divergent portions of said coupling member being disposed in directions normal to each other and at an angle of substantially 45° with respect to the surface of a record, said longitudinally extending elements including their remote portions being disposed in a common plane, each said transducer means having a mounting portion and a driven portion remote from said mounting portion and being responsive to displacement of said driven portion by said coupling member to provide electrical signals, means to support the mounting portion of said transducers on the support means with the longitudinal axes of said transducers extending in parallel relation, means to mount the remote portions of said elements respectively on the driven portions of said transducers so that said common plane is substantially perpendicular to a plane passing through said longitudinal axes, means for mounting the end of said stylus arm remote from said record engaging stylus on said support means with said stylus arm extending generally parallel to said longitudinal axes and with an intermediate portion of said stylus arm operatively engaging said reentrant central portion, said reentrant central portion proportioned so that said stylus arm passes through the intersection of a projection of said longitudinally extending elements.

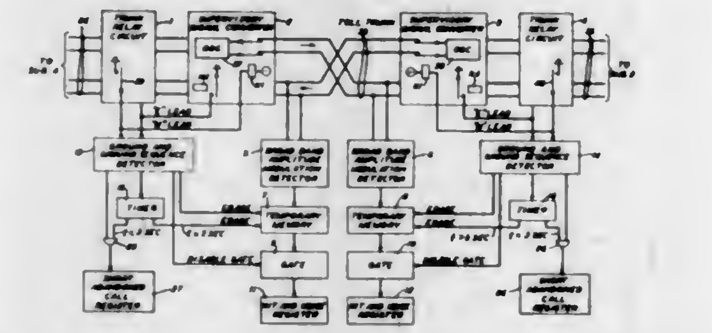
3,309,470

APPARATUS FOR INDICATING DISTURBANCES ON A COMMUNICATION LINE

James H. Mayer, Middletown Township, Monmouth County, and Doren Mitchell, Martinsville, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 14, 1963, Ser. No. 323,707

5 Claims. (Cl. 179—175.3)



1. In a communication system of the type in which an idle channel marking signal has characteristic presence intervals and characteristic absence intervals that alternate for supervisory signaling, said marking signal being continuously absent during subscriber message signaling, an apparatus for indicating channel transmission disturbances, comprising means for detecting changes in said marking signal, means for temporarily storing detected changes that are accompanied by absence of said marking signal, means for erasing said stored changes whenever said accompanying absence together with any alternating presence of said marking signal at least as short as said characteristic presence intervals endures at least as long as an expected minimum duration of said supervisory and said subscriber message signaling, and means for making a permanent record of all of said detected changes that are not erased.

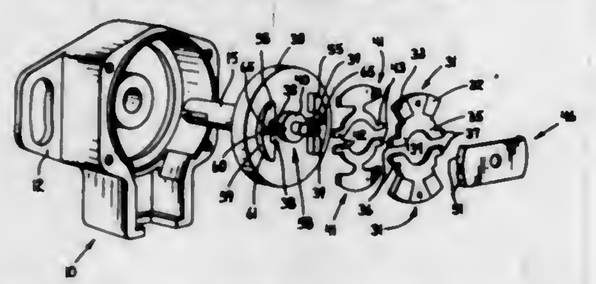
3,309,471

ROTARY SWITCH CONTACT STRUCTURE WITH IMPROVED WASHER FASTENING MEANS

Philip H. Korrell, Marion, Ind., assignor to Appliance Manufacturing Co., Inc., Van Buren, Ind., a corporation of Indiana

Filed May 23, 1966, Ser. No. 551,984

4 Claims. (Cl. 200—11)



1. In a switch including an element formed of insulating material, a pair of electrical contact members mounted on the element, said members each including a flattened metal piece having a pair of spaced legs, said element having recesses in the face thereof which recesses receive the leg ends of the respective members, said recesses in said element and the leg ends therein of one member being spaced from the recesses and the leg ends therein of the other member, the improvement which comprises a resilient washer of insulating material having projections at the periphery thereof which grip said element and retain said washer on said element, said element having indentations therein which extend between the leg ends of one member and the leg ends of the other member, and raised portions formed on said washer and extending into said indentations.

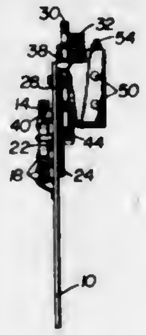
3,309,472

GEARING MECHANISM AND PRINTED CIRCUITBOARD FOR A ROTARY SWITCH

James A. Burns, Jr., 524 Jackson Ave., Elizabeth, N.J. 08527

Filed Mar. 18, 1966, Ser. No. 535,535

6 Claims. (Cl. 200—17)



1. Apparatus for mounting a rotary element, having a plane and an axis of rotation perpendicular to said plane, on a printed circuitboard having a plane and first and second planar faces comprising, in combination:

means for electrically and mechanically mounting said element adjacent said first face of said circuitboard such that the planes of each are substantially parallel, thereby to permit said second face to be dip soldered,

a drive gear positioned adjacent said second face and having a shaft rotatably extending through said circuitboard to rotatably and driveably engage said rotary element, the axis of said shaft coinciding with the axis of said rotary element,

a gear wheel having a gear formed in one face thereof adapted to engage said drive gear,

said gear wheel being positioned over said drive gear whereby the face of said gear wheel retains said drive gear between said circuitboard and said gear wheel,

a retaining bracket having a pin adapted to rotatably mount said gear wheel and additional pins adapted to engage said board, and

means to clamp said bracket and board together.

3,309,473

RACKING MECHANISM FOR DISCONNECTING CIRCUIT BREAKER CONDUCTORS FROM SWITCH BOARD CONDUCTORS

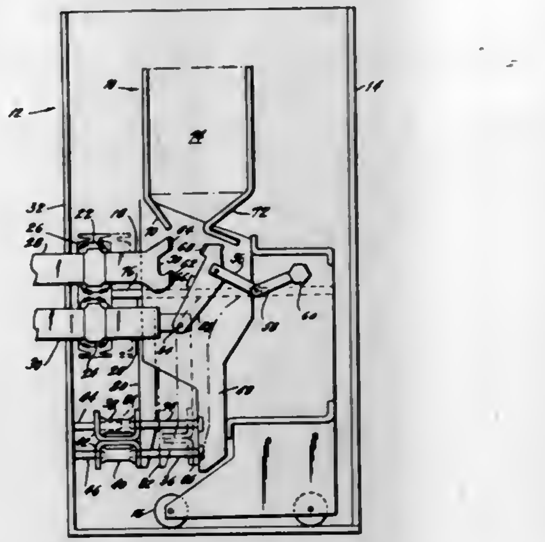
George A. Wilson, Media, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Nov. 24, 1965, Ser. No. 509,580

17 Claims. (Cl. 200—50)

1. In a circuit breaker having a breaker conductor adapted to be electrically connected to an associated external conductor, the improvement comprising means for electrically connecting and disconnecting said breaker conductor and its associated external conductor while maintaining said circuit breaker and breaker conductor motionless relative to said external conductor, said means comprising:

a conductive disconnect contact movable relative to said breaker conductor and said external conductor between a first position in which said disconnect contact electrically connects said breaker conductor and said external conductor, and a second position in which said breaker conductor and said external conductor are electrically isolated; and



racking means secured to said circuit breaker and said disconnect contact for selectively moving said disconnect contact between its first and second position; and

positioning means cooperating with said racking means for automatically stopping and preventing further movement of said disconnect contact when it has reached the exact location of its first or second position.

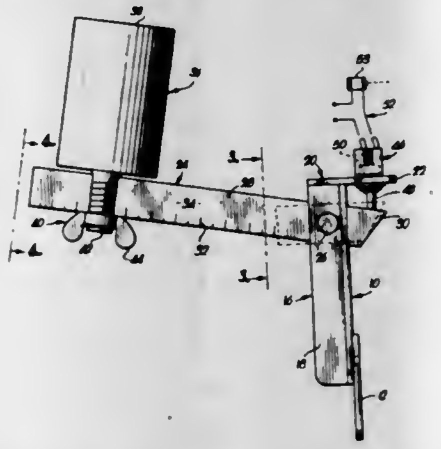
3,309,474

RAINFALL ACTUATED SWITCHING APPARATUS

Elmer G. Heinrich, Goodland, Kans., assignor of one-half to Selby S. Soward, Goodland, Kans.

Filed Jan. 25, 1966, Ser. No. 522,951

6 Claims. (Cl. 200—61.07)



1. A rainfall-actuated switching apparatus comprising:

a bracket;

a lever;

means pivotally mounting said lever on said bracket for swinging of the lever through a vertical plane;

a cup;

readily releasable structure securing said cup to the lever at any one of a number of positions along the length of said lever, each of said positions corresponding to a selective depth of rainfall, the open end of the cup normally being disposed upwardly;

a balancing element connected to said lever to normally yieldably dispose the cup in an upper operating position; and

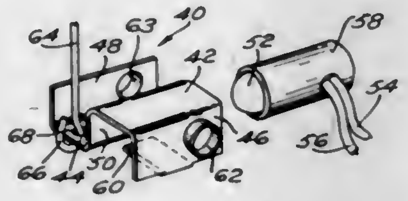
a switch positioned adjacent said lever and actuated thereby when the lever and cup are pivoted against the resistance of said balancing element from the cup's upper operating position to a predetermined lower operating position in response to the weight of rain falling into said cup.

3,309,475
SWITCH CONSTRUCTION FOR USE WITH SAFETY BELTS

Edward J. Butler, Jr., Barrington, R.I., assignor to Electronics Research Corp., Providence, R.I., a corporation of Rhode Island

Filed Oct. 20, 1964, Ser. No. 405,173

4 Claims. (Cl. 200—61.58)



1. In a safety device for use in an automotive vehicle and adapted to be electrically interconnected in the ignition circuit thereof, a safety belt for attachment around an occupant of said vehicle including a pair of flexible portions that are adapted to be interlocked around said occupant, one of said flexible portions being interconnected to a fixed support in said vehicle, a safety switch assembly mounted in said vehicle adjacent to said one flexible portion and including a housing having a pivotally mounted member mounted therein to which a contact element is secured, said contact element being defined by an enclosed cylinder to which terminals are connected, the terminals being interconnected in said ignition circuit, the circuit between said terminals being open when the member in which said contact element is mounted is located in an inoperative position and being closed when said contact element is moved with said member to an operative position, means for interconnecting said member to said one flexible belt portion, and means for retaining said member in the inoperative position when said flexible belt portions are unlocked, said member being responsive to locking of said flexible belt portions together for pivoting against the action of said retainer means and for moving said contact element to the operative position thereof, thereby completing the circuit through said terminals, said pivotally mounted member including a socket portion in which said contact element is received, bearings joined to said member on opposite sides thereof and extending through openings formed in opposite walls of said housing for mounting said member in pivotal relation therein.

3,309,476
QUICK ACTING MAKE-AND-BREAK MICROSWITCH

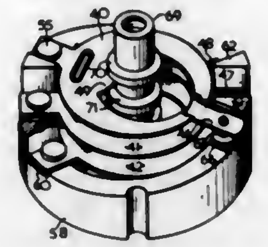
Stephen Domville McKie, 317 Pennant Hills Road, Thornleigh, New South Wales, Australia

Filed Feb. 14, 1964, Ser. No. 344,991

Claims priority, application Australia, Feb. 25, 1963, 27,747/63; Aug. 8, 1963, 34,018/63

4 Claims. (Cl. 200—67)

3. A quick make-and-break microswitch comprising a base, a stressed flexible metal annulus secured to the base at one end of a diameter, a contact on the annulus at the other end of the said diameter, a permanent bending of the metal at the contact end of the diameter out of the plane of the annulus to thereby effectively shorten the circumference of the annulus whereby the annulus takes up a bowed formation, supports for the annulus at spaced points adjacent to the inner circle of the annulus at the secured end of the diameter, a nib projecting internally from the annulus between the said supports, and means applying pressure to the annulus.

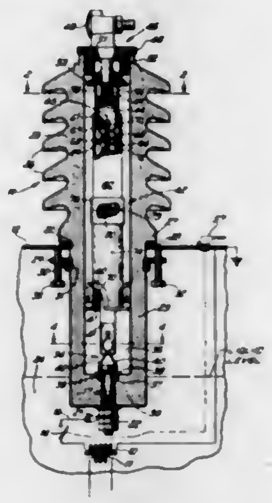


3,309,477
PROTECTIVE MEANS FOR ENCASED ELECTRICAL APPARATUS

Raymond J. Bronikowski, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Nov. 25, 1964, Ser. No. 413,800

5 Claims. (Cl. 200—113)



1. In combination, an encased electrical apparatus having a metallic casing, a tubular insulating bushing extending through an aperture in a wall portion of said casing, a current limiting fuse mounted within the axial opening in said bushing, said fuse including a hollow insulating housing, a fusible element within said housing electrically connected at one end to said apparatus and extending through said aperture and on opposite sides of said wall portion of said casing which wall portion is at ground potential, high dielectric strength granular material within said housing embedding said fusible element, and a conductive coating on said housing in surrounding relationship to said fusible element and electrically connected to one end only of said fusible element and disposed at the point of extension of said fusible element through said wall portion of said casing.

3,309,478
MULTI-POLE ELECTRIC CIRCUIT BREAKER AND FUSE COMBINATION WITH SINGLE BLOWN-FUSE SENSING SOLENOID FOR ALL POLES

George W. Kiesel and Henry E. S. Owen, Unionville, Conn., assignors to General Electric Company, a corporation of New York

Filed Sept. 15, 1965, Ser. No. 487,424

1 Claim. (Cl. 200—114)

A multipole electric circuit breaker and fuse combination comprising:

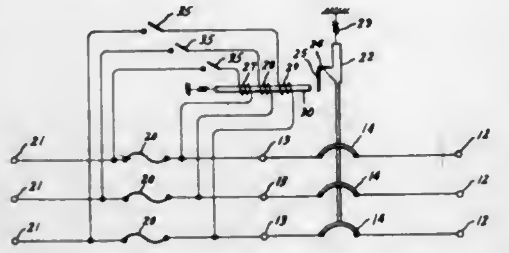
(a) a three-pole electric circuit breaker, said circuit breaker including an insulating base;

(b) three pairs of relatively movable contacts supported on said insulated base;

(c) operating mechanism supported on said insulating base;

(d) means connecting said operating mechanism to said pairs of contacts for moving said contacts between open and closed circuit positions, said operating mechanism including a trip member and means biasing said trip member toward open circuit position and a latch member normally restraining said trip member in closed circuit position;

(e) three electric fuses, each of said fuses being connected electrically in series with one of said pairs of relatively movable contacts;



(f) an electric solenoid supported on said base, said solenoid comprising three separate windings, each of said windings being connected electrically in parallel with one of said fuses respectively;

(g) said solenoid including an actuating plunger disposed to be actuated upon energization of any of said solenoid windings, whereby upon blowing of at least one of said fuses, the corresponding one of said windings is energized, actuating said solenoid plunger and causing release of said latch member and opening movement of all of said contacts; and

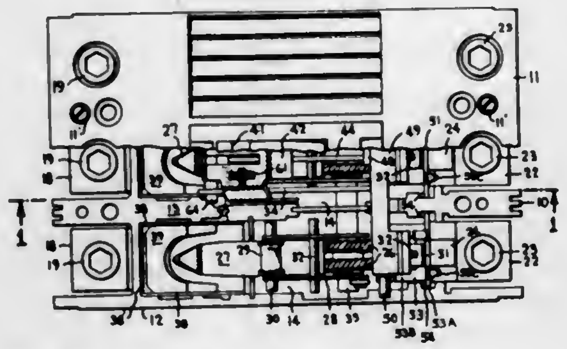
(h) switch means electrically in series with each of said windings of said solenoid whereby said windings may be selectively disconnected, whereby said circuit breaker is maintained in said closed condition despite the blowing of one or more of said fuses.

3,309,479
ELECTRIC CIRCUIT BREAKER OPERATING MECHANISM

Frank H. Murphy, West Hartford, Conn., assignor to General Electric Company, a corporation of New York

Original application June 3, 1964, Ser. No. 372,193, now Patent No. 3,265,833, dated Aug. 9, 1966. Divided and this application Oct. 21, 1965, Ser. No. 510,113

3 Claims. (Cl. 200—116)



1. An electric circuit breaker comprising:

(a) a support;

(b) at least one pair of relatively movable contacts;

(c) means supporting said relatively movable contacts on said support;

(d) contact operating means supported on said support for operating said relatively movable contacts between open and closed circuit positions;

(e) said contact operating means including a cam member having an arcuate cam surface;

(f) means pivotally supporting said cam member on said support;

(g) latch means supported on said support and releasably engaging said cam member and normally restraining said cam member in a first position;

(h) a manually operable member;

(i) means supporting said manually operable member on said support for reciprocal movement between open and closed circuit positions;

(j) said contact operating means also including an elongated contact arm and means supporting said contact arm on said support for reciprocal movement between open and closed circuit positions respectively;

(k) a generally U-shaped member having a bight portion and a pair of opposed side portions terminating in free end portions and means rigidly connecting each of said side portions to said bight portion and preventing substantial independent movement of said side portions;

(l) means pivotally connecting said U-shaped member to said contact arm for pivotal movement about an axis extending adjacent and generally parallel to the bight portion of said U;

(m) a cam follower roller;

(n) means supporting said cam follower roller on said U-shaped member for rotation about an axis extending between said free end portions of said side portions and substantially parallel to said bight portion of said U;

(o) said cam follower roller being in engagement with said cam surface of said cam member and moving reciprocally along said cam surface between first and second positions corresponding to said open and closed circuit positions of said contact arm;

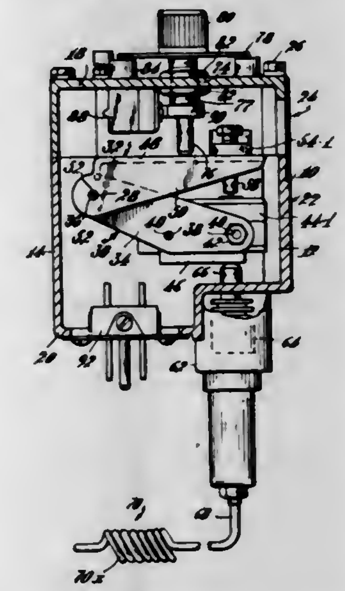
(p) spring means interconnecting said cam follower roller and said manually operable member, said spring means acting on said cam follower roller to urge said cam follower roller into engagement with said cam surface.

3,309,480
REMOTE CONTROL SWITCH WITH CONDITION RESPONSIVE ELEMENT

John S. Machado, Woburn, Mass., assignor to United Electric Controls Company, Watertown, Mass., a corporation of Massachusetts

Filed Apr. 27, 1964, Ser. No. 362,704

11 Claims. (Cl. 200—140)

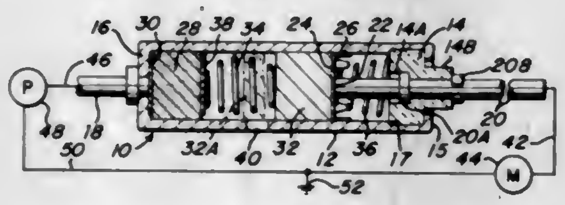


1. A control device comprising a support, a pair of arms pivotally mounted at one end on the support for movement about a common axis relative to the support and to each other, three switches mounted at the distal end of one arm, three actuators mounted at the distal

end of the other arm, said switches and switch-actuators being engageable by relative movement of the arms, an adjustable spindle mounted on the support with an end engaging said other arm, said spindle limiting its movement relative to its pivot, a sensing device including means engaged with said one arm, said means being movable in response to a change in ambient condition, to effect movement of said one arm relative to said other arm, means on the support for adjusting the position of the adjustable spindle to effect actuation of one of the switches in response to a predetermined response of the sensing device, and means on said other arm for adjusting the switch-actuators of the other two switches to effect their operation when the response is less than or greater than said predetermined response.

3,309,481
THERMAL SWITCH WITH THERMALLY COLLAPSIBLE MEMBER

Phillip Edward Merrill, Kettering, Ohio, assignor to Micro Devices Corp., Dayton, Ohio, a corporation of Ohio
Filed Mar. 4, 1965, Ser. No. 437,139
2 Claims. (Cl. 200—142)

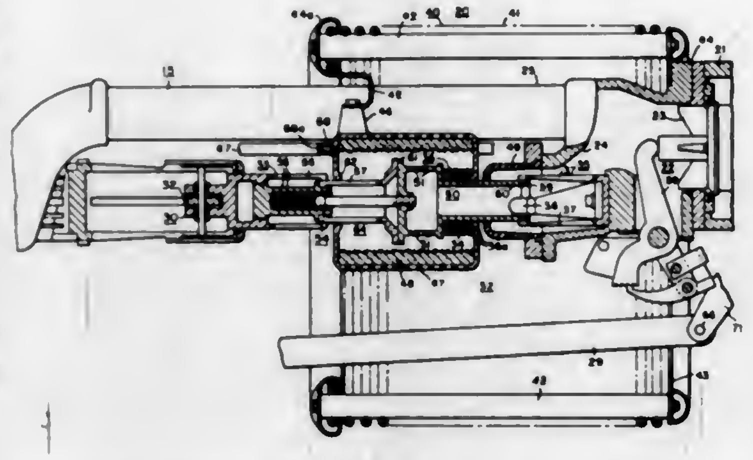


1. A switch comprising: a cylindrical electrically conductive casing with an electrically conductive end wall and an insulative end wall; a first line conductor connected to said conductive end wall; a second line conductor extending through said insulative end wall with a line contact in said casing; a conductive disc having an edge contacting the interior of said casing; a thermally collapsible pellet adjacent said conductive end wall; a cylindraceous spacing member of substantial axial length adjacent said conductive disc; a thermally collapsible pellet adjacent said conductive end wall; a strong spring outside said pellet with one end adjacent said pellet and with the other end pushing said spacing member to push said disc against said line contact while said pellet is not collapsed; a weak coil spring surrounding said second line conductor and moving said spacing member with said disc away from said line contact when said pellet is collapsed, said conductive casing having a viewing means of limited size to permit different viewing of said spacing member when said pellet is collapsed and is not collapsed and in which a cylindraceous insulative casing surrounds said conductive casing and in which said first and second line conductors extend endwise out of said insulative casing and in which said insulative casing contains electrical heating means effective on said pellet; and electrical connecting means extending endwise out of said insulative casing and being connected to said heating means.

3,309,482
RECIRCULATING-TYPE GAS-BLAST DOUBLE-BREAK CIRCUIT INTERRUPTER WITH FILTERING HOUSING SURROUNDING INTERMEDIATE CONTACT

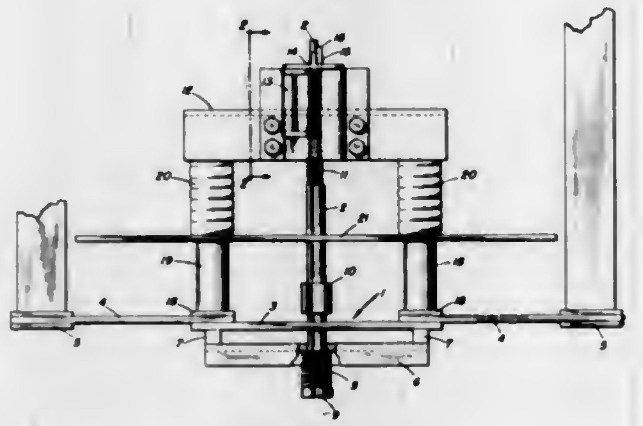
Winthrop M. Leeds, Forest Hills Boro, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 22, 1965, Ser. No. 509,064
5 Claims. (Cl. 200—148)

1. A gas-blast circuit interrupter of the recirculating-gas type including a relatively stationary contact, a movable tubular intermediate contact through which gas may flow and a movable disconnecting contact cooperable with said movable intermediate contact to establish an isolating break, means for directing a flow of compressed gas into the movable tubular intermediate contact during the opening operation to extinguish the arc established between the relatively stationary and intermediate contacts, a filter housing substantially surrounding the tubular intermediate contact, and venting means (51) provided in the side wall of the movable tubular intermediate contact for directing all of the gas flow into the surrounding filter housing prior to exhaust for subsequent reuse.



3,309,483
SPRING LOADED CIRCUIT BREAKER

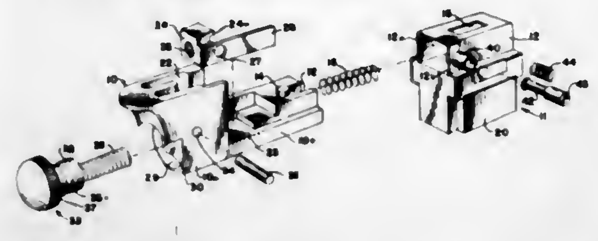
Lowell W. Bennett, Derwood, and Marshall E. Rose, Laurel, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Dec. 24, 1964, Ser. No. 421,136
14 Claims. (Cl. 200—154)



1. A circuit breaker, comprising
a pair of contacts,
a bus bar adapted to interconnect said contacts,
a mounting rod,
an impact collar connected to said mounting rod,
a spring resiliently urging the impact collar into engagement with the upper surface of said bus bar and permitting relative motion of said bus bar on said rod,
a mounting bracket,
a second spring positioned on the upper portion of said rod and adapted to resiliently connect said rod with said mounting bracket,
a solenoid mounted on said mounting bracket, and
a lever pivoted to said mounting bracket and adapted to be actuated by said solenoid upon energization thereof to engage said rod and to resiliently maintain engagement of said bus bar and said contacts.

3,309,484
TRIGGER ACTUATED SWITCH DEVICE

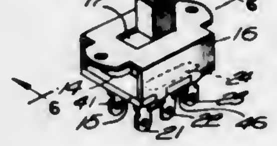
Carl J. Frenzel, Chicago, Ill., assignor to Skil Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,331
10 Claims. (Cl. 200—157)



1. In a portable tool having a trigger receiving housing aperture, wherein the tool is of the type adapted to contain a control system capable of varying the speed of the tool motor in response to the amount of trigger movement, a trigger actuated switch device for mounting in said tool with the trigger extending through said aperture for manual depression, said switch device comprising, a casing, a trigger mounted by the casing for oscillating movement, resilient means carried by the casing and engaged with the trigger for urging the same to its extended position, said trigger including guide means extending in parallel relation with the direction of trigger movement, lug means carried by said trigger and engaged with said guide means for movement in either direction therealong, a manually operable adjustment means including a member rotatably carried by the trigger and engaged with said lug means for moving the same in either direction along said path of movement thereof, and abutment means on said casing arranged to be engaged by said lug means upon depression of the trigger thereby to limit the amount of movement of the latter for establishing a selected speed of the tool motor.

3,309,485
ILLUMINABLE SLIDE SWITCH

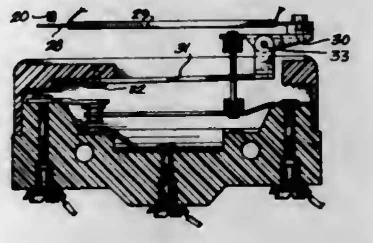
William Gluck, Monroeville, Pa., assignor to UID Electronics Corp., Hollywood, Fla., a corporation of Florida
Filed Dec. 23, 1965, Ser. No. 515,980
10 Claims. (Cl. 200—167)



1. An illuminable slide switch comprising,
a base,
a plurality of insulatedly separated contacts supported essentially in line in said base,
sliding contact means for selectively interconnecting adjacent ones of said plurality of contacts,
means supporting said base and said sliding contact means for relative movement along a substantially linear path embracing said plurality of contacts to selectively interconnect adjacent ones of said contacts,
illuminable light bulb means supported closely adjacent and generally parallel to said path,
means responsive to establishment of a predetermined relative position between said sliding contact means and said plurality of contacts for illuminating said bulb means,
actuating means establishing relative movement between said sliding contact means and said plurality of contacts along said path,
and means including said base and said actuating means surrounding said illuminable bulb means,
said means including translucent means for transmitting light from said illuminable bulb means when the latter is illuminated to the outside of said means for surrounding.

3,309,486
LINKAGE TYPE SWITCH CONTROL FOR TEMPERATURE RESPONSIVE MEANS

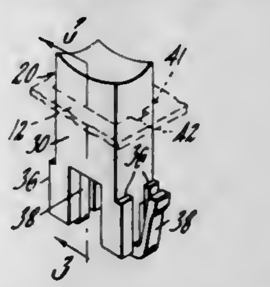
Fred H. Jensen, 6849 32nd NE., Seattle, Wash. 98115
Filed June 10, 1964, Ser. No. 373,930
8 Claims. (Cl. 200—122)



1. Control switch mechanism comprising switch means, and lever means operable to effect movement of said switch means, said lever means including a support, first flexible strip means mounted in cantilever fashion by said support and having a free end portion displaceable relative to said support by flexure of said first flexure strip means, a fulcrum carried by said first flexible strip means at a location remote from said support, second flexible strip means engaged with said fulcrum and tiltable relative thereto, switch-actuating means engaged between said switch means and a portion of said second flexible strip means spaced from said fulcrum for effecting movement of said switch means by movement of said switch-actuating means relative to said support accomplished by movement of said second flexible strip means relative to said support, and temperature-sensing means, responsive to the temperature of an environment and engageable with said lever means, for effecting tilting of said lever means to actuate said switch-actuating means.

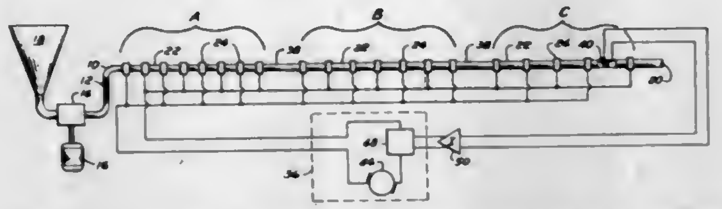
3,309,487
PUSH BUTTON ACTUATOR

Harold Francis Fisher, West Newton, Mass., assignor to Ark-Les Switch Corporation, Watertown, Mass., a corporation of Massachusetts
Filed Jan. 13, 1966, Ser. No. 520,507
5 Claims. (Cl. 200—172)



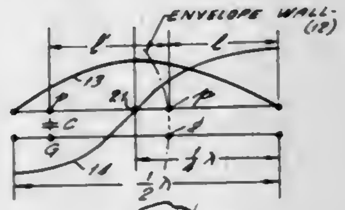
1. A push button for use in a push button switch having spaced guideways with friction surfaces along which said push button is adapted to be moved between raised and depressed positions, which comprises a molded unitary mass of a plastic material having required qualities of electrical non-conductivity, durability, toughness, and resiliency having a substantially rectangular shank, formed at one end with a finger press end surface, and at the other end with a cammed operating surface, and with guide appendages integrally attached to said shank and disposed adjacent to opposite edge faces of said shank, including outwardly biased resilient friction guide members for yieldably guiding engagement with said spaced guide and friction surfaces for yieldably guiding and supporting said push button in each of said raised and depressed positions.

3,309,488
APPARATUS FOR PRODUCING FOOD PRODUCT
Ray D. Francis, Cicero, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
Original application Feb. 6, 1963, Ser. No. 256,641, now Patent No. 3,235,388, dated Feb. 15, 1966. Divided and this application Aug. 13, 1965, Ser. No. 479,540
7 Claims. (Cl. 219—10.65)



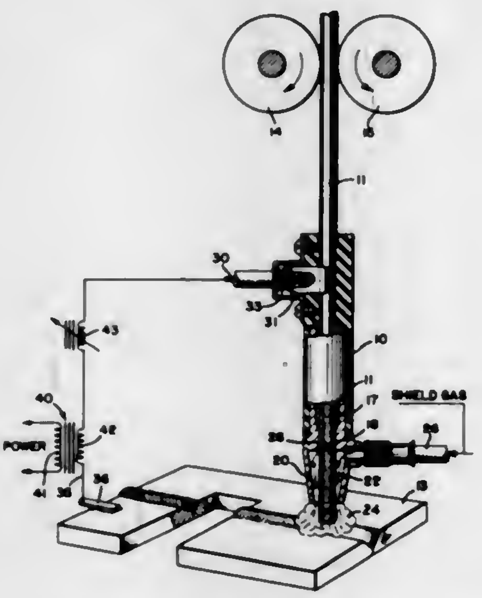
1. An improved apparatus for heating food material emulsion to at least a coagulation temperature to produce a rod-like product of self-sustaining consistency, said apparatus comprising: conduit means for containing a flow of the emulsion; delivery means connected to an end of said conduit means for flowing emulsion therethrough; electrode means spaced longitudinally along said conduit for applying electrical energy across emulsion flowing in said conduit, said electrode means being arranged in a plurality of spaced zones along said conduit the distances between successive electrode means in any one zone being substantially uniform and being increased in succeeding zones in the direction of emulsion flow, said zones being spaced by an even greater distance between the last electrode means in one zone and the first electrode means in the next succeeding zone; electrical energy supply means connected to said electrode means; temperature sensing means positioned in said conduit at the end of the last of said zones in the direction of emulsion flow; and control means connected between said temperature sensing means and said energy supply means for regulating the output of the latter in accordance with the variation of the detected temperature from a desired value.

3,309,489
ULTRA-SHORT-WAVE DIELECTRIC HEATING EQUIPMENT
Kiyoshi Uchimaru and Yoshiaki Shimono, both of Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed July 20, 1965, Ser. No. 473,326
Claims priority, application Japan, Mar. 27, 1962, 37/12,268
3 Claims. (Cl. 219—10.75)



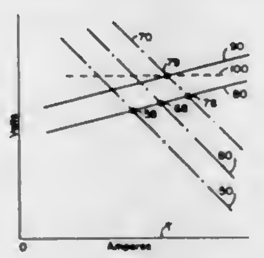
1. Ultra-short-wave dielectric heating apparatus comprising a circuit provided with a resonant line having a first end open-circuited or nearly open-circuited; an electron tube having cathode, anode and grid electrodes; said anode and grid electrodes being connected to said line at the second end thereof to form a self oscillation circuit with said resonant line; said electron tube exhibiting inter-electrode capacitances and distributed lead inductances; a pair of electrodes connected to said resonant line at said first end of said resonant line; the point of connection being the maximum H.-F. voltage distribution of said resonant line which is at or close to the open-circuited end thereof, and means for inserting a dielectric to be heated between said pair of electrodes in such a manner that said open-circuited state may not be affected; said point of connection being located at a distance of less than ¼ wavelength of the operating frequency from the electron tube envelope thereby moving the point of maximum current and zero voltage of said transmission line to the tube interior to cancel a portion of said lead inductances.

3,309,490
ARC WELDING WITH A.C. POWER AND CORED ELECTRODE
Howard B. Cary, Troy, Ohio, assignor to Hobart Brothers Company, Troy, Ohio, a corporation of Ohio
Continuation of abandoned application Ser. No. 455,188, May 12, 1965. This application Mar. 14, 1966, Ser. No. 540,788
17 Claims. (Cl. 219—74)



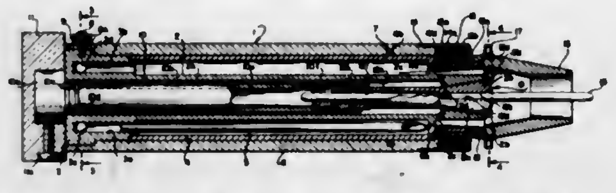
1. An arc welding electrode for welding steel by an arc created by an alternating current power supply, said electrode consisting of a metallic tube filled with a composition comprising by weight 20 to 40 parts of potassium titanate, 15 to 45 parts of ferromanganese, 12 to 25 parts of ferrosilicon, and a trace to 20 parts of iron oxide.

3,309,491
CONSUMABLE ANODE ELECTRODE ARC WELDING
Charles T. Jacobs, Box 362, Bernardsville, N.J. 07924
Continuation of abandoned application Ser. No. 461,579, Apr. 12, 1965. This application June 13, 1966, Ser. No. 557,322
12 Claims. (Cl. 219—74)



1. In the electric arc-welding of work with a consumable anode electrode continuously advancing toward the work and in a shielding atmosphere consisting of gas in which a snap-over of the transfer of anode-electrode material to the work from globular to spray nature does not occur at any value of arc current, the method of causing the anode-electrode-material transfer to be of spray nature which includes the steps of (1) establishing, from the advancing electrode to the work, an anode-electrode-material transfer of spray nature in a shielding atmosphere consisting of gas in which snap-over of the transfer from globular to spray nature does occur when the arc current is raised to a particular value, and (2) thereafter, and while maintaining the arc current at least as great as said particular value, changing the shielding atmosphere to said first-mentioned atmosphere.

3,309,492
HIGH AMPERE MACHINE WELDING TORCH
Dallas Fields, Smyrna, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Dec. 30, 1963, Ser. No. 334,340
8 Claims. (Cl. 219—75)



8. In a welding torch, the combination comprising:

a central body portion having a head end, a bottom end and an axial passage extending between said head end and said bottom end,

said axial passage being tapered at its bottom end to form a central body bearing surface;

a first gas inlet passage connected to said axial passage for communicating an inert gas supply therewith;

a jacket mounted in surrounding relation to said central body portion to form a cooling chamber between said central body portion and said jacket;

inlet and outlet passages connected to said cooling chamber for communicating said cooling chamber with cooling fluid supply and return;

a draw bar having a head end and an elongate body portion located with its elongate body portion rotatably received in said axial passage and its head end rotatably seated on the head end of said central body portion;

an axial passage through said draw bar;

a second gas inlet passage extending through said head end of said draw bar and communicating with said axial passage through said draw bar;

seal means interposed between said draw bar and said central body portion;

a collet having an axial bore therethrough, a first tapered end of complementary configuration to that of said central body bearing surface, and a second threaded end,

said collet secured by its threaded end to said draw bar;

longitudinal slits formed in said tapered collet end;

a non-consumable hollow electrode located within said bore through said collet,

said non-consumable electrode having an axial passage therethrough;

at least a portion of the collet bore proximate the tapered end drawn into firm engagement with said electrode by the coaction of the tapered collet end drawn into firm engagement with said central body bearing surface; and

a welding nozzle having a butt end and a tip end mounted with its butt end at the bottom end of said central body portion.

3,309,493
MULTIPLE BONDING
Benedict F. Vitale, Auburn, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Feb. 21, 1964, Ser. No. 346,556
10 Claims. (Cl. 219—79)

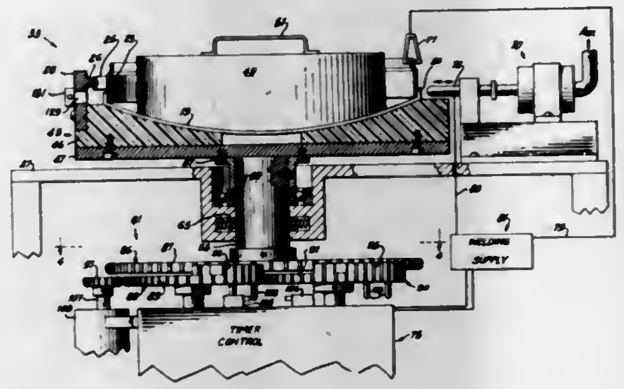
5. The apparatus for making a cathode ray tube shadow mask-supporting frame assembly comprising:

a base table;

a plano-concave support member mounted on said base table and formed for perimetrically holding said frame and said mask in assembled predetermined continguous concentric and spatial alignment, the curvature of the concavity being compatible with the mask;

seating engagement means to provide seating engagement of said mask in said support member;

a plurality of welding stations positioned relative to the perimeter of said support member, each of said welding stations having a first welding electrode capable of simultaneous reciprocal lateral movement;



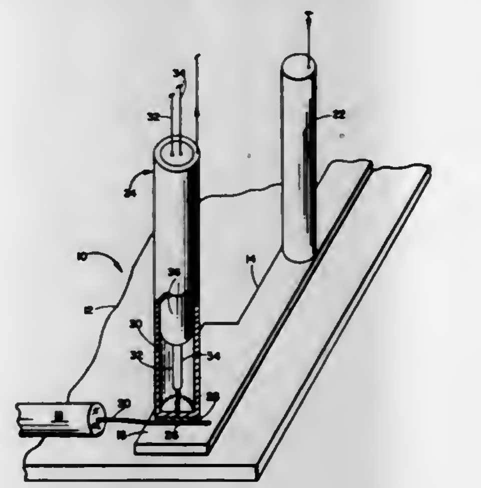
a common electrical welding conductor having connective means formed for contacting said supporting frame to provide said frame as a common second welding electrode;

means for supplying relative movement between said support member and said welding station in a predetermined indexing manner;

a welding supply for activating said welding stations; and

timing means to provide predetermined welding and actuation of reciprocal electrode movement to facilitate the making of repetitive sets of perimetrically spaced simultaneous welds.

3,309,494
BONDING APPARATUS
Roy J. Hebert, Garden Grove, and Sam J. Griffin, La Habra, Calif., assignors to North American Aviation, Inc.
Filed June 12, 1963, Ser. No. 287,333
2 Claims. (Cl. 219—85)



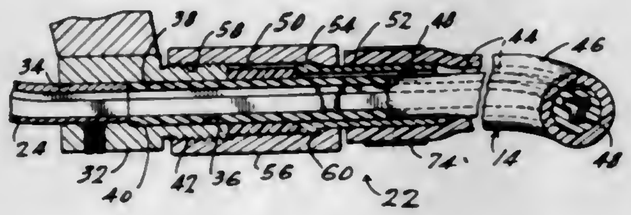
1. A resistance soldering apparatus for soldering a workpiece, said apparatus comprising:

a sheathed-thermocouple first electrode comprising a hollow sheath of a non-solderable material comprising one of stainless steel or Inconel, said sheath being closed at one end, a thermocouple housed within said sheath, said thermocouple being connected to said closed end, said thermocouple otherwise being electrically insulatingly separated from said sheath, a second electrode, said first and second electrodes being juxtaposed and terminating on the same side of the workpiece; and

control means for controlling the heating current applied across said electrodes in a manner dependent on the temperature of said workpiece as sensed by said thermocouple, said control means comprising means to regulate said heating current to achieve controlled cooling of said workpiece.

3,309,495
APPARATUS FOR WELDING SMALL STUDS

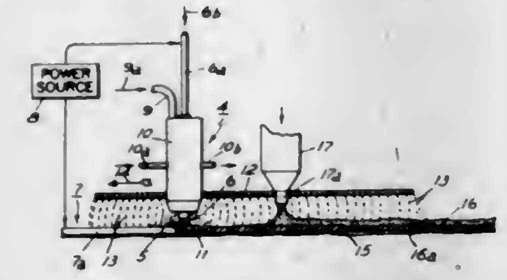
Thomas E. Shoup, Amherst, and Steve Spisak, Elyria, Ohio, assignors to Gregory Industries, Inc., Lorain, Ohio, a corporation of Michigan
Filed Nov. 18, 1964, Ser. No. 412,015
9 Claims. (Cl. 219—98)



6. A tube assembly comprising a stud supply tube having a passage of predetermined cross-sectional shape and a guard tube surrounding said supply tube, a stud-receiving body having a passage receiving said supply tube, said supply tube having an enlargement affixed thereto at a point spaced a predetermined distance from one end thereof, said enlargement having a square end lying in a plane perpendicular to the axis of said supply tube, a member cooperating with said enlargement and attachable to said stud-receiving body to produce an axial force on said square end of said enlargement and on a portion of said supply tube without squeezing said tube when said member is attached to said body.

3,309,496
WELDING OF TITANIUM

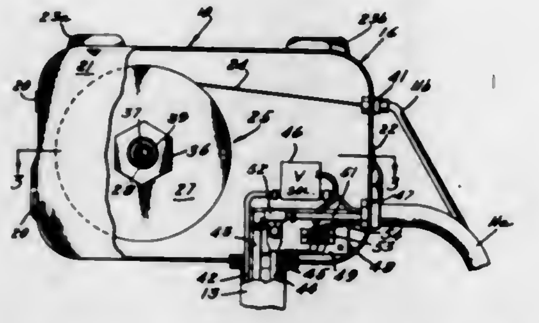
Robert A. Rosenberg, Norwood, Mass., assignor to Mitron Research & Development Corporation, Waltham, Mass., a corporation of Delaware
Filed May 29, 1963, Ser. No. 286,101
21 Claims. (Cl. 219—118)



1. The process of forming ductile welds of workpieces of titanium and alloys thereof substantially free of hydrogen, nitrogen, oxygen and carbon which comprises generating an electric arc between a workpiece and an electrode to fuse adjoining parts of the workpiece and thereby form a weld therebetween, and protecting the welded parts against embrittling contaminations while at high temperatures, the protecting process including mixing and applying to heat-affected surfaces of said workpiece the mixture of finely-divided particles consisting essentially of titanium with a non-reactive flux consisting essentially of at least one finely-divided halide which at temperatures above about 1,000° F. generates a protective gaseous halide film which shields said surfaces against atmospheric contaminants, whereby unmelted amounts of said finely-divided particles hold quantities of the melted flux together on the heat-affected surfaces in protective relationship thereto, and maintaining said flux in contact with said heat-affected surfaces until they cool below about 1,000° F.

3,309,497
WELDING BACK PACK

Milo M. Kensrue, 13882 Sanderstead Road, Santa Ana, Calif. 92705
Filed Jan. 21, 1966, Ser. No. 522,151
5 Claims. (Cl. 219—130)

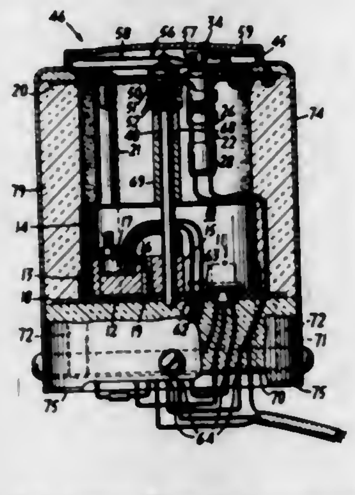


1. A body carried portable welding unit from which a welding wire is adapted to be continuously supplied to a hand manipulated welding device having power means for pulling the welding wire thereto and feeding it to the welding arc, comprising:

(a) an enclosure providing a support structure and being adapted for suspending from a welder's body;
(b) a container for welding wire to be supplied to said device, said container being mounted on said structure; and
(c) flexible means connected at one end with said support for guidingly carrying welding wire from said container to said welding device, whereby the welder is free to move from one welding position to another without being limited by the length of said flexible means.

3,309,498
CONTROLLED TEMPERATURE CHAMBER

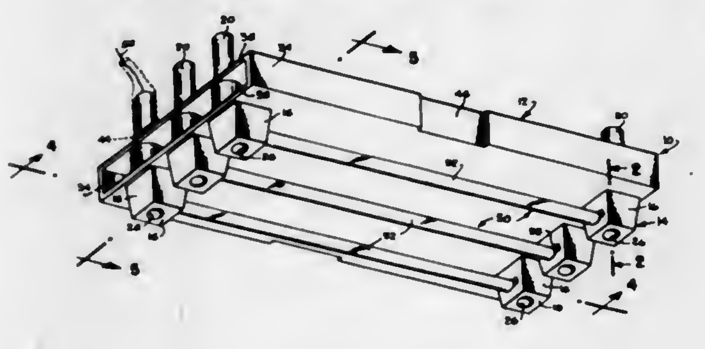
John Nagy, Jr., Union, and Roman I. Andrushkiw, Newark, N.J., assignors to Daystrom, Incorporated, Murray Hill, N.J., a corporation of Texas
Continuation of abandoned application Ser. No. 334,745, Dec. 31, 1963. This application Mar. 11, 1966, Ser. No. 533,729
5 Claims. (Cl. 219—210)



1. Apparatus for controlling the temperature of an enclosed chamber comprising, means forming an enclosed chamber, a heat source including a power dissipating transistor disposed within said chamber, the amount of heat dissipated by said transistor being variable over a continuous range between predetermined minimum and maximum values and dependent upon the magnitude of the current flow therethrough, a coiled, bimetallic temperature sensing element in said chamber, a light source having means forming a straight slit for providing illumination along a line of limited length, a photocell having a light sensitive strip coextensive with said line of illumination, said light source and photocell mounted exteriorly of said chamber with said slit and said light sensitive strip spaced apart and facing each other in aligned relationship, opaque vane means of relatively broad extent with respect to said line of illumination mechanically coupled to said temperature sensing element, said vane means adapted to be angularly moved by said element and interposed between said light source and photocell to shade the latter to an extent dependent upon the temperature within said chamber, thereby to make the amount of light reaching said photocell dependent upon the chamber temperature, and electrical circuit means including said photocell for varying the current through said transistor.

3,309,499
RADIANT HEATER

Joseph J. Carr, 7315 Aurora Ave., Seattle, Wash. 98133
Filed Oct. 25, 1962, Ser. No. 232,935
5 Claims. (Cl. 219—343)

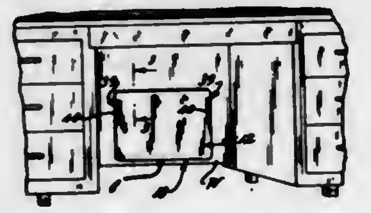


2. A radiant heater, said heater comprising:

(a) a heating lamp;
(b) said lamp having a filament and lead-in wires at the ends of the lamp;
(c) a housing for the end of the lamp;
(d) said housing having a chamber, a chimney connecting with the chamber, and an opening in said chamber;
(e) a base;
(f) said base having two spaced-apart holes;
(g) means to removably position a chimney in said hole; and,
(h) each end of the lamp projecting through the opening and into said chamber.

3,309,500
RADIANT DESK HEATER

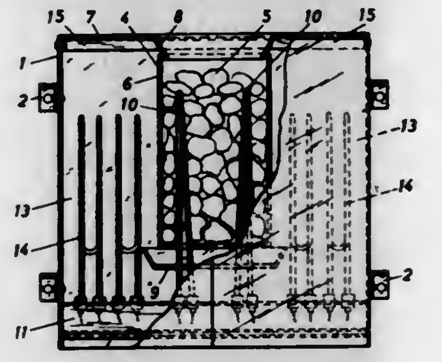
Louis J. Reynolds, Santa Fe, N. Mex., assignor to Aztec Electric Heat (a division of Reynolds Electrical & Engineering Co., Inc.), Santa Fe, N. Mex.
Filed Dec. 14, 1964, Ser. No. 419,283
7 Claims. (Cl. 219—345)



1. A radiant desk heater comprising a relatively flat panel of a size to fit on the inner surface of the front wall of a desk and adding little additional bulk thereto, said flat panel being composed of front and rear plates with angularly disposed margins which overlap when the plates are assembled in parallel relation, said front plate having front and rear insulating surfaces, a sheet type heating element covering substantially the entire rear surface of said front plate, said sheet type heating element having widely spaced generally parallel copper strips incorporated therein with conductors extending therefrom to a connector by which said heating element can be connected to a source of electrical energy, heat responsive means connected to said conductors for breaking the circuit when the temperature exceeds a predetermined value, strip means having adhesive on both sides securing said heating element to the insulating rear surface of said front plate, a relatively thick layer of thermal insulation mounted between said heating element and the rear panel plate whereby the transmission of heat to the rear panel is substantially restricted, means for fastening the front and rear plates in assembled relation with said heating element and relatively thick layer of thermal insulation therebetween, and a strip for mounting said panel on a wall surface, said strip having means whereby it may be adhesively attached to a wall surface and with means by which said panel may be attached to said strip.

3,309,501
ELECTRIC STEAM BATH HEATER

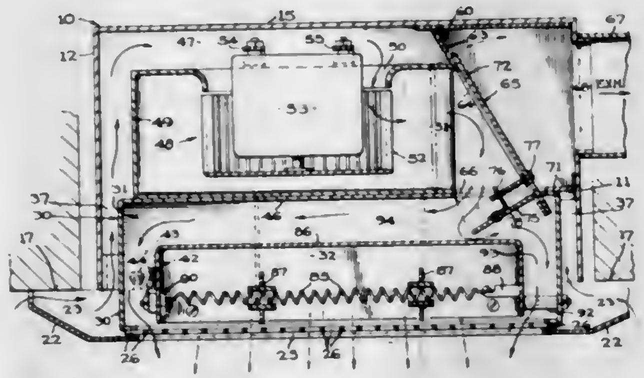
Sven-Olof Jansson, Fredagsgrand 13, Halmstad, Sweden
Filed June 22, 1964, Ser. No. 376,744
Claims priority, application Sweden, July 16, 1963, 7,867/63; May 26, 1964, 6,352/64
1 Claim. (Cl. 219—367)



A steam bath heater for a steam bath room comprising a housing having an opening in its top wall, a container filled with heat receiving and retaining bodies for storing heat having an open upper end in said housing, means for heating said bodies and the air in and around said housing, said heating means comprising a plurality of resistance elements in said container adapted to be connected to a source of electric energy, tubes completely enclosing said elements projecting into said container and in direct contact with said bodies in said container, said container being positioned in spaced relation to the end walls of said housing so as to form an air heating chamber located at each side of said container in said housing, each of said chambers having an air inlet means at its lower end located at each side of said container in said housing, said heating means also comprising resistance elements located in each chamber adapted to be connected to said source of electric energy, tubes enclosing said resistance elements in each chamber projecting into each chamber, a lattice arranged above each chamber in said housing forming an air outlet, rods in each lattice to direct the air streams heated in each chamber away from the side of said housing which is adjacent a wall of said room, said container having a hinged flap with its front edge spaced above the top of said container to form an air outlet, means for returning said flap when raised automatically to a position covering the upper end of said container, a horizontal shaft extending along the rear wall of said container on which said flap is journalled, said means for returning said flap including a Z-shaped disk spring attached to the rear wall of said container cooperating with said flap, a horizontal deflector located below said tubes containing said resistance elements in each chamber adapted to direct the heat emission from said tubes upwardly, said deflector being shaped as a groove with walls diverging in the upward direction.

3,309,502
DAMPER CONTROL AND ASSEMBLY FOR HEATING AND VENTILATING APPARATUS

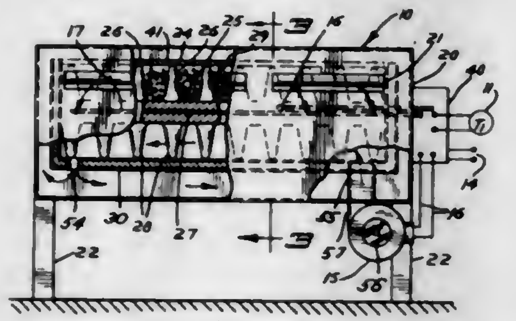
Jack Witherspoon, Jr., Knoxville, Tenn., assignor to Ceilheat, Incorporated, Knoxville, Tenn., a corporation of Tennessee
Filed Oct. 30, 1964, Ser. No. 407,775
17 Claims. (Cl. 219—369)



1. A room heating and ventilating unit comprising in combination a housing having a plurality of passages, one of which is adapted to deliver air into the room, exhaust means connected to another of said passages, an electrical heating element in said housing adapted to be energized for heating the room, a fan and a unidirectional motor for driving said fan disposed in said housing, means for selectively driving said motor at one of two speeds for establishing a predetermined forced air flow through said passages for heating and ventilating the room, and a biased damper movable between a first and a second position and operable in response to the force of the air flow for directing the air flow through a selected one of said passages.

3,309,503
ELECTRIC SAUNA BATH HEATER

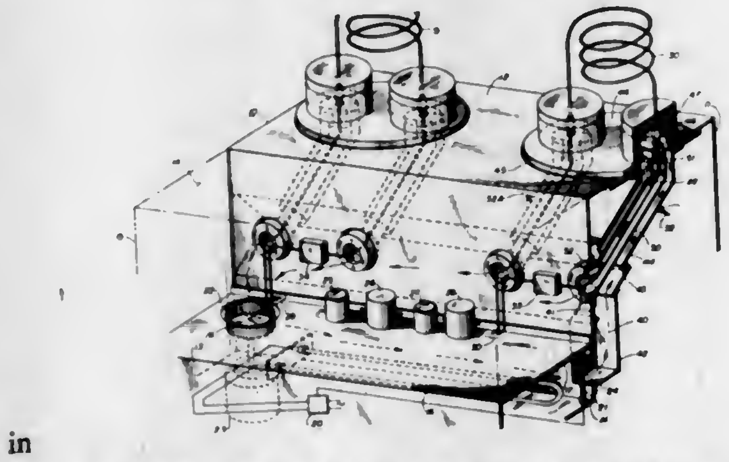
Gordon M. Dow, North, and Lowell T. Swenson, Thief River Falls, Minn., assignors to Dow-Key Company, Inc., Thief River Falls, Minn., a corporation of Minnesota
Filed Jan. 16, 1964, Ser. No. 338,086
12 Claims. (Cl. 219—378)



1. A heater for sauna bath enclosures comprising in combination: a horizontally disposed, substantially planar heating element having a plurality of upwardly and downwardly extending protrusions formed integrally therewith; heating means disposed interiorly of said heating element; a housing therefor, said housing being adapted to surround and enclose said heating element whereby said housing is divided into upper and lower chambers, each containing corresponding upwardly and downwardly extending pluralities of said protrusions, the lower chamber having inlet and outlet openings for the transmission of air therethrough and the upper chamber having an upwardly directed opening for receiving liquids to be vaporized and also containing a plurality of said protrusions on the heating element; and means for supplying air under pressure connected to said inlet opening.

3,309,504
SYSTEM FOR HEATING CHROMATOGRAPHIC COLUMNS

John B. Rosso and Charles R. Ferrin, Tulsa, Okla., assignors to Combustion Engineering, Inc., New York, N.Y, a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,427
4 Claims. (Cl. 219—399)



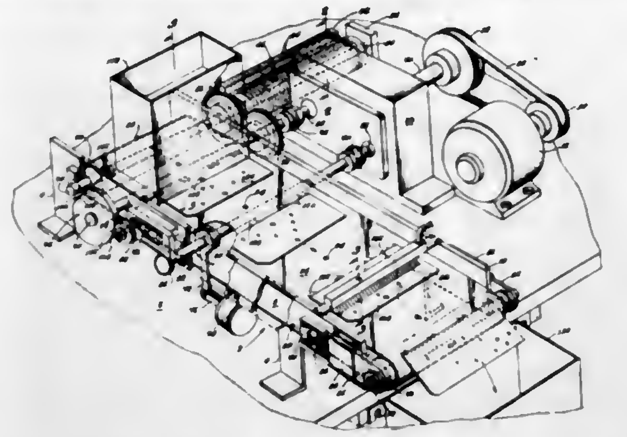
1. Apparatus for heating a chromatographic column, including,
an oven enclosure,
an electric heating element within the oven,
a blower mounted within the oven in a position to move air over the heating element,
a manifold conduit connected to the oven arranged to receive the air heated by the element,
a duct connected to the manifold for receiving at least part of the heated air of the manifold conduit,
a tube coupling mounted at the end of the duct and receiving one end of a chromatographic column,
a housing over the coupling and duct end to receive the heated air and pass it over the coupling,
a conduit connected to the housing and extending from the coupling to receive the heated air from the duct and connected to the oven to return the air to the oven,
and a tube for a sample to be analyzed by the column connected to the column with the coupling and extending within and along the length of the conduit to the oven in contact with the air returned to the oven.

3,309,505
METAL BELT CARD READER

Jack D. Theis, Manhattan Beach, Calif., assignor, by mesne assignments, of sixty percent to Elliot F. Beldman, Manhattan Beach, Calif., twenty percent to Wayne J. King, Calabasas, Calif., and twenty percent to Bertram R. Newman, Sherman Oaks, Calif.
Filed Apr. 30, 1962, Ser. No. 190,909
16 Claims. (Cl. 235—61.11)

1. In an information retriever,
a power source,
a stepless variable speed drive associated with the power source,
a plurality of rollers in spaced relation to each other,
an endless metallic belt operatively associated with the rollers for motion therearound,
means operatively connecting the drive with the rollers whereby power for rotation of the rollers is supplied thereto,

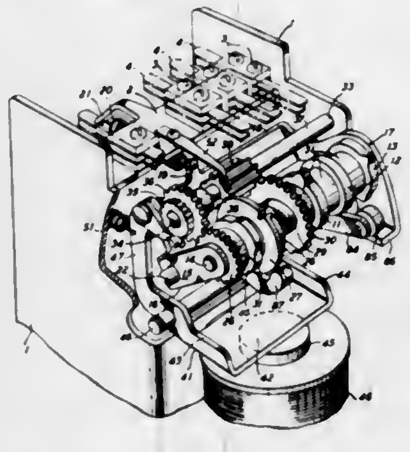
a source of information cards having informative apertures therein,
means to selectively position the information cards on the belt for sequential motion therewith,
and means including a plurality of electrically conduc-



tive brushes positioned in operative relation to said belt and being normally biased toward said metallic belt for engagement therewith by flexure through individual apertures in a passing card, to sense location of said apertures in such a card when passingly carried by said belt.

3,309,506
ELECTROMECHANICAL COUNTER

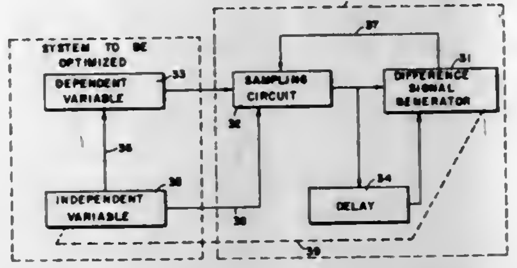
Thomas H. Barker, Westerville, Ohio, Robert C. Nance, Wood-Ridge, N.J., and John R. Shine, Plainview, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 4, 1963, Ser. No. 249,512
6 Claims. (Cl. 235—92)



1. An electromechanical register comprising a first shaft, means for driving said first shaft in rotation, gear means driven by said first shaft, and a second shaft drivable in rotation by said gear means, a first shaft rotational position indicator associated with said first shaft, a plurality of shaft rotational position indicators associated with said second shaft, sensing means associated with each of said shaft rotational position indicators, switching means for selectively rendering said plurality of shaft rotational position indicators operable, means associated with said sensing means for recognizing that said first and second shafts reside in selected predetermined relative rotational positions, and means for rotating said first and second shafts to an initial relative rotational position; said means for rotating said first and second shafts to an initial relative rotational position including a bracket holding said shafts, two cams each rotatably fixed on each of said shafts, a claw element engageable in both of said cams, means for pivoting said bracket toward said claw element, and said claw element toward said bracket concurrently in a scissoring action to engage said claw element with said cams and thereby rotate said cams and said shafts into a predetermined rotational position.

3,309,507
OPTIMAL CONTROLLER COMPUTER

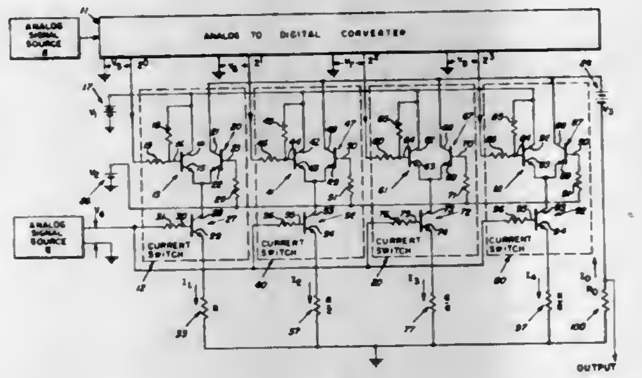
Heimar Schlein, Reseda, Calif., assignor to North American Aviation, Inc.
Filed Jan. 17, 1963, Ser. No. 252,107
13 Claims. (Cl. 235—150.1)



1. Apparatus for controlling a system having an optimum point of operation comprising a first input signal representing the value of a dependent variable, and another input signal representing the value of an independent variable of the system to be controlled; first means responsive to said first input signal for periodically generating a group of pulses proportional to the value of said dependent variable; second means connected to said first means for comparing successive periodic pulse groups and providing a difference signal proportional in sense and magnitude to the difference between two successive pulse groups; third means responsive to said difference signal for selectively changing the value of said independent variable value, said third means including fourth means connected to said second means and responsive to a predetermined difference output signal for generating a monitor signal, fifth means responsive to said monitor signal for connecting said other input signal to said first means and energizing said first means in such a manner that said group of pulses is proportional to a ratio between said first input signal and said other input signal, said fourth means being responsive to a difference signal greater than said predetermined difference signal to generate a compute signal and disconnect said other input signal from said first means.

3,309,508
HYBRID MULTIPLIER

Richard P. Witt, Framingham, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Mar. 1, 1963, Ser. No. 262,059
4 Claims. (Cl. 235—150.52)



1. A multiplier for generating a signal representative of the product of a digital quantity and an analog quantity comprising a source of reference potential, a source of ground potential, a plurality of switching devices each having a transistor having base, collector, and emitter electrodes, a first input circuit for said analog quantity connected to said base electrode, a comparator connected to said reference potential source and to said collector electrode, and a second input circuit for a digit of said

digital quantity connected to said comparator, means for providing a signal whose magnitude varies as a function of said analog quantity to each of said first input circuits, means for providing a different digit of said digital quantity to each of said second input circuits, and means for providing an output signal proportional to the product of said analog and digital signal including a plurality of weighted impedances, one of said impedances coupled to each emitter electrode of each one of said plurality of switching devices and to said source of ground potential, and each of said impedances being weighted in value inversely proportional to the weighting of the digit which is applied to the switch to which it is coupled, a summing impedance means connected between said source of reference potential and said source of ground potential, and output signal transfer means connected to said source of reference potential and to said summing means.

3,309,509

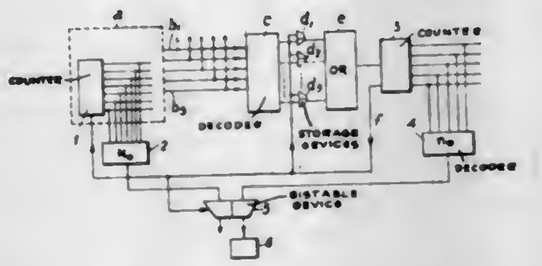
SYSTEM FOR CHECKING THE RANDOM CHARACTER OF SEQUENCES OF N SYMBOLS

Jean-Pierre Vasseur, Paris, France, assignor to CSF—Compagnie Générale de Télégraphie Sans Fil, a corporation of France

Filed May 9, 1963, Ser. No. 279,194

Claims priority, application France, May 10, 1962, 897,078, Patent 1,330,284

7 Claims. (Cl. 235—177)



1. A system for checking the random character of sequences of N symbols comprising: means for providing a signal each time a given symbol appears for the first time within one of said sequences; first means for counting said signals to provide a first count; second means for counting said symbols to provide a second count; and bistable means, responsive to said first and second means, for providing a signal when a predetermined one among said counts is greater than the other.

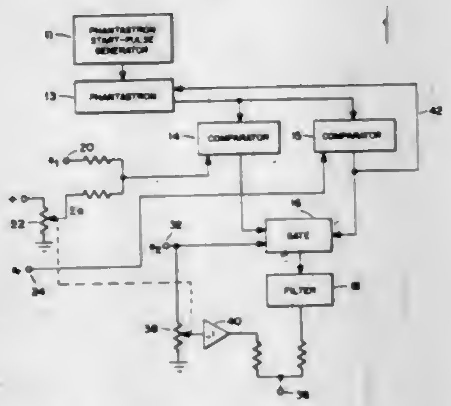
3,309,510

ANALOG MULTIPLIER

Irving Brown, Cherry Hill, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed July 12, 1963, Ser. No. 294,776

4 Claims. (Cl. 235—194)



1. An analog voltage multiplier comprising in combination:

(a) means for generating a run-down voltage,

(b) a first voltage comparator connected to said generating means,

(c) a first analog voltage source connected to said comparator for generating a pulse at the output of said comparator when said annalog voltage equals said run-down voltage,

(d) a second voltage comparator connected to said generating means,

(e) a reference voltage source connected to said second comparator for generating a pulse at the output of said second comparator when said reference voltage equals said run-down voltage,

(f) gate means connected to said first and second comparators,

(g) a second analog voltage source connected to said gate means, and

(h) a filter circuit connected to said gate means for providing a signal directly proportional to the product of said first and second analog voltages.

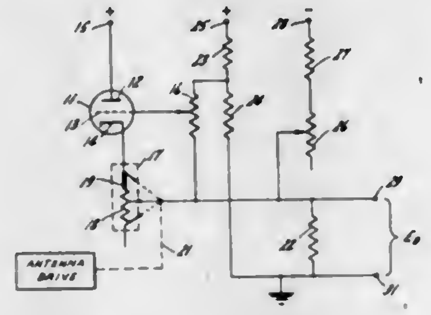
3,309,511

HYPERBOLIC FUNCTION GENERATOR

Robert H. Begeman and Eugene R. Roeschlein, Indianapolis, Ind., assignors to the United States of America as represented by the Secretary of the Navy

Filed Mar. 18, 1963, Ser. No. 266,110

6 Claims. (Cl. 235—197)



1. A function generating circuit for producing a voltage waveform of predetermined shape comprising:

a source of positive direct current potential;

an electron emission device having emission, control, and collection electrodes, said collection electrode being coupled to said source of positive direct current potential;

a first potentiometer means having a movable contact and a fixed terminal, said fixed terminal being coupled to said emission electrode;

a mechanical linkage attached to said movable contact of said first potentiometer means for coupling to a repetitive mechanical motion generating means to provide motion to said movable contact to vary its position in proportion to the desired said waveform of predetermined shape;

a first resistance means having one terminal coupled to said movable contact of said first potentiometer means and the other terminal coupled to ground potential;

a second potentiometer means having first and second fixed terminal means and a movable contact, said movable contact thereof being coupled to said control electrode of said electron emission device, said first fixed terminal means being coupled to said movable contact of said first potentiometer means and said second fixed terminal means being coupled to said source of positive direct current potential, said second potentiometer means providing adjustment of the amount of gain of said electron emission device; and

output terminal means coupled across said first resistance means for providing thereat the desired voltage waveform of predetermined shape.

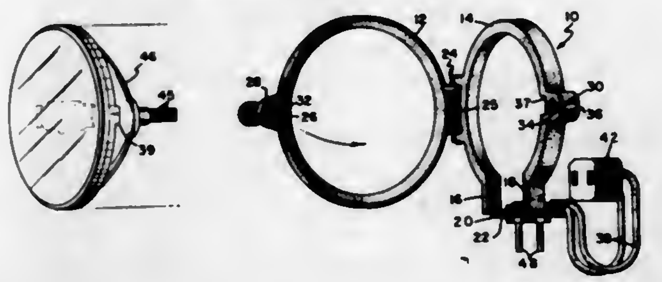
3,309,512

PHOTOGRAPHIC LAMP ADAPTER

Austin B. Conley, Ipswich, and William H. Morgan, Jr., Georgetown, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Feb. 2, 1965, Ser. No. 429,800

7 Claims. (Cl. 240—1.3)



1. An adapter to receive a lamp having a pair of electrical contacts, said adapter comprising: a base ring having a pair of electrical posts depending therefrom; a face ring pivotally mounted on said base ring and spaced therefrom to receive a lamp therebetween; and means for electrically connecting said lamp electrical contacts to said electrical posts.

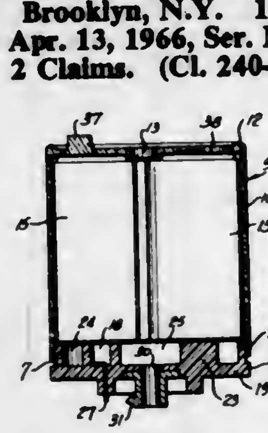
3,309,513

FLASH HOLDER FOR CAMERAS

Julian Robert Aymar, 5122 Fort Hamilton Parkway, Brooklyn, N.Y. 11219

Filed Apr. 13, 1966, Ser. No. 542,355

2 Claims. (Cl. 240—1.3)



1. A flash holder comprising a rotary transparent container, inner reflecting walls in said container dividing the interior thereof into a plurality of compartments of the same size, a supporting plate carrying said container and rotatable therewith, said supporting plate having flash lamp sockets, each of said sockets being located in a separate compartment, and flash lamp contacts located in said sockets and extending through said supporting plate, said container comprising a top having an opening communicating with all of said compartments, wherein said top comprises two opposed pins and two openings for receiving pins of another top.

3,309,514

FLASHLIGHT ATTACHMENT FOR CLIPBOARDS

Louis Levy, 1 Lafayette Plaisance, Detroit, Mich. 48207, and Roger L. Van Den Hout, 5 Colonial Parkway, Pittsford, N.Y. 14534

Filed Oct. 21, 1965, Ser. No. 500,111

4 Claims. (Cl. 240—6.4)

1. A flashlight attachment for clipboards, comprising:

a casing comprising a base and front and rear end covers, the length of said casing between said front and rear end covers being just sufficient to accommodate the length of an ordinary flashlight battery;

means for mounting within said casing two flashlight batteries, said batteries being axially aligned with the length of said casing and disposed abreast of each other;

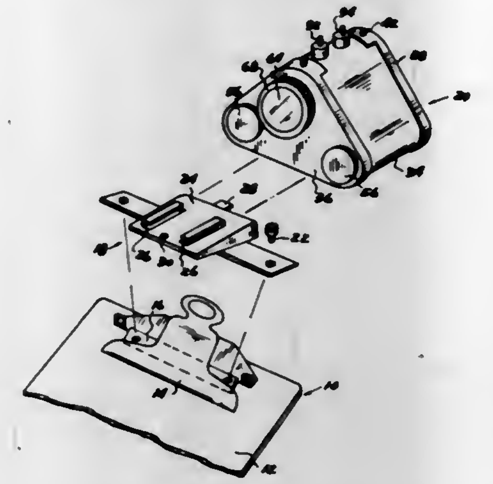
a first bulb, socket, and reflector assembly mounted in said front end cover;

a second bulb, socket, and reflector assembly mounted in said rear end cover;

said first and second bulbs being arranged to shine in opposite directions;

electrical circuit means including switch means operatively connecting said batteries and said bulbs;

and mounting means for detachably securing said base of the flashlight to the clip of a conventional clipboard.



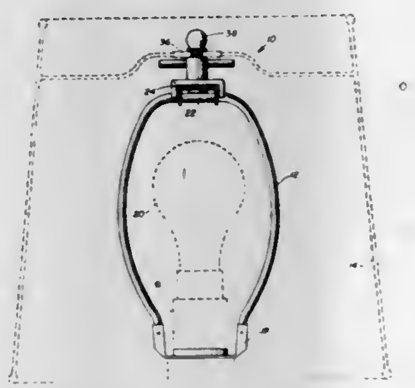
3,309,515

TILTABLE LAMP SHADE HOLDER

Chester Fanshier, P.O. Box 696, Bartlesville, Okla. 74003

Filed Feb. 8, 1965, Ser. No. 430,837

5 Claims. (Cl. 240—148)



1. A tiltable lamp shade holder comprising:

(a) a lamp harp having means at the lower end for supporting to a light socket, the upper end portion of the harp being substantially straight and horizontal;

(b) a bracket pivotally affixed to the harp upper horizontal portion, the bracket having a vertically extending threaded portion;

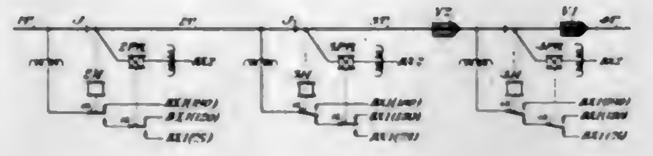
(c) an inverted U-shaped clamp member defined by a horizontal portion having an opening therein and opposed paralleled downwardly extending legs, the opening receiving said bracket threaded portion, the lower end of the legs engaging said harp horizontal portion to either side of said bracket;

(d) a spacer having a threaded opening in the lower end to receive the bracket threaded portion and thereby urge said clamp against said harp horizontal portion, the spacer having an integral upwardly extending threaded lamp shade eyelet receiving portion; and

(e) a nut threadable on said spacer upwardly extending threaded portion.

3,309,516
RAILWAY SIGNALING SYSTEMS

George W. Baughman, Swissvale, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Apr. 16, 1964, Ser. No. 360,351
18 Claims. (Cl. 246—34)

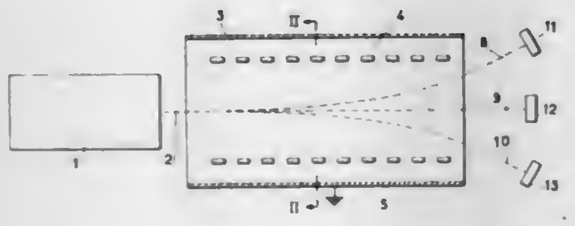


1. A signaling system for a stretch of railway track traversed by trains equipped with speed control apparatus responsive only to a preselected signaling current flowing in the rails and carrying at any one time a selected distinctive signal character establishing an allowed speed for a train, comprising in combination,

(a) circuit means having connections to the rails for supplying said signaling curent having selections of signal character extending over predetermined sections of track,
(b) distance means also with connections to said rails and controlled by the presence of trains for measuring independent of said sections of track the relative distance between a train within a predetermined section of track and a location at which that train must be prepared to stop,
(c) selection means controlled by said distance means and having connections to said circuit means for varying the selection of the distinctive signal character carried by said signaling current in accordance with said measured relative distance.

3,309,517
ELECTROSTATIC SEPARATOR WHICH UTILIZES ELECTRODES WITH A SHAPE OF GEOMETRICALLY PERIODIC DELAY LINES

Raymond Liot, 79 Blvd. Haussmann, Paris, France
Filed Aug. 14, 1963, Ser. No. 302,101
Claims priority, application France, Sept. 4, 1962, 908,514
10 Claims. (Cl. 250—41.9)



1. In a electrostatic separator for separating charged particles contained in a particle beam said charged particles having individual momentum values resulting from at least one different parameter of the two momentum parameters consisting of mass and velocity, respectively, of each particle, the improvement essentially consisting of:

a spaced pair of mutually facing electrodes with a shape of geometrically periodic delay lines,
means for applying an electrostatic potential difference between said electrodes,
and means for directing the particle beam through the space between said electrodes.

3,309,518
METHOD OF AERIAL PROSPECTING WHICH INCLUDES A STEP OF ANALYZING EACH SAMPLE FOR ELEMENT CONTENT, NUMBER AND SIZE OF PARTICLES

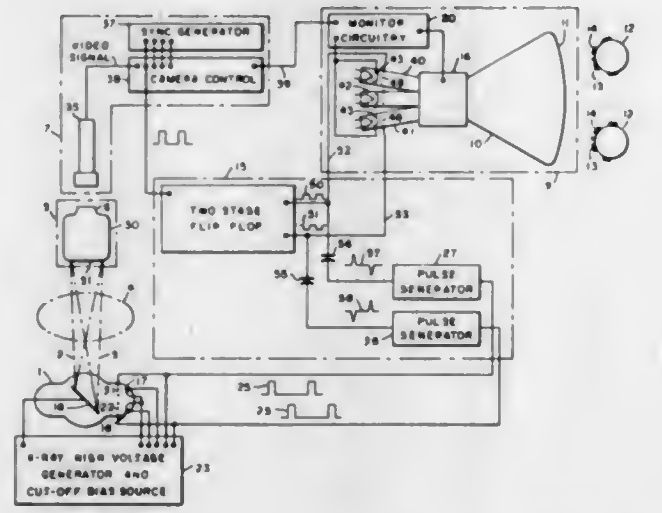
Oscar Weiss, 15 North Road, Dunkeld West, Johannesburg, Transvaal, Republic of South Africa
Filed July 1, 1963, Ser. No. 292,058
8 Claims. (Cl. 250—49.5)

1. A method of prospecting an area of the earth's crust for solid metalliferous mineral deposits existing therein which comprises:

(a) collecting on separate extended collector surfaces successive samples of airborne particles at a plurality of different positions at least 500 feet above the earth's surface,
(b) determining the positions at which each of said samples are collected relative to the earth's surface,
(c) analyzing each sample for element content, number and size of particles, and
(d) correlating the results of said analyses with the determined positions of collection whereby to determine the position of mineral deposits in the earth's crust.

3,309,519
X-RAY STEREOSCOPIC APPARATUS FOR PRODUCING ALTERNATE IMAGES OF DIFFERENT COLORS ON A CATHODE RAY TUBE

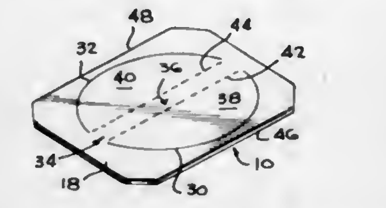
Fred J. Euler, Ellicott City, and Edward L. Webb, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 25, 1963, Ser. No. 318,902
4 Claims. (Cl. 250—60)



2. Stereoscopic X-ray apparatus comprising X-ray source means operable to radiate X-rays to an object at two different angles alternately; means for producing light images of X-ray images of such object; a black-and-white video camera means productive of video signals corresponding to such light images and including a sync generator productive of sixty-cycle blanking signals for a video monitor; a video monitor, including a multi-gun color picture tube productive of different colors on the screen of such tube by respective electron beams, operable to scan such beams in synchronism with the aforesaid sixty-cycle blanking signals to fill a frame on the screen each one-thirtieth of a second, and operable to respond to video signals from said camera means to modulate such electron beams to produce color images; and control means regulated by said sixty-cycle blanking signals to effect the alternate different-angled radiation of X-rays at a rate of thirty pulses per second and to effect alternate response of two of the electron beams to video signals from said camera means respectively to the angles of X-ray radiation, whereby images of the observed object are alternately presented on the screen of said color picture tube at horizontally offset positions in accord with the different angles of X-ray radiation and in respective colors which may be separated by the viewer for stereo effect with use of two-color eye glasses.

3,309,520
DENTAL X-RAY FILM PACKET WITH FOLDABLE TABS TO PROVIDE GRIPPING MEANS

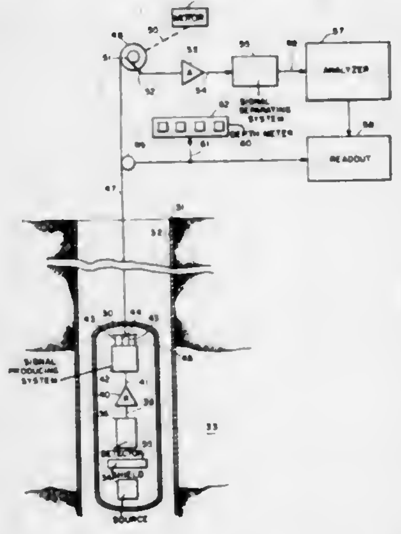
Christy D. Cugini, 54 Hudson Place, Staten Island, N.Y. 10303
Filed Oct. 5, 1964, Ser. No. 401,370
10 Claims. (Cl. 250—69)



1. A dental X-ray film packet comprising: a film, a back sealing sheet and a front sealing sheet extending around the edges of said film and being adhesively secured to said back sealing sheet, said front sealing sheet having two opposed score lines spaced apart thereon, each said score line partially enclosing a tab area on said front sheet forming a tab, a central sheet portion positioned between the tab areas, said sheet portion being integral with that portion of the front sheet outside said areas, said tab areas being foldable back to a mutual facing position to provide gripping means.

3,309,521
TRANSMISSION OF WELL LOGGING SIGNALS IN BINARY OR DIGITAL FORM

James D. Bargainer, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 18, 1963, Ser. No. 288,716
62 Claims. (Cl. 250—83.3)

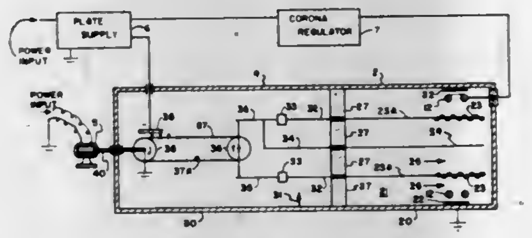


1. A borehole logging system for producing intelligence signals in a borehole for transmission to the surface by way of an electrical conductor signal transmission system including at least one electrical conductor, comprising:

a logging tool including a source for applying energy to the formations of interest,
means for detecting in said borehole a resulting phenomenon having characteristic parameters of interest dependent upon the formations adjacent said borehole,
means for producing timing functions at a substantially constant frequency,
signal producing means responsive at least to said phenomenon detected and to said timing functions for selectively forming an intelligence signal from a plurality of said timing functions proportional in number to the magnitude of at least one parameter which characterizes said phenomenon detected.
said intelligence signal including a plurality of electrical functions representative of said parameter,
said signal producing means being coupled to said electrical conductor signal transmission system for applying thereto for transmission to the surface said plurality of electrical functions forming each intelligence signal,
said signal producing means applying to said transmission system only electrical functions forming each intelligence signal.

3,309,522
PULSED NEUTRON GENERATOR

Arthur H. Youmans and Eric C. Hopkinson, Houston Tex., assignors to Dresser Industries, Inc., Dallas Tex., a corporation of Delaware
Continuation of application Ser. No. 259,073, Feb. 18, 1963. This application May 13, 1965, Ser. No. 456,902
26 Claims. (Cl. 250—84.5)



2. A source of neutrons comprising

an ion beam accelerator and a constant current electrostatic generator;
said accelerator including
  a static atmosphere substantially composed of a heavy hydrogen isotope,
  means including an anode and a cathode arranged to produce an ionizing flow of electrons in said atmosphere,
  and a target containing a heavy hydrogen isotope arranged to receive hydrogen isotope ions produced in said atmosphere by said electron flow;
said generator including
  and endless rotatable belt,
  means for developing an electric charge on said belt at a first location,
  and a collector electrode for receiving such electric charge from said belt at a second location;
said neutron source also comprising
  pulsing means interconnected with said anode and said collector electrode to intermittently conduct said electric charge therebetween to produce said ionizing flow of electrons in a functionally related intermittent manner.

3,309,523
X-RAY TUBE HAVING FIELD EMISSION CATHODE AND EVAPORATIVE ANODE IN COMBINATION WITH ELECTRICAL PULSER MEANS

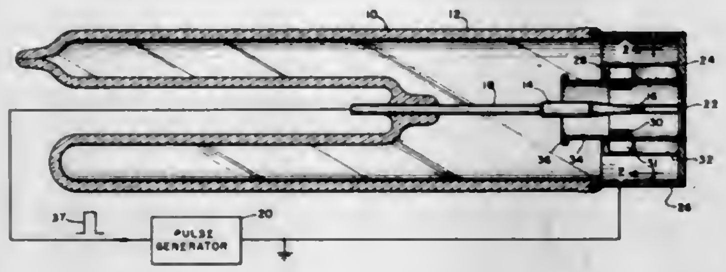
Walter P. Dyke and Frank J. Grundhauser, McMinnville, Oreg., assignors to Field Emission Corporation, McMinnville, Oreg., a corporation of Oregon
Filed June 24, 1963, Ser. No. 289,999
8 Claims. (Cl. 250—102)

1. An X-ray pulse generator, comprising:

a diode X-ray tube having an evacuated envelope;
an anode mounted within said envelope;
a field emission cathode mounted within said envelope

in spaced, insulated relationship with respect to said anode, said cathode having a plurality of spaced, sharpened emitter portions of sufficiently small radii of curvature to enable the field emission of electrons therefrom and causing said electrons to bombard said anode to emit X-rays from said anode; and

pulser means for applying electrical pulses of sufficiently high voltage and high current between said cathode and said anode to initiate the field emission of electrons from at least one emitter portion for each pulse, and to cause some of the material of said cathode to vaporize into positive ions to produce a vacuum arc which greatly increases the current flow in said tube, said anode being sufficiently small and said electrical pulses being of sufficient intensity to cause some of the material of said anode to vaporize when bombarded by said electrons to cool said anode;

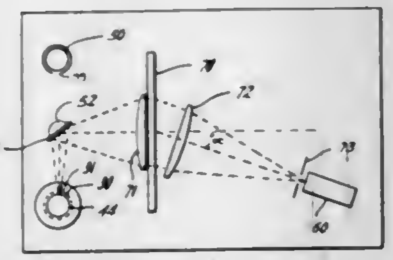


said pulser means including means for forming said electrical pulses with a substantially rectangular waveform and for terminating the electrical pulses before any substantial amount of positive ions of vaporized anode material reaches said cathode to prevent said ions from bombarding the cathode and damaging said cathode.

3,309,524
HYDROGEN DETECTOR USING HYDROGEN PERMEABLE MEMBRANE WITH FEEDBACKS

Clark D. Goodman, Houston, Tex., assignor to Prengle, Dukler & Crump, Inc., Houston, Tex., a corporation of Texas

Filed Mar. 18, 1963, Ser. No. 265,651
13 Claims. (Cl. 250—218)



1. A hydrogen detector comprising:

tube means having a capillary portion for causing a gas being analyzed to be ionized,

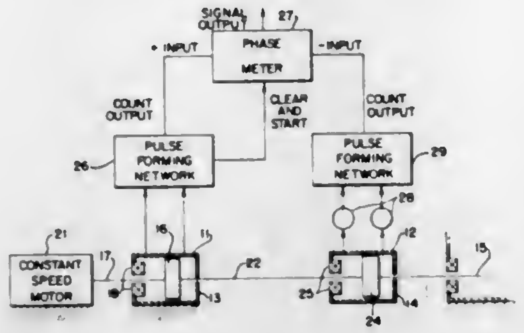
means selectively passing hydrogen into said tube means wherein said hydrogen can be acted on by said ionizing means said hydrogen passing means including a hydrogen permeable membrane formed in one end of said tube means, and

light-sensitive means for controlling the temperature of said hydrogen passing means, said light-sensitive means being activated by the spectral emission of gas ionized by said ionizing means, said temperature being inversely proportional to the amount of spectrally emitted light striking said light-sensitive means.

3,309,525
DOUBLE SHAFT ENCODER USING PHASE METER TO INDICATE RELATIVE ROTATION

Eugene P. Johnson, Jr., Woburn, Mass., assignor to Dynamics Research Corporation, Stoneham, Mass., a corporation of Massachusetts

Filed June 9, 1964, Ser. No. 373,817
8 Claims. (Cl. 250—231)



1. An electromechanical transducer comprising first and second rotor elements, each of said rotor elements having a plurality of alternately light transmissive and non-transmissive sectors disposed circumferentially thereon; a stationary element in close juxtaposition to said first rotor element; an input element in close juxtaposition to said second rotor element, said input element being relatively rotatable with respect to said stationary element; drive means for rotating said first and second rotor elements at substantially constant angular velocity with respect to said stationary element; a first light source fixed to said stationary element on one side of said first rotor element and projecting light onto said first rotor element; a first light sensor mounted on said stationary element on the opposite side of said first rotor element and in a position to receive light from said first light source which is transmitted through said first rotor element; means fixed to said stationary element in the region of said first light source and said first light sensor for modulating light from said first light source such that the amount of light received by said first sensor varies in accordance with the angular position of said first rotor element; a second light source fixed to said input element on one side of said second rotor element and projecting light onto said second rotor element, a second light sensor mounted on said input element on the opposite side of said second rotor element from said second light source in the position to receive light from said second light source transmitted through said second rotor element; second modulating means mounted on said input element in the region of said second light sensor for modulating the light from said second light source such that the amount of light received by said second sensor varies in accordance with the angular position of said rotor element; said first and said second sensors providing electrical output signals which vary in accordance with the amount of light received and phase sensor means for determining the average phase relationship between said output from said first light sensor and said second light sensor for each complete revolution of said rotor elements and providing an output indication of the amount of rotation of said input element with respect to said stationary element.

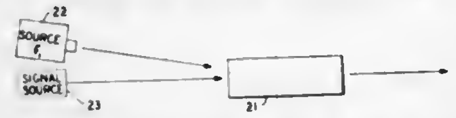
3,309,526
OPTICAL PARAMETRIC AMPLIFIER AND OSCILLATOR WITH ISOTROPIC CRYSTAL, PHASE MATCHING AND LOWER FREQUENCY PUMP

Joseph A. Giordmaine, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 14, 1965, Ser. No. 513,704
7 Claims. (Cl. 307—88.3)

1. An optical parametric device comprising an isotropic crystal, means for producing within said crystal

a phase matched condition among waves of frequencies f_2 and f_3 propagating in said crystal and a traveling wave of index of refraction change in said crystal having a frequency $2f_1$ comprising means for directing energy at a frequency f_1 into said crystal at a power level less than the threshold power for non-phase matched amplification within said crystal, where



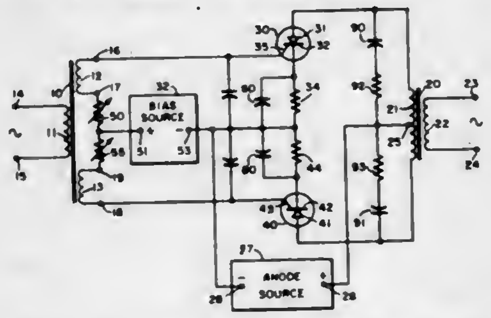
$$f_1=\frac{f_2+f_3}{2}$$

and means for utilizing output radiation from said crystal at the frequency f_2.

3,309,527
CHOPPER AMPLIFIER

Alec H. B. Walker, Trafford, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 21, 1963, Ser. No. 260,198
16 Claims. (Cl. 307—88.5)

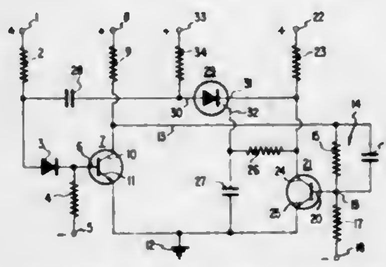


1. A chopper amplifier comprising, at least one controllable rectifier device each having anode, cathode and control electrodes with both turn-on and turn-off control characteristics, input terminals, output terminals, a source of anode voltage connected in series with said anode and cathode electrodes, a source of bias voltage connected in series with said control and cathode electrodes, a resistance connected in both the anode-cathode and control-cathode circuits, reactance means connected in the control-cathode circuit to delay both the flow of turn-off current generated by said resistance and the flow of turn-on current from said bias source and hence predetermine the chopping frequency and duty cycle of the conductive and non-conductive states of said device, means to couple a signal to be amplified from said input terminals in series with the bias source in the control-cathode circuit of said device, and means to couple the amplified output signal in said anode circuit to said output terminals.

3,309,528
MONOSTABLE MULTIVIBRATOR EMPLOYING A SILICON CONTROLLED RECTIFIER

Kenneth L. Ziegler, Stow, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed May 1, 1963, Ser. No. 277,279
10 Claims. (Cl. 307—88.5)

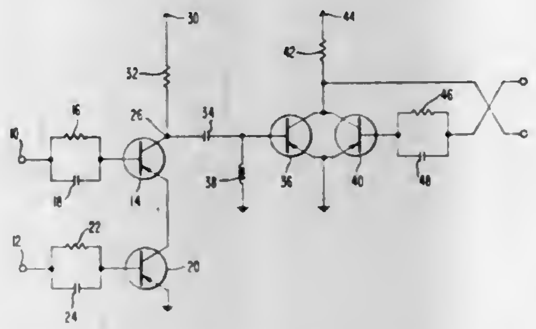


1. A multivibrator circuit comprising at least a first and a second amplifier, each amplifier having at least a control element and an output element, means interconnecting said amplifiers to render each of said amplifiers non-conductive when the other amplifier is conductive, said means including a reactance element connected to the control element of the first amplifier and a gated uniconductive element having two main electrodes and a gate electrode, said uniconductive element being a silicon controlled rectifier, said main electrodes connecting said reactance element in series to the output element of the second amplifier, means connected to the gate of the uniconductive element to render the uniconductive element conductive when the second amplifier is conductive, and means for connecting a source of charging voltage for the reactance element between the reactance element and the uniconductive device.

3,309,529
RINGING TRIGGER MEANS FOR FLIP-FLOP

Albert M. Bates, Davisville, and Joseph J. Karew, Warminster, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Aug. 20, 1963, Ser. No. 303,254
10 Claims. (Cl. 307—88.5)



1. Apparatus for switching an active circuit element having a two-terminal input circuit from a first state to a second state comprising:

input means providing a first voltage pulse having a predetermined pulse width and a polarity opposite that necessary to switch said active circuit element from said first state to said second state; and

resonant differentiating means which resonates at a frequency the period of which is approximately double the duration of said voltage pulse, for producing only one pulse having a polarity opposite the polarity of said first pulse after the termination of said first pulse, of switching magnitude for said active circuit element, and which comprises a series network including inductance means, a capacitor connected directly to said inductance means at one end and resistance damping means;

said input means being electrically connected across said capacitor and said inductance means, and said inductance means being electrically connected across the input circuit of said active element.

3,309,530
RINGING TRIGGER FOR FLIP-FLOP INCORPORATING UNIDIRECTIONALLY CONDUCTIVE BLOCKING AND LEVEL SHIFTING MEANS

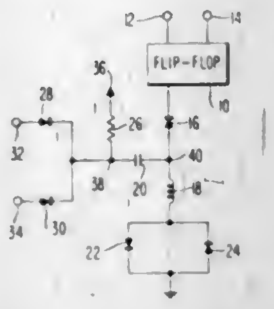
William A. Lacher, North Wales, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Sept. 26, 1963, Ser. No. 311,800
12 Claims. (Cl. 307—88.5)

1. Apparatus for switching an active circuit element from one state to another comprising:

an input terminal adapted to receive a first trigger pulse;

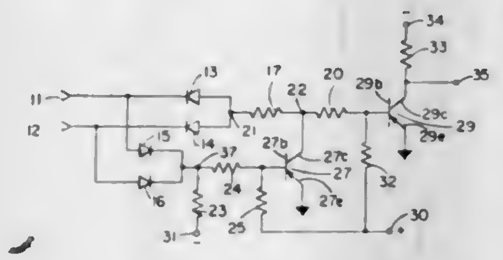
resonant pulse forming means, electrically connected to said input terminal, for converting the energy from said first trigger pulse to a series of oscillatory pulses including a second pulse having a polarity opposite to that necessary to switch said circuit element from one state to the other and to a third pulse of the polarity necessary to switch said circuit element from one state to another and of substantially the same width as said second pulse;



unidirectional means, electrically connected to said pulse forming means, for blocking said second pulse and passing said third pulse, and

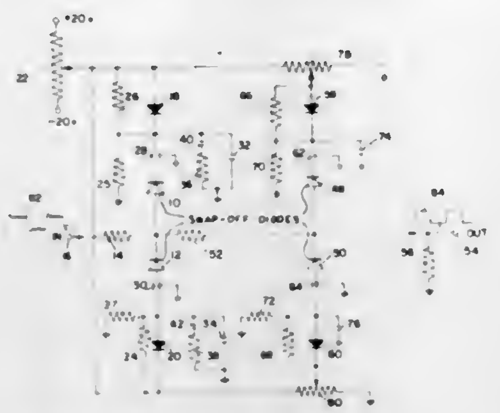
an output terminal, electrically connected to said unidirectional means, adapted to provide said active circuit element with said third pulse.

3,309,531
TRANSISTORIZED EXCLUSIVE OR LOGIC CIRCUIT
Glenn R. Hearn, Burlington, Mass., and Edward C. Nellum, Rochester, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 4, 1964, Ser. No. 349,427
3 Claims. (Cl. 307—88.5)



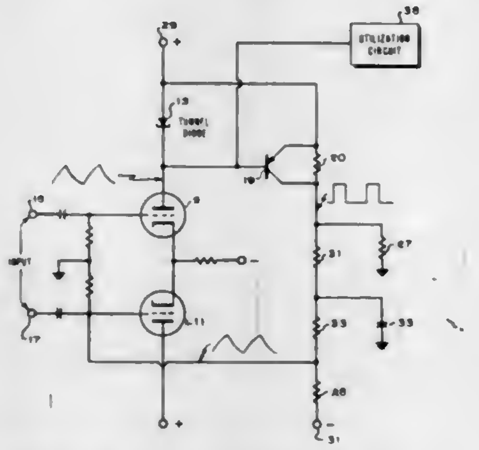
1. A logic circuit comprising: first and second transistors each having base, emitter and collector electrodes; first and second input terminals to which respective sources of input voltage levels are adapted to be applied; first and second diodes; a first resistor; said first diode being connected between said first input terminal and said first resistor; said second diode being connected between said second input terminal and said first resistor; a second resistor; means connecting said first and second resistors in series to the base electrode of said first transistor; third and fourth diodes; said third and fourth diodes being respectively connected between said first and second input terminals and one terminal of a third resistor, means connecting the other terminal of said third resistor to the base electrode of said second transistor; a first source of potential connected to the junction of said third and fourth diodes and said third resistor; a second source of potential opposite in polarity to said first source of potential connected to the base of said second transistor; further means connecting the base electrode of said first transistor to said second source of potential; a point of reference potential; means directly connecting the emitter electrodes of said first and second transistors to said point of reference potential; means directly connecting the collector electrode of said second transistor to the junction between said first and second resistors; a third source of potential connected to the collector electrode of said first transistor; and an output terminal connected to the collector electrode of said first transistor.

3,309,532
WAVE SHAPING AND VOLTAGE LIMITING CIRCUIT EMPLOYING PLURAL SNAP-OFF DIODES
George J. Frye, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., an Oregon corporation
Filed Mar. 20, 1964, Ser. No. 353,379
7 Claims. (Cl. 307—88.5)



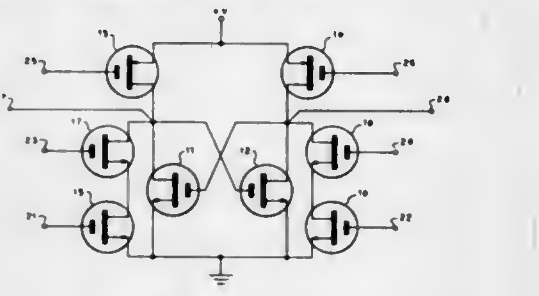
1. A wave shaping circuit, comprising:
a pair of snap-off diodes each having a pronounced minority carrier charge storage characteristic;
means connecting said snap-off diodes together and to an input terminal with opposite polarities;
a load impedance connected across said snap-off diodes and to an output terminal; and
means for forwardly biasing one snap-off diode and for reversely biasing the other snap-off diode so that an input signal applied to said input terminal causes said snap-off diodes to produce an output signal across said load impedance having a wave form whose leading and trailing edges have steeper slopes than the input signal.

3,309,533
SWEEP-TRIGGER-CIRCUIT EMPLOYING TUNNEL-DIODE DIFFERENTIAL-AMPLIFIER AND TIMING-NETWORK PROVIDING EITHER AUTOMATIC OR SYNCHRONIZED-INPUT TRIGGERING OF SWEEP
Scott McClendon, Palo Alto, and Norman B. Schrock, Los Altos Hills, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed May 5, 1964, Ser. No. 365,048
4 Claims. (Cl. 307—88.5)



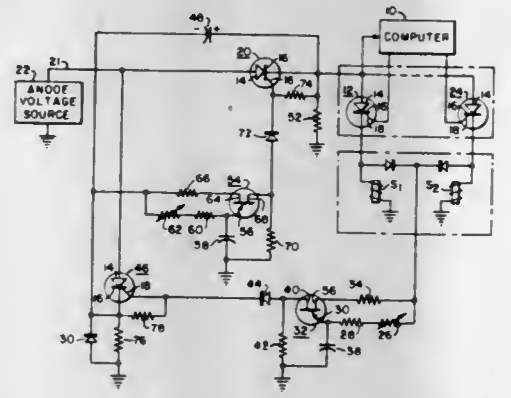
1. An oscilloscope circuit comprising:
a tunnel diode and means connected thereto for biasing the tunnel diode for two-state operation on its peak and valley current characteristic;
a controllable current source responsive to an input signal and connected to said tunnel diode for applying current thereto with sufficient amplitude to vary the current therethrough continuously beween the peak and valley current value of the tunnel diode to switch the operating states thereof at such values in response to the continuous variations with time of the amplitude of an input signal applied to the current source;
a timing circuit having an input and an output and including resistance and reactance;
means connecting the input of the timing circuit to receive the signal appearing across the tunnel diode and means connecting the output of the timing circuit to the current source to form a relaxation oscillator circuit in the absence of input signal applied to the current source for producing output signals in response to variations of the current though the tunnel diode between the peak and valley current values thereof at a rate determined by the time constant of the resistance and reactance of the timing circuit.

3,309,534
BISTABLE FLIP-FLOP EMPLOYING INSULATED GATE FIELD EFFECT TRANSISTORS
Edwin K. C. Yu, Manville, and Adolph K. Rapp, Princeton, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 22, 1964, Ser. No. 384,563
1 Claim. (Cl. 307—88.5)



A bistable flip-flop storage element comprising:
first and second output terminals;
first and second switching pulse input terminals;
first and second load transistors each having a gate, a drain, and a source, said transistors each being an insulated gate, field effect device of a first conductivity type having a maximum current characteristic and a leakage current characteristic, said sources thereof being directly connectable in parallel to a bias potential source, said drains thereof each being directly connected to a respective one of said first and second output terminals, and said gates thereof each being directly connected to a respective one of said first and second input terminals;
first and second control transistors each having a gate, a drain and a source, said transistors each being an insulated gate, field effect device of a second conductivity type having a maximum current characteristic less than that of said load transistors and a leakage current characteristic less than of said load transistors, said drains of said control transistors each being directly connected to a respective one of said first and second output terminals, said gates of said control transistors each being directly connected to a respective other of said first and second output terminals and said sources of said control transistors being directly connectable in parallel with a reference potential source;
third and fourth switching pulse input terminals;
first and second state signal input terminals;
fifth and sixth transistors each having a gate, a drain and a source, said transistors each being an insulated gate, field effect device of said second conductivity type, said drain of one of said transistors being connected to said source of the other of said transistors, said drain of said other transistor being directly connected to one of said first and second output terminals, said gate of one of said transistors being directly connected to one of said third and fourth switching pulse input terminals, and said gate of the other of said transistors being directly connected to one of said first and second state signal input terminals;
seventh and eighth transistors each having a gate, a drain and a source, said transistors each being an insulated gate, field effect device of said second conductivity type, said drain of one of said transistors being connected to said source of the other of said transistors, said drain of said other transistor being directly connected to the other of said first and second output terminals, said gate of one of said transistors being directly connected to the other of said third and fourth switching pulse input terminals, and said gate of the other of said transistors being directly connected to the other of said first and second state signal input terminals; and
said sources of said one of said fifth and sixth transistors and said one of said seventh and eighth transistors being directly connectable in parallel with the reference potential source.

3,309,535
SWITCHING CIRCUITRY FOR SEMICONDUCTIVE CONTROLLED RECTIFIERS
James F. Sutherland and Tibor D. Rubner, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 28, 1964, Ser. No. 392,736
11 Claims. (Cl. 307—88.5)

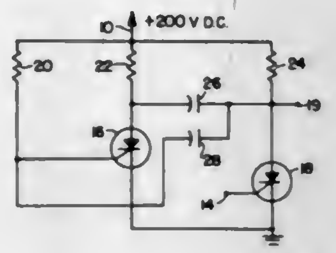


1. Apparatus for interrupting the anode circuit to a semiconductive controlled rectifier at the termination of a first period T_1 following firing of the rectifier and for thereafter restoring the anode circuit at the termination of a second period T_2, comprising a normally closed switch device in said anode circuit, first time delay means responsive to the current flow through said switch device for opening said switch device to break said anode circuit at the completion of the period T_1, and second time delay means responsive to the opening of said switch device for again closing said switch device to restore said anode circuit at the completion of the period T_2.

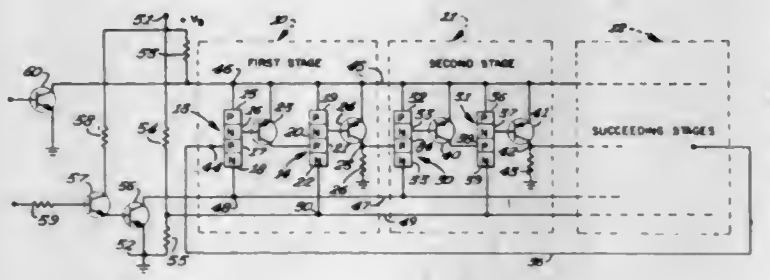
3,309,536
ONE-SHOT MULTIVIBRATOR CIRCUIT
George E. Misthos, Glenview, Ill., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Filed Nov. 16, 1964, Ser. No. 411,504
9 Claims. (Cl. 307—88.5)

1. A one-shot multivibrator comprising a source of direct current operating voltage having a positive terminal and a negative terminal, first and second controlled rectifiers one of which is normally conducting and the other of which is normally non-conducting, and each of which has an anode terminal connected to the positive terminal, a cathode terminal connected to the negative terminal

and a gate terminal; first and second loads in series with the first and second controlled rectifiers respectively; means for providing a circuit where only one of said controlled rectifiers conducts at a time including a commutating capacitor connected to junctions between each load and its associated controlled rectifier, a resistor and a second capacitor connected together at a further junction to form a series circuit, a free terminal of the second capacitor being connected to the junction of the load and one rectifier and a free terminal of the resistor being connected to a point of fixed potential positive relative to the cathode terminal of said one rectifier; a circuit connection between said further junction and the gate terminal of the other rectifier; and means for actuating said multivibrator circuit comprising input signal pulses applied to the gate terminal of said one rectifier.



3,309,537
MULTIPLE STAGE SEMICONDUCTOR CIRCUITS AND INTEGRATED CIRCUIT STAGES
Alva I. Archer, North Palm Beach, Fla., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Nov. 27, 1964, Ser. No. 427,199
22 Claims. (Cl. 307—88.5)



10. An integrated semiconductor ring counter stage comprising:

a block of semiconductive material having a first conductivity type;

first, second, third, and fourth regions of opposite conductivity type disposed within said block;

fifth, sixth, seventh, and eighth regions of said first conductivity type disposed respectively within said first through fourth regions;

ninth, tenth, eleventh, twelfth, and thirteenth regions of said opposite conductivity type disposed within said fifth through eighth regions and said block respectively;

fourteenth and fifteenth regions of said first conductivity type disposed respectively within said ninth and eleventh regions;

first and second ohmic contacts at opposite ends of said thirteenth region;

ohmic contacts to each of said first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth, eleventh, twelfth, fourteenth, and fifteenth regions and to said semiconductive block;

conductive means connecting said fourth region contact to said first contact;

conductive means connecting said fifth region contact to said sixth region contact;

conductive means connecting said seventh region contact to said eighth region contact;

conductive means connecting said second region contact to said eleventh region contact; and

conductive means connecting said first region contact, said tenth region contact, said third region contact and said twelfth region contact.

15. A semiconductor apparatus comprising:

a plurality of electrically energizable stages,

each of said stages including

first and second four layer semiconductor devices,

first semiconductor current controlling means connected in controlling relation to said second device,

means connecting first device in controlling relation to said first semiconductor means,

further semiconductor current controlling means for connecting in controlling relation to the first device of another stage, and

means connecting said second device in controlling relation to said further semiconductor means;

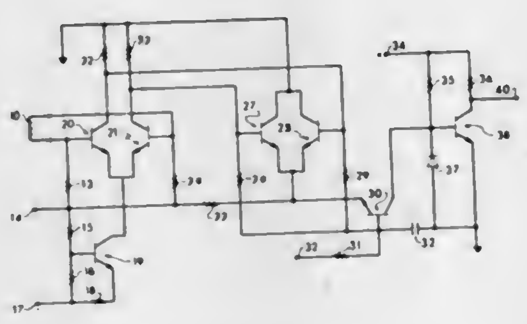
means electrically interconnecting said plurality of stages;

first and second energizing terminals for connection to a source of energy;

means electrically connecting all of said first devices between said first and second terminals; and

means electrically connecting all of said second devices between said first and second terminals.

3,309,538
SENSITIVE SENSE AMPLIFIER CIRCUITS CAPABLE OF DISCRIMINATING MARGINAL-LEVEL INFO-SIGNALS FROM NOISE YET UNAFFECTED BY PARAMETER AND TEMPERATURE VARIATIONS
Albert H. Ashley, Holliston, and Matthew C. Abbott, Wakefield, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,121
14 Claims. (Cl. 307—88.5)



1. A sense amplifier circuit comprising:

a balanced difference amplifier having first and second input terminals adapted to receive bipolar signals, and first and second output terminals;

a discrimination stage having first and second input terminals and first and second output terminals;

means connecting the first and second output terminals of said balanced difference amplifier to the first and second input terminals, respectively, of said discrimination stage;

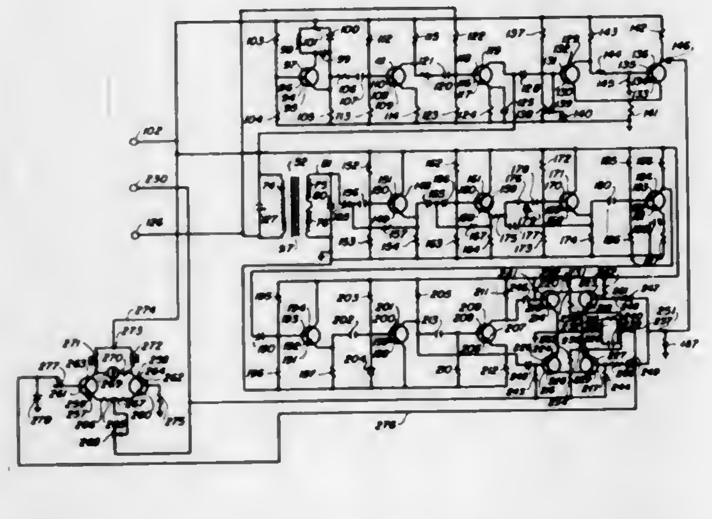
a gating amplifier having first and second input terminals and an output terminal;

means connecting the first and second output terminals of said discrimination stage directly to the first input terminal of said gating amplifier;

first and second resistors respectively connected between the first and second input terminals of said discrimination stage and the second input terminal of said gating amplifier; and

a third resistor connected between the second input terminal of said gating amplifier and a point of reference potential, said first, second and third resistors being operative to establish the discrimination level of said sense amplifier circuit, said discrimination level being proportional to the ratio of the resistance values of said first, second and third resistors and independent of the absolute values of said resistors.

3,309,539
PHASE DETECTOR CIRCUIT
Daniel R. Brosious, Bethlehem, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Original application Aug. 6, 1963, Ser. No. 300,211. Divided and this application Feb. 7, 1966, Ser. No. 525,756
8 Claims. (Cl. 307—88.5)



1. A circuit for determining any difference in phase between a first and a second alternating signal having the same frequency, comprising:

(a) a first source of D.C. potential, negative in polarity;

(b) a second source of D.C. potential, positive in polarity and equal in magnitude to said first source;

(c) a voltage divider network comprising first, second, third, and fourth resistors connected in series between said first and second sources;

(d) said first and fourth resistors being equal in magnitude;

(e) said second and third resistors being equal in magnitude;

(f) output means, including integrating means, connected to the junction of said second and third resistors;

(g) first and second switching means connecting the junction of said first and second resistors to ground;

(h) third and fourth switching means connecting the junction of said third and fourth resistors to ground;

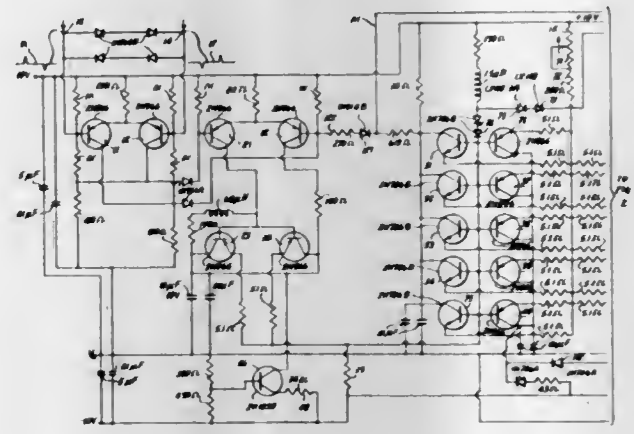
(i) means for shifting the phase of said second signal by 90 degrees;

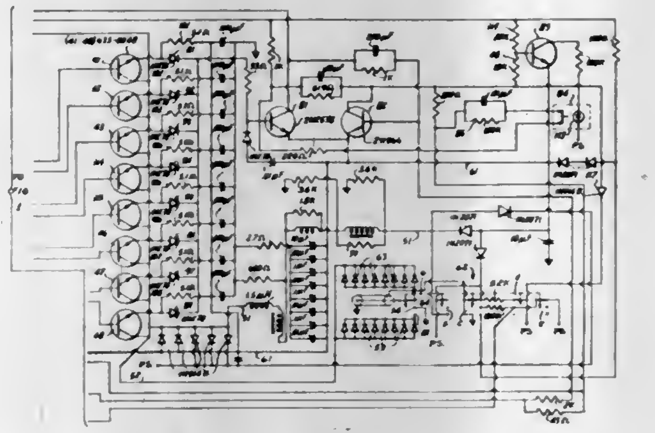
(j) means coupling said phase-shifted second signal to said first and third switching means for simultaneously opening said first and third switching means during alternate half cycles of said phase-shifted second signal;

(k) means coupling one half cycle of said first signal to said second switching means for opening said second switching means during said half cycle; and

(l) means coupling the other half cycle of said first signal to said fourth switching means for opening said fourth switching means during said other half cycle.

3,309,540
PULSE GENERATOR
John C. Hubbs, Lafayette, Calif., assignor to E-H Research Laboratories, Inc., Oakland, Calif., a corporation of California
Filed Dec. 31, 1963, Ser. No. 334,855
5 Claims. (Cl. 307—106)

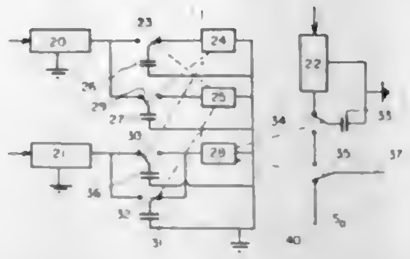




1. A pulse generator comprising at least one active element operative in at least two states, a first state wherein it presents a high impedance between two terminals and a second state where it presents a low impedance between the same two terminals, means for conditioning said active element to normally assume said first or said second state, means responsive to input signals of one polarity for switching said element from the first to the second state for a predetermined time when the element is conditioned normally to said first state and for switching said active element from said second state to the first state when the element is conditioned normally to said second state, output means, means connected to said output means and said active element for supplying current thereto when the active element is conditioned normally in its second state, a current source, a voltage source, switching means connected to said output means and said active element and having a first condition for coupling said current source to said active element and for biasing said active element to normally assume its second state, said active element serving to normally direct current away from said output means and to pass current to said output means when it is switched to its first state by said input signals, said switching means having a second condition for coupling said voltage source to said active element and decoupling said current source and for biasing said active element to normally assume its first state and to supply voltage to said output means when it is switched to its second state.

3,309,541
APPARATUS FOR CAUSING SIGNALS AT RANDOM INTERVALS

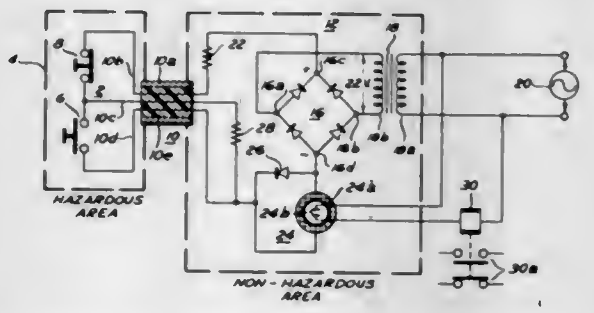
Bernard Stuart Baker, Coventry, England, assignor to Courtaulds Limited, London, England, a company of Great Britain
Filed May 21, 1965, Ser. No. 457,759
2 Claims. (Cl. 307—106)



1. In a control system, a first waveform generator, first charge storage means, first discharge storage means including a first relay, second charge storage means, second discharge means including a second relay, connecting means operated by said second relay for alternately connecting said first storage means to said generator and said first discharge means, and connecting means operated by said first relay for alternately connecting said second charge storage means to said generator and said second discharge means, a second waveform generator, a third and a fourth charge storage means, third discharge means including a third relay, connecting means operated by said first relay for alternately connecting said third storage means to said second generator and said third discharge means, connecting means operated by said second relay for alternately connecting said fourth storage means to said second generator and said third discharge means, and output means controlled by said third relay.

3,309,542
INTRINSICALLY SAFE SWITCHING SYSTEMS

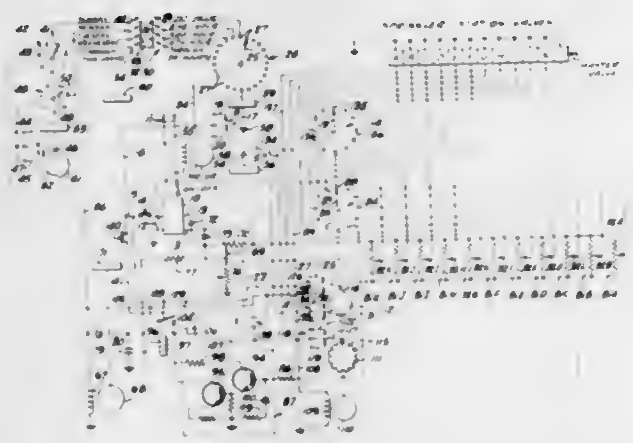
William H. Elliot, Whitefish Bay, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Oct. 31, 1963, Ser. No. 320,487
7 Claims. (Cl. 307—136)



1. A system for controlling from an intrinsically safe control station located in an area where a hazardous atmospheric mixture may be present an electroresponsive device located in a nonhazardous area comprising:
- general purpose switching means at the hazardous area;
- a control circuit at the nonhazardous area for controlling energization of the electroresponsive device;
- a sealed electric conduit comprising conductors connecting said control station to said control circuit and preventing passage therethrough of the hazardous atmospheric mixture from the hazardous area to the nonhazardous area;
- and said control circuit comprising sensitive electroresponsive means;
- a source of direct current for supplying unidirectional energy to said sensitive electroresponsive means;
- means connecting said switching means through said electric conduit in circuit with said sensitive electroresponsive means and said source of direct current for controlling the energization of said sensitive electroresponsive means and reducing any capacitive effect in the conductors between said switching means and said control circuit;
- and means connecting in circuit said sensitive electroresponsive means, said switching means and said source of direct current for transmitting to said switching means at the hazardous area an amount of unidirectional electrical energy insufficient to cause ignition of the hazardous atmosphere when said switching means is operated but sufficient to cause operation of said sensitive electroresponsive means when said switching means is operated.

3,309,543
AUTOMATIC CONTROL FOR SPRINKLER SYSTEMS

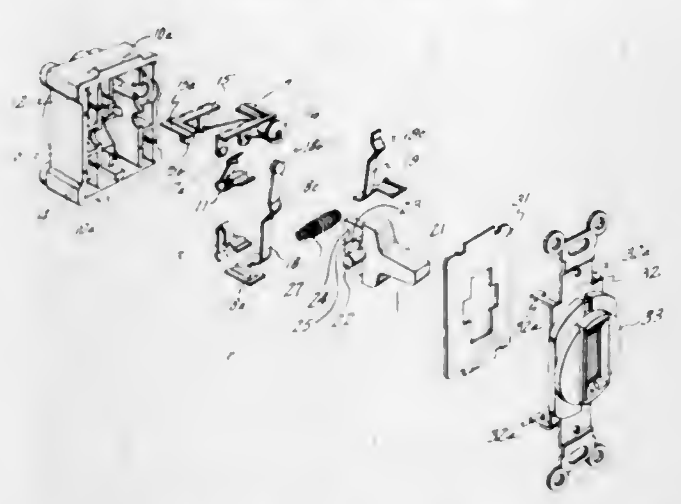
Russell M. Alston, West Covina, and Carl R. Sharp, Glendora, Calif., assignors to Rain Bird Sprinkler Mfg. Corp., Glendora, Calif., a corporation of California
Filed July 22, 1963, Ser. No. 296,844
12 Claims. (Cl. 307—141.4)



1. A system for controlling a plurality of sprinkler stations comprising:
- a power supply;
- a motor;
- means connecting said power supply with said motor to energize said motor, said connecting means including first switch means for permitting current flow through said connecting means at selected hours of the day and second switch means for permitting current flow through said connecting means on selected days of the week;
- a master potentiometer connected to said power supply;
- means drivingly connecting the wiper arm of said master potentiometer to said motor;
- a plurality of adjustable potentiometers, each of said potentiometers corresponding to one of said sprinkler stations, said adjustable potentiometers being connected to said power supply to form a plurality of bridge circuits with said master potentiometer, the output of each bridge circuit appearing between the wiper arm of the master potentiometer and the wiper arm of the respective adjustable potentiometer;
- a switch having a plurality of contacts and means for sequentially engaging said contacts, each of said contacts being connected to the wiper arm of one of said adjustable potentiometers;
- a transistor amplifier having an input and an output, said input being connected to said sequentially engaging means of said switch;
- a relay having a coil and a pair of contacts engageable by energization of said coil, said coil being connected in series with said output of said amplifier whereby it is energized upon conduction of said amplifier;
- a second motor;
- means drivingly connecting said second motor with said sequentially engaging means of said switch; and
- means for connecting said motor to said power supply, said means including said contacts of said relay.

3,309,544
THREE-POSITION SWITCH

Gustaf R. Lawson, West Warwick, R.I., assignor to General Electric Company, a corporation of New York
Filed Feb. 21, 1961, Ser. No. 90,821
4 Claims. (Cl. 307—146)

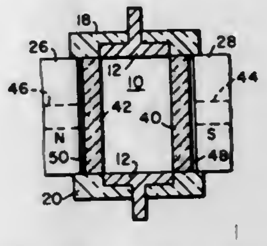


1. A three-position switch comprising a housing formed by a recessed base and cover member, a pair of spaced fixed contacts in register with each other in said housing, a dry rectifier connected across said contacts, a first terminal to which one of said fixed contacts is connected, a movable spring contact blade having motion between said fixed contacts, said movable contact blade having a detent-engaging lateral ridge across the center portion thereof, a second terminal to which said movable contact blade is connected, a manually operable trigger movable about a pivotal axis between two extreme at-rest positions and a mid-way at-rest position, a detent on the base of said trigger in engagement with said movable contact blade and the lateral ridge thereof for causing said movable contact blade to engage one of said fixed contacts in one extreme position and the other of said fixed contacts in the opposite extreme position while holding said movable contact out-of-contact with said fixed contacts in the mid-way position, the base portion of said trigger having a bottom edge on the interior of said housing forming an indexing cam surface with three spaced spring pockets, and a spring member in said housing engaged by said cam surface and being displaceable by movement of said cam surface whereby said spring member when in engagement with said spring pockets maintains said trigger in one of its three at-rest positions.

3,309,545
GASEOUS INSULATION FOR MAGNETO-HYDRODYNAMIC ENERGY CONVERSION APPARATUS

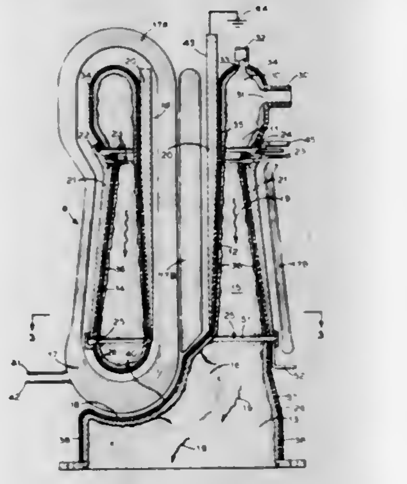
Werner S. Emmerich, Churchill Borough, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 17, 1962, Ser. No. 210,408
2 Claims. (Cl. 310—11)

1. In thermal to electrical energy conversion apparatus operative with a flow of working fluid and a coolant gas, the combination of: a generator member including opposed side and opposed electrode bearing wall members to form a duct through which said flow of working fluid may pass; a plurality of electrically conducting electrodes disposed on said electrode bearing wall members and adjacent said flow of working fluid; said side wall members comprising a porous material; and cooling means to supply said coolant gas to said porous side wall members so that said coolant gas may pass therethrough into said duct to form a layer of coolant gas between each of said side wall members and said flow of working fluid.



3,309,546
APPARATUS FOR THE GENERATION OF ELECTRIC ENERGY

Richard H. Boll, Alliance, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 14, 1963, Ser. No. 265,248
7 Claims. (Cl. 310—11)



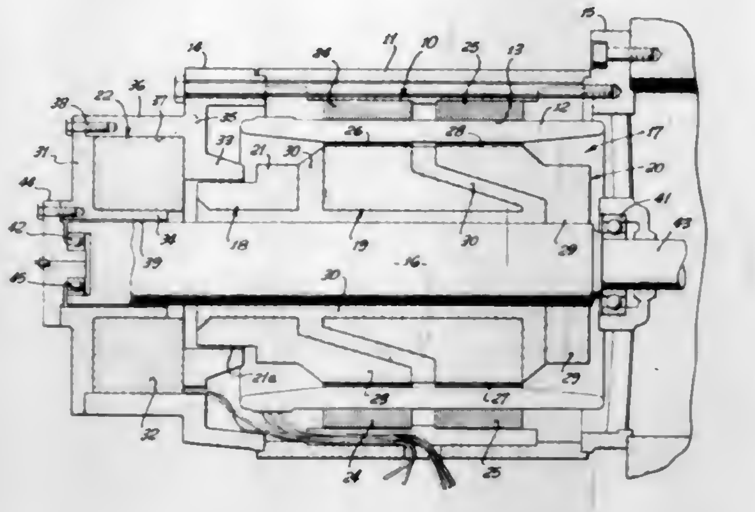
1. Apparatus for generating electric power comprising walls forming concentric frusto-conical electrodes defining a circumferentially unobstructed annular gas-flow passage therebetween, said gas-flow passage increasing in flow area in the direction of gas flow therethrough, means for passing a high velocity flow of electrically conducting gas through said annular gas-flow passageway to produce axial and circumferential flow including walls defining inlet and outlet means, means for producing a magnetic field within said annular gas-flow passage substantially perpendicular to the direction of gas-flow through said annular gas-flow passage, means for electrically separating said electrodes from said walls defining the said inlet and outlet means, means for collecting generated electric power from said electrodes.

3,309,547
BRUSHLESS ALTERNATOR

Richard C. Woodward, Jr., Fullerton, Calif., assignor to Emerson Electric Co., a corporation of Missouri
Filed Nov. 13, 1962, Ser. No. 237,064
10 Claims. (Cl. 310—168)

1. In a brushless synchronous dynamoelectric machine: a stator of magnetic material; a rotor shaft of magnetic flux transfer relationship thereto, said second having pole means in magnetic flux transfer relationship to said shaft and rotatable within the stator structure; a second rotor section mounted on the shaft but out of magnetic flux transfer relationship thereto, said second rotor section section having pole means rotatable within the stator structure; said rotor sections being magnetically

separated parts of a rotor structure; said second rotor section having a cylindrical part located beyond the stator in magnetic flux transfer relationship to its pole means; and a non-rotary field magnet structure having annular



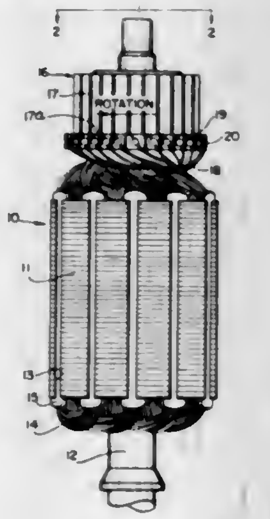
pole parts providing cylindrical surfaces respectively opposed to the shaft and the cylindrical part of said second rotor section, said field magnet being located beyond the end of the stator structure.

3,309,548
ARMATURE LEAD CONNECTIONS

Carroll L. Gough, Baltimore, and Robert E. Dorsee, Towson, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland

Filed Sept. 2, 1964, Ser. No. 394,021

2 Claims. (Cl. 310—234)



1. In an armature for a commutator-type of electric motor which is subjected to vibrational forces in usage, wherein the armature is provided with an armature shaft, a stack of laminations, and a plurality of conventional windings in respective winding slots formed therein, and further is provided with a respective plurality of commutator segments with respective leads connecting the segments to the windings, the improvement in means to prevent lead breakage, which comprises:

(a) each lead being brought around to its respective commutator segment in a position which is approximately 180 degrees away, circumferentially, from its winding slot on the armature, thereby deliberately increasing the length of the lead which may accommodate and absorb relatively-high vibrational forces imposed upon the armature; and each lead being disposed in as close as possible to the armature shaft, whereby the various leads are in effect twisted about the armature shaft with substantially no clearance therebetween;

(b) a skewed slot formed in each of the commutator segments; and

(c) the free end of each lead being secured within the skewed slot of its respective segment on the commutator, the skewed design of the slot further accommodating the imposition of vibrational forces on the armature.

2. The improvement of claim 1, wherein:

(a) each lead is brought around in the direction of rotation; and

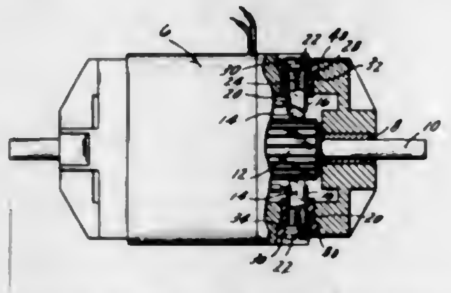
(b) each slot is skewed in the direction of rotation.

3,309,549
BRUSH HOLDER ASSEMBLY AND MOUNTING

Gary G. Bluemink, Racine, Wis., assignor, by mesne assignments, to MSL Industries, Inc., Racine, Wis., a corporation of Minnesota

Filed July 17, 1963, Ser. No. 295,728

11 Claims. (Cl. 310—247)



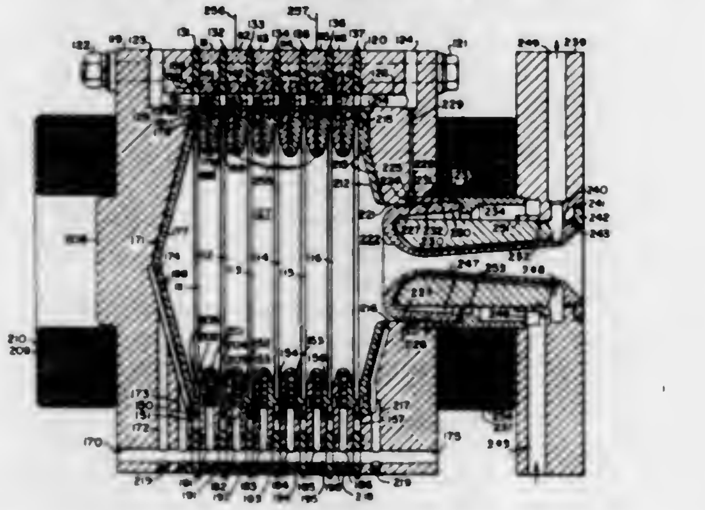
10. In a motor or the like, the combination with a die cast shell having a shaft bearing and a generally radial opening, said shell having a shoulder about the opening and an outwardly opening cavity constituting an enclosed part of the opening beyond the shoulder, said shell having an integral rib projecting into the cavity and integral with the shoulder, of an electrically insulating brush holder in the opening having an enlarged head seated on the shoulder and fitted in the cavity and in which said rib is embedded, said rib securing said brush holder against rotation in the opening, and means for confining the brush holder against axial displacement from the opening.

3,309,550
MULTIPLE ANNULAR ELECTRODE GAS ARC HEATER WITH A MAGNETIC ARC SPINNER

Charles B. Wolf, Irwin, and George A. Kemeny, Export, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 6, 1964, Ser. No. 349,893

21 Claims. (Cl. 313—231)



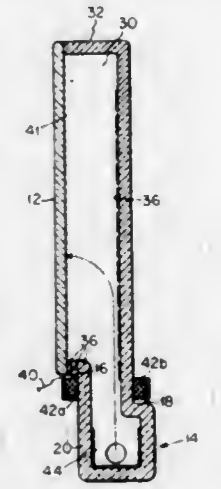
10. Arc heater apparatus comprising, in combination, a plurality of similar annular rings composed of conductive material and disposed in axial alignment in a stack, a plurality of annular insulating gaskets disposed between the rings and insulating and spacing each ring from the rings on each side thereof, a first end cover plate composed of a nonmagnetic material disposed adjacent the ring at one end of the stack, an additional gasket insulating the first end cover plate from said adjacent ring, a second end cover plate located adjacent the ring at the other end of the stack, the second end cover plate having an annular aperture therethrough, nozzle means disposed in the annular aperture, a further gasket insulating the second end cover plate from the adjacent ring, each of the rings having a plurality of concentric circular passageways therein of progressively increasing diameter, each of the rings having conduit means therein connecting with the plurality of circular passageways for bringing a cooling fluid to the passageways and conducting fluid therefrom, means for admitting gas to be heated to the chamber through the spaces between rings, means for applying an energizing potential to a selected two of the rings to form an electric arc therebetween inside the chamber, and means for setting up a magnetic field of predetermined strength and direction inside the chamber, the arc heating the gases admitted to the chamber whereafter the gases are exhausted through the nozzle means.

3,309,551
ENVELOPE FOR FLAT CATHODE TUBES WITH LOWER SECTIONS OF FRONT AND REAR WALLS SIMILARLY DISPLACED

William R. Aiken, 10410 Magdalena Ave., Los Altos Hills, Calif. 94022

Filed June 1, 1964, Ser. No. 371,664

2 Claims. (Cl. 313—79)



1. An envelope for flat cathode ray tubes comprising relatively spaced front and rear walls, each having an upper and a lower section displaced from each other in the same direction, a first connecting wall portion extending between the upper and lower sections of said front wall in a plane substantially perpendicular to the planes defined by said wall sections and a second connecting wall portion extending between the upper and lower sections of said rear wall in a plane substantially perpendicular to the planes defined by said wall sections and located at a lower level than said first connecting wall portion, said upper front wall section having a phosphor layer upon its inner surface, electrode means in the space between said lower wall sections for deflecting an electron beam upwardly into a vertical plane adjacent the inner surface of said upper rear wall section, and magnetic means at either side of said plane of deflection below said first connecting wall portion and above said second connecting wall portions respectively, for accentuating the upward deflection of the electron beam by said electrode means.

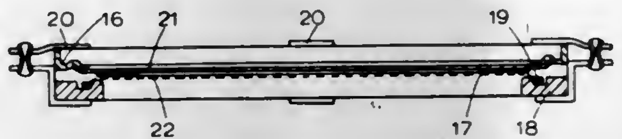
3,309,552
NON-MAGNETIC METAL MOUNTING FRAME FOR PICK-UP TUBE TARGETS FOR PREVENTING MICROPHONY

John Edwin Ingliston Cairns, Chalfont St. Peter, Harry Cassman, Ealing, London, and Albert Horace Atherton, Ruislip, England, assignors to Electric & Musical Industries Limited, Middlesex, England, a company of Great Britain

Filed May 2, 1963, Ser. No. 277,599

Claims priority, application Great Britain, May 4, 1962, 17,121/62

5 Claims. (Cl. 313—89)



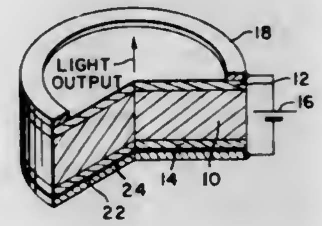
1. A pick-up tube adapted for magnetic deflection of the scanning beam having a target in the form of a dielectric membrane supported by a metal frame, means which in operation of the tube produces a beam of electrons which are directed at one surface of the target, means which in operation of the tube projects an electron image on the other surface of the target, and an electrically conducting mesh disposed adjacent to the target, vibration of said target relative to said mesh being liable to produce spurious variations in the output signal of the tube, wherein said metal frame is constructed of non-magnetic metal thereby to reduce vibration of the target due to the magnetic deflecting field.

3,309,553
SOLID STATE RADIATION EMITTERS

Herbert Kroemer, Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Aug. 16, 1963, Ser. No. 302,647

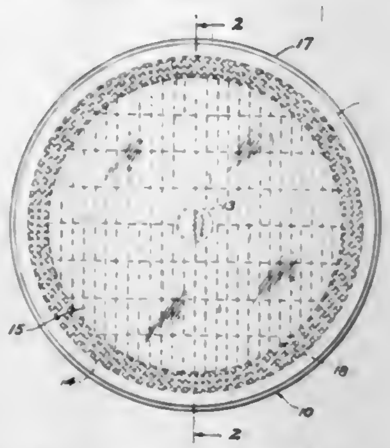
20 Claims. (Cl. 313—108)



1. A heterojunction solid state optical frequency radiation device including at least two different types of semiconductor materials united together to form a heterojunction semiconductor body, one of said at least two different types of semiconductor materials forming an injector region and the other of said at least two different types of semiconductor materials forming a base region, said injector region including semiconductor injector regions disposed on opposite sides of said base region, said semiconductor injector regions having opposite types of conductivity relative to each other, said semiconductor material forming said injector regions having a larger forbidden band gap than said semiconductor material forming said base region, said semiconductor injector regions having higher doping levels than said base region, said injector and base regions being physically inter-related relative to each other and provided with bias means for injecting carriers from said injector regions into said base region such that carrier accumulation in said base region exceeds levels in excess of the doping levels of said injector regions while inhibiting carrier run-off from said base region into said injector regions.

3,309,554
SEALED BEAM HEADLAMPS WITH A REFLECTIVE SAFETY RING

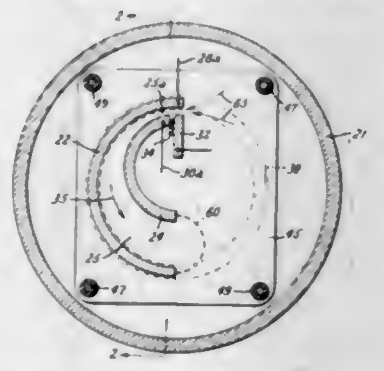
Mario M. De Lorenzo, San Francisco, Calif.
(P.O. Box 203, Glen Ellen, Calif. 95442)
Filed Sept. 30, 1963, Ser. No. 312,538
4 Claims. (Cl. 313—111)



1. A lamp for vehicles comprising a hermetically sealed bulbous body, a parabolic primary reflector including a vertex providing a principal focus of said reflector at one axial end thereof, said reflector having at its opposite axial end an outer circumferential edge portion, a source of light means at the principal focus of said reflector at said one axial end thereof, a lens closing said opposite axial end of the primary parabolic reflector and integrally sealed thereto at its circumferential edge portion providing said hermetically sealed bulbous body, said lens having a smooth outer face and having an annular planar band at a circumferential edge portion of its inner face, said band having a multipilicity of self-focusing secondary reflector units integral with the inner face of said lens and protectively encased within said bulbous body and within the diameter of the plane of said outer circumferential edge portion of said primary reflector, the area of the lens within said band being at least partially permeable by rays of said light source.

3,309,555
SPARK-GAP TYPE OF SURGE ARRESTOR FOR A D.-C. SYSTEM

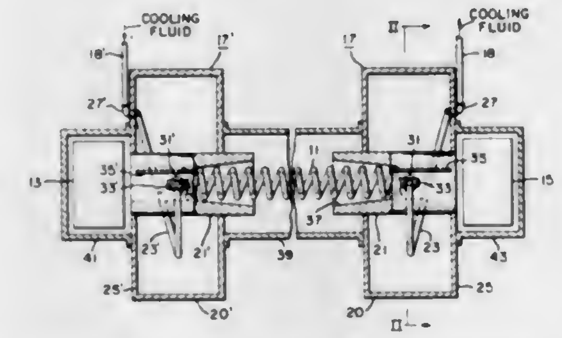
Thomas H. Lee, Nether Providence, and Tseng W. Liao, Media, Pa., assignors to General Electric Company, a corporation of New York
Filed July 31, 1963, Ser. No. 298,942
11 Claims. (Cl. 313—156)



1. A surge arrestor for a D.-C. circuit comprising:
(a) an envelope containing a gas,
(b) a pair of spaced-apart main electrodes within said envelope defining a gap therebetween that contains said gas,
(c) each of said main electrodes being of a substantially semi-circular configuration with one electrode disposed about the outer periphery of the other,
(d) each of said electrodes having an arc-initiating portion at one end and the remainder of said electrode constituting an arc-running portion,
(e) one of said electrodes having a radius substantially smaller than the other and a center of curvature which is offset from the center of curvature of the other in such a manner that the arc-initiating portions of said electrodes are relatively close together and the arc-running portions are at progressively greater distances apart proceeding in a direction away from said arc-initiating portions,
(f) means comprising a trigger electrode located adjacent the arc-initiating portion of one of said main electrodes for causing an arc to be established between the arc-initiating portions of said main electrodes when said trigger electrode is energized by a voltage pulse of a predetermined magnitude,
(g) magnetic means for driving the terminals of said arc off the arc-initiating portions of said main electrodes and along the arc-running portions of said main electrodes into a position where an arc voltage high enough to drive the arc current to zero is developed.

3,309,556
FLUID-COOLED TRAVELING WAVE TUBE

Erling L. Lien, Mountain View, Calif., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 11, 1964, Ser. No. 395,651
8 Claims. (Cl. 315—3.5)

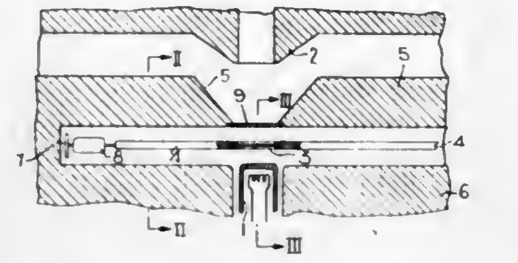


1. A microwave tube comprising a vacuum envelope, an electromagnetic wave energy propagating structure positioned within said envelope, a transmission line coupling connection positioned externally of said envelope, an electromagnetic energy transmission line section positioned within said envelope for transferring electromagnetic energy between said coupling connection and said propagating structure, a cooling fluid connection positioned externally of said envelope, a helical section positioned within said envelope for transferring a cooling fluid between said cooling fluid connection and said electromagnetic wave energy propagating structure, means for coupling said helical section to said transmission line section, and a shorting plane positioned at one end of said helical section adjacent said cooling fluid connection to form a resonant section that presents a high shunt impedance to said transmission line section, said shorting plane being substantially perpendicular to the axis of said electromagnetic wave energy propagating structure.

3,309,557
ELECTRON GUN UTILIZING A STRIP TRANSMISSION LINE TO EXTRACT ELECTRONS FROM A CATHODE

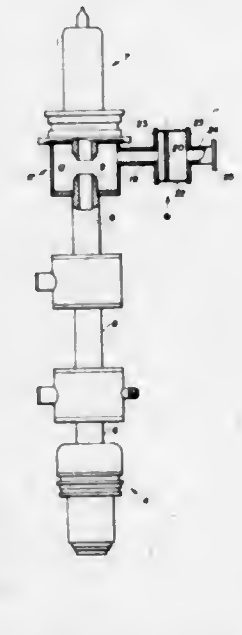
Michael Crowley Crowley-Milling, Higher Disley, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed July 8, 1963, Ser. No. 293,304
Claims priority, application Great Britain, July 12, 1962, 26,882/62
9 Claims. (Cl. 315—5)

1. An electron gun comprising a cathode and an anode, a strip transmission line extending transversely across the electron path between the cathode and anode, said strip transmission line including an inner conductor and an outer conductor, said inner and outer conductors having apertures aligned with the said electron path to provide for the passage of electrons.



3,309,558
ELECTROMAGNETIC WAVE TRANSMISSION SYSTEMS INCLUDING A DIELECTRIC WINDOW FOR TRANSMITTING HIGH-FREQUENCY HIGH-POWER ELECTROMAGNETIC ENERGY TO A LOAD FROM A SOURCE OF SUCH ENERGY SUCH AS A RESONANT CAVITY OF A KLYSTRON

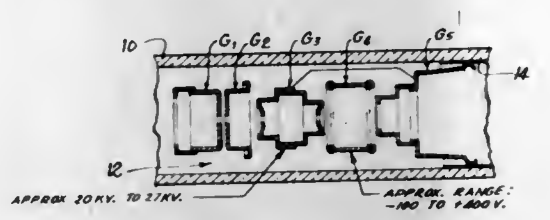
Oskar Heil, San Mateo, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California
Filed Oct. 7, 1963, Ser. No. 314,183
8 Claims. (Cl. 315—5.39)



4. A klystron including an electron gun section, a radio-frequency interaction section and a collector section defining an evacuated envelope, said radio-frequency interaction section comprising a plurality of axially aligned resonant cavity portions, each resonant cavity portion contains electromagnetic wave energy and includes an interaction gap and conductive metallic surfaces within the evacuated envelope, and an electromagnetic wave transmission system associated with at least one of said resonant cavity portions, said electromagnetic wave transmission system comprising a waveguide section containing standing wave energy having alternate regions of low and high intensity electric fields, said waveguide section being provided with a dielectric window transparent to electromagnetic wave energy mounted therein, said window being located in the low intensity electric field region within said electromagnetic wave transmission system between the high intensity electric field region in said waveguide section and said associated resonant cavity.

3,309,559
ELECTRON LENS ASSEMBLY HAVING ELECTRODES WITH TOROIDAL TERMINATIONS

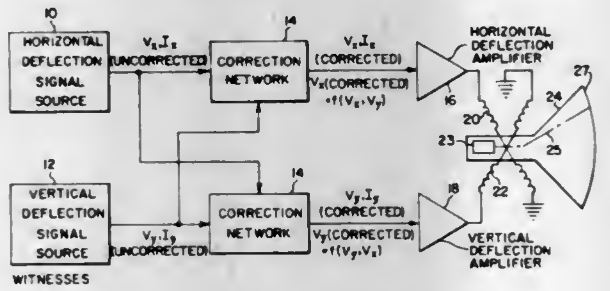
Anacleto D. Giacchetti, Lemont, and Daniel J. Plach, Riverside, Ill., assignors to National Video Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 18, 1964, Ser. No. 352,847
2 Claims. (Cl. 315—16)



1. A lens assembly for focusing a beam of electrons on a target area comprising a first hollow cylindrical electrode, a second hollow cylindrical electrode and a third hollow cylindrical electrode, all coaxial with the principal axis of the beam and in that order, beginning at the cathode source, said first and third electrodes each being of some predetermined diameter and operated at a high potential and the second electrode being operated at a substantially lower potential, said second electrode having its ends spaced apart, in an axial sense, from the first and third electrodes and having an interior diameter greater than that of both the first and third electrodes, each end of the second electrode being provided with a toroidal termination having a transvesre diameter from two to four times the thickness of the wall of said second electrode.

3,309,560
LINEARITY CORRECTION APPARATUS

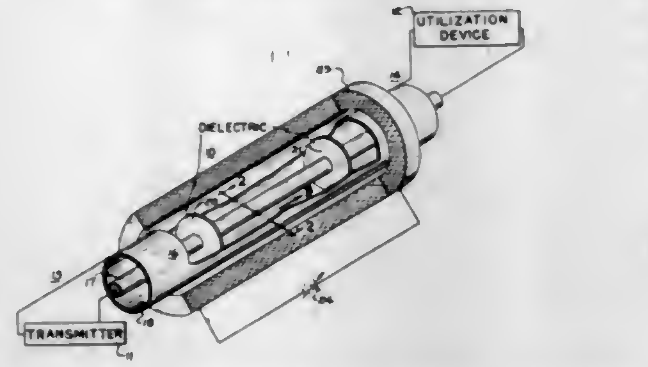
Alfred E. Popodi, Glen Burnie, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 10, 1963, Ser. No. 315,303
11 Claims. (Cl. 315—24)


10
HORIZONTAL DEFLECTION SIGNAL SOURCE
V_x, I_x (UNCORRECTED)
14
CORRECTION NETWORK
V_x, I_x (CORRECTED)
V_x(CORRECTED) $= f(V_x, V_y)$
HORIZONTAL DEFLECTION AMPLIFIER
16
20
23
24
25
27
12
VERTICAL DEFLECTION SIGNAL SOURCE
V_y, I_y (UNCORRECTED)
14
CORRECTION NETWORK
V_y, I_y (CORRECTED)
V_y(CORRECTED) $= f(V_y, V_x)$
18
22
VERTICAL DEFLECTION AMPLIFIER
WITNESSES

1. A linearity correction circuit for a cathode ray tube display, comprising in combination: means for generating an electron beam; target means; a source of deflection signals; deflection means coupled to said source of deflection signals and cooperating with said electron beam to scan a raster of a predetermined shape on said target means; a voltage controlled nonlinear voltage divider coupled between said deflection means and said source of deflection signals, said source of deflection signals altering the divider ratio of said voltage divider in relation to the magnitude of said deflection signals directed thereto for compensating for nonlinear distortion of said raster.

3,309,561
COAXIAL MULTIPACTOR SWITCH UTILIZING MAGNETIC FIELD TO CONTROL IMPEDANCE

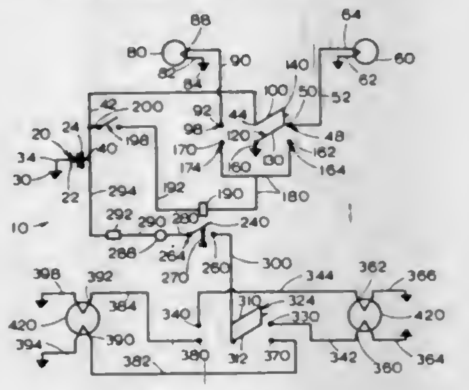
John Frederick Kane, Mountain View, Calif., assignor to General Electric Company, a corporation of New York
Filed Jan. 31, 1963, Ser. No. 255,362
5 Claims. (Cl. 315—39)



1. A microwave transmission line system comprising a variable impedance cell located between a source and a load, said cell for providing a variable impedance comprising:
- a conductive wall partially bounding a region,
- means for maintaining said region substantially evacuated,
- an electromagnetic wave generator coupled to supply electromagnetic energy to said region, the level of said energy being sufficient to induce a multipactor discharge in said region along a path having at least one end terminating at said wall, and
- a magnetic field source for applying to said region a steady magnetic field, said magnetic field being oriented perpendicularly to said path, said multipactor discharge having a maximum value when the magnetic field is zero.

3,309,562
SEMI-CONTINUOUS ALERT LIGHTS FOR MOTOR VEHICLES

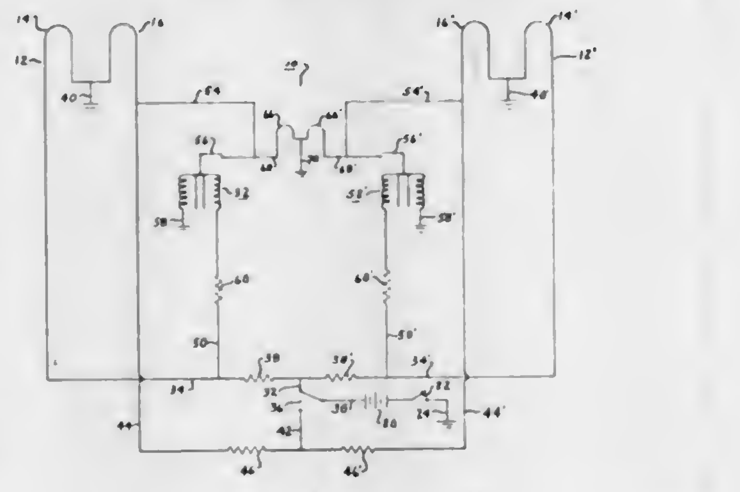
Elmer A. Schultz, 1405 N. 21st St., Council Bluffs, Iowa 51501
Filed Dec. 17, 1964, Ser. No. 419,036
3 Claims. (Cl. 315—77)



1. An alternate alert light and turn light system for automobiles having turn lights comprising: a source of power, right and left turn lights, means connecting one terminal of each turn light to said power source, right and left turn light switches, means connecting the other terminals of each turn light to said power source through said switches respectively, a solenoid having a terminal connected to a terminal of said power source, two solenoid control switches each having a terminal connected to the other terminal of said power source and each having another terminal connected to said solenoid, means operatively correlating said turn signal switches and said solenoid control switches whereby when said turn signal switches are closed for operation of said turn lights said solenoid control switches are also closed for energizing said solenoid, at least one alert light having a terminal connected to said power source, an alert light shut-off switch, means urging said shut-off switch to be normally closed for normal operation of said alert light, means connecting the other terminal of said alert light to said source through said shut-off switch and said solenoid and said shut-off switch being operatively correlated for the opening of said shut-off switch when said solenoid is energized, and a blinker switch means in series with said alert light to cause said alert light to blink.

3,309,563
LIGHTING SAFETY CIRCUIT FOR ENERGIZING THE SECONDARY FILAMENT UPON THE FAILURE OF THE MAIN FILAMENT

Veto A. McKienzie, 216 W. 4th St., Buchanan, Mich. 49107
Filed Oct. 28, 1963, Ser. No. 319,481
4 Claims. (Cl. 315—83)

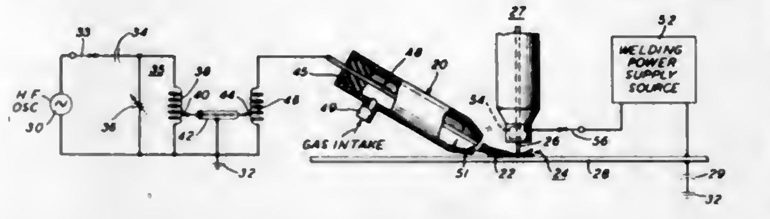


1. A lighting safety device for a vehicle in combination with a battery, a ground for said battery and high-beam and low-beam filaments, comprising a first lead connecting said battery with the low-beam filament, a resistor in said lead, a second lead connecting said battery with the high-beam filament, a resistor in said second lead, a dimming switch in said leads for switching the current from said battery between said high-beam and low-beam filaments, a ground for said filaments, a relay having a switch and a coil, a third lead means connecting said first lead between the resistor and low beam filament to said coil and said relay switch, a resistor in said third lead, a fourth lead connecting said relay switch with the high-beam filament, the resistors in said first and third leads being of such value that the current flowing through the relay is insufficient to close the relay switch while the low-beam filament is in operating condition, a signal filament, a fifth lead connecting said signal filament to said fourth lead, and a ground for said signal filament.

3,309,564
ARC WELDING APPARATUS HAVING PLASMA GENERATOR FOR STARTING

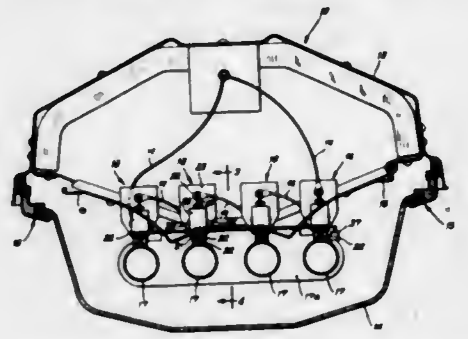
Stephen D. Poulsen, Summit, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 26, 1963, Ser. No. 333,534
2 Claims. (Cl. 315—111)

1. In an electric arc welding apparatus having two electrodes spaced apart to form an arc gap, in combination, a high frequency source, a shielded high frequency transmission line, voltage step-down means connecting said source to one end of said line, a plasma torch electrically separate from the remainder of the electric arc apparatus, voltage step-up means connecting the other end of said line to said torch, and means to project a plasma flame from said torch to the region of the arc gap to provide an ionized path across said arc gap to facilitate establishment of an arc thereacross.



3,309,565
LIGHT OUTPUT OF FLUORESCENT LAMPS AUTOMATICALLY HELD CONSTANT BY MEANS OF PELTIER TYPE COOLERS

Philip B. Clark, Hales Corners, and Harold A. Van Dusen, Jr., South Milwaukee, Wis., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Dec. 14, 1959, Ser. No. 859,455
14 Claims. (Cl. 315—117)

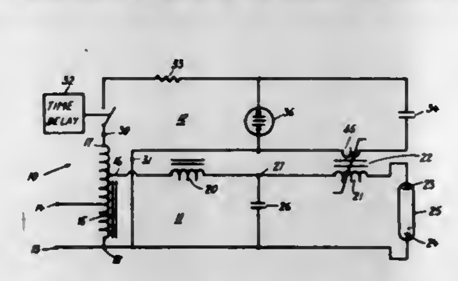


3. In a luminaire having at least one fluorescent lamp the light output of which is optimum at a predetermined lamp bulb temperature and which diminishes at temperatures above said predetermined temperature, the combinations with said lamp of means adjacent a localized portion of said lamp for cooling and maintaining said localized portion at said predetermined temperature; said means comprising a plurality of relatively spaced heat absorbing shoes adjacent a localized portion of said lamp and receiving heat therefrom, a heat dissipating member spaced from each of said heat absorbing shoes, a pair of Peltier-type junctions connecting respective ones of said heat absorbing shoes and heat dissipating members, a source of electrical energy, said Peltier-type junctions, heat absorbing means, heat dissipating members and said source of electrical energy being so interconnected that when an electric current is passed through said Peltier-type junctions heat is transferred from said heat absorbing shoes to said heat dissipating members, and means controlled by the temperature of said localized portion and connected to said source of electrical energy for controlling the amount of said heat transfer in accordance with the temperature of said localized portion, so that said localized portion is maintained at said predetermined temperature and the light output of said lamp is maintained at optimum.

3,309,566
ELECTRICAL SYSTEM FOR GAS DISCHARGE LAMP

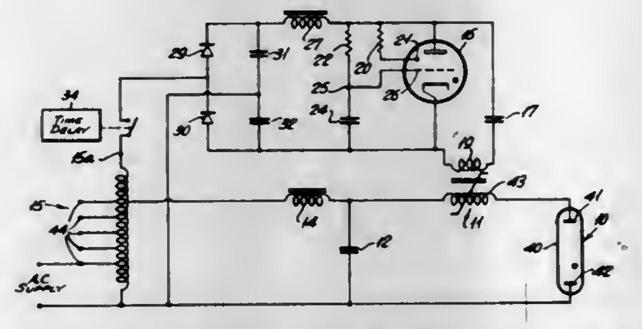
Maksymilian A. Michalski, Woodside, N.Y., assignor, by mesne assignments, to Berkey Photo, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 20, 1964, Ser. No. 412,606
4 Claims. (Cl. 315—171)

1. An electric system comprising an electric discharge lamp, an operating circuit connected to an alternating current source of relatively low frequency, an operating circuit current limiting impedance, a main capacitor connected in series with the operating circuit current limiting impedance across said low frequency source, a saturable reactor including a main winding connected in series with said lamp across said capacitor, a starting circuit supplied by said source of potential, starting circuit current limiting impedance, a bilateral switching diode, a triggering capacitor, an auxiliary winding for the saturable reactor, said triggering capacitor and said starting circuit current limiting impedance connected in series and forming resistance-capacitance circuit means, said resistance-capacitance circuit means supplied by said source of potential, said bilateral switching diode and said auxiliary winding connected in series with said triggering capacitor so that upon conduction of said bilateral switching diode the triggering capacitor is discharged through said bilateral switching diode and said auxiliary winding, the constants of said resistance-capacitance circuit means being so selected with respect to the voltage of said source and the break-down voltage of said bilateral switching diode that the potential across said series connected auxiliary winding and switching diode causes conduction of said bilateral switching diode between two and ten times during at least each alternate half cycle of the low frequency source, whereby upon each conduction of said bilateral switching diode, said conduction occurring two to ten times during at least each alternate half cycle of the low frequency supply, a pulse is produced in the auxiliary winding, each said pulse comprising high frequency damped oscillations, and corresponding pulses are induced across the main winding of the saturable reactor and superimposed upon the low frequency voltage pulses supplied to the discharge lamp.



3,309,567
PULSE DISCHARGE LAMP CIRCUIT

Robert A. Flieder, Fords, N.J., and Maksymilian A. Michalski, Woodside, N.Y., assignors to Berkey Photo, Inc., New York, N.Y.
Filed Oct. 22, 1965, Ser. No. 511,270
7 Claims. (Cl. 315—176)

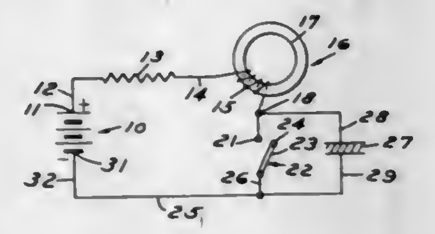


1. An electric system comprising an electric discharge lamp, an operating circuit connected to an alternating current source of relatively low frequency, an operating circuit current limiting impedance, a main capacitor connected in series with the operating circuit current limiting impedance across said low frequency source, a saturable reactor including a main winding connected in series with said lamp across said capacitor, a starting circuit supplied by said source of potential, starting circuit current limiting impedance, an electronic switch having two main elec-

trodes and a control electrode, a resistance-capacitance circuit means supplied by said source of potential operatively connected to said control electrode to effect closing of the electronic switch between two and ten times during at least each alternate half cycle of the low frequency source, a triggering capacitor, an auxiliary winding for the saturable reactor, the triggering capacitor and the auxiliary winding connected in series with the starting circuit current limiting impedance across said source of potential for the charging of the triggering capacitor, the electronic switch connected across the series connected triggering capacitor and auxiliary winding whereby upon each closing of the electronic switch, said closing occurring two to ten times during at least each alternate half cycle of the low frequency supply, a pulse is produced in the auxiliary winding each said pulse comprising high frequency damped oscillations, and corresponding pulses are induced across the main winding of the saturable reactor and superimposed upon the low frequency voltage pulses supplied to the discharge lamp.

3,309,568
MEANS INCLUDING A SATURABLE CAPACITOR FOR REDUCING ELECTRICAL ENERGY DISSIPATION IN AN ELECTRICAL SWITCHING ELEMENT

Ole K. Nilssen, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,044
12 Claims. (Cl. 315—223)

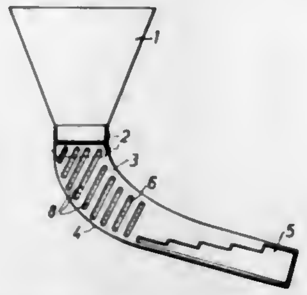


1. In an electrical switching system, a source of electrical energy, a load including an inductive component, an electrical switching means connected in circuit with said source of electrical energy and said load for controlling the energization of said load from said source of electrical energy, a saturable capacitor connected across said switching means for delaying the voltage rise across said switching means as said switching means is switched to its nonconducting state, and a saturable inductor connected in series with said switching means and saturable at a fraction of a final current through said electrical switching means and said load when said electrical switching means is in a conducting state to thereby delay current increase through said switching means as said switching means is switched to its conducting state.

3,309,569
APPARATUS FOR DISCHARGING INSULATING ARTICLES ON A SUPPORT

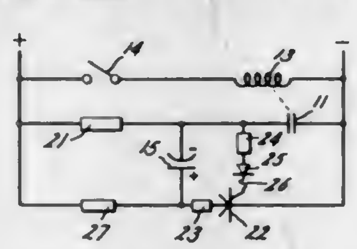
Gerhard Heyl, Cologne-Stammheim, and Günter Lüttgens and Bernhard Vinzelberg, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Jan. 30, 1963, Ser. No. 254,994
Claims priority, application Germany, Feb. 9, 1962, F 35,989
5 Claims. (Cl. 317—2)

1. In the production of small discontinuous articles of insulating material, wherein the produced articles are transported by gravity from a feed hopper to a size-sorting device down an inclined plane and wherein said articles pick up a static charge by reason of their transportation down said inclined plane; the improvement which comprises providing perforations of a size smaller than the smallest dimension of said articles in said inclined plane; providing an electrostatic discharging means below said inclined plane operatively associated such as to discharge static electricity from said gravity transported articles, wherein said electrostatic discharge means is spaced at a distance from said inclined plane such that there will be substantially no passage of electricity between said discharge means and said plane.



3,309,570
ARCLESS INTERRUPTER

Leon J. Goldberg, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 299,913, Aug. 5, 1963. This application May 16, 1966, Ser. No. 559,670
21 Claims. (Cl. 317—11)

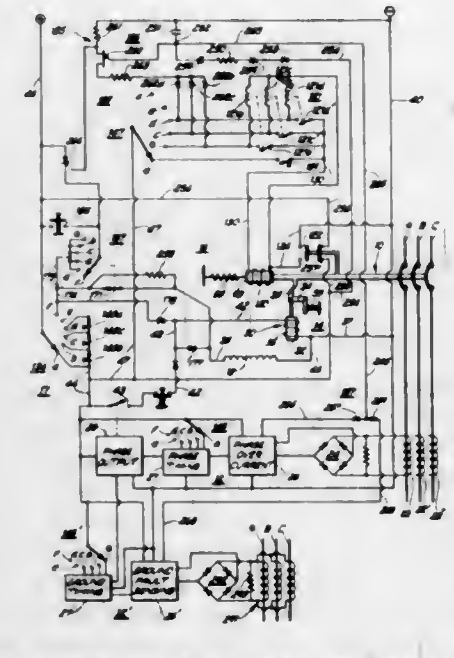


1. An arcless circuit interrupter including in combination a set of physically separable contacts connected in series circuit relationship with a load for interrupting current to the load, a commutating capacitor and a fast acting gate controlled conducting device operatively connected in series circuit relationship across the separable contacts, electronic sensing and control means comprised by the control gate-cathode of a gate controlled solid state semiconductor device directly connected across said contacts and to the control gate of said gate controlled conducting means for sensing a potential drop across the contacts as they start to open and for rendering said fast acting gate controlled conducting means conductive in response to the opening of the contacts, and means for charging the commutating capacitor to a voltage level and polarity such that upon discharge of the commutating capacitor when the gate controlled conducting means is rendered conductive, the capacitor discharge current circulated in the closed series loop comprised by the contacts, the commutating capacitor and the gate controlled conducting means is sufficient to reduce the load current flow through the contacts to zero or to reverse the direction of current flow through the contacts with respect to the initial load current flow to thereby prevent formation of any substantial arc across the contacts upon the opening thereof.

3,309,571
REPEATING CIRCUIT INTERRUPTER HAVING RESET CONTROL MEANS RESPONSIVE TO LINE CONDITION

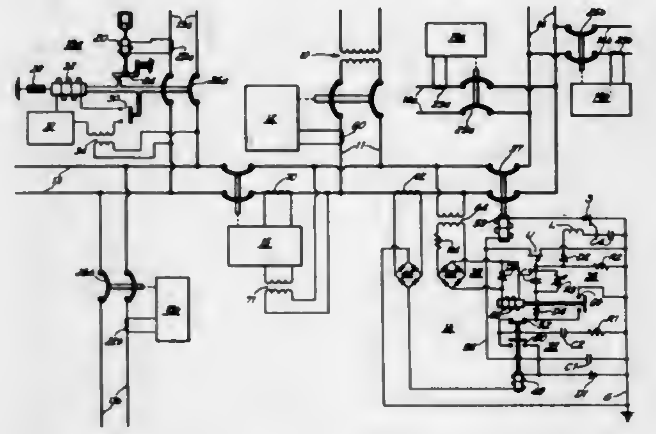
Clyde Gilker, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,195
20 Claims. (Cl. 317—22)

1. A repeating circuit interrupter including main switch means in circuit with an electrical system, means for opening said main switch means when an abnormal condition exists in said system, switch closing means, sequencing means having a plurality of stages and being operable to a successive one of said stages upon each switch opening operation, the operation of said sequencing means from an initial stage to each of a predetermined number of successive stages being operable to initiate the actuation of said switch closing means, the operation of said sequencing means to the next succeeding stage after said predetermined number being ineffective to initiate the actuation of said switch closing means so that said main switch means is not reclosed, resetting means coupled to said system and responsive to the return of normal circuit conditions to effect the return of said sequencing means to said initial stage if said sequencing means is in one of its predetermined number of stages.



3,309,572
ELECTRIC POWER SYSTEM HAVING SECTIONALIZING MEANS AND CONTROL CIRCUIT THEREFOR

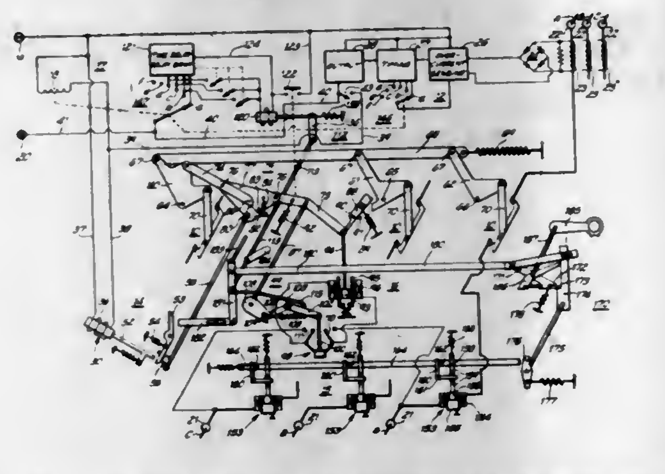
Richard E. Riebs, Hales Corners, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 401,361
14 Claims. (Cl. 317—22)



13. In an electrical power system having a source of power, a first opening time delayed repeating circuit interrupter connected in said system and proximate to said source, a second opening time delayed repeating circuit interrupter connected in said system and remote from said source, said first repeating circuit interrupter having a longer opening time delay than said second repeating circuit interrupter, sectionalizing means disposed between said circuit interrupters and being constructed and arranged to open circuit said system after a predetermined number of appearances and disappearances of overload current in said system, said sectionalizing means also including line integrity sensing means for sensing the existence of system integrity between said sectionalizing means and said source and operable in response to system integrity between said sectionalizer and said source to prevent the operation of said sectionalizing means.

3,309,573
REPEATING CIRCUIT INTERRUPTER

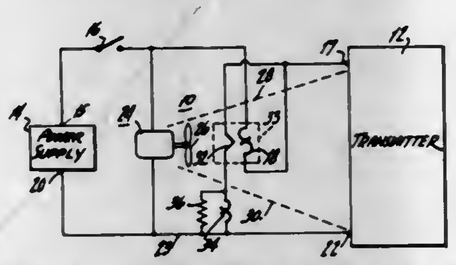
Kazuo Henry Date, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Mar. 8, 1965, Ser. No. 437,762
9 Claims. (Cl. 317—22)



1. A protective device for an electrical system including interrupting contacts for opencircuiting said system, electroresponsive means for opening said interrupting contacts, electronic control circuit means coupled to said system and normally operative upon the occurrence of an overload condition to actuate said electroresponsive means to initiate a switch opening operation, low voltage power supply means for energizing said electronic control circuit means, an electromotive control means coupled to said system independently of said electronic circuit means and being operatively associated with said electroresponsive means, said electromotive control means being operable in response to an overload in said system and being independent of said low voltage power supply means and said electroresponsive means to effect the opening of said switch means, and time delay means for delaying the operation of said electromotive control means and having a time delay period longer than that normally required for said electronic circuit means to initiate a switch opening operation.

3,309,574
PROTECTIVE COOLING SYSTEM

Don A. Colby, Eightyfour, and Walter C. Painter, Bethel Park, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,725
4 Claims. (Cl. 317—40)

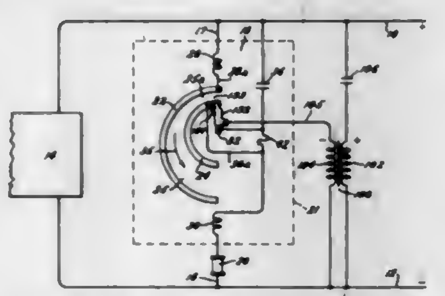


1. A protective cooling system for cooling heat generating electrical equipment comprising:

(a) a fluid circulator disposed to direct a stream of cooling fluid onto said equipment to cool the latter;
(b) a thermostat;

- (c) a heated element disposed in a continuous heat-exchange relationship with said thermostat, said thermostat operating in response to the heat generated by said heated element, said heated element and said thermostat being disposed in said stream of cooling fluid causing said heated element to be cooled below the temperature at which said thermostat is actuated;
- (d) means to energize said fluid circulator; and
- (e) means to send current to said equipment and to said heated element through said thermostat, said thermostat being adapted to be actuated by the heat from said heated element in the absence of said stream of cooling fluid.

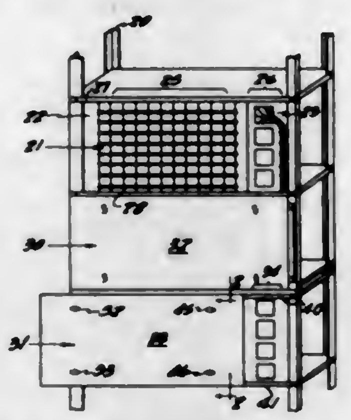
3,309,575
TRIGGERED SPARK GAP TYPE OF SURGE ARRESTOR
Thomas H. Lee and Tseng W. Liao, Media, Pa., assignors to General Electric Company, a corporation of New York
Filed Oct. 19, 1965, Ser. No. 505,122
9 Claims. (Cl. 317—61.5)



1. In a D.-C. circuit comprising a pair of conductors of opposite polarity, a surge arrestor comprising:

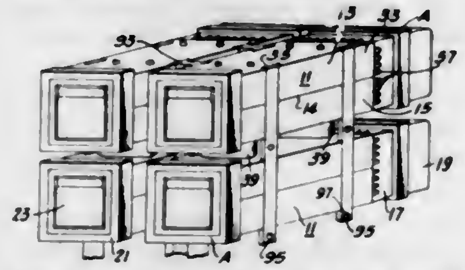
- (a) a pair of spaced apart main electrodes,
- (b) means adapted to electrically connect said main electrodes across said conductors,
- (c) each of said main electrodes comprising an arc-initiation portion and an arc-running portion adjacent said arc-initiation portion,
- (d) high-frequency-responsive triggering means comprising a first trigger electrode located adjacent the arc-initiation portion of one of said main electrodes for causing an arc to be established between the arc-initiation portions of said main electrodes when said high-frequency-responsive triggering means is energized by a voltage surge on said D.-C. circuit of a predetermined minimum magnitude having a high rate of change,
- (e) low-frequency-responsive triggering means for causing an arc to be established between the arc-initiation portions of said main electrodes when said low-frequency-responsive triggering means is energized by a voltage surge on said D.-C. circuit of a predetermined minimum magnitude having a relatively low rate of change, said low-frequency-responsive triggering means comprising a transformer and a second trigger electrode in circuit with said transformer and electrically insulated from said first trigger electrode, said second trigger electrode being located adjacent the arc-initiation portion of said one main electrode and insulated therefrom,
- (f) the establishment of an arc between said main electrodes completing a by-pass circuit between said D.-C. conductors around said transformer that protects said transformer from said high rate of change voltage surges,
- (g) and means operable when an arc is established between said main electrodes for developing an increasing arc voltage for driving the arc current toward zero, comprising means for propelling said arc along the arc-running portions of the main electrodes.

3,309,576
TELEPHONE EQUIPMENT HOUSING
Robert Y. Sims, Hato Rey, and Alfred I. Bottner, Miramar, Santurce, Puerto Rico, assignors to International Telephone and Telegraph Corporation, a corporation of Maryland
Filed Mar. 23, 1965, Ser. No. 442,134
4 Claims. (Cl. 317—99)



1. A relay rack having a plurality of vertically stacked shelf sections with telephone equipment horizontally disposed thereon, certain equipment being positioned at one end of said horizontal disposition and other equipment being positioned at the other end of said horizontal disposition, spaced parallel rails positioned above and below said horizontal disposition on each shelf to provide a pair of tracks, and a cover panel slidably supported on said rails for enclosing all of said equipment when said panel is in a normal position, the proportions and dimensions of said equipment and panels providing access to said certain equipment while denying access to said other equipment when said panel is horizontally slid to an off normal position.

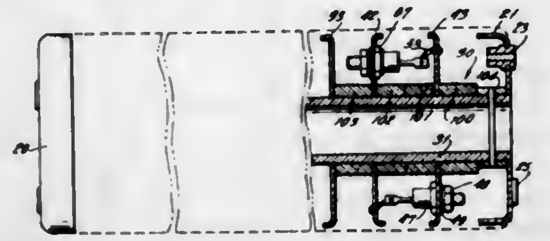
3,309,577
ELECTRICAL COMPONENT HOUSING AND SYSTEM
Walter Francis Roll, Jr., Dallas, Tex., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Mar. 7, 1966, Ser. No. 532,161
18 Claims. (Cl. 317—99)



8. An assembly of housings for electrical components of annunciator systems comprising:

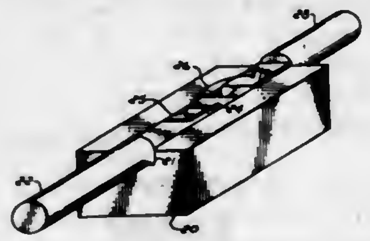
- (a) a plurality of annunciator module housings each housing including
  - (i) an elongated tubular member adapted to contain at least one of said electrical components;
  - (ii) a first closure removably secured to one end of said member;
  - (iii) a second closure removably secured to the other end of said member and having therein perforations for removably admitting electrical leads to be connected to the electrical components within said housing;
- (b) said housings being arranged in groups, each group including at least one housing unit;
- (c) first means cooperating with and maintaining adjacent housing units of a group in juxtaposed relation in a first direction; and
- (d) second means cooperating with and maintaining adjacent groups of housing units in juxtaposed relation in a second direction.

3,309,578
ENCAPSULATED HIGH VOLTAGE RECTIFIER STACK
Edward J. Diebold, Palos Verdes Estates, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Mar. 18, 1965, Ser. No. 440,825
6 Claims. (Cl. 317—100)



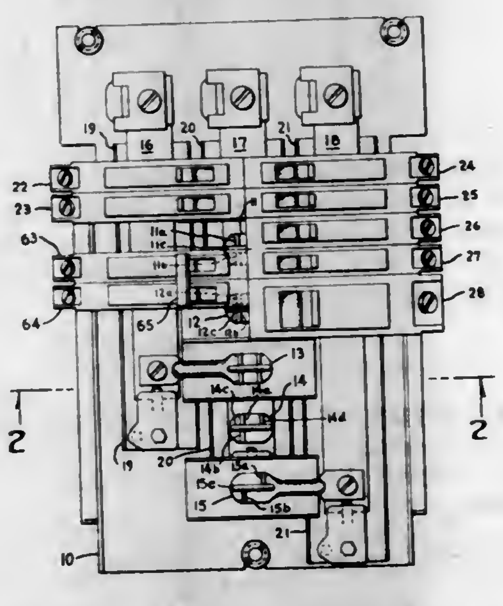
6. A module of a plurality of series connected rectifier elements; said module comprising first and second generally parallel spaced plates; each of said first and second plates comprising a plurality of generally flat spaced and coplanar fin elements and a terminal fin element coplanar with and spaced from said generally flat fin elements; each of said plurality of flat fin elements including first and second connection means for mechanically and electrically receiving the anode and cathode terminal respectively of a first and second rectifier element of said plurality of rectifier elements; each of said terminal fin elements including connection means for mechanically and electrically receiving one of the cathode or anode terminals of one of said rectifier elements of said plurality of rectifier elements; each of said generally flat fin elements of said first and second plates being rotated out of registry with respect to one another with the first and second connection means of said plurality of fins of said first plate in registry with said second and first connection means respectively of said plurality of fins of said second plate; each of said connection means of said terminal fin elements of said first and second plates in registry with a first and second connection means respectively of one of said fins of said opposing first and second plates respectively; each of said rectifier elements electrically and mechanically connected between each of said registering first and second connection means of said fins of said first and second plates to define a progression of series connected rectifier elements.

3,309,579
MOUNTING ASSEMBLY FOR ELECTRICAL COMPONENTS
Jacques Rodrigue Josephe St. Louis and William Delbert Russell, both of Ottawa, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Mar. 10, 1965, Ser. No. 438,673
7 Claims. (Cl. 317—101)



1. A semiconductor mounting assembly comprising a block of insulating material having at least one lead receiving slot therein, a first electrically conductive lead having sufficient mass to provide good thermal conductivity disposed in a slot in said block, said slot having an entrance portion slightly greater in width than the diameter of the lead prior to deformation and an undercut portion wider than said entrance portion, the lead being pressed and deformed into said undercut portion to secure the lead in the slot and form a flat surface on the top of the lead, a semi-conductor device mounted directly on said flat surface whereby the lead itself acts as a heat sink for the semi-conductor device secured in a slot and means for electrically connecting the semi-conductor device to said second lead.

3,309,580
CIRCUIT BREAKER LOAD CENTER
Lewis W. Jacobs, West Hartford, and Robert J. Sabatella, Southington, Conn., assignors to General Electric Company, a corporation of New York
Filed Dec. 24, 1964, Ser. No. 420,868
10 Claims. (Cl. 317—119)



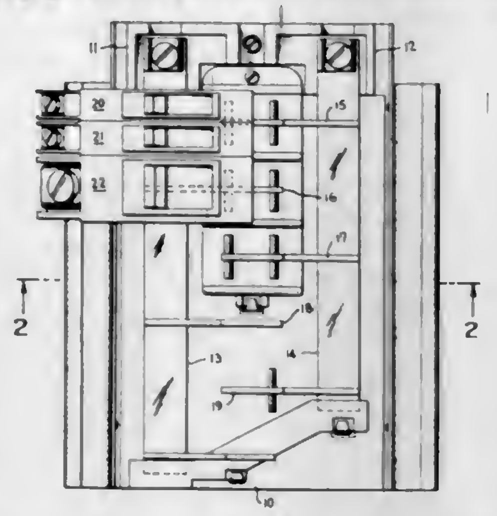
1. An electric circuit control device panel board comprising a generally planar base, insulating means mounted on said base, a plurality of electrical contacts supported on said insulating means, at least some of said electrical contacts including a central blade member extending generally normal to the plane of said base, and at least one transverse blade extending perpendicularly from said central blade on each side thereof, and a plurality of circuit breakers of first and second modular size, said circuit breakers of said first modular size including electrical contact means configured and disposed to engage a central blade and said circuit breakers of said second modular size including electrical contact means configured and disposed to engage one of said transverse blades.

3,309,581
PANELBOARD WITH CONTACT MEMBERS HAVING ORTHOGONAL ENGAGEABLE SURFACES
Keith W. Klein, Simsbury, Conn., assignor to General Electric Company, a corporation of New York
Filed Dec. 24, 1964, Ser. No. 420,875
10 Claims. (Cl. 317—119)

9. In a control device panel board, the combination comprising:

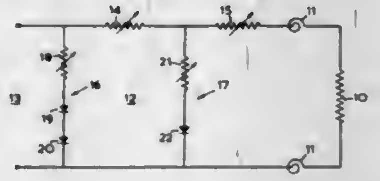
- (a) a support;
- (b) an elongated busbar supported in insulated relationship on said support; and
- (c) an electrical contact unit having a contact arm portion electrically connected adjacent one end thereof to said busbar and extending generally normally thereto, said contact arm portion having adjacent its other end a portion with a major dimension in a first direction and a minor in a direction at right angles to said first direction dimension, said contact unit also having a socket-receiving portion projecting from said contact arm portion adjacent said other

end thereof generally normally to the plane of said major dimension and extending generally parallel to said busbar, the opposite surfaces of said socket-receiving portion providing a pair of contact surfaces extending generally parallel to said busbar and generally normally to the plane of said major dimension, said socket-receiving portion being adapted to receive a contact socket extending transversely of an associated circuit breaker to provide electrical contact therefor to said busbar.



3,309,582
ELECTRICAL PROTECTIVE RELAYS

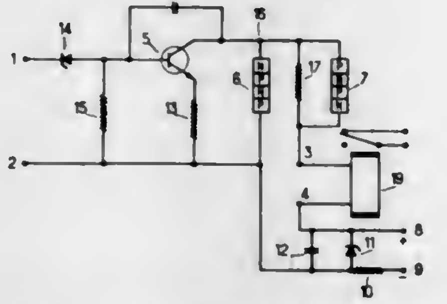
Peter Lewis Moreton, Felton, Somerset, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Sept. 9, 1963, Ser. No. 307,422
Claims priority, application Great Britain, Sept. 11, 1962, 34,737/62
4 Claims. (Cl. 317—123)



1. An electrical time-overcurrent protective relay including a relay operating element for energisation by an operating current supplied thereto for performing in response to such operating current a protective function after a time delay dependent upon the magnitude of the operating current, and a relay input circuit arrangement having first and second input terminals for connection with a source of unidirectional current which is to be monitored by the relay, first and second output terminals connected with the relay operating element for transmitting thereto the said operating current, shunt electric circuit means connected between the first and second input terminals and including in series with one another a non-linear resistor and an adjustable linear resistor (hereafter referred to as the first adjustable linear resistor), serial electric circuit means including first electric circuit means connected between the first input terminal and the first output terminal, and second electric circuit means connected between the second input terminal and the second output terminal, one of the said first and second electric circuit means including an adjustable linear resistor (hereafter referred to as the second adjustable linear resistor), the said non-linear resistor exhibiting alternatively a high resistance value or a low resistance value according to whether a unidirectional current carried thereby lies in a predetermined range of low values or in a predetermined range of higher values respectively, and these resistance values being such that for a predetermined range of low input current values the non-linear resistor exhibits its high resistance value and prevents adjustment of the first adjustable linear resistor having any substantial influence on the ratio 'operating current/input current', adjustment of this ratio to calibrate the relay time delay at a predetermined first input current value, lying in the said range of input current values, being obtainable by way of adjustment of the second adjustable linear resistor only, and such that for a predetermined range of higher input current values the non-linear resistor exhibits its low resistance value and enables adjustment of the first adjustable linear resistor to be effective to provide adjustment of the said ratio whereby to calibrate the relay time delay at a predetermined second input current value, lying within the said predetermined range of higher input current values, without substantially upsetting the calibration of the relay time delay at the said predetermined first input current value as determined by the setting of the second adjustable linear resistor.

3,309,583
ELECTRONIC DEVICE FOR THE CONTROL OF RELAYS AND SIMILAR APPARATUS

Michel Edouard Georges Knapp-Ziller, 146 Grande Rue, Vaux-sur-Seine, France, and Guy Jean-Marie Damême, 14 Chemin de Paris, Eragny-sur-Oise, France
Filed Nov. 18, 1964, Ser. No. 411,990
Claims priority, application France, Dec. 17, 1963, 957,412
6 Claims. (Cl. 317—148.5)

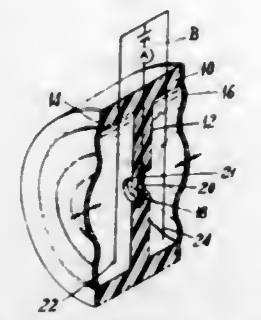


1. An electronic relay control device comprising a direct-current amplifier including a transistor in common-emitter connection, first and second direct-current supply terminals for biasing said transistor, input circuit means including first and second input terminals for applying a control voltage to the base-emitter circuit of said transistor, an electromagnetic relay having at least one winding and provided with a contact connected with a pair of output terminals for operating an external utilization circuit, connection means between said first input terminal and the base electrode of said transistor, a first resistor connecting said base electrode with a common point itself connected with said second input terminal and with said second direct-current supply terminal, a second resistor connecting the emitter of said transistor with said common point, a series circuit including said winding and a third resistor in series connection and linking said first direct-current supply terminal to the collector of said transistor, and first and second four-layer semiconductor diodes respectively connected across said third resistor and between said collector and common point.

3,309,584
INERT ELECTRODES FOR ELECTROCHEMICAL DEVICES

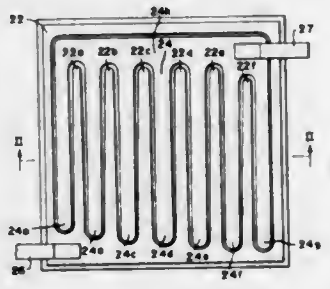
Robert A. Powers, Lakewood, Demetrios V. Louzos, Rocky River, and William G. Darland, Jr., Parma, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Nov. 18, 1963, Ser. No. 324,275
10 Claims. (Cl. 317—231)

4. A solion as defined by claim 1 in which said anode comprises a substrate of a transition metal selected from the group consisting of titanium, niobium, molybdenum, zirconium, hafnium, tantalum, tungsten, chromium and vanadium and a surface layer of a compound selected from the group consisting of the carbides, nitrides, silicides, and borides of one of said group of transition metals.



3,309,585
JUNCTION TRANSISTOR STRUCTURE WITH INTERDIGITATED CONFIGURATION HAVING FEATURES TO MINIMIZE LOCALIZED HEATING

Richard A. Forrest, Greensburg, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 29, 1963, Ser. No. 326,989
5 Claims. (Cl. 317—234)



1. In a junction transistor, a base-emitter configuration wherein said base region has a contact comprising a web portion thereon and finger-like projections extending from said web portion and said emitter region has a contact comprising a web portion thereon and finger-like projections extending from said web portion, the finger-like projections of the contact on said emitter region being each disposed between two finger-like projections of the contact to said base region; the extremities of said finger-like projections of the contact to said emitter being closer to said base contact than the spacing between the web portion of said emitter contact and the extremities of said finger-like projections of the contact to said base region in order to minimize localized heating in said transistor.

3,309,586
TUNNEL-EFFECT SEMICONDUCTOR SYSTEM WITH CAPACITATIVE GATE ACROSS EDGE OF PN-JUNCTION

Hans P. Kleinknecht, Emmendingen, Baden, Germany, assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Nov. 6, 1961, Ser. No. 150,275
Claims priority, application Germany, Nov. 11, 1960, I 19,004
6 Claims. (Cl. 317—235)

1. A semiconductor device comprising:

a semiconductor body having first and second regions of given and opposite respective conductivity types with a P-N junction therebetween extending to a given surface of said body,

said first region having a sufficient high concentration of conductivity-type-determining impurities such that said region is degenerative,

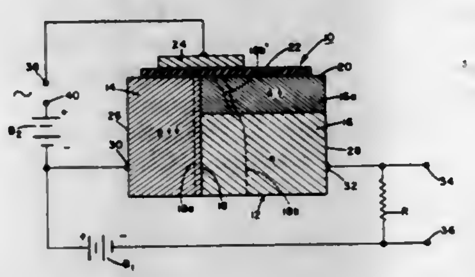
said second region comprising a first zone having a conductivity-type-determining impurity concentration substantially lower than said first region such that the adjacent portion of said junction inhibits quantum-mechanical tunneling,

said second region having a laminar zone of said opposite conductivity type adjacent said surface, said laminar zone having a conductivity-type-determining impurity concentration higher than said first zone and lower than said first region forming a quantum-mechanical tunneling area in the portion of said junction between said first region and said laminar zone;

a layer of insulating material on said surface and overlying said junction,

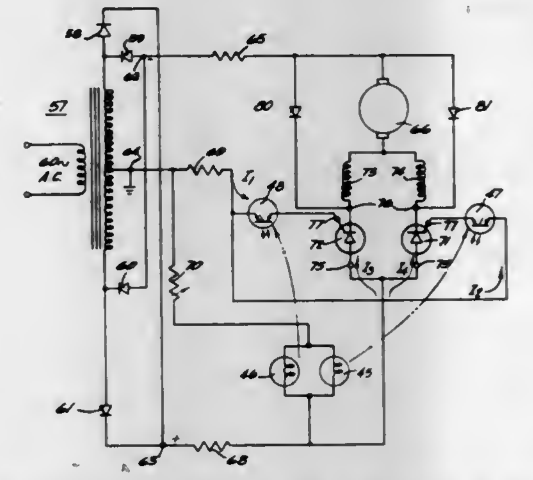
a control electrode disposed on said insulating layer adjacent said junction, and

first and second electrodes contacting said first and second regions respectively.



3,309,587
CURRENT CONTROL CIRCUIT

John D. Meng, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed Aug. 1, 1963, Ser. No. 299,418
3 Claims. (Cl. 318—6)



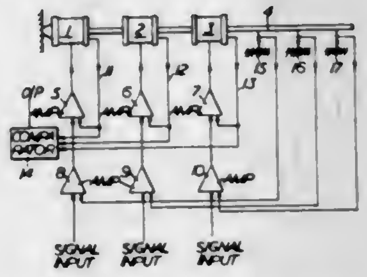
1. A motor control circuit for use with a source of unidirectional pulses, a reversible electric motor, and a mechanical device to indicate position of a load coupled to said motor comprising a pair of electric lamps, means for applying said pulses to said lamps, means for controlling light output of said lamps, a pair of light actuated switches, means for controlling current through said switches, said pair of lamps being radiation-coupled to said pair of switches, a shutter, said shutter being positioned by said mechanical device to control the amount of light from said lamps falling upon said switches, a mechanical damping means, said damping means being connected to said shutter, a pair of current controlling means, said current controlling means interconnecting said source of pulses and said motor, said switches being directly connected to said controlling means to control current from said source of pulses to said reversible motor, and electrical damping means, said damping means being connected between said source of pulses and said current

controlling means, said damping means being coupled to said sources of radiation, said electrical damping means controlling light output of said lamps in response to current through said motor.

3,309,588
MULTIPLEX SERVO SYSTEM FOR SERVO MOTORS MECHANICALLY CONNECTED IN SERIES

Derek John Martin, Spondon Village, near Derby, and Maurice Cecil Curties, Lightwater, Surrey, England, assignors to Ferranti, Limited, Hollinwood, England, a company of the United Kingdom of Great Britain and Northern Ireland

Filed Dec. 5, 1963, Ser. No. 328,231
8 Claims. (Cl. 318—19)

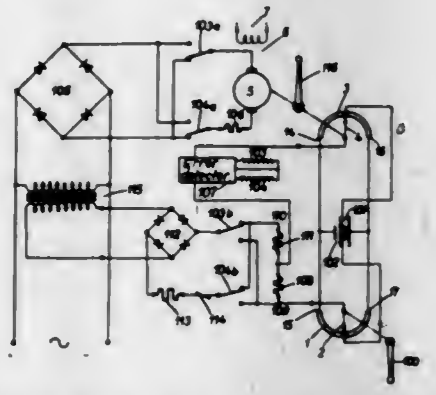


1. A multiplex servo system including a plurality of servo motors mechanically connected in series for driving an output member, an individual sub-channel connected to each servo motor for controlling the associated servo motor, each individual sub-channel having at least one amplifier, a plurality of pick-off devices for detecting movements of the output member and each sub-channel including a negative feedback path connected from the associated servo motor for applying to said sub-channel a feedback signal proportional to the output displacement of the associated servo motor and a negative feedback path connected from an individual pick-off device responsive to total movement of said output member for applying to said sub-channel a feedback signal proportional to the total movement of the output member.

3,309,589
ELECTRICAL DEVICE FOR PRECISELY POSITIONING A REMOTE COMPONENT

Louis Luyten, Brussels, Belgium, assignor to "Electricite, Mecanique et Applications" (E.M.A.), Brussels, Belgium, a Belgian company

Filed Nov. 14, 1963, Ser. No. 323,692
Claims priority, application Belgium, Nov. 23, 1962, 625,241
5 Claims. (Cl. 318—28)

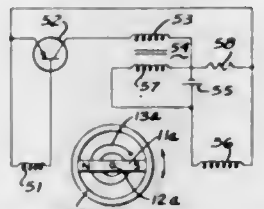


1. An electrical device for precisely positioning a remote component comprising a master unit including transmitting means, at least one remote component including receiving means, means to set on said transmitting means information to be reproduced at said remote component, a D.C. electric servomotor operatively connected to drive said receiving means and said remote component, said transmitting means and said receiving means forming an electrical bridge circuit, a deviation of information between the receiver and the transmitter appearing as an electrical potential across a measuring diagonal of said electrical bridge, an error detector, said error detector being connected to said measuring diagonal and controlling the direction of operation of said servomotor, said servomotor having a non-linear braking characteristic, a compensating device connected betwen the servomotor and said error detector to control the latter in response to the operating condition of the former, said compensating device comprising a resistor in series with said error detector, and an element having a non-linear current/voltage characteristic depending on the braking characteristic of the servomotor, said element being connected in series with said resistor, a current dependent on the armature voltage of the servomotor traversing said resistor and said element.

3,309,590
MAGNETIC IMPELLING SYSTEM FOR MECHANICAL OSCILLATORS

Robert Walter Reich, Merzhauserstr. 143, Freiburg im Breisgau, Germany

Original application Mar. 31, 1961, Ser. No. 99,940, now Patent No. 3,221,231, dated Nov. 30, 1965. Divided and this application Sept. 20, 1965, Ser. No. 488,376
7 Claims. (Cl. 318—128)



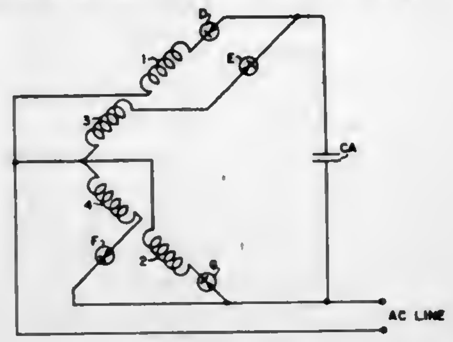
1. Impelling system for a mechanical oscillator including magnet means oscillating therewith comprising: a stationary driver coil adjacent said oscillator; said magnet means during oscillation of said oscillator having a zero position, a period of approach and a period of receding of said magnet means with respect to said driver coil; position sensing means adjacent said oscillator and responsive to the momentary position of said oscillator during said period of approach and operable for producing an output signal voltage pulse indicative thereof; pulse developing means connected to said sensing means and responsive thereto so as to develop a current pulse upon occurrence of an output signal voltage pulse of said sensing means; and circuit means interconnecting said pulse developing means with said driver coil means and including inductive means operable in response to a pulse developed in said pulse developing means to develop consecutive driving pulses of respectively opposite polarity in said driver coil with the first occurring during said perod of approach of said magnet means and attracting said magnet means and the second occurring during said period of receding of said magnet means and repelling said magnet means.

3,309,591
SINGLE PHASE REVOLVING FIELD MOTOR

Joseph G. Putnocky, Jr., 189 N. Cedar Road, Fairfield, Conn. 06430; Mary B. Putnocky, administratrix of said Joseph G. Putnocky, Jr., deceased

Filed Nov. 19, 1963, Ser. No. 324,890
3 Claims. (Cl. 318—138)

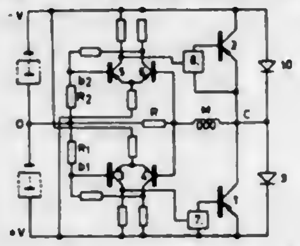
1. In an electric motor having a stator, a rotor, and field means for causing rotation thereof, said field means comprising a plurality of field circuits connected in parallel with a source of alternating current power with one of said circuits having a capacitor therein whereby the current in said circuits is out of phase electrically, each field circuit comprising a plurality of field coils with the coils in said circuits being connected in parallel and alternately arranged and mechanically displaced on the stator in a ring surrounding the rotor, and individual rectifier means serially connected to each coil and so poled as to render said coil operative during one half of each cycle of the alternating current in said field circuits to thereby produce a rotating magnetic field for the motor.



3,309,592
ELECTRONIC SWITCHING SYSTEM FOR MOTORS

Robert Favre, Lausanne, Switzerland, assignor to Golay, Buchel & Cie. S.A., Malley-Lausanne (Canton of Vaud), Switzerland, a firm

Filed Jan. 28, 1964, Ser. No. 340,630
Claims priority, application Switzerland, Jan. 31, 1963, 1,226/63
11 Claims. (Cl. 318—138)



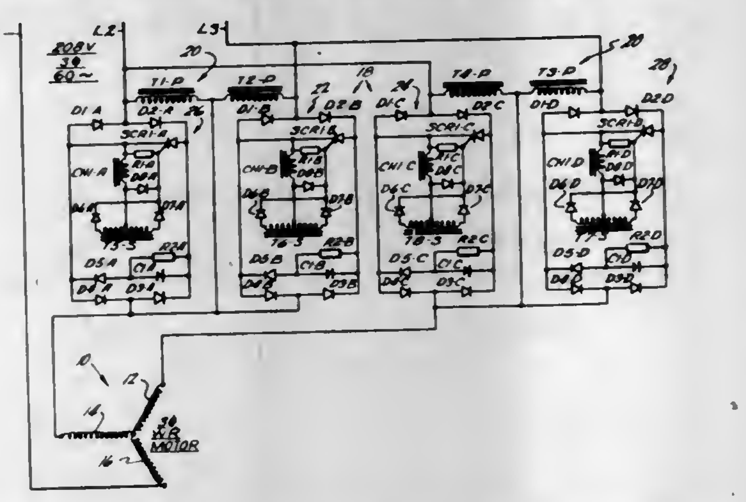
1. A control circuit for a D.C. powered A.C. motor having a stator winding and a power circuit comprising:
(1) a monostable multivibrator connected with said control circuit;
(2) power transistors connected to said stator winding for energizing the same in both current directions;
(3) at least two voltage-control producing means connected in the base circuit of said power transistors and with said monostable multivibrator, one of said means acting on one of said power transistors during one current direction and the other controlling said other power transistor for the other current direction;
(4) switching means controlled by the motor current for making said power transistor non-conductive whenever a given maximum value of the motor current is exceeded, and for making it again conductive whenever the motor current falls below a given value;
(5) an auxiliary circuit having an operative member connected to said switching means for adjusting the threshold value of the voltage of the switching means as a function of the speed of rotation of the motor.

3,309,593
REVERSING LINE STARTER

Robert W. Egglestone, West Hartford, and Algernon S. Noell, Jr., Windsor, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 28, 1964, Ser. No. 421,272
3 Claims. (Cl. 318—207)

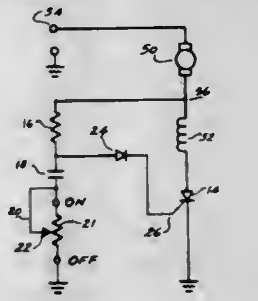
1. An electrical reversing line starter operative to control the application of a three-phase power supply to a three-phase load comprising in combination first switching means interconnecting one phase of the power supply with one phase of the load, fourth switching means interconnecting another phase of the power supply with another phase of the load, second and third switching means interconnecting said other and said one phases of the power supply, respectively, with said one and said other phases of the load, respectively, each of said switching means including a rectifier bridge connected intermediate the respective phase of the power supply and the respective phase of the load, a silicon controlled rectifier connected in said bridge in a manner to control the passage of current through the bridge from the power supply to the load, a control circuit for controlling the gating of the silicon controlled rectifiers and including first, second, third and fourth transformers the primaries of which are connected respectively across the rectifier bridge network of the first, second, fourth and third switching means, fifth, sixth, seventh and eighth transformers the secondaries of which are connected into the gating circuit of the silicon controlled rectifier of the first, second, fourth and third switching means, respectively, to provide gating current therefor, means for rectifying the current produced by these secondary windings and applying it to the gate of the silicon controlled rectifier, the secondary windings of the first and fourth transformers being interconnected with the primary windings of the sixth and seventh transformers to energize these latter transformers incident to energization of the former transformers and the secondary windings of the second and third transformers being interconnected with the primary of the fifth and eighth transformers to likewise energize these latter transformers incident to energization of said second and third transformers.



3,309,594
POWER CONTROL CIRCUIT FOR SERIES MOTORS

Thomas G. Belt, Garland, and Jearld L. Hutson, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Original application Aug. 22, 1960, Ser. No. 50,995, now Patent No. 3,194,973, dated July 13, 1965. Divided and this application May 21, 1965, Ser. No. 477,989
2 Claims. (Cl. 318—246)



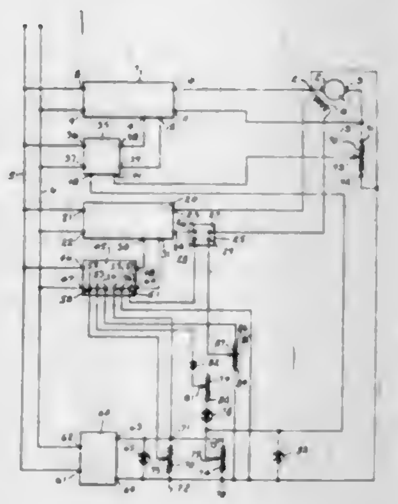
1. A circuit for controlling the speed of a motor having series connected armature and field windings comprising:
(1) a pair of input terminals adapted to be connected to a source of alternating current voltage;

(2) a thyratron type device having an anode, a cathode and a gate;
(3) electrical lead means connecting said series connected armature and field windings in series circuit with said input terminals and said anode and cathode;
(4) resistive means electrically connected to the junction between the field winding and armature winding of said motor;
(5) capacitive means electrically connected in circuit with said resistive means;
(6) means connected in circuit with said capacitive means for varying the charging rate of said capacitive means; and
(7) means electrically connecting said capacitive means with said gate whereby the firing angle of said thyratron type switch is controllable over essentially the full positive half cycle of the voltage applied to said input terminals.

3,309,595
CONTROLLED SOURCE ELECTRICAL MOTOR SPEED SYSTEM

John G. Safar, Milwaukee, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Mar. 2, 1964, Ser. No. 348,656
5 Claims. (Cl. 318—328)

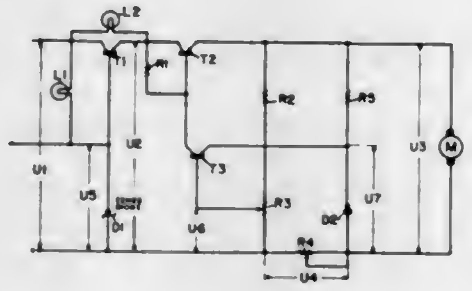


1. A speed control network for simultaneously controlling the electrical excitation of the armature and field windings of an electrical motor comprising, in combination:
a first controllable electric power source adapted to provide electrical excitation to an armature winding of an electrical motor;
a second controllable electric power source adapted to provide electrical excitation to a field winding of an electrical motor;
a first control element, the first control element being responsive to a net armature control signal and controlling the first power source in accordance with said armature control signal;
a second control element, the second control element being responsive to a net field control signal and controlling the second power source in accordance with said second control signal;
an armature feedback sensing means adapted to provide an electrical armature feedback signal in accordance with the actual armature excitation of said electrical motor;
a direct current voltage reference supply source;
a cross-over network providing control signals for said first and second control elements, the cross-over network including a first present field reference signal source responsive to said reference supply source and providing a substantially constant first field control signal segment to said second control element, a second variable field reference signal source responsive to said reference supply source and preset according to the desired motor speed and connected to said second control element in series with a first unidirectional signal magnitude sensitive device, said first signal magnitude sensitive device having breakdown voltage characteristics coinciding with the desired cross-over speed, said first signal magnitude sensitive device substantially blocking current flow for potentials less than the breakdown value, a second unidirectional signal magnitude sensitive device extending across said reference supply source and extending in series with said armature feedback sensing means and the first control element, said second signal magnitude sensitive device having voltage breakdown characteristics coinciding with the desired cross-over speed, whereby for motor speeds below the cross-over value the net field control signal remains substantially constant comprising substantially the preset value of the first field control signal segment and the armature control signal value varies in accordance with the signal across said second magnitude sensitive device and said armature feedback signal and for motor speeds exceeding the cross-over value the net field control signal comprises substantially the summation of the first and second field control signal segments and the armature control signal value remains substantially constant in accordance with the breakover voltage value of said second magnitude sensitive device and said armature feedback signal.

3,309,596
CIRCUIT ARRANGEMENT FOR REGULATING THE SPEED OF MINIATURE ELECTRIC D.-C.-MOTORS

Robert Limley, Kirchdamm 5, Hemmingen-Westerfeld, Germany

Filed Nov. 17, 1965, Ser. No. 508,341
Claims priority, application Germany, Oct. 25, 1961, P 28,090
8 Claims. (Cl. 318—331)

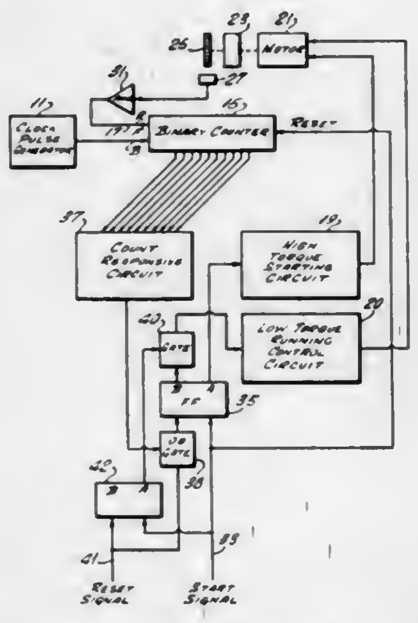


1. Arrangement for maintaining constant the number of revolutions of a constantly energized direct current shunt motor despite occurring changes of the direct current supply voltage and of the load comprising a first transistor, the collector-emitter distance of which is connected in series within the armature circuit of said motor, a second transistor, the collector electrode of which is coupled to the base electrode of said first transistor, circuit means for deriving a direct current voltage and for feeding said control voltage to the base and emitter electrodes of said second transistor, said control voltage being the sum of a constant direct current voltage and a voltage proportional to the armature direct current minus a voltage which is proportional to the armature direct current voltage.

3,309,597
MOTOR ACCELERATION CONTROL SYSTEM

Andrew Gabor, Huntington, Ivan O. Fieldgate, Halesite, and Eleuthere Poumakis, East Islip, N.Y., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed Apr. 20, 1964, Ser. No. 361,179
6 Claims. (Cl. 318—393)

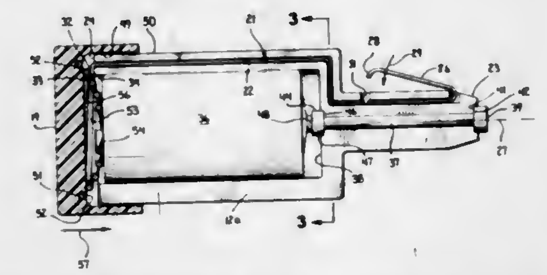


1. A speed control system comprising,
a motor, and
means to control the energization of said motor to initially generate a high torque and then to automatically reduce the torque generated by said motor to a lower value in response to a predetermined function reaching a predetermined value, said function having a first term increasing in magnitude linearly with time and a second term increasing in magnitude linearly with the distance through which the output of said motor has rotated, said first and second terms being of opposite signs, increases in the magnitude of said second term tending to change the value of said function toward said predetermined value.

3,309,598
DRY CELL BATTERY CHARGER UTILIZING AUTOMOBILE CIGAR LIGHTER SOCKET

Carrol M. Montgomery, Box 620D, R.R. 1, and Paul V. Ruff, Box 619D, R.R. 1, both of Anderson, Ind. 46011

Filed Mar. 31, 1964, Ser. No. 356,237
5 Claims. (Cl. 320—2)

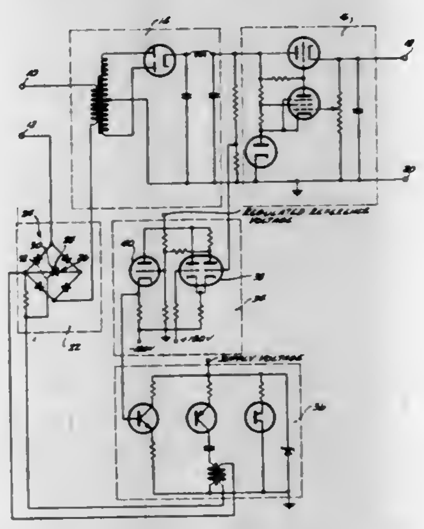


1. A battery cell charging device comprising:
a body having a generally cylindrical cell receiver with a cavity therein to receive an electric battery cell, and said body having a mounting stem with a generally cylindrical outer surface formed for reception in a low voltage electric cigar lighter socket, said body being formed of two identical plastic shells secured together in face-to-face relationship, each shell having a flat face abuttingly engaged with the corresponding flat face of the other shell;
a groove in the flat face of one of said shells and extending near an outer margin of said shell from a point on said stem to a rear end of said receiver;
an electric battery cell in said receiver;
a first resilient electrical conductor received in said groove and retained in said groove by the flat face of said other shell, said first conductor having a first portion projecting outwardly from said stem for engagement with a conductive portion of a cigar lighter socket, and said first conductor having a second portion joining said first portion and extending inwardly therefrom, and said first conductor having a third portion extending from said receiver;
and a cup shaped closure received on said receiver and having conductor means thereon for engaging said third portion of said first conductor and said cell to make an electrical path between said first conductor and said cell;
and a second electrical conductor having a first exposed portion at the front end of said stem and a second exposed portion at the said cavity, both of said exposed portions being rigidly supported for making contact with a conductor in the lighter socket and with said cell;
whereby electrical energy available at the lighter socket is applicable to said cell for recharging thereof, and a storage battery energizing said socket.

3,309,599
REGULATED POWER SUPPLY

Gordon E. Broomhall, Escondido, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 22, 1963, Ser. No. 317,880
1 Claim. (Cl. 321—24)

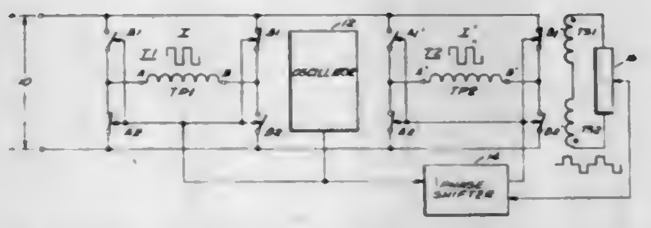


A voltage regulator comprising:
a pair of terminals adapted to be coupled to a source of alternating current voltage;
an electronic rectifier-filter circuit for rectifying said alternating current voltage to provide a direct current operating voltage;
a pair of terminals adapted to be coupled to an output circuit;
an electronic regulating circuit coupled between said rectifier-filter circuit and said output circuit for maintaining the voltage supplied to said output circuit substantially constant;
a phase controlled switch circuit coupled between said source and said rectifier-filter circuit, said circuit including a diode bridge circuit and a controlled rectifier connected between opposite terminals of said bridge circuit, said controlled rectifier having a cathode, anode, and gate; and
a control circuit means connected to said rectifier-filter circuit and said gate for triggering said controlled rectifier when the magnitude of the voltage of said source varies from a predetermined value, said circuit including a plurality of triode electron discharge

devices coupled as a differential amplifier and a cathode follower amplifier and a unijunction timing circuit coupled to said cathode follower amplifier to receive the amplified signal from said differential amplifier and to develop a pulse sufficient to switch said controlled rectifier from its blocking to its conducting state.

3,309,600
D.C. TO A.C. INVERTER ARRANGEMENT

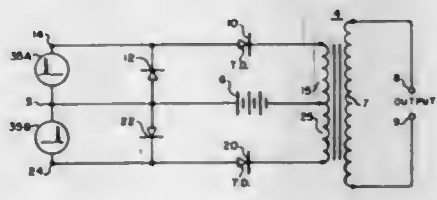
Armistead L. Wellford, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Jan. 30, 1963, Ser. No. 254,920
8 Claims. (Cl. 321—45)



3. In a power conversion system comprising a plurality of bridge inverters, each of said inverters comprising first and second parallel arranged circuit legs adapted to be connected across a unidirectional potential source having a positive and negative terminal, each of said first and second legs comprising a series arrangement of a plurality of gate controlled rectifiers having respective first and second junctions therebetween, the anode of a first gate controlled rectifier in a leg being adapted to be connected to said positive terminal, the cathode of a second gate controlled rectifier in a leg being adapted to be connected to said negative terminal and oscillating means for alternately gating into conductivity combinations of a first and second gate controlled rectifiers of different legs in an inverter; an output transformer for providing the combined outputs of said inverters comprising a first primary winding coupling said first junctions, a second primary winding coupling said second junctions, said first and second primary windings being so poled whereby the outputs appearing therein are in phase.

3,309,601
TUNNEL-DIODE LOW VOLTAGE STATIC INVERTER

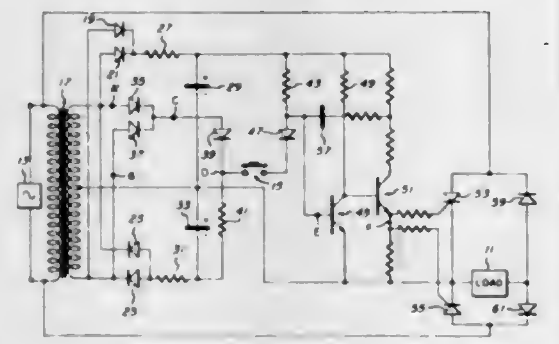
William L. Dudley, Shrewsbury, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Nov. 7, 1963, Ser. No. 322,257
5 Claims. (Cl. 321—45)



2. A tunnel-diode static inverter comprising
a transformer having a center-tapped primary winding, and a secondary winding;
a source of direct voltage;
a first tunnel-diode;
a first blocking diode connected in series with said first tunnel-diode, said source of voltage, and one half of said primary winding;
a second tunnel-diode;
a second blocking diode connected in series with said source of voltage, said second tunnel-diode, and the other half of said primary winding;
means for applying a first source of pulses across said first blocking diode;
means for applying a second source of pulses, alternating with the pulses of said first source, across said second blocking diode; and
means for connecting an output load across said secondary winding.

3,309,602
CURRENT CONTROLLERS

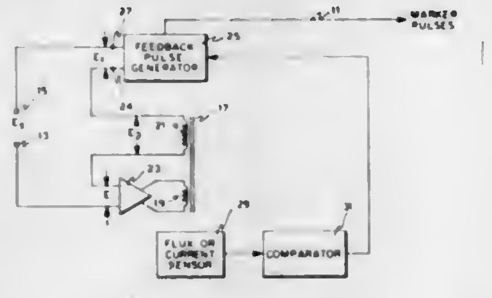
Louis J. Euvino, Bronx, and Robert L. Zinke, East Northport, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed July 18, 1963, Ser. No. 295,928
7 Claims. (Cl. 321—46)



1. In combination,
(a) an alternating current supply,
(b) a silicon controlled rectifier to conduct rectified current from the supply to a load,
(c) means to sense the instantaneous value of the output of the supply,
(d) a monostable multivibrator,
(e) means to trigger the multivibrator into the quasi-stable state when the instantaneous value of the output of the supply approaches zero, and
(f) means to supply a triggering voltage to the silicon controlled rectifier when the multivibrator is in the quasi-stable state.

3,309,603
VOLTAGE TO PULSE FREQUENCY CONVERTER

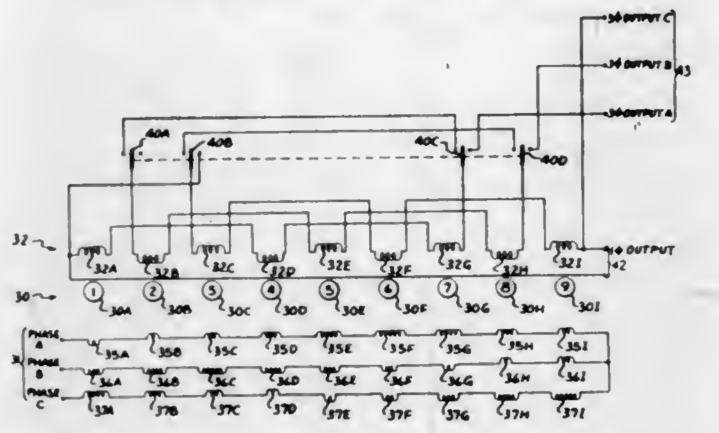
Victor H. Seliger, North Caldwell, and Ronald Y. Paradise, Hillsdale, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporatiou of Delaware
Filed Aug. 26, 1963, Ser. No. 304,415
5 Claims. (Cl. 321—60)



4. A voltage to pulse frequency converter comprising transducer means to generate an output current proportional to an applied signal voltage, inductor means coupled to said transducer means to generate a signal proportional to the rate of change of current flow produced by said transducer means, a pulse generator operable to produce an output pulse in response to an applied enabling signal, input means to receive an input signal, circuit means for applying to said transducer means a signal proportional to said input signal minus the output of said pulse generator minus the output of said inductor means, and means responsive to the output current of said transducer means exceeding a predetermined value to apply an enabling signal to said pulse generator.

3,309,604
MAGNETIC CORE FREQUENCY MULTIPLIER AND METHOD OF CONSTRUCTING THE SAME

William H. Bussey, Rockford, Ill., assignor to The E.M.U. Company, Inc., Rockford, Ill., a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 316,936
15 Claims. (Cl. 321—68)

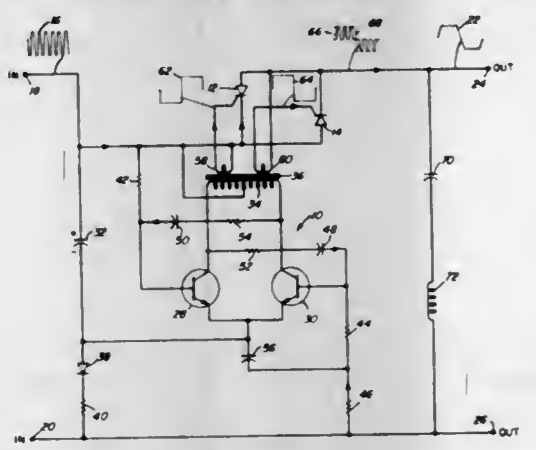


7. In a frequency multiplier having an input circuit adapted to be connected to a polyphase input and capable of producing a single phase or polyphase output, the combination which comprises, a series of magnetic core members corresponding in number to the desired multiplication factor for a single phase output and each defining substantially closed loop flux paths, output windings wound individually on the respective core members, switching means having two positions for serially connecting all of the output windings in series with adjacent windings being effectively wound in opposite directions when in a first position so that a single output circuit is formed thereby and serially connecting selected output windings in series with adjacent windings being effectively wound in opposite directions when in the second position so that a plurality of output circuits are formed thereby, and a plurality of distributed windings corresponding in number to the number of input phases each of said distributed windings being connected to the input circuit so as to receive one phase of the polyphase input, each distributed winding including turns singly electromagnetically linking several of said cores, successive ones of the cores being linked by different combinations of turns of said distributed windings, said combinations being selected to cause the net magnetomotive force exerted on successive cores by currents flowing through said distributed windings to cross zero at successive instants to continuously drive the cores in sequence across a zero axis of magnetic saturation whereby bidirectional output signals are induced in the output windings (1) to provide an alternating output signal in the single output circuit having a frequency equal to the number of core members times the input frequency when the switching means is in the first position and (2) to provide an alternating output signal in each output circuit having a frequency equal to the number of associated core members times the input frequency when the switching means is in the second position.

3,309,605
FREQUENCY CONVERTER WHEREIN AN ASTABLE OSCILLATOR IS FREE RUNNING AT HIGH FREQUENCY INPUT SIGNALS AND IS SYNCHRONIZED TO LOW FREQUENCY INPUT SIGNALS

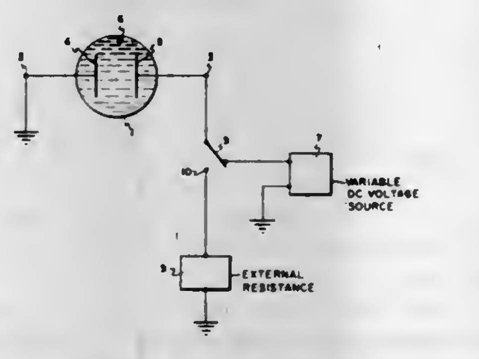
El Don L. Hoven, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Aug. 19, 1963, Ser. No. 302,949
5 Claims. (Cl. 321—69)

5. An A.C. frequency converter circuit, comprising:
a pair of trigger controlled rectifiers having anode, cathode and trigger electrodes connected in parallel with the cathode of one rectifier connected to the anode of the other rectifier;
input means including a shunt capacitor connected to a diode and a resistor to provide a source of D.C. supply voltage, said input means being connected to one of the common connections at the anode and cathode of said rectifiers to apply an input line voltage thereto;
a pair of transistors connected as common emitter amplifiers with their emitter to collector circuits connected across said shunt capacitor, each of said transistor to form an astable multivibrator;
a transformer having a center tapped primary winding connected at its opposite ends to the outputs of said transistors with the center tap of said primary winding connected to said input means, and a pair of secondary windings each connected to a different one of the trigger electrodes of said rectifiers;
coupling means including a bypass capacitor connected across the input of one of said transistors, for applying said input line voltage to said transistors in order to synchronize the oscillations of said multivibrator at a predetermined frequency when said input line voltage is below an upper limit frequency, and to allow said multivibrator to free run when said input line voltage is above a lower limit frequency determined by said bypass capacitor; and
output means connected to the other common connection at the anode and cathode of said rectifiers to transmit an output line voltage therefrom whose frequency is determined by the oscillation frequency of said multivibrator.



3,309,606
VARIABLE PERMITIVITY DEVICE AND PROCESS THEREFOR

Eric O. Forster, Scotch Plains, and Norvell E. Wisdom, Jr., Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,980
11 Claims. (Cl. 323—93)



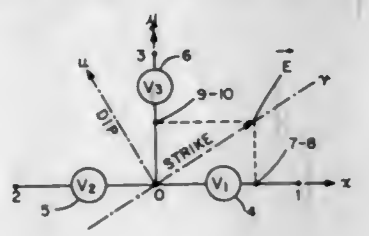
8. In combination with an alternating current circuit, a variable permitivity capacitive circuit element operatively connected therein, said element comprising a pool

of a C_6–C_{50} unsaturated liquid hydrocarbon having an impurity level below 1 part per million and a pair of electrodes immersed therein and spaced from each other at a distance of 0.001 to 0.20 cm., a source of direct current potential connected to said electrodes and means for varying said potential, said permitivity being responsive to the variation of the potential.

3,309,607

METHOD FOR THE DETERMINATION OF DIRECTION OF EFFECTIVE STRIKE AND DIP FROM TELLURIC POTENTIALS UTILIZING A T-SPREAD QUADRUPOLE ELECTRODE ARRAY

Sulhi H. Yungul, La Habra, Calif., assignor to Chevron Research Company, a corporation of Delaware
Filed Dec. 22, 1964, Ser. No. 420,340
6 Claims. (Cl. 324—1)



3. A method for determining the azimuth angle ϕ of the effective strike of the subsurface formations comprising the steps of:

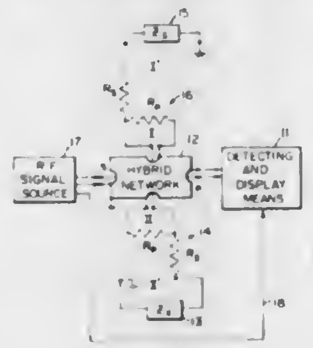
- (a) measuring as continuous functions of time first and second voltages representative of the telluric current between, respectively, a first pair of fixed electrodes and a second pair of fixed electrodes, said second pair of electrodes being on a straight line passing through said first pair of electrodes and including one of said first pair of electrodes;
- (b) simultaneously measuring as a continuous function of time a third voltage representative of the telluric current between a third pair of electrodes, said third pair being in a line substantially perpendicular to a line through said first pair of electrodes and including said electrode that is included in both said first and said second pair of electrodes;
- (c) comparing the voltage representations measured by said first and said second pair of electrodes to identify relatively large variations of substantially the same amount in both said first and second measured voltages produced by a telluric current flowing through said subsurface formations substantially parallel to the strike of said subsurface formations;
- (d) determining the voltage change in said measured third voltage during said identified large variations of said first and second voltages, and determining the azimuth angle ϕ of the effective strike by correlating the change in said first and second measured voltages during said interval of time with the change in said measured third voltage during the same interval of time.

3,309,608

HIGH FREQUENCY TECHNIQUES FOR MEASURING REFLECTED ENERGY

Andrew Alford, Winchester, Mass.
(299 Atlantic Ave., Boston, Mass. 02110)
Filed Oct. 22, 1963, Ser. No. 317,906
7 Claims. (Cl. 324—58)

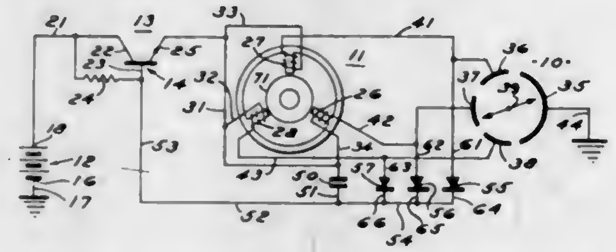
1. High frequency reflector energy measuring apparatus comprising,
a network exhibiting hybrid properties over a prescribed frequency range and having a series branch, a parallel branch and a pair of side branches with each of said branches characterized by a common characteristic impedance,
said network including an effective reactance across at least one of said side branches that is much larger than said common characteristic impedance within said prescribed frequency range and having the property that when said side branches are terminated in equal impedances and energy applied to one of said series and parallel branches all said energy divides equally between said impedances terminating said side branches,
a first pair of side terminals,
attenuating means coupling said first pair of side terminals to said at least one of said side branches including resistive means much less than said effective reactance within said prescribed frequency range for terminating said at least one side branch so that a first prescribed nominal impedance terminating said pair of side terminals coacts with said attenuating means to terminate said at least one side branch in said common characteristic impedance,
an unknown impedance terminating said first pair of side terminals for coacting with said attenuating means for reflecting energy emitted from said one side branch back into said one side branch,
a source of an A.C. signal,
means for coupling said A.C. signal source to one of said series and parallel branches,
and detecting means coupled to the other of said series and parallel branches for providing a signal into said network by said unknown impedance being coupled to said one side branch through said first-mentioned attenuating means.



3,309,609

ELECTRICAL SPEEDOMETER WITH ELECTRICAL ENERGY REGULATING MEANS

Richard D. Brewer, Dearborn, and Bernard G. Radin, Oak Park, Mich., assignors to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 3, 1963, Ser. No. 313,663
5 Claims. (Cl. 324—70)

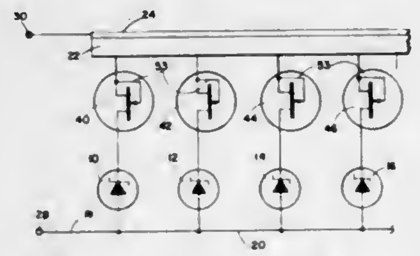


1. In an electrically operated speedometer for a motor vehicle, a source of electrical energy, a receiver having a plurality of windings and a rotor driven by said windings, a speed indicating means, said rotor being connected to said speed indicating means, means adapted to be driven by a rotatable portion of a motor vehicle at a speed indicative of motor speed, said means coupled to said source of electrical energy and said windings and having means for sequentially energizing said windings from said source of electrical energy, a transistor having an emitter, a collector and a base, said emitter and collector being connected in series circuit with said source of electrical energy and said windings, and means coupled to said base for causing the conduction of said transistor to increase as a function of increasing vehicle speed.

3,309,610

MULTI-LAYER SOLID STATE METER HAVING ELECTROLUMINESCENT INDICATION, BREAKDOWN DIODES AND CONSTANT-CURRENT CONTROLLING ELEMENTS

Yujiro Yamamoto, Santa Ana, Calif., assignor to North American Aviation, Inc.
Filed May 28, 1963, Ser. No. 283,745
10 Claims. (Cl. 324—103)

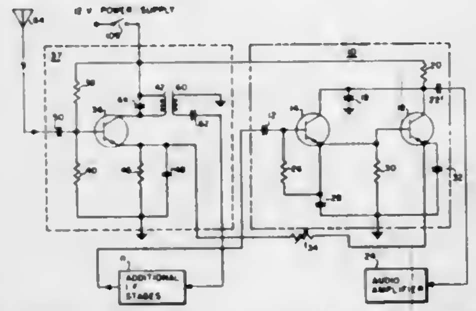


1. The combination comprising
a strip of electroluminescent material;
a plurality of constant-current-controlling members;
a plurality of diodes having different breakdown voltages; and
means for series-connecting a diode, a member of said plurality, and an area of said strip of said electroluminescent material—whereby input signals of different magnitudes cause various portions of said strip to glow, said constant-current-controlling members acting to provide a combination having a substantially constant input impedance.

3,309,611

HIGH GAIN A.G.C. SYSTEM FOR TRANSISTOR I.F. SYSTEMS

Clarence Bainum, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 29, 1963, Ser. No. 284,270
4 Claims. (Cl. 325—401)

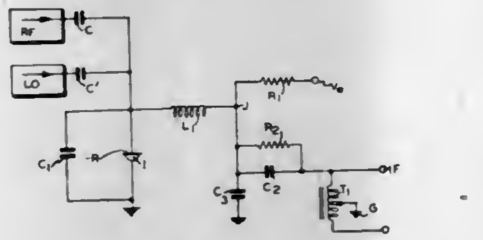


1. In an automatic gain control system for detecting and amplifying an I.F. frequency signal, the combination including:
a first transistor having a base, emitter and collector,
a second transistor having a base, emitter and collector, said second transistor being connected to said first transistor such that the current of the emitter of said second transistor is the product of the current at the emitter of the first transistor times the gain of said second transistor,
a first I.F. stage including a control element electrically associated therewith,
at least one additional I.F. stage having the base of said first transistor connected to the output of said additional I.F. stage for receiving an A.C. signal therefrom, the input of said additional I.F. stage being connected to the output of said first I.F. stage, and
a variable resistance means connected at one of its ends to the emitter of said second transistor and being connected at its other end to the control element of said first I.F. stage whereby when minimum detectable signals are received from the I.F. stages the gain thereof is controlled over a large dynamic range by the operation of said first and second transistor arrangement, the overall arrangement acting to provide a simple, troublefree A.G.C. circuit for use in detecting solar noise from an antenna input.

3,309,612

CONVERTER APPARATUS EMPLOYING NEGATIVE RESISTANCE MIXER

Irving Horowitz, Eatontown, N.J., assignor to Blonder-Tongue Electronics, Newark, N.J., a corporation of New Jersey
Filed Oct. 21, 1963, Ser. No. 317,528
5 Claims. (Cl. 325—449)



5. Converter apparatus having, in combination, a two-terminal negative-resistance mixing element for producing an intermediate frequency from radio-frequency and local-oscillation frequency inputs thereto, a radio-frequency and local-oscillation-frequency-suppressing impedance element connected to the mixing element, a resistive direct-current voltage divider connected to the said impedance element and to intermediate-frequency stage means, and means for preventing spurious oscillation with the mixing element at frequencies in the region of the said intermediate frequency caused by impedance changes ranging from substantial short to open circuit conditions at the intermediate-frequency stage means and comprising means for adjusting the positive resistance reflected back from the intermediate-frequency stage means at both the said short and open circuit conditions to a value less than the negative resistance of the mixing element at frequencies different than the said radio-frequency and local-oscillation frequencies.

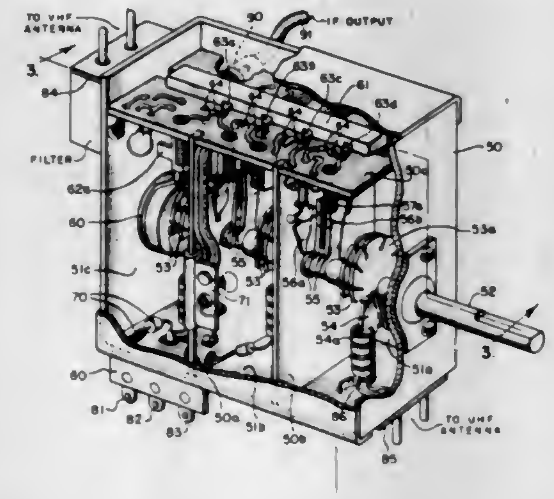
3,309,613

CONTINUOUSLY ADJUSTABLE VHF/UHF TELEVISION TUNER

John F. Bell, Wilmette, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed July 29, 1966, Ser. No. 568,816
11 Claims. (Cl. 325—459)

1. A system for selectively tuning a television receiver to any channel within the VHF and UHF frequency bands comprising:
a shield housing having partitions which define radio frequency, oscillator and mixer compartments; adjustable tuning arrangements in each of said compartments individually comprising a rotatable tuning shaft that is common to all said compartments, a UHF tuner continuously adjustable over the entire UHF band having a rotor supported on said shaft and having a stator positioned within said compartment to have effective coupling with said UHF rotor over a first range of angular displacements of said shaft, a VHF tuner continuously adjustable over two

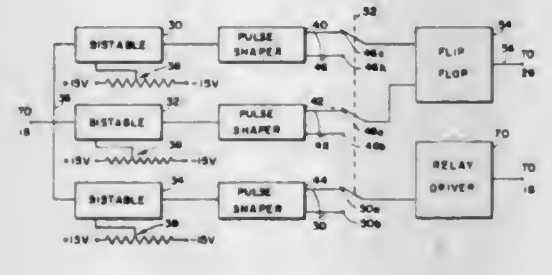
band segments which collectively define the VHF band and including a common rotor supported on said shaft and a pair of stators angularly displaced from one another along the path of movement of said VHF rotor and positioned within said compartment to have effective coupling with said VHF rotor over a second and a third range of angular displacement of said shaft which are mutually exclusive of one another and exclusive of said first range;



and a switching system for functionally connecting said stators in operating relation to the remainder of said receiver seriatim, including a switch operator supported on said shaft and having active elements oriented on said shaft to effect a switching function only during angular displacements of said shaft that are between said first, second and third ranges.

3,309,614
VOLTAGE DETECTION CIRCUIT

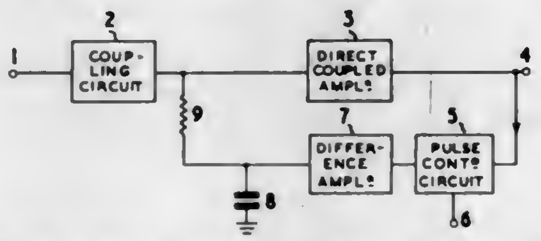
Helmar Schlein, Reseda, Calif., assignor to North American Aviation, Inc.
Filed Oct. 18, 1963, Ser. No. 317,333
3 Claims. (Cl. 328—147)



1. A unilateral slope detector comprising a source of varying voltage, first means responsive to a first preselected value of said varying voltage to generate a first signal, second means responsive to a second preselected value different from said first valve of said varying voltage to generate a second signal, third means connected to each of said signal generating means and selectively responsive to a preselected order of said first and second signals for generating a first control signal when said first value is reached and a second control signal when said second value is reached so that said first and second control signals are generated only when said first and second signals are generated in said preselected order, and a separate reference voltage generator means connected to each of said first and second named means for varying said preselected value independent of said voltage source.

3,309,615
SIGNAL LEVEL CONTROL APPARATUS

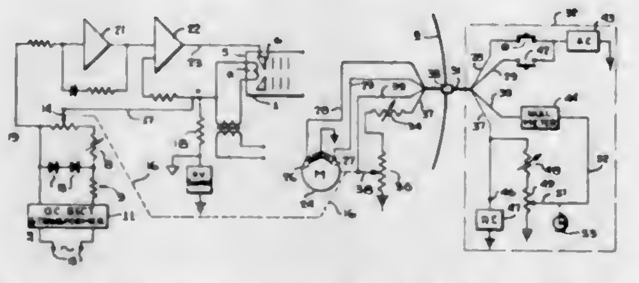
John Lewis Edwin Baldwin, Croydon, Surrey, and Derek John Parkyn, Sanderstead, Surrey, England, assignors to Rank-Bush Murphy Limited, London, England, a British company
Filed Feb. 4, 1964, Ser. No. 342,867
Claims priority, application Great Britain, Feb. 12, 1963, 5,664/63
7 Claims. (Cl. 328—175)



1. Signal level control apparatus comprising, in combination: a source of an input signal including periodically recurrent reference level portions; an input terminal; circuit means connecting said input signal to said input terminal; an output terminal; a coupling circuit coupling said input terminal to said output terminal, said coupling circuit including a series coupling capacitor; drive pulse generator means producing pulses occurring during said recurrent signal portions; control pulse generator means responsive to a control signal and to drive pulses to develop first and second control pulses of like polarity, the amplitudes of said first and second control pulses varying oppositely when the amplitude of said control signal during said drive pulses has a value differing from a predetermined value; means for applying said input signal to said control pulse generator; means for applying said drive pulses to said control pulse generator; a storage capacitor having first and second terminals; a point of constant potential; a direct connection from said second terminal of said storage capacitor to said point of constant potential; a direct current source having first and second poles; first pulse controlled current varying means connected to control the flow of current from said source to said first terminal of said storage capacitor; second pulse controlled current varying means connected to control the flow of current from said first terminal of said storage capacitor to said second pole of said current source; means for applying said first and second control pulses to control said first and second current varying means respectively; and circuit means for applying the potential appearing at said first terminal of said storage capacitor to control the potential of a point in said coupling circuit subsequent to said coupling capacitor.

3,309,616
CURRENT CONTROL AND INDICATOR FOR HIGH VOLTAGE ACCELERATORS

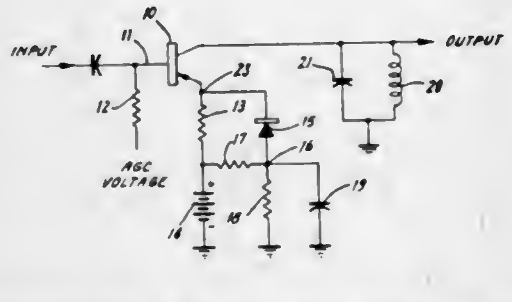
Chester C. Thompson, Jr., Roslyn Heights, N.Y., assignor to Radiation Dynamics, Inc., Westbury, N.Y., a corporation of New York
Filed Dec. 17, 1963, Ser. No. 331,243
7 Claims. (Cl. 328—258)



1. A current control system for a high-voltage, beam tube accelerator having a current control electrode located at the high voltage end of the tube, said current control system comprising means for establishing a first voltage, indicative of a desired beam current, an electromechanical transducer having a mechanical output element, means for energizing said transducer, such that said mechanical output element assumes a position which is a function of said first voltage, a variable voltage means, means for varying said variable voltage means to produce a second voltage indicative of the position of said mechanical output element and means for applying a voltage to the current control electrode of the beam tube which is a function of said second voltage.

3,309,617
CONTROLLABLE GAIN TRANSISTOR AMPLIFIER UTILIZING CURRENT-VARIABLE IMPEDANCE IN EMITTER CIRCUIT FOR PROVIDING CONTROLLABLE SIGNAL DEGENERATION

William W. Lancaster, Philadelphia, and Abram Hopengarten, Lafayette Hills, Pa., assignors to Philco-Ford Corporation, a corporation of Delaware
Filed May 4, 1964, Ser. No. 364,635
4 Claims. (Cl. 330—28)



2. A variable gain amplifier for alternating current signals, comprising: a transistor having a base, an emitter, and a collector, a signal input circuit connected to said base, means for applying an automatic gain control voltage to said base, an emitter circuit, means in said emitter circuit for causing said amplifier to produce degeneration of alternating current signals applied to said input circuit, said means including in parallel a resistor and a diode, means for biasing said diode to render it conductive when said automatic gain control voltage is of low value and reverse biased when said automatic gain control voltage is of high value, a collector circuit, and means for deriving an output signal from said collector circuit.

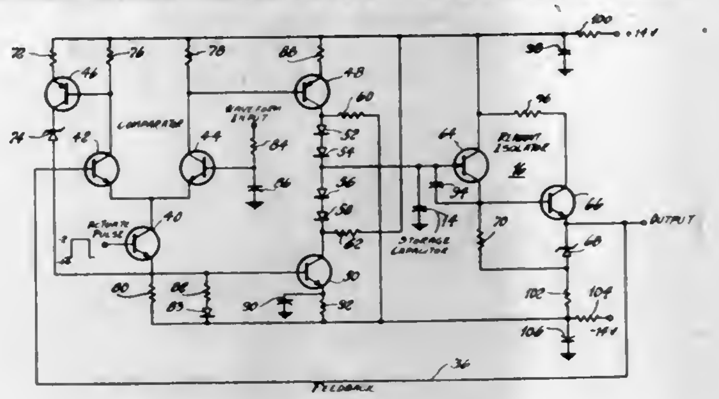
ERRATUM

For Class 330—47 see:
Patent No. 3,309,660

3,309,618
POSITIVE-FEEDBACK BOXCAR CIRCUIT

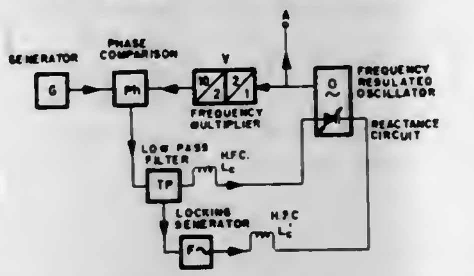
Paul E. Harris, Syracuse, and Bower Eugene Simmons, Fayetteville, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 27, 1964, Ser. No. 385,529
12 Claims. (Cl. 330—69)

1. A boxcar circuit comprising, in combination:
difference amplifier means operating in response to a gating pulse for comparing the values of an input signal and a feedback signal and producing a difference signal proportional to the difference between said values;
storage means connected to said difference amplifier means for storing energy in proportion to said difference signal;
an output terminal;
isolation means connected between said output terminal and said storage means for transmitting to said output terminal a signal proportional to the energy stored in said storage means and for isolating said storage means from loading effects at said output terminal; and
feedback means connected between said output terminal and said difference amplifier means for feeding back the signal at said output terminal to said difference amplifier means for comparison with said input signal.



3,309,619
PHASE-LOCKED FREQUENCY DIVIDER CIRCUIT

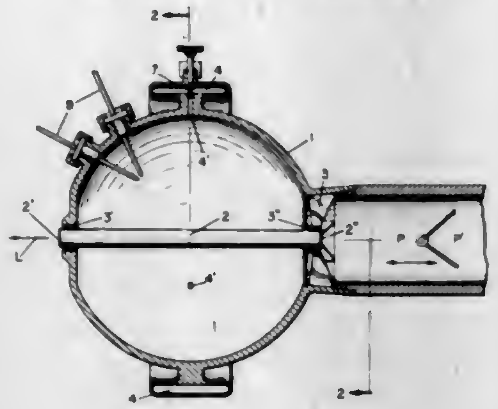
Peter Schucht, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Sept. 28, 1964, Ser. No. 399,717
Claims priority, application Germany, Sept. 30, 1963, S 87,652
5 Claims. (Cl. 331—17)



5. A frequency divider circuit for a voltage whose frequency is variable over a wide range and for the achievement of a large divider ratio and high side-wave attenuation, utilizing a frequency regulation circuit comprising a generator which produces the frequency which is to be divided, a frequency-regulated oscillator with a reactance circuit for producing the desired divider frequency, a phase comparison circuit having respective inputs to one of which said generator is operatively connected, a frequency multiplier disposed between and operatively connecting said oscillator with another input of said phase comparison circuit, said multiplier being operative to multiply the divider frequency to that of the frequency to be divided, said phase comparison circuit having an output, and a low pass filter circuit extending between and operatively connecting said output and said reactance circuit, completing a regulating loop:
- (a) Said low pass filter circuit having filter means for suppressing side-waves, and filter means with a very low limit frequency;
- (b) Said second mentioned filter means of said low pass filter having phase-shifting means therein for effecting a compensation occasioned by the presence of said first mentioned filter means of said low pass filter;
- (c) Said first mentioned filter means of said low pass filter containing a diode connected in parallel with a part of such filter means, which diode has an initial operational conducting characteristic such that it is non-conductive under normal circuit operation, but in the presence of predetermined higher voltages is operative to substantially produce a short circuit across such part of the associated filter means.

3,309,620
METHOD AND APPARATUS FOR PUMPING A LASER BY EXPLODING DISPERSED METAL PARTICLES

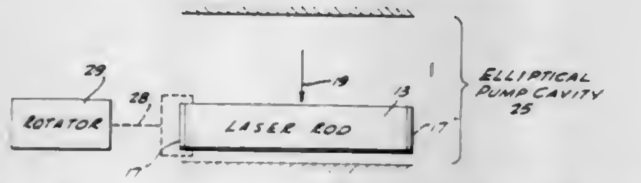
Jack De Ment, 4847 SE. Division St., Portland, Oreg. 97206
Filed Mar. 21, 1963, Ser. No. 267,010
14 Claims. (Cl. 331—94.5)



1. An apparatus for irradiating a target with bursts of light characterized as lying in the ultraviolet, visible and infrared portions of the electromagnetic wave spectrum which comprises a spheroidal, pressure-resistant chamber having an elongated irradiable target positioned along the diameter of said chamber, a pressurized source of explodable light-releasing particulate solid and a pressurized source of reactant gas, each of said sources being provided with a conduit in communication with valve dispensing means which form a premix of the said solid and reactant gas, conduit means leading from the said valve dispensing means to a premix impeller, said impeller being to feed the said premix into the said chamber, a conduit leading from the impeller to the chamber, ignition means mounted within the chamber, said ignition means being provided with a source of electric energy, and a debris exhaust, whereby upon introduction of the premix into the chamber and ignition thereof by the electric ignition means a light-releasing explosion occurs with subsequent removal of the debris from the explosion via the said exhaust.

3,309,621
MODE CONTROLLED LASER

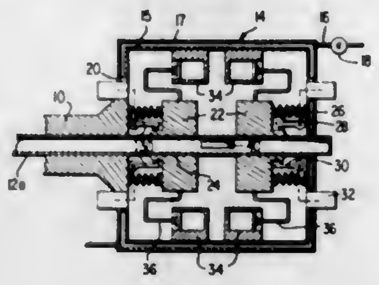
Viktor Evtuhov, Pacific Palisades, and James K. Neeland, Santa Monica, Calif., assignors to Hughes Aircraft Corporation, Culver City, Calif., a corporation of Delaware
Filed June 24, 1963, Ser. No. 289,823
3 Claims. (Cl. 331—94.5)



1. A method for producing a transverse mode controlled laser comprising the steps of: placing laser material within an optical resonator having reflecting means optically coupled to said laser material to provide a laser cell, said laser cell having a plurality of characteristic modes of oscillation; providing a non-uniform pump energy distribution around the periphery of said laser material, said pump energy being just of sufficient magnitude to cause oscillation within said laser cell; selecting a desired transverse mode of oscillation from said plurality of modes by changing the relationship between said non-uniform pump energy distribution and said laser material; and modifying the reflective properties of said reflecting means to support only the selected transverse mode of oscillation.

3,309,622
SELF-OSCILLATING NUCLEAR POWERED PULSING DEVICE

Robert I. Weiner, Baltimore, Md., and Christopher P. Witze, Oakland, Calif., assignors to Martin Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Dec. 9, 1963, Ser. No. 328,866
15 Claims. (Cl. 331—94.5)



1. A self-oscillating, nuclear powered, pulsing device comprising:

means for supporting a pair of nuclear critical mass blocks for movement between first and second positions,

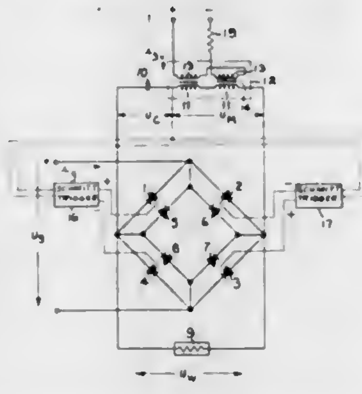
releasable means for latching said blocks in said second positions,

biasing means continually tending to move said blocks toward a first position in which said blocks physically contact each other to become supercritical when said releasable means are released,

whereby physical forces are created between said blocks tending to move said blocks against said biasing means to a second position wherein said blocks become sub-critical, said biasing means and said physical forces coacting on said blocks to effect a continuing oscillation of said blocks between said second and said first positions producing a pulsed nuclear radiation output when said blocks are in physical contact.

3,309,623
SELF-COMMUTATING AND AUTOMATICALLY CONTROLLED INVERTER

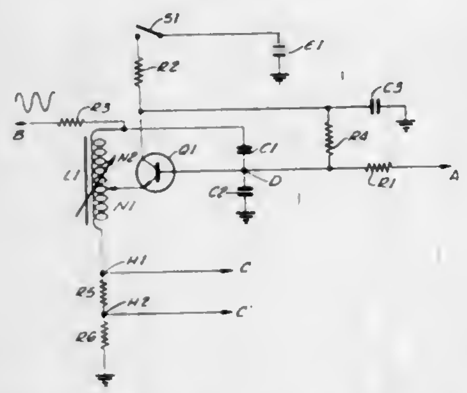
Manfred Depenbrock, Mannheim-Almenhof, Germany, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Apr. 27, 1966, Ser. No. 554,238
2 Claims. (Cl. 331—113)



1. A self-commutating and automatically controlled inverter comprising a full-wave bridge of four legs in each of which is inserted a controllable valve paralleled by a non-controllable valve connected in back-to-front relation, a source of unidirectional voltage connected to the input of said bridge, a load element connected to the output of said bridge, a base load circuit connected in parallel with said load element, said base load circuit including a capacitor connected in series with the primary coils of a magnetic amplifier unit, a source of unidirectional voltage connected to the secondary coils of said magnetic amplifier unit, and means controlling the conduction of said controllable valves by voltage impulses whose phase position is derived from the zero passage of the capacitor voltage of the base load.

3,309,624
MULTIPLE TONE GENERATOR FOR MUSICAL INSTRUMENT

Robert D. Allen, Sunland, Calif., assignor to Robert L. Eby, Los Angeles, Calif.
Filed Apr. 29, 1965, Ser. No. 451,870
4 Claims. (Cl. 331—117)

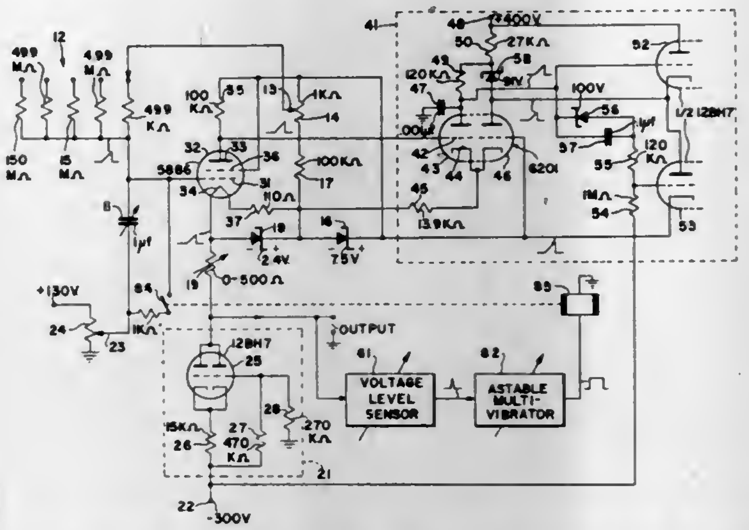


1. An electronic tone-signal generator for electronically producing electric waves to be transduced to sound waves simulating those of a musical instrument, said generator comprising: an oscillatory circuit comprising first and second serially-connected capacitance elements having a first junction therebetween and a tapped inductance in series with the capacitance elements and a second junction therebetween; a solid state gate device having emitter, collector and base electrodes; conductor means directly connecting said emitter to the tap of said inductance to provide a substantially non-resistive connection therebetween and directly connecting said base electrode to said first junction to provide a substantially non-reactive connection therebetween; a potential source and a resistive means, and means directly connecting said source and said resistive means in series with the emitter and collector circuit of said gate device and with the tapped portion of said inductance; a tone-signal connection comprising a series resistor connected to said second junction and operable to provide a pure musical tone signal, and means for keying supply of potential from said source to the emitter and collector circuit of said gate device.

3,309,625
CIRCUIT FOR GENERATING A LINEAR SWEEP WHOSE PERIOD IS ADJUSTABLE OVER A WIDE RANGE

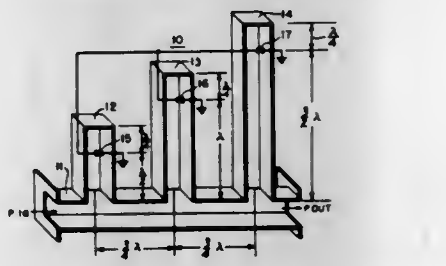
Charles F. Lothrop, Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed July 22, 1965, Ser. No. 474,010
7 Claims. (Cl. 331—152)

1. A linear sweep circuit comprising a capacitor, a resistor, means for connecting said capacitor and said resistor in series with each other and a D.C. source of constant current to generate a varying voltage across said capacitor, an electrometer tube including cathode, grid and anode electrodes, said capacitor and D.C. source of constant current serially connected between said grid and cathode electrodes of said electrometer tube, one end of said resistor connected to said grid electrode of said electrometer tube, a load resistor connected to the anode of said electrometer tube, a D.C. source of constant voltage connected between said cathode electrode and said load resistor of said electrometer tube, said cathode electrode of said electrometer tube coupled to provide a voltage at the other end of said resistor having exactly the same voltage variations as the voltage variation across said capacitor, a feedback circuit coupled to said anode electrode of said electrometer tube to receive a voltage signal therefrom, said feedback circuit having gain to provide an output voltage having exactly the same variations as the voltage variation across said capacitor, said feedback circuit output voltage coupled to said cathode electrode of said electrometer tube and said other end of said resistor.



3,309,626
MICROWAVE LIMITER

Vincent J. Higgins, Keansburg, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 3, 1964, Ser. No. 415,836
5 Claims. (Cl. 333—17)



1. A microwave limiter comprising a waveguide having an input end and an output end, a plurality of series stubs connected to said waveguide intermediate said ends, each said stub terminating in a shorted wall, a plurality of semiconductor diodes each mounted in a separate one of said stubs and spaced an integral multiple of a half wavelength from the associated waveguide stub junction, said end walls being spaced from its associated diode an odd number of quarter wavelengths, and means connecting said diodes in parallel with each other and with the diode located closest to said input end reversed in polarity with respect to the other of said diodes.

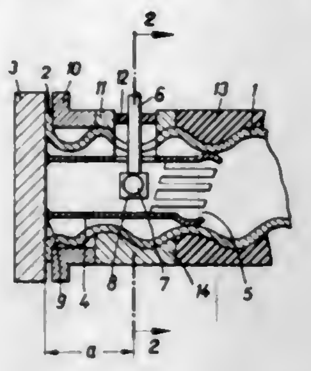
3,309,627
WAVEGUIDE

Wolfgang Krank and Erich Schüttlöffel, Backnang, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed May 5, 1965, Ser. No. 453,384
Claims priority, application Germany, May 5, 1964, T 26,140
11 Claims. (Cl. 333—21)

10. A waveguide arrangement, comprising, in combination:

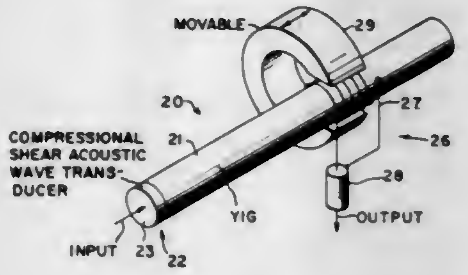
a flexible waveguide capable of being wound upon a drum; and

a hollow body disposed in an end of the waveguide and having only its inward portion outwardly springy, said body being inserted into the waveguide so that the electrical connections can be provided in the springy portion of the hollow body, and the other end of the hollow body being firmly connected with the waveguide.



3,309,628
YIG BROADBAND VARIABLE ACOUSTIC DELAY LINE

Frank A. Olson, Palo Alto, Calif., assignor, by mesne assignments, to Teledyne, Inc., Hawthorne, Calif., a corporation of Delaware
Filed May 7, 1965, Ser. No. 454,062
8 Claims. (Cl. 333—30)

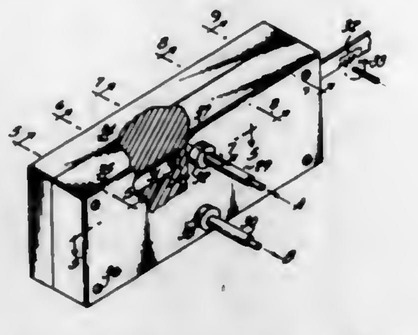


1. A broadband microwave variable delay apparatus comprising: means for propagating acoustic waves including a ferrimagnetic single crystal material; input coupling means for coupling an input microwave signal to an input region of said material for establishing an acoustic wave propagating within said material; output coupling means for setting up an output microwave signal from said propagating acoustic wave at an output region of said material spaced from said input region; at least one of said input and output coupling means, including means for establishing a magnetic field with a steep step in the magnetic field strength within said material in the region of said one coupling to cause conversion between an acoustic wave and a spin wave and between spin wave and a microwave signal; and means for moving the steep step magnetic field in said one coupling means longitudinally of said material to change the effective path length of said acoustic wave from said input region to said output region for varying the time delay between said input microwave signal and said output microwave signal.

3,309,629
NON-CONTACTING LINE STRETCHER

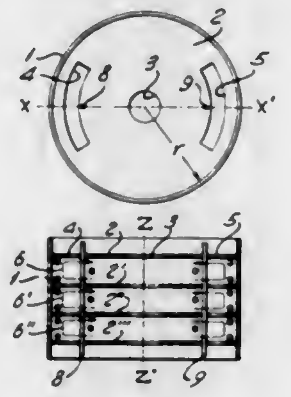
John Hessler, Jr., Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation
Filed Nov. 29, 1962, Ser. No. 240,919
14 Claims. (Cl. 333—31)

1. A line stretcher for use with a microwave transmission line comprising a shielding housing having at least one pickup cavity formed therein, a printed circuit card having a conductive strip line printed thereon, at least one non-contacting pickup connected to said transmission line and mounted in said cavity, and means for selectively moving said printed circuit card to a desired position relative to said pickup, said conductive strip having a geometry which increases or decreases the effective length of said transmission line as a function of the position of said card relative to said pickup.



3,309,630
SLOW WAVE LINE FOR ELECTRON DISCHARGE DEVICE

Takeo Hukunaga, a5 Ouemachi, Kumamotoshi, Japan
Filed June 29, 1965, Ser. No. 467,847
Claims priority, application Japan, July 3, 1964, 39/37,752
7 Claims. (Cl. 333—31)

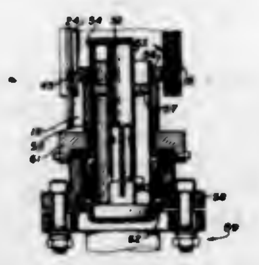


1. An electron discharge device comprising
a double cavity slow wave structure in the form of a stack of metallic disk partitions of similar physical configuration,
means for supporting said partitions at the peripheries thereof,
each of said partitions having a plurality of coupling slots,
and a plurality of electrical conducting bodies interconnecting said partitions,
the points of interconnection being adjacent said coupling slots, whereby the improved characteristics of higher Q, wider band-pass and higher impedance over conventional structures is achieved.

3,309,631
HIGH FREQUENCY TUBE COAXIAL TRANSMISSION LINE

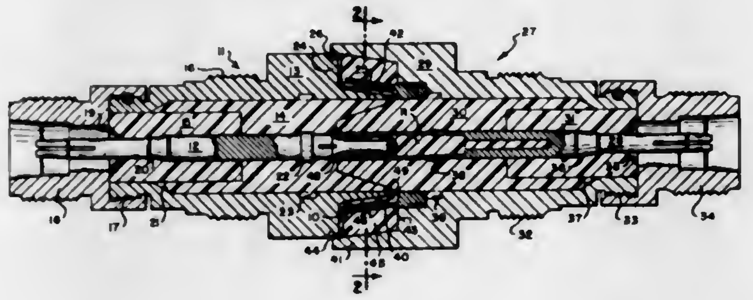
Joseph K. Mann, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Original application Dec. 16, 1959, Ser. No. 859,964, now Patent No. 3,058,026, dated Oct. 9, 1962. Divided and this application June 18, 1962, Ser. No. 203,374
1 Claim. (Cl. 333—33)

A high frequency coaxial transmission line apparatus for coupling wave energy between resonant cavity means of a high frequency electron discharge device and load means comprising; coaxially disposed inner and outer conductors; a strap member connecting said inner and outer conductors and vacuum sealing the end of said inner conductor, thereby forming an inductive coupling loop, and an annular ceramic wave permeable window member coaxially disposed with respect to said inner and outer conductors and forming an electromagnetic wave permeable vacuum seal between said inner and outer conductors, said window member having a net predetermined lumped capacitance value in the transmission line and spaced from said strap member such that the combination forms an impedance transformer over a range of frequencies for transforming the load means impedance to the optimum impedance for the device over a range of frequencies.



3,309,632
MICROWAVE CONTACTLESS COAXIAL CONNECTOR

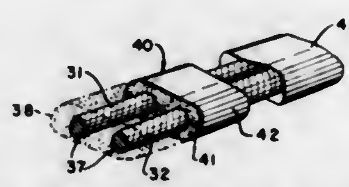
Ronald E. Trudeau, Florence, Mass., assignor to Kollmorgan Corporation, Garden City, N.Y., a corporation of New York
Filed Apr. 13, 1965, Ser. No. 447,701
8 Claims. (Cl. 333—33)



1. A quick-disconnect microwave coaxial connector having a first fitting engageable with a second fitting, each of said fittings having an inner conductor and an outer conductor separated by dielectric material, said conductors having mating surfaces, the connector comprising:
(a) an open-circuited quarter-wavelength choke coupling the inner conductors,
(b) a short-circuited half-wavelength choke coupling the outer conductors, and
(c) two separable solid dielectric layers, each of said layers being bonded to the mating surfaces of the conductors of one of said fittings.

3,309,633
ANTI-PARASITE ELECTRIC CABLE

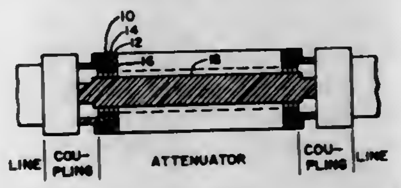
Ferdy Mayer, 8 Blvd. Gambetta, 38 Grenoble, France
Filed Jan. 10, 1963, Ser. No. 250,636
6 Claims. (Cl. 333—79)



1. A low pass electric cable for transmitting a range of low frequencies without substantial attenuation and for providing substantial absorption over a selected wide range of frequencies in the megacycle range, said cable comprising at least one conducting element, at least one insulating medium at least partially enclosing said conducting element, and at least one conductive return path separated from said conducting element by said insulating medium, said insulating medium including a mixture of materials selected to have a frequency dependent electromagnetic wave attenuation due to absorption losses over said selected range of frequencies substantially as great as the attenuation caused by reactive effects of said mixture of materials, said absorption losses being produced by microscopic magnetic and/or dielectric resonance or relaxation within the mixture of materials, said cable further comprising a body of high permittivity dielectric material connected between said conducting element and said conductive return path and defining a capacitor therebetween, said cable presenting an attenuation increase, in said selected range of frequencies, of at least about three times over the same cable without said body of high permittivity dielectric material defining said capacitor and without said conductive return path.

3,309,634
TRANSMISSION LINE ATTENUATORS FOR HIGH POWER

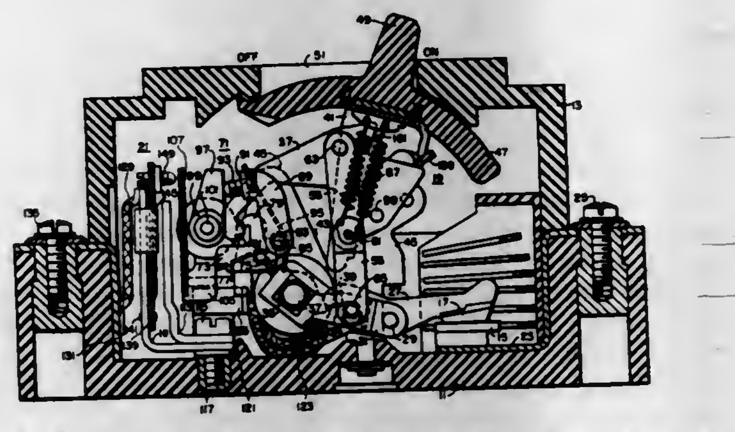
Harold A. Wheeler, Great Neck, N.Y., and David S. Lerner, North Plainfield, N.J., assignors to Hazeltine Research, Inc., a corporation of Illinois
Filed Dec. 14, 1964, Ser. No. 418,003
16 Claims. (Cl. 333—81)



1. An attenuator comprising:
a plurality of spaced iron sheets in common electrical contact at the outer edges with the central portions spaced and noncontacting and having openings in the central portions cooperating to permit propagation of electromagnetic waves;
the attenuator being so constructed and arranged that currents associated with such waves are made to travel a long zigzag path along the surface of each sheet out to the common contact, back in again along the surface of the next sheet, etc., and the surface resistance encountered along said path dissipates energy while the resulting heat is conducted away through the sheets.

3,309,635
CIRCUIT BREAKER WITH IMPROVED THERMAL AND ELECTROMAGNETIC TRIP MEANS

Eugene J. Walker, Borough Township, Beaver, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 24, 1965, Ser. No. 458,248
8 Claims. (Cl. 335—35)

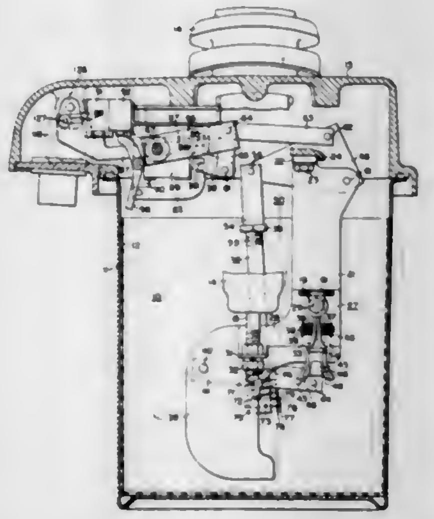


1. A circuit breaker comprising a pair of contacts and means releasable to effect opening of said contacts to

thereby effect opening of a circuit, trip means comprising a movable current-carrying heater member connected in said circuit, a bimetal member supported to be heated by the heat generated in said heater member, upon the occurrence of certain overload current conditions below a predetermined value in said circuit said bimetal member flexing independent of movement of said heater member to effect release of said releasable means, means operatively connecting said heater member with said bimetal member such that operative movement of said heater member operatively moves said bimetal member, an electromagnet comprising a stationary magnet member and a movable magnet member, said stationary and movable magnet members being supported to be energized by the current in said circuit, means operatively connecting said movable magnet member with said heater member such that operative movement of said movable magnet member operatively moves said heater member, and upon the occurence of an overload current above said predetermined value said movable magnet member being magnetically attracted toward said stationary magnet member and moving toward said stationary magnet member to operatively move said heater member which operative movement of said heater member operatively moves said bimetal member to effect release of said releasable means.

3,309,636
ELECTRICALLY OPERATED SWITCH HAVING IMPROVED ARMATURE AND LINKAGE MEANS

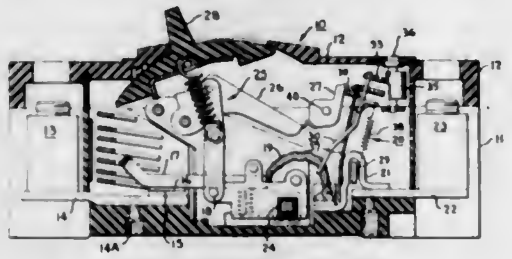
Robert W. Price, Bloomington, Ind., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 31, 1964, Ser. No. 341,593
15 Claims. (Cl. 335—155)



1. Switch apparatus comprising, in combination, fixed contact means, movable contact means movable into engagement with the fixed contact means to close the switch and movable out of engagement with said fixed contact means to open the switch, operating means including a toggle mechanism for effecting movement of the movable contact means into engagement with the fixed contact means when the toggle mechanism is moved at least to a near toggle point and out of engagement with the fixed contact means when the toggle mechanism is moved away from the toggle point by at least a predetermined amount, solenoid actuated means including a solenoid having a rotatable armature and a rotatable shaft secured thereto for rotation therewith, link means operatively connecting the toggle mechanism to the rotatable shaft for moving the toggle mechanism at least to said near toggle point when the solenoid is energized to effect a closing of the switch, and spring means operatively connected to the solenoid actuated means and including a spring normally tensioned to a first degree while the solenoid is deenergized, said spring being tensioned to a second degree greater than said first degree when the solenoid is energized, said spring when the solenoid is thereafter deenergized causing the toggle mechanism to move away from the near toggle point by said predetermined amount and open said switch.

3,309,637
CIRCUIT BREAKER WITH IMPROVED TRIP ADJUSTMENT

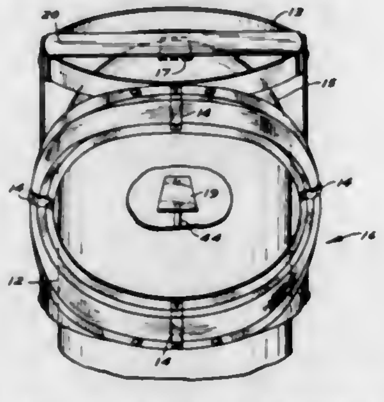
Charles L. Jencks, Avon, Conn., assignor to General Electric Company, a corporation of New York
Filed Mar. 29, 1965, Ser. No. 443,462
5 Claims. (Cl. 335—176)



1. Control apparatus comprising:
(a) a support;
(b) a cam member having first and second cam surfaces fixed relative to each other;
(c) means supporting said cam member on said support for movement along a predetermined path between predetermined limits;
(d) first and second cam follower members;
(e) a movable output member supported on said support;
(f) common support means supporting said first and second cam follower members in fixed relation to each other for simultaneous movement;
(g) means connecting said common support means to said output member for movement of said output member in response to movement of said cam member;
(h) said first cam follower member engaging said first cam surface during a first portion of said movement of said cam member, and said second cam follower member engaging said second cam surface during a second portion of said movement of said cam member; and
(i) means for adjusting at least one of said cam follower members independently of the other of said cam follower members.

3,309,638
COIL ARRANGEMENT FOR IMPROVED FIELD UNIFORMITY

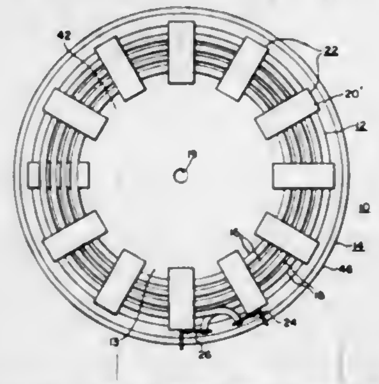
William V. Rausch, 1450 N. Larch Lane, Minneapolis, Minn. 55427, and Arthur Calderon, 2514 Cedarwood Ridge, Minnetonka, Minn. 55343
Filed May 7, 1965, Ser. No. 454,148
5 Claims. (Cl. 335—299)



1. Apparatus for producing a substantially uniform magnetic field in a planar area comprising: a pair of series aiding electromagnetic coils having the same axis; said coils being positioned adjacent opposite sides of the planar area; said axis lying in the planar area; each of said coils having a greater diameter in a direction parallel to the planar area than in a direction perpendicular to the planar area; and said coils being curved at least partially around said opposite sides of the planar area so that a surface defined by each of said coils is perpendicular to the planar area.

3,309,639
SOUND REDUCING MEANS FOR ELECTRICAL REACTORS

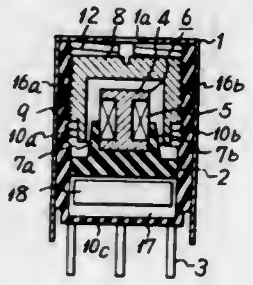
George N. Goolsby, Jr., Sharon, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 12, 1965, Ser. No. 455,207
5 Claims. (Cl. 336—100)



1. An air core reactor assembly comprising a winding structure having a passageway therein which interconnects first and second openings, said winding structure including a plurality of layers of electrical conductors disposed about a common axis and means for holding said layers in spaced relation, electrical insulating and mounting means disposed to provide a predetermined distance between said winding structure and ground, and a chamber formed of sound absorbing means, said sound absorbing means including a porous insulating material having a plurality of air spaces therein, said chamber having a bottom portion and sidewall portions which define an opening therein, said chamber being disposed in a substantially concentric side-by-side relation with said electrical insulating and mounting means, with its opening in substantial registry with one of the first and second openings in said winding structure, to enclose the opening in said winding structure with said chamber.

3,309,640
HIGH-FREQUENCY CORE DEVICE WITH RELATIVELY MOVABLE CORES

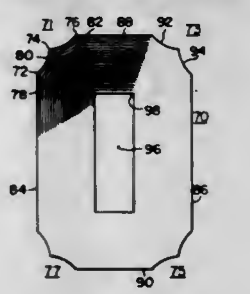
Masaomi Oshima, Yokohama-shi, Japan, assignor to Oshima Musan Co., Ltd., Yokohama-shi, Japan, a corporation of Japan
Filed June 1, 1965, Ser. No. 460,149
Claims priority, application Japan, June 10, 1964, 39/46,020
2 Claims. (Cl. 336—135)



1. A high-frequency coil device comprising an insulating base plate, a plurality of terminal pins projecting from said plate, a magnetic core mounted on said base plate, a winding wound on the center portion of said magnetic core, a holder consisting of a flexible plate portion and holding portions extending upwardly from the opposite sides of said plate portion in parallel relationship, each of said holding portions having inner screw threads, said plate portion being integral with said holding portions to connect the lower ends of said holding portions with each other and being disposed in engagement with the lower surface of said base plate, and a movable screw-threaded cylindrical magnetic core screwed into said holder with flexibility caused by the flexibility of said plate portion.

3,309,641
MAGNETIC CORE STRUCTURES FOR ELECTRICAL INDUCTIVE APPARATUS

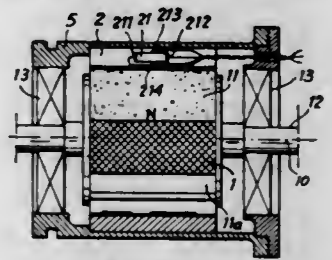
Charles E. Burkhardt, Sharon, and Belvin B. Ellis, Pulaski, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 28, 1966, Ser. No. 561,206
10 Claims. (Cl. 336—211)



1. A magnetic core comprising a plurality of superimposed turns of metallic laminations, said superimposed turns of metallic laminations providing a laminated core structure in which the outer turn defines a plurality of major outer sides separated by outer corners and the inner turn defines an opening in the structure, at least the outer corners of said core structure each having a plurality of discrete bends which provide a plurality of additional outer sides, said discrete bends at each of said outer corners extending through all of the superimposed turns of the metallic laminations, from the outer lamination turn to the inner lamination turn, each of said additional outer sides being bent inwardly a predetermined amount to insure that the discrete bends are sharply defined in each of the lamination turns.

3,309,642
HALL EFFECT ROTATING DEVICE

Bernard Grancoin, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed July 1, 1964, Ser. No. 379,525
Claims priority, application France, July 5, 1963, 940,535
5 Claims. (Cl. 338—32)



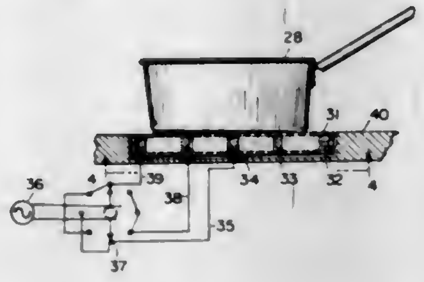
4. A resolver for translating into electrical signals, the cosine and the sine of an angle, said angle being simulated by the relative position of a rotor and a stator, comprising: a stator having four identical shells, two pairs of diametrally opposed air gaps separating respectively said four shells from each other, the diameter along which one pair is situated being perpendicular to that along which

the other pair is situated; four Hall probes, respectively disposed in said four air gaps with their major planar surfaces parallel to said respective diameters passing through said air gaps; said stator having an axis of revolution; a rotor rotatably mounted about said axis of revolution and within said stator; said rotor comprising a permanent magnet and two pole pieces made of a soft magnetic material, having identical shape and size, and forming with said shells respective air gaps radially increasing with the distance to the vertex of said pole pieces increasing, for the peaks of said pole pieces to be rounded near the edges of said magnet; means for applying a constant current to said Hall probes; and means for collecting at said probes taken by pairs respective output voltages proportional to the sine and the cosine of the angle of rotation of said rotor.

3,309,643
ELECTRIC HEATING ELEMENT

August Ferretti, Cambridge, and Richard W. Germann, Boston, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed Jan. 2, 1964, Ser. No. 334,999
7 Claims. (Cl. 338—330)

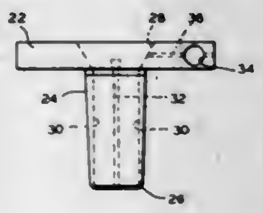


1. An electric heating element comprising:
- at least one heating zone of a preselected finely divided metal dispersed uniformly throughout a preselected refractory insulator;
- at least two conducting zones of similar material to said heating zones bearing a much higher ratio of metal to refractory insulator;
  - said heating and conducting zones prearranged to provide a substantially broad uniform heating surface
  - the interface between said heating and conducting zones prearranged to provide a gradual transition in metal richness such that destructive thermal stresses are therefore avoided;
- leads fastened to said conducting zones;
- a coating of said refractory insulator extending over said entire element with said leads projecting through said coating providing a strong electrically insulated surface capable of intimate contact with vessels to be heated.

3,309,644
ELECTRICAL CONNECTOR

Ronald L. Zubko, Michigan City, Ind., assignor to Clark Equipment Company, a corporation of Michigan

Filed Apr. 26, 1965, Ser. No. 450,732
9 Claims. (Cl. 339—97)

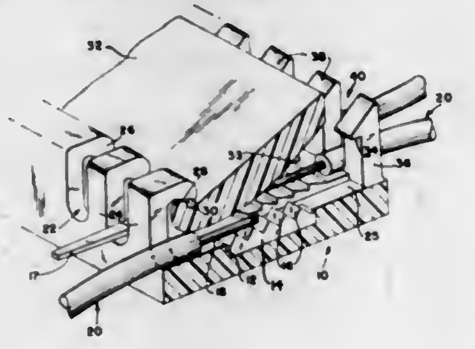


1. An article of manufacture comprising a cross-bar, a stem connected to said cross-bar intermediate the ends thereof, a groove in said cross-bar, a pair of passages extending between said groove and the end of said stem opposite said cross-bar, a first bore in said cross-bar, and a second bore in said cross-bar which connects with said groove and intersects said first bore.

3,309,645
MULTIPLE CONNECTOR

Rocco J. Noschese, Rowayton, Conn., assignor to Burndy Corporation, a corporation of New York

Filed Dec. 31, 1964, Ser. No. 422,641
2 Claims. (Cl. 339—98)

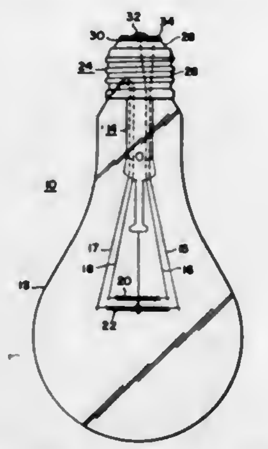


1. An electrical connector for a plurality of electrical conductors, comprising:
- a base element of dielectric material having a base surface portion;
- a lid element of dielectric material hingedly coupled to said base element for permitting pivotal motion of said lid element toward and away from said base surface portion;
- a plurality of electrical contact elements mounted to said base surface portion in opposed relation to said lid element;
- a first plurality of integral upright projections on said base element extending substantially uprightly from said base surface portion in parallel spaced-apart relationship and forming a separable hinged coupling between said base element and said lid element;
- a second plurality of spaced-apart integral projections on said base element, extending uprightly from said base surface portion in substantially parallel spaced-apart relation to said first plurality of integral projections, and having resilient detent means thereon for releasably securing said lid element in engagement with said contact element to grip a conductor therebetween;
- said first plurality of integral projections together defining a plurality of conductor-receiving grooves between adjacent projections for receiving conductors therein;
- said second plurality of integral projections together defining a plurality of conductor-receiving grooves between adjacent projections for receiving conductors therein;
- each of said electrical contact elements being positioned between said first and second pluralities of integral projections, in substantial alignment with a plurality of said conductor-receiving grooves;
- a conductor-engaging surface portion on each contact element formed of a plurality of substantially parallel transversely disposed edge portions which together define a surface area having a transverse width sufficient to engage two conductors positioned in adjacent conductor-receiving grooves in side by side relationship;
- whereby a plurality of conductors disposed in said receiving grooves may be clamped in intimate engagement with said contact elements by pivoting said lid element into engagement with said detent means.

3,309,646
MULTIPLE-FILAMENT ELECTRIC INCANDESCENT LAMP

Isaac S. Goodman, Livingston, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 11, 1965, Ser. No. 431,834
4 Claims. (Cl. 339—145)

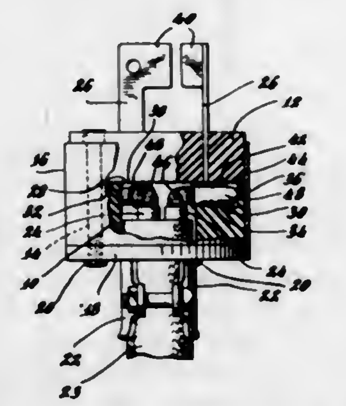


1. In a multiple-filament electric incandescent lamp having an envelope and a base comprising a metal shell that is attached to the envelope and carries an insulator that projects beyond the free end of said shell and has an end contact, the improvement comprising,
- an annular metallic member that is fastened to said insulator and is axially spaced from said end contact,
- a layer of electrically conductive material on the exposed surface of said metallic member which extends transverse to the lamp axis and thus comprises the contacting portion of said member, said layer of electrically conductive material being softer than said metallic member and of such thickness and configuration that it provides a second deformable planar contact for said lamp that extends completely around said annular member and is also axially spaced from said end contact, and
- a lead wire extending through said base and envelope and connecting one of the filaments with said annular metallic member.

3,309,647
ELECTRICAL CORD CONNECTOR WITH IMPROVED SCREWLESS TERMINALS

Charles T. Von Holtz, Bridgeport, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut

Filed July 7, 1964, Ser. No. 380,824
6 Claims. (Cl. 339—174)

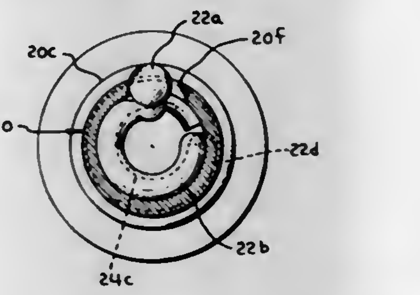


1. An electrical connector comprising: a pair of housing members of electrical insulating material arranged to be connected together to form a connector housing; one of said members carrying a plurality of electrical contacts; the other of said members carrying a plurality of wire electrical conductors, each having a bared lead wire end to be electrically connected to a portion of a contact; said other member having an inner surface provided with a plurality of recesses facing an adjacent inner surface of said one member and individually aligned with said contacts; a thin-walled deformed cup-shaped terminal member made of very soft electrically conductive material secured on each lead wire end; a separate terminal member disposed in a separate recess in engagement with a portion of a separate contact; and means for detachably securing said housing members together to clamp said terminal members between their associated contact portion and the bottom of their associated recess to effect electrical connections between associated contacts and conductors.

3,309,648
PLUG CONTACTOR

Edward John Whiteman, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed July 13, 1964, Ser. No. 382,241
8 Claims. (Cl. 339—217)



1. In a plug contactor a sleeve member having a support portion and a forward contact portion, a rearward portion adapted to be terminated to a conductive lead and a locking and latching mechanism fitted within the sleeve member including a forward nose member extending out of said forward contact portion and supported for sliding movement therein, said nose member having a head portion extending into the forward end of said support portion, a spring member having a detent carried thereon positioned to extend through an aperture proximate said end of said support portion to engage the edges of a receptacle during use of said contactor, said spring member having an arm disposed in a plane transverse to the longitudinal axis of said contactor which provides spring action in a generally radial sense relatively transverse to the longitudinal axis of said contactor whereby upon said contactor being plugged into a plugboard or withdrawn therefrom the said detent is engaged by receptacle edges to be driven inwardly against the said spring action and upon the forces being applied to the end of said contactor forward nose member tending to push said contactor from said plugboard, the said head portion thereof is driven rearwardly to block the said detent from inward travel to prevent said contactor from being pushed out of said plugboard.

3,309,649
SONOBUOY WITH DEPTH SELECTION CAPABILITIES

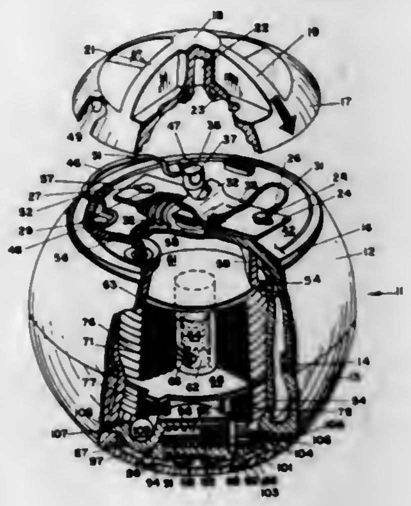
Samuel S. Ballard, Hollis, and Richard D. J. Proctor and William E. Barry, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Mar. 26, 1964, Ser. No. 354,985
11 Claims. (Cl. 340—2)

1. An air launched sonobuoy with antenna release and hydrophone depth selection capabilities comprised of:
- (A) a releasable antenna cover plate having a recess opening therein,
- (B) a cable release drive train having a portion thereof

in mating driving engagement with said antenna cover plate recess opening, said drive train being discharged from said sonobuoy upon water impact,

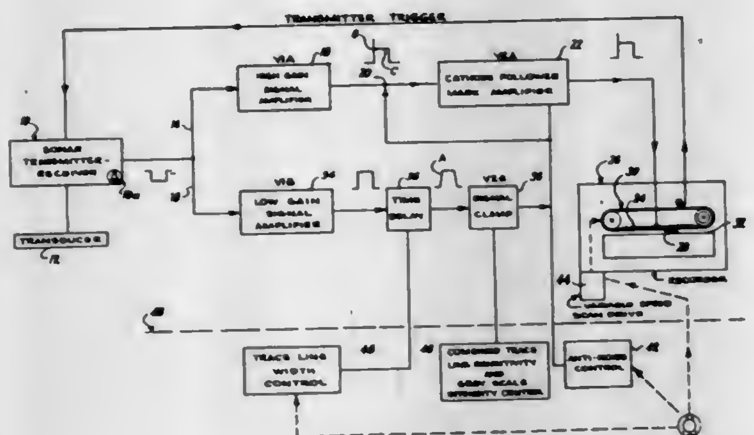
(C) a suspension cable supply divided into a separated first and second unit of predetermined lengths,.



(D) said individual units being interconnected by an intermediate portion of said suspension cable, and

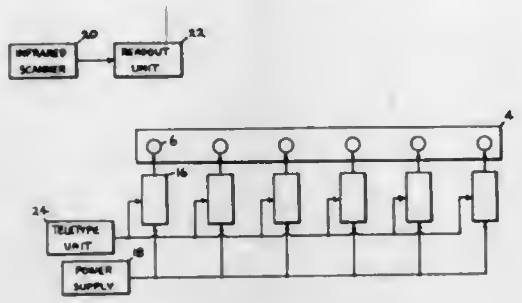
(E) a release mechanism forming an integral portion of said cable release drive train, said release mechanism being movable between a first and second position to thereby control the release of said first and second suspension supply cable units.

3,309,650
PULSE-ECHO SOUNDER SYSTEM
Wayne M. Ross and John W. Dudley, Seattle, Wash., assignors to Ross Laboratories, Inc., Seattle, Wash., a corporation of Washington
Filed Sept. 24, 1963, Ser. No. 311,044
11 Claims. (Cl. 340—3)



11. In a pulse-echo system having a pulse-echo receiver and a display means therein for indicating received signals of different orders of magnitude, means to enhance the indications of received signals of a selected general order of magnitude in preference to signals of a different order of magnitude, including amplifier means operable to limit the magnitude of received signals before application thereof to said display means, and clamping circuit means operable in response to received signals to decrease the magnitude of such limited signals by amounts which increase with increase of received signal strength, said clamping circuit means including means adjustable at will therein to vary its gain and simultaneously to vary its threshold level of response to received signals, whereby such gain is increased as threshold level is decreased.

3,309,651
UNDERWATER SIGNALLING SYSTEMS
David Epstein and Sidney Epstein, Brooklyn, N.Y., assignors to Vadys Associates, Ltd., Brooklyn, N.Y., a corporation of New York
Filed Nov. 13, 1964, Ser. No. 412,284
2 Claims. (Cl. 340—4)



2. Apparatus for signalling by coded messages representative of predetermined intelligence from an underwater vehicle to a surface vessel or aircraft comprising:

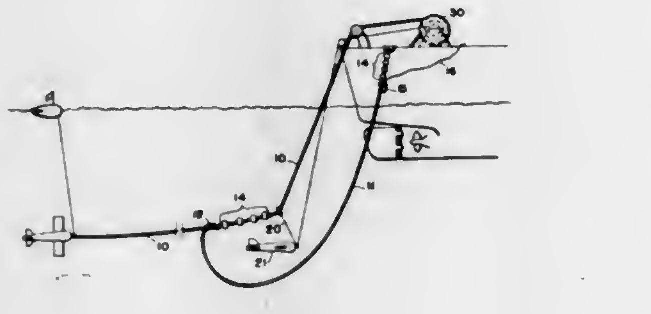
thermal energy source means on said underwater vehicle for emitting discrete pulses of water of higher thermal energy than that of the surrounding water representative of the coded messages,

said thermal energy of said pulses being conveyed to the water surface by convection to thereby produce local temperature differentials at the water surface,

means disposed above said water surface for detecting said temperature differentials

and means coupled to said detecting means for reading out said messages.

3,309,652
UNDERWATER VIBRATION DETECTOR
Horace M. Trent and Thomas F. Jones, Jr., Alexandria, Va. (both of Naval Research Laboratory, Anacostia Station, Washington, D.C. 20020)
Filed Mar. 12, 1946, Ser. No. 653,928
3 Claims. (Cl. 340—6)



2. A system for giving audible indication of contact of a sweep cable with a submerged object in minesweeping operations, comprising a metal sweep cable towed by a ship and partially submerged by a depressor, a first mechanical vibration filter clamped on said sweep cable aft of the junction of said sweep cable with a line from said depressor, a second cable secured at one end to the ship through a second vibration filter and at the other end to a point on the sweep cable in acoustical contact with the latter aft of said first mechanical vibration filter, an electroacoustic pickup device attached to said second metal cable, an amplifier operatively connected to the pickup device, and an indicating means operatively connected with said amplifier.

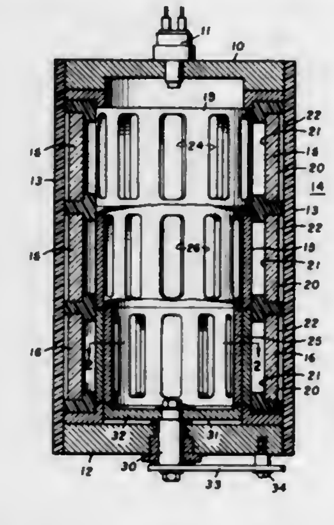
3,309,653
CERAMIC TRANSDUCER ASSEMBLY
Joseph E. Martin, Pacoima, and John A. Merrill, Sepulveda, Calif., assignors to The Bendix Corporation, North Hollywood, Calif., a corporation of Delaware
Filed June 28, 1963, Ser. No. 291,383
6 Claims. (Cl. 340—10)

1. A transducer assembly for operation in a liquid medium comprising a plurality of radially vibratile cylindrical radiating elements of polycrystalline material arranged in an axially aligned array,

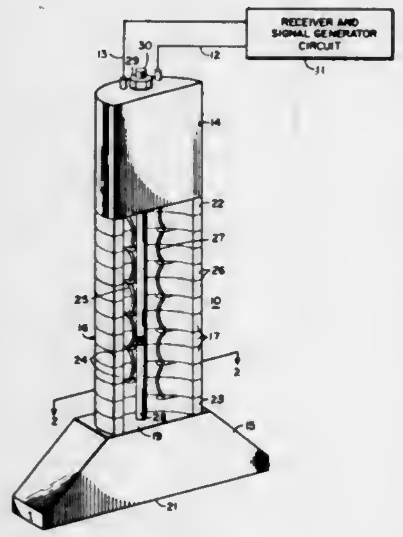
means for acoustically isolating the interior of said array from its exterior,

an acoustic transmitting liquid placed within said array and adjacent the internal surfaces of said radiating elements, and

an acoustic loading member of generally cylindrical configuration placed within the central cavity of said array for modifying the operating frequency characteristics of said transducer assembly.



3,309,654
ACOUSTIC APPARATUS
Harry B. Miller, Rochester, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,543
8 Claims. (Cl. 340—10)



1. A transducer comprising

(a) a back member having a mass,

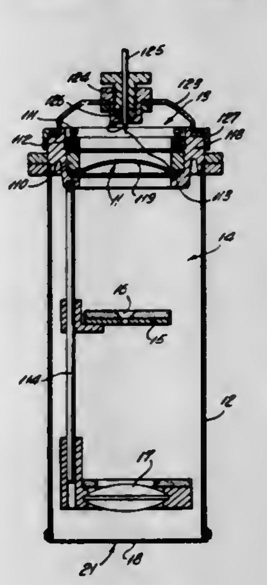
(b) a piston,

(c) a column of material exhibiting electromechanical transducing action,

(d) said column of material being disposed between said piston and back member for vibration in a direction longitudinally of said column to define a first mechanical mesh having a resonant frequency f_r, and

(e) means for biasing said column and piston for flexural vibration defining a second mechanical mesh closely coupled to said first mesh and having a resonant frequency of about $2f_r$.

3,309,655
ULTRASONIC DIAGNOSTIC VIBRATION TRANSDUCER
Manfred von Ardenne, Dresden-Weisser, Hirsch, Germany, assignor to Veb Transformatoren- und Rontgenwerk Dresden, Dresden, Germany
Original application Mar. 2, 1962, Ser. No. 177,062, now Patent No. 3,245,251, dated Apr. 12, 1966. Divided and this application Aug. 25, 1965, Ser. No. 482,410
4 Claims. (Cl. 340—15)



1. In a diagnostic testing apparatus, the combination comprising a convergence-type transducer adapted to emit and receive ultrasonic pulses and having a focal point, a gaseous medium adjacent the convex surface of said transducer and a liquid medium adjacent the concave surface thereof, a convergence-type lens spaced apart from said transducer, adapted to pass said ultrasonic pulses in either direction and also having a focal point, and a diaphragm substantially midway between said transducer and said lens, and having an aperture coinciding with said focal point of the transducer, said lens being adapted both to project said aperture onto a predetermined object area to be diagnosed at its focal point, and to return echoes of said ultrasonic pulses to said diaphragm and to said transducer, which are reflected from said focal point of the lens, an elongated, substantially cylindrical housing, an annular holding member close to one end of said housing for mounting said transducer, and means attached to said holding member for mounting said diaphragm and said lens with freedom of individual adjustment with respect to said transducer.

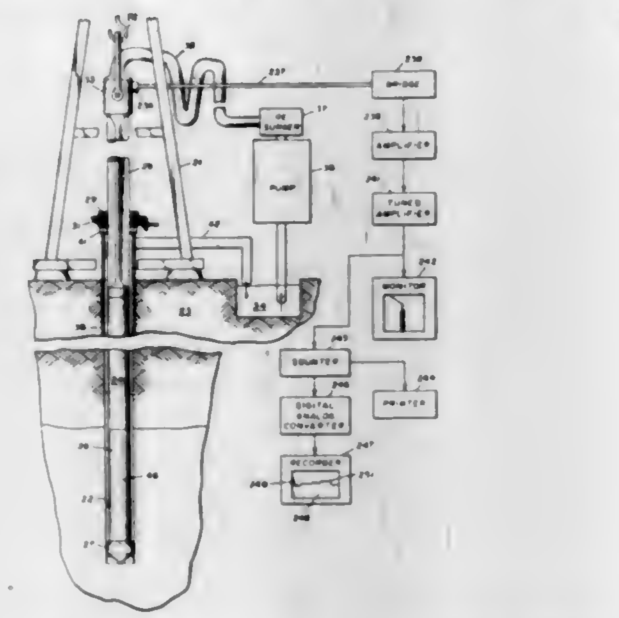
3,309,656
LOGGING-WHILE-DRILLING SYSTEM
John K. Godbey, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 10, 1964, Ser. No. 374,111
35 Claims. (Cl. 340—18)

1. A method for measuring a downhole condition in a well containing a conduit through which is circulated a fluid, comprising the steps of:

(a) passing a portion of the circulating fluid within the conduit in the well through an orifice to provide a jet of such fluid,

(b) periodically interrupting the fluid jet to provide vibratory impulses in such fluid to produce a continuous sonic wave,

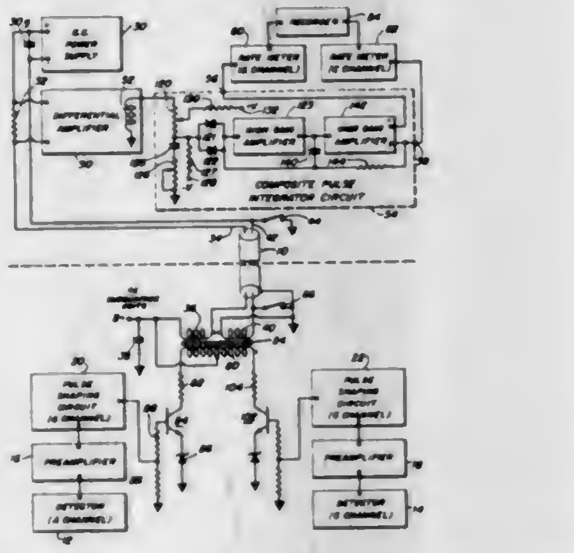
(c) varying the frequency of interrupting the fluid jet in response to a downhole condition being measured to frequency modulate the sonic wave, and



(d) demodulating the sonic wave at a location spaced from where the condition exists into a readout of the measured condition.

3,309,657
DUAL CHANNEL WELL LOGGING SYSTEM

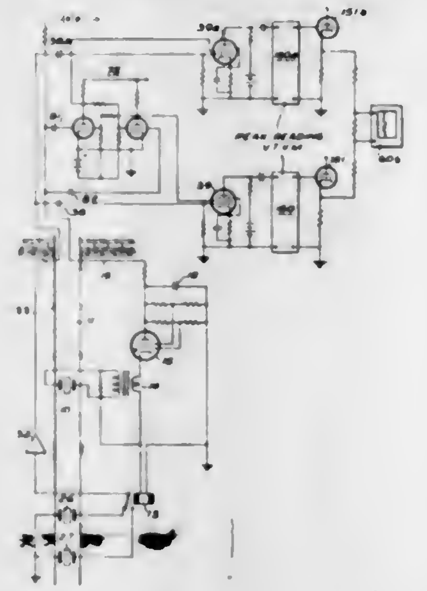
William R. Rabson, Thomas A. Rabson, Homer M. Wilson, and Leroy C. De La Torre, Houston, Tex., assignors, by mesne assignments, to PGAC Development Company, Houston, Tex., a corporation of Texas
Filed Apr. 19, 1965, Ser. No. 449,210
16 Claims. (Cl. 340—18)



1. In a well logging system, a subsurface unit, a cable for moving said unit within a bore hole, first and second detectors in said unit and each arranged to produce a pulse type signal, means included in said subsurface unit for converting pulses from each of said detectors into a composite pulse consisting essentially of equal area pulse portions of opposite polarity, means for transmitting said composite pulses over said cable to the earth's surface, and pulse integrator means located at the earth's surface and connected to said cable, said pulse integrator means having a time constant such that each of said composite pulses is converted into a unidirectional pulse having substantially no overshoot portion of the opposite polarity, said unidirectional pulses corresponding to one of said detectors being of the opposite polarity from those unidirectional pulses corresponding to the other of said detectors.

3,309,658
AMPLITUDE LOGGING ON ALTERNATE TRANSMITTER PULSES

Gerald C. Summers, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Application May 15, 1964, Ser. No. 367,661, now Patent No. 3,260,993, dated July 12, 1966, which is a division of application Ser. No. 287,853, May 15, 1952, now Patent No. 3,191,145, dated June 22, 1965. Divided and this application Apr. 18, 1966, Ser. No. 543,341
6 Claims. (Cl. 340—18)



1. A borehole logging system having a transmitter and two receivers for measuring in correlation with depth the attenuation properties of the formations adjacent said borehole through a distance equal to the spacing between said receivers comprising:

downhole means movable lengthwise of said borehole and including said two receivers and a transmitter spaced from said two receivers a distance which is large compared with the spacing between said two receivers,

means for periodically energizing said transmitter for the production of a succession of acoustic pulses for travel through said formations along said borehole,

cable-conductor means connected to said receivers and extending to the surface for transmittal thereto of signals produced by said receivers in response to the acoustic pulses traveling through said formations from said transmitter to first one and then the other of said receivers,

electrical circuit means located at said surface and connected to said cable-conductor means for producing outputs respectively proportional to the signal amplitude developed first by one and then the other of said receivers as a result of said acoustic pulses generated by said transmitter,

selective means disposed between said two receivers and said electrical circuit means for applying thereto the signals developed by one of said receivers in response to one of said acoustic pulses and thereafter for applying to said electrical circuit means the signals from a second of said receivers in response to a second of said transmitter pulses, and

difference means for producing an output signal representative of the difference between said amplitudes of said signals developed first by one of said receivers and then by a second of said receivers as a measure of the attenuation of said acoustic pulses during their travel through the separation distance between said receivers, the large spacing between said transmitter and said two receivers enhancing the accuracy of the measurement of said attenuation.

2. An acoustic amplitude logging system comprising:

downhole means having a plurality of transducers including a transmitter of time-spaced acoustic pulses and at least two receivers,

sync means for generating sync pulses representative of the time occurrence of the generation of acoustic pulses by said transmitter,

circuit means connecting said transducers to surface equipment,

said surface equipment including amplitude sensing means for producing separate amplitude functions representative of the amplitudes of acoustic energy appearing at said receivers,

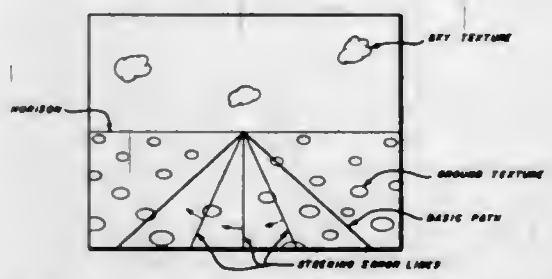
a bistable circuit, said sync pulses being applied to said bistable circuit to switch it between stable states in response to each sync pulse,

gating means connected between said receivers and said amplitude sensing means, the output of said bistable circuit being applied to said gating means to enable it to pass the output of a first of said receivers after a first and succeeding alternate sync pulses and to pass the output of a second of said receivers after a second and succeeding alternate sync pulses so that said amplitude sensing means produces a first of said amplitude functions representative of the amplitude of at least a portion of a first acoustic pulse after travel along the formations between said transmitter and a first of said receivers, and a second of said amplitude functions representative of the amplitude of at least a portion of a second acoustic pulse after travel along said formations between said transmitter and a second of said receivers, and

means for producing from said separate amplitude functions a signal representative of the attenuation of acoustic energy between said two receivers.

3,309,659
ELECTRONIC VISUAL CUE INDICATOR SYSTEM FOR AIRCRAFT

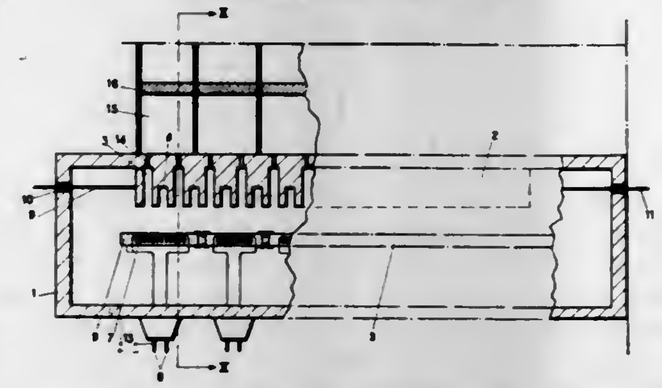
George H. Balding, Los Altos, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 17, 1964, Ser. No. 397,350
5 Claims. (Cl. 340—27)



1. In a visual indicator system for displaying different items of information on a display unit relating to the movement of an object relative to true world conditions including a first cue generator circuit operative to generate a first group of signals for coupling to said display device to provide a first cue set comprising a sky, a horizon, and a ground portion on the display unit and further including a second cue generator circuit operative to generate a second group of signals for coupling to said display device having waveforms of a shape to provide a display of a cue set thereon consisting of triangular path extending across at least a portion of the display, and further including a path control means including a path-end positioning circuit means operative to provide signals for adjusting signal output of the second generator circuit to adjust the apex of the path on the display unit to different horizontal and vertical coordinate positions, the path control means having a generator means for generating signals of different characteristics to adjust the path outline to widths of corresponding different values, and further including means for coupling the output of said path control means to said display unit, the improvement comprising: an additional generator means for generating a set of signals of a waveform to establish a plurality of lines perspectively parallel to the path, which rotate about the apex thereof at a rate related to the heading error of the object relative to a predetermined path, and which rotate in a direction indicative of the direction of the error, and means for coupling said set of signals to the display unit for display thereon.

3,309,660
ELECTRON DISCHARGE AMPLIFIER DEVICE

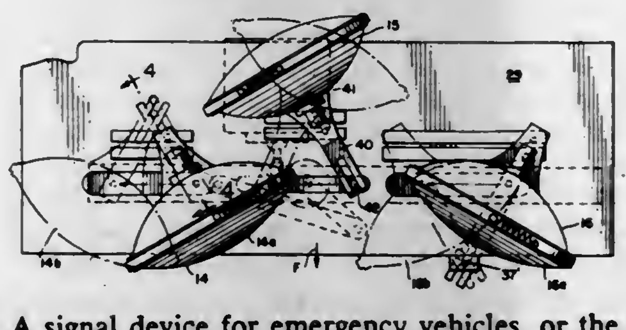
Georges Mourier, 79 Blvd. Haussmann, Paris, France
Filed May 22, 1962, Ser. No. 196,704
Claims priority, application France, May 26, 1961, 862,948
12 Claims. (Cl. 330—47)



1. A magnetron amplifier comprising a non-re-entrant uniformly iterative delay circuit means having a plurality of uniform periodic cells and having effectively an input end and an output end mutually decoupled, cathode means extending along said delay circuit means and spaced therefrom a uniform distance to define a uniform interaction space therewith, means for establishing an electrostatic field within said interaction space between said delay circuit means and said cathode means, means for establishing within said interaction space a transverse magnetic field crossed with said electrostatic field, said delay circuit means being of a type providing a series of periodically spaced homologous points in which the electromagnetic field having substantially the same phase at substantially the same instant appears at said points and in which microwave propagates on a given wave length simultaneously in the substantially infinite-phase velocity mode and at least in the neighborhood of a predetermined retarded mode, input means coupled to said input end for injecting microwave energy into said circuit, and a plurality of output means separate and distinct from said input means distributed along said delay circuit means and coupled to respective ones of said periodic cells for abstracting therefrom amplified energy.

3,309,661
SIGNAL DEVICE

Jeremiah Daniel Kennelly, 408 S. Oak Park Ave., Oak Park, Ill. 60302
Filed Sept. 10, 1964, Ser. No. 395,386
2 Claims. (Cl. 340—50)



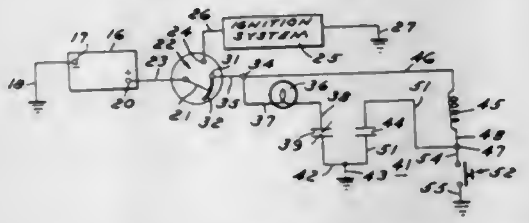
1. A signal device for emergency vehicles, or the like, comprising a frame, a pair of beam lamps mounted on

said frame in spaced-apart relation for pivotal movement about generally vertical axes, and means on said frame for oscillating said lamps about their respective axes in arcs in a common plane so that the beams therefrom are in overlapping relation for a portion of each oscillation.

3,309,662
SEAT BELT REMINDER SYSTEM

Frank Skrbina, Dearborn, Mich., assignor to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 26, 1963, Ser. No. 333,556
3 Claims. (Cl. 340—52)

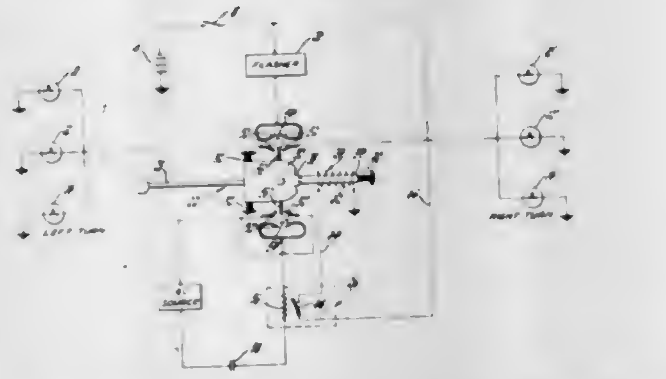


1. In an automotive vehicle, a reminder system for reminding a vehicle occupant to fasten his seat belt comprising a warning device, a source of electrical energy, an ignition switch, a relay having a winding, a normally closed set of contacts, and a normally open set of contacts, circuit means connecting said warning device, said source of electrical energy, said ignition switch and said normally closed set of contacts of said relay in series circuit whereby said warning device is energized when said ignition switch is closed, a push button switch, circuit means connecting said source of electrical energy, said ignition switch, said relay winding and said push button switch in series circuit whereby said relay winding is energized, said normally closed contacts are opened, said warning device is de-energized, and said normally open contacts are closed when said push button switch is actuated while said ignition switch is closed, said normally open set of contacts positioned in parallel circuit with said push button switch for keeping said relay winding energized, said normally open set of contacts closed and said warning device de-energized until said ignition switch is opened and re-closed.

3,309,663
TURN SIGNAL SYSTEM WITH AUTOMATIC CANCELING MEANS

Edward G. Curtindale, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 3, 1964, Ser. No. 372,214
5 Claims. (Cl. 340—55)

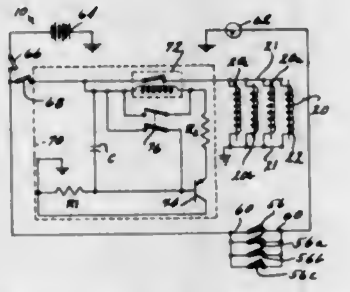


1. In a motor vehicle having a source of alternating current of variable frequency depending upon the speed of the vehicle, a turn signal system comprising actuator means, indicator means, means for intermittently energizing said indicator means in response to actuation of said actuator means, canceling means for deenergizing said indicator means, frequency responsive time delay means adapted to be connected to said source in response to actuation of said actuator means for controlling the operation of said canceling means whereby said indicating means are deenergized after a time interval dependent on the speed of the vehicle.

3,309,664
VEHICLE AUTOMATIC DOOR LOCK AND INDICATOR DEVICE

Walter E. Deutsch, 1421 Veteran Ave., Los Angeles, Calif. 90024, and Renee H. Sanders, 2916 Oakhurst Ave., Los Angeles, Calif. 90034

Filed May 28, 1964, Ser. No. 370,919
6 Claims. (Cl. 340—56)

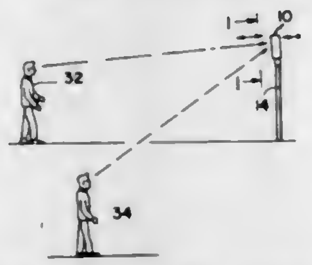


1. In an automobile having an electrical system, an ignition switch, a door and a door jamb, the combination comprising: bolt means slidably mounted in said door for engagement with said jamb; solenoid means connected to said bolt means for sliding said bolt means into engagement with said jamb to lock said door when said solenoid means is energized; electrical leads connecting said solenoid in said electrical system through said ignition switch, a normally closed electrical switch mounted in said jamb for engagement by said bolt means, an indicator lamp connected to said normally closed switch, said normally closed switch being connected to said automobile electrical system through said ignition switch, whereby said indicator lamp becomes lit when said ignition switch is closed and remains lit until said bolt means engages said normally closed switch to open it.

3,309,665
PROCESS AND APPARATUS FOR COLLIMATED SIGN

Douglas A. Kohl, Osseo, Minn., assignor, by mesne assignments, to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland

Filed July 19, 1963, Ser. No. 296,218
6 Claims. (Cl. 340—120)

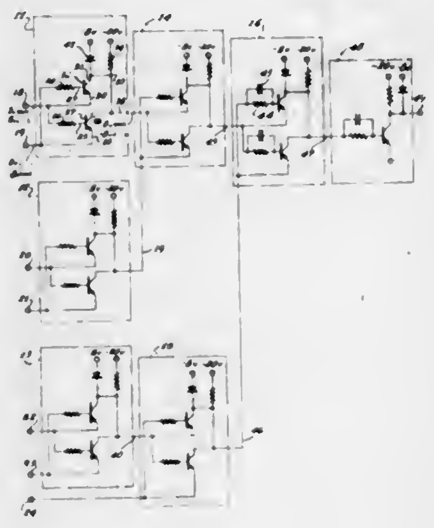


1. A collimating display sign designed to visibly and intelligibly communicate information to a viewer only along a predetermined line of sight, which comprises:
- a display member having a representation to be visually communicated to said viewer only along said predetermined line of sight, and
- means for reciprocating said display member along a rectilinear path parallel to said predetermined line of sight so that only to a viewer who is looking at said representation along a line of sight parallel to said path of reciprocation does said display member appear to be stationary and the representation appear intelligible.

3,309,666
TRANSISTORIZED PARITY BIT GENERATING AND CHECKING CIRCUIT

Robert Frohman, Sunnyvale, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Continuation of application Ser. No. 769,034, Oct. 22, 1958. This application Mar. 23, 1966, Ser. No. 536,925
3 Claims. (Cl. 340—146.1)

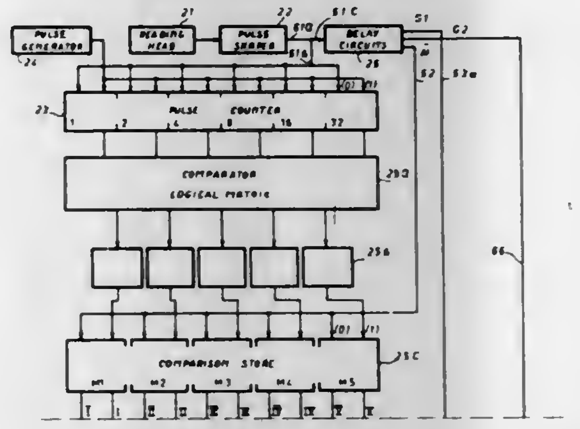


1. Parity checking means comprising in combination: first, second, third and fourth sources of binary signals, first, second and third pairs of transistors, each pair having first and second transistors, each transistor having a base, an emitter and a collector, means connecting the collectors of the transistors in each pair to provide an output, first low resistance means connecting the first source to the emitter of the first transistor of the first pair, second low resistance means connecting the second source to the emitter of the second transistor of the first pair, third low resistance means connecting the third source to the emitter of the first transistor of the second pair, fourth low resistance means connecting the fourth source to the emitter of the second transistor of the second pair, fifth low resistance means connecting the output of the first pair to the emitter of the first transistor of the third pair, sixth low resistance means connecting the output of the second pair to the emitter of the second transistor of the third pair, first high resistance means independent of any fixed biasing source connecting the first source to the base of the second transistor of the first pair, second high resistance means independent of any fixed biasing source connecting the second source to the base of the first transistor of the first pair, third high resistance means independent of any fixed biasing source connecting the third source to the base of the second transistor of the second pair, fourth high resistance means independent of any fixed biasing source connecting the fourth source to the base of the first transistor of the second pair, fifth high resistance means independent of any fixed biasing source connecting the output of the second pair to the base of the first transistor of the third pair, and sixth high resistance means independent of any fixed biasing source connecting the output of the first pair to the base of the second transistor of the third pair.

3,309,667
CHARACTER IDENTIFYING ARRANGEMENT

Henri Gérard Feissel, Paris, Pierre Alfred Ferrier, Villebon, Seine-et-Oise, and Marc Charles Joseph Lesueur, Chaville, Seine-et-Oise, France, assignors to Compagnie des Machines Bull (Societe Anonyme), Paris, France

Filed Apr. 17, 1961, Ser. No. 103,386
Claims priority, application France, July 26, 1960, 834,008, Patent 1,271,150; Mar. 2, 1961, 854,343, Patent 79,378
12 Claims. (Cl. 340—146.3)



1. An analyzing and converting arrangement for analysing characters in relative horizontal movement, each character being composed of a fixed number of vertical bars, the latter having their homologous edges separated by intervals of two different widths with a fixed number of so-called "long" intervals differently located among other intervals called "short" intervals, comprising reading means for generating an effective reading signal for one edge of each bar read, time measuring means connected to said reading means to receive said reading signals for detecting a long interval between two consecutive reading signals and for emitting a distinct pulse upon such detection and including at least one time discriminating means, first storage means connected to said discriminating means for momentarily storing said distinctive pulse, second storage means having several storage positions and switching means which are associated with said second storage means and which are connected to be actuated step-by-step by said reading signals in order to cause said second storage means to store a binary value assigned to such a long interval into appropriate storage positions under control of said first storage means.

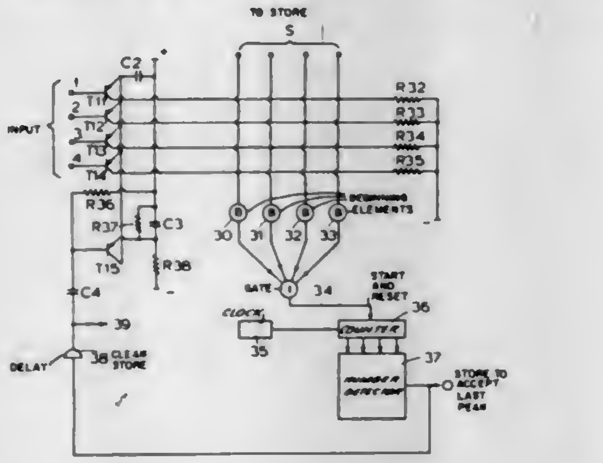
3,309,668
APPARATUS FOR RECOGNIZING POORLY SEPARATED CHARACTERS

William Ellis Ingham, London, Christopher Archibald Gordon Lemay, Isleworth, Middlesex, and John James Jarrett, Higher Denham, England, assignors to Electric & Musical Industries Limited, Hayes, England, a company of Great Britain

Filed Dec. 26, 1962, Ser. No. 247,157
Claims priority, application Great Britain, Jan. 4, 1962, 365/62
4 Claims. (Cl. 340—146.3)

1. A pattern recognition device comprising means for sensing an area in which patterns may occur in indeterminate positions, to derive signals in response to such patterns which signals may occur at indeterminate times depending on the positions of said patterns, means for applying said signals to correlation devices to derive from said devices a plurality of correlation signals representative respectively of the correlation between a pattern being sensed and a plurality of predetermined patterns, said correlation signals being liable to exhibit extreme values at indeterminate times responsive to said sensing means and the positions of the patterns which are sensed, stor-

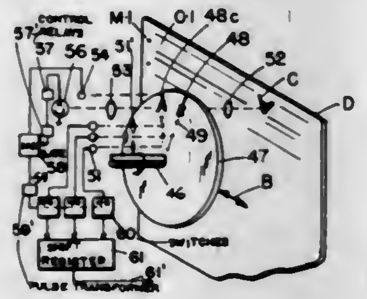
age means for storing an indication of the correlation signal which has attained the extreme value of greatest magnitude since said storage means was last reset, timing means of which the operation is initiated by the attainment of an extreme value of greatest magnitude, identifying means for utilising the indication of said storage means to identify the pattern sensed by said sensing



means, said identifying means being enabled by said timing means at the end of a predetermined time delay from the initiation of said timing means, means for thereupon resetting said storage means and resetting means for resetting said timing means to recommence at zero time if an extreme value of greater magnitude than that stored occurs before the terminaton of said predetermined time delay.

3,309,669
SCANNING APPARATUS FOR READING DOCUMENTS COMPRISING A ROTATING SCANNING DISC

Jerome H. Lemelson, 85 Rector St.,
Metuchen, N.J. 08840
Filed Jan. 14, 1964, Ser. No. 337,615
17 Claims. (Cl. 340—146.3)

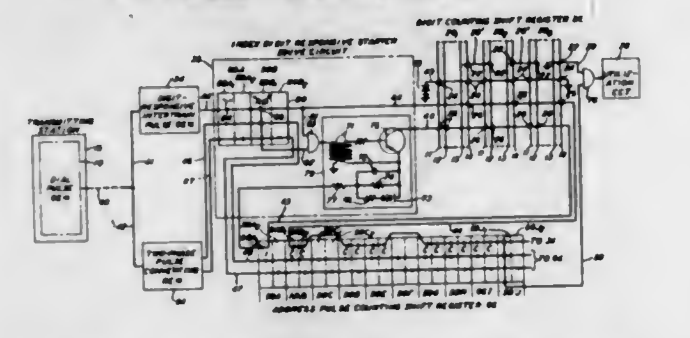


1. Apparatus for reading characters provided on a document comprising:

(a) first means for scanning characters,
(b) second means for receiving and prepositioning a document to be scanned relative to said first means,
(c) said first means including third means containing all of the characters to be identified,
(d) comparison means coupled to said third means,
(e) fourth means movably mounting said first means,
(f) means moving said first means on said fourth means to rotatably convey said identifying means through the field of said scanning means,
(g) means relatively moving said third and second means whereby said first means traverses a path parallel to a line of characters to be read and in a manner to scan each character with said identifying means,
(h) said third means further comprising fifth means for generating different code signals each representative of a different character,
(i) computing means for receiving code signals, and
(j) control means operatively connected to said code signal generating means and said comparison means and operative to effect transmission of a code representative of an identified character to said computing means only when the same character of said third means is in alignment with the character being read on said document.

3,309,670
SELECTIVE SIGNALING RECEIVER

George W. Dick, Morris Township, Morris County, and Wayne D. Farmer, Plainfield, and Paul S. Kopel, Somerset, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 29, 1963, Ser. No. 284,030
13 Claims. (Cl. 340—164)



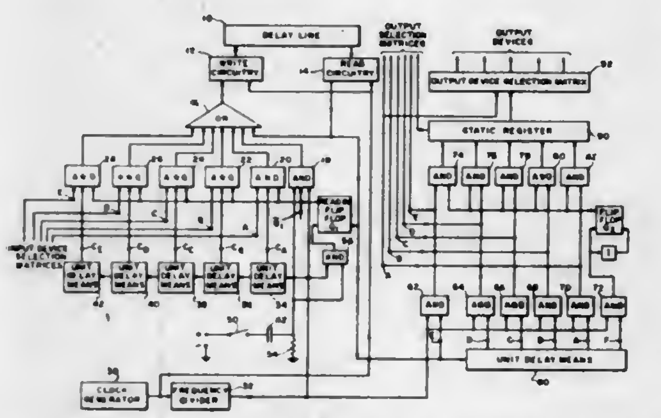
3. In a signal receiving apparatus having an input circuit for receiving trains of pulses each being separated by intertrain pauses and each being the code representation of a digit of a numbering system, the combination comprising

a digit responsive pulse generator circuit connected to said input circuit,
an address pulse converting generator connected to said input circuit,
a digit counting shift register, and an address pulse counting shift register,
an information bit generator drive circuit connected to said digit responsive and pulse converting generators, said drive circuit having a counter activating output lead connected to said digit and address pulse counting shift registers in tandem,
an advance circuit connecting said address pulse converting generator to said address pulse counting register,
a control circuit connecting said digit counting shift register to said digit responsive generator for causing said register, in response to outputs from said digit responsive generator, to count the number of digits,
said control circuit being connected in tandem to said address pulse counting register and said digit counting register and being utilized in said pulse counting register to clear all register stages except those defining a desired permutation,
a utilization circuit,
and a logic gate connected between said utilization circuit and said digit counting and address pulse counting shift registers and responsive to the coincidence of outputs therefrom.

3,309,671
INPUT-OUTPUT SECTION

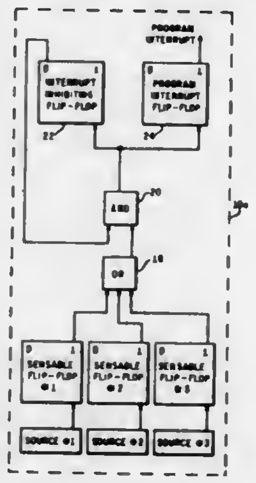
Carl M. Lekven, Burbank, Calif., assignor to General Precision, Inc., a corporation of Delaware
Filed Sept. 4, 1962, Ser. No. 221,126
3 Claims. (Cl. 340—172.5)

1. A buffer circuit including: dynamic register means including delay means for circulating bits of binary data in a series of successive bit positions, said binary data including a plurality of multi-bit binary information words carried in said delay means in a bit-interlaced relationship with one another, at least one of the bits in each of said binary information words forming with one another a multi-bit binary coded control word; a plurality of input channels for receiving separate multi-bit binary information words; circuit means for scanning said input channels successively to introduce the bits of the word in each channel to said delay means to cause the bit-interlaced words to be circulated through said dynamic register means at successive bit times; selection circuit means coupled to said dynamic register means for selecting each of said information words therefrom on a serial bit-by-bit basis; control register means; logic circuitry coupling said selection circuit means to said control register means to pass the bit constituting said coded control word to said control register means; and selection matrix circuitry coupled to said selection circuit means and to said control register means to pass a selected one of said information words to a destination selected by the control word in said control register means.



3,309,672
ELECTRONIC COMPUTER INTERRUPT SYSTEM

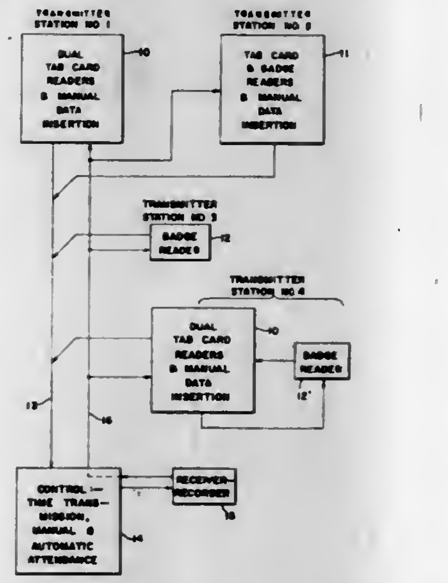
Herbert Brun, Newton, Mass., Watts S. Humphrey, Jr., Chappaqua, N.Y., and John Terzian, Winchester, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Jan. 4, 1963, Ser. No. 249,387
4 Claims. (Cl. 340—172.5)



1. For electronic data processing equipment operating according to the consecutive steps of a program, a means for interrupting said program upon the occurrence of a particular event and comprising: a plurality of sensable storage means; means for causing one of the storage means to generate a signal upon the happening of said event; means for initiating the program interrupt; gating means including an OR gate means connected to the plurality of sensable storage means and an AND gate means connected to the OR gate means and to the means for initiating the program interrupt for causing operation of the program interrupt initiating means; and, an inhibiting means connected to the AND gate means for preventing the program interrupt initiating means from causing a separate and distinct program interruption upon subsequent operation of any of the plurality of sensable storage means, including the sensable storage means effecting the initial program interruption.

3,309,673
DATA TRANSMISSION SYSTEM

Ben A. Harris and Gilbert A. Denis, Rochester, N.Y., assignors, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware
Filed Jan. 30, 1963, Ser. No. 254,896
41 Claims. (Cl. 340—172.5)


TRANSMITTER STATION NO 1
DUAL TAB CARD READERS & MANUAL DATA INSERTION
10
TRANSMITTER STATION NO 2
TAB CARD & BADGE READERS & MANUAL DATA INSERTION
11
TRANSMITTER STATION NO 3
BADGE READER
12
TRANSMITTER STATION NO 4
DUAL TAB CARD READERS & MANUAL DATA INSERTION
10
BADGE READER
12'
13
16
CONTROL — TIME TRANSMISSION, MANUAL & AUTOMATIC ATTENDANCE
14
RECEIVER-RECORDER
18

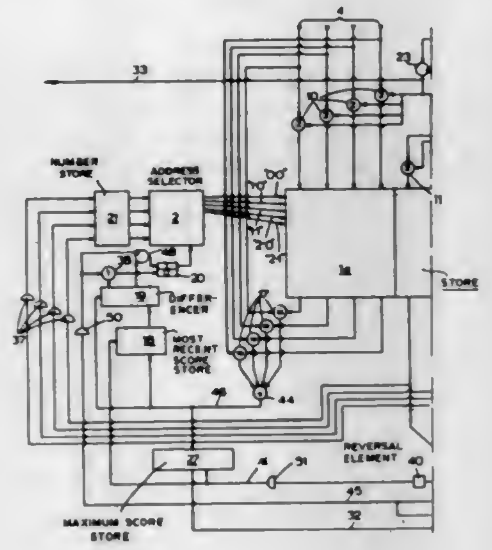
1. A data transmission system comprising a data receiver, a plurality of data supply sources adapted to be coupled to said receiver through a data communication channel common to all thereof, means at each location of a data source and operable to initiate a request for access to said data channel of any local data supply source having data available for transmission, control means at said each source location and operated by said access request means thereof for sensing the establishment of preselected operational conditions verifying that any available-data supply source at said each location has a quantity of data in readiness for transmission and has performed a preliminary operation evidencing that such source is in operational readiness to transmit its available data and upon such verification to complete the request for access to said channel of said ready data sources, and means providing automatic operational intercontrol between said access initiating control means of all of said data-source locations for dynamically assigning by a preselected program of sequential priorities from a first to a last thereof the orders in which the data sources of localities having control-means verified readiness for access automatically complete their access one after another to said channel for consecutive source transmissions to said receiver.

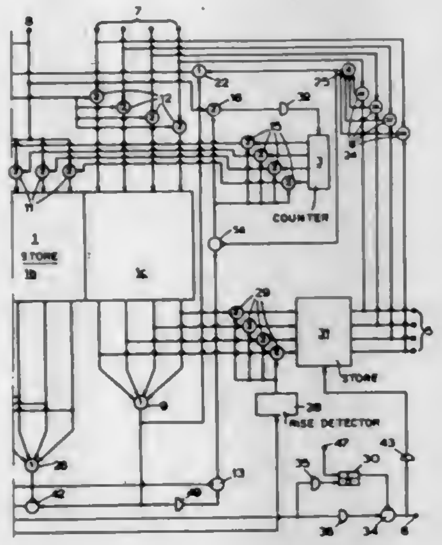
3,309,674
PATTERN RECOGNITION DEVICES

Christopher Archibald Gordon Lemay, Isleworth, England, assignor to Electric & Musical Industries Limited, Hayes, England, a British company
Filed Apr. 11, 1963, Ser. No. 272,249
Claims priority, application Great Britain, Apr. 13, 1962, 14,293/62
14 Claims. (Cl. 340—172.5)

1. A data sorting device comprising a store, first input means for a multi-element information signal, second input means for an associated response signal, means for

selecting an address in said store, said selecting means including means for selecting a group of addresses and further means for selecting an address within the groups, said store being divided into three parts, a first part for multi-element information signals, a second part for associated response signals and a third part for selection signals, means for transferring signals from said third part



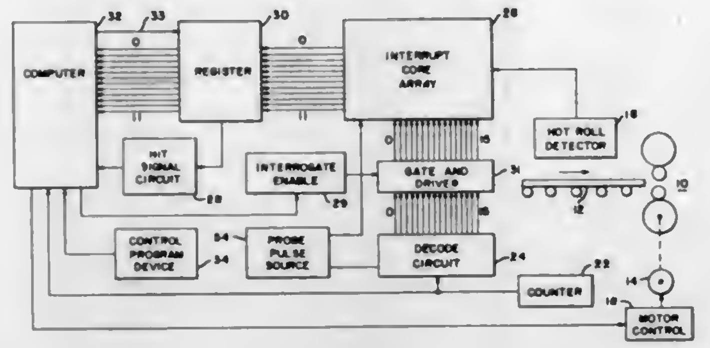


of said store to said selecting means to select a group of addresses, means for comparing a multi-element information signal derived from the first part of said store with an input multi-element information signal and for controlling the further means for selecting the address within the groups whereby an input multi-element information signal is compared with a sequence of stored multi-element information signals.

3,309,675
INTERRUPTION CONTROL APPARATUS FOR A COMPUTER

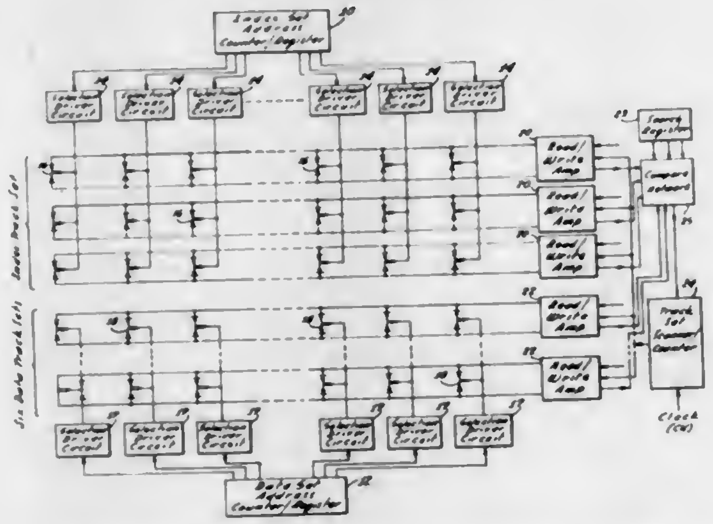
Donald A. Burt, Franklin Township, Murrysville, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 27, 1963, Ser. No. 312,125
6 Claims. (Cl. 340—172.5)

1. Apparatus for interrupting the programmed operation of a computer during the interrogation of an interrupt core array of said computer and upon the occurrence of a predetermined event, comprising square loop magnetic signal storage means initially operative in a first stable state and capable of being switched between at least two stable states of operation, input signal providing means operative upon the occurrence of said event for providing an input signal, voltage charging means responsive to said input signal for providing a control voltage, pulse providing means for providing a pulse signal prior to said interrogation to permit the switching of said signal storage means into a second state of operation, and a control device connected between said signal storage means and said voltage charging means and responsive to said control voltage and said pulse signal for changing said signal storage means to the second state of operation upon the occurrence of said control voltage followed by said pulse signal.



3,309,676
DATA MASS MEMORY SYSTEM

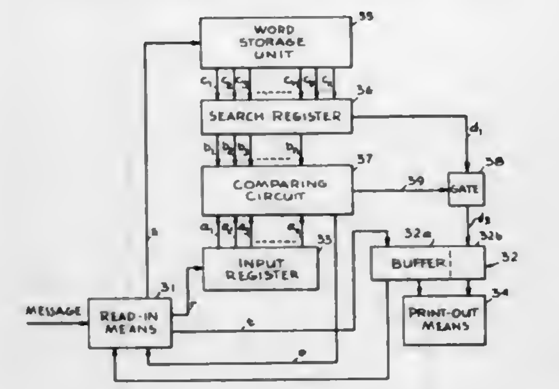
Paul R. Hickey, Tujunga, Calif., assignor to General Precision, Inc., a corporation of Delaware
Filed Dec. 10, 1963, Ser. No. 329,437
6 Claims. (Cl. 340—172.5)



1. A memory system including: a memory storage medium having a plurality of first tracks for the storage of first information representing index blocks of identifying information in successive locations in each of said first tracks, and having a plurality of groups of further tracks for the inter-laced storage of second information representing data blocks of information therein respectively corresponding to said index blocks; a plurality of first transducer units respectively coupled to respective ones of said first tracks; a plurality of groups of further separate transducer units respectively coupled to respective ones of said groups of further tracks; first switching circuitry coupled to said first transducer units for selectively activating such first transducer units; second switching circuitry coupled to said groups of further transducer units for selectively activating said groups; first control circuit means including a first address register for selectively activating said first switching circuitry in response to signals stored in said first address register; and second control circuitry independent of said first control circuitry and including a separate address register for selectively activating said second switching circuitry in response to signals stored in said second address register; and means for introducing a common address into said first and second address registers.

3,309,677
AUTOMATIC INFORMATION INDEXING

Christine A. Montgomery, Hollywood, and Louis C. Ray, Los Angeles, Calif., and Don R. Swanson, Chicago, Ill., assignors, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,108
15 Claims. (Cl. 340—172.5)



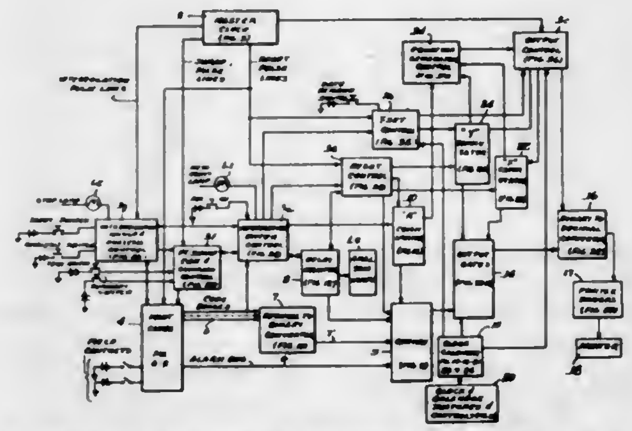
1. A system for automatically indexing information comprising:

first means responsive to input information for comparing said input information with information stored therein and detecting correspondence therebetween; and

second means for indexing said input information with codes representing said information stored in said first means which has been detected to correspond to said input information.

3,309,678
SEQUENCE INDICATING MONITORING SYSTEM

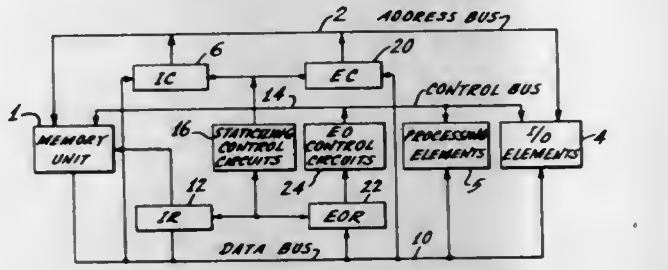
Jack Sargent, Skokie, and Kenneth C. Linder, Arlington Heights, Ill., and Amiel I. Goodman, Waltham, Mass., assignors, by mesne assignments, to The Scam Instrument Corporation, Skokie, Ill., a corporation of Illinois
Original application Sept. 6, 1962, Ser. No. 221,828. Divided and this application Oct. 18, 1965, Ser. No. 516,806
5 Claims. (Cl. 340—172.5)



1. A variable monitoring system for indicating the order in which a number of variables become abnormal, said system comprising: respective control means which respond to the normal and abnormal conditions of respective variables, each of said control means having an abnormal variable indicating state when the associated variable becomes abnormal and a normal variable indicating state when the associated variable is normal, storage means for recording the order in which the variables go abnormal and including successive storage positions in which information on the identity and timing information of abnormal variables may be recorded, interrogation means for sequentially interrogating the control means in a predetermined order and for storing in successive positions of said storage means the identity of control means as they are operated to their abnormal variable indicating states, print-out means for printing information in said storage in the order in which such information is stored in successive positions of said storage means, means for clearing said storage means when all the variable condition information in said storage means has been fed to said print-out means, timing means which is reset to zero prior to the feeding of a new sequence of information to said storage means and which starts counting time from zero when the information is fed to the first position of said storage means, means for storing in each storage position of said storage means the timing information indicated by said timing means at the time the variable identifying information is fed to the storage position, and means responsive to the clearing of said storage means for resetting said timing means to zero.

3,309,679
DATA PROCESSING SYSTEM

Joseph A. Weisbecker, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Continuation of application Ser. No. 213,781, July 31, 1962. This application June 23, 1966, Ser. No. 560,011
22 Claims. (Cl. 340—172.5)



1. In a data processing system arranged for executing an instruction by a sequence of one or more machine steps beginning with an initial step, said instruction being defined by an instruction word comprising a plurality of digits including operation digits, each of said machine steps being defined by a machine word comprising a plurality of digits including operation digits, a first counting means for storing instruction word addresses, a second counting means for storing machine word addresses, storage means for storing instruction words and machine word, means responsive to an address specified by said first counting means for selecting a word from said storage means, means for sensing said operation digits of said selected word, and means responsive to said means for sensing for inserting an address in said second counting means and for changing said first counting means to specify another address when said selected word is an instruction word.

3,309,680
ENHANCED VOLTAGE READOUT FOR CRYOELECTRIC MEMORIES

John P. Pritchard, Jr., Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed July 13, 1966, Ser. No. 564,857
4 Claims. (Cl. 340—173.1)

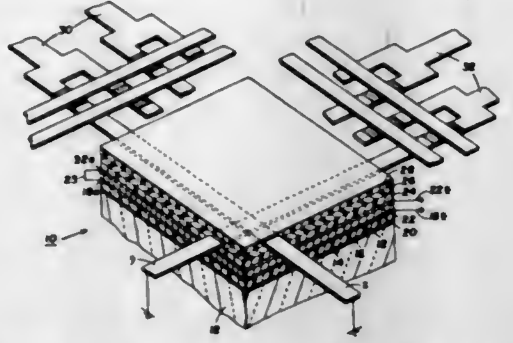
1. In a cryoelectric memory system, the combination of:

a superconductive memory plane,

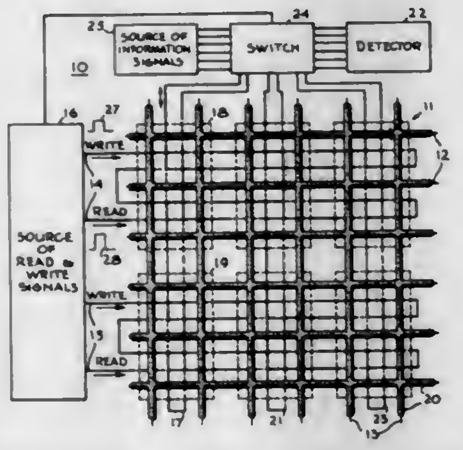
write and read drive line means disposed adjacent one side of the memory plane for selectively storing an idle current in the memory plane and for selectively switching the stored idle current off,

a layer of material having a magnetic permeability greater than unity disposed adjacent the memory plane on the side of the memory plane opposite the drive line means such that the magnetic field from an idle current stored in the memory plane will pass through the layer of material, and

sensing means disposed adjacent the layer of material for sensing changes in the magnitude of the magnetic field within the layer of material.



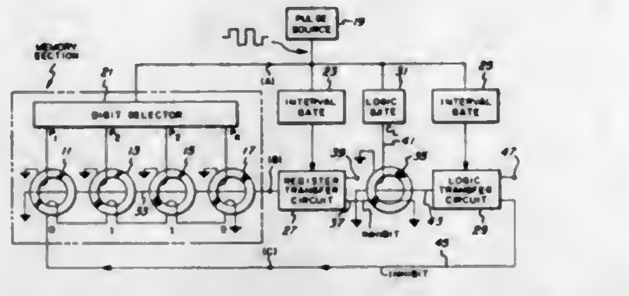
3,309,681
MULTI-APERTURED MEMORY ARRANGEMENT
David R. Boyles. Van Nuys, John S. Davis, Glendale, and Paul E. Wells, Los Angeles, Calif., assignors to The Bunker-Ramo Corporation, a corporation of Ohio
Filed Aug. 21, 1962, Ser. No. 218,389
18 Claims. (Cl. 340—174)



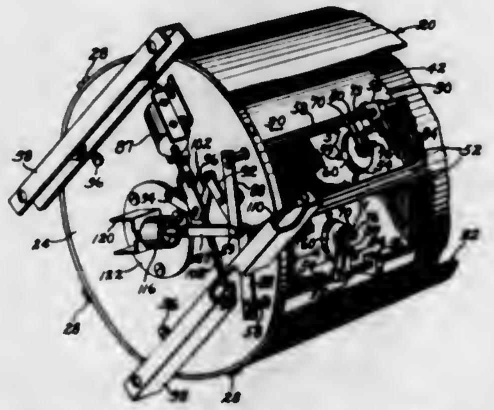
1. An information storage arrangement comprising a screen of filamentary elements coated with remanent magnetic material in a manner to provide an ordered arrangement of symmetrical magnetic paths surrounding adjacent openings in the screen, means for coincidently applying information storage signals to produce particular flux conditions in the magnetic material surrounding two adjacent openings having a common leg, and means for selectively sensing the state of stored information.

3,309,682
MAGNETIC CORE INTERROGATION CIRCUITS FOR CORE ARRAY
John J. King, Jericho, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Mar. 22, 1963, Ser. No. 267,278
8 Claims. (Cl. 340—174)

1. The combination comprising an array of register cores, means to provide trains of alternate READ and WRITE timing pulses, means to switch the first READ pulse in a given train and the second following WRITE pulse in that train to a first register core in said array, means to switch succeeding READ pulses sequentially to the individual remaining register cores and to switch succeeding WRITE pulses in the same sequence to the individual remaining register cores, a register transfer circuit coupled to receive information read out of said array in response to a READ pulse, a logic core coupled to receive information from said register transfer circuit in response to a WRITE pulse, and a logic transfer circuit coupled to receive information read out of said logic core in response to a READ pulse, said logic transfer circuit being further coupled to the cores in said array so as to transfer information from said logic core back into said array.



3,309,683
AIR BEARING TRANSDUCER APPARATUS
Harry L. Worosz, Dearborn, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 7, 1962, Ser. No. 243,107
9 Claims. (Cl. 340—174.1)

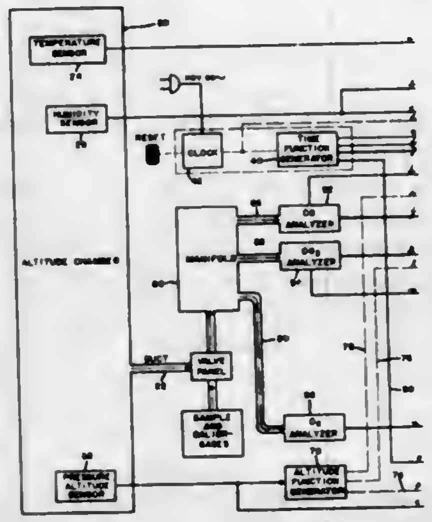


1. In an information storage apparatus, a rotatable means having a magnetizable surface for the recording of information and generating an air cushion at said surface by the rotary action of said means, a resilient arm mounted in spaced relation to the magnetic surface of said rotatable means, said arm having a free end portion overlying and tensioned to oppose the pressure of said air cushion, a magnet carrying head having a planing face with a plurality of openings facing said magnetizable surface, said head urged by the tension of said arm to ride on said cushion of air proximate said magnetizable surface, said head movable relative to said arm, and means limiting movement of said head relative to said arm.

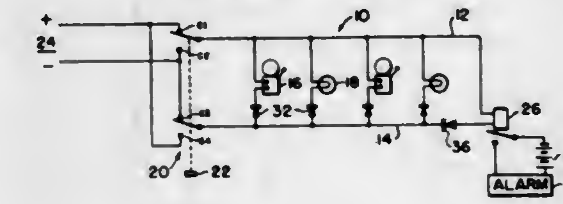
3,309,684
BIO-INSTRUMENTATION MONITORING AND DISPLAY DEVICE
Elliott H. Kahn, Brooklyn, William M. Nelson, Flushing, and Samuel Stempler, Brooklyn, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 9, 1964, Ser. No. 373,894
2 Claims. (Cl. 340—213)

1. Bio-instrumentation apparatus comprising:
an environmental chamber;
a plurality of environmental sensing and analyzing means connected to said chamber for providing a plurality of output signals each corresponding to an actual environmental parameter in said chamber including THI, carbon monoxide, carbon dioxide, oxygen, and altitude pressure conditions;
clock driven function generator means for providing a plurality of reference signals each representing the allowable value of one of said THI, carbon monoxide, carbon dioxide, and oxygen conditions as a function of time;

altitude function generator means responsive to the output signal corresponding to said altitude pressure condition to provide an altitude correction signal;
THI, carbon monoxide, carbon dioxide, and oxygen ratio computers connected to said sensing and analyzing means, to said time function generator and to said altitude function generator, said ratio computers being operative to compare said output signals of said sensing and analyzing means to said reference signals and responsive to said altitude correction signals to provide a ratio signal for each of said THI, carbon monoxide, carbon dioxide, and oxygen conditions representative of stress therefrom; and
warning means connected to said ratio computers and responsive to said ratio signals to provide a warning signal when a predetermined condition of stress is exceeded for any one of said parameters.

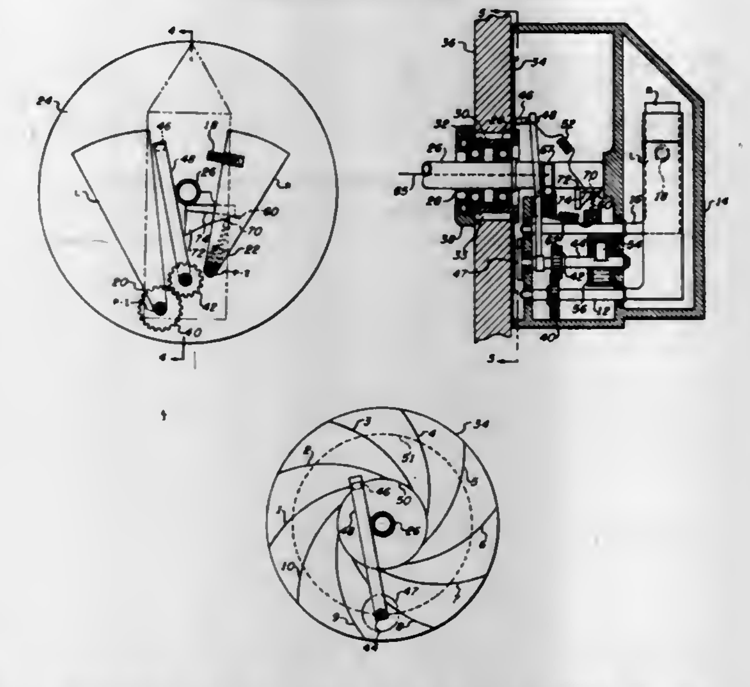


3,309,685
SUPERVISORY CIRCUIT
David Manning, Springfield, Mass., assignor to The Standard Electric Time Company, Springfield, Mass., a corporation of Connecticut
Filed June 16, 1964, Ser. No. 375,581
2 Claims. (Cl. 340—213)



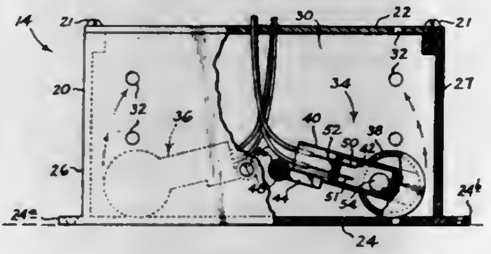
1. In an alarm system including a plurality of signaling devices, a control circuit including a source of direct current, a pair of conductors connecting said source to said devices in parallel array, switch means, a relay connected in series with said conductors, said switch means and said source, said switch means being interposed between said source and said conductors and operable to reverse the polarity of the connection therebetween and to reverse the flow of current in said conductors from a first to a second direction, a polarity sensing device interposed in series with each said signaling device to pass current to each said device only when said current flows in said second direction and normally to prevent the flow of current to each said device when said current flows in said first direction, said relay being energized only when said current flows in said first direction and deenergized when said current flows in said second direction, and means responsive to deenergization of said relay for actuating an alarm.

3,309,686
SWITCH APPARATUS
John M. Lester, Garden City, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 422,930
9 Claims. (Cl. 340—221)



1. Apparatus for use with a switch comprising recording playback means having respective tracks with words for and indicative of each of the quiescent positions of said switch, pickup means relatively positionable simultaneously with said switch to the track associated with the setting of said switch for cooperating with said tracks to produce audible indications of the settings of said switch, means for relatively positioning the pickup means in a particular direction along the track to which it is relatively positioned, and means for relatively moving said pickup means at a predetermined speed along that track, whereby an audible indication of the setting of the switch may be provided.

3,309,687
FLOAT-OPERATED LIQUID LEVEL SENSING DEVICE
John D. Phipps, 6517 N. Commercial Ave., Portland, Oreg. 97217
Filed Feb. 23, 1962, Ser. No. 175,045
3 Claims. (Cl. 340—244)



1. In combination with a boat, a bilge water sensing device comprising a pair of float members, each of said float members including an elongated water-buoyant float element and an arm connected at one end to an intermediate portion of the float element extending out to one side of the element, said float elements occupying a substantial horizontal position within the casing which parallels the longitudinal axis of the boat, pivot means mounting the opposite end of the arm for each of said float member accommodation pivotal movement of the member with such movement limited to movement about an axis substantially paralleling the longitudinal axis of the boat, a perforate casing surrounding the float members and the

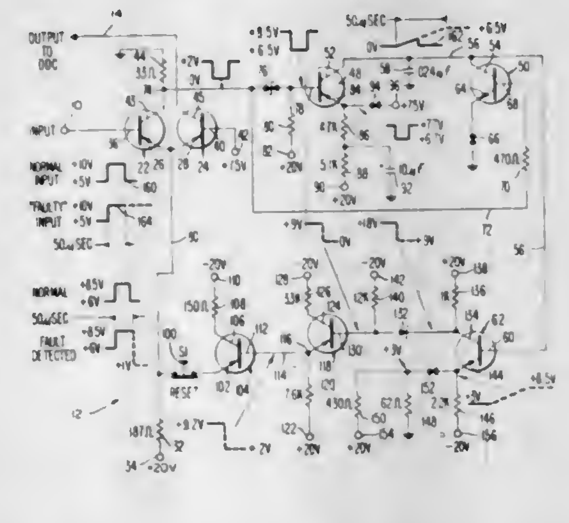
pivot means mounting each, switch means on each of said float members actuated by pivotal movement of the member, an electrically operated warning device, and circuit means connecting the switch means of the two float members and said electrically operated warning device with the switch means electrically in parallel.

3,309,688
PULSE WIDTH FAULT DETECTION APPARATUS

Gilbert Yanishevsky, Philadelphia, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 3, 1963, Ser. No. 327,785

13 Claims. (Cl. 340—248)



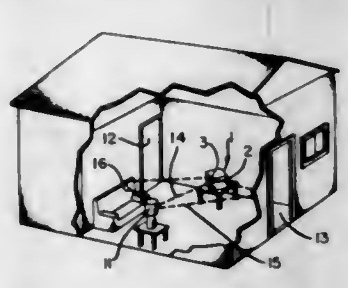
1. Pulse width fault detection apparatus comprising:
(a) a source of signal pulses of predetermined duration and width;
(a^1) input solid state means to which said pulses of predetermined width are applied from said source of pulses;
(b) means for selectively reproducing the input signal pulses at an output line directly coupled thereto;
(c) means for generating a voltage waveform for the time period during which a pulse is applied to said input means;
(d) means actuated by said voltage waveform for selectively inhibiting said output means when a signal of greater than the predetermined time duration and width occurs; and
(e) means for re-establishing the original circuit condition.

3,309,689
INTRUSION DETECTION SYSTEM

Clare G. Keeney, Campbell, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Oct. 30, 1964, Ser. No. 407,713

8 Claims. (Cl. 340—258)



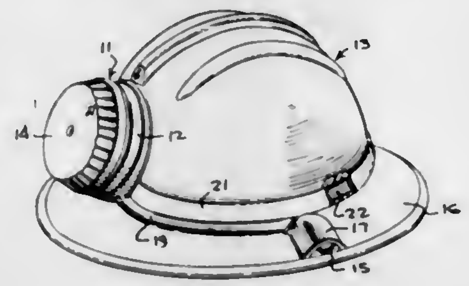
1. A system for detecting intrusion of a room comprising
an electric lamp at a first location in said room,
detection apparatus at a second location in said room, said detection apparatus comprising
a body having a plurality of plane sides with the planes of the sides intersecting each other,
said body being oriented with the intersection of the planes of two of said sides closer to said lamp than the remainder of the body,
a light responsive element mounted on the exterior of each of said two sides and substantially equally spaced from said lamp and at a greater distance therefrom than said intersection of the planes of said two sides,
each of said elements being characterized by an electrical resistance that is a function of the intensity of light incident thereupon,
a source of electrical energy connected to said elements,
said elements being electrically connected in series to form a voltage divider network,
a signal processing circuit connected to said network and being responsive to a relative change in voltages across said elements to produce an output, and
an alarm circuit responsive to said output of the signal processing circuit to produce an alarm.

3,309,690
HELMET WITH DETECTING CIRCUIT MOUNTED THEREON FOR INDICATING APPROACH TO AN ENERGIZED POWERLINE

Melville M. Moffitt, 26 Oxford St., Chevy Chase, Md. 20015

Filed May 19, 1966, Ser. No. 551,272

2 Claims. (Cl. 340—258)



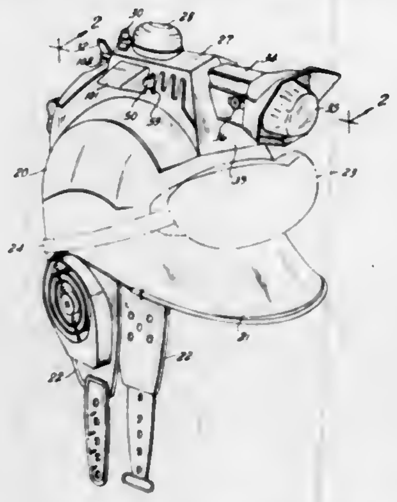
1. In combination, a helmet to be placed upon the head of a wearer having mounted thereupon a portable multistage miniaturized detection circuit means for detecting a radiated inductive field and giving a warning to the wearer when the detection circuit means approaches closer than a variable pre-determined distance to an energized powerline, the detection circuit means including an energizing means, a normally closed switch means for completing the circuit, an antenna means mounted on the helmet and connected to the circuit means for receiving the inductive electric field input signal, a high impedance amplification means coupled to the antenna means to receive the input signal and to direct the input signal to a gain control stage having manually adjustable means for setting a pre-determined signal level, audio-amplification means capacitively coupled to the gain control stage to raise the input signal to a pre-determined voltage value, rectifying means connected to the output of the audio-amplification means to convert the input signal voltage to a D.C. signal voltage, switching means coupled to the rectifying means and operative in response to a pre-determined voltage value therefrom, an oscillating means controlled by the switching means adapted to operate at such times as a pre-determined voltage value is received by the switching means from the rectifying means, audible signal means mounted on the helmet and connected to the oscillating means so as to transmit an audible signal to the wearer responsive to the setting of the gain control adjustable means.

3,309,691
SIGNALING DEVICE FOR HELMETS

Joseph L. Bonanno, South Orange, N.J., assignor to De Luxe Reading Corporation, Elizabeth, N.J., a corporation of New Jersey

Filed May 10, 1965, Ser. No. 454,505

8 Claims. (Cl. 340—321)



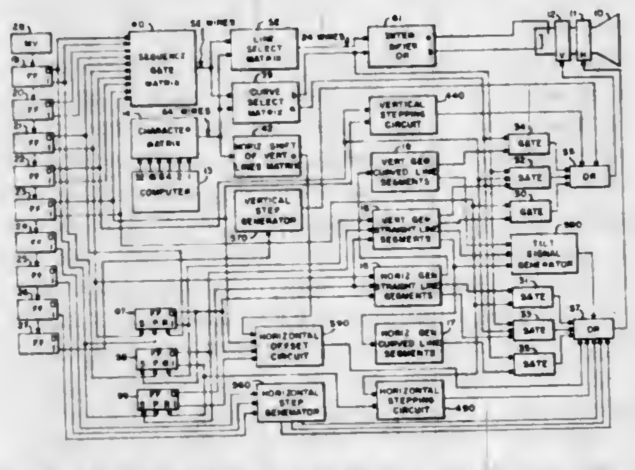
1. In a helmet-supported illumination device, signalling means, a housing, an electric circuit for the signalling means including a pair of input terminals exposed within said housing, a flashlight unit including a casing complete in itself and containing a lamp and a battery, and being provided with exposed exterior terminal means electrically connected to said battery, and means for separably securing said flashlight unit within the housing, rear end in said means being effective to establish electrical connection between said battery and said input terminals by engagement of said input terminals with said exterior terminals to energize said signalling circuit.

3,309,692
CHARACTER DISPLAY APPARATUS

Carl R. Wilhelmsen, Huntington Station, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois

Filed Dec. 3, 1964, Ser. No. 415,766

15 Claims. (Cl. 340—324)



1. In a character generator for displaying characters on an image reproducing device by selecting segments of a composite pattern composed of straight and curved segments, signal generating apparatus comprising:
first means for supplying groups of signals, each group representative of a particular character to be displayed;
second means for generating a plurality of timing control signals;
third means coupled to said second means and responsive to said timing control signals, for generating deflection signals in a predetermined sequence, said deflection signals corresponding to straight and curved segments of said composite pattern;
and fourth means coupled to said first, second and third means and responsive to said character representative, timing control and deflection signals, for selecting a fixed number of deflection signals, said fixed number including a lesser number corresponding to the segments needed to form a particular character, and for supplying said selected deflection signals as output signals suitable for use by said image reproducing device, and for generating a fixed number of control signals, each corresponding to a given one of said selected deflection signals and indicative of whether or not the segment represented by the corresponding selected deflection signal is to be displayed, and for supplying said control signals as output signals suitable for causing said device to display a particular character.

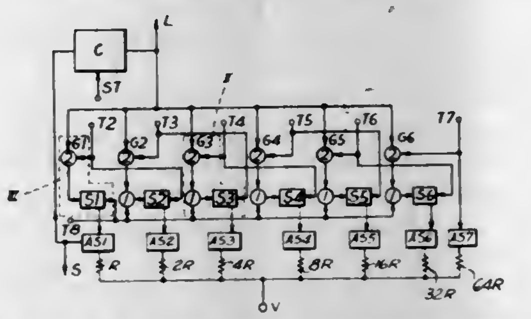
3,309,693
ELECTRICAL SIGNALLING SYSTEMS

John Christopher Hammond Davis, Taplow, England, assignor to British Telecommunications Research Limited, Taplow, England, a British company

Filed May 14, 1963, Ser. No. 280,206

Claims priority, application Great Britain, May 16, 1962, 18,900/62

8 Claims. (Cl. 340—347)



1. For use in a pulse code modulation communication system, a storage arrangement for a signal character involving a predetermined number of successive signal elements each having one or other of two values, comprising in combination, a plurality of capacitors equal in number to the number of signal elements forming a character, a like plurality of transistors respectively associated with said capacitors, a pulse source providing a series of regularly recurring timing pulses, a further transistor, means controlled by said timing pulses for effectively associating said further transistor with each of said plurality of transistors in turn to form a multi-outlet current switch, control means for said further transistor dependent on the values of said signal elements, and means controlled respectively by said plurality of transistors for altering the state of charge of any one of said associated capacitors if said further transistor is non-conducting due to the corresponding signal element having a particular one of said two values when said further transistor is associated with the corresponding one of said plurality of transistors.

3,309,694
CODE CONVERSION APPARATUS

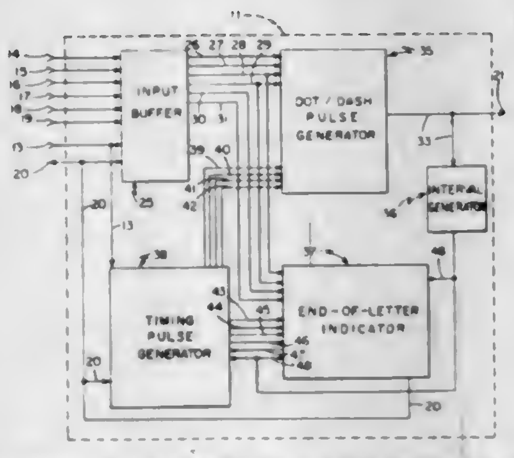
Stanley A. Flerston, Swampscott, and Walter Glanton, Jr., Watertown, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 30, 1963, Ser. No. 334,412

9 Claims. (Cl. 340—347)

1. Apparatus for translating the binary equivalent representation of a character to a dot/dash signal code representation of said character, wherein said binary equivalent representation of said character consists of *m* binary bits of which *n* bits (*n* being less than *m*) are to be translated to said signal code representation, said apparatus comprising:
a plurality of input terminals to which input signals are applied;

an *m*-bit input buffer connected to said multiplicity of input terminals;
means for generating timing pulses;
means for sequentially generating dot and dash signals representing said character;
means connecting said timing pulse means to said signal code generating means;
means for generating time intervals between successive signals generated;
means connecting said signal code generating means to said time interval generating means;



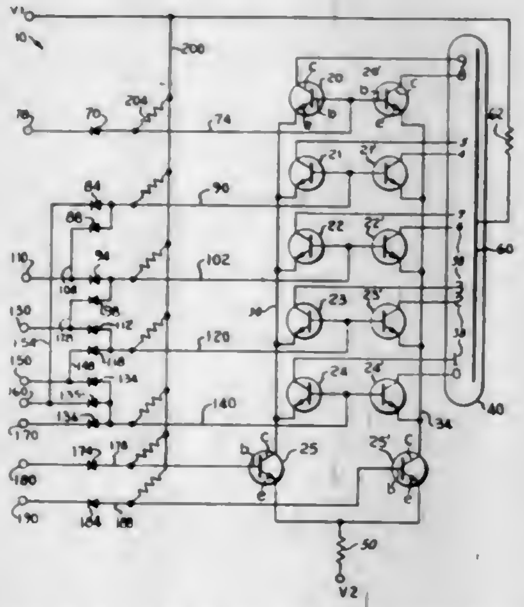
means connecting said timing pulse means to said time interval generating means;
means for interrogating said *m*-binary bits of said binary equivalent representation of said character to determine when said *n* bits have been translated;
means connecting said interrogating means to said input buffer and to said timing pulse generating means;
and, means operative in response to completion of the translation of said character for generating a signal indicating completion.

3,309,695
ELECTRONIC DIODE MATRIX DECODER CIRCUITS

James J. Klinikowski, Somerville, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Mar. 23, 1964, Ser. No. 353,845

5 Claims. (Cl. 340—347)



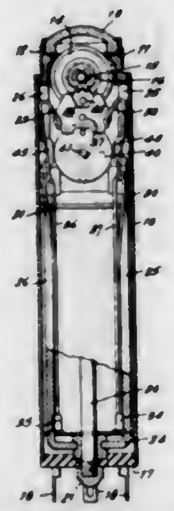
5. A circuit for use in decoding biquinary code signals comprising
five pairs of decimal-representing transistors,
two auxiliary control transistors, each coupled to and controlling the operation of one transistor of each pair of transistors,
a diode matrix,
eight input lines to said diode matrix,
seven output lines from said diode matrix,
said diode matrix including single diodes in three of said output lines,
three two-diode AND gates in three of said output lines, and one three-diode AND gate in one of said output lines,
said input lines being adapted to receive different combinations of signal bits in one code and providing current flow on one output line from the diode matrix to one of said pairs of transistors and to one of said auxiliary transistors whereby one transistor of one of said pairs of transistors is turned on and provides an output signal having a meaning in decimal code.

3,309,696
ELECTROMAGNETIC DISPLAY DEVICE

David I. Alster, Westbury, and Arnold M. Wolf, Brooklyn, N.Y., assignors to Electrospace Corporation, Glen Cove, N.Y., a corporation of New York

Filed Apr. 20, 1965, Ser. No. 449,549

10 Claims. (Cl. 340—373)



1. An electromagnetic display device for displaying alternate visual signals comprising, an electromagnet including ferro-magnetic pole pieces having like polarity, a core, a rockable display member having a permanent magnet positioned adjacent to one end of said core and between said pole pieces, said magnet having two north poles and two south poles, each of said magnet poles lying substantially equi-distant from the axis of rotation, a lever secured to the magnet and rocked by it, said lever formed with a gear segment on one end thereof, a rockable signal means having indicia on its outer surface which can be viewed by an observer, said signal device including a gear wheel whose teeth mesh with the gear segment on said lever coil windings on said core, two pairs of input terminals for applying electrical operating pulses to said coil windings to rock said display member, two pairs of contacts mounted adjacent to said lever for activating the windings on the core, connecting means for forming two circuits, each including two terminals, a pair of contacts, and one of the windings connected in series, and mechanical coupling means between said lever and said pairs of contacts for opening one pair and closing the other pair when the lever is rocked.

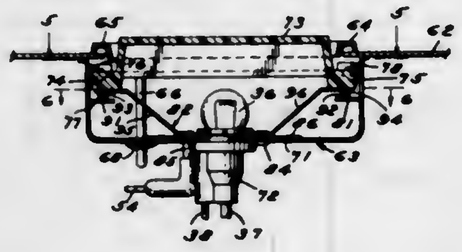
3,309,697
SEAT BELT REMINDER INDICATING SWITCH

Frank Skrbina, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Original application Dec. 26, 1963, Ser. No. 333,556. Divided and this application May 18, 1966, Ser. No. 551,113

2 Claims. (Cl. 340—381)

1. In an automotive vehicle a warning lamp and push button switch assembly in which said warning lamp is adapted to be extinguished when said push button switch is closed comprising, a housing, a warning lamp mounted in said housing, a lens positioned in said housing opposite said warning lamp, means carried by said housing mounting said lens in said housing for limited movement toward and away from said warning lamp, a leaf spring member secured to said housing adjacent said warning lamp and including resilient arms extending outwardly from said warning lamp, the ends of said arms engaging said lens for urging said lens into a position remote from said warning lamp, switch contacts carried by said ends of said resilient arms and said housing and being in a normally open state, said contacts being closable when said lens is moved toward said warning lamp by a vehicle occupant, said leaf spring member including said resilient arms having a light reflective surface positioned relative to said warning lamps for reflecting light through said lens.



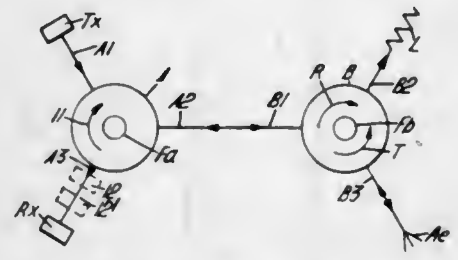
3,309,698
RADAR SYSTEMS

George Seymour Baldock, Edinburgh, Scotland, assignor to Ferranti, Limited, Lancashire, England, a company of Great Britain and Northern Ireland

Filed Oct. 7, 1964, Ser. No. 402,257

Claims priority, application Great Britain, Oct. 9, 1963, 39,734/63

8 Claims. (Cl. 343—5)



5. For use in a radar system, a duplexer combination of first and second waveguide multi-arm circulators each having one arm connected to one arm of the other for the transmission of electrical signals therebetween, means for setting up within at least the second circulator a magnetic field the polarity condition of which controls the mode of energy transfer between the arms of said circulator, an absorptive load connected to another arm of the second circulator, and control means for reversing the magnetic field polarity conditions within the second circulator at will.

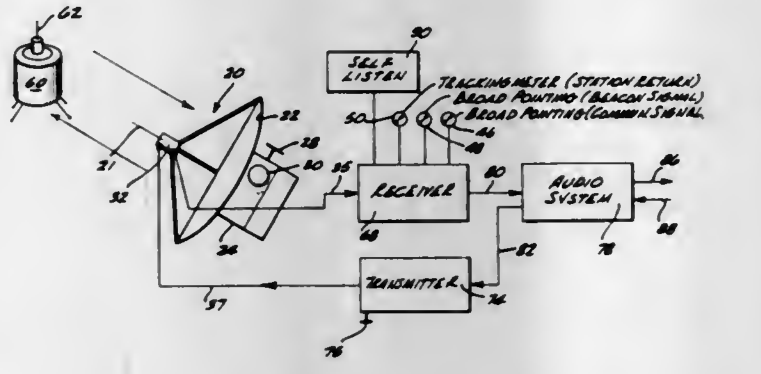
3,309,699
TRACKING SYSTEM FOR COMMUNICATION SATELLITES

Louis V. Erdle, Thousand Oaks, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 21, 1964, Ser. No. 369,070

16 Claims. (Cl. 343—6.5)

16. A satellite tracking and communication system for broad pointing of the system during initial acquisition of the satellite and for accurate pointing of the system during tracking of the satellite, said system operable with another communication station, said satellite responding to received signals to transmit signals with a fixed down conversion in frequency comprising
a communication antenna having a boresight axis and movable so that said axis points at the satellite,
a transmitter coupled to said antenna for transmitting first frequency modulated communication signals, said satellite responding to said first signals to transmit second frequency modulated signals,
means coupled to said antenna for receiving said second signals and third frequency modulated signals transmitted from said satellite responding to frequency modulated communication signals received from the other communication station,
first and second filter means coupled to said means for receiving for respectively passing said second and third signals,
first and second gain control amplifiers respectively coupled to said first and second filter means,
first and second phase lock demodulator means respectively coupled to said first and second gain control amplifiers for responding to the signals passed therethrough to develop respective first and second audio signals and to develop respective first and second automatic gain control voltages for controlling the gain of said amplifiers,
first and second ear phones respectively coupled to said first and second demodulator means for responding to the respective first and second audio signals to develop sounds having substantially minimum noise volume respectively when said boresight axis is substantially accurately pointing toward said satellite for tracking thereof and when said boresight axis is broadly pointing toward said satellite for initial acquisition thereof,
and first and second indicating means respectively coupled to said first and second demodulator means for respectively indicating the amplitudes of said first and second automatic gain control voltages having substantially maximum amplitudes respectively representative of when said boresight axis is substantially accurately pointing toward said satellite for tracking thereof and when said boresight axis is broadly pointing toward said satellite for initial acquisition thereof.


SELF LISTEN
TRACKING METER (STATION RETURN)
BROAD POINTING (BEACON SIGNAL)
BROAD POINTING (COMMON SIGNAL
RECEIVER
AUDIO SYSTEM
TRANSMITTER

3,309,700
RADAR SEARCH SYSTEM

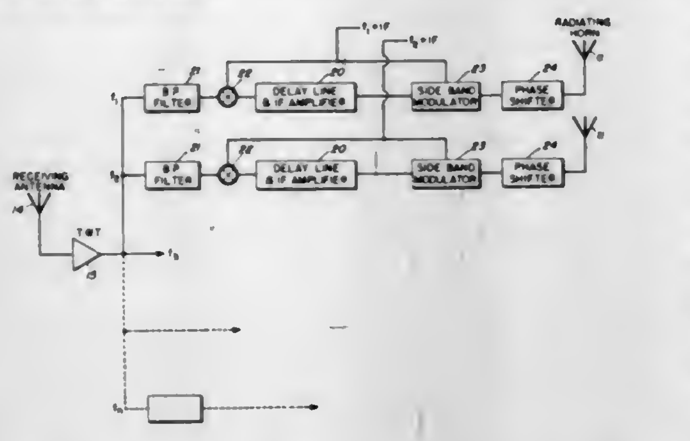
John B. Garrison, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 18, 1963, Ser. No. 266,113

10 Claims. (Cl. 343—8)

1. A pulse Doppler radar search and acquisition system comprising
an antenna for receiving a plurality of pulses,
each containing a Doppler component,
a plurality of acquitision channels connected to said antenna,
means for applying each input pulse to a different acquisition channel,

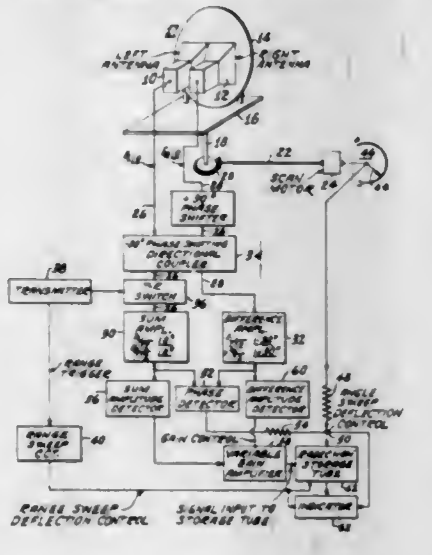
delay means connected to each acquisition channel for applying to the pulse in each channel a delay which is proportional to the relative time of transmission of the pulse, and



means for linearly delaying each pulse in varying increments which are proportional to the Doppler frequencies of the pulses of each channel.

3,309,701
SIMULTANEOUS LOBING RADAR

Waldon Pearson Bollinger, Haddonfield, N.J., and John R. Ford, Narberth, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Nov. 30, 1950, Ser. No. 198,272
13 Claims. (Cl. 343—11)

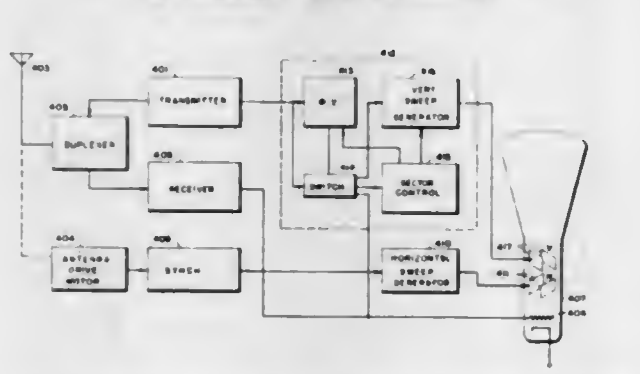


1. In a simultaneously lobing radar system having a transmitter for transmitting signals, two antennas having energy patterns with a central axis for receiving signals echoed from an object, a common scan drive for said antennas, a pair of transmission lines one connected respectively to each antenna and interconnected to supply at a line termination of one line the vector sum of signals received by said antennas and at a line termination of the other line the vector difference of signals received by said antennas, the combination comprising a phase detector connected to said lines for detecting with sensing the difference signal amplitude and phase, a storage tube having cathode means to produce a beam of electrons, a storage target against which said beam of electrons is directed, means to withdraw the difference between successive signals from any point of the target scanned by said beam and deflection means to deflect the beam over said target, means connected to the antenna scan drive and connected also to the said phase detector to deflect said electron beam along one dimension of said target, the said deflection being thereby corrected for angular departure between said object and said antenna axis, and means to deflect said beam along a second dimension transverse to the first an amount depending upon the time between transmission and reception of a signal, said storage tube being connected to said lines through means to control the stored signal.

3. In a simultaneous lobing radar system having a transmitter for transmitting signals, two antennas for receiving signals echoed from an object, a common scan drive for said antennas, a sum receiver connected to said antennas to derive as output a signal proportional to the vector sum of signals from said antennas and a difference receiver connected to said antennas to derive as output a signal proportional to the vector difference of signals from said antenna, the combination comprising a variable gain amplifier connected to amplify said sum receiver output signal, means connecting said amplifier to receive said difference receiver output signal to control the gain of the amplified signal, and a utilization circuit distinct and different from said amplifier and connected to receive the said amplified signal.

3,309,702
RADAR INDICATION SYSTEM

Harold L. Saxton, 7556 Broadview Road SE., Washington, D.C. 20022
Filed May 22, 1946, Ser. No. 671,490
6 Claims. (Cl. 343—11)



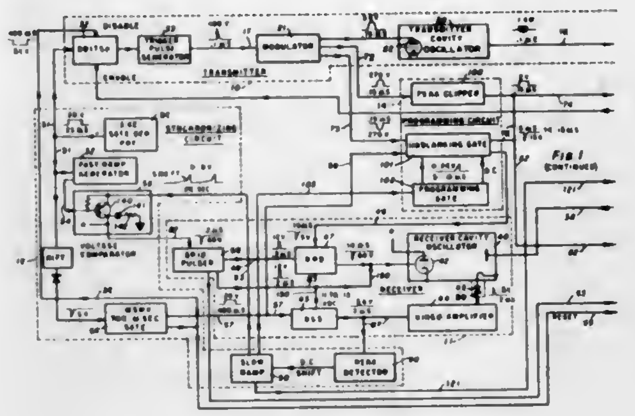
1. In a system of echo detection wherein a given field in space is scanned by a beam of periodically emitted energy and reradiations of said energy from an object within said field are received, means providing a plot of the range and direction of said object comprising, in combination, a cathode ray tube, first time base generating means, means synchronizing said first generating means with the scanning of said beam, second time base generating means, means operative to vary the trace velocity of the second time base in inverse relation to the range of said objects, means coupling both of the time bases to said tube to produce mutually perpendicular time base loci on the screen of said tube, and means operative on receiving reradiations of energy to effect an indication on said time base loci.

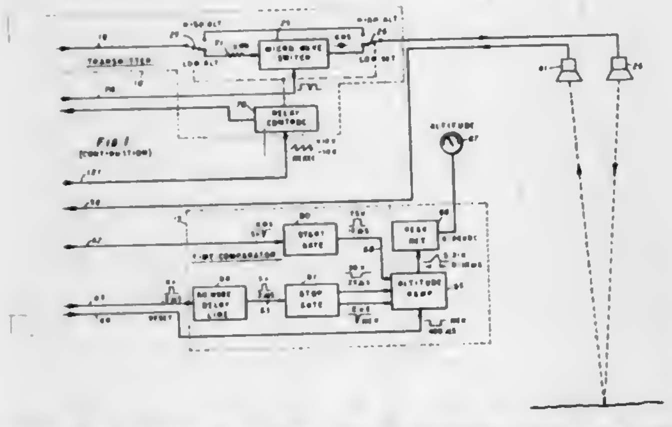
3,309,703
PULSED RADAR ALTIMETER

Milton H. Ammon, Van Nuys, Warren J. Kennedy, Northridge, Lambert F. Lyons, San Fernando, and Ronald C. Mead, Van Nuys, Calif., assignors to The Bendix Corporation, North Hollywood, Calif., a corporation of Delaware
Filed Apr. 24, 1961, Ser. No. 104,936
13 Claims. (Cl. 343—13)

1. In a pulse echo distance-measuring system:
a pulse transmitter;
a pulse receiver;
means for periodically energizing said transmitter to transmit a pulse of traveling wave energy;
means for generating a first time-variable voltage time-related to the transmission of said pulse;
means for generating a second time-variable voltage independent of the time of transmission of said pulse;

a voltage comparator for said first and second time variable voltages;
means responsive to the output of said voltage comparator at coincidence of said first and second voltages for enabling said pulse receiver;

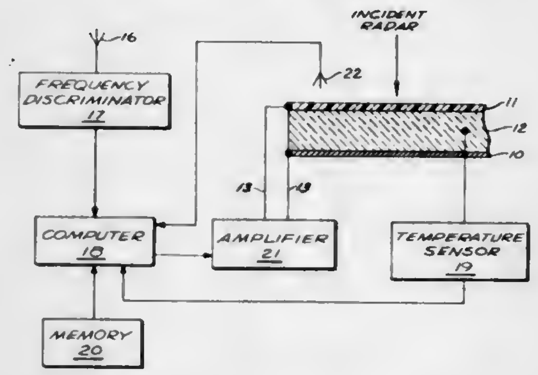




means for measuring the time interval between the energizing of said pulse transmitter and the enablement of said pulse receiver; and
means for representing the measured time interval as a function of distance.

3,309,704
TUNABLE ABSORBER

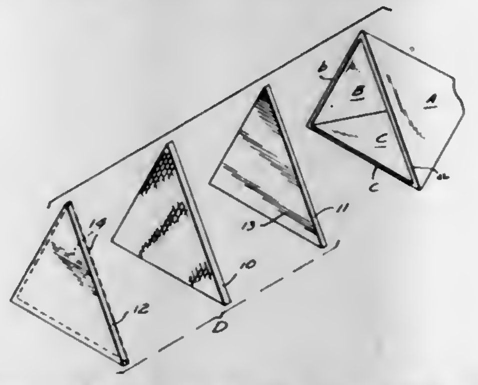
Eugene H. Klingler, Tulsa, Okla., assignor to North American Aviation, Inc.
Filed Sept. 7, 1965, Ser. No. 485,239
17 Claims. (Cl. 343—18)



13. An active attenuator of electromagnetic energy comprising:
an electrically conductive ground plane;
an impedance layer spaced apart from said ground plane and substantially parallel thereto, said impedance layer having an extent much larger than the wave length of energy to be attenuated;
a dielectric material between said ground plane and said impedance layer;
antenna means for receiving electromagnetic energy;
discriminator means connected to said first antenna means for providing a signal representative of frequency of the electromagnetic energy;
means responsive to the signal from said discriminator means for providing an output voltage that varies with said signal according to a predetermined relation; and
means for employing the output voltage for changing intensive properties of said dielectric material.

3,309,705
RADAR TARGET FOR CIRCULARLY POLARIZED RADIATION

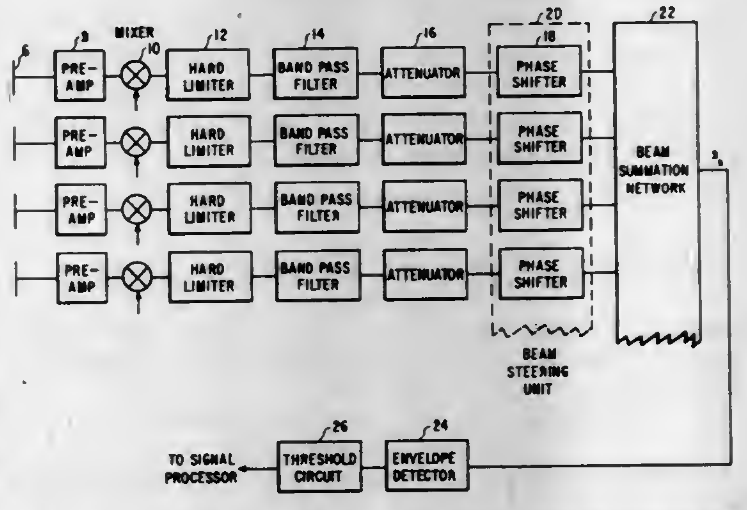
Stephen J. Blank, 54—44 Little Neck Parkway, Little Neck, N.Y. 11362, and Louis H. Sacks, 117—26 Springfield Blvd., Cambria Heights, N.Y. 11411
Filed June 8, 1966, Ser. No. 556,062
5 Claims. (Cl. 343—18)



1. A corner reflector target for use with circularly polarized radar beams, comprising a trihedral reflector arrangement and a triangular phasing grid assembly covering the aperture thereof, the said phasing grid assembly comprising two grid support plates of radome material, two parallel spaced conductor grids supported by the said plates, the said grids being spaced apart by a dielectric spacer plate and the conductors of the said grids being spaced from each other by a fraction of a wavelength and having a width a fraction of the said spacing and such that a circularly polarized wave passing through the grid structure and being reflected back therethrough is polarized in its original sense.

3,309,706
PHASED ARRAY SYSTEMS

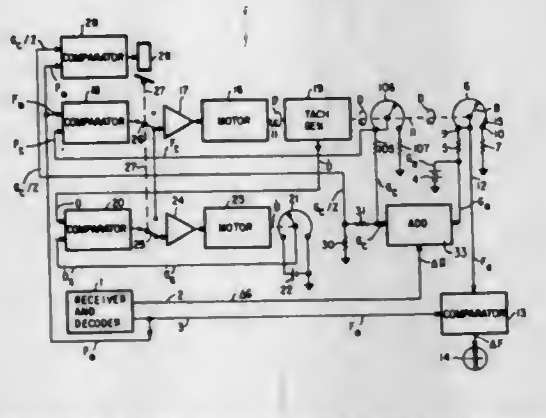
William H. Huggins, Baltimore, Md., and Daniel J. Crowley, Needham, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed May 21, 1962, Ser. No. 197,177
5 Claims. (Cl. 343—100)



1. A phased array of signal receiving system comprising a plurality of spatially disposed signal receiving elements, a signal processing channel coupled to each of said receiving elements, each of said channels including means

for limiting the signal therein and producing a fixed amplitude output signal, means for combining the output signals from all of said channels to produce a beam signal, and a threshold circuit to which said beam signal is applied, said threshold circuit being operative to reject beam signals below a selected level and to produce an output signal of amplitude proportional to the amplitude of beam signals whose amplitude exceeds said selected level.

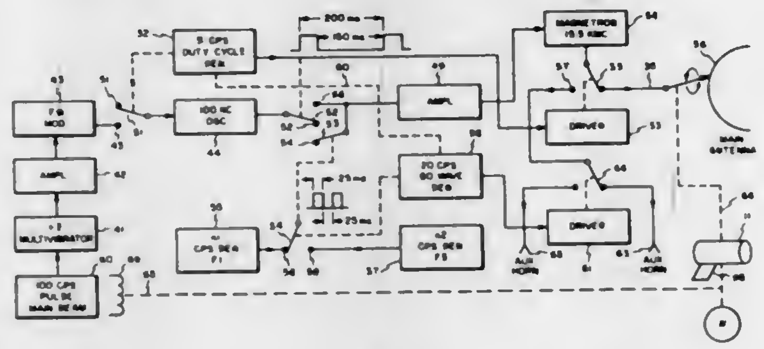
3,309,707
GUIDANCE COMPUTER FOR AIRCRAFT LANDING SYSTEM
Abraham Tatz, Levittown, and Francis X. Kelly, Jr., Huntington, N.Y., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 2, 1965, Ser. No. 436,503
7 Claims. (Cl. 343—108)

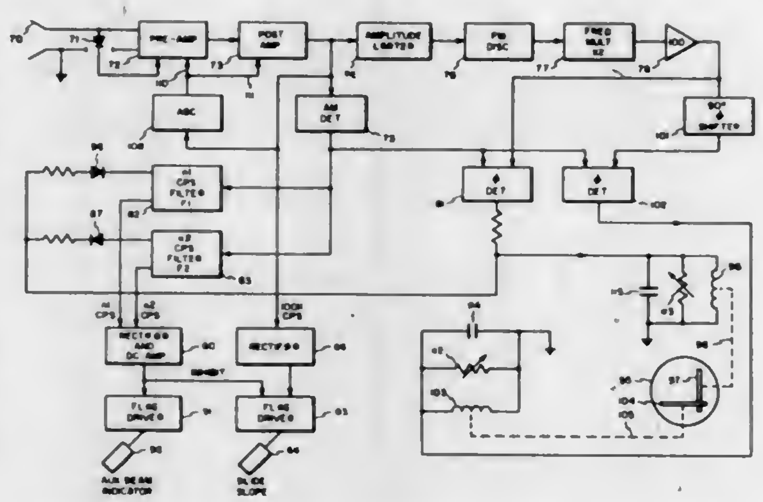


4. Apparatus for use in an aircraft landing system comprising:
(a) means for producing a first signal representing the distance of the aircraft from a reference point that is in advance of a site located beyond an intended touchdown region,
(b) means for producing a second signal representing a desired elevation angle from a point in advance of said touchdown region,
(c) a resistor network comprised of first and second resistors each having one end respectively connected to first and second ends of a rheostat that includes a movable contact and at least two adjoining resistive portions, the first resistive portion, connected to the first end of the rheostat, providing the highest resistance values which vary linearly as a function of movement of the movable contact and the second resistive portion providing progressively lower resistance values which vary non-linearly as a function of the movement of said movable contact,
(d) means for varying the position of the movable contact as a function of said first signal,
(e) means coupling said second signal to the other end of said first resistor to provide at the movable contact of said rheostat a desired elevation angle signal representing a desired flight path to be followed by the aircraft to said touchdown region.

3,309,708
TACTICAL LANDING APPROACH RADIO SYSTEM
Donald J. Toman, Pleasantville, and Leonard O. Vladimir, Chappaqua, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Filed Mar. 11, 1966, Ser. No. 533,647
7 Claims. (Cl. 343—108)

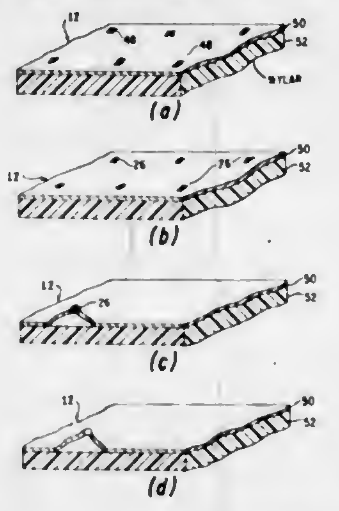
1. A tactical landing approach radio system comprising,
a ground-based transmitter including antenna means for radiating a plurality of directive beams of radio signal energy including,
a main beam,
a first auxiliary beam and
a second auxiliary beam,
means for rotating said main beam of signal energy in a conical scan about an axis at a selected rate of rotation,
means operated in synchronism with the rotation of said main beam for generating a reference signal having a frequency related to the rate of rotation of said main beam and a phase dependent on the positional displacement thereof,
a local oscillator,
cyclic timing means for providing a timed cycle including a first timed interval and a second timed interval,
means for frequency modulating the output of said local oscillator by the said reference signal during said first timed interval,
a microwave generator,
means for amplitude modulating the output of said microwave generator by the frequency modulated output of said local oscillator for generating a modulated main beam transmission signal during said first timed interval,





means for imposing said modulated main beam transmission signal on said antenna means for transmitting said main beam during said first timed interval,
means for dividing said second timed interval into two timed periods,
means for pulse amplitude modulating the output of said microwave generator by the output of said local oscillator at a first predetermined rate during the first timed period of said two timed periods for providing a first pulse modulated transmission signal,
means for imposing said first pulse modulated transmission signal on said antenna means for transmitting said first auxiliary beam during said first timed period,
means for pulse amplitude modulating the output of said microwave generator by the output of said local oscillator at a second predetermined rate during the second timed period of said two timed periods for providing a second pulse modulated transmission signal,
means for imposing said second pulse modulated transmission signal on said antenna means for transmitting said second auxiliary beam during said second timed period,
an airborne receiver including an amplitude modulation detector for deriving a signal from said main beam transmitted signal having a frequency related to the rate of rotation of said main beam of signal energy,
a frequency modulation detector for producing an output signal having a frequency equal to the frequency modulation component of said main beam of signal energy,
means for detecting the phase relation of the output of said amplitude modulation detector relative to the output of said frequency modulation detector,
position indicator means energized by the output of said phase detector means,
said receiver further including means for detecting said first pulsed modulated transmitted signal and for providing a first indication signal in response thereto, and
means for detecting said second pulse modulated transmitted signal and for providing a second indication signal in response thereto.

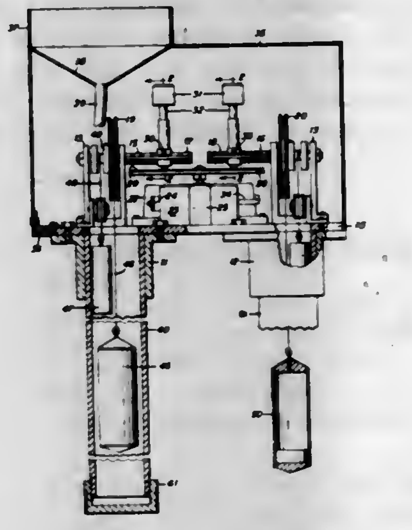
3,309,709
METHOD OF PERMANENTLY RECORDING ON A MAGNETIZABLE MEDIUM BY ABRADING
John W. Glinski, Pembroke, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 1, 1963, Ser. No. 262,070
9 Claims. (Cl. 346—1)



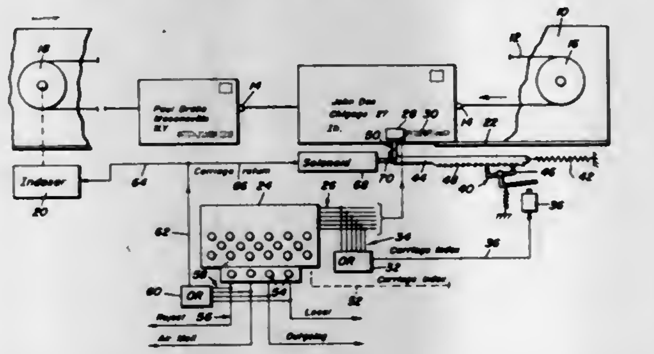
1. A method for permanently recording data on a magnetizable record medium comprising the steps of:
selectively magnetizing discrete areas of the record medium according to given input data;
depositing particles of magnetizable material on said discrete areas of said medium;
producing abrasive action on said areas by vibrating said particles whereby a permanent record of said data is produced by the deformation of the surface of said medium at said areas; and
thereafter removing said particles from the record medium.

3,309,710
FLOOD HYDROGRAPH AND RAIN-GAGE RECORDER
George F. Smoot, Fairfax, Va., and Samuel E. Rickly, Grove City, and Edgar G. Barron, Columbus, Ohio, assignors to the United States of America as represented by the Secretary of the Interior
Filed Oct. 1, 1965, Ser. No. 492,343
1 Claim. (Cl. 346—49)

A hydrographic instrument comprising integrally-mounted precipitation recording means and water stage recording means;
each of said recording means having a float mechanism for sensing liquid level, and cable means for transmitting motion to a base-mounted support for angular translation of motion;
helical thrust means for translating angular motion to horizontal linear motion proportional to float position;
chart drive means for rotating a circular chart in a horizontal plane at a uniform speed;
dual stylus marking means each having a guide bar and operated by the helical thrust means connected to each of the precipitation float and water range float, said stylus marking means being located about 180° apart on the chart, said stylus marking means having a weight-actuated device for supplying solid marking material to the chart surface;
syphon means for draining a precipitation-collecting pipe well at a predetermined level corresponding to a given quantity of precipitation;
counter-balance means for operating the cable means, having a reduced travel over corresponding floats; and
a hinged instrument cover having integrally-mounted thereon a precipitation-collecting means having a drain tube leading to the precipitation-collecting pipe well.



3,309,711
MAGNETIC MAIL CODING APPARATUS
John R. Sorrells, Rockville, and Jacob Rabinow, Bethesda, Md., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed May 3, 1963, Ser. No. 277,896
3 Claims. (Cl. 346—74)



1. Coding apparatus to magnetically code a postal article at a coding station, said apparatus comprising a conveyor for the article, a transducer carriage adapted to be rectilinearly indexed, a transducer on said carriage, said transducer including a group of head structures having parallel gaps arranged perpendicular to the direction of transducer carriage movement, said

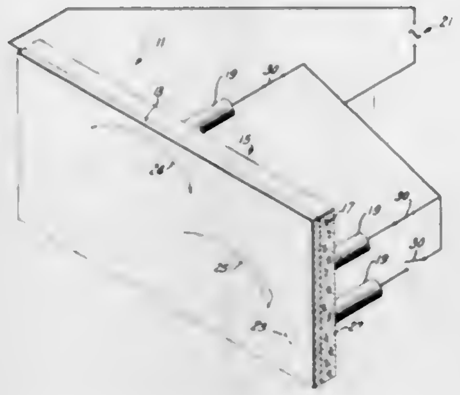
gaps being spaced approximately 0.03 inch in the direction of transducer carriage movement, each head structure being capable of recording a discrete bit of independently of the adjacent head structures, and there being a number of head structures in the group sufficient to record a code which corresponds to a character, a code signal generator for providing code signals corresponding to the bits which define the code of said character, means including conductors to conduct the individual code signals to the respective head structures of said transducer while said carriage is at rest and in a manner such as for the character code each head has one bit signal conductor connected therewith, and means effective after the code for said character is transduced by said transducer for indexing said transducer carriage along said station a distance at least equal to the distance between the first and last gap of the transducer thereby positioning said transducer relative to the article for the coding of another character.

3,309,712
ELECTROLUMINESCENT DYNAMIC DISPLAY DEVICE

David L. Cole, Jenison, Mich., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 5, 1963, Ser. No. 285,765
14 Claims. (Cl. 346—74)

2. An electroluminescent dynamic display device comprising:

- a first electrically conductive layer formed to provide a first electrode;
- a dielectric layer of electric field responsive phosphors disposed upon said first electrode;
- a second electrode of restricted terminal area in contact with said dielectric layer and formed for movement thereupon to discretely dispense a conductive substance having a controlled rate of electrical decay;



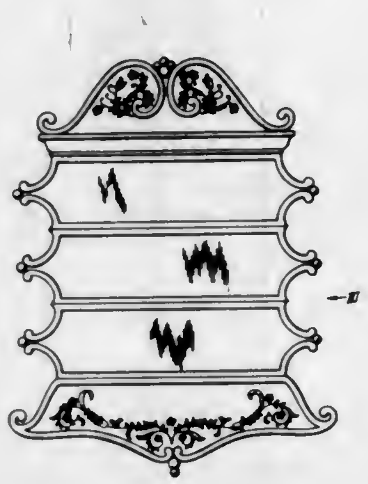
- means for imparting dynamic movement to said second electrode; and
- electrical potential supply means interconnecting said first and said second electrodes to provide the electrical field for actuating phosphor luminescence in accordance with the dynamic movements of said second electrode.

DESIGNS

MARCH 14, 1967

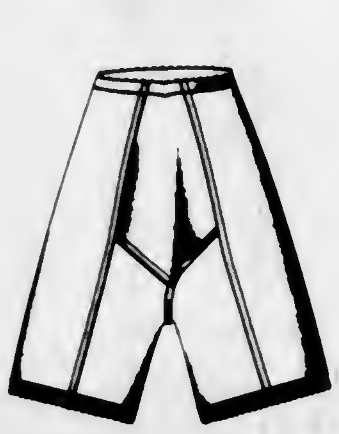
207,161
NAMEPLATE

Peter Rowland Hill, The Bowery, Main St., Wymondham, Melton Mowbray, England
Filed Oct. 6, 1965, Ser. No. 87,333
Claims priority, application Great Britain Apr. 10, 1965
Term of patent 14 years
(Cl. D1—7)



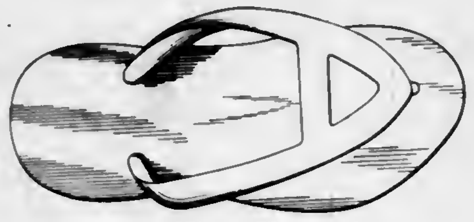
207,162
GIRDLE

Carl R. Glines, Bogota, N.J., assignor to Sarong, Inc., Dover, Del., a corporation of Delaware
Filed Jan. 21, 1966, Ser. No. 711
Term of patent 14 years
(Cl. D2—4)



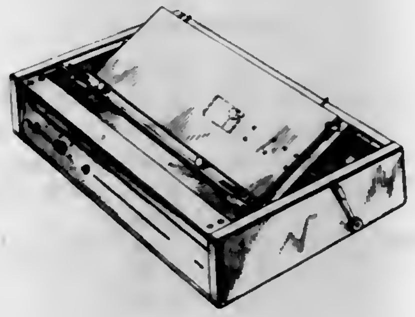
207,163
SANDAL

Sadao Fukuoka, 3—20 Minamifukushima-cho, Tokushima, Japan
Filed June 17, 1964, Ser. No. 80,450
Term of patent 14 years
(Cl. D2—270)



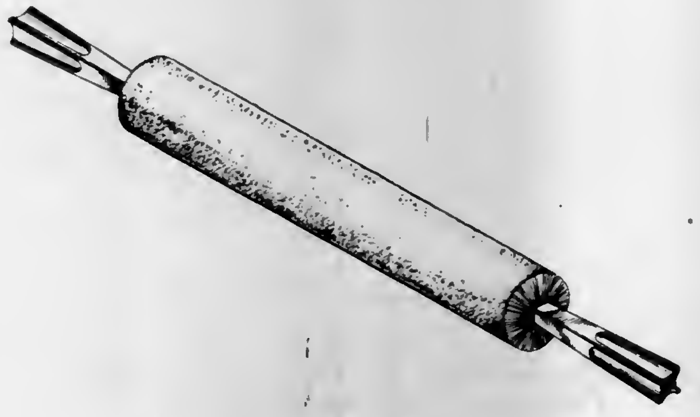
207,164
BOOK BINDING MACHINE

Fred C. Bolick, Jr., Atlanta, Ga., assignor to Lanier Electronics Laboratory, Atlanta, Ga., a corporation of Georgia
Filed Oct. 1, 1965, Ser. No. 87,277
Term of patent 14 years
(Cl. D6—1)



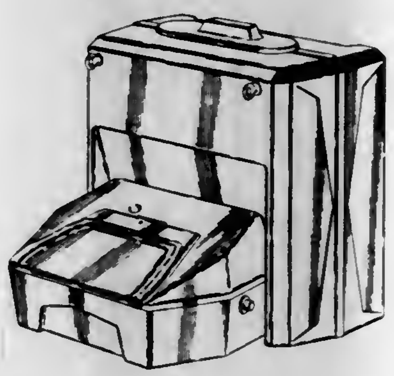
207,165
BATH BRUSH

Edna Mae Klenk, Coral Gables, Fla.
(8800 SW. 8th St., 905G, Miami, Fla. 32144)
Filed Jan. 25, 1966, Ser. No. 760
Term of patent 14 years
(Cl. D9—2)

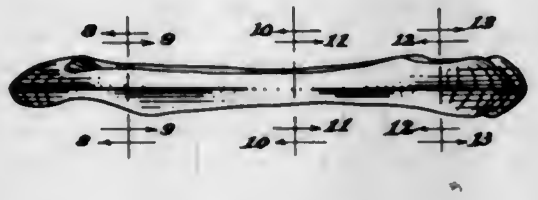


207,166
COMBINED WATERING DEVICE AND FEEDER

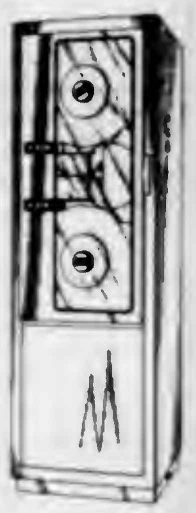
Melvin L. Noble, Rte. 2, Godley, Tex. 76044
Filed Feb. 7, 1966, Ser. No. 953
Term of patent 14 years
(Cl. D12—2)



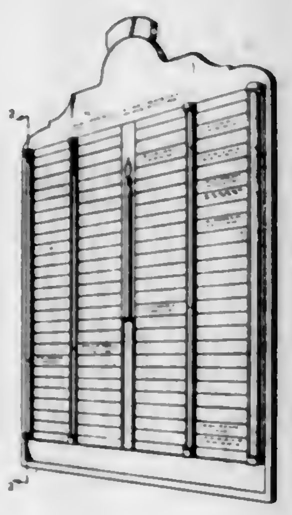
207,167
SCULPTURED ANIMAL TOY OR THE LIKE
Stanton E. Fisher, % Items, Incorporated, 3960 Olive St.,
St. Louis, Mo. 63108
Filed July 29, 1966, Ser. No. 3,261
Term of patent 14 years
(Cl. D12—2)



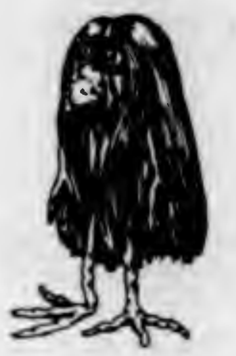
207,168
MAGNETIC TAPE TRANSPORT
Walter J. Cheney, San Mateo, and Charles F. Grossman, Sunnyvale, Calif., and Marvin A. Southcott, Baltimore, Md., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed May 13, 1965, Ser. No. 85,266
Term of patent 14 years
(Cl. D26—5)



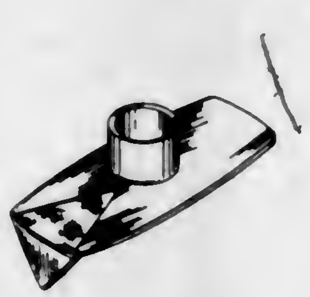
207,169
MEMORIAL WALL PLAQUE OR THE LIKE
Philip Karz, 1035 Westholme Ave.,
Los Angeles, Calif. 90024
Filed Sept. 22, 1965, Ser. No. 87,120
Term of patent 14 years
(Cl. D29—23)



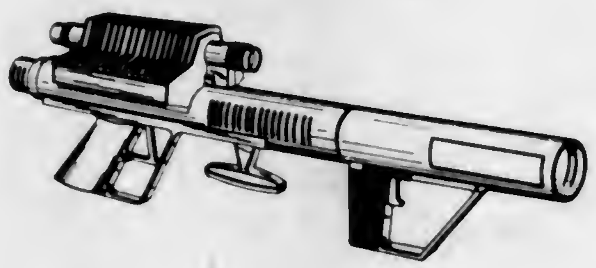
207,170
TOY FIGURE
Jorge Argemi Vidal, Calle Maignon 10,
Barcelona, Spain
Filed Feb. 16, 1966, Ser. No. 1,068
Term of patent 3½ years
(Cl. D34—4)



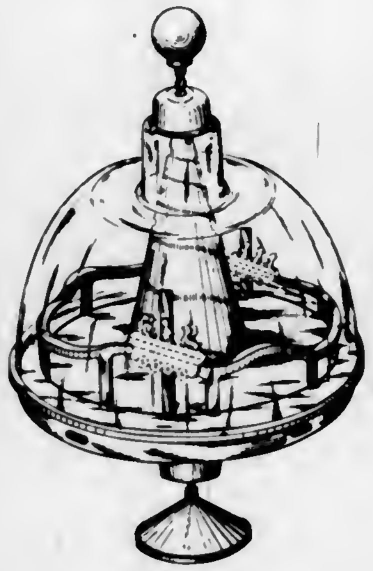
207,171
GOLF TEE
George H. Gardiner, 955 E. 40th St.,
Brooklyn, N.Y. 11210
Filed Apr. 13, 1966, Ser. No. 1,870
Term of patent 3½ years
(Cl. D34—5)



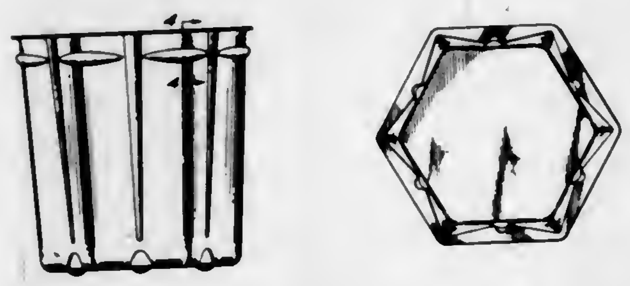
207,172
CONVERTIBLE GUN TOY
John W. Ryan, Bel-Air, and Floyd Evan Schlau, Redondo Beach, Calif., assignors to Mattel, Inc., a corporation of California
Filed Feb. 2, 1966, Ser. No. 890
Term of patent 14 years
(Cl. D34—15)



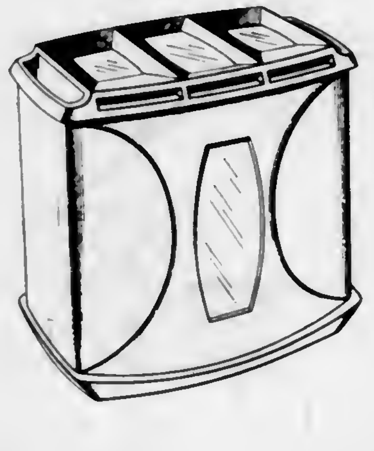
207,173
TOY SPINNING TOP
Peter Balleis, 55 Hermann-Lons-Strasse,
Zirndorf, near Nurnberg, Germany
Filed Aug. 3, 1965, Ser. No. 86,411
Claims priority, application Germany Feb. 13, 1965
Term of patent 14 years
(Cl. D34—15)



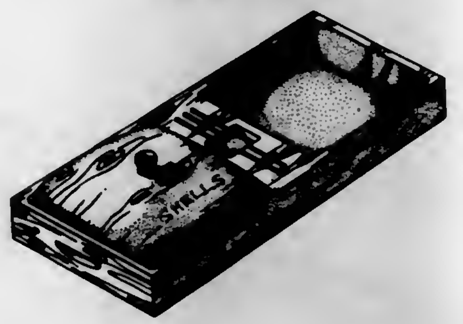
207,174
FLOWER POT
Francis W. Rowbottam, Palos Verdes Estates, Calif., assignor to Delkay Plastics Corporation, Inglewood, Calif., a corporation of California
Filed Feb. 16, 1966, Ser. No. 1,079
Term of patent 14 years
(Cl. D35—3)



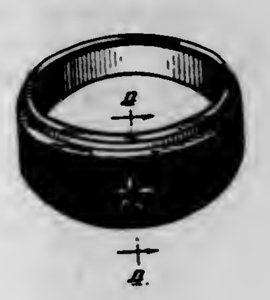
207,175
CONDIMENT DISPENSER
Paul E. Brefka, Framingham, Mass., assignor to LDA Inc., Natick, Mass., a corporation of Massachusetts
Filed Apr. 25, 1966, Ser. No. 2,004
Term of patent 14 years
(Cl. D44—6)



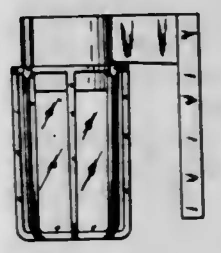
207,176
NUT TRAY
Eulalia M. Langford, Rte. 4, Vienna Road,
Rolla, Mo. 65404
Filed Feb. 18, 1966, Ser. No. 1,113
Term of patent 14 years
(Cl. D44—10)



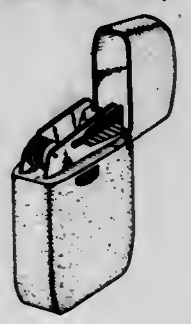
207,177
FINGER RING
Abraham G. Sager, 910 W. Jackson Blvd.,
Chicago, Ill. 60607
Filed May 18, 1966, Ser. No. 2,374
Term of patent 14 years
(Cl. D45—10)



207,178
COMBINED LUMINAIRE AND GUARD THEREFOR
Leonard Atkin, Springfield, and Richard Sangiamo, Roselle Park, N.J., assignors to Stonco Electric Products Company, a corporation of New Jersey
Filed July 19, 1966, Ser. No. 3,132
Term of patent 14 years
(Cl. D48—4)



207,179
CIGARETTE LIGHTER OR SIMILAR ARTICLE
Yoshio Kanamaru, Tokyo, Japan, assignor to Kanamaru Shoten, Ltd., Tokyo, Japan
Filed Oct. 20, 1965, Ser. No. 87,633
Term of patent 14 years
(Cl. D48—27)

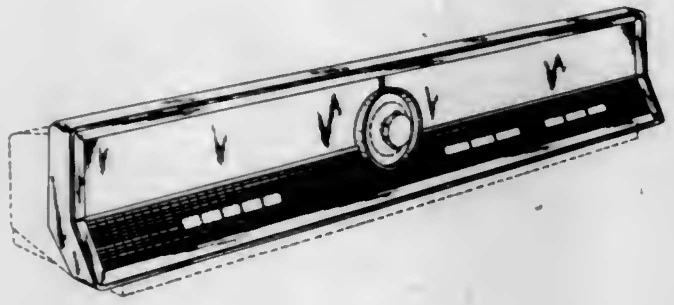


207,180

LAUNDRY APPLIANCE CONTROL PANEL

Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware

Filed Oct. 5, 1964, Ser. No. 82,023
Term of patent 14 years
(Cl. D49—1)

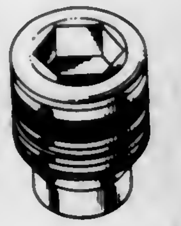


207,181

NUT

Charles G. Mackie, Glen Ellyn, and Phillip G. Holliday, Bellwood, Ill., assignors to Standard Screw Company, Bellwood, Ill., a corporation of New Jersey

Filed Mar. 11, 1966, Ser. No. 1,420
Term of patent 7 years
(Cl. D54—9)

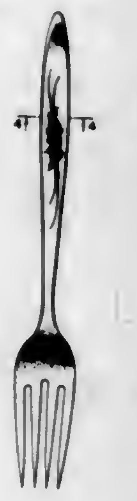


207,182

FORK OR SIMILAR ARTICLE OF FLATWARE

Siro R. Toffolon, Meriden, Conn., assignor to The International Silver Company, Meriden, Conn., a corporation of Connecticut

Filed Jan. 7, 1966, Ser. No. 528
Term of patent 14 years
(Cl. D54—12)

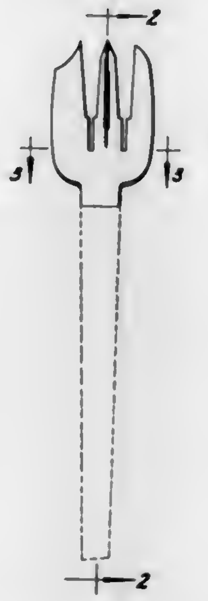


207,183

SERVING FORK OR THE LIKE

Clayton A. Laughlin, Minneapolis, Minn.
(8749 S. Greenwood Ave., Chicago, Ill. 60619)

Filed May 2, 1966, Ser. No. 2,111
Term of patent 14 years
(Cl. D54—12)

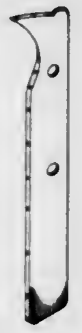


207,184

GASKET REMOVAL TOOL

Herbert F. Williams, 2011 Brookhaven Drive, Dallas, Tex. 75224

Filed July 22, 1965, Ser. No. 86,263
Term of patent 14 years
(Cl. D54—13)

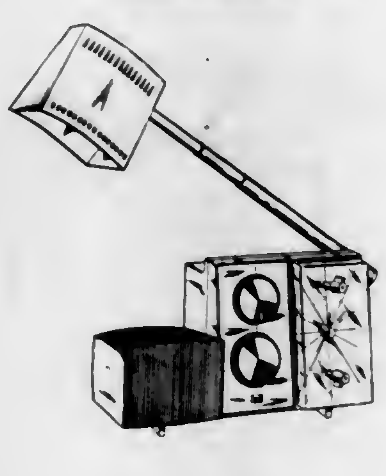


207,185

COMBINATION CLOCK-RADIO AND LAMP, OR SIMILAR ARTICLE

Victor Reichenstein, Great Neck, N.Y., assignor to Consolidated Merchandising Corp., New York, N.Y., a corporation of New York

Filed Feb. 9, 1966, Ser. No. 985
Term of patent 7 years
(Cl. D56—4)

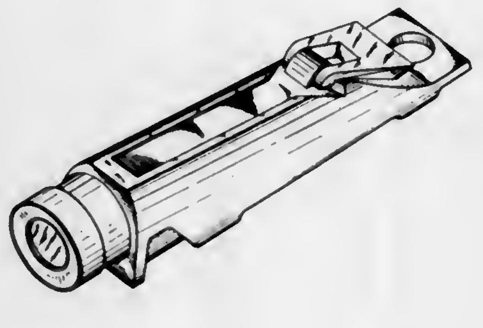


207,186

COMBINED REFRACTOMETER AND ROTATABLE COVER THEREFOR

Donald E. Everburg, Southbridge, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed Feb. 24, 1966, Ser. No. 1,163
Term of patent 14 years
(Cl. D57—1)

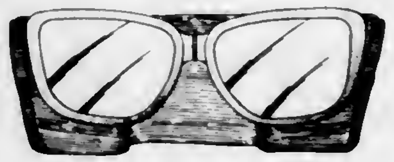


207,187

COMBINATION GOGGLES AND HEADBAND

Jerry R. Gould, Gunnison, Ga.
(2200 N. 9th Laramie, Wyo. 82070)

Filed Sept. 24, 1965, Ser. No. 87,158
Term of patent 14 years
(Cl. D57—1)

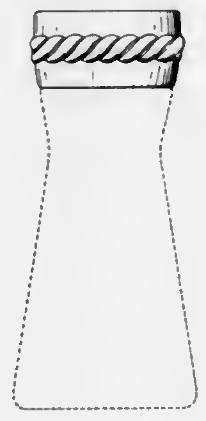


207,188

BOTTLE

Willard F. Meyers, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Apr. 1, 1965, Ser. No. 84,551
Term of patent 14 years
(Cl. D58—8)

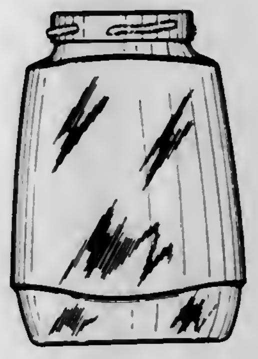


207,189

JAR

Ernest F. Thomson, 212 Burns St., Forest Hills, N.Y. 11375, and Carl G. Hebel, 290 Jefferson Ave., Haworth, N.J. 07641

Filed July 31, 1964, Ser. No. 81,089
Term of patent 14 years
(Cl. D58—25)

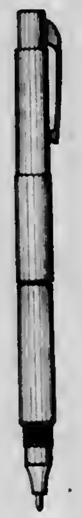


207,190

WRITING INSTRUMENT OR SIMILAR ARTICLE

Robert John Darst, Fort Madison, Iowa, assignor to W. A. Sheaffer Pen Company, Fort Madison, Iowa, a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 87,867
Term of patent 14 years
(Cl. D74—17)

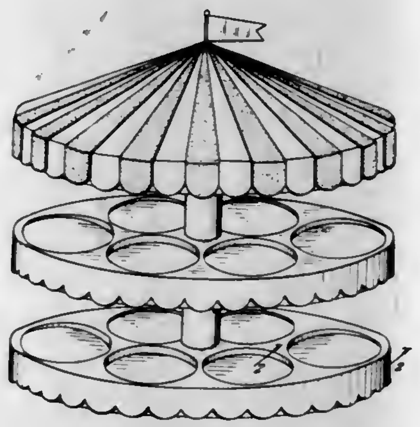


207,191

DISPLAY STAND FOR JARS OR THE LIKE

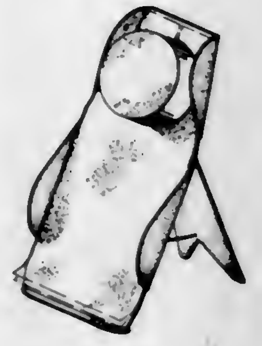
Richard C. Kearns, Jackson Heights, and Alvin Eisenberg, Little Neck, N.Y., assignors to Q-Tv Inc., New York, N.Y., a corporation of New York

Filed Jan. 22, 1966, Ser. No. 739
Term of patent 14 years
(Cl. D80—9)



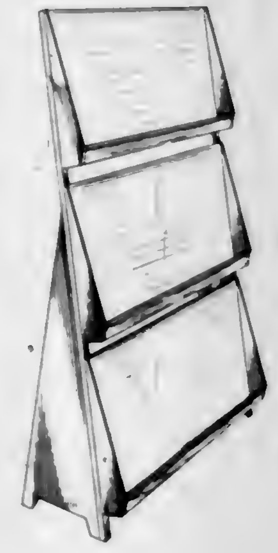
207,192
HOLDER FOR DISPLAYING BIBS

Russell H. McKenzie, Costa Mesa, Calif.
(2302 SW. Bertha Blvd., Portland, Oreg. 97201)
Filed May 28, 1965, Ser. No. 85,504
Term of patent 14 years
(Cl. D80—9)



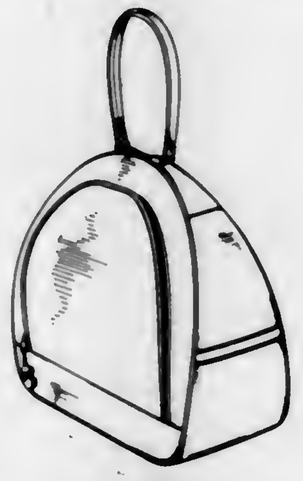
207,193
MAGAZINE RACK

William S. Leath, Birmingham, Ala., assignor to EBSCO Industries, Inc., a corporation of Delaware
Filed Nov. 24, 1965, Ser. No. 88,205
Term of patent 14 years
(Cl. D80—9)



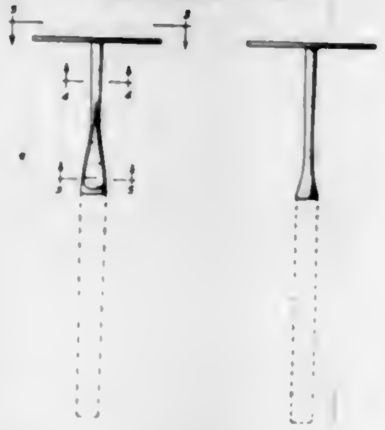
207,194
HANDBAG

John Artmann, Downsview, Ontario, Canada, assignor to Cooper-Weeks Limited, Toronto, Ontario, Canada, a corporation of Ontario
Filed Feb. 15, 1965, Ser. No. 83,812
Claims priority, application Canada Aug. 15, 1964
Term of patent 3½ years
(Cl. D87—5)



207,195
VEGETABLE MASHER

Richard S. Latham, Chicago, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 22, 1966, Ser. No. 1,594
Term of patent 14 years
(Cl. D89—1)



LIST OF DESIGN PATENTEES

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Balleis, Peter. Toy spinning top. 207,173, 3-14-67, Cl. D34—15.
Bolick, Fred C., Jr., to Lanier Electronics Laboratory. Book binding machine. 207,164, 3-14-67, Cl. D6—1.
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Cheney, Walter J., C. F. Grossman, and M. A. Southcott, to Ampex Corp. Magnetic tape transport. 207,168, 3-14-67, Cl. D26—5.
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  Kearns, Richard C., and Eisenberg. 207,191.
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Fisher, Stanton E. Sculptured animal toy or the like. 207,167, 3-14-67, Cl. D12—2.
Fukuoka, Sadao. Sandal. 207,163, 3-14-67, Cl. D2—270.
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Glines, Carl R., to Sarong, Inc. Girdle. 207,162, 3-14-67, Cl. D2—4.
Gould, Jerry R. Combination goggles and headband. 207,187, 3-14-67, Cl. D57—1.
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Klenk, Edna Mae. Bath brush. 207,165, 3-14-67, Cl. D9—2.
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Rowbottam, Francis W., to Delkay Plastics Corp. Flower pot. 207,174, 3-14-67, Cl. D35—3.
Ryan, John W., and F. E. Schlau, to Mattel, Inc. Convertible gun toy. 207,172, 3-14-67, Cl. D34—15.
Sager, Abraham G. Finger ring. 207,177, 3-14-67, Cl. D45—10.
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  Glines, Carl. 207,162.
Schlau, Floyd E.: *See*—
  Ryan, John W., and Schlau. 207,172.
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  Atkin, Leonard, and Sangiamo. 207,178.
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Vidal, Jorge A. Toy figure. 207,170, 3-14-67, Cl. D34—4.
Williams, Herbert F. Gasket removal tool. 207,184, 3-14-67. Cl. D54—13.

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PATENTS WERE ISSUED ON THE 14TH DAY OF MARCH, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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ACF Industries Inc.: *See*—
  Halcomb, Samuel P., and Lawrence. 3,308,769.
AMP Inc.: *See*—
  Patrick, Richard W., and McFadden. 3,308,672.
  Whiteman, Edward J. 3,309,648.
Abe, Hitoshi, and K. Imai, to Kurashiki Rayon Co., Ltd. Methyl methacrylate syrup composition containing poly-a-methyl styrene. 3,309,424, 2-14-67, Cl. 260—885.
Abex Corp.: *See*—
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Abrahams, David H., and L. Goldberg, to Dexter Chemical Corp. Amine-modified uron resins. 3,309,341, 3-14-67, Cl. 260—70.
Abrams, William L. Decorative panel. 3,308,875, 2-14-67, Cl. 160—369.
Abramson, Franz W., to Lockheed Aircraft Corp. Hydroski vehicle. 3,308,780, 3-14-67, Cl. 114—66.5.
Achucarro, Jose L. Freeze-drying apparatus and method. 3,308,551, 3-14-67, Cl. 34—5.
Ackerman, Charles B., and D. J. Sullivan, to Motorola, Inc. Alloy-diffused method for producing semiconductor devices. 3,309,244, 3-14-67, Cl. 148—178.
Adams, Charles R., to Shell Oil Co. Vinyl thiophene production. 3,309,381, 3-14-67, Cl. 260—329.
Adler Process Corp.: *See*—
  Adler, Solomon. 3,309,252.
Adler, Solomon, to Adler Process Corp. Method and apparatus for producing pile fabric. 3,309,252, 3-14-67, Cl. 156—72.
Aerochem Research Laboratories, Inc.: *See*—
  Mantell, Russell M. 3,309,299.
Aga Aktiebolag: *See*—
  Granqvist, Carl-Erik. 3,308,670.
Agfa Aktiengesellschaft: *See*—
  Von Albedyll, Joachim, and Hennig. 3,308,733.
Aiken, William R. Envelope for flat cathode tubes with lower sections of front and rear walls similarly displaced. 3,309,551, 3-14-67, Cl. 313—79.
Allman, David E.: *See*—
  Du Breuil Curry, Shirley, Young, Berkelhammer, and Allman. 3,309,371.
Air Products and Chemicals, Inc.: *See*—
  Hess, Richard A. 3,309,231.
  Klasson, George A., McQuillen, and Mills. 3,308,990.
  Singleton, Alan H. 3,308,646.
Air Reduction Co., Inc.: *See*—
  Poulsen, Stephen D. 3,309,564.
Aktiengesellschaft Brown, Boveri & Cie: *See*—
  Depenbrock, Manfred. 3,309,623.
Albee, Percy F., Jr., to Q-Panel Corp. Stand for projection screen. 3,309,049, 3-14-67, Cl. 248—171.
Alberto-Culver Co.: *See*—
  Oppasser, Edward F., and Thiele. 3,308,998.
Alderman, Lewis, to Simon-Carves Ltd. Coke oven ascension pipe offtake means. 3,309,286, 3-14-67, Cl. 202—258.
Alfille, Lucien, J.-C. Charrault, and F. La Fontaine, to European Atomic Energy Community (Euratom). Fuel pencils having a thin flexible can for nuclear reactors. 3,309,283, 3-14-67, Cl. 176—72.
Alford, Andrew. High frequency techniques for measuring reflected energy. 3,309,608, 3-14-67, Cl. 324—58.
Alfredeen, Sten A., to Diamond Power Specialty Corp. Feed means for magnetic conveyor. 3,308,925, 3-14-67, Cl. 198—41.
Allen-Bradley Co.: *See*—
  Pearse, James N. 3,308,527.
  Safar, John G. 3,309,595.
Allen-Harper, Inc.: *See*—
  Allen, Kenneth M., and Harper. 3,308,898.
Allen, Kenneth M., and C. H. Harper, to Allen-Harper, Inc. Vibrated flow control valve and weigher. 3,308,898, 3-14-67, Cl. 177—64.
Allen, Paul L., to United States of America, Navy. Thermite-resin binder solid fuel composition. 3,309,249, 3-14-67, Cl. 149—19.
Allen, Robert D., to R. L. Eby. Multiple tone generator for musical instrument. 3,309,624, 3-14-67, Cl. 331—117.
Alles, David S., and R. L. Craven, to E. I. du Pont de Nemours and Co. Process and apparatus for forming rolled slivers. 3,309,034, 3-14-67, Cl. 242—55.
Allied Chemical Corp.: *See*—
  Barton, Alfred O., Griffin, Lund, Oser, and Vitrone. 3,309,339.
  Carroll, Felix P., and Hoelzer. 3,309,328.
  Hartford, Winslow H., and Hoyt. 3,309,172.
  Taylor, John R. 3,308,980.
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  Bednarz, Anthony P., and Roser. 3,308,502.
Allis-Chalmers Mfg. Co.: *See*—
  Dickson, James J. 3,309,278.
Alltop, James C., and F. C. Crowe, to International Specialty Products, Inc. Business card dispenser having a reciprocating card ejector means. 3,308,989, 3-14-67, Cl. 221—232.
Almerini, Achille L., and H. R. Knapp, to United States of America, Army. Ammonia cell. 3,309,230, 3-14-67, Cl. 136—90.
Alster, David I., and A. M. Wolf, to Electrospace Corp. Electromagnetic display device. 3,309,696, 3-14-67, Cl. 340—373.
Alston, Russell M., and C. R. Sharp, to Rain Bird Sprinkler Mfg. Corp. Automatic control for sprinkler systems. 3,309,543, 3-14-67, Cl. 307—141.4.
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  English, Jackson P. 3,309,432.
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  Schiller, Arthur M., Tanner, and Lewis. 3,309,261.
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  Puldokas, Stanley V. 3,308,682.
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  Boughton, Olin W. 3,309,161.
American Radiator & Standard Sanitary Corp.: *See*—
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  Raichelson, Melvin A., and Sullivan. 3,308,865.
Ammon, Milton H., W. J. Kennedy, L. F. Lyons, and R. C. Mead, to The Bendix Corp Pulsed radar altimeter. 3,309,703, 3-14-67, Cl. 343—13.
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Amsbury, Gene H. Cut-off device for automobile engine. 3,308,795, 3-14-67, Cl. 123—41.15.
Anderson, Arthur R., T. M. Stickney, and D. W. Gordon, to Cook Electric Co. High temperature measuring devices. 3,308,666, 3-14-67, Cl. 73—362.
Anderson, James A., to Breneman, Inc. End construction for shade roller. 3,308,874, 3-14-67, Cl. 160—326.
Anderson, Maurice J., to The Black Clawson Co. Paper machinery. 3,309,036, 3-14-67, Cl. 242—58.3.
Andrews, Richard L., S. D. Cramer, C. B. Kenahan, and D. Schlain, to United States of America, Interior. Method for obtaining thick adherent coatings of platinum metals on refractory metals. 3,309,292, 3-14-67, Cl. 204—39.
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  Nagy, John, Jr., and Andrushkiw. 3,309,498.
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  Magg, Alfred, and Angerer. 3,308,686.
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  Bender, Joseph L., and Williams. 3,309,303.
Anselin, Francois, and R. Pascard, to Commissariat A l'Energie Atomique. Uranium monocarbide-plutonium mononitride nuclear fuel. 3,309,322, 3-14-67, Cl. 252—301.1.
Anthony, Andrew J., to Combustion Engineering, Inc. Coupling joint for nuclear reactor control rod arrangement. 3,309,118, 3-14-67, Cl. 287—103.
Antos, Joseph. Shutter mechanism for slide projectors. 3,308,718, 3-14-67, Cl. 88—26.
Appel, Henry W., W. Borberg, and A. F. Hayek, to Smith Kline & French Laboratories. Ultrasonic transducer scanner. 3,308,652, 3-14-67, Cl. 73—71.5.
Applegate, Earl. Power driven baseball pitching machine with batter signalling means. 3,308,802, 3-14-67, Cl. 124—1.
Appliance Mfg. Co., Inc.: *See*—
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Arentzen, Einar M., to Lee-Norse Co. Mining machine having independent means to rotate and oscillate cutters. 3,309,145, 3-14-67, Cl. 299—71.
Ark-Les Switch Corp.: *See*—
  Fisher, Harold F. 3,309,487.
Arlett, Robert H., S. DiVita, and E. J. Smoke, to United States of America, Army. Methods for controlling the thermal expansion properties of ceramics. 3,309,208, 3-14-67, Cl. 106—39.

Armstrong, Richard L.: *See*—
  Russell, Fred J., Armstrong, and Falk. 3,308,866.
Arnold, Howard N., to Baron-Blakeslee, Inc. Degreaser with optionally rotary and non-rotary containers. 3,308,920, 3-14-67, Cl. 198—19.
Arp, Leon J., to Iowa State University Research Foundation, Inc. Anesthetic device. 3,308,819, 3-14-67, Cl. 128—215.
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  Beck, Philip. 3,308,933.
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- Bennett, Lowell W., and M. E. Rose, to United States of America, Navy. Spring loaded circuit breaker. 3,309,483, 3-14-67, Cl. 200—154.
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- Bodkin, Lawrence E. Motor. 3,308,907, 3-14-67, Cl. 185—39.
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- Bolkow Gesellschaft mit beschrankter Haftung: *See—*
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- Bollinger, Waldon P., and J. R. Ford, to United States of America, Army. Simultaneous lobing radar. 3,309,701, 3-14-67, Cl. 343—11.
- Bonanno, Joseph L., to De Luxe Reading Corp. Signaling device for helmets. 3,309,691, 3-14-67, Cl. 340—321.
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- Borack, Joseph, to Tapeprinter, Inc. Color changeable embossable laminate. 3,309,257, 3-14-67, Cl. 161—6.
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- Borman, August H., Jr., to General Motors Corp. Transmission. 3,308,687, 3-14-67, Cl. 74—760.
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  - Brilhart, Arnold. 3,308,706.
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- Bruno, Victor M. Foam-producing and foam-dispensing means. 3,308,993, 3-14-67, Cl. 222—146.
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- Bryan, Leonard T. F. Device for detecting flaws in fabrics. 3,308,658, 3-14-67, Cl. 73—159.
- Bryant, Austin U. Pill organizer and method. 3,308,962, 3-14-67, Cl. 211—74.
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- Bueler, Richard C., to Wagner Electric Corp. Combined service and emergency brake system. 3,309,149, 3-14-67, Cl. 303—13.
- Bullard, Robert L., R. A. Hasbrouck, P. S. Schlemmer, and R. E. Thun, to International Business Machines Corp. Fabrication of cermet film resistors to close tolerances. 3,308,528, 3-14-67, Cl. 29—155.7.
- Bullock, Milon W., and I. B. Wood, to American Cyanamid Co. Organic phosphorus anthelmintics and method of using the same. 3,309,270, 3-14-67, Cl. 167—53.
- Bulmer, Donald L. Occupant-propelled wheelchair. 3,309,110, 3-14-67, Cl. 280—242.
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- Burczyk, Casimir A., and D. S. Chisholm, to The Dow Chemical Co. Processing of polymers and apparatus therefor. 3,309,441, 3-14-67, Cl. 264—85.
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- Burkhardt, Rolf, to Compur-Werke Gesellschaft mit beschrankter Haftung & Co. Knife adjusting means for microtome. 3,308,704, 3-14-67, Cl. 83—699.
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- Burt, Donald A., to Westinghouse Electric Corp. Interruption control apparatus for a computer. 3,309,675, 3-14-67, Cl. 340—172.5.
- Burwell, Gar Wood N.: *See—*
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- Burwell, Hilda N.: *See—*
  - Burwell, Lester T. 3,309,023.
- Burwell, Lester T. (deceased, late of Maplewood), by H. N. Burwell, J. B. Maldonado, executrices, and G. W. N. Burwell, and Maplewood Bank and Trust Co., executors. Railway rail-holding device. 3,309,023, 3-14-67, Cl. 238—349.
- Buscemi, Rosario: *See—*
  - Tuomy, Justin M., and Buscemi. 3,309,207.
- Busch, Robert W., Jr.: *See—*
  - Ivanko, Michael F., and Busch. 3,308,776.
- Buser, Fritz, A.G.: *See—*
  - Voegelin, Heinrich. 3,308,750.
- Bussey, William H., to The E.M.U. Co., Inc. Magnetic core frequency multiplier and method of constructing the same. 3,309,604, 3-14-67, Cl. 321—68.
- Butler, Edward J., Jr., to Electronics Research Corp. Switch construction for use with safety belts. 3,309,475, 3-14-67, Cl. 200—61.58.
- Butler Mfg. Co.: *See—*
  - Cooper, Merle D., and Olson. 3,308,596.
- Butler, Roy T., to Ford Motor Co. Sliding tail gate. 3,309,133, 3-14-67, Cl. 296—51.
- Butterbaugh, William H. III, to Phillips Petroleum Co. Fractional distillation of a component from a feedstock by the addition of higher boiler vapors to the reboiler. 3,309,288, 3-14-67, Cl. 203—1.
- Buyatti, Placido L., to Sociedad Civil de Estudio e Investigaciones del Desarrollo Y Progreso del Automotor Y Mandatos B.M.B. Internal combustion engine. 3,308,797, 3-14-67, Cl. 123—90.
- Byczkowski, Ernest, and H. J. Tischler, to Young Spring & Wire Corp. Reclining seat construction. 3,309,138, 3-14-67, Cl. 297—355.
- CSF-Compagnie Generale de Telegraphie: *See—*
  - Grancoin, Bernard. 3,309,642.
- CSF-Compagnie Générale de Télégraphie Sans Fil: *See—*
  - Vasseur, Jean-Pierre. 3,309,509.
- C-Thru Products, Inc.: *See—*
  - Rosenberg, Norman, and Kamins. 3,309,007.
- Cacioppo, Marie L., to L. Marino. Cushion construction. 3,308,490, 3-14-67, Cl. 5—345.
- Cahn, Arno, R. R. Winnegrad, and A. H. Gilbert, to Lever Bros. Co. Perfume composition containing 2-(2-methyl-1-propenyl)-2,4,6-trimethyldihydro-4,5-pyran. 3,309,276, 3-14-67, Cl. 167—94.
- Cahn, Robert P., and F. J. Herrmann, to Esso Research and Engineering Co. Distillation of heat sensitive compounds. 3,309,295, 3-14-67, Cl. 202—153.
- Cairns, John E., H. Cassmann, and A. H. Atherton, to Electric & Musical Industries Ltd. Non-magnetic metal mounting frame for pick-up tube targets for preventing microphony. 3,309,552, 3-14-67, Cl. 313—89.
- Calderon, Arthur: *See—*
  - Rausch, William V., and Calderon. 3,309,638.
- Caldwell, John R., to Eastman Kodak Co. Polyesters or polycarbonates coated with cured unsaturated polyester resins containing nitrogen. 3,309,222, 3-14-67, Cl. 117—138.8.
- Calfee, John D.: *See—*
  - Holladay, Harry P., and Calfee. 3,309,225.
- Calhoun, George M., and H. Diamond, to Shell Oil Co. Oil-soluble bis(methylphosphono)disulfides. 3,309,428, 3-14-67, Cl. 260—932.
- Callahan, Francis J., Jr., to Kenmore Research Co. High-temperature lubricating composition. 3,309,318, 3-14-67, Cl. 252—26.
- Canada, Her Majesty the Queen in right of, as represented by Canadian Patents and Development Ltd.: *See—*
  - Morton, Geoffrey W. 3,309,114.
- Canadian Westinghouse Co., Ltd.: *See—*
  - Yulle, Arthur M. 3,308,846.
- Canny, Floyd H., and A. C. Zeamer, to SCM Corp. Changeable type. 3,308,916, 3-14-67, Cl. 197—36.
- Caplan, Benjamin. Ozone generators. 3,309,304, 3-14-67, Cl. 204—313.
- Caplinger, Eugene, and S. L. Ellenberg, to Electro-Optical Systems, Inc. Ion propulsion system with ion engine utilizing power supply hot surface. 3,308,622, 3-14-67, Cl. 60—202.
- Caporael, Frank T., to Photolume Corp. Apparatus for dark field background photography of medical and biological specimens. 3,308,716, 3-14-67, Cl. 88—24.
- Carbond Corp.: *See—*
  - Sermon, George T., and Lescelius. 3,309,183.
- Carlin, Harry: *See—*
  - Raak, Bently P., Grlica, and Carlin. 3,308,732.
- Carlisle Chemical Works, Inc.: *See—*
  - Thompson, Paul F. 3,309,269.
  - Turel, Stanley P. 3,309,336.
- Carlson, George E. Drying, distilling and calcining machine. 3,309,074, 3-14-67, Cl. 266—16.

- Carlson, John H., and A. J. Kotek, to United Shoe Machinery Corp. Winches having overload control means. 3,309,066 3–14–67, Cl. 254—173.
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  - Belentepe, Yilmaz C., Carmi, Kiehl, and Rodgers. 3,309,-190.
- Carpenter, Sammy, W. E. Taylor, W. T. McNair, Jr., and F. T. Talbert, to Celanese Corp. of America. Process of purifying methyl ethyl ketone. 3,309,407, 3–14–67, Cl. 260—593.
- Carr, Joseph J. Radiant heater. 3,309,499, 3–14–67, Cl. 219—343.
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  - Gerteis, Karl M. 3,308,877.
- Carrock, Frederick E.: *See*—
  - Doak, Kenneth W., and Carrock. 3,309,422.
- Carroll, Felix P., and R. J. Hoelzer, to Allied Chemical Corp. High strength adhesive for building materials. 3,309,328, 3–14–67, Cl. 260—23.
- Carson, Charles W., to General Electric Co. Core index coil winding apparatus. 3,309,033, 3–14–67, Cl. 242—9.
- Carter, Andrew G. Fail-safe automatic belt anchor system. 3,308,902, 3–14–67, Cl. 180—82.
- Cary, Howard B., to Hobart Bros. Co. Arc welding with A.C. power and cored electrode. 3,309,490, 3–14–67, Cl. 219—74.
- Cassman, Harry: *See*—
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- Caughey, Robert A.: *See*—
  - Long, Roger A., Caughey, and Sievert. 3,308,532.
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- Celanese Coating Co.: *See*—
  - Shimp, David A., and Kuhn. 3,309,384.
- Celanese Corp. of America: *See*—
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  - Carpenter, Sammy, Taylor, McNair, and Talbert. 3,309,-407.
  - Gross, John. 3,308,827.
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- Chadwick, Abraham B., and J. N. Tutterrow, to American Radiator & Standard Sanitary Corp. Oil burner. 3,309,-027, 3–14–67, Cl. 239—406.
- Chambers, John E. Ventilating air diffuser apparatus. 3,308,-741, 3–14–67, Cl. 98—40.
- Chan, Edward T., and W. R. Postlewaite, to Chevron Research Co. Method and apparatus for offshore well completion. 3,308,881, 3–14–67, Cl. 166—.6.
- Chaney, John W. Prefabricated roof structure. 3,308,583, 3–14–67, Cl. 52—92.
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- Chemetron Corp.: *See*—
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  - Moulton, Joseph D., Grieger, and Treitler. 3,308,648.
- Chemical Construction Corp.: *See*—
  - Christensen, Axel. 3,308,985.
- Chesley Industries, Inc.: *See*—
  - Chesley, Robert G. 3,308,961.
- Chesley, Robert G., to Chesley Industries, Inc. Package display-dispenser. 3,308,961, 3–14–67, Cl. 211—49.
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  - Chan, Edward T., and Postlewaite. 3,308,881.
  - Magee, Philip S. 3,309,266.
  - Scott, John W. 3,309,305.
  - Yungul, Sulhi H. 3,309,607.
- Chiang, Robert N. S.: *See*—
  - Kirkconnell, Thomas W., and Chiang. 3,308,559.
- Chieger, George, to Fruehauf Corp. Air-single leaf spring wheel suspension for trailer. 3,309,107, 3–14–67, Cl. 280—124.
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  - Burczyk, Casimir A., and Chisholm. 3,309,441.
- Chomel, Marc L., and M. A. Tiano, to Rhone-Poulenc S.A. Closure devices for tanks or like containers for liquid. 3,308,987, 3–14–67, Cl. 220—57.
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  - Nash, Culver B. 3,309,128.
  - Newbury, Gilbert H. 3,309,103.
- Church-Budget Envelopment Co., The: *See*—
  - Miller, William E. 3,309,076.
- Ciancitto, Antonino. Rocket engine with consumable casing. 3,308,624, 3–14–67, Cl. 60—224.
- Ciba Ltd.: *See*—
  - Goerg, Alfred. 3,309,177.
  - Jenny, Walter. 3,309,400.
- Cincinnati Milling Machine Co., The: *See*—
  - Bohart, Paul R. 3,308,849.
- Cislo, Stanley J., and C. A. Tea, to Ford Motor Co. Drive shaft travel limiting device. 3,308,901, 3–14–67, Cl. 180—70.
- Clark, Charles F., E. L. Messenger, and H. E. Arter, to The Cobey Corp. Steering apparatus for vehicles. 3,309,105, 3–14–67, Cl. 280—99.
- Clark Equipment Co.: *See*—
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  - Zubko, Ronald L. 3,309,644.
- Clark, Hubert K.: *See*—
  - Booth, Franklin W., and Clark. 3,309,012.
- Clark, Philip B., and H. A. Van Dusen, Jr., to McGraw-Edison Co. Light output of fluorescent lamps automatically held constant by means of peltier type coolers. 3,309,565, 3–14–67, Cl 315—117.
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  - Peplin, Stephen C., and Webb. 3,309,085.
- Clifton Yarn Mills, Inc.: *See*—
  - Susskind, John W. and W. B. 3,308,615.
- Coats, John H.: *See*—
  - Bergy, Malcolm E., Coats, and Reusser. 3,309,273.
- Cobey Corp., The: *See*—
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- Cobley, Patrick M. T., to Humber Ltd. Engine cooling and interior heating systems in motor vehicles. 3,309,020, 3–14–67, Cl. 237—8.
- Cocco, Henry A. Tool post. 3,308,697, 3–14–67, Cl. 82—36.
- Cochran, Thomas J., N. J. Donato, D. K. Elrick, and W. W. Ficker, to International Business Machines Corp. Automatic tray handler. 3,308,977, 3–14–67, Cl. 214—301.
- Cogez, Paul, and L. Guiducci, to European Atomic Energy Community (Euratom). Tight passage at the end of a channel of a nuclear reactor cooled by an organic liquid. 3,309,281, 3–14–67, Cl. 176—64.
- Cohen, Elliott: *See*—
  - Gadekar, Shreekrishana M., and Cohen. 3,309,368.
- Cohen, Milton J. Blood withdrawal device and dispenser. 3,308,809, 3–14–67, Cl. 128—2.
- Colby, Don A., and W. C. Painter, to Radio Corp. of America. Protective cooling system. 3,309,574, 3–14–67, Cl. 317—40.
- Cole, David L., to Sylvania Electric Products Inc. Electroluminescent dynamic display device. 3,309,712, 3–14–67, Cl. 346—74.
- Cole, Stanton. Automobile bumper jack. 3,309,063, 3–14–67, Cl. 254—99.
- Colechia, Raymond L., to General Dynamics Corp. Fluid contamination analyser. 3,308,649, 3–14–67, Cl. 73—61.
- Coleman Co., Inc., The: *See*—
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  - McGhie, Russell P. 3,308,857.
- Colombani, Don P. L. J.: *See*—
  - Ferrie, Franck G. M., Marchand, and Colombani. 3,308,-623.
- Columbus Bolt and Forging Co.: *See*—
  - Hampton, Lynn F. 3,308,645.
- Combustion Efficiency Corp.: *See*—
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- Combustion Engineering, Inc.: *See*—
  - Anthony, Andrew J. 3,309,118.
  - Egglestone, Robert W., and Noell. 3,309,593.
  - Lawton, Carl W. 3,308,792.
  - Livingston, William L. 3,308,869.
  - Owens, Sidney W. 3,308,663.
  - Rosso, John B., and Ferrin. 3,309,504.
  - Short, Edward H., III. 3,308,663.
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- Commissariat a l'Energie Atomique: *See*—
  - Anselin, Francois, and Pascard. 3,309,322.
  - Blum, Pierre, Bochirol, and Moreau. 3,309,434.
- Communications Construction & Excavating Co., Inc.: *See*—
  - Nichols, Robert K. 3,308,628.
- Compagnie des Machines Bull (Societe Anonyme): *See*—
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  - Spiessl, Ewald. 3,308,734.
  - Spiessl, Ewald. 3,308,735.
- Conair, Inc.: *See*—
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- Condodina, Arthur G.: *See*—
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- Conley, Austin B., and W. H. Morgan, Jr., to Sylvania Electric Products, Inc. Photographic lamp adapter. 3,309,512, 3–14–67, Cl. 240—1.3.
- Connell, Clayton C. Above ground terminal tap enclosure for subterranean cables. 3,309,456, 3–14–67, Cl. 174—38.
- Container Corp. of America: *See*—
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- Contigea Societe Anonyme: *See*—
  - Vilbajo, Jean. 3,308,761.
- Continental Can Co., Inc.: *See*—
  - Hsia, Pong R. 3,308,509.
- Continental Oil Co.: *See*—
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  - Poe, Ronald L., and Kennedy. 3,309,416.
- Control Data Corp.: *See*—
  - Sorrells, John R., and Rabinow. 3,309,711.
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  - Karlovsky, Jerry, Jr., Conway, and Cookson. 3,309,143.
- Cook Electric Co.: *See*—
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- Cooper, Merle D., and H. C. Olson, to Butler Mfg. Co. Corrugated panel. 3,308,596, 3–14–67, Cl. 52—630.
- Coover, Harry W., Jr., and M. A. McCall, to Eastman Kodak Co. Polymerization process using catalyst containing substituted ethers. 3,309,347, 3–14–67, Cl. 260—93.7.
- Copeland, George G., and J. E. Hanway, Jr., to Container Corp. of America. Fluidized bed oxidation of waste liquors resulting from the digestion of cellulosic materials for paper making. 3,309,262, 3–14–67, Cl. 162—30.
- Core Laboratories, Inc.: *See*—
  - Wisenbaker, John D., and Stuart. 3,308,893.
- Corning Glass Works: *See*—
  - Belentepe, Yilmaz C., Carmi, Kiehl, and Rodgers. 3,309,-190.

- Corrigan, Donald A., to The International Nickel Co., Inc. Gas-shielded arc welding of 18% nickel steel. 3,309,243, 3–14–67, Cl. 148—127.
- Costain, Richard, Ltd.: *See*—
  - Jansz, Joost W. 3,309,062.
- Costerousse, Germain: *See*—
  - Bucourt, Robert, Pierdet, and Costerousse. 3,309,388.
- Cote, Raymond A., to International Paper Co. Folding carton. 3,308,935, 3–14–67, Cl. 206—45.33.
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- Coward, Todd L., and N. R. Smith, to The Procter & Gamble Co. Detergent-whitener compositions. 3,309,319, 3–14–67, Cl. 252—137.
- Crabtree, R. W., & Sons Ltd.: *See*—
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- Cramer, Stephen D.: *See*—
  - Andrews, Richard L., Cramer, Kenahan, and Schlain. 3,309,292.
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  - Alles, David S., and Craven. 3,309,034.
- Crawford, Arthur R., to Abex Corp. Vibration pickup with calibrating means. 3,308,647, 3–14–67, Cl. 73—1.
- Crawford, Richard B. Article positioning device. 3,308,923, 3–14–67, Cl. 198—33.
- Crawford, Thomas J., to Universal Metal Hose Co. Apparatus for forming spiral tubing from a ribbon on thin material. 3,309,003, 3–14–67, Cl. 228—15.
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- Crossly Window Corp.: *See*—
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  - Alltop, James C., and Crowe. 3,308,989.
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- Crowley, Richard P., and W. E. Lovett, to Esso Research and Engineering Co. Polyether diamine as stabilizer for petroleum distillate fuels. 3,309,182, 3–14–67, Cl. 44—72.
- Crowley-Milling, Michael C., to Associated Electrical Industries Ltd. Electron gun utilizing a strip transmission line to extract electrons from a cathode. 3,309,557, 3–14–67, Cl. 315—5.
- Crown Cork & Seal Co., Inc.: *See*—
  - Nekola, William J. R. 3,308,604.
- Crowson, Albert L., to Commercial Welding Co., Inc. Livestock tipping table. 3,308,790, 3–14–67, Cl. 119—103.
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  - Strance, John S., and Cruger. 3,309,043.
- Cruse, Joseph R. Surgical suction device. 3,308,825, 3–14–67, Cl. 128—276.
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- Cugini, Christy D. Dental X-ray film packet with foldable tabs to provide gripping means. 3,309,520, 3–14–67, Cl. 250—69.
- Culk, Raimund. Refrigerating compressors. 3,309,009, 3–14–67, Cl. 230—58.
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- Cullity, Richard E., to W. J. Voit Rubber Corp. Football kicking tee. 3,309,087, 3–14–67, Cl. 273—55.
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- Cummings, Howard B., to Shenago China, Inc. Recuperator tubes. 3,309,072, 3–14–67, Cl. 263—20.
- Cunningham, Donald F., to U.S. Partition & Packaging Corp. Partition strip holddown device. 3,308,927, 3–14–67, Cl. 198—160.
- Cunningham, James M., to International Business Machines Corp. Ventilated and soundproofed enclosure for printer. 3,308,919, 3–14–67, Cl. 197—186.
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  - Tatz, Abraham, and Kelly. 3,309,707.
- Cutler, Stanley, C. L. Tichenor, and L. J. Malmsten, to Warwick Electronics Inc. Electrical musical instrument automatically producing selected rhythms. 3,309,454, 3–14–67, Cl. 84—1.18.
- Dahl, Robert M. Amphibious vehicle. 3,308,782, 3–14–67, Cl. 115—1.
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  - Fricker, Ludwig. 3,308,762.
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  - D'Alelio, Gaetano F. 3,309,423.
- Dale, James W., and G. J. O'Neill, to Monsanto Research Corp. Fluorine-containing polymer. 3,309,344, 3–14–67, Cl. 260—79.
- D'Alelio, Gaetano F., to Dal Mon Research Co. Block copolymers of polymeric dianions. 3,309,423, 3–14–67, Cl. 260—885.
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  - Knapp-Ziller, Michel E. G., and Dameme. 3,309,583.
- Dana Corp.: *See*—
  - Wojcikowski, Richard J. 3,308,685.
- Danek, Joseph C. Snow removing apparatus. 3,308,563, 3–14–67, Cl. 37—12.
- Daniels, Paul J. Dispensing cartons for stacked food items. 3,309,206, 3–14–67, Cl. 99—192.
- Danzig, Morris J., to Lord Corp. N-nitroso derivatives of aromatic amines and a method for their preparation. 3,309,-373, 3–14–67, Cl. 260—296.
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  - Powers, Robert A., Louzos, and Darland. 3,309,584.
- Darlington, Henry S., Jr., to A. H. Wirz, Inc. Cap carried axial plug for a fluid dispenser. 3,308,999, 3–14–67, Cl. 222—546.
- Date, Kazuo H., to McGraw-Edison Co. Repeating circuit interrupter. 3,309,573, 3–14–67, Cl. 317—22.
- Davidson, Clarence O. Nut gathering apparatus. 3,308,613, 3–14–67, Cl. 56—328.
- Davies, Charles. Air diffuser. 3,308,745, 3–14–67, Cl. 98—40.
- Davila, Eugene. Method of packaging purified graphite and the package formed thereby. 3,308,943, 3–14–67, Cl. 206—84.
- Davis, John C. H., to British Telecommunications Research Ltd. Electrical signalling systems. 3,309,693, 3–14–67, Cl. 340—347.
- Davis, John S.: *See*—
  - Boles, David R., Davis, and Wells. 3,309,681.
- Davis-Ratcliffe, Peter D., to Gullick Ltd. Pivotal supporting devices particularly for mine roof supports. 3,309,054, 3–14–67, Cl. 248—354.
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  - Nagy, John, Jr., and Andrushkiw. 3,309,498.
- Dean, Gordon G. Bow sight. 3,308,540, 3–14–67, Cl. 33—46.
- Dearsley, George, to American Machine & Foundry Co. Machine for making cigarettes. 3,308,838, 3–14–67, Cl. 131—94.
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  - Kelly, Stanley. 3,308,904.
- Decker, Robert A.: *See*—
  - Bellas, Frederick E., and Decker. 3,308,845.
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  - Hook, Richard W., and Sanderson. 3,309,147.
  - Jackson, William W. 3,308,891.
  - Johnson, Glen A., and Waschek. 3,309,116.
  - Keeton, Eugene G. 3,308,774.
  - Shriver, George H. 3,308,929.
  - Walters, George R., and Luckett. 3,308,565.
- De Ford, Donald D., to Phillips Petroleum Co. High precision flow meter. 3,308,660, 3–14–67, Cl. 73—194.
- De Francisci, Leonard, to De Francisci Machine Corp. Conveyor apparatus. 3,308,930, 3–14–67, Cl. 198—213.
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  - De Francisci, Leonard. 3,308,930.
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- De Hart, Harold F. Carpenter's miter box. 3,308,858, 3–14–67, Cl. 143—89.
- De La Torren, Le Roy C.: *See*—
  - Rabson, William R. and T. A., Wilson, and De La Torren. 3,309,657.
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- D'Ella, Janet M. Anti-cribbing mask for horses. 3,308,791, 3–14–67, Cl. 119—129.
- De Lorenzo, Mario M. Sealed beam headlamps with a reflective safety ring. 3,309,554, 3–14–67, Cl. 313—111.
- De Luca, Vincent D., to L. Fontano. Hypodermic needle. 3,308,822, 3–14–67, Cl. 128—221.
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  - Ito, Yoshikazu, Torimitsu, Shimokawa, Nishikawa, and Hara. 3,309,298.
- Harada, Kazuya: *See*—
  - Yumoto, Hirosuke, Harada, Itoga, and Kato. 3,309,452.
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- Harnett, John P., to Great Lakes Carbon Corp. Method of producing bodies from raw petroleum coke. 3,309,437, 3–14–67, Cl. 264—29.
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- Harrick, Nicolas J., to North American Philips Co., Inc. Multiple reflection optical device. 3,308,709, 3–14–67, Cl. 88—1.
- Harrington, Earl J., to Spurgeon Co. Apparatus for delivering rods one at a time from a bundle. 3,308,968, 3–14–67, Cl. 214—1.
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- Harris, Edward P., to Edwards High Vacuum International Ltd. Metal pastes for use in brazing. 3,309,239, 3–14–67, Cl. 148—24.
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  - Moyer, Robert F. 3,308,524.
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  - Gate, James M., and Hart. 3,309,095.
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- Heimann, Fred G., to Fruehauf Corp. Ventilating rib panels. 3,308,738, 3–14–67, Cl. 98—6.
- Heinrich, Elmer G., ½ to S. S. Soward. Rainfall actuated switching apparatus. 3,309,474, 3–14–67, Cl. 200—61.07.
- Heitzman, Calvin D. Automatic electrical levelling switch for silo unloaders. 3,308,973, 3–14–67, Cl. 214—17.
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- Helmer, Ronald M. Process for the preparation of dry concentrated acid. 3,309,320, 3–14–67, Cl. 252—145.
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- Hess, Richard A., to Air Products and Chemical Inc. Method of forming a fuel cell electrode. 3,309,231, 3–14–67, Cl. 136—122.

- Hessler, John, Jr., to International Telephone and Telegraph Corp. Non-contacting line stretcher. 3,309,629, 3–14–67, Cl. 333—31.
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- Hirt, Rudolf, to Dr. A. Wander, S.A. Derivatives of benzamidobenzanilide. 3,309,367, 3–14–67, Cl. 260—256.4.
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- Holub, Fred F., to General Electric Co. Polymeric copolyesters of phthalic acids, a bis-(hydroxyphenyl)alkane and a diphenolic acid. 3,309,334, 3–14–67, Cl. 260—33.2.
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- Horowitz, Irving, to Blonder-Tongue Electronics. Converter apparatus employing negative resistance mixer. 3,309,612, 3–14–67, Cl. 325—449.
- Horton, Eddie. Fishing bait containers. 3,308,570, 3–14–67, Cl. 43—55.
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- Ingold, Hans. Portable railway. 3,309,022, 3–14–67, Cl. 238—10.
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Jubb, Albert, and K. A. Hatchett, to Rolls-Royce Ltd. Range blower pressure control. 3,308,618, 3–14–67, Cl. 60—39.15.

Jung, Erland V., and S. H. Monteus. Centrifuges. 3,309,015, 3–14–67, Cl. 233—10.

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Kane, John W., to The Detroit Edison Co. Stand-off insulator bracket. 3,309,047, 3–14–67, Cl. 248—65.

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Karlovsky. Jerry, Jr., to National Mine Service Co. Boring head having extensible arm and relatively rotated concentric cutter. 3,309,144, 3–14–67, Cl. 299—60.

Karp, Edward C., to Sanitary Scale Co. Relaceable printing type slug member. 3,308,756, 3–14–67, Cl. 101—396.

Karp, Edward C., to Sanitary Scale Co. Weigh scale with fast response lever and spring balance arrangement. 3,308,900, 3–14–67, Cl. 177—230.

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Katz, Silas, and E. T. Winston, to United States of America, Army. Angular displacement sensor. 3,308,550, 3–14–67, Cl. 33—206.

Kaufman, Vern F., and W. C. Rockwell, to United States of America, Agriculture. Freeze-drying apparatus. 3,308,552, 3–14–67, Cl. 34—92.

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Keeney, Clare G., to Sylvania Electric Products, Inc. Intrusion detection system. 3,309,689, 3–14–67, Cl. 340—258.

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Kestel, Heinrich, to H. and P Wacker. Reciprocating system for manually guided motor driven working device. 3,308,729, 3–14–67, Cl. 94—49.

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Kitabayashi, Seiichi. Mounting cap means for dispenser. 3,308,982, 3–14–67, Cl. 215—73.

Klasson, George A., J. E. McQuillen, and J. W. Mills, to Air Products and Chemicals, Inc. Container and dispensing apparatus. 3,308,990, 3–14–67, Cl. 222—52.

Klein, Ernst, to Schloemann Aktiengesellschaft. Shears with a stationary blade and a movable blade. 3,308,702, 3–14–67, Cl. 83—558.

Klein, Keith W., to General Electric Co. Panelboard with contact members having orthogonal engageable surfaces. 3,309,581, 3–14–67, Cl. 317—119.

Klein, Lee F., to General Motors Corp. Desiccant and strainer assembly. 3,308,957, 3–14–67, Cl. 210—266.

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Kleinknecht, Hans P., to International Telephone and Telegraph Corp. Tunnel-effect semiconductor system with capacitative gate across edge of PN-junction. 3,309,586, 3–14–67, Cl. 317—235.

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Klinikowski, James J., to Burroughs Corp. Electronic diode matrix decoder circuits. 3,309,695, 3–14–67, Cl. 340—347.

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Kollsman, Paul. Method for producing a deionized liquid product by electrodialysis. 3,309,301, 3–14–67, Cl. 204—180.

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Kosanke, Kurt M., and W. W. Kulcke, to International Business Machines Corp. Electro-optical high speed adjustable. 3,309,162, 3–14–67, Cl. 350—160.

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Krake, Kenneth V., to Kimberly-Clark Corp. Fabric belt for papermaking machine. 3,309,265, 3–14–67, Cl. 162—348.

Krank, Wolfgang, and E. Schuttloffel, to Telefunken Patenverwertungsgesellschaft m.b.H. Waveguide. 3,309,627, 3–14–67, Cl. 333—21.

Krapcho, John, and C. F. Turk, to E. R. Squibb, & Sons. Benzoxazepines. 3,309,361, 3–14–67, Cl. 260—239.3.

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Kritzer, Richard W., Jr. Heating and cooling refrigeration system. 3,308,633, 3–14–67, Cl. 62—239.

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Kurtz, Mark, to United States of America, Navy. Multiple unit mine cable cutter. 3,308,781, 3–14–67, Cl. 114—221.

Kus, Rudolf, to Westfalia Dinnendahl Groppel Aktiengesellschaft. Journalling structure for rotatable processing drums such as rotary kilns, tube mills. 3,308,657, 3–14–67, Cl. 73—140.

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Laefer, Norman L., to Bell Telephone Laboratories, Inc. Priority service control equipment for operator positions. 3,309,468, 3-14-67, Cl. 179—27.
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La Marca, John. Lathe line center. 3,308,696, 3-14-67, Cl. 82—33.
Lambach, Frederick A., to Plastilite Corp. Surfboard. 3,308,-493, 3-14-67, Cl. 9—310.
Lambert, Chandley W. Vacuum clothes dryer. 3,308,553, 3-14-67, Cl. 34—92.
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Langguth, Robert P., and W. W. Morgenthaler, to Monsanto Co. Corrosion inhibited ammonium sulfate solutions and compositions useful for manufacturing them. 3,309,324, 3-14-67, Cl. 252—387.
Langhjelm, Henrik G., and C. J. Di Gioia, to Finn Bergishagen. Variable pitch propeller with automatic adjustment. 3,308,-889, 3-14-67, Cl. 170—160.51.
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La Pointe, Gabriel M., to Parker Mfg. Co. Torque limiting device. 3,308,690, 3-14-67, Cl. 81—52.5.
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Lebourg, Maurice P., to Schlumberger Technology Corp. Well testing method and apparatus. 3,308,882, 3-14-67, Cl. 166—3.
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  Gram, Arthur J., Jr., and Lecon. 3,308,876.
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  Arentzen, Einar M. 3,309,145.
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Lee, Thomas B.: *See*—
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Lee, Thomas H., and T. W. Liao, to General Electric Co. Spark-gap type of surge arrestor for a D.-C. system. 3,309,-555, 3-14-67, Cl. 313—156.
Lee, Thomas H., and T. W. Liao, to General Electric Co. Triggered spark gap type of surge arrestor. 3,309,575, 3-14-67, Cl. 317—61.5.
Leeds, Winthrop M., to Westinghouse Electric Corp. Recirculating-type gas-blast double-break circuit interrupter with filtering housing surrounding intermediate contact. 3,309,-482, 3-14-67, Cl. 200—148.
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Lemay, Christopher A. G., to Electric & Musical Industries, Ltd. Pattern recognition devices. 3,309,674, 3-14-67, Cl. 340—172.5.
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Lemelson, Jerome H. Scanning apparatus for reading documents comprising a rotating scanning disc. 3,309,669, 3-14-67, Cl. 340—146.3.
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  Fambach, Rudolf, and Lewen. 3,309,466.
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  Schiller, Arthur M., Tanner, and Lewis. 3,309,261.
Lewis, Linford H. Container apparatus. 3,309,160, 3-14-67, Cl. 312—308.
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  Lee, Thomas H., and Liao. 3,309,575.
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Licher, Robert J. Inflatable life preserver. 3,308,494, 3-14-67, Cl. 9—317.
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  Gilroy, Howard L., and Lillard. 3,308,587.
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  Masters, Joseph P. 3,308,601.
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  Weil, Edward D., and Linder. 3,309,191.
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Liot, Raymond. Electrostatic separator which utilies electrodes with a shape of geometrically periodc delay lines. 3,309,517, 3-14-67, Cl. 250—41.9.
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  Bennett, Chester M. 3,309,284.
  Bunn, John F. 3,308,908.
  Etchberger, Frank R. 3,309,041.
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Loeffel, Lester H., to The Berger Bros. Co. Hernia belt. 3,308,818, 3-14-67, Cl. 128—96.
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Long, Roger A., R. A Caughey, and G. H. Sievert, to Whittaker Corp. Method and fillings for exothermic brazing. 3,308,532, 3-14-67, Cl 29—486.
Long, William J., 15/100 each to R. A. Marrs, and L. O. Tucker. Folding table. 3 308,773, 3-14-67, Cl. 108—79.
Loprete, Joseph F., to Curtiss-Wright Corp. Gas cooled rocket structures. 3,309,026, 3-14-67, Cl. 239—265.11.
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  Danzig, Morris J. 3,309,378.
Lorentz, Guido M. R.: *See*—
  Schultz, Gerhart, and Lorentz. 3,309,329.
Lothrop, Charles F., to Varian Associates. Circuit for generating a linear sweep whose period is adjustable over a wide range. 3,309,625, 3-14-67, Cl. 331—152.
Loughlin, Bernard D., to Hazeltine Research, Inc. Television receiver circuit means for stabilising black level on scenes of low average brightness and for suppressing black level on high brightness scenes. 3,309,462, 3-14-67, Cl. 178—7.5.
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Machado, John S., to United Electric Controls Co. Remote control switch with condition responsive element. 3,309,-480, 3-14-67, Cl. 200—140.
MacLaren, Donald D., to Esso Research and Engineering Co. Powerformer startup procedure using nitrogen-hydrogen mixtures. 3,309,306, 3-14-67, Cl. 208—138.
Maddalozzo, Raymond J., to International Harvester Co. Fuel delivery valve and injection apparatus employing same. 3,309,024, 3-14-67, Cl. 239—5.
Maddocks, Herbert. Heat exchangers. 3,308,879, 3-14-67, Cl. 165—167.
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Magee, Philip S., to Chevron Research Co. Insecticidal compositions containing O-alkyl-S-alkyl phosphoroamidothioates and methods for killing insects therewith. 3,309,266, 3-14-67, Cl. 167—22.
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  Skau, Evald L., Mod, and Magne. 3,309,332.
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Markow, Edward G., to Grumman Aircraft Engineering Corp. Structural unit with engaging means. 3,308,595, 3-14-67, Cl. 52—579.
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Mayer, Alfred, to Radio Corp. of America. Low temperature synthesis of compound semiconductors. 3,309,176, 3-14-67, Cl. 23—204.
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  Coover, Harry W., Jr., and McCall. 3,309,347.
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- McMahon, Richard F., and R. M. Tonsi, to Jones Division Beloit Corp. Material working apparatus. 3,309,031, 3-14-67, Cl. 241—37.
- McMaster, Wardley D., to General Motors Corp. Windshield cleaner. 3,309,321, 3-14-67, Cl. 252—152.
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- McNinch, Herbert A., and R. E. Karll, to Standard Oil Co. Low corrosivity nitrogen and sulfur-containing detergent for lubricant oil formulations. 3,309,316, 3-14-67, Cl. 252—47.5.
- McPheeters, Charles C., J. C. McGuire, and R. Tercovich, to United States of America, Atomic Energy Commission. Solid electrolyte electrochemical cell. 3,309,233, 3-14-67, Cl. 136—153.
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- McTeague, Gerald E., to General Precision, Inc. Wax masking process. 3,309,227, 3-14-67, Cl. 117—212.
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- Merijan, Ashot, and F. Grosser, to General Aniline & Film Corp. Alkylated cyclic imides and processes for their production. 3,309,365, 3-14-67, Cl. 260—247.7.
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- Meyer, Karlheinz, S. Schutz, K. Stoepel, and H.-G. Kroneberg, to Farbenfabriken Bayer Aktiengesellschaft. Pregnane guanyl hydrazones and derivatives thereof. 3,309,362, 3-14-67, Cl. 260—239.5.
- Michalsi, Maksymilian A., to Berkey Photo Inc. Electrical system for gas discharge lamp. 3,309,566, 3-14-67, Cl. 315—171.
- Michalski, Maksymilian A.: *See—*
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- Miller, Harry B., to General Dynamics Corp. Acoustic apparatus. 3,309,654, 3-14-67, Cl. 340—10.
- Miller, James V., Velcro Corp. Anti-offset roll. 3,308,522, 3-14-67, Cl. 29—120.
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- Miller, Theodore G., Jr., to Design & Mfg. Co., Inc. Raised panel members. 3,308,592, 3-14-67, Cl. 52—455.
- Miller, William E., to The Church-Budget Envelopment Co. Gathering carriage with cushioning means. 3,309,076, 3-14-67, Cl. 270—58.
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- Mitron Research & Development Corp.: *See—*
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- Mitzbager, Abraham, and J. Mizrahi, to Israel Mining Industries-Institute for Research and Development. Sink float method of classifying wet flocculated solid particles. 3,308,946, 3-14-67, Cl. 209—5.
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- Mod, Robert R., F. C. Magne, and E. L. Skau, to United States of America, Agriculture. N,N-disubstituted amides and their use as plasticizers in vinyl chloride resins. 3,309,333, 3-14-67, Cl. 260—32.6.
- Moedritzer, Kurt, to Monsanto Co. Preparation of phosphine oxide compounds. 3,309,408, 3-14-67, Cl. 260—606.5.
- Moffitt, Melville M. Helmet with detecting circuit mounted thereon for indicating approach to an energized powerline. 3,309,690, 3-14-67, Cl. 340—258.
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- Moiso, Ugo, and S. S. Papa, to Aziendie Colori Nazionali Affini-Acna S.p.A. Metallized monoazo complexes. 3,309,354, 3-14-67, Cl. 260—145.
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- Moncada, Alfonso, V, and J. Method of purifying dry cleaning solvents. 3,309,166, 3-14-67, Cl. 8—142.
- Moncada, John: *See—*
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- Montgomery, Carrol M., and P. V. Ruff. Dry cell battery charger utilizing automobile cigar lighter socket. 3,309,598, 3-14-67, Cl. 320—2.
- Montgomery, Christine A., L. C. Ray, and D. R. Swanson, to The Bunker-Ramo Corp. Automatic information indexing. 3 309,677, 3-14-67, Cl. 340—172.5.
- Mooney, George G., and E. C. Driver, to Bascule Design Consultants, Inc. Hydraulic operating system for opening bridges. 3,308,496, 3-14-67, Cl. 14—36.
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- Morgan, Bill T., and R. W. Matthews, to Phillips Petroleum Co. Article carrying case. 3,308,983, 3-14-67, Cl. 220—21.
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- Morton, Robert D., to The Hartford Special Machinery Co. Thread rolling machine. 3,308,642, 3-14-67, Cl. 72—88.
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- Mosterd, Jacob H. Apparatus for causing articles separately supplied by grip means to be deposited in a row one after another. 3,308,928, 3-14-67, Cl. 198—179.
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- Motto, John W., Jr., and W. C. Fry, to Westinghouse Electric Corp. Ignition circuits. 3,308,800, 3-14-67, Cl. 123—148.
- Motto, John W., Jr., to Westinghouse Electric Corp. Capacitive discharge ignition system. 3,308,801, 3-14-67, Cl. 123—148.
- Moulton, Joseph D., P. F. Grieger, and T. L. Treitler, to Chemetron Corp. Gas measuring method and apparatus. 3,308,648, 3-14-67, Cl. 73—23.
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- Mourier, Georges. Electron discharge amplifier device. 3,309,660, 3-14-67, Cl. 330—47.
- Mouser, William N., to United States of America, Army. Tool for crimping seals on containers. 3,308,603, 3-14-67, Cl. 53—334.
- Moyer, Robert F., to Harsco Corp. Method of making a die bushing with a replaceable liner. 3,308,524, 3-14-67, Cl. 29—149.5.
- Mueller, Johannes G., to Weil-McLain Co., Inc. Air elimination device. 3,808,607, 3-14-67, Cl. 55—201.
- Mueller, Ronald H., and J. C. Marshall, to United States of America, Atomic Energy Commission. Brazing alloys for tantalum. 3,309,180, 3-14-67, Cl. 29—198.
- Muench, Werner: *See—*
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  - Richardson, Harry L., and Muhlfelder. 3,308,619.
- Mullan, Joseph A., to Rose Mfg. Co. Strap buckle. 3,308,516, 3-14-67, Cl. 24—75.
- Muller, Wolf, E. W. Kulesh, and R. S. Lanier, deceased (by D. L. Lanier, administratrix); said Muller and said Kulesh assors. to United States of America, Navy. Winch mechanism with dual drive. 3,309,064, 3-14-67, Cl. 254—168.
- Munn, John E., to Jas. H. Matthews & Co. Rotary drum printer and inking apparatus therefor. 3,308,754, 3-14-67, Cl. 101—348.
- Murata, Tomoji: *See—*
  - Okishima, Yoshiro, and Murata. 3,308,717.
- Murphy, Frank H., to General Electric Co. Electric circuit breaker operating mechanism. 3,309,479, 3-14-67, Cl. 200—116.
- Mutschler, Erich, and M. Reibl. Pump construction. 3,308,765, 3-14-67, Cl. 103—152.
- Myatt, Gerald, to Pearce Inc. Feeding, gripping and registering mechanism and method therefor. 3,309,077, 3-14-67, Cl. 271—3.
- Myers Industries, Inc.: *See—*
  - Peacock, Henry S. 3,308,963.
- Myers, Jack A., to United States of America, Navy. Modular dispenser for aircraft carried devices. 3,308,719, 3-14-67, Cl. 89—1.5.
- Nadolny, Walter. Motor vehicle and dual track. 3,308,576, 3-14-67, Cl. 46—243.
- Nagel, Fritz J., to The Polymer Corp. Coating method and apparatus. 3,309.217, 3-14-67, Cl. 117—18.
- Nagin, Harold: *See—*
  - Nagin, Harry S., L., and H. 3,308,725.
- Nagin, Harry S., L., and H., to Reliance Steel Products Co. Paving element and paving employing the same. 3,308,725, 3-14-67, Cl. 94—4.
- Nagin, Leon: *See—*
  - Nagin, Harry S., L., and H. 3,308,725.
- Nagy, John, Jr., and R. I. Andrushkiw, to Daystron, Inc. Controlled temperature chamber. 3,309,498, 3-14-67, Cl. 219—210.
- Nakagawa, Kunio, and T. Nakata, to Shionogi & Co., Ltd. Telomerization of acrylonitrile. 3,309,393, 3-14-67, Cl. 260—465.
- Nakajima, Yoshihiko, to Janome Sewing Machine Co., Ltd. Threading device for sewing machines. 3,308,778, 3-14-67, Cl. 112—225.
- Nakata, Tadashi: *See—*
  - Nakagawa, Kunio, and Nakata. 3,309,393.
- Nakashio, Seizo: *See—*
  - Fukui, Kenichi, Kagiya, Segawa, Yokota, Hisao, Kondo, and Nakashio. 3,309,296.
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  - Eda, Masumi, Fujishiro, and Nanba. 3,308,755.
- Nance, Robert C.: *See—*
  - Barker, Thomas H., Nance, and Shine. 3,309,506.
- Nash, Culver R., to Chrysler Corp. Door lock mechanism. 3,309,128, 3-14-67, Cl. 292—280.
- Nash, Elmer D., to Harris-Intertype Corp. Continuous sheet feeding device having registering means. 3,309,078, 3-14-67, Cl. 271—12.
- National Cash Register Co., The: *See—*
  - Frohman, Robert. 3,309,666.
  - Irasek, Eugene H. 3,308,830.
- National Distillers and Chemical Corp.: *See—*
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  - Mador, Irving L., and Scheben. 3,309,403.
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  - Karlovsky, Jerry, Jr., Conway, and Cookson. 3,309,143.
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- National Steel Container Corp.: *See—*
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- Nebraska Packing Co.: *See—*
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  - Evtuhov, Viktor, and Neeland. 3,309,621.
- Nekola, William J. R., to Crown Cork & Seal Co., Inc. Crowning head. 3,308,604, 3-14-67, Cl. 53—343.
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  - Hearn, Glenn R., and Nellum. 8,309,531.
- Nelson, Daniel E. and M. W. Convertible gas turbine-rocket reaction propulsion engine. 3,808,626, 3-14-67, Cl. 60—244.
- Nelson, Lorne W., to Honeywell Inc. Temperature control system with improved heat anticipation. 3,309,019, 3-14-67, Cl. 236—68.
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  - Nelson, Daniel E. and M. W. 3,308,626.
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- Nesbit-Evans, J., & Co. Ltd.: *See—*
  - Nesbit-Evans, Dermot K. L. 3,308,485.
- Neveling, Herwig. Automatic door lock. 3,309,125, 3-14-67, Cl. 292—78
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  - Theis, Jack D. 3,309,505.
- Newman, Harry and R. Detachable vehicle door bumper. 3,309,129, 3-14-67, Cl. 293—1.
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- Nichols, Donald E. Vehicle fuel consumption indicating instrument 3,308,655, 3-14-67, Cl. 73—114.
- Nichols, Robert K., to Communications Construction & Excavating Co., Inc. Cable laying attachment for a scraper vehicle. 3,308,628, 3-14-67, Cl. 61—72.6.
- Nierode, Armin E., and R. E. Perlewitz, to Tecumseh Products Co. Fuel pumping and charge forming apparatus. 3,309,068, 3-14-67, Cl. 261—35.
- Nilssen, Ole K., to Ford Motor Co. Means including a saturable capacitor for reducing electrical energy dissipation in an electrical switching element. 3,309,568, 3-14-67, Cl. 315—223
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  - Uchimaru. Kiyoshi, and Shimono. 3,309,489.
- Nishikawa, Fumio: *See—*
  - Ito, Yoshikazu, Torimitsu, Shimokawa, Nishikawa, and Hara. 3,309,298.
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  - Ostrow, Barnet D., and Nobel. 3,309,293.
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  - Egglestone, Robert W., and Noell. 3,309,593.
- Nohe, Heinz, C. Palm, and R. Platz, to Badische Anilin- & Soa-Fabrik Aktiengesellschaft. Prouction of acrylonitrile or methacrylonitrile. 3,309,395, 3-14-67, Cl. 260—465.3.
- Noll, Walter: *See—*
  - Schnurrbusch, Karl, and Noll. 3,309,253.
- Nolte, Robert K., to Metalwash Machinery Corp. Baking pan cleaning apparatus. 3,308,838, 3-14-67, Cl. 134—70.
- Nonweiler, Richard A., to Lakeside Plastics Corp. Method of producing an expanded polystyrene foam having a dense surface. 3,309,439, 3-14-67, Cl. 264—45.
- Noorlander, Daniel O., to Bel-Mar Mfg. Corp. Teat cup assembly. 3,308,788, 3-14-67, Cl. 119—14.52.
- North American Aviation, Inc.: *See—*
  - Hebert, Roy J., and Griffin. 3,309,494.
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- Norton, Charles L., Jr., W. O. Bohling, and A. D. Fentzke, to The Babcock & Wilcox Co. Insulating firebrick. 3,309,210, 3-14-67, Cl. 106—64.
- Noschese, Rocco J., to Burndy Corp. Multiple connector. 3,309,645, 3-14-67, Cl. 339—98.
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Park, Donald M., to Park-Baker Electronic Development Corp. Tone sustaining system for electric musical instrument. 3,309,453, 3-14-67, Cl. 84—1.13.
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Pops, Horace, to United States Steel Corp. High-carbon precipitation-hardening austenitic steel alloy. 3,309,242, 3-14-67, Cl. 148—38.
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Powers, Milton A., to Skuttle Mfg. Co. Baseboard humidifier. 3,309,021, 3-14-67, Cl. 237—78.
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Price, Robert W., to Westinghouse Electric Corp. Electrically operated switch having improved armature and linkage means. 3,309,636, 3-14-67, Cl. 335—155.
Pringle, Dukler & Crump, Inc.: *See*—
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- Rausch, Douglas A., to The Dow Chemical Co. Solid propellants containing hydrazonium azide and boron compounds. 3,309,248, 3-14-67, Cl. 149—19.
- Rausch, William V., and A. Calderon. Coil arrangement for improved field uniformity. 3,309,638, 3-14-67, Cl. 335—299.
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  - Mutschler, Erich, and Reibl. 3,308,765.
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  - Bergy, Malcolm E., Coats, and Reusser. 3,309,273.
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  - Rex, John F., Jr. 3,308,870.
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  - Kelley Joseph M., Miskel, and Marinaccio. 3,309,350.
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- Rhode, Dan R. Beet blocking apparatus. 3,308,890, 3-14-67, Cl. 172—6.
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- Reibs, Richard E., to McGraw-Edison Co. Electric power system having sectionalizing means and control circuit therefor. 3.309,572. 3-14-67, Cl. 317—22.
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- Riley, Harry L., to United Coke & Chemicals Co., Ltd. Production of electrically conducting carbon. 3,309,326, 3-14-67, Cl. 252—503.
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  - Zoludow, Richard S. 3,308.851.
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  - Berg, Kenneth M., and Robertson. 3,309,175.
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  - Prud'homme, John W., Robertson, and Fisher. 3,309,065.
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- Roele, Pieter, to Lever Bros. Co. Preparation of sulfate esters of fatty alcohols or ethylene oxide condensates thereof. 3.309,392, 3-14-67, Cl. 260—459.
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- Rohn, Owen W., to Baker Perkins Inc. Feeder apparatus. 3,308,994. 3-14-67, Cl. 222—245.
- Roland, Max, W. J. Stratton, and A. W., Jr., to Nebraska Packing Co. Closed end film package. 3,308,936, 3-14-67, Cl. 206—46.
- Roll, Walter F., Jr., to Koppers Co. Inc. Electrical component housing and system. 3,309,577, 3-14-67, Cl. 317—99.
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  - Jubb, Albert, and Hatchett. 3,308,618.
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- Rosenberg, Norman, and S. Kamins, to C-Thru Products, Inc. Waste receptacle. 3,309,007, 3-14-67, Cl. 229—55.
- Rosenberg, Robert A., to Mitron Research & Development Corp. Welding of titanium. 3,309,496, 3-14-67, Cl. 219—118.
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- Ryan, John W., to Mattel, Inc. Skip loader toy with sounding means. 3,308,573, 3-14-67, Cl. 46—40.
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- Sanders Associated, Inc.: *See*—
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- Sanderson, Leon F.: *See*—
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- Sato, Shichiro. Plier-type tool having cam and slot actuation means. 3,308,692, 3-14-67, Cl. 81—342.
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- Saunders, Walter S. Means for reducing linear wind resistance in single chassis type vehicles. 3,309,131, 3-14-67, Cl. 296—1.
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- Schad, Charles A. Method of controlling the level of contamination in crude petroleum. 3,309,308, 3-14-67, Cl. 208—178.
- Schach, Albert W., to Barber-Colman Co. Strip type air distributor. 3,308,744, 3-14-67, Cl. 98—40.
- Schaefer, Frederic C., to American Cyanamid Co. Process for the preparation of amidine salts. 3,309,374, 3-14-67, Cl. 260—296.
- Schall, Mike A. Nut cracker. 3,308,863, 3-14-67, Cl. 146—13.
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- Schilling, Paul K., to Plastics Inc. Method of producing two tone dishes and the like. 3,309,448, 3-14-67, Cl. 264—245.
- Schindler, Othmar, to Dr. A. Wander S.A. Imidazo- and pyrmido-quinazolines. 3,309,369, 3-14-67, Cl. 260—256.4.
- Schlain, David: *See*—
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- Schlein, Helmar, to North American Aviation, Inc. Optimal controller computer. 3,309,507, 3-14-67, Cl. 235—150.1.
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  - Bullard, Robert L., Hasbrouck, Schlemmer, and Thun. 3,308,528.
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- Schnurrbusch, Karl, and W. Noll, to Farbenfabriken Bayer Aktiengesellschaft. Process for securing connection between two solid surfaces by means of a polydimethyl siloxane. 3,309,253, 3-14-67, Cl. 156—92.
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- Schueler, George B. E. Method of producing particle board. 3,309,444, 3-14-67, Cl. 264—109.
- Schuette, Clarence E. Child-safe door catch assembly. 3,309,126, 3-14-67, Cl. 292—175.
- Schuller, Walter H., and R. V. Lawrence, to United States of America, Agriculture. Photodehydrogenation of resin acids. 3,309,351, 3-14-67, Cl. 260—98.
- Schultz, Elmer A. Semi-continuous alert lights for motor vehicles. 3,309,562, 3-14-67, Cl. 315—77.
- Schultz, Gerhart, and G. M. R. Lorentz, to Farbwerke Hoechst vormals Meister Lucius & Bruning Aktiengesellschaft. Bituminous compositions containing amorphous polypropylene and an ethylene-vinylacetate copolymer. 3,309,329, 3-14-67, Cl. 260—28.5.
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- Schut, Robert N., to Miles Laboratories Inc. Bicycloalkyl piperazine derivatives and process. 3,309,370, 3-14-67, Cl. 260—268.
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- Scott, John W., to Chevron Research Co. Fluidized hydrocracking of residual hydrocarbons. 3,309,305, 3-14-67, Cl. 208—111.
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  - Lovell, Calvin H., Lowrie, and Yonan. 3,309,364.
  - Pappo, Raphael. 3,309,383.
- Seeber, Fritz, to The Firm Karl Peschke Kapitalverwaltungs Karl Peschke m.b.H. Axle arrangement for cross country vehicles. 3,309,097, 3-14-67, Cl. 280—6.11.
- Seeler, Henry W. Reduction regulator valve for scuba system. 3,308,817, 3-14-67, Cl. 128—147.
- Sefcik, Robert, to J. Chein & Co. Folding leg structure. 3,309,055, 3-14-67, Cl. 248—431.
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  - Fukui, Kenichi, Kagiya, Segawa, Yokota, Hisao, Kondo, and Nakashio. 3,309,296.
- Seliger, Victor H., and R. Y. Paradise, to General Precision Inc. Voltage to pulse frequency converter. 3,309,603, 3-14-67, Cl. 321—60.

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DESIGN PATENTS

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
March 14, 1967 Volume 836 Number 2

TRADEMARKS

NOTICES

Powers of Attorney in Registered Trademark Files

On and after February 1, 1967, communications advising of changes in the powers of attorney for registered trademarks will be placed in the registration files, but will not be acknowledged by the Patent Office. The information will thus be available to those who inspect the files, but since these powers of attorney do not directly concern the Patent Office, acknowledgments are not believed to be necessary.

C. M. WENDT,
Director.

Jan. 30, 1967.

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17, 077
Date of oldest new application	Jan. 4, 1966
Date of oldest amended application (filing date)	Oct. 8, 1963

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	1-4-66	5-4-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-17-66	10-8-63
Renewals (All Classes)	1-3-67	--------
Sec. 12 (c) Publications (All Classes)	1-9-67	--------

Applications filed during the month of January 1967—2,054

Registration Issued ---------------------------392—No. 825,538 to No. 825,929
Renewals Issued --------------------------- 79

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

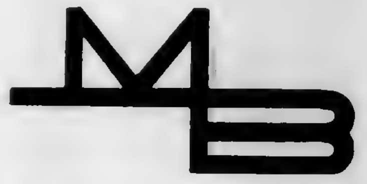
SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE**: For publication of marks presented in applications for registration in one class, see section 2.]

SN 208,374. Montgomery Brothers, Inc., Burlingame, Calif. Filed Dec. 17, 1964.



Owner of Reg. No. 651,931.

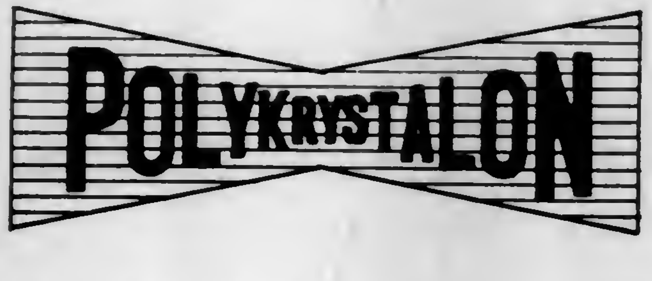
Class 21—Electrical Apparatus, Machines, and Supplies

For Photoelectric Controls, Electric Air Duct Heaters, Process Electric Heaters, and Electric Magnetic Contactors. First use October 1962.

Class 26—Measuring and Scientific Appliances

For Electronic Counters and Electrically Operated Thermostats. First use January 1963.

SN 212,483. The PolyKrystalon Co., Inc., Houston, Tex., assignee of B. V. Ballard, Houston, Tex. Filed Feb. 23, 1965.



The drawing is lined for the color blue.

Class 20—Linoleum and Oiled Cloth

For Plastic Floor and Wall Tiles Composed of Polyester Resin With Embediments of Marble Fines and Sections.

Class 32—Furniture and Upholstery

For Vanity and Table Tops.

First use December 1964.

SN 216,987. West Coast Alloys Co., Inc., Troutdale, Oreg. Filed Apr. 20, 1965.

WESCOLOY

Class 14—Metals and Metal Castings and Forgings

For Metal Castings Formed of Abrasion Resistant Alloys. First use at least as early as Jan. 1, 1961.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Welding Electrodes of Abrasion Resistant Alloys. First use at least as early as Feb. 23, 1956.

SN 217,535. Gladen Enterprises, Inc., Bay City, Mich. Filed Apr. 28, 1965.

SILVERCONE

Class 1—Raw or Partly Prepared Materials

For Silicone Rubber.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Rubber Dies and Pads for the Hot Stamping of Plastic Parts.

First use November 1964.

SN 220,053. Aerpat A.G., Garus, Switzerland. Filed June 1, 1965.

AVEX

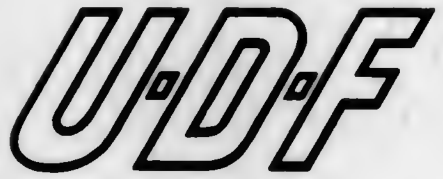
Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Tubular Rivets. First use Jan. 18, 1962; in commerce Apr. 20, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Riveting Tools, Both Manually and Power Operated. First use Nov. 6, 1961; in commerce Apr. 15, 1964.

SN 222,442. Ajax Magnethermic Corporation, Warren, Ohio. Filed July 1, 1965.



Class 21—Electrical Apparatus, Machines, and Supplies

For Uni-Directional Flow Inductors.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Induction Melting Furnaces.

First use June 11, 1965.

SN 223,937. The Singer Company, New York, N.Y. Filed July 22, 1965.

WHAT'S NEW FOR TOMORROW IS AT SINGER TODAY!

Owner of Reg. No. 786,974.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radios, Television Sets, and Vacuum Cleaners. First use June 11, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Sewing Machines and Sewing Machine Parts and Attachments. First use January 1965.

Class 32—Furniture and Upholstery

For Sewing Cabinets and Stools. First use July 24, 1964.

Class 36—Musical Instruments and Supplies

For Phonographs and Phonograph Records. First use May 30, 1964.

Class 50—Merchandise Not Otherwise Classified

For Dress Forms. First use Nov. 14, 1964.

SN 229,208. Conrae Interiors, Inc., Reno, Nev. Filed Oct. 4, 1965.

CONRAE

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Lamps.

Class 32—Furniture and Upholstery

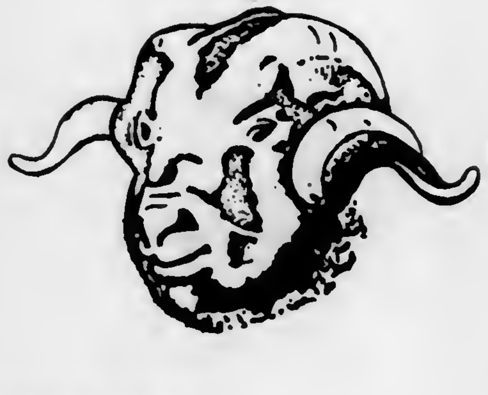
For Sofas, Chairs, Tables, Mattresses, Dressers, and Nightstands.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Rugs, Carpets, and Draperies.

First use Sept. 15, 1965.

SN 232,262. Western Felt Works, Chicago, Ill. Filed Nov. 8, 1965.



Owner of Reg. No. 37,409.

Class 1—Raw or Partly Prepared Materials

For Industrial Felt and Plastic Sheets. First use Jan. 1, 1943.

Class 12—Construction Materials

For Acoustical and Insulating Felt for Industrial Use. First use Jan. 1, 1938.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Anti-Vibration Pads for Machinery and Pads for Similar Industrial Applications Where Cushioning and Padding Are Required. First use Jan. 1, 1938.

Class 31—Filters and Refrigerators

For Filters. First use Jan. 1, 1938.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Wicks for Feeding Oil to Motor Parts and Kindred Uses. First use Jan. 1, 1938.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Seals, Gaskets, and Tubing. First use Jan. 1, 1938.

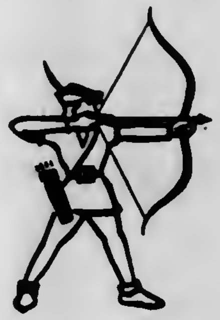
Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Wool Felt. First use Jan. 1, 1901.

Class 44—Dental, Medical, and Surgical Appliances

For Surgical Pads. First use Jan. 1, 1938.

SN 233,035. Associated Spring Corporation, Bristol, Conn. Filed Nov. 22, 1965.



Owner of Reg. Nos. 541,630, 555,216, and 666,233.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Fastener Hardware—Namely, Bolts, Screws, Nuts, Lock Nuts, and Washers; Cap Screws, Marine Hardware and Accessories, Fasteners, Studs, Bolts, Screws and Nuts, Washers, Clips and Cotter Pins, Hardware Cabinets, Brake Tubing, Unions for Metal Brake Tubing Fuel Lines, Fuel Line Fittings and Valves, and Shear Pins; Canvas Fastening Equipment—Namely, Eyelets, Studs, Buttons, and Sockets; and Cap Screw Type Bolts for Motor Vehicles and Off-the-Road Equipment.

Class 19—Vehicles

For Service and Replacement Parts for Automotive and Aviation Vehicles—Namely, Windshield Wipers and Parts Therefor, Steering Gear Mechanism and Component Parts Thereof, Radiator and Gasoline Tank Caps, Running Board Moldings, Shackles and Component Parts Thereof, Shock Absorber Parts, Namely, Link Pins and Assemblies, Tie Rod Ends, Spindle and King Pin Assemblies, Wheel Weights, Brake Tubing Fitted With End Connectors, Windshield Wiper Tubing, U-Bolts, Wheel Studs, Window Channels, Window Regulators, Rubber Grommets for Pedal Aperture in Floor Boards, and Brake Shoes; and Marine Steering Apparatus and Parts Thereof, Rope and Cable Clamping, Tightening, Guiding and Clipping Equipment, Deck Hooks and Sockets, Step Plates, Transom Pads, Oar Locks, Cleats, Chocks and Handles.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Service and Replacement Automotive Parts—Namely, Battery Bolts, Cables, and Ground Straps; Motor and Generator Parts, Namely, Brushes, Bearings, and Regulators; Ignition System Parts, Namely, Distributor Rotors, Caps and Points, Condensers and Spark Plug Terminals, Wiring Assemblies and Terminals, Switches, Fuses, Lamp Assemblies; Marine Electrical Switches, Lights, Pilot Lamps, Deck Lamps, Wire and Wire Terminals, Fuses, Points and Condensers, Electric Horns, Switch Plates, Fuse Blocks, Electrical Contacts and Connectors.

Class 22—Games, Toys, and Sporting Goods

For Water Skis and Related Accessories.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

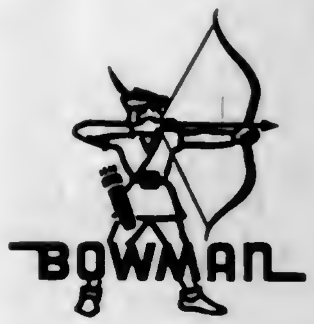
For Structural and Replacement Parts for Automotive and Aviation Vehicles—Namely, Connecting Rod Bearings, Pistons, Carburetors and Parts Thereof, Fuel Pumps, Poppet Valves for Internal Combustion Engines, Fan Blades, Generator Pulleys, Mufflers, and Clutch Springs; Marine Resinous Pulley Blocks and Screw Drivers.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Radiator Hose.

First use Sept. 1, 1957.

SN 233,666. Associated Spring Corporation, Bristol, Conn. Filed Dec. 1, 1965.



Owner of Reg. Nos. 541,630, 712,807, and others.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Fastener Hardware—Namely, Bolts, Screws, Nuts, Lock Nuts, and Washers; Cap Screws, Marine Hardware and Accessories, Fasteners, Studs, Bolts, Screws and Nuts, Washers, Clips and Cotter Pins, Hardware Cabinets, Brake Tubing, Unions for Metal Brake Tubing Fuel Lines, Fuel Line Fittings and Valves, and Shear Pins; Canvas Fastening Equipment—Namely, Eyelets, Studs, Buttons, and Sockets; and Cap Screw Type Bolts for Motor Vehicles and Off-the-Road Equipment.

Class 19—Vehicles

For Service and Replacement Parts for Automotive and Aviation Vehicles—Namely, Windshield Wipers and Parts Therefor, Steering Gear Mechanism and Component Parts Thereof, Radiator and Gasoline Tank Caps, Running Board Moldings, Shackles and Component Parts Thereof, Shock Absorber Parts, Namely, Link Pins and Assemblies, Tie Rod Ends, Spindle and King Pin Assemblies, Wheel Weights, Brake Tubing Fitted With End Connectors, Windshield Wiper Tubing, U-Bolts, Wheel Studs, Window Channels, Window Regulators, Rubber Grommets for Pedal Aperture in Floor Boards, and Brake Shoes; and Marine Steering Apparatus and Parts Thereof, Rope and Cable Clamping, Tightening, Guiding and Clipping Equipment, Deck Hooks and Sockets, Step Plates, Transom Pads, Oar Locks, Cleats, Chocks and Handles.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Service and Replacement Automotive Parts—Namely, Battery Bolts, Cables, and Ground Straps; Motor and Generator Parts, Namely, Brushes, Bearings, and Regulators; Ignition System Parts, Namely, Distributor Rotors, Caps and Points, Condensers and Spark Plug Terminals, Wiring Assemblies and Terminals, Switches, Fuses, Lamp Assemblies; Marine Electrical Switches, Lights, Pilot Lamps, Deck Lamps, Wire and Wire Terminals, Fuses, Points and Condensers, Electric Horns, Switch Plates, Fuse Blocks, Electrical Contacts and Connectors.

Class 22—Games, Toys, and Sporting Goods

For Water Skis and Related Accessories.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Structural and Replacement Parts for Automotive and Aviation Vehicles—Namely, Connecting Rod Bearings, Pistons, Carburetors and Parts Thereof, Fuel Pumps, Poppet Valves for Internal Combustion Engines, Fan Blades, Generator Pulleys, Mufflers, and Clutch Springs; Marine Resinous Pulley Blocks and Screw Drivers.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Radiator Hose.

First use Sept. 1, 1960.

SN 238,010. Rodo Enterprises, Inc., Baltimore, Md. Filed Feb. 3, 1966.

RODO-PAK

Class 2—Receptacles

For Paper Cartons; Paper Boxes; Paper Bags; Plastic Cartons; Plastic Boxes; Plastic Coated Paper and Similar Sheet Cartons, Boxes, and Bags; and Packaged Plates and Cups.

Class 37—Paper and Stationery

For Paper for Wrapping, Plastic Wrapping Material in Sheet Form; Metallic Foil for Wrapping; and Plastic Coated Paper and Similar Sheet Material.

First use June 4, 1965.

SN 253,702. S. C. Johnson & Son, Inc., Racine, Wis. Filed Sept. 2, 1966.

PRONTO

Owner of Reg. Nos. 422,278 and 761,479.

Class 4—Abrasives and Polishing Materials

For Floor Polish.
First use May 10, 1966.

Class 52—Detergents and Soaps

For Floor Cleaner.
First use on or about July 31, 1932.

SN 255,267. Longines-Wittnauer Watch Co., Inc., New York, N.Y. Filed Sept. 28, 1966.

SYMPHONETTE

Owner of Reg. Nos. 307,087, 592,852, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio and Television Receiving Sets, Electric Phonographs, and Combinations of the Same, Such as Radio-Phonographs, Television-Phonographs, and Television-Radio-Phonographs.

Class 26—Measuring and Scientific Appliances

For Cameras and Parts Therefor.

First use in or about March 1965.

SECTION 2

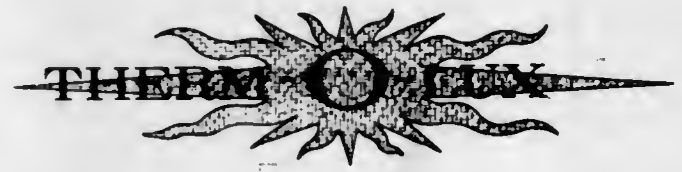
The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

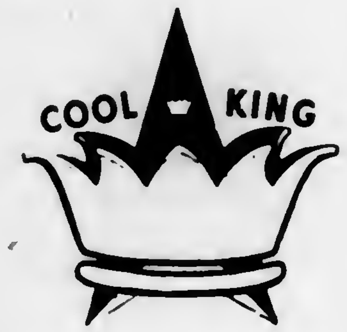
SN 237,175. Therm-O-Lux International, Inc., Cambridge, Mass. Filed Jan. 24, 1966.



The drawing is lined for the color yellow, but the color is not claimed as an essential feature of the mark, except for contrast.
For Laminated Aluminum and Plastic Heat Reflective, Light Transparent Film for Glass Surfaces.
First use on or about July 27, 1959.
Sub. to Intf. with SN 234,264.

Class 2—Receptacles

SN 230,817. General Foam Plastics Corporation, Portsmouth, Va. Filed Oct. 21, 1965.



For Plastic Cooler Buckets and Plastic Ice Chests Made of Expanded Polystyrene.
First use Jan. 2, 1961.

SN 232,758. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Nov. 15, 1965.

Markaman
LIGHT-Tite

Owner of Reg. Nos. 761,783 and 761,908.
For Paperboard Cartons for Multipacks.
First use Oct. 13, 1965.

SN 236,777. Plastics Manufacturing Company, Dallas, Tex. Filed Jan. 18, 1966.

TEXAS-WARE

For Tableware Made of Plastics.
First use 1952.

SN 249,112. Bennett Industries, Inc., Peotone, Ill. Filed June 28, 1966.

GALAXEE CENTURY 21

For Self-Supported Plastic Containers for the Shipment and Storage of Liquid Materials.
First use about Mar. 18, 1966.

SN 257,737. Gotham Industries, Inc., Chicago, Ill. Filed Nov. 2, 1966.

Motif

For Plastic Containers—Namely, Waste Baskets, Laundry Baskets, Pails, and Dish Pans.
First use Oct. 11, 1966.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 236,188. Herz Specialty Products, Inc., Long Island City, N.Y. Filed Jan. 11, 1966.

FEW POUNDER

For Garment Carrying Case of Flexible Material Such as Cloth, Plastic, or the Like, Which Is Adapted To Hold a Suit of Clothes, Dresses, etc.
First use Nov. 5, 1965.

Class 4—Abrasives and Polishing Materials

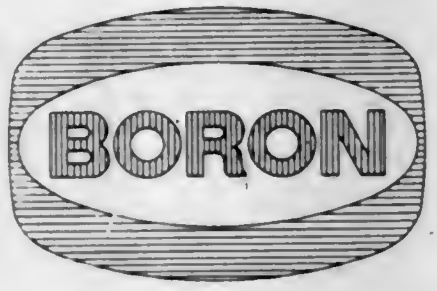
SN 235,479. American-Lincoln Corporation, Toledo, Ohio. Filed Dec. 29, 1965.

ACRI-LUSTRE

For Protective Surface Coating Material—Namely, Floor Wax, Particularly for Commercial and Industrial Applications.
First use Feb. 17, 1965.

Class 6—Chemicals and Chemical Compositions

SN 232,520. Boron Oil Company, Cleveland, Ohio. Filed Nov. 12, 1965.



The drawing is lined for the colors red and blue, but no claim as to color is made.

For Chemical Test Kits, and Component Parts Thereof, for Determining the Presence or Absence of Live Microorganisms in Petroleum Product Systems.

First use Apr. 26, 1965.

SN 248,439. Frank D. Davis Company, Los Angeles, Calif. Filed June 20, 1966.

DEE-TO-SPERSE

For Pigment Dispersion for Use in Making Water Emulsion Paints.

First use June 1964.

Class 7—Cordage

SN 254,309. Norcross, Inc., New York, N.Y. Filed Sept. 12, 1966.

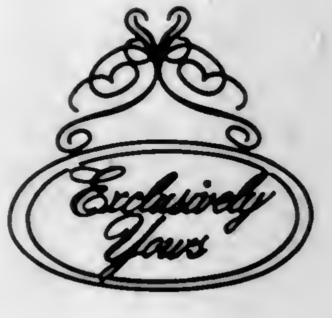
MAN SIZE

For Ribbon.

First use July 15, 1966.

Class 11—Inks and Inking Materials

SN 247,902. Distinguished Brands, Inc., Plainview, N.Y. Filed June 13, 1966.



For Inked Ribbons and Carbon Paper.

First use July 15, 1965.

Class 12—Construction Materials

SN 205,315. Midwesco-Enterprise, Inc., Chicago, Ill. Filed Nov. 2, 1964.

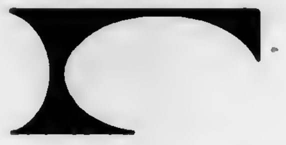
PERMA-PIPE

Owner of Reg. No. 765,750.

For Insulated Underground Conduit Systems and Portions Therefor, Including Pipe and Insulation, Leak Detector Systems, and Prefabricated Tunnel.

First use September 1962.

SN 234,557. Formica Corporation, Cincinnati, Ohio. Filed Dec. 14, 1965.



The mark is a device similar to the shape of the front of an anvil and may be in any color. Owner of Reg. Nos. 155,689, 742,863, and others.

For Flakeboard and Laminated Sheets of Wood, Fabric or Paper Impregnated With Synthetic Resin and Consolidated Under Heat and Pressure for Use on Table Tops, Furniture, and Wall Paneling.

First use Nov. 10, 1961.

SN 236,175. Bird & Son, Inc., East Walpole, Mass. Filed Jan. 11, 1966.

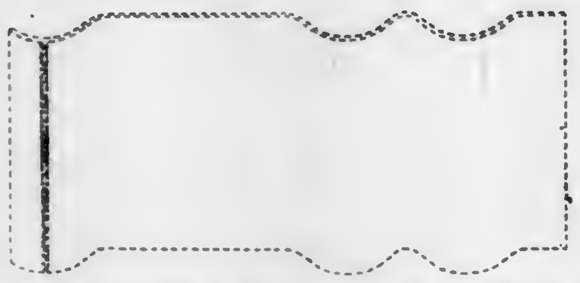
LEVEL DECK

Owner of Reg. No. 674,344.

For Bitumen Compound in Solid and in Semi-Liquid Forms Used in the Construction of Laminated Built-Up Roofs.

First use May 10, 1957.

SN 242,001. Filon Corporation, Hawthorne, Calif. Filed Mar. 28, 1966.

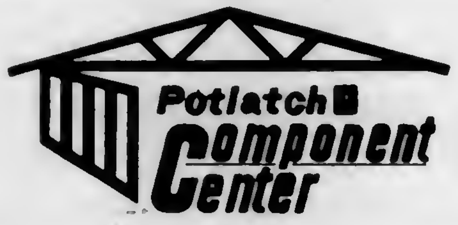


The mark comprises a gold colored stripe which extends longitudinally of the goods.

For Translucent Plastic Panels.

First use Jan. 14, 1966.

SN 242,484. Potlatch Forests, Inc., San Francisco, Calif. Filed Apr. 1, 1966.



The words "Component Center" and the representations of the wood shapes are disclaimed apart from the mark as shown.

For Building Materials of Wood Including Lumber, Panels, Trusses, Beams, and other Like Pre-Fabricated Building Shapes.

First use Mar. 18, 1966.

SN 242,642. Charles A. Owen, d.b.a. Owen Safety First Company, San Mateo, Calif. Filed Apr. 4, 1966.

FALL-SAFE

For Surfacing Composition of Sand, Wood Cuttings, and the Like, With an Oil Base for Athletic and Play Areas.

First use Mar. 29, 1966.

SN 245,791. Wilbur W. Raab, d.b.a. D & R Fabricators, Grand Rapids, Mich. Filed May 16, 1966.

PLASTI-COVE

For Plastic Cabinet and Countertop Trim.

First use June 10, 1964.

SN 254,644. United States Plywood Corporation, New York, N.Y. Filed Sept. 19, 1966.

PERMACOLOR

Owner of Reg. Nos. 426,165, 796,624, and others.

For Finish Applied to Lumber, Wood and Metal Products in the Building, Industrial, and Furniture Fields, and Especially for Building and Furniture Panels, Table and Counter Tops, Doors, and Partitions.

First use June 30, 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

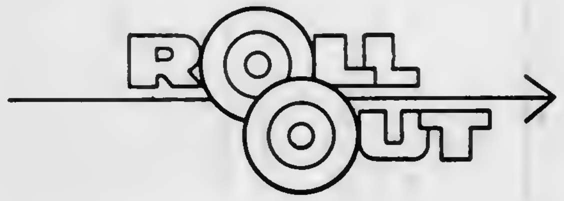
SN 229,886. The Stocker Hinge Mfg. Co., Brookfield, Ill. Filed Oct. 11, 1965.

TAB LOCK

For Hinges.

First use in or about September 1961.

SN 231,416. George W. Goodson, d.b.a. Delta Products Co., Glendale, Calif. Filed Oct. 23, 1965.



For Rollers for Household Appliances Such as Refrigerators, Freezers, and Ranges.

First use May 15, 1965.

SN 231,545. Continental Oil Company, Ponca City, Okla. Filed Oct. 24, 1965.

CARFLEX

For Plastic Pipe.

First use Feb. 20, 1963.

SN 233,706. FMC Corporation, San Jose, Calif. Filed Dec. 1, 1965.

DUO-SERT

For Fluid Valves.

First use Aug. 26, 1965.

SN 234,565. Hartwell Corporation, Los Angeles, Calif. Filed Dec. 14, 1965.

H-5000

For Aircraft Latches.

First use Jan. 15, 1949.

SN 235,352. Wm. Steinen Mfg. Co., Parsippany, N.J. Filed Dec. 27, 1965.

AGRI-SPRAY

For Industrial and Agricultural Spray Nozzles.

First use Oct. 2, 1965.

SN 235,353. Wm. Steinen Mfg. Co., Parsippany, N.J. Filed Dec. 27, 1965.

AGRI-JET

For Industrial and Agricultural Spray Nozzles.

First use Oct. 2, 1965.

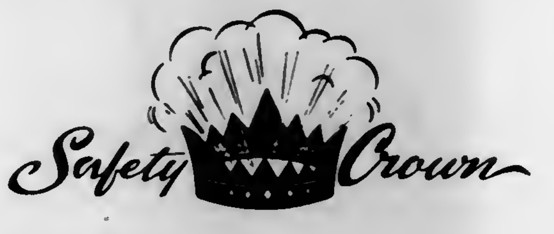
SN 236,280. Nordskog Company, Inc., Van Nuys, Calif. Filed Jan. 12, 1966.

AERO JAVA

For Automatic Coffee Makers.

First use Sept. 1, 1963.

SN 236,973. Continental Disc Corporation, Kansas City, Mo. Filed Jan. 21, 1966.



For Rupture Discs.

First use Dec. 27, 1965.

SN 237,897. Wayne Manufacturing Company, Staatsburg, N.Y. Filed Feb. 2, 1966.

WAYNE-WARE

For Metal Cookware.

First use July 12, 1960.

SN 238,788. Ray Control Corp., New York, N.Y. Filed Feb. 14, 1966.

FONTANA

For Stainless Steel Cookware, Consisting of Fry Pans, Sauce Pots, With and Without Covers, Roast Pans, Chicken Fryers, and Coffee Perculators.

First use 1957.

SN 243,286. Kings Langley Engineering Company Limited, Kings Langley, England. Filed Jan. 26, 1966.

KINGLEY

Owner of British Reg. No. 661,748, dated Aug. 20, 1947.

For Pipes and Tubes of Common Metal (Other Than Boiler Tubes or Parts of Machines), Pipe Joints and Pipe Couplings.

SN 245,155. Bridgeport Brass Company, Bridgeport, Conn. Filed May 9, 1966.

DIAL-TROL

For Showerheads.
First use Feb. 28, 1966.

SN 258,447. Armco Steel Corporation, Middletown, Ohio. Filed Nov. 14, 1966.

SPANGRID

Owner of Reg. Nos. 531,654, 798,018, and others.
For Ferrous Metal Pipe.
First use Oct. 22, 1966.

Class 15 — Oils and Greases

SN 232,441. A-Try Corporation, Chicago, Ill. Filed Nov. 10, 1965.

SOCIA LITE

Applicant disclaims the word "Lite" apart from the mark as shown.
For Candles.
First use on or before Mar. 30, 1965.

SN 239,040. Energy Research Group, Inc., Denver, Colo., assignee of Fuels Research Corporation, Denver, Colo. Filed Feb. 17, 1966.

ALL-12

For Gasoline Supplement.
First use Oct. 1, 1965.

SN 245,859. Sinclair Refining Company, New York, N.Y. Filed May 17, 1966.

SINCOPRIME

Owner of Reg. Nos. 126,348, 595,418, and others.
For Refined Mineral Oils, Lubricating Oils, Process Oils, and Spray Oils.
First use Apr. 19, 1966.

SN 245,860. Sinclair Refining Company, New York, N.Y. Filed May 17, 1966.

SINCOLUX

Owner of Reg. Nos. 126,348, 595,418, and others.
For Refined Mineral Oils, Lubricating Oils, Process Oils, and Spray Oils.
First use Apr. 19, 1966.

SN 245,861. Sinclair Refining Company, New York, N.Y. Filed May 17, 1966.

SINCO-TECH

Owner of Reg. Nos. 126,348, 201,184, 595,418, and others.
For Refined Mineral Oils, Lubricating Oils, Process Oils, and Spray Oils.
First use Apr. 19, 1966.

SN 245,862. Sinclair Refining Company, New York, N.Y. Filed May 17, 1966.

DUOTREAT

For Refined Mineral Oils, Lubricating Oils, Process Oils, and Spray Oils.
First use Apr. 19, 1966.

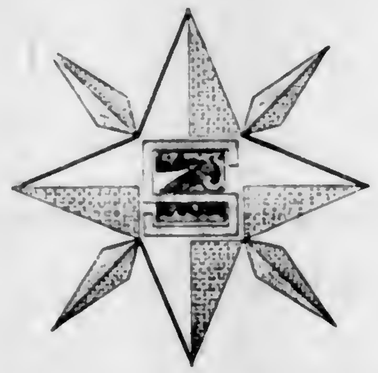
SN 261,002. Matrix Laboratories, Inc., d.b.a. Perkiomen Laboratories, Inc., Collegeville, Pa. Filed Dec. 19, 1966.

FREE'N KLEEN

For Penetrating Oil With Anti-Corrosive and Lubricating Properties.
First use Nov. 4, 1966.

Class 16 — Protective and Decorative Coatings

SN 231,599. Schmitt Paint and Chemical-Equipment Corp., Fort Wayne, Ind. Filed Oct. 24, 1965.



The drawing is lined for red, violet, and gold, but color is not claimed as a part of the mark.
For Paint—Namely, Lead Base Exterior Paint, Titanium Base Exterior Paint, Alkyd Base Enamel, Alkyd Base High Gloss Paint, Alkyd Base Machinery Enamel, Alkyd Base Interior Primer and Sealer, Alkyd Base Flat Wall Paint, Alkyd Base Porch, Deck and Trim Enamel, Vinyl Interior Flat Wall Paint, and Vinyl Exterior Paint.
First use June 29, 1965.

SN 245,033. Universal Wholesale Corporation, Phoenix, Ariz. Filed May 5, 1966.

Uni-Cap

For Epoxy Base Roof Coating.
First use Aug. 7, 1963.

SN 246,264. Carboline Company, St. Louis, Mo. Filed May 23, 1966.

PERDURA

For Components, Sold as Such, of a Mixture To Be Applied to Building Surfaces To Form a Resistant Coating Thereon.
First use Jan. 4, 1966.

SN 246,364. Purton, Inc., Sycamore, Ill. Filed May 23, 1966.

JAMBOREE

For Spray Paint.
First use Apr. 15, 1966.

Class 17 — Tobacco Products

SN 244,817. Wally Frank, Ltd., New York, N.Y. Filed May 3, 1966.

HOLLCO

For Tobacco Products—Namely, Cigars.
First use September 1962.

SN 260,498. Philip Morris Incorporated, New York, N.Y. Filed Dec. 12, 1966.

PERC

For Cigarettes.
First use Nov. 28, 1966.

Class 18 — Medicines and Pharmaceutical Preparations

SN 210,728. American Cyanamid Company, Wayne, N.J. Filed Jan. 27, 1965.

SYMASUL

For Antibacterial Preparation.
First use Jan. 11, 1965.

SN 210,729. American Cyanamid Company, Wayne, N.J. Filed Jan. 27, 1965.

CYMASUL

For Antibacterial Preparation.
First use Jan. 11, 1965.

SN 215,145. A. H. Robins Company, Incorporated, Richmond, Va. Filed Mar. 30, 1965.

DONNAMYCIN-PG

For Pharmaceutical Preparation Used as an Antidiarrheal.
First use Aug. 14, 1964.

SN 227,447. Sandoz, Inc., Hanover, N.J. Filed Sept. 8, 1965.

ORIGINAL RESEARCH SERVING THE PHYSICIAN

For Pharmaceutical Products.
First use at least by Apr. 1, 1961.

SN 244,376. A. H. Robins Company, Incorporated, Richmond, Va. Filed Apr. 27, 1966.

PONDEREX

For Anorexigenic Medicinal Preparation.
First use Apr. 18, 1966.

SN 254,708. Noxell Corporation, Baltimore, Md. Filed Sept. 19, 1966.

NOXCEL

Owner of Reg. Nos. 112,638, 561,345, and others.
For Medicated Skin Cream.
First use Aug. 10, 1966.

SN 255,677. Leneva Laboratories, Inc., Omaha, Nebr. Filed Oct. 4, 1966.

For Medicament To Lessen Distress of Aches, Pains, and Itching.
First use on or about May 17, 1966.

SN 255,678. Leneva Laboratories, Inc., Omaha, Nebr. Filed Oct. 4, 1966.

Patiton

For Medicament To Lessen Distress of Aches, Pains, and Itching.
First use on or about May 17, 1966.

Class 19 — Vehicles

SN 201,973. Sheller Manufacturing Corporation, Detroit, Mich. Filed Sept. 15, 1964.

SHELLER

Owner of Reg. No. 623,771.
For Steering Wheels, Arm Rests, Crash Pads, Horn Rings, Ornamental Die Castings, and Bezels, Knobs, Emblems, and Escutcheons for Use on Vehicles.
First use 1930.

SN 205,035. Alfred Bloomingdale, Los Angeles, Calif. Filed Oct. 29, 1964.

JET FISH

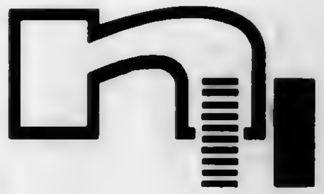
For Small Sailboats Equipped With or Adapted for Inboard Water Jet Engines, and for Component Elements of Such Boats.
First use Oct. 15, 1964.

SN 245,604. The New York Air Brake Company, New York, N.Y. Filed May 13, 1966.

NYCOPAC

Owner of Reg. No. 504,295.
For Brake Assemblies for Use on Railway Car Trucks.
First use Mar. 31, 1966.

SN 245,740. Namco Industries, Inc., Elkhart, Ind. Filed May 16, 1966.



For Mobile Homes.
First use on or about Dec. 18, 1962.

SN 245,741. Namco Industries, Inc., Elkhart, Ind. Filed May 16, 1966.

namco

For Mobile Homes.
First use on or about Dec. 18, 1962.

SN 245,876. Travelhome, Inc., Grinnell, Iowa. Filed May 4, 1966.

THE ESCORT

For Portable Houses—Namely, Campers, Camping Trailers, and Trailers Having Facilities for Temporary Living.
First use November 1956.

SN 245,910. Chickasha Mobile Homes of Missouri, Inc., North Kansas City, Mo. Filed May 18, 1966.

PATRICE

For Mobile Homes.
First use Apr. 6, 1966.

SN 246,304. General Body Sales Corporation, Chicago, Ill. Filed May 23, 1966.

TRI-TAPER

For Truck Beds and Truck Bodies.
First use November 1964.

SN 246,367. Republic Engineering & Manufacturing Co., St. Louis, Mo. Filed May 23, 1966.

REMCO-MATIC

Owner of Reg. Nos. 566,598, 749,027, and 751,962.
For Automotive Parts—Namely, Ball Joints, Tie Rods and Tie Rod Ends, Steering Pitman Arms, and Steering and Suspension Parts.
First use Mar. 30, 1966, on ball joints.

SN 254,716. Plasti-Craft Inc., of California, San Gabriel, Calif. Filed Sept. 19, 1966.

TOTE-ABOUT

For Garment Hanger for Use in Automobiles.
First use July 29, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 229,490. The R. T. Bozak Manufacturing Company, South Norwalk, Conn. Filed Oct. 7, 1965.

BOZAK

For Speakers and Speaker Systems.
First use October 1961.

SN 235,214. National Semiconductor Corporation, Danbury Conn. Filed Dec. 23, 1965.

GEM

For Semiconductor Devices—Namely, Transistors.
First use Mar. 20, 1965.
Subj. to Intf. with SN 248,622.

SN 237,247. Norddeutsche Mende Rundfunk K.G., Bremen-Hemelingen, Germany. Filed Jan. 25, 1966.

GLOBETRAVELER

For Car Radios, Boat Radios, and Portable Radios.
First use Apr. 1, 1965; in commerce Apr. 1, 1965.

SN 238,701. Bourns, Inc., Riverside, Calif. Filed Feb. 14, 1966.

INFINITRON

For Electrical Resistive Elements for Potentiometers and Variable Resistors.
First use Sept. 3, 1965.

SN 239,674. Tech Plastics Corporation, New York, N.Y. Filed Feb. 25, 1966.

BLINKY

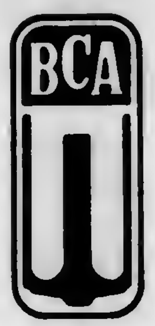
For Portable Electric Warning Beacon.
First use Jan. 3, 1966.

SN 240,494. Antennacraft Company, Burlington, Iowa. Filed Mar. 9, 1966.

ANTENNACRAFT

For Television, FM and High Frequency Antennas.
First use Aug. 15, 1961.

SN 240,499. Battery Corporation of America, Fort Lauderdale, Fla. Filed Mar. 9, 1966.



For Dry Cell Batteries.
First use on or about Dec. 9, 1965.

SN 240,968. Societe Anonyme Societe Européenne d'Isolateurs en Verre, Paris, France. Filed Mar. 14, 1966.

SEDIVER

For Insulators.
First use July 1, 1959; in commerce July 21, 1961.

SN 245,539. Ameco, Inc., Phoenix, Ariz. Filed May 13, 1966.

AMECO

Owner of Reg. No. 711,148.
For Community, Master, and Closed Circuit Television Transmission Equipment.
First use Jan. 13, 1964.

SN 248,622. IRC, Inc., Wilmington, Del. Filed June 21, 1966.

GEM

For Electrical Resistors.
First use July 1964.
Subj. to Intf. with SN 235,214.

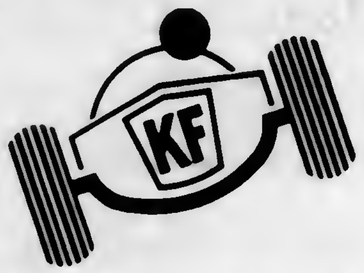
SN 255,691. Bose Corporation, Natick, Mass. Filed Oct. 4, 1966.

BOSE

For Acoustical Transducer Systems for Reproducing Sound.
First use at least as early as May 1966.

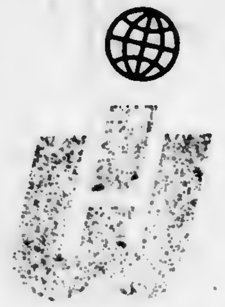
Class 22—Games, Toys, and Sporting Goods

SN 225,774. K-F Industries, Inc., Philadelphia, Pa. Filed Aug. 16, 1965.



For Slot-Racing Power Consoles—Namely, Electronic Power Supply Units, Timers and Time Controllers, and Time Totalizers.
First use March 1965.

SN 234,980. Western Import Inc., Portland, Oreg. Filed Dec. 20, 1965.



For General Line of Games, Toys, and Sporting Goods—Namely, Mechanical Toys, Battery Operated Toys, Friction Operated Toys, Pre-School Toys, Educational Toys, Musical Toys, Party Toys, Inflatable Toys, Toy Novelties, Toy Guns, Toy Gun Sets, Boys' Toys, Girls' Toys Including Dolls and Accessories Therefor, Board and Similar Type Parlor Games, Baseball Gloves, Golf Accessories, Badminton Sets, Table Tennis Accessories, Badminton Accessories, Tennis Accessories, and Darts.
First use Dec. 1, 1964.

SN 238,619. De Luxe Reading Corporation, Elizabeth, N.J. Filed Feb. 11, 1966.

TEX

For Dolls.
First use Jan. 28, 1966.

SN 239,011. Chaparral Cars, Midland, Tex. Filed Feb. 17, 1966.

CHAPARRAL

For Slot-Type Racing Cars.
First use Sept. 1, 1966.

SN 240,806. Totem Manufacturing Company, Kent, Wash. Filed Mar. 11, 1966.

Swinging Sam

For Fishing Lures.
First use on or about Mar. 2, 1966.

SN 241,101. The United States Playing Card Company, Cincinnati, Ohio. Filed Mar. 15, 1966.

No. 68

Owner of Reg. No. 55,508.
For Playing Cards.
First use 1898.

SN 242,686. Top Flite Models, Inc., Chicago, Ill. Filed Apr. 4, 1966.

MONOKOTE

For Adhesive Coated Plastic Film Coverings for Model Airplanes.
First use Mar. 9, 1966.

SN 242,807. E.S.R., Inc., Montclair, N.J. Filed Apr. 6, 1966.

Dr.NIM

For Equipment and Component Parts of Computerized Marble Game.
First use Jan. 28, 1966.

SN 242,988. Jolor Enterprises, Dearborn, Mich. Filed Apr. 8, 1966.

BOWL-TRU

For Finger and Thumb Grips for Bowling Balls.
First use Mar. 25, 1966.

SN 243,048. Victor Comptometer Corporation, Chicago, Ill. Filed Apr. 8, 1966.

Overspin

For Golf Clubs.
First use Aug. 25, 1965.

SN 243,139. Jeffers & Bailey, Inc., Fresno, Calif. Filed Apr. 11, 1966.

BOD-E-GUARD

For Fishing Lures.
First use Aug. 10, 1961.

SN 243,540. Milton Bradley Company, Springfield, Mass. Filed Apr. 15, 1966.

Somerset

For Full Circle Puzzles.
First use Jan. 1, 1966.

SN 243,607. Victor Comptometer Corporation, Chicago, Ill. Filed Apr. 15, 1966.

TŌP-SPIN

For Golf Clubs.
First use Mar. 29, 1966.

SN 243,692. Mattel, Inc., Hawthorne, Calif. Filed Apr. 18, 1966.

BAT-BOMB

For Toy Cap Firing Throwing Devices.
First use Feb. 23, 1966.

SN 253,281. Colonial Latex Cushion Inc., Buffalo, N.Y. Filed Aug. 29, 1966.

FOAMPETS

For Toy Animal Figures of Synthetic Sponge Material Used as Playthings, Wall Decorations, Party Favors, and the Like.
First use June 1, 1966.

SN 259,372. Louis Marx & Co., Inc., New York, N.Y. Filed Nov. 25, 1966.

THUNDERCOLT

For Toy Horses.
First use Aug. 2, 1966.

SN 259,504. Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. Filed Nov. 28, 1966.

MR. MURDER

For Fishing Lures.
First use Sept. 14, 1966.

SN 259,505. Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. Filed Nov. 28, 1966.

MAVERICK

For Fishing Lures.
First use Sept. 14, 1966.

SN 259,626. The United States Playing Card Company, Cincinnati, Ohio. Filed Nov. 29, 1966.

44

Owner of Reg. Nos. 557,010 and 555,116.
For Playing Cards.
First use Nov. 15, 1966.

SN 260,208. Mattel, Inc., Hawthorne, Calif. Filed Dec. 7, 1966.

FUZBY

For Dolls, Doll Clothing, and Doll Accessories.
First use Nov. 14, 1966.

SN 260,210. Mattel, Inc., Hawthorne, Calif. Filed Dec. 7, 1966.

KISSIN' KUZZINS

For Dolls, Doll Clothing, and Doll Accessories.
First use Nov. 14, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 202,198. H. A. Waldrich G.m.b.H., Siegen, Wastphalia, Germany. Filed Sept. 2, 1964.

TORQUEON

Owner of German Reg. No. 787,831, dated Apr. 28, 1964.
For Lathes, Milling Machines, and Other Machine Tools Having Rotary Cutting Members, Driven by Electrical Power, and Replacement Parts for Such Machine Tools.

SN 202,199. H. A. Waldrich G.m.b.H., Siegen, Westphalia, Germany. Filed Sept. 2, 1964.

TORCON

Owner of German Reg. No. 787,105, dated Apr. 14, 1964.
For Lathes, Milling Machines, and Other Machine Tools Having Rotary Cutting Members Driven by Electrical Power, and Replacement Parts for Such Machine Tools.

SN 207,927. Weben Products, Inc., Dallas, Tex. Filed Dec. 10, 1964.

COIN Car Wash

The words "Car Wash" are disclaimed apart from the mark as shown.
For Mechanism for Dispensing Heated and Softened Water With Detergent Therein.
First use Oct. 1, 1964.

SN 210,734. Thomas B. Ballard, Highland Park, Mich. Filed Jan. 27, 1965.

PENDANT WASH

Applicant disclaims the word "Wash" except in connection with the mark.
For Washers and Degreasing Machines for Metal Parts.
First use Mar. 16, 1964.

SN 214,417. Brant Sewing Machine Co., Inc., Cincinnati, Ohio. Filed Mar. 18, 1965.

IMPERIAL

For Sewing Machines.
First use February 1963.

SN 225,060. Polycom Corporation, Winsted, Conn. Filed Aug. 5, 1965.

POLYCOM

For Apparatus for Moving Fluids Such as Air and Water, Comprising Pumps, Fans, Chambers, Screens, Filter Packing Material, and the Like, Sold as a Unit.
First use Feb. 2, 1965.

SN 225,064. Polycom Corporation, Winsted, Conn. Filed Aug. 5, 1965.

VAM

For Apparatus for Moving Fluids Such as Air and Water, Comprising Pumps, Fans, Chambers, Screens, Filter Packing Material, and the Like, Sold as a unit.
First use Feb. 2, 1965.

SN 228,001. Borg-Warner Corporation, Chicago, Ill. Filed Sept. 17, 1965.

DITTMER

Owner of Reg. No. 584,526.
For Gears, Shafts, and Bearings, for Automotive Transmissions.
First use on or prior to June 10, 1965.

SN 229,991. Mobile Aerial Towers, Inc., Fort Wayne, Ind. Filed Oct. 12, 1965.

THE Hustler

For Aerial Towers Capable of Being Mounted on Trucks.
First use Sept. 20, 1965.

SN 231,318. William R. Van Deburg, d.b.a. Wedco Manufacturing Company, Jackson, Wyo. Filed Oct. 22, 1965.

WEDCO

For Steam-Cleaning Apparatus.
First use Apr. 17, 1962.

SN 232,772. Eversharp, Inc., Milford, Conn. Filed Nov. 16, 1965.

REELSHAV

For Safety Razors and Safety Razor Blades.
First use Oct. 26, 1965.

SN 232,773. Eversharp, Inc., Milford, Conn. Filed Nov. 16, 1965.

INSTAMATIC

For Safety Razors and Safety Razor Blades.
First use Oct. 26, 1965.

SN 234,221. Ernest W. Miller, d.b.a. Scuttle-Board, Redwood City, Calif. Filed Dec. 8, 1965.

SCUTTLE-BOARD

For Chopping Scoop Kitchen Utensil.
First use Oct. 3, 1965.

SN 234,236. "R.A.M.O." Realisations d'Appareils et de Machines-Outils, Niort, Deux Sevres, France. Filed Dec. 8, 1965.

RAMO

For Lathes—Namely, Slide-Lathes, Screw Cutting and Threading Lathes, Drilling Apparatus, Their Component Parts and Accessories, Tools for Lathes, Tool-Holders, Chucks, Apparatus and Instruments for Measuring, Positioning, Setting and Controlling Parts on Lathes, Synchronized Multiple-Stop Apparatus for Limiting the Movement of Tools on a Lathe, and Tightening Apparatus for Tightening the Tailstock Center of Lathes.
First use Apr. 30, 1960; in commerce Apr. 30, 1960.

SN 234,329. Bimba Manufacturing Company, Monee, Ill. Filed Dec. 10, 1965.

CUSHION QUIET

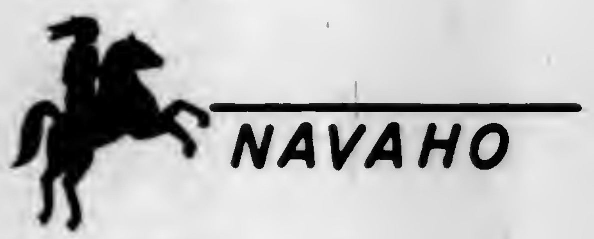
For Air Cylinders.
First use Sept. 9, 1965.

SN 234,787. U.S. Textile Machine Company, Scranton, Pa. Filed Dec. 16, 1965.

UTEX

For Textile Machines and Parts Therefor.
First use Apr. 27, 1960.

SN 234,834. New Jersey Machine Corporation, Hoboken, N.J. Filed Dec. 17, 1965.



For Labeling Machines.
First use on or about July 28, 1964.

SN 235,338. RJS Products Company, Inc., Akron, Ohio. Filed Dec. 27, 1965.

RAPID-PLY

For Machinery for Fabricating Bands or Strips of Rubber or Rubberized Material.
First use Feb. 12, 1963.

SN 235,792. The Parker Pen Company, Janesville, Wis. Filed Jan. 4, 1966.

PARKER

Owner of Reg. Nos. 165,783, 617,440, and others.
For Hand Tools—Namely, Devices for Cutting Clippings From Newspapers, Magazines or the Like; Moistener Tools; Staple Removers; Screwdrivers; Scribers; Knives; Telescoping Pointers; and Coin Wrapping Devices.
First use Dec. 17, 1965.

SN 236,084. Genbearco International Corporation, West Nyack, N.Y. Filed Jan. 10, 1966.

GBC

For Ball Bearings, Cylindrical Roller Bearings, Tapered Roller Bearings, Pillow Blocks, Flange Mountings, Split Housing Pillow Blocks, Adapter Sleeves, Roller Chain, Clutch Throw-Out Bearings, Fan and Pump Shaft Bearings, Gears, Gear Reducers, Universal Joints, and Power Transmission Equipment.
First use Apr. 6, 1965.

SN 239,349. United Engineering and Foundry Company, Pittsburgh, Pa. Filed Feb. 21, 1966.

UNI-CASE

For Machined Metallic Articles—Namely, Rolls, Pinions, Gears, and Rollers.
First use Feb. 8, 1966.

SN 239,845. Wayne Manufacturing Co., Pomona, Calif. Filed Feb. 28, 1966.

STARSWEEP

For Machines for Outdoor and Indoor Improved Ground Area Sweeping, for Cleaning, Handling and for the Disposal of Refuse Collected From Streets and Such Areas.
First use Sept. 21, 1961.

SN 239,887. Fisher Scientific Company, Pittsburgh, Pa. Filed Mar. 1, 1966.

SPOONULET

For Combination Spoon and Spatula.
First use November 1965.

SN 243,264. Portable Elevator Manufacturing Company, Bloomington, Ill. Filed Apr. 12, 1966.

GIANT G

For Chisel Plows.
First use at least as early as October 1957.

SN 243,468. William A. Moore, d.b.a. Bell Rubber Company, Dallas, Tex. Filed Apr. 14, 1966.

XEL

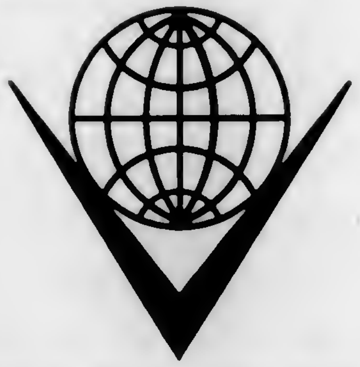
For Oil Well Tubing Swab Cups.
First use Jan. 5, 1966.

SN 243,558. William J. Hayden, d.b.a. Hayden Mfg. Co., Marshall, Mo. Filed Apr. 15, 1966.

HOG-DOG

For Instrument for Catching and Holding Animals.
First use Aug. 1, 1965.

SN 244,893. Embassy Overseas Corp., Farmingdale, N.Y. Filed May 4, 1966.



For Machinery for Manufacturing Metal Fin and Tube Products, Comprising Machines for Applying Plastic Tracks to Metal Fins Which Are Attached to Tubes; Draw Benches for Drawing Mandrels Through Tubes for Expanding Such Tubes for Bonding the Metal Fins to the Tubes; Dies for Stamping the Metal Fins and Jigs for Use in the Manufacture of Metal Finned Tube Products.
First use Mar. 11, 1966.

SN 245,695. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed May 16, 1966.

MARSHALLMATIC

For Hydrostatic Power Transmissions, Parts and Controls Therefor.
First use May 2, 1966.

SN 249,190. Tarrant Manufacturing Company, Saratoga Springs, N.Y. Filed June 28, 1966.

CATCH VAC

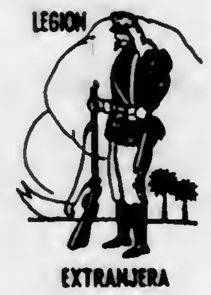
For Vacuum-Type Catch Basin Cleaner and Leaf Collector.
First use Apr. 11, 1966.

SN 255,566. Continental Exchange Ltd. of California, d.b.a. Robert Louis, Ltd., Los Angeles, Calif. Filed Oct. 3, 1966.

RO-LO

For Small, Hand-Operated Kitchen Utensils or Gadgets—Namely, Jar Wrench; Apple Slicer and Corer; French Fry Cutter; Kitchen Shears; Frozen Food Knife; Cheese Slicer; Nut Cracker Set; Egg Slicer; Lemon Squeezer; Egg Beater; Lobster Cracker Set; Can Opener; Hamburger Press; Winged Corkscrew; Holder for Holding Potatoes Upright When Baking; Ice Cream Spade; Aluminum Baster for Meats and Fowl; Ice Cream Scoop; Stirring Spoon Set of Stainless Steel; Meat Tenderizer Mallet; Collapsible Fruit and Vegetable Washer; Sandwich Spreader; Garlic Press; Ice Crusher; Potato Baker Heat Conductor; Cutting Board; Fruit Corer and Parer; Combination Chopper and Slicer; Melon and Potato Baller; Spoon and Spatula Set of Non-Precious Metal; Cake Breaker; Kitchen Serving Tongs; Spaghetti Tongs; Pizza Cutter; and Cheese Boards.
First use May 1966.

SN 256,748. Legion Extranjera, Fabrica de Hojas de Afeitar, Industrial y Comercial, Sociedad Anonima, Buenos Aires, Argentina. Filed Oct. 19, 1966.



The Spanish words "Legion Extranjera" translated into English mean "foreign legion." Owner of Argentine Reg. No. 553,375, dated June 3, 1965.
For Razors, Razor Blades, Safety Razors, Safety Razor Blades, Mechanical Razor Stroppers, Mechanical Razors, and Electric Tonsorial Shavers.

Class 24 — Laundry Appliances and Machines

SN 238,411. E and B Manufacturing Co., Inc., Romulus, Mich. Filed Feb. 9, 1966.

For Outdoor Clothes Drying Racks.
First use Jan. 5, 1966.

Class 25 — Locks and Safes

SN 235,105. Industries Plus, Inc., Brooklyn, N.Y. Filed Dec. 22, 1965.

PORTA-VAULT

For Safety Boxes.
First use Oct. 29, 1965.

SN 237,430. Curtis Noll Corporation, Cleveland, Ohio. Filed Jan. 27, 1966.

CNC-KEYMETAL

For Alloy Made Into Key Blanks.
First use at least as early as Jan. 12, 1966.

Class 26 — Measuring and Scientific Appliances

SN 231,875. Addressograph Multigraph Corporation, Cleveland, Ohio. Filed Nov. 1, 1965.

COPY MINDER

For Digital Counters.
First use on or about Nov. 1, 1964.

SN 232,836. Hyde Manufacturing Company, Southbridge, Mass. Filed Nov. 17, 1965.

MEASURE-ZUM

For Measuring Rulers.
First use Oct. 4, 1965.

SN 233,624. The Mosler Safe Co., Hamilton, Ohio. Filed Nov. 30, 1965.

SELECTRIEVER

Owner of Reg. No. 727,186.
For Equipment for Storing a Multiplicity of Cards, Microfiche, or Information Storage Media in Card Format, and for Automatically Moving a Single Unique Card, Microfiche, Medium or Group of Cards, Microfiche, or Media From the Storage Area of the Machine to an Information Retrieval Station in Response to a Command Signal, and for Subsequently Returning the Card. Microfiche, Medium or Group of the Same to the Storage Area From the Retrieval Station in Response to Another Command Signal.
First use Oct. 8, 1965.

SN 237,974. Integron, Inc., Burlington, Mass. Filed Feb. 3, 1966.

CALIBAIRE

For Wind Tunnels Complete With Blowers and Instrumentation Including Humidity Indicators, Air Flow Indicators, and Thermometers.
First use on or about Aug. 1, 1965.

SN 238,060. Edroy Products Company, Inc., New York, N.Y. Filed Feb. 4, 1966.

No claim is made to the words "an" and "Product" apart from the combination. Owner of Reg. No. 419,264.
For Magnifying Glasses and Reading Glasses.
First use June 15, 1944.

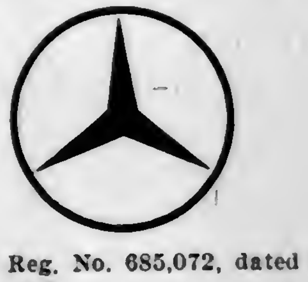
SN 252,625. Sams Technical Institute, Inc., Indianapolis, Ind. Filed Aug. 18, 1966.

DEMOdule

For Electronic Circuitry Demonstration Device Used in Teaching Electronics.
First use June 1, 1966.

Class 27 — Horological Instruments

SN 234,807. Daimler-Benz Aktiengesellschaft, Stuttgart-Untertuerkheim, Germany. Filed Dec. 17, 1965.



Owner of German Reg. No. 685,072, dated July 25, 1942; and U.S. Reg. No. 790,257.

For Clocks.

First use 1933; in commerce 1953; 1909 as to the representation of the three pointed star; 1912 as to the mark now shown, in a similar display.

Class 28 — Jewelry and Precious-Metal Ware

SN 241,172. Oneida Ltd., Oneida, N.Y. Filed Mar. 16, 1966.

TORONADO

For Silver-Plated Flat Tableware.

First use Dec. 29, 1965.

SN 241,283. Stein & Ellbogen Company, Chicago, Ill. Filed Mar. 17, 1966.

AZURLITE

Owner of Reg. No. 682,194.

For Simulated Pearl Necklaces.

First use Mar. 1, 1966.

Class 29 — Brooms, Brushes, and Dusters

SN 241,630. Bill G. Blount, d.b.a. School Products Co., Irving, Tex. Filed Mar. 23, 1966.

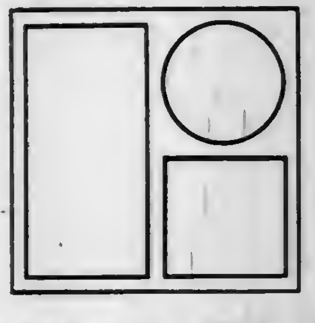
T.A.B.

For Paint Brushes.

First use Sept. 18, 1965.

Class 32 — Furniture and Upholstery

SN 236,102. Litton Industries, Inc., Beverly Hills, Calif. Filed Jan. 10, 1966.



The mark consists of the letters "LI." Owner of Reg. No. 703,170.

For Furniture—Namely, Desks, Chairs, Tables, Filing and Storage Cabinets, Bookcases, Lockers, Roll-out Shelf Files, Horizontal Drawer Files, and Card Files.

First use on or about Oct. 1, 1963.

SN 246,550. Fixtures Manufacturing Corporation, Kansas City, Mo. Filed May 25, 1966.

ECON-O-STAK

For Chairs.

First use May 18, 1965.

SN 246,583. Modern Upholstered Chair Co., Inc., Morristown, Tenn. Filed May 25, 1966.

ULTRAMA

For Reclining Chairs and Lounge Chairs.

First use Apr. 22, 1966.

SN 260,378. Thomas Black & Sons, Inc., Ogdensburg, N.Y. Filed Dec. 9, 1966.

KAMPAMAT

For Plastic Foam Mattresses.

First use at least as early as Apr. 1, 1962.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 235,093. Engelhard Industries, Inc., Newark, N.J. Filed Dec. 22, 1965.

PTX

For Catalytic Air Purification and Catalytic Air Pollution Elimination Apparatus.

First use Oct. 25, 1965.

SN 235,494. Crane Co., New York, N.Y. Filed Dec. 29, 1965.

ELECTROTUBE

For Electric Baseboard Heating Systems, and Parts and Components Thereof.

First use July 29, 1964.

SN 260,379. Green Colonial, Inc., Des Moines, Iowa. Filed Dec. 9, 1966.

For Furnaces.

First use Nov. 16, 1966.

SN 260,497. Eldon Industries, Inc., Hawthorne, Calif. Filed Dec. 12, 1966.

PRINCESS

For Soldering Irons and Various Parts and Supplies for Soldering Irons.

First use Aug. 26, 1966.

SN 260,633. The Vulcan Radiator Company, Hartford, Conn. Filed Dec. 13, 1966.

VULCAN

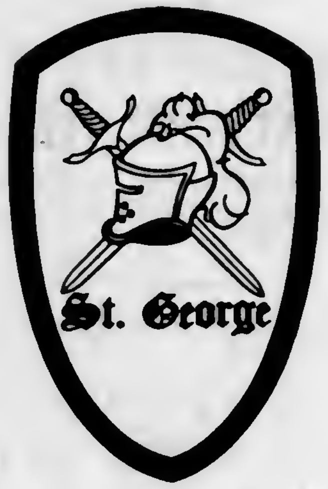
Owner of Reg. Nos. 417,346, 661,054, and others.

For Heating, Cooling, and Air Conditioning Apparatus Including Heat Transfer Elements and Enclosures Therefor, Heating and Ventilating Units, Parts and Accessories Therefor; and Diffusers for Forced Air Heating and Cooling Systems.

First use 1926.

Class 36 — Musical Instruments and Supplies

SN 227,280. George's Import-Export, Ltd., Hollywood, Calif. Filed Sept. 7, 1965.



For Musical Instruments—Namely, Guitars and Picks, Drums, Drum Sticks and Drum Pedals, Bongos, Ukeleles, Banjos, Violins, Basses, Cymbals; and Accessories, Including Cases, Covers, Pads, Stands, Straps, Pickups, Jacks, Extension Cords, and Amplifiers.

First use Jan. 14, 1964.

SN 232,473. Pacific Electro Magnetics Co., Inc., Palo Alto, Calif. Filed Nov. 10, 1965.

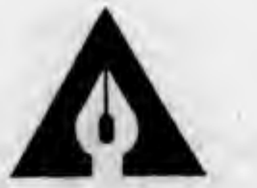
The drawing is lined for the color blue, but color is not a feature of the mark. Owner of Reg. No. 725,626.

For Magnetic Tape Recorders.

First use July 6, 1965; Sept. 30, 1960, as to the trademark "Pemco."

Class 37 — Paper and Stationery

SN 230,750. The Allen Pen Company, Inc., Needham Heights, Mass. Filed Oct. 21, 1965.



For Stationery Supplies—Namely, Pens, Pencils, Index Tabs, Index Cards, Composition Books, Stenographer Notebooks and Notebook Fillers, Paper, and Pads of Paper.

First use about January 1965.

SN 233,195. Paper Mate Manufacturing Company, Santa Monica, Calif. Filed Nov. 23, 1965.

LIMITED EDITION

For Ball Point Pens.

First use Oct. 21, 1965.

SN 234,094. Wallace Pencil Company, Maplewood, Mo. Filed Dec. 6, 1965.

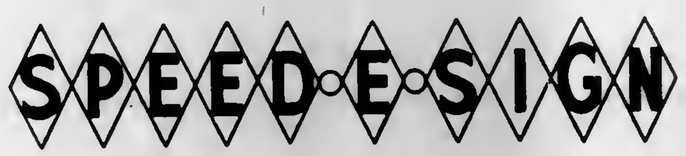
GLIDER

Owner of Reg. No. 775,376.

For Ball Point Pens, Mechanical Pencils, Wood Case Pencils, and Felt and Fibre Tip Marking Pens.

First use Apr. 10, 1957.

SN 235,347. Speedrite Products, Inc., Wichita, Kans. Filed Dec. 27, 1965.



Owner of Reg. No. 726,271.

For Fountain-Type Pens Having Felt Nibs and Holders Therefor.

First use on or about Nov. 26, 1965.

SN 236,098. Lakeside Central Company, Chicago, Ill. Filed Jan. 10, 1966.

DRAWRITE

For Artists' Drawing Tablets and Paper.

First use Nov. 8, 1965.

SN 238,196. Alfred Dunhill Limited, London, England. Filed Feb. 7, 1966.

DUNHILL

Owner of U.S. Reg. Nos. 155,951, 634,071, and others.

For Pens, Pencils, Desk Sets, Lap Desks, Pen Holders, Diaries, Address Books, Memo Pads, Scrap Books, Photograph Albums, and Desk Calendars.

First use at least 1943; in commerce 1943.

SN 254,449. Jacques Kreisler Manufacturing Corporation, North Bergen, N.J. Filed Sept. 14, 1966.

KREILOY-POINT

The word "Point" is disclaimed apart from the mark as shown.

For Ball Point Pens and Ballpoint Pen Refills.

First use Sept. 1, 1966.

Class 38 — Prints and Publications

SN 213,664. Food Fair Stores, Inc., Philadelphia, Pa. Filed Mar. 9, 1965.

Golden Kitchens

For Recipes, and Leaflets Containing Recipes and Planned Weekly Menus.

First use Nov. 17, 1964.

SN 234,922. Medical Economics, Inc., Oradell, N.J. Filed Dec. 21, 1965.

HOSPITAL PHYSICIAN

For Monthly Magazine.
First use on or about July 6, 1965.

Class 39 — Clothing

SN 204,776. Durban Clothing Manufacturers Limited, Mayville, Durban, Natal, Republic of South Africa. Filed Oct. 26, 1964.

MAN-ABOUT-TOWN

Owner of South African Reg. No. 62/2540, dated July 30, 1962.
For Suits, Tuxedos, Full Dress Suits, Trousers, and Shorts.

SN 225,828. John B. Stetson Company (Delaware corporation), Philadelphia, Pa., by merger John B. Stetson Company (Pennsylvania corporation), Philadelphia, Pa. Filed Aug. 16, 1965.

Mallory Nokabout

Owner of Reg. Nos. 212,132 and 569,923.
For Hats, Caps; Footwear, Including Boots, Shoes and Slippers, for Men, Women, and Children.
First use 1926.

SN 228,804. Bond Stores, Incorporated, New York, N.Y. Filed Dec. 13, 1966.

BONDSET

For Men's Shirts.
First use Sept. 30, 1965.

SN 231,083. Exmoor Knitwear Co., Inc., Haverstraw, N.Y. Filed Oct. 22, 1965.

EXMOOR

Owner of Reg. No. 425,062.
For Women's and Misses' Knitted Outer Garments—Namely, Sweaters and Jackets, Suits and Dresses.
First use Aug. 1, 1942.

SN 231,981. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Nov. 2, 1965.

Owner of Reg. Nos. 429,337, 797,292, and others.
For Men's and Boys' Pants, Slacks, Vests, and Trousers.
First use Oct. 14, 1965.

SN 232,026. W. S. Peebles & Company, Incorporated, Lawrenceville, Va. Filed Nov. 2, 1965.

Veilstep

For Ladies' Hosiery.
First use Aug. 19, 1965.

SN 233,528. Puritan Fashions Corporation, New York, N.Y. Filed Nov. 29, 1965.

TEMPO TEENS

For Men's and Boys' Casual Slacks, Shirts, and Work Clothing.
First use Oct. 13, 1965.

SN 234,567. International Seaway Trading Corp., Cleveland, Ohio. Filed Dec. 14, 1965.

WALKER HILL

For Footwear—Namely, Shoes, Overshoes, and Boots of Canvas, Rubber, Vinyl, and Leather.
First use June 23, 1965.

SN 234,610. Puritan Fashions Corporation, New York, N.Y. Filed Dec. 13, 1965.

YOUNG COUNTRY BY PADDLE AND SADDLE

Owner of Reg. No. 344,959.
For Anklets, Shirts, Bermuda Pants and Knit Tops.
First use Oct. 1, 1965.

SN 244,187. Harold A. Candland, Evanston, Ill. Filed Apr. 25, 1966.

PARCRAFT

For Golf Shoes.
First use July 18, 1965.

SN 246,196. Robert Hall Plimpton, d.b.a. Teckla Garment Company, Worcester, Mass. Filed May 20, 1966.

TECKLA

For Hospital and Office Patients' Garments in the Form of Gowns, Bed Gowns, Examination Gowns, Blouses, Sheets, and Kimonos.
First use at least 1915.

SN 246,218. The Williams Manufacturing Company, Portsmouth, Ohio. Filed May 20, 1966.

SLOPPY JOE'S

For Shoes.
First use May 6, 1966.

SN 246,677. The Granet Corp., Framingham, Mass. Filed May 26, 1966.

Rawtan

For Work Gloves.
First use Apr. 8, 1966.

SN 246,976. Wipette Sportswear, Inc., New York, N.Y. Filed May 31, 1966.

Wippette

Owner of Reg. No. 586,621.
For Women's Dresses, Blouses, Sweaters, Suits, Slacks, Shorts, Shifts, Jackets, and Coats.
First use June 30, 1951.

SN 247,140. Morris & Company, Inc., Baltimore, Md. Filed June 2, 1966.

PAUL JONES ESQUIRE

Owner of Reg. Nos. 114,808 and 810,480.
For Men's Professional Coats and Jackets—Namely, Coats for Use by Doctors, Technicians, Beauticians, and the Like.
First use May 10, 1966.

SN 248,137. House of Worsted-Tex, Inc., Philadelphia, Pa. Filed June 15, 1966.

For Men's and Young Men's Suits, Topcoats, and Overcoats.
First use in or about August 1965.

SN 248,138. House of Worsted-Tex, Inc., Philadelphia, Pa. Filed June 15, 1966.

The mark consists of the letters "WT."
For Men's and Young Men's Suits, Topcoats, and Overcoats.
First use in or about August 1965.

SN 248,739. Phil Rose of California, Inc., Los Angeles, Calif. Filed June 22, 1966.

PANTOPS

Owner of Reg. No. 695,711.
For Knit Shirts and Sweaters.
First use June 17, 1959.

SN 250,159. Jalkoff Furs Inc., New York, N.Y. Filed July 13, 1966.

Narobia

For Fur Wearing Apparel—Namely, Coats, Jackets, Stoles, Capes, Collars, Scarves, Muffs, Belts, and Fur Trimmed Cloth Coats.
First use Jan. 15, 1910.

SN 250,287. Mercantile Stores Company, Inc., New York, N.Y. Filed July 14, 1966.

For Ladies' Millinery.
First use Jan. 14, 1957.

SN 250,568. Eagle Clothes, Inc., New York, N.Y. Filed July 19, 1966.

For Men's Coats, Topcoats, and Suits.
First use October 1952.

SN 250,842. Harlemark International, Inc., Framingham, Mass. Filed July 22, 1966.

DRIDOCS

For Men's, Women's, and Children's Socks.
First use May 17, 1966.

SN 252,608. Wayne Knitting Mills, Humboldt, Tenn. Filed Aug. 17, 1966.

MOONLIGHTERS

For Ladies' Garments—Namely, Coordinated Sets of Tights and Slippers.
First use on or about July 22, 1966.

SN 257,721. New York Mackintosh, Inc., New York, N.Y. Filed Nov. 1, 1966.

PIRATES COVE

For Skirts, Shorts, Slacks, Sweaters, Dresses, and Jackets for Girls, Subteens and Juniors.
First use on or about Oct. 1, 1966.

SN 260,501. U.S. Industries, Inc., New York, N.Y. Filed Dec. 12, 1966.

talbott

Owner of Reg. Nos. 594,267, 607,773, and 715,806.
For Women's Sweaters, Skirts, and Dresses.
First use Aug. 15, 1953.

SN 260,801. Maidenform, Inc., New York, N.Y. Filed Dec. 15, 1966.

SPINDLE SHELL

For Foundation Garments and Lingerie.
First use Nov. 23, 1966.

SN 260,802. Maidenform, Inc., New York, N.Y. Filed Dec. 15, 1966.

STAR SHELL

For Foundation Garments and Lingerie.
First use Nov. 23, 1966.

SN 260,803. Maidenform, Inc., New York, N.Y. Filed Dec. 15, 1966.

SILVER SHELL

For Foundation Garments and Lingerie.
First use Nov. 23, 1966.

SN 260,804. Maidenform, Inc., New York, N.Y. Filed Dec. 15, 1966.

LIMPET SHELL

For Foundation Garments and Lingerie.
First use Nov. 25, 1966.

Class 40 — Fancy Goods, Furnishings, and Notions

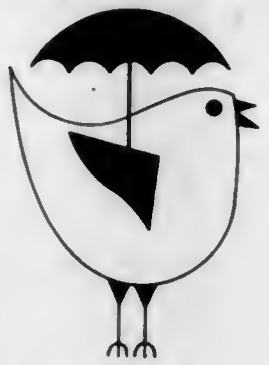
SN 223,809. Majestic Electronics, Inc., Los Angeles, Calif. Filed July 20, 1965.

THE ROMAN WIG

Applicant disclaims the word "Wig" apart from the mark as shown.
For Wigs and All Types of Hair Pieces.
First use May 11, 1965.

Class 41 — Canes, Parasols, and Umbrellas

SN 250,811. Aberdeen Manufacturing Corporation, New York, N.Y. Filed July 22, 1966.



For Umbrellas and Parts Thereof.
First use Aug. 31, 1965.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 200,112. Percase, Inc., Brockton, Mass., assignee of Arnold L. Mills, Brockton, Mass. Filed Aug. 18, 1964.

PERCASE

For Pillow Cases and Sheets.
First use Feb. 15, 1964.

SN 234,737. Duplex International, Ltd., New York, N.Y. Filed Dec. 16, 1965.

Duplex
INTERNATIONAL LTD.

The drawing is lined for red.
For Textile and Knitted Fabrics Composed of Wool and Synthetic Fibers and/or Blends Thereof.
First use in or about September 1961.

SN 234,738. Duplex International, Ltd., New York, N.Y. Filed Dec. 16, 1965.

Duplex-Shannon

The drawing is lined for red.
For Textile and Knitted Fabrics Composed of Wool and Synthetic Fibers and/or Blends Thereof.
First use in or about October 1963.

SN 247,600. India Merchandise Ltd., New York, N.Y. Filed June 8, 1966.

INDIASTAN

For Bedspreads, Draperies, and Burlap Piece Goods.
First use Apr. 1, 1966.

SN 248,381. The Whitecliff Corporation, Niota, Tenn. Filed June 17, 1966.

CLIFF CRAFT

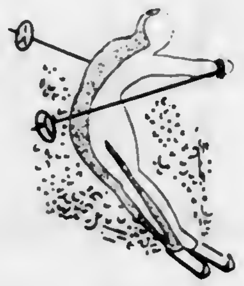
For Rugs and Toilet Seat Covers.
First use June 19, 1962.

SN 251,012. J. P. Stevens & Co., Inc., New York, N.Y. Filed July 25, 1966.

BEAUTI-PRESS

For Sheets and Pillow Cases.
First use July 1, 1966.

SN 251,027. Waumbec Mills Incorporated, New York, N.Y. Filed July 25, 1966.



For Knitted and Woven Fabrics Made of Natural and/or Synthetic Fibers and/or Blends Thereof, Used for the Manufacture of Wearing Apparel Including Outerwear Garments.
First use May 18, 1965.

SN 251,040. Abney Mills, Greenwood, S.C. Filed July 26, 1966.

TRAVELSET

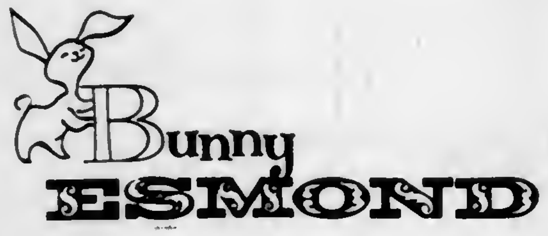
For Cotton Piece Goods.
First use June 21, 1966.

SN 251,125. Edgar Fabrics Inc., New York, N.Y. Filed July 27, 1966.

EDGAL

For Voile Textile Fabric for Drapery, Dresses, Ladies' Apparel, Curtains, and Bedspreads.
First use June 30, 1966.

SN 251,188. Chatham Manufacturing Company, Elkin, N.C. Filed July 28, 1966.



Owner of Reg. Nos. 67,044, 522,197, and others.
For Blankets.
First use Dec. 10, 1963; 1907 as to "Esmond"; Sept. 20, 1907 as to the word "Bunny" and the representation of a bunny or a rabbit.

SN 251,807. FMC Corporation, Philadelphia, Pa. Filed Aug. 5, 1966.

AVISLON

For Textile Rugs, Carpets, and Floor Coverings.
First use Aug. 2, 1966.

SN 253,811. National Research Corporation, Cambridge, Mass. Filed Aug. 15, 1966.

SPACE

For Metallized Plastic Blankets in Laminate Form, Primarily for Outdoor Use.
First use on or about Aug. 1, 1966; Sept. 7, 1965 in a different form.

Class 43 — Thread and Yarn

SN 235,649. Filatures Prouvost & Cie La Lainiere de Roubaix, Roubaix, Nord, France. Filed Jan. 3, 1966.

BeBe
PINGOUIN

Owner of French Reg. No. 8,723, dated Mar. 11, 1961 (Roubaix); Natl. Inst. No. 162,058; and U.S. Reg. Nos. 303,410, 303,413, and 587,357.
For Yarns and Threads Made of Wool, Cotton, Linen, Silk, Rayon, Hemp, Flax, and Synthetic and Artificial Fibers.

SN 237,209. Emile Bernat & Sons Co., Uxbridge, Mass. Filed Jan. 25, 1966.

WISHING WOOL

Applicant disclaims the word "Wool" apart from the mark as shown.
For Kits Containing Yarn and Fabric, Being Made Wholly or in Substantial Part of Wool, Zipper, and Instructions for Knitting Garments.
First use at least as early as Jan. 3, 1966.

SN 251,515. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Aug. 2, 1966.

CHADOLOFT

Owner of Reg. No. 614,527.
For Yarn.
First use June 16, 1966.

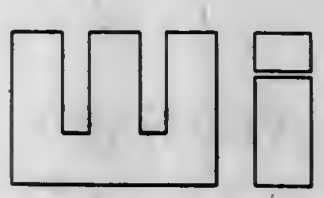
SN 251,806. FMC Corporation, Philadelphia, Pa. Filed Aug. 5, 1966.

AVISLON

For Yarns, Threads, and Yarn and Thread Filaments.
First use July 27, 1966.

Class 44 — Dental, Medical, and Surgical Appliances

SN 172,440. Walker Industries, San Francisco, Calif. Filed July 3, 1963.



For Disposable Plastic Bags for Medical Use, Catheter Plugs, Adaptors and Umbilical Cord Clamps.
First use Oct. 19, 1960.

SN 223,700. Modern Denture Research Co., Santa Monica, Calif. Filed July 19, 1965.

CUSHION-AIR

For Denture Diagnosis and Bite Correction Kit, Including A Bladder and Supports Therefor, Intended for Attachment to Dentures in the Mouth of a Patient.
First use May 5, 1965.

SN 247,492. Drägerwerk, Heinr. & Bernh. Drager, Lubeck, Germany. Filed June 7, 1966.

OXY

Owner of German Reg. No. 782,609, dated July 11, 1960.
For Protective Breathing Apparatus, Respiratory Apparatus, Anesthesia and Analgesic Apparatus.

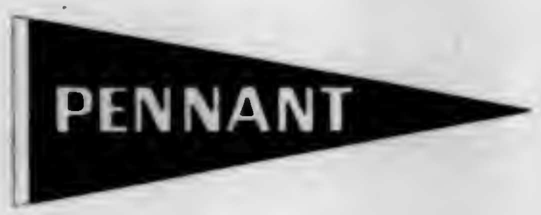
SN 260,376. American Home Products Corporation, New York, N.Y. Filed Dec. 9, 1966.

INHIBAND

For Intra-Uterine Device.
First use Oct. 28, 1966.

Class 46—Foods and Ingredients of Foods

SN 214,040. Union Starch & Refining Co., Inc., Columbus, Ind. Filed Mar. 12, 1965.



Owner of Reg. Nos. 199,647 and 579,324.
For Mixed Table Syrups.
First use about February 1960; May 3, 1911, in a different form.

SN 214,042. Union Starch & Refining Co., Inc., Columbus, Ind. Filed Mar. 12, 1965.

PENNANT

Owner of Reg. Nos. 199,647 and 579,324.
For Mixed Table Syrups.
First use about Mar. 28, 1950; May 3, 1911, in a different form.

SN 214,043. Union Starch & Refining Co., Inc., Columbus, Ind. Filed Mar. 12, 1965.

PENNANT

Owner of Reg. Nos. 537,987, 669,979, and others.
For Marshmallow and Marshmallow Creams.
First use about Mar. 28, 1950; Oct. 1, 1908, in a different form.

SN 224,718. Chicken Unlimited Inc., Chicago, Ill. Filed Aug. 2, 1965.

chicken
UNLIMITED

Applicant disclaims any rights in the descriptive word "Chicken," apart from the mark as shown.
For Chicken Breading Mix.
First use Mar. 22, 1965.

SN 226,839. G.C.R. Bakery Corporation, Astoria, N.Y. Filed Aug. 31, 1965.

ITALIAN DELITES

The word "Italian" is disclaimed apart from the mark as shown.
For Italian Food Specialties—Namely, Frozen Pizza Dough; and Condiments—Namely, Olives and Peppers.
First use Apr. 1, 1957.

SN 228,297. The Acme Packing Company, Baltimore, Md. Filed Sept. 22, 1965.

MAGIC CHEF

For Polish Sausage and Spiced Sausages.
First use Jan. 26, 1956.

SN 231,351. Carnation Company, Los Angeles, Calif. Filed Oct. 18, 1965.

CONTADINA

The Italian expression "Contadina" may be interpreted into English as "peasant." Owner of Reg. Nos. 555,226, 565,166, and 585,012.
For Evaporated Milk.
First use Apr. 27, 1964.

SN 232,022. Henry H. Ottens Mfg. Co., Inc., Philadelphia, Pa. Filed Nov. 2, 1965.

VAN-AROMA

For Modified Vanilla Flavoring Powder.
First use 1956.

SN 232,023. Henry H. Ottens Mfg. Co., Inc., Philadelphia, Pa. Filed Nov. 2, 1965.

BUTTERIN

For Food Flavoring Concentrate of a Cultured Butter Nature.
First use 1958.

SN 232,024. Henry H. Ottens Mfg. Co., Inc., Philadelphia, Pa. Filed Nov. 2, 1965.

BUTTER-CREME

For Food Flavoring Concentrate of a Cultured Butter Nature.
First use 1958.

SN 238,294. Rema Foods, Inc., New York, N.Y. Filed Feb. 7, 1966.

HARVEST OF EDEN

For Mandarin Oranges, Carrots, Pineapple, Mushrooms, Pimientos, and Artichoke Hearts in Cans.
First use Oct. 5, 1965.

SN 238,745. Joyva Corporation, Brooklyn, N.Y. Filed Feb. 14, 1966.

Sesamettes

For Candy.
First use Jan. 12, 1966.

SN 239,541. Purnell's Pride, Inc., Tupelo, Miss. Filed Feb. 24, 1966.

PURNELL'S PRIDE

For Fresh Eggs and Fresh and Frozen Dressed Poultry.
First use July 1, 1941.

SN 239,589. Calumet Cheese Co., Inc., Hilbert, Wis. Filed Feb. 25, 1966.

YE OLD CHESHIRE INN

Owner of Reg. No. 747,014.
For Cheese.
First use July 20, 1962.

SN 240,221. Universal Foods Corporation, Milwaukee, Wis. Filed Mar. 4, 1966.

SADY

For Active Dry Yeast.
First use on or about Aug. 19, 1965.

SN 240,476. The Purdue Frederick Company, Yonkers, N.Y. Filed Mar. 8, 1966.

MATERNALAC

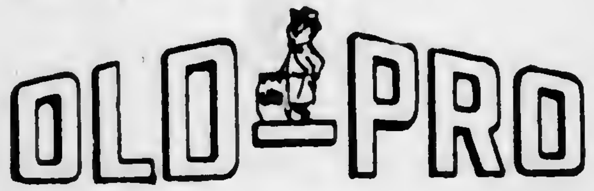
For Prepared Formula for Infant Feeding.
First use Feb. 1, 1966.

SN 242,036. National Biscuit Company, New York, N.Y. Filed Mar. 28, 1966.

WILD ONE

For Candy Bars.
First use Mar. 18, 1966.

SN 246,875. Botkins Grain & Feed Co., Botkins, Ohio. Filed May 31, 1966.



For Feed for Livestock and Poultry.
First use Sept. 11, 1965.

SN 246,890. Davis-Le Grand Company, Long Beach, Calif. Filed May 31, 1966.

DINNER HOUR

For Canned Fruits and Vegetables.
First use Apr. 27, 1966.

SN 246,904. Heggblade-Marguleas Co., San Francisco, Calif. Filed May 31, 1966.

HILO HONEY

For Fresh Fruits.
First use May 23, 1966.

SN 257,630. Horn's Poultry, Inc., Mattoon, Ill. Filed Oct. 31, 1966.

DIAMOND E

For Frozen Onion Rings.
First use Sept. 22, 1966.

SN 260,504. Plus Poultry, Inc., Siloam Springs, Ark. Filed Dec. 12, 1966.

TOWN & COUNTRY

Owner of Reg. Nos. 640,432 and 701,087.
For Frozen Poultry, Frozen Poultry Parts, Ready Cooked and Frozen Whole Chicken, Canned Whole Chicken, Cut-Up Frying Chicken, Dressed Frying Chicken, Chicken Wieners, Chicken Roll, and Frozen Pizza.
First use Apr. 15, 1955.

Class 49—Distilled Alcoholic Liquors

SN 232,297. Double Springs Distillers, Inc., d.b.a. Greenbrier, Bardstown Distilling Co., Louisville, Ky. Filed Nov. 8, 1965.

GOLD COACH

For Whiskies, Gin, and Vodka.
First use at least as early as Apr. 22, 1965.

Class 50—Merchandise Not Otherwise Classified

SN 242,515. Staver Westport Incorporated, Westport, N.Y. Filed Apr. 1, 1966.

¡MAGiNET!

For Art Set Using Movable Multicolor Precut Pieces Magnetically Adherent on a Backboard.
First use Mar. 1, 1966.

SN 249,211. The Arpax Company, Chagrin Falls, Ohio. Filed June 29, 1966.

KURLPAK

For Dunnage Material for Protective Packaging.
First use June 16, 1966.

Class 51 — Cosmetics and Toilet Preparations

SN 238,199. Alfred Dunhill Limited, London, England. Filed Feb. 7, 1966.

DUNHILL

Owner of U.S. Reg. Nos. 155,951, 634,071, and others.
For Men's Toiletries—Namely, Pre-Electric Shave Lotion, After Shave Lotion, Shave Cream, Cologne, Talcum Powder, and Personal Deodorant.
First use at least 1945; in commerce 1945.

SN 238,527. Hi-Fashion, Inc., Atlanta, Ga. Filed Feb. 10, 1966.

FROST-LUCENT

For Lipstick.
First use on or about Dec. 29, 1965.

SN 239,145. The Gillette Company, Boston, Mass. Filed Feb. 18, 1966.

ROYAL CHACE

For After Shave Lotion, Cologne, Talcum Powder, Shaving Cream, Hair Dressing, and Deodorant for Personal Use.
First use Feb. 1, 1966.

SN 244,458. Samuel Bonat & Bro., Inc., West Paterson, N.J. Filed Apr. 28, 1966.

FORMAGEL

Owner of Reg. No. 819,255.
For Hair Setting Lotion and Conditioner.
First use Mar. 31, 1966.

SN 244,798. Biometica Limited, Boreham Wood, England. Filed May 3, 1966.

BU-TO

Owner of British Reg. No. 575,681, dated Mar. 5, 1937.
For Depilatory Preparations for Toilet Use.

SN 247,428. The Wella Corporation, Englewood, N.J. Filed June 6, 1966.

ACCORD

For Hair Coloring and Setting Lotion.
First use December 1958.

SN 257,767. Chesebrough-Pond's Inc., New York, N.Y. Filed Nov. 2, 1966.

ALL-COOL

For Anti-Perspirant Deodorant.
First use Oct. 12, 1966.

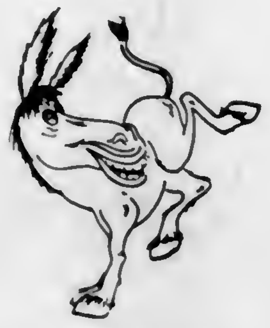
SN 260,219. Ed Pinaud Inc., New York, N.Y. Filed Dec. 7, 1966.

GAG

For After Shave Lotion and Cologne.
First use Nov. 14, 1966.

Class 52 — Detergents and Soaps

SN 238,492. Chemical Supplies Inc., Massillon, Ohio. Filed Feb. 10, 1966.



WHITE MULE BRAND

For Various Cleaning Compounds; Such as Steam Cleaners, Car Cleaners, and Cleaning Solvents for Use on Electrical Equipment, Machines, and Instruments.
First use Febuary 1964.

SN 247,510. Jac Son Co., Burbank, Calif. Filed June 7, 1966.

SURGI-KLENZ

For Cleansing Liquid for Use in Hospitals, Clinics, Doctors' and Dentists' Offices, and Laboratories as a Scrub-Up and Shampoo Cleanser.
First use Jan. 17, 1966.

SN 248,120. Colgate-Palmolive Company, New York, N.Y. Filed June 15, 1966.

GUSTO

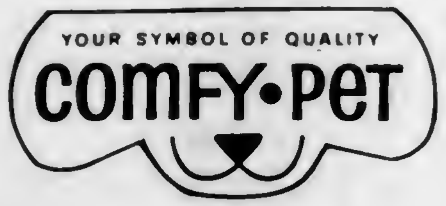
Owner of Reg. Nos. 729,926 and 732,256.
For Liquid Detergent for Hand Dishwashing.
First use May 12, 1966.

SN 248,551. Standard International Corporation, Andover, Mass. Filed June 20, 1966.

HOUSE POW'R

Owner of Reg. No. 773,358.
For Household Cleaner.
First use June 7, 1966.

SN 248,689. F. W. Woolworth Co., New York, N.Y. Filed June 22, 1966.



The words "Your Symbol of Quality" are disclaimed apart from the mark as shown.
For Dog Shampoo.
First use Apr. 7, 1966.

SN 249,313. Economics Laboratory, Inc., St. Paul, Minn. Filed June 30, 1966.

DIP-IT

Owner of Reg. No. 601,119.
For Cleaning Preparation for Removing Stains From Food Utensils.
First use Apr. 15, 1952.

SN 249,517. Economics Laboratory, Inc., St. Paul, Minn. Filed July 5, 1966.

MEDI-SOFT

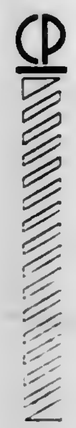
For Liquid Antiseptic Hand Soap.
First use June 15, 1966.

SN 251,273. Avon Products, Inc., New York, N.Y. Filed July 29, 1966.

WISHING

Owner of Reg. No. 424,752.
For Toilet Soap.
First use September 1961.

SN 260,221. Deltrol Corp., d.b.a. Campbell Products Co., Bellwood, Ill. Filed Dec. 7, 1966.



For Cleaner for Lather Dispensers.
First use December 1963.

SN 260,496. The Procter & Gamble Company, Cincinnati, Ohio. Filed Dec. 12, 1966.

CINCH

Owner of Reg. Nos. 421,821 and 732,255.
For All Purpose Household Cleaner.
First use Aug. 26, 1966.

SERVICE MARKS

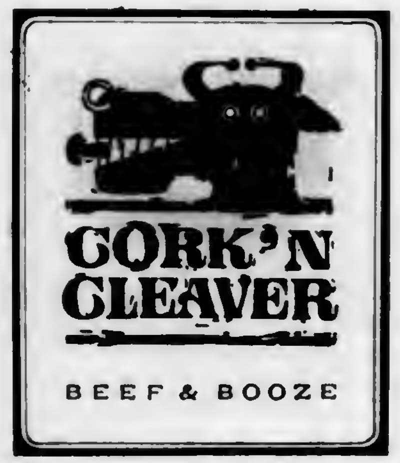
Class 100 — Miscellaneous

SN 225,286. Cork 'N Cleaver, Inc., Scottsdale, Ariz. Filed Aug. 9, 1965.

CORK 'N CLEAVER

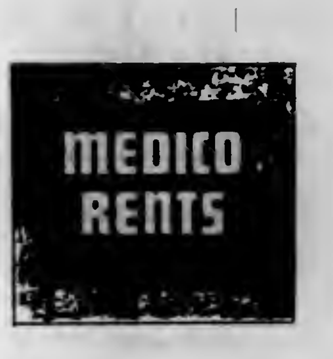
For Restaurant and Bar Services.
First use Nov. 25, 1964.

SN 225,288. Cork 'N Cleaver, Inc., Scottsdale, Ariz. Filed Aug. 9, 1965.



Applicant disclaims the wording "Beef & Booze" apart from the mark as shown.
For Restaurant and Bar Services.
First use Nov. 25, 1964.

SN 228,866. Abbey Rents, d.b.a. Medico Rents, Los Angeles, Calif. Filed Sept. 29, 1965.



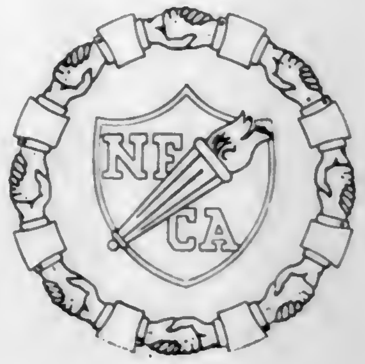
The word "Rents" is disclaimed apart from the mark as shown. Owner of Reg. No. 440,758.
For Rental of Sick Room and Party Equipment and Supplies, Power Tools, and Miscellaneous Consumer Rental Articles.
First use Jan. 1, 1947.

SN 233,672. Bataille, Kane & McKie, Inc., Barrington, Ill. Filed Dec. 1, 1965.

WATERMATION

For Analysis of Water and Heat Use and Conservation Problems and the Design of Systems Pertaining Thereto.
First use Nov. 3, 1965.

SN 237,015. National Fraternal Congress of America, Chicago, Ill. Filed Jan. 21, 1966.



For Promoting the General Welfare of the Fraternal Benefit System by Uniting Fraternal Benefit Societies in All Matters of Mutual Concern and Public Interest.
First use Aug. 1, 1965.

SN 237,839. Holmes Tire and Supply Co., Inc., Madison, Wis. Filed Feb. 2, 1966.

DYNoTRAAC

For Testing of Motor Vehicles To Determine Needed Repairs and Adjustments.
First use Jan. 3, 1966.

Class 101 — Advertising and Business

SN 197,164. Odessa Chamber of Commerce Corporation, Odessa, Tex. Filed July 6, 1964.

ODESSA CHUCK WAGON GANG

For Association Services—Namely, the Development, Encouragement, and Promoting of the Business and Industrial Interests of Odessa, Tex., and West Texas, and Dissemination of Information Concerning the Same, Which Services Are Rendered by Preparing and Serving Barbecue Dinners Throughout the United States and in Other Ways.
First use 1946.

SN 222,147. Guardian Nursing Homes, Inc., Bay City, Mich. Filed June 28, 1965.

GUARDIAN

For Offering and Furnishing Information and Plans Relative to Building and Financing Nursing Homes for Others.
First use Oct. 2, 1962.

SN 231,608. Universal Publicizers, Inc., Chicago, Ill. Filed Oct. 24, 1965.

UNIVERSAL SURVEY

Applicant disclaims any rights in the word "Survey" apart from the mark as shown.
For Services Consisting of Making Surveys To Produce Information From Radio Listeners by Means of Research Listener Questionnaires Used in Such Surveys.
First use Oct. 12, 1965.

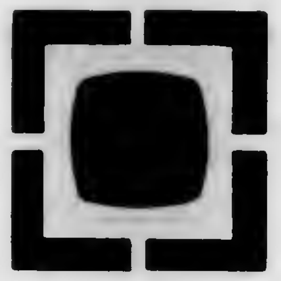
SN 236,655. Schwerin Research Corporation, New York, N.Y. Filed Jan. 17, 1966.

CHANNEL CHOICE

For Audience Reaction Testing Services.
First use on or about May 10, 1965.

Class 102 — Insurance and Financial

SN 243,865. Grand Prairie State Bank, Grand Prairie, Tex. Filed Apr. 20, 1966.



For Banking Services.
First use Jan. 1, 1966.

SN 246,903. W. T. Grant Company, New York, N.Y. Filed May 31, 1966.

GRANT-A-CHARGE

Owner of Reg. No. 806,112.
For Retail Credit Services.
First use Apr. 28, 1966.

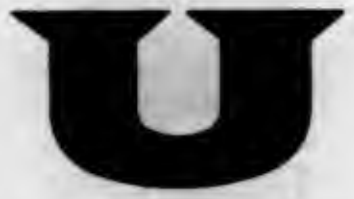
Class 103 — Construction and Repair

SN 195,711. Raymond International Inc., New York, N.Y. Filed June 15, 1964.

STEP-TAPER

For Engineering and Installation of Pile Foundations and Construction and Repair of Concrete Foundations and other Concrete Structures and the Driving, Repair, and Replacement of Piles.
First use 1931.

SN 232,428. Union Tank Car Company, Chicago, Ill. Filed Nov. 9, 1965.



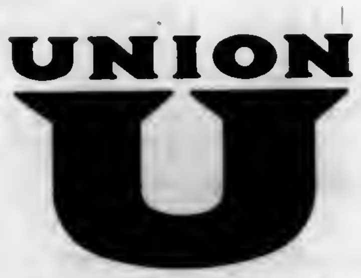
Owner of Reg. Nos. 766,087, 775,962, and others.
For Railroad Tank Car Repair and Maintenance Services.
First use at least as early as 1964.

SN 232,429. Union Tank Car Company, Chicago, Ill. Filed Nov. 9, 1965.

UNION

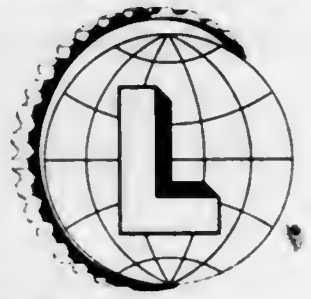
Owner of Reg. Nos. 775,960, 775,961, and 775,962.
For Railroad Tank Car Repair and Maintenance Services.
First use at least as early as 1960.

SN 232,430. Union Tank Car Company, Chicago, Ill. Filed Nov. 9, 1965.



Owner of Reg. Nos. 755,142, 775,962, and others.
For Railroad Tank Car Repair and Maintenance Services.
First use at least as early as 1964.

SN 236,106. Sellon, Inc., Toledo, Ohio, assignee of Lockwood Grader Corporation, Gering, Nebr. Filed Jan. 10, 1966.



Owner of Reg. No. 781,302.
For Field Testing and Servicing Customer Agricultural and Shop Equipment for Optimum Performance, and Servicing Used Customer Equipment Including Repair and Parts Replacement.
First use Apr. 23, 1963.

Class 105 — Transportation and Storage

SN 243,872. Home-Pack Transport Inc., Maspeth, N.Y. Filed Apr. 20, 1966.

HOME-PACK

For Providing and Supervising the Packing, Transporting, Delivery, Customs Clearance, and Unpacking of Household and Other Goods.
First use 1959.

SN 243,902. Santini Bros. Inc., Bronx, N.Y. Filed Apr. 20, 1966.

THE SEVEN BROTHERS

Owner of Reg. Nos. 602,238 and 790,133.
For Providing and Supervising the Packing, Transporting, Delivery, Customs Clearance, and Unpacking of Household and Other Goods.
First use in or about 1905.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

825,538. VITREDIL. Montecatini, Societa Generale per l'Industria Mineraria e Chimica. SN 208,714. Pub. 12–27–66. Filed 12–23–64.

825,539. HERCULANEUM BOTTICINO. Marble Products Company of Ga. SN 219,012. Pub. 12–27–66. Filed 5–17–65.

825,540. REDIFRAC. The Dow Chemical Company. SN 225,938. Pub. 12–27–66. Filed 8–18–65.

825,541. MILL-O-IZED. Lucille S. Antles, d.b.a. L. C. Antles, Pollen. SN 233,986. Pub. 12–27–66. Filed 12–6–65.

825,542. ASTRO-26 AND DESIGN. Hugh S. Stoller, d.b.a. Stoller Processing Co. SN 244,435. Pub. 12–27–66. Filed 4–27–66.

Class 2 — Receptacles

825,543. CENCO AND DESIGN. Cenco Instruments Corporation. MULTIPLE CLASS (Classes 2, 3, 4, 5, 6, 11, 13, 14, 15, 16, 21, 23, 26, 27, 29, 32, 33, 34, 35, 36, 37, 38, 39, 44, and 50). SN 212,473. Pub. 12–27–66. Filed 2–23–65.

825,544. SWEET SAVER. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 223,722. Pub. 12–27–66. Filed 7–19–65.

825,545. SECURITY BLANKET. Reusche-De Grace. SN 228,749. Pub. 12–27–66. Filed 9–27–65.

825,546. EL REXENE. Rexall Drug and Chemical Company. SN 229,288. Pub. 12–27–66. Filed 10–4–65.

825,547. HI-PLAS. Robert K. Naff and Gordon J. Naff (partnership), d.b.a. Highland Printers & Plastic Molders. SN 231,466. Pub. 12–27–66. Filed 10–23–65.

825,548. POCKET-PAK. Keyes Fibre Company. SN 232,920. Pub. 12–27–66. Filed 11–18–65.

825,549. TOTE-ABOUT. The Folger Coffee Company. SN 233,333. Pub. 12–27–66. Filed 11–26–65.

825,550. SHOW-OFF. The Finn Industries. SN 233,705. Pub. 12–27–66. Filed 12–1–65.

825,551. MONARCH CUSTOM. Wilbert W. Haase Co. SN 235,563. Pub. 12–27–66. Filed 12–30–65.

825,552. DINEX. Bopp-Decker Incorporated. SN 238,489. Pub. 12–27–66. Filed 2–10–66.

825,553. ROTA AND DESIGN. Sinclair & Powell Proprietary Limited. SN 252,061. Pub. 12–27–66. Filed 8–10–66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

825,543. (See Class 2 for this trademark.)

Class 4 — Abrasives and Polishing Materials

825,543. (See Class 2 for this trademark.)

825,554. SNAP. Epic Chemicals, Inc. SN 241,217. Pub. 12–27–66. Filed 3–17–66.

Class 5 — Adhesives

825,543. (See Class 2 for this trademark.)

825,555. DU PONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 252,150. Pub. 12–27–66. Filed 8–11–66.

Class 6 — Chemicals and Chemical Compositions

825,543. (See Class 2 for this trademark.)

825,556. PERMALUSTRE. K. J. Quinn & Co., Inc. SN 216,003. Pub. 12–27–66. Filed 4–7–65.

825,557. EASY MAY. K. J. Quinn & Co., Inc. SN 216,004. Pub. 12–27–66. Filed 4–7–65.

825,558. WEATHERFOIL. K. J. Quinn & Co., Inc. SN 216,005. Pub. 12–27–66. Filed 4–7–65.

825,559. WESTERN. Western Litho Plate & Supply Co. MULTIPLE CLASS (Classes 6 and 50). SN 221,127. Pub. 11–8–66. Filed 6–14–65.

825,560. VAN-DYKE. Epic Chemicals, Inc. SN 222,563. Pub. 12–27–66. Filed 7–2–65.

825,561. DICOM. Tenneco Chemicals, Inc. SN 228,208. Pub. 12–27–66. Filed 9–20–65.

825,562. AMPITOL. Dexter Chemical Corporation. SN 228,663. Pub. 12–27–66. Filed 9–27–65.

825,563. DEXENE. Dexter Chemical Corporation. SN 228,664. Pub. 12–27–66. Filed 9–27–65.

825,564. TRULANOL. Moser Paper Company. SN 231,191. Pub. 12–27–66. Filed 10–22–65.

825,565. TEK-FLOC. Hamblet & Hayes Co. SN 235,977. Pub. 12–27–66. Filed 1–7–66.

825,566. HIB A DYE. Paul H. Jamieson, d.b.a. Jamieson Products Co. SN 236,386. Pub. 12–27–66. Filed 1–13–66.

825,567. ANSCOCOLOR. General Aniline & Film Corporation. SN 236,809. Pub. 12–27–66. Filed 1–19–66.

825,568. APOSET. Apogee Chemical, Inc. SN 240,146. Pub. 12–27–66. Filed 3–4–66.

825,569. FILIRAN. Geigy Chemical Corporation. SN 240,892. Pub. 12–27–66. Filed 3–14–66.

825,570. REHLOSO. Armour Pharmaceutical Company. SN 243,299. Pub. 12–27–66. Filed 4–13–66.

825,571. REHCOGEL. Armour Pharmaceutical Company. SN 243,300. Pub. 12–27–66. Filed 4–13–66.

825,572. REHSORPTAR. Armour Pharmaceutical Company. SN 243,301. Pub. 12–27–66. Filed 4–13–66.

825,573. SA–1. Gordon L. Schneider, d.b.a. The Central Chemical Co. SN 245,162. Pub. 12–27–66. Filed 5–9–66.

825,574. AVIBEST. FMC Corporation. SN 247,211. Pub. 12–27–66. Filed 6–3–66.

825,575. ARMOUR AND DESIGN. Armour and Company. SN 247,306. Pub. 12–27–66. Filed 6–6–66.

825,576. TRYAD. Hercules Glue Co., Ltd., d.b.a. Colloidal Products Corporation. SN 247,360. Pub. 12–27–66. Filed 6–6–66.

825,577. ELVACE. E. I. du Pont de Nemours and Company. SN 254,217. Pub. 12–27–66. Filed 9–12–66.

825,578. GLYTEL. Chas. Pfizer & Co., Inc. SN 254,975. Pub. 12–27–66. Filed 9–23–66.

825,579. WALLOP. Monsanto Company. SN 255,011. Pub. 12–27–66. Filed 9–23–66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

825,580. RIFLE-MATE. Ten Ring Mfg. Corp. SN 239,554. Pub. 12–27–66. Filed 2–24–66.

825,581. AR–15. Colt's Inc. SN 253,092. Pub. 12–27–66. Filed 8–25–66.

Class 11 — Inks and Inking Materials

825,543. (See Class 2 for this trademark.)

Class 12 — Construction Materials

825,582. APACHE AND DESIGN. Air Products and Chemicals Inc. SN 222,900. Pub. 12–27–66. Filed 7–8–65.

825,583. K-LUX. K-S-H Plastics, Inc. SN 224,755. Pub. 12–27–66. Filed 8–2–65.

825,584. SSI AND DESIGN. Carboline Company. SN 228,629. Pub. 12–27–66. Filed 9–27–65.

825,585. HAIDA HIDE. Haida Hide, Inc., assignee of Einar Svensson. SN 230,946. Pub. 12–27–66. Filed 10–21–65.

825,586. MARBLE TOP AND DESIGN. The Georgia Marble Company. SN 232,691. Pub. 12–27–66. Filed 11–15–65.

825,587. MARBLE TOP AND DESIGN. The Georgia Marble Company. SN 232,692. Pub. 12–27–66. Filed 11–15–65.

825,588. SPIDER-FORM. Dur-O-Wal National, Inc. SN 234,631. Pub. 12–27–66. Filed 12–15–65.

825,589. INLAND HOMES AND DESIGN. Inland Homes Corporation. SN 235,040. Pub. 12–27–66. Filed 12–16–65.

825,590. JET SET. United States Plywood Corporation, assignee of Allied Building Components, Inc. SN 236,951. Pub. 12–27–66. Filed 1–21–66.

825,591. ANCHOR-PLY. Anchor Sales Corporation. SN 241,729. Pub. 12–27–66. Filed 3–24–66.

825,592. TRU-WELD. L & H Lumber Co. SN 241,785. Pub. 12–27–66. Filed 3–24–66.

825,593. TRIDENT (DESIGN). Kaiser Aluminum & Chemical Corporation. SN 243,450. Pub. 12–27–66. Filed 4–14–66.

825,594. BOND-DECK AND DESIGN. American Forest Products Corporation. SN 244,649. Pub. 12–27–66. Filed 5–2–66.

825,595. FLORPINE. Brooks-Willamette Corporation. SN 246,262. Pub. 12–27–66. Filed 5–23–66.

825,596. CRETE-LOX. Larsen Products Corporation. SN 246,796. Pub. 12–27–66. Filed 5–27–66.

825,597. PEB-ROCK. Asbestos Products and Fabricators. SN 247,308. Pub. 12–27–66. Filed 6–6–66.

825,598. CRYSTALICS. Martha Turi and Associates, Inc. SN 256,041. Pub. 12–27–66. Filed 10–10–66.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

825,543. (See Class 2 for this trademark.)

825,599. PHIFER AND DESIGN. Phifer Wire Products. SN 214,692. Pub. 12–27–66. Filed 3–22–65.

825,600. FIRST FAMILY IN DRAPERY HARDWARE. Western Newell Mfg. Co. SN 230,726. Pub. 12–27–66. Filed 10–20–65.

825,601. THE PIPE WITH THE STRIPE. Continental Oil Company. SN 231,544. Pub. 12–27–66. Filed 10–24–65.

825,602. "ADJUSTO-FLO." Milwaukee Faucets, Inc. SN 233,271. Pub. 7–26–66. Filed 11–24–65.

825,603. WAYNE-CLAD. Wayne Manufacturing Company. SN 237,896. Pub. 12–27–66. Filed 2–2–66.

825,604. BATH SERVER. Lerner Manufacturing, Inc. SN 245,324. Pub. 11–8–66. Filed 5–10–66.

825,605. CHILTON ALUMINUM. Aluminum Specialty Company. SN 245,451. Pub. 12–27–66. Filed 5–12–66.

825,606. STOLLOCK. Ulrich W. Stoll and Mira Stoll, trustees of a testamentary trust created by Albert Stoll. SN 245,626. Pub. 12–27–66. Filed 5–13–66.

825,607. SUPER-SEAL. Grand Automotive Products, Inc. SN 246,563. Pub. 12–27–66. Filed 5–25–66.

Class 14 — Metals and Metal Castings and Forgings

825,543. (See Class 2 for this trademark.)

Class 15 — Oils and Greases

825,543. (See Class 2 for this trademark.)

825,608. OLD DUTCH AND DESIGN. Marathon Oil Company. SN 233,923. Pub. 12–27–66. Filed 12–3–65.

825,609. CHEF. Pacific Candle Company. SN 255,168. Pub. 12–27–66. Filed 9–27–66.

Class 16 — Protective and Decorative Coatings

825,543. (See Class 2 for this trademark.)

825,610. "ROLL-ON." Artex Hobby Products, Inc. SN 220,188. Pub. 12–27–66. Filed 6–2–65.

825,611. KANDY RIPPLE. Badger Manufacturing Corporation. SN 230,503. Pub. 12–27–66. Filed 10–19–65.

825,612. GLID-COOL. The Glidden Company. SN 235,183. Pub. 12–27–66. Filed 12–23–65.

825,613. RYAN AND DESIGN. Clyde R. Ryan, d.b.a. Ryan Paint Company. SN 236,780. Pub. 12–27–66. Filed 1–18–66.

825,614. CRAFTEEK. Elliott Paint & Varnish Co. SN 243,552. Pub. 12–27–66. Filed 4–15–66.

825,615. SEA-MATE. C. A. Woolsey Paint & Color Co., Inc. SN 243,746. Pub. 12–27–66. Filed 4–18–66.

825,616. AGATEEN ACQUATIC. Agate Lacquer Manufacturing Co., Inc. SN 243,754. Pub. 12–27–66. Filed 4–19–66.

825,617. ELAST-A-BOND. Evr-Gard Coatings Corporation. SN 243,972. Pub. 12–27–66. Filed 4–21–66.

825,618. ALSICOAT. American Lava Corporation. SN 256,037. Pub. 12–27–66. Filed 10–10–66.

Class 17 — Tobacco Products

825,619. REPRESENTATION OF THREE SHIPS. Jamestown Leaf Tobacco Co., Inc. SN 229,249. Pub. 12–27–66. Filed 10–4–65.

Class 18 — Medicines and Pharmaceutical Preparations

825,620. PEPSINIC SELTZER. Pepsinic Seltzer Corporation. SN 187,607. Pub. 12-27-66. Filed 2-27-64.

825,621. SPECILAIT. Guy-Claude Jacob. MULTIPLE CLASS (Classes 18 and 46). SN 221,232. Pub. 12-27-66. Filed 6-16-65.

825,622. DIOCALM. Beecham Group Limited, d.b.a. Beechams of St. Helens. SN 239,871. Pub. 12-27-66. Filed 3-1-66.

825,623. PREDISAL. Mallard, Incorporated. SN 241,354. Pub. 12-27-66. Filed 3-18-66.

825,624. D.H.L. Haver - Lockhart Laboratories, Incorporated. SN 244,107. Pub. 11-22-66. Filed 4-22-66.

825,625. TETRA-PRO. Horton & Converse, d.b.a. Professional Drug Products. SN 247,922. Pub. 12-27-66. Filed 6-13-66.

Class 19 — Vehicles

825,626. AZTEC. Velocidad, Inc., d.b.a. Fiberfab. SN 237,892. Pub. 12-27-66. Filed 2-2-66.

825,627. SPACE-MISER. Daybrook-Ottawa Corporation. SN 238,055. Pub. 12-27-66. Filed 2-4-66.

825,628. TRAVELER. Karpak Company. SN 238,088. Pub. 12-27-66. Filed 2-4-66.

825,629. CANAVERAL. Golden Crown Products Co., Inc., d.b.a. Canaveral Supply Co. SN 238,524. Pub. 12-27-66. Filed 2-10-66.

825,630. ESCORT. Doughboy Industries, Inc. SN 239,130. Pub. 12-27-66. Filed 2-18-66.

825,631. KAR - GO - MASTER. Arcoa, Inc. SN 242,316. Pub. 8-9-66. Filed 3-31-66.

Class 20 — Linoleum and Oiled Cloth

825,632. AMTICO AND DESIGN. American Biltrite Rubber Co. Inc. SN 233,567. Pub. 12-27-66. Filed 11-30-65.

825,633. COLONNADE. Congoleum-Nairn Inc. SN 244,467. Pub. 12-27-66. Filed 4-28-66.

Class 21 — Electrical Apparatus, Machines, and Supplies

825,543. (See Class 2 for this trademark.)

825,634. C-M W-55+. Sigmund F. Hiller, d.b.a. Richlite Electric Products. SN 208,575. Pub. 12-27-66. Filed 12-21-64.

825,635. TENNA MATE AND DESIGN. Snyder Manufacturing Company. SN 211,679. Pub. 1-11-66. Filed 2-9-65.

825,636. MAGICALL. Dasa Corporation (Massachusetts corporation), assignee of Dasa Corporation (California corporation). SN 216,487. Pub. 12-27-66. Filed 4-14-65.

825,637. HY. Hycon Mfg. Company. SN 221,057. Pub. 12-27-66. Filed 6-14-65.

825,638. SKYBORNE. Aladdin Industries, Incorporated, assignee of Sprague Electric Company. SN 221,215. Pub. 7-5-66. Filed 6-15-65.

825,639. BM AND DESIGN CIRCLES. Roach-Appleton Manufacturing Company. MULTIPLE CLASS (Classes 21 and 23). SN 223,936. Pub. 12-27-66. Filed 7-22-65.

825,640. PIEZOTRON. Kistler Instrument Corporation. SN 226,249. Pub. 12-27-66. Filed 8-23-65.

825,641. PROMPT PICTURE. R. H. Macy & Co., Inc. SN 227,048. Pub. 12-27-66. Filed 9-2-65.

825,642. MILL-O-MATIC ETC. AND DESIGN. Industrial Electric Reels, Inc. SN 230,647. Pub. 12-27-66. Filed 10-20-65.

825,643. A (DESIGN). Aeroflex Laboratories Incorporated. SN 234,523. Pub. 8-9-66. Filed 12-14-65.

825,644. CLASSMATE. Thomas Industries Inc. SN 236,159. Pub. 12-27-66. Filed 1-10-66.

825,645. ROYAL AND DESIGN. International Telephone and Telegraph Corporation. SN 236,266. Pub. 12-27-66. Filed 1-12-66.

825,646. GREAT WESTERN. Great Western Battery Manufacturing Corporation. SN 236,743. Pub. 12-27-66. Filed 1-18-66.

825,647. TRI-LITE. Tri-Lite Industries, Inc. SN 236,787. Pub. 12-27-66. Filed 1-18-66.

825,648. SSE. Transene Company, Inc. SN 236,855. Pub. 12-27-66. Filed 1-19-66.

825,649. DIMIE. Dearborn Electronics, Inc. SN 237,091. Pub. 12-27-66. Filed 1-24-66.

825,650. M AND FANCIFUL DESIGN. Oak Electro/Netics Corp. SN 252,934. Pub. 12-27-66. Filed 8-23-66.

Class 22 — Games, Toys, and Sporting Goods

825,651. CAD-A-BOUT. Blake W. Asquith. SN 230,499. Pub. 12-27-66. Filed 10-19-65.

825,652. FRENCH FRIED RAWHIDE. Hartz Mountain Products Corp. SN 235,298. Pub. 12-27-66. Filed 12-27-65.

825,653. MOR-GRIP. Forrest Enterprises, Inc. SN 239,510. Pub. 12-27-66. Filed 2-24-66.

825,654. HAWK EYE. The Ajac Corporation. SN 239,573. Pub. 12-27-66. Filed 2-25-66.

825,655. GRAND NATIONAL. Colt's Inc. SN 239,970. Pub. 12-27-66. Filed 3-2-66.

825,656. FLEX-A-TOY. Wonder Toys, Inc. SN 240,227. Pub. 12-27-66. Filed 3-4-66.

825,657. THE MAGIC CARPET. Pierre-Carole Corporation. SN 240,474. Pub. 12-27-66. Filed 3-8-66.

825,658. BZ. BZ Industries. SN 240,496. Pub. 12-27-66. Filed 3-9-66.

825,659. BANSHEE. BZ Industries. SN 240,497. Pub. 12-27-66. Filed 3-9-66.

825,660. CONTROLAIRE AND DESIGN. World Engines Incorporated. SN 240,691. Pub. 12-27-66. Filed 3-10-66.

825,661. WILDCAT. Columbia Industries, Inc. SN 241,241. Pub. 12-27-66. Filed 3-17-66.

825,662. JOHNNY COMBAT. Barton Import Company Ltd. SN 241,836. Pub. 12-27-66. Filed 1-17-66.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

825,543. (See Class 2 for this trademark.)

825,639. (See Class 21 for this trademark.)

825,663. COX. Lynch Corporation. MULTIPLE CLASS (Classes 23, 26 and 31). SN 201,293. Pub. 12-27-66. Filed 9-4-64.

825,664. UNI-PAC AND DESIGN. National Uni-Pac, Inc. SN 209,625. Pub. 12-27-66. Filed 1-8-65.

825,665. CAVO. Atlas Copco Aktiebolag. SN 222,102. Pub. 12-27-66. Filed 6-28-65.

825,666. TERM-O-SPRA. James G. Lindsey, d.b.a. Cherokee Stone Center. SN 223,131. Pub. 12-27-66. Filed 7-12-65.

825,667. TECO AND DESIGN. Townsend Engineering Company. SN 224,811. Pub. 12-27-66. Filed 8-2-65.

825,668. HALO-CIRCUIT. Baron Blakeslee Incorporated. SN 226,203. Pub. 12-27-66. Filed 8-23-65.

825,669. BALANCE MASTER. Conco Engineering Works, Inc. SN 226,725. Pub. 12-27-66. Filed 8-30-65.

825,670. HARWIL. Harwil Company. SN 228,035. Pub. 12-27-66. Filed 9-17-65.

825,671. KINEFLEX. Kinemotive Corporation. SN 228,537. Pub. 12-27-66. Filed 9-24-65.

825,672. KWIK SET. William W. Showler, d.b.a. Concentric System Company. SN 228,947. Pub. 8-9-66. Filed 9-29-65.

825,673. REGENT PISTON PUMP. Aquariums Incorporated. SN 229,731. Pub. 12-27-66. Filed 10-11-65.

825,674. LEADER PISTON PUMP. Aquariums Incorporated. SN 229,733. Pub. 12-27-66. Filed 10-11-65.

825,675. ITI AND DESIGN. Ojai Industrial Tools, Inc., d.b.a. Industrial Tools, Inc. SN 231,474. Pub. 12-27-66. Filed 10-23-65.

825,676. BISSELL. Bissell Inc. SN 231,883. Pub. 12-27-66. Filed 11-1-65.

825,677. FLOATING CONVEX EDGE. Eversharp, Inc. SN 231,988. Pub. 12-27-66. Filed 11-2-65.

825,678. FLEX-LIFT. Albritton Engineering Corporation. SN 232,177. Pub. 12-27-66. Filed 11-5-65.

825,679. TRICEPS. Universal Technical Products Inc. SN 232,619. Pub. 12-27-66. Filed 11-12-65.

825,680. OLYMPIA. Empac-O-Matic, S.A. SN 233,087. Pub. 12-27-66. Filed 11-22-65.

825,681. HY-DYNAMIC. The Hy-Dynamic Co. SN 233,267. Pub. 12-27-66. Filed 11-24-65.

825,682. CALTYPE. The Caltype Corp. SN 234,333. Pub. 12-27-66. Filed 12-10-65.

825,683. PEBBLE BEACH. Imperial Knife Associated Companies, Inc. SN 235,188. Pub. 12-27-66. Filed 12-23-65.

825,684. GEMINI. Imperial Knife Associated Companies, Inc. SN 235,190. Pub. 12-27-66. Filed 12-23-65.

825,685. MARCHIONESS. Imperial Knife Associated Companies, Inc. SN 235,192. Pub. 12-27-66. Filed 12-23-65.

825,686. ASTRO-EDGE. Imperial Knife Associated Companies, Inc. SN 235,193. Pub. 12-27-66. Filed 12-23-65.

825,687. TRU-LOC. Draper Corporation. SN 235,636. Pub. 9-13-66. Filed 1-3-66.

825,688. LIFTOMATIC. Woodford Manufacturing Co. SN 237,773. Pub. 9-20-66. Filed 2-1-66.

825,689. DIAL-O-MATIC. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co. SN 238,870. Pub. 9-20-66. Filed 2-15-66.

825,690. LIQUA - BLASTER. Partek Corporation. SN 240,331. Pub. 12-27-66. Filed 3-7-66.

825,691. THE OLE MEDICINE MAN AND DESIGN. Howard F. Wood, d.b.a. Lookout Vending & Supply. SN 241,111. Pub. 12-27-66. Filed 3-15-66.

825,692. GIRAFFE (DESIGN). Great Neck Saw Manufacturers, Inc. SN 241,588. Pub. 12-27-66. Filed 3-22-66.

825,693. GREAT NECK AND DESIGN. Great Neck Saw Manufacturers, Inc. SN 241,589. Pub. 12-27-66. Filed 3-22-66.

825,694. INLINER. Ingersoll-Rand Company. SN 241,662. Pub. 12-27-66. Filed 3-23-66.

825,695. ACCELERATOR. Houston Engineers, Inc. SN 242,011. Pub. 12-27-66. Filed 3-28-66.

825,696. SCHUGI. Schuurmans & Van Ginneken. SN 242,669. Pub. 12-27-66. Filed 4-4-66.

825,697. MULTIWAY. The Miles Standard Corporation. SN 242,742. Pub. 12-27-66. Filed 4-5-66.

825,698. CLAYTON. Clayton Manufacturing Company. SN 245,683. Pub. 12-27-66. Filed 5-16-66.

825,699. TORSIONETIC. Eaton Yale & Towne Inc. SN 245,694. Pub. 12-27-66. Filed 5-16-66.

825,700. RICE BARTON AND DESIGN. Rice Barton Corporation. SN 246,485. Pub. 12-27-66. Filed 5-24-66.

825,701. UNI-SHAVER. Colgate-Palmolive Company. SN 246,755. Pub. 12-27-66. Filed 5-27-66.

825,702. SE AND DESIGN. Southern Elevator Company. SN 247,097. Pub. 12-27-66. Filed 6-2-66.

825,703. VERTA-L. The Singer Company. SN 252,627. Pub. 12-27-66. Filed 8-18-66.

825,704. WESCO. Stop-Motion Devices Corporation. SN 256,030. Pub. 12-27-66. Filed 10-10-66.

Class 24 — Laundry Appliances and Machines

825,705. NORVA. Norva Maskinfabrik A/S. SN 234,705. Pub. 12-27-66. Filed 12-14-65.

Class 26 — Measuring and Scientific Appliances

825,543. (See Class 2 for this trademark.)

825,663. (See Class 23 for this trademark.)

825,706. KARINA. Cinematic-Anstalt. SN 204,049. Pub. 12-27-66. Filed 10-15-64.

825,707. EDSCO. Sarco Canada Limited. SN 220,239. Pub. 12-27-66. Filed 6-2-65.

825,708. HY. Hycon Mfg. Company. SN 221,058. Pub. 12-27-66. Filed 6-14-65.

825,709. MICROFLAT. Collins Microflat Company, Inc. SN 228,515. Pub. 12-27-66. Filed 9-24-65.

825,710. FILTREX. Acme-Lite Manufacturing Co. SN 229,170. Pub. 12-27-66. Filed 10-4-65.

825,711. ECONOSHOT. Pyles Industries, Inc. SN 230,562. Pub. 12-27-66. Filed 10-19-65.

825,712. ROYCO. Royco Instruments Inc. SN 232,793. Pub. 12-27-66. Filed 11-16-65.

825,713. THE GEM OF FRAME ELEGANCE. Saphira Creations, Inc. SN 234,072. Pub. 12-27-66. Filed 12-6-65.

825,714. AEROFLEX AND DESIGN. Aeroflex Laboratories Incorporated. SN 234,522. Pub. 8-9-66. Filed 12-14-65.

825,715. KOBENA. Ponder & Best. SN 236,413. Pub. 12-27-66. Filed 1-13-66.

825,716. VIDEOCOM. Accura, Ltd. SN 236,950. Pub. 12-27-66. Filed 1-21-66.

825,717. PRAKTISIX. Veb Pentacon Dresden Kamera- und Kinowerke. SN 237,265. Pub. 12-27-66. Filed 1-25-66.

825,718. STEREOFLOAT ETC. AND DESIGN. Vermögensverwaltungs G.m.b.H. SN 237,276. Pub. 12-27-66. Filed 1-6-66.

825,719. PRESS-O. Stanley C. Keiser, d.b.a. Kaiser Products. SN 237,355. Pub. 12-27-66. Filed 1-26-66.

825,720. UNIPRO. Sperry Rand Corporation. SN 237,393. Pub. 12-27-66. Filed 1-26-66.

825,721. TIME - O - TEST. Railway Research, Inc. SN 237,743. Pub. 12-27-66. Filed 2-1-66.

825,722. JANTZEN. Jantzen Inc. SN 239,150. Pub. 12-27-66. Filed 2-18-66.

825,723. DIVING GIRL (DESIGN). Jantzen Inc. SN 239,151. Pub. 12-27-66. Filed 2-18-66.

825,724. ANELEX. Anelex Corporation. SN 239,365. Pub. 12-27-66. Filed 2-23-66.

825,725. ANSCOPAK. General Aniline & Film Corporation. SN 239,408. Pub. 12-27-66. Filed 2-23-66.

825,726. OLO. Giannini Controls Corporation. SN 239,409. Pub. 12-27-66. Filed 2-23-66.

825,727. CHROMEGA. Simmon Brothers, Inc. SN 239,548. Pub. 12-27-66. Filed 2-24-66.

825,728. BS AND DESIGN. Brown & Sharpe Manufacturing Company. SN 243,768. Pub. 12-27-66. Filed 4-19-66.

825,729. MR. MOD AND DESIGN. Mr. Mod Shop, Inc. SN 245,436. Pub. 12-27-66. Filed 4-4-66.

825,730. ESLON. Sekisui Chemical Company Ltd. of Japan. SN 249,282. Pub. 12-27-66. Filed 6-30-66.

Class 27 — Horological Instruments

825,543. (See Class 2 for this trademark.)

825,731. ACCUTIME. Bulova Watch Company, Inc. SN 237,931. Pub. 12–27–66. Filed 2–3–66.

825,732. VARILARM. General Electric Company. SN 237,958. Pub. 12–27–66. Filed 2–3–66.

Class 28 — Jewelry and Precious-Metal Ware

825,733. FOPE. F.O.P.E. di Odino Cazzola. SN 235,400. Pub. 12–27–66. Filed 12–28–65.

825,734. NEWE AUSTRIA. Neumann & Wenzel Bijouteriewarenfabrik. SN 235,577. Pub. 12–27–66. Filed 12–30–65.

825,735. HR AND DESIGN. Herbert Rosenthal Jewelry Corp. SN 236,783. Pub. 12–27–66. Filed 1–18–66.

825,736. MR. MOD AND DESIGN. Mr. Mod Shop, Inc. SN 245,438. Pub. 12–27–66. Filed 4–4–66.

Class 29 — Brooms, Brushes, and Dusters

825,543. (See Class 2 for this trademark.)

Class 31 — Filters and Refrigerators

825,663. (See Class 23 for this trademark.)

825,737. PURA-TROL. General Star Products, Inc. SN 228,902. Pub. 12–27–66. Filed 9–29–65.

825,738. VEE PAC AND DESIGN. Donaldson Company, Inc. SN 242,968. Pub. 12–27–66. Filed 4–8–66.

825,739. DUPONT IN OVAL DESIGN. E. I. du Pont de nemours and Company. SN 248,651. Pub. 12–27–66. Filed 6–22–66.

Class 32 — Furniture and Upholstery

825,543. (See Class 2 for this trademark.)

825,740. REDI-MED. McKesson & Robbins, Incorporated. SN 239,061. Pub. 12–27–66. Filed 2–17–66.

825,741. FLEX - O - SLIDE. Dohrmann Co. SN 241,880. Pub. 12–27–66. Filed 3–25–66.

Class 33 — Glassware

825,543. (See Class 2 for this trademark.)

Class 34 — Heating, Lighting, and Ventilating Apparatus

825,543. (See Class 2 for this trademark.)

825,742. TRIATOMIC. Donald Francis Fleck. SN 192,383. Pub. 12–27–66. Filed 4–30–64.

825,743. X-OX. Milton Roy Company. SN 211,741. Pub. 12–27–66. Filed 2–10–65.

825,744. AUTO RACK AND DESIGN. American Screen Process Equipment Co. SN 218,051. Pub. 12–27–66. Filed 5–5–65.

825,745. STEREO. American Screen Process Equipment Co. SN 218,055. Pub. 12–27–66. Filed 5–5–65.

825,746. SPANNER. Spanner Boilers Limited. SN 234,251. Pub. 12–27–66. Filed 12–8–65.

825,747. FANTOM AND DESIGN. Rotron Manufacturing Company, Inc. SN 242,392. Pub. 12–27–66. Filed 3–31–66.

825,748. STEAM KAT AND DESIGN. James A. Phillips, Jr. SN 242,650. Pub. 12–27–66. Filed 4–4–66.

825,749. MISCELLANEOUS DESIGN. Embassy Overseas Corp. SN 244,894. Pub. 12–27–66. Filed 5–4–66.

825,750. SILENT-AIRE. Yandle Heating Supply, Inc. SN 245,126. Pub. 12–27–66. Filed 5–6–66.

825,751. VEL-AIR. Eclipse Fuel Engineering Co. SN 245,298. Pub. 12–27–66. Filed 5–10–66.

825,752. CHEVRON (DESIGN). Standard Oil Company of California. SN 245,351. Pub. 12–27–66. Filed 5–10–66.

825,753. EX AND DESIGN. Tri-Ex, Incorporated. SN 245,430. Pub. 12–27–66. Filed 5–11–66.

825,754. CYLINDRICELL. United Lighting and Ceiling Co. SN 245,433. Pub. 12–27–66. Filed 5–11–66.

825,755. GASIFORM. Voorheis Industries, Inc. SN 254,080. Pub. 12–27–66. Filed 9–8–66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

825,543. (See Class 2 for this trademark.)

825,756. TRIMSEAL. Kinemotive Corporation. SN 228,536. Pub. 12–27–66. Filed 9–24–65.

825,757. CONIFLEX. Kinemotive Corporation. SN 228,538. Pub. 12–27–66. Filed 9–24–65.

825,758. CUTLASS. Jetzon Tire and Rubber Corporation. SN 236,763. Pub. 12–27–66. Filed 1–18–66.

825,759. DS+7. Dayco Corporation. SN 248,440. Pub. 12–27–66. Filed 6–20–66.

825,760. STOPPER. Abex Corporation. SN 255,757. Pub. 12–27–66. Filed 10–5–66.

Class 36 — Musical Instruments and Supplies

825,543. (See Class 2 for this trademark.)

825,761. PICKWICK/33 RECORDS. Pickwick International, Inc. SN 224,685. Pub. 12–27–66. Filed 7–29–65.

825,762. MINICONIC. Euphonics Corporation. SN 225,129. Pub. 12–27–66. Filed 8–6–65.

825,763. AURA. Liberty Records, Inc. SN 227,693. Pub. 12–27–66. Filed 9–13–65.

825,764. AURA AND DESIGN. Liberty Records, Inc. SN 227,694. Pub. 12–27–66. Filed 9–13–65.

825,765. BERNARDO. Bernardo, S.A. SN 231,026. Pub. 12–27–66. Filed 10–22–65.

825,766. B & D. The Fred. Gretsch Mfg. Co. SN 231,119. Pub. 12–27–66. Filed 10–22–65.

825,767. PEMCO. Pacific Electro Magnetics Co., Inc. SN 231,202. Pub. 12–27–66. Filed 10–22–65.

825,768. ABLAZE. The Reactors, Inc. SN 231,225. Pub. 12–27–66. Filed 10–22–65.

825,769. MTA. MTA Productions, Ltd. SN 243,564. Pub. 12–27–66. Filed 4–15–66.

Class 37 — Paper and Stationery

825,543. (See Class 2 for this trademark.)

825,770. REMBRANDT. H. S. Crocker Co., Inc. SN 208,549. Pub. 12–27–66. Filed 12–21–64.

825,771. OLD TREATY BOND. Saxon Paper Corporation, assignee of Weyerhaeuser Company. SN 224,490. Pub. 12–27–66. Filed 7–28–65.

825,772. CAPT. ACCENT. Sanford Ink Company. SN 227,448. Pub. 12–27–66. Filed 9–8–65.

825,773. GOLDEN AXE. Mitsubishi Pencil Company, Ltd. SN 229,113. Pub. 12–27–66. Filed 10–1–65.

825,774. ALLEN PEN. The Allen Pen Company, Inc. SN 230,749. Pub. 12–27–66. Filed 10–21–65.

825,775. MEN AND WOMEN DANCING MAY DANCE (DESIGN). Carolina Company, Inc., d.b.a. The Carolina Soap and Candle Makers. MULTIPLE CLASS (Classes 37 and 51). SN 231,356. Pub. 12–27–66. Filed 10–23–65.

825,776. CHIFFON. Crown Zellerbach Corporation. SN 235,628. Pub. 12–27–66. Filed 1–3–66.

825,777. THE ALASKAN SCRATCH PAD. F. Willis Brown. SN 236,458. Pub. 12–27–66. Filed 1–14–66.

825,778. FANFARE. Peninsular Paper Company. SN 240,333. Pub. 12–27–66. Filed 3–7–66.

825,779. SOFT-CHARM. The Procter & Gamble Company. SN 244,739. Pub. 12–27–66. Filed 5–2–66.

825,780. PANASTAT. Manifold Supplies Company. SN 245,084. Pub. 12–27–66. Filed 5–6–66.

825,781. COMPUTER. Scripto, Inc. SN 246,376. Pub. 12–27–66. Filed 5–23–66.

825,782. CREATIVE COLORS. Scripto, Inc. SN 246,377. Pub. 12–27–66. Filed 5–23–66.

825,783. HAMMERMILL PALETTE. Hammermill Paper Company. SN 247,695. Pub. 12–27–66. Filed 6–9–66.

825,784. PRE-REC. Moss Key-Rec Systems, Inc. SN 247,945. Pub. 12–27–66. Filed 6–13–66.

Class 38 — Prints and Publications

825,543. (See Class 2 for this trademark.)

825,785. QUICKDEX. Beaver Tool & Engineering Corporation. SN 218,953. Pnb. 12–27–66. Filed 5–17–65.

825,786. FLAVOR TO TASTE. Camille H. Glenn. SN 229,521. Pub. 12–27–66. Filed 10–7–65.

825,787. SKIRA AND DESIGN. Albert Skira, d.b.a. Editions d'Art Albert Skira. SN 231,673. Pub. 12–27–66. Filed 10–27–65.

825,788. SKIRA. Albert Skira, d.b.a. Editions d'Art Albert Skira. SN 231,674. Pub. 12–27–66. Filed 10–27–65.

825,789. IA INC. AND DESIGN. Instructional Aids Inc. SN 234,646. Pub. 12–27–66. Filed 12–15–65.

825,790. DIMENSIONS IN LIVING AND DESIGN. Dimensions in Living, Inc. SN 238,937. Pub. 12–27–66. Filed 2–16–66.

825,791. MEDALLION HOME. National Electrical Manufacturers Association. SN 239,069. Pub. 12–27–66. Filed 2–17–66.

825,792. THE BANK DIRECTOR. Free Enterprise Publications Inc. SN 239,254. Pub. 12–27–66. Filed 2–21–66.

825,793. FP AND DESIGN. The Macmillan Company. SN 239,529. Pub. 12–27–66. Filed 2–24–66.

825,794. WOMEN NOW. Llewellyn King Associates, Inc. SN 239,778. Pub. 12–27–66. Filed 2–28–66.

825,795. TRANSDEC. Nashua Corporation. SN 241,497. Pub. 12–27–66. Filed 3–21–66.

825,796. PANEL. American Plywood Association. SN 241,574. Pub. 12–27–66. Filed 3–22–66.

825,797. RELAYMASTER. Kierulff Electronics, Inc. SN 241,903. Pub. 12–27–66. Filed 3–25–66.

825,798. METERMASTER. Kierulff Electronics, Inc. SN 241,904. Pub. 12–27–66. Filed 3–25–66.

825,799. N & N AND DESIGN. Noble and Noble Publishers, Inc. SN 241,924. Pub. 12–27–66. Filed 3–25–66.

Class 39 — Clothing

825,543. (See Class 2 for this trademark.)

825,800. MISS J SHOP. Jacobson Stores Inc. SN 200,263. Pub. 12–27–66. Filed 8–20–64.

825,801. TIGER "440." Atlas Shirt Company, Inc. SN 216,129. Pub. 12–27–66. Filed 4–9–65.

825,802. LEG-INS. John Meyer of Norwich, Inc. SN 217,914. Pub. 6–14–66. Filed 5–3–65.

825,803. SEA & SKI. Sea & Ski Corporation. SN 222,979. Pub. 12–27–66. Filed 7–8–65.

825,804. PRINCESSA. Endicott Johnson Corporation. SN 225,162. Pub. 12–27–66. Filed 8–6–65.

825,805. GRAHAM & GUNN LTD. Hart Schaffner & Marx. SN 225,310. Pub. 12–27–66. Filed 8–9–65.

825,806. BABY LINKS. Somerset Knitting Mills, Inc. SN 225,680. Pub. 12–27–66. Filed 8–13–65.

825,807. DORRINDA. Groves Junior Fashions Limited. SN 226,443. Pub. 12–27–66. Filed 8–25–65.

825,808. MISCELLANEOUS DESIGN. A. Rivetz Co., Inc. SN 226,674. Pub. 12–27–66. Filed 8–27–65.

825,809. PERENNIALS. Glen Mfg. Inc. SN 227,678. Pub. 12–27–66. Filed 9–13–65.

825,810. DENTON. Denton Sleeping Garment Mills, Inc. SN 228,441. Pub. 12–27–66. Filed 9–23–65.

825,811. SPIRIT. J. P. Stevens & Co., Inc. SN 230,206. Pub. 12–27–66. Filed 10–14–65.

825,812. EVAN WAYNE. Evan Wayne Knits, Inc. SN 231,513. Pub. 12–27–66. Filed 10–23–65.

825,813. BABY CABLE. Somerset Knitting Mills, Inc. SN 232,359. Pub. 12–27–66. Filed 11–8–65.

825,814. SNO-FLURRY. Barlan Furs, Inc. SN 233,309. Pub. 12–27–66. Filed 11–26–65.

825,815. MISS BILLIKEN AND DESIGN. Craddock-Terry Shoe Corporation. SN 235,493. Pub. 12–27–66. Filed 12–29–65.

825,816. SERVIS CAP AND DESIGN. Keystone Adjustable Cap Co., d.b.a. Keystone Adjustable Cap Company. SN 236,271. Pub. 12–27–66. Filed 1–12–66.

825,817. EL GRECO. El Greco Leather Products Co. Inc. SN 237,947. Pub. 12–27–66. Filed 2–3–66.

825,818. MALJANA. Maljana S.p.A. SN 237,985. Pnb. 12–27–66. Filed 2–3–66.

825,819. COR LISLE. Royce Hosiery Mills, Inc. SN 238,672. Pub. 12–27–66. Filed 2–11–66.

825,820. PRINCE ELEGANT AND DESIGN. Diana Stores Corporation. SN 239,129. Pub. 12–27–66. Filed 2–18–66.

825,821. CAPCO MATES. Capco Sales Corp. SN 239,223. Pub. 12–27–66. Filed 2–21–66.

825,822. TARVAL. Target Stores, Inc. SN 239,673. Pub. 12–27–66. Filed 2–25–66.

825,823. K6. S. S. Kresge Company. SN 240,007. Pub. 12–27–66. Filed 3–2–66.

825,824. CAPI-KNIT SOX AND DESIGN. National Association of Supermarket Apparel Distributors. SN 240,323. Pub. 12–27–66. Filed 3–7–66.

825,825. SOFT SHELL. Ship 'N Shore, Inc. SN 240,350. Pub. 12–27–66. Filed 3–7–66.

825,826. MONTE VARDI AND DESIGN. Monte Vardi Sportswear Co., Inc. SN 241,264. Pub. 12–27–66. Filed 3–17–66.

825,827. QUINELLA. Unishops, Inc. SN 241,606. Pub. 12–27–66. Filed 3–22–66.

825,828. TUMBLEWEEDS. Donmoor, Inc. SN 241,766. Pub. 12–27–66. Filed 3–24–66.

825,829. HARK IMPORTS. Hark Importing Corp. SN 241,778. Pub. 12–27–66. Filed 3–24–66.

825,830. VITA CUSHION. Interco Incorporated. SN 242,014. Pub. 12–27–66. Filed 3–28–66.

825,831. RINKY DINK AND DESIGN. The N & B Company. SN 242,377. Pub. 12–27–66. Filed 3–31–66.

825,832. BODY MAGIC. Sarong, Inc. SN 242,503. Pub. 12–27–66. Filed 4–1–66.

825,833. OBTEL AND DESIGN. Societe Rhodiaceta. SN 242,755. Pub. 12-27-66. Filed 4-5-66.

825,834. PALLADIUM. Rapid-American Corporation. SN 243,224. Pub. 12-27-66. Filed 4-12-66.

825,835. SUPER HERO. Ben Cooper, Inc. SN 243,225. Pub. 12-27-66. Filed 4-12-66.

825,836. KENTIMER. Kenrose Manufacturing Co., Inc. SN 243,456. Pub. 12-27-66. Filed 4-14-66.

825,837. LOCKER LACER AND DESIGN. Belleville Shoe Manufacturing Company. SN 243,628. Pub. 12-27-66. Filed 4-18-66.

825,838. CRISPREST. Halpern & Christenfeld Inc. SN 243,870. Pub. 12-27-66. Filed 4-20-66.

825,839. HIGHER UPPERS. Royal Industries, Inc. SN 243,899. Pub. 12-27-66. Filed 4-20-66.

825,840. YOUNG HAPPENINGS. Exquisite Form Industries, Inc. SN 244,693. Pub. 12-27-66. Filed 5-2-66.

825,841. MACSHAG. Kayser-Roth Corporation. SN 244,828. Pub. 12-27-66. Filed 5-3-66.

825,842. FAMOUS HEROS. Ben Cooper Inc. SN 250,213. Pub. 12-27-66. Filed 7-14-66.

825,843. GREAT HEROS. Ben Cooper Inc. SN 250,216. Pub. 12-27-66. Filed 7-14-66.

825,844. MEBRA. Vanity Fair Mills, Inc. SN 251,260. Pub. 12-27-66. Filed 7-29-66.

825,845. J.G. Diana Foundations, Inc. SN 255,785. Pub. 12-27-66. Filed 10-5-66.

Class 40 — Fancy Goods, Furnishings, and Notions

825,846. AMCREST. Aimcee Wholesale Corporation. SN 246,430. Pub. 12-27-66. Filed 5-24-66.

Class 41 — Canes, Parasols, and Umbrellas

825,847. MR. MOD AND DESIGN. Mr. Mod Shop, Inc. SN 245,437. Pub. 12-27-66. Filed 4-4-66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

825,848. POLY-LOK. Indian Head Inc., assignee of Indian Head Mills, Inc. SN 231,419. Pub. 12-27-66. Filed 10-23-65.

825,849. TWINKLE-AIRE. Registered Fabrics Corp. SN 233,397. Pub. 12-27-66. Filed 11-26-65.

825,850. ADWAY. Max P. Steinway. SN 234,252. Pub. 12-27-66. Filed 12-8-65.

825,851. KARPET-KLEEN. American Biltrite Rubber Co., Inc. SN 239,576. Pub. 12-27-66. Filed 2-25-66.

825,852. OBTEL AND DESIGN. Societe Rhodiaceta. SN 242,756. Pub. 12-27-66. Filed 4-5-66.

825,853. HOTHOUSE FLOWERS. Bates Manufacturing Company, Incorporated. SN 244,182. Pub. 12-27-66. Filed 4-25-66.

825,854. SPITFIRE SPREADMOBILE AND DESIGN. Shapiro & Son Curtain Corp. SN 245,519. Pub. 12-27-66. Filed 5-12-66.

825,855. SATINCALE. Dan River Mills, Incorporated. SN 247,199. Pub. 12-27-66. Filed 6-3-66.

825,856. TRANQUALE. Dan River Mills, Incorporated. SN 247,201. Pub. 12-27-66. Filed 6-3-66.

825,857. RESISTAL. Thomas Pride Mills, Inc. SN 247,542. Pub. 12-27-66. Filed 6-7-66.

Class 43 — Thread and Yarn

825,858. SEMI-COR. Stretch Yarns, Incorporated. SN 242,153. Pub. 12-27-66. Filed 3-29-66.

825,859. HIGHLAINE. Spinnerin Yarn Co., Inc. SN 242,676. Pub. 12-27-66. Filed 4-4-66.

825,860. OBTEL AND DESIGN. Societe Rhodiaceta. SN 242,757. Pub. 12-27-66. Filed 4-5-66.

825,861. ALMEE. Filatures Prouvost & Cie, la Lainiere de Roubaix. SN 243,779. Pub. 12-27-66. Filed 4-19-66.

825,862. AGE D'OR. Filatures Prouvost & Cie, la Lainiere de Roubaix. SN 247,345. Pub. 12-27-66. Filed 6-6-66.

Class 44 — Dental, Medical, and Surgical Appliances

825,543. (See Class 2 for this trademark.)

825,863. CORR-A-TUBE. Hudson Oxygen Therapy Sales Company. SN 237,129. Pub. 12-27-66. Filed 1-24-66.

825,864. WHITE BEAUTY. Rexall Drug and Chemical Company, d.b.a. The Absorbent Cotton Company. SN 238,112. Pub. 12-27-66. Filed 2-4-66.

825,865. BRONCHOCATH. Deseret Pharmaceutical Company, Inc. SN 241,990. Pub. 12-27-66. Filed 3-28-66.

825,866. TRACHEOCATH. Deseret Pharmaceutical Company, Inc. SN 241,992. Pub. 12-27-66. Filed 3-28-66.

825,867. ORTHO-WHITE. Ortho Pharmaceutical Corporation. SN 242,382. Pub. 12-27-66. Filed 3-31-66.

825,868. CONTROLFLATE. Pharmaseal Laboratories. SN 242,924. Pub. 12-27-66. Filed 4-7-66.

825,869. ENCASE. American Home Products Corporation. SN 243,762. Pub. 12-27-66. Filed 4-19-66.

825,870. TIME MACHINE AND DESIGN. Stylors, Inc. SN 254,967. Pub. 12-27-66. Filed 9-23-66.

Class 46 — Foods and Ingredients of Foods

825,621. (See Class 18 for this trademark.)

825,871. GUBBENS. Gubbens A/S. SN 231,911. Pub. 12-27-66. Filed 11-1-65.

825,872. BY MAGGIE. Ralph Samsel, d.b.a. Ralph Samsel Co. SN 233,219. Pub. 12-27-66. Filed 11-22-65.

825,873. WHITE ANGEL. Mother's Cake & Cookie Co. SN 237,241. Pub. 12-27-66. Filed 1-25-66.

825,874. RANGER. Mother's Cake & Cookie Co. SN 237,242. Pub. 12-27-66. Filed 1-25-66.

825,875. SORRENTO. Mother's Cake & Cookie Co. SN 237,243. Pub. 12-27-66. Filed 1-25-66.

825,876. NU-WAY. Frito-Lay, Inc. SN 239,609. Pub. 12-27-66. Filed 2-25-66.

825,877. RIDERS PRIDE. Ultra-Life Laboratories, Inc. SN 241,947. Pub. 12-27-66. Filed 3-25-66.

825,878. POTATO PATCH. H. P. Cannon & Son, Incorporated. SN 241,970. Pub. 12-27-66. Filed 3-28-66.

825,879. CASTLEBERRY'S. Castleberry's Food Company. SN 241,971. Pub. 12-27-66. Filed 3-28-66.

Class 47 — Wines

825,880. CHERRY JULEP. Jack Poust & Company, Inc. SN 190,644. Pub. 12-27-66. Filed 4-8-64.

Class 49 — Distilled Alcoholic Liquors

825,881. 18-64. Charles Rosenblum, d.b.a. Stuart Lloyd Co. SN 232,597. Pub. 12-27-66. Filed 11-12-65.

825,882. RN. R. Stevenson Taylor and Company, Limited. SN 241,815. Pub. 12-27-66. Filed 3-24-66.

Class 50 — Merchandise Not Otherwise Classified

825,543. (See Class 2 for this trademark.)

825,559. (See Class 6 for this trademark.)

825,883. GLAMOUR. Shaw & Slavsky, Inc. SN 244,035. Pub. 12-27-66. Filed 4-21-66.

825,884. VINYLAN. Broadloom Imports, Inc. SN 252,933. Pub. 12-27-66. Filed 8-23-66.

Class 51 — Cosmetics and Toilet Preparations

825,775. (See Class 37 for this trademark.)

825,885. INDOOR OUTDOOR. Sea & Ski Corporation, assignee of Botany Industries, Inc., d.b.a. Sea & Ski Company. SN 206,414. Pub. 12-6-66. Filed 11-18-64.

825,886. FROSTED SLICKER. Yardley of London, Inc. SN 211,402. Pub. 12-27-66. Filed 2-4-65.

825,887. ONCE UPON A TIME. Viviane Woodard Corporation. SN 229,905. Pub. 12-27-66. Filed 10-11-65.

825,888. IMPI. Josephine K. Preston, d.b.a. Jo Preston Cosmetics. SN 242,658. Pub. 12-27-66. Filed 4-4-66.

825,889. MR. MOD AND DESIGN. Mr. Mod Shop, Inc. SN 245,434. Pub. 12-27-66. Filed 4-4-66.

825,890. HOLIDAY MAGIC HM XXI AND DESIGN. Holiday Magic. SN 254,028. Pub. 12-27-66. Filed 9-8-66.

Class 52 — Detergents and Soaps

825,891. SHIMMER-OL. Margaret Cormier, d.b.a. Shimmer-Ol Co. SN 219,859. Pub. 12-27-66. Filed 5-27-65.

825,892. EVE OF ROMA. Eve Elmes, d.b.a. Eve of Roma. SN 234,017. Pub. 12-27-66. Filed 12-6-65.

825,893. 003½. Colgate-Palmolive Company. SN 244,304. Pub. 12-27-66. Filed 4-26-66.

Service Marks

Class 101 — Advertising and Business

825,894. GUARANTEED RESERVATIONS AND DESIGN. Guaranteed Reservations, Incorporated. SN 216,162. Pub. 12-27-66. Filed 4-9-65.

825,895. AT CAMERA AND CRAFT ETC. AND DESIGN. Camera & Craft, Inc. SN 219,399. Pub. 12-27-66. Filed 5-21-65.

825,896. ART IRON. Art Iron, Inc. SN 228,504. Pub. 12-27-66. Filed 9-24-65.

825,897. THREE INTERLOCKING CIRCLES COLORED RED AND BLUE (DESIGN). Mary Carter Paint Co. SN 231,046. Pub. 12-27-66. Filed 10-22-65.

825,898. VIEWERS IN PROFILE. A. C. Nielsen Company. SN 232,581. Pub. 12-27-66. Filed 11-12-65.

825,899. RAMS HORN (DESIGN). Aries Corporation. SN 239,700. Pub. 12-27-66. Filed 2-28-66.

825,900. ARIES. Aries Corporation. SN 239,701. Pub. 12-27-66. Filed 2-28-66.

Class 102 — Insurance and Financial

825,901. RCCP ETC. AND DESIGN. Nationwide Financial Corporation. SN 218,211. Pub. 12-27-66. Filed 5-6-65.

Class 104 — Communication

825,902. TELESPECTRUM. Spectrum Fabrics Corporation, d.b.a. Telespectrum. SN 237,885. Pub. 12-27-66. Filed 2-2-66.

Class 107 — Education and Entertainment

825,903. THEATRAVEL. Theatravel Ticket Agency, Inc. SN 180,338. Pub. 12-27-66. Filed 11-1-63.

825,904. THE BEAT AND DESIGN. Show Biz, Inc. SN 235,016. Pub. 12-27-66. Filed 12-21-65.

Collective Membership Marks

Class 200

825,905. NATIONAL PRESS CLUB WASHINGTON AND DESIGN OF U.S. CAPITOL DOME ETC. The National Press Club of Washington, D.C. SN 239,650. Pub. 12-27-66. Filed 2-25-66.

825,906. FLYING EDUCATORS. Flying Educators, Inc. SN 242,002. Pub. 12-27-66. Filed 3-28-66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

825,911. Lipper and Mann Inc., New York, N.Y. SN 218,361. Filed P.R. 5-10-65; Am. S.R. 1-4-67.

LYTTON

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Stainless Steel Holloware Such as a Butter Dish, Gravy Boat With Ladle, Salad Server Pair, Salad Bowl, Sugar-Creamer Set, Chip 'n Dip Set, Vegetable Server, Bread Tray, Meat Carving and Serving Set, Spoon and Rack Set, Knife and Rack Set, and Chafing Dish and Steak Board Set.

Class 30—Crockery, Earthenware, and Porcelain

For Dinnerware, Coffee Mugs, TV Snack Sets, Cups and Saucers, Tea Pots, Trays, Gourmet Serving Pieces, Vegetable Servers All of the Above Items Being Made in Whole or in Part of Chinaware, Stoneware, and Semi-Porcelain.
First use Aug. 3, 1964.

SECTION 2

Class 8—Smokers' Articles, Not Including Tobacco Products

825,907. The Bloch Brothers Tobacco Co., Wheeling, W. Va. SN 235,952. Filed P.R. 1-7-66; Am. S.R. 1-3-67.

MILLARD

For Smokers' Pipes.
First use Dec. 22, 1965.

Class 18—Medicines and Pharmaceutical Preparations

825,908. Progressive Drugs of America, Inc., Chattanooga, Tenn. SN 248,928. Filed 6-24-66.

MONTHLY-ETS

For Proprietary Medicine for Menstrual Pain (Tablet).
First use Feb. 11, 1965.

825,909. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. SN 251,265. Filed P.R. 7-29-66; Am. S.R. 12-19-66.

ALO-RELIEF

For Lotion for the Treatment of Sunburn, Minor Burns, Non-Poisonous Insect Bites, and Minor Skin Irritations.
First use May 23, 1963.

Class 19—Vehicles

825,910. Nationwide Railroad Leasing, Inc., Chicago, Ill., assignee of International Car Corp., Chicago, Ill. SN 223,125. Filed P.R. 7-12-65; Am. S.R. 12-7-66.

ALL DOOR

For Railroad Cars.
First use on or about Nov. 16, 1962.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

825,911. See Section 1 (Combined Certificate).

Class 30—Crockery, Earthenware, and Porcelain

825,911. See Section 1 (Combined Certificate).

Class 38—Prints and Publications

825,912. 5 Associates Inc., Redworth City, Calif. SN 231,821. Filed P.R. 10-29-65; Am. S.R. 1-18-67.

SEEDCARD

For Souvenir Mailing Folders Adapted To Contain a Packet of Seeds, Descriptive Matter and Space for Message.
First use about Aug. 9, 1965.

825,913. Volume Builders Inc., Philadelphia, Pa. SN 235,366. Filed P.R. 12-27-65; Am. S.R. 1-5-67.

MATCH THE BRAND

For Promotional Coupons for Promoting the Sale of Merchandise by Others.
First use Dec. 23, 1965.

825,914. Volume Builders Inc., Philadelphia, Pa. SN 235,367. Filed P.R. 12-27-65; Am. S.R. 1-5-67.

MATCH THE LABEL

For Promotional Coupons for Promoting the Sale of Merchandise by Others.
First use Dec. 23, 1965.

825,915. Volume Builders Inc., Philadelphia, Pa. SN 235,368. Filed P.R. 12-27-65; Am. S.R. 1-5-67.

MATCH THE MAN

For Promotional Coupons for Promoting the Sale of Merchandise by Others.
First use Dec. 23, 1965.

825,916. Volume Builders Inc., Philadelphia, Pa. SN 235,369. Filed P.R. 12-27-65; Am. S.R. 1-5-67.

MATCH THE PACKAGE

For Promotional Coupons for Promoting the Sale of Merchandise by Others.
First use Dec. 23, 1965.

825,917. Commerce Publishing Company, St. Louis, Mo. SN 235,623. Filed P.R. 1-3-66; Am. S.R. 1-17-67.

DECOR

For Magazine.
First use Dec. 24, 1965.

825,918. Equipment Guide-Book Company, Palo Alto, Calif. SN 238,062. Filed P.R. 2-4-66; Am. S.R. 1-16-67.

OFF HIGHWAY
TRUCKS
&
TRAILERS

For Handbook of New and Used Truck and Trailer Values.
First use on or about Nov. 1, 1964.

825,919. The Conde Nast Publication Inc., New York, N.Y. SN 257,681. Filed P.R. 11-1-66; Am. S.R. 1-17-67.

A PENNY FOR YOUR THOUGHTS

For Column in a Periodical Published Monthly.
First use Jan. 20, 1938.

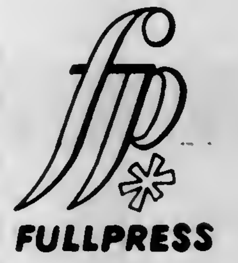
Class 39—Clothing

825,920. Oxford Manufacturing Company, Inc., Atlanta, Ga. SN 233,191. Filed P.R. 11-23-65; Am. S.R. 1-11-67.

CALIFORNIA CLASSICS

For Articles of Clothing—Namely, Men's and Boys' Sport Shirts, Sport Jackets, Slacks, Dress Shirts and Walking Shorts.
First use Nov. 1, 1965.

825,921. Oxford Manufacturing Co., Inc., d.b.a. Maxon Shirt Company Division, Atlanta, Ga. SN 235,858. Filed P.R. 1-5-66; Am. S.R. 12-19-66.



For Boys' Shirts, Pants and Matched Sets of Such Pants and Shirts Sold as Coordinating Sets, and Pajamas.
First use Dec. 16, 1965.

Class 40—Fancy Goods, Furnishings, and Notions

825,922. Plasti-Stitch, Inc., Port Chester, N.Y. SN 236,412. Filed P.R. 1-13-66; Am. S.R. 1-12-67.

Super-Mend

For Iron-On Patches.
First use Dec. 28, 1965.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

825,923. Hilton Clothes, Inc., New York, N.Y. SN 254,158. Filed P.R. 9-9-66; Am. S.R. 1-3-67.

GILBERTSON

For Fabrics for Use in Making Suits, Jackets, Slacks and Topcoats.
First use at least as early as August 1964.

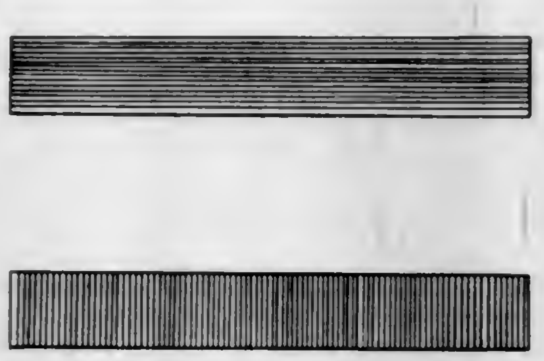
825,924. Hilton Clothes, Inc., New York, N.Y. SN 254,160. Filed P.R. 9-9-66; Am. S.R. 1-3-67.

DORNOCH

For Fabrics for Use in Making Suits, Jackets, Slacks, and Topcoats.
First use at least as early as August 1965.

Class 46 — Foods and Ingredients of Foods

825,925. Parisian Bakeries, Inc., San Francisco, Calif. SN 221,084. Filed P.R. 6–14–65; Am. S.R. 10–19–66.



The drawing is lined for blue and red with an uncolored dividing band indicating white.

For Bakery Goods—Namely, Bread.

First use on or about Mar. 7, 1961.

825,926. Carteret Quick Freezing Co., Inc., Beaufort, N.C. SN 241,122. Filed 3–16–66.

HATTERAS

For Frozen Seafood—Namely, Frozen Shellfish.

First use at least as early as November 1956.

Service Marks

Class 101 — Advertising and Business

825,927. Campbell Associates, Inc., Washington, D.C. SN 228,004. Filed P.R. 9–17–65; Am. S.R. 1–10–67.

WASHINGTON INTERNATIONAL FOOD SHOW

For Staging Trade Shows for the Food Industry.

First use September 1964.

Class 105 — Transportation and Storage

825,928. F. Latham, Corpus Christi, Tex. SN 161,526. Filed P.R. 1–28–63; Am. S.R. 4–5–65.

TOURS-FOR-TEXANS

For Conducting Escorted Travel Tours.

First use Jan. 2, 1963.

825,929. Columbia Tours, Inc., New York, N.Y. SN 231,541. Filed P.R. 10–24–65; Am. S.R. 12–9–66.

ELEGANZA

The term "Eleganza" is the Italian equivalent of the English word "elegant."

For Travel Agency Services.

First use 1956.

TRADEMARK REGISTRATIONS RENEWED

59,323. DEFYANCE. Cl. 39. 1–8–07.
59,517. CREOLIN. Cl. 6. 1–8–07.
59,704. THE BELL AND REPRESENTATION OF BELL. Cl. 39. 1–15–07.
60,507. DOMESTIC. Cl. 23. 2–12–07.
61,147. GRAND RAPIDS. Cl. 23. 3–5–07.
62,432. FRITZSCHE BROTHERS AND DESIGN. Cl. 6. 5–7–07.
62,722. KENTUCKY-CLUB. Cl. 49. 5–21–07.
62,940. HUNKIDORI. Cl. 39. 5–28–07.
219,116. RECOLAC AND DESIGN. Cl. 46. 10–12–26.
221,536. TITIAN. Cl. 30. 12–7–26.
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691,013. WILDERNESS AND DESIGN. Cl. 46. 1–5–60.
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704,487. DURA-STRESS. Cl. 12. 9–20–60.

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710,084. MIDFLEX. Cl. 1.
710,085. SOLEFLEX. Cl. 1.
710,086. INFLEX. Cl. 1.
710,087. RODEO. Cl. 1.
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710,121. MOLA MULCH. Cl. 10.
710,127. DECI-PAK AND DESIGN. Cl. 11.
710,132. ROSS SKYLINE. Cl. 13.
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710,178. M-R MIDLAND-ROSS CORP. Cl. 19.
710,179. STA-GON. Cl. 19.
710,184. MARVEL. Cl. 21.
710,187. RUI OMEGA AND DESIGN. Cl. 21.
710,189. JAY. Cl. 21.
710,190. VISORLITE. Cl. 21.
710,192. STARLETTE. Cl. 21.
710,193. TRA-VOLCO. Cl. 21.
710,202. CAKE-ICER BY MERRY-MAID. Cl. 23.
710,206. AIR-ROL. Cl. 23.
710,216. "ROLL-O-TAPER." Cl. 23.
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710,244. MAG PNU TRA X. Cl. 26.
710,246. THE IMPALA CORPORATION AND REPRESENTATION OF AN IMPALA. Cl. 27.
710,251. MIL-FLO. Cl. 31.
710,255. ULTIMA. Cl. 32.
710,259. AUTO FLIGHT. Cl. 35.
710,262. DAVIS IMPERIAL SENTRY. Cl. 35.
710,263. FLEX-SILEC. Cl. 35.
710,265. ATLANTIS. Cl. 36.
710,266. TRANSICORDER. Cl. 36.
710,277. PROFESSIONAL FLORIST. Cl. 38.
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710,285. MARLINDA. Cl. 39.
710,287. SLIMFORM AND DESIGN. Cl. 39.
710,289. RONNIE. Cl. 39.
710,292. CURL CUVER. Cl. 39.
710,295. KURL-KNIT. Cl. 39.
710,298. NAP 'N' SHEAR. Cl. 39.
710,302. QUIK-CHEK OUT. Cl. 39.
710,305. BONGO. Cl. 39.
710,310. LAMINAIRE. Cl. 39.
710,316. INNER-SELF. Cl. 39.
710,320. BASHER. Cl. 39.
710,322. MARTERIZED! Cl. 42.
710,325. JAMES NELSON. Cl. 42.
710,326. LEMOYNE. Cl. 42.
710,327. CUDDLY BEAR. Cl. 42.
710,329. TERRY RUB-A-DUB AND DESIGN. Cl. 42.
710,330. KLM. Cl. 42.
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710,336. SITZER. Cl. 44.
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710,377. DONEGAL. Cl. 42.
710,380. MRS. PURWIN'S. Cl. 46.

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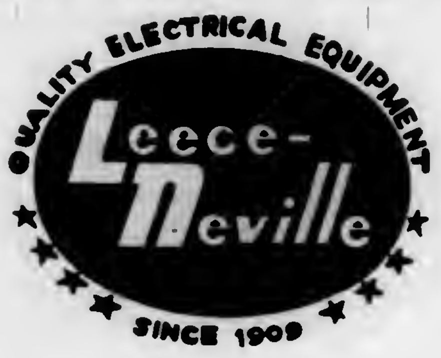
515,558. LEECE-NEVILLE. Cl. 21. 9–27–49. The Leece-Neville Company, Cleveland, Ohio. Amended to appear:



576,212. SAFETY-LINEN SOUR. Cl. 6. 6–23–53. Diamond Alkali Company, Cleveland, Ohio. Amended to appear:

SAFETY-LINEN SOUR

717,540. CLIKDIAL. Cl. 26. 6–27–61. Penn Controls, Inc., Goshen, Ind. Amended to appear:

801,907. CONSUMERS DIGEST ETC. AND DESIGN. Cl. 38. 1-11-66. Van Leer Corporation. Consumers Digest, Inc., Chicago, Ill. Amended: In the statement, column 1, before line 1, *Consumer's Digest, Inc., by change of name from* is inserted.

814,568. RAIN GLACE. Cl. 39. 9-6-66. New York Mackintosh Clothing Company, Inc. New York Mackintosh, Inc., New York, N.Y. Corrected: In the statement, column 1, before line 1, *New York Mackintosh, Inc., assignee of* should be inserted.

820,059. ALL-BRANDS. Cl. 52. 12-6-66. The Beacon Company. Lehn & Fink Products Corporation, New York, N.Y. Amended to appear:

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820,376. PETER RABBIT AND DESIGN. Cl. 46. 12-13-66. F. C. Matson, doing business as J. G. Maples Co., Cleveland, Ohio. Corrected: In the statement, column 1, line 2, "(West Virginia corporation)" should be deleted.

821,636. TORAY. Cl. 39. 1-3-67. Toyo Rayon Co., Ltd., Tokyo, Japan. Corrected: In the statement, column 1, line 1, after "Co." *a comma* should be inserted.

821,805. DACONATE. Cl. 6. 1-10-67. Diamond Alkali Company, Cleveland, Ohio. Corrected: In the statement, column 1, line 1, "Ohio" should be deleted and *Delaware* should be inserted.

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(Registered, Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

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Accura, Ltd., Flushing, N.Y. 825,716, pub. 12-27-66. Cl. 26.
Acme-Lite Mfg. Co., Chicago, Ill. 825,710, pub. 12-27-66. Cl. 26.
Adams, William, & Sons (Potters) Ltd., Turnstall, England. 221,536, ren. 3-14-67. Cl. 30.
Aerojet Engineering Corp., Pasadena, to Aerojet-General Corp., El Monte, Calif. 426,781, ren. 3-14-67. Cl. 23.
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Aeroscience, Inc., Santa Ana, Calif. 710,241, canc. Cl. 26.
Agate Lacquer Mfg. Co., Inc., Long Island City, N.Y. 825,616, pub. 12-27-66. Cl. 16.
Aimcee Wholesale Corp., New York, N.Y. 825,846, pub. 12-27-66. Cl. 40.
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Aktiebolaget Bofors, Bofors, Sweden. 710,163, canc. Cl. 18.
Aktiebolaget Bofors, Bofors, Sweden. 710,164, canc. Cl. 18.
Aktiebolaget Bofors, Bofors, Sweden. 710,165, canc. Cl. 18.
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Allen Pen Co., Inc., The, Needham Heights, Mass. 825,774, pub. 12-27-66. Cl. 37.
Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. 825,909. Cl. 18.
Aluminum Specialty Co., Manitowoc, Wis. 825,605, pub. 12-27-66. Cl. 13.
Alvin Corp., The, Providence, R.I. 429,405, ren. 3-14-67. Cl. 28.
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American Screen Process Equipment Co., Chicago, Ill. 825,745, pub. 12-27-66. Cl. 34.
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Atlantic Export-Import Ltd., Toronto, Ontario, Canada. 710,266, canc. Cl. 36.
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Barton Import Co. Ltd., Vancouver, British Columbia, Canada. 825,662, pub. 12-27-66. Cl. 22.
Bates Mfg. Co., Inc., Lewiston, Maine. 825,853, pub. 12-27-66. Cl. 42.
Bazley, Ernest S., d.b.a. The Bazley Market, to Bazley and Junedale Markets Co., Chicago, Ill. 224,600, ren. 3-14-67. Cl. 46.
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Bill Board Publishing Co., The, Cincinnati, Ohio. 778,780, cor. Cl. 38.
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Bloch Brothers Tobacco Co., The, Wheeling, W. Va. 825,907. Cl. 8.
Bopp-Decker Inc., Birmingham, Mich. 825,552, pub. 12-27-66. Cl. 2.
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Botany Industries, Inc.: *See—*
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Brown & Sharpe Mfg. Co., North Kingstown, R.I. 825,728, pub. 12-27-66. Cl. 26.
Brown, Willis F., Nome, Alaska. 825,777, pub. 12-27-66. Cl. 37.
Bulova Watch Co., Inc., Flushing, N.Y. 825,731, pub. 12-27-66. Cl. 27.
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Buttoni Foods Corp., South Hackensack, N.J. 710,352, canc. Cl. 46.
Cal Corp., Berkeley, Mich. 710.179, canc. Cl. 19.
Caltype Corp., The, Los Angeles, Calif. 825,682, pub. 12-27-66. Cl. 23.
Camera & Craft, Inc., Chattanooga, Tenn. 825,895, pub. 12-27-66. Cl. 101.
Campbell Associates, Inc., Washington, D.C. 825,927. Cl. 101.
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Cannon, H. P., & Son, Inc., Bridgeville, Del. 825,878, pub. 12-27-66. Cl. 46.
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Carboline Co., St. Louis, Mo. 825,584, pub. 12-27-66. Cl. 12.
Carolina Co., Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. 825,775, pub. 12-27-66. Multiple Class (Classes 37 and 51).
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Carter, Mary, Paint Co., Tampa, Fla. 825,897, pub. 12-27-66. Cl. 101.
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Carteret Quick Freezing Co., Inc., Beaufort, N.C. 825,926. Cl. 46.
Castleberry's Food Co., Augusta, Ga. 825,879, pub. 12-27-66. Cl. 46.
Cenco Instruments Corp., Chicago, Ill. 825,543, pub. 12-27-66. Multiple Class (Classes 2, 3, 4, 5, 6, 11, 13, 14, 15, 16, 21, 23, 26, 27, 29, 32, 33, 34, 35, 36, 37, 38, 39, 44, and 50).
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Cohen, Joseph H., & Sons, Inc., to Rapid-American Corp., New York, N.Y. 428,180, ren. 3-14-67. Cl. 39.
Colgate-Palmolive Co., New York, N.Y. 825,701, pub. 12-27-66. Cl. 23.
Colgate-Palmolive Co., New York, N.Y. 825,893, pub. 12-27-66. Cl. 52.
Collins Microflat Co., Inc., Hawthorne, Calif. 825,709, pub. 12-27-66. Cl. 26.
Colt's Inc., Hartford, Conn. 825,581, pub. 12-27-66. Cl. 9.
Colt's Inc., Hartford, Conn. 825,655, pub. 12-27-66. Cl. 22.
Columbia Industries, Inc., San Antonio, Tex. 825,661, pub. 12-27-66. Cl. 22.
Columbia Tours, Inc., New York, N.Y. 825,929. Cl. 105.
Commerce Publishing Co., St. Louis, Mo. 825,917. Cl. 38.
Concentric System Co.: *See—*
Showler, William W.
Conco Engineering Works, Inc., Mendota, Ill. 825,669, pub. 12-27-66. Cl. 23.
Conde Nast Publication Inc., New York, N.Y. 825,919. Cl. 38.
Congoleum-Nairn Inc., Kearny, N.J. 825,633, pub. 12-27-66. Cl. 20.
Consumers Digest, Inc.: *See—*
Van Leer Corp.
Continental Oil Co., Ponca City, Okla. 825,601, pub. 12-27-66. Cl. 13.
Cooper, Ben, Inc., Brooklyn, N.Y. 825,835, pub. 12-27-66. Cl. 39.
Cooper, Ben, Inc., Brooklyn, N.Y. 825,842, pub. 12-27-66. Cl. 39.
Cooper, Ben, Inc., Brooklyn, N.Y. 825,843, pub. 12-27-66. Cl. 39.
Cormier, Margaret, d.b.a. Shimmer-Ol Co., Stratford, Conn. 825,891, pub. 12-27-66. Cl. 52.
Coro, Inc., New York, N.Y. 425,516, ren. 3-14-67. Cl. 28.
Cosart, W. F., Packing Co.: *See—*
Fremont Fruit Association.
Courtaulds, Inc., New York, N.Y. 710,326, canc. Cl. 42.
Craddock-Terry Shoe Corp., Lynchburg, Va. 825,815, pub. 12-27-66. Cl. 39.
Craft Mfg. Co., North Chicago, Ill. 710,336, canc. Cl. 44.
Crawford Associates, Inc., Palo Alto, Calif. 710,087, canc. Cl. 1.
Cresswell's Asbestos Co. Ltd., Bradford, England. 225,045, ren. 3-14-67. Cl. 35.
Crocker, H. S., Co., Inc., San Bruno, Calif. 825,770, pub. 12-27-66. Cl. 37.
Crown Zellerbach Corp., San Francico, Calif. 825,776, pub. 12-27-66. Cl. 37.
DASA Corp., from DASA Corp., Andover, Mass. 825,636, pub. 12-27-66. Cl. 21.
D. & S. Tablet Co., Atlanta, Ga., to Union Camp Corp., New York, N.Y. 223,319, ren. 3-14-67. Cl. 37.
Dan River Mills, Inc., Danville, Va. 825,855, pub. 12-27-66. Cl. 42.
Dan River Mills, Inc., Danville, Va. 825,856, pub. 12-27-66. Cl. 42.
Daviess County Distilling Co., The, Owensboro, Ky., to National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., New York, N.Y. 62,722, ren. 3-14-67. Cl. 49.
Daybrook-Ottawa Corp., Ottawa, Kans. 825,627, pub. 12-27-66. Cl. 19.
Dayco Corp., Dayton, Ohio. 825,759, pub. 12-27-66. Cl. 35.
Dearborn Electronics, Inc., Orlando, Fla. 825,649, pub. 12-27-66. Cl. 21.
Dee Sportswear, Inc., Rockaway Beach, N.Y. 710,320, canc. Cl. 39.
Defiance Tick Mitten Co., The, Toledo, Ohio, to Boss Mfg. Co., Kewanee. Ill. 59,323, ren. 3-14-67. Cl. 30.
Delmer Engineers, Bell, Calif. 710,093, canc. Cl. 2.
Demetrios Mountanos, d.b.a. Terry Rub-A-Dub, New York, N.Y. 710,329, canc. Cl. 42.
Denton Sleeping Garment Mills, Inc., Chicago, Ill. 825,810, 12-27-66 Cl. 39.
Deseret Pharmaceutical Co., Inc., Salt Lake City, Utah. 825,865, pub. 12-27-66. Cl. 44.
Deseret Pharmaceutical Co., Inc., Salt Lake City, Utah. 825,866, pub. 12-27-66. Cl. 44.
Dexter Chemical Corp., Bronx, N.Y. 825,562, pub. 12-27-66. Cl. 6.
Dexter Chemical Corp., Bronx, N.Y. 825,563, pub. 12-27-66. Cl. 6.
Diamond Alkali Co., Cleveland, Ohio. 576, 212, new cert. Cl. 6.
Diamond Alkali Co., Cleveland, Ohio. 821,805, cor. Cl. 6.
Diana Foundations, Inc., New York, N.Y. 825,845, pub. 12-27-66. Cl. 39.
Diana Stores Corp., North Bergen, N.J. 825,820, pub. 12-27-66. Cl. 39.
Dimensions In Living, Inc., New York, N.Y. 825,790, pub. 12-27-66. Cl. 38.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 59,029, cor. Cl. 1.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 717,198, cor. Cl. 37.
Doho Chemical Corp., New York, N.Y. 710,107, canc. Cl. 6.
Dohrmann Co., Brisbane, Calif. 825,741, pub. 12-27-66. Cl. 32.
Donaldson Co., Inc., Minneapolis, Minn. 825,738, pub. 12-27-66. Cl. 31.
Donmoor, Inc., New York, N.Y. 825,828, pub. 12-27-66. Cl. 39.
Doughboy Industries, Inc., New Richmond, Wis. 825,630, pub. 12-27-66. Cl. 19.
Dow Chemical Co., The Midland, Mich. 825,540, pub. 12-27-66. Cl. 1.
Draper Corp., Hopedale, Mass. 825,687, pub. 9-13-66. Cl. 23.
Duplex Corp.: *See—*
International Duplex Corp.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 825,555, pub. 12-27-66. Cl. 5.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 825,577, pub. 12-27-66. Cl. 6.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 825,739, pub. 12-27-66. Cl. 31.
Dura-Stress, Inc., Leesburg, Fla. 704,487, canc. Cl. 12.
Dur-O-Wal National, Inc., Cedar Rapids, Iowa. 825,588, pub. 12-27-66. Cl. 12.
Eagle Knitting Mills, Inc., Milwaukee, Wis. 710,295, canc. Cl. 39.
Eaton Yale & Towne Inc., Cleveland, Ohio. 825,699, pub. 12-27-66. Cl. 23.
Eclipse Fuel Engineering Co., Rockford, Ill. 825,751, pub. 12-27-66. Cl. 34.
Editions d'Art Albert: *See—*
Albert Skira.

Editions d'Art Albert Skira, d.b.a. Albert Skira, Geneva, Switzerland. 825,787, pub. 12-27-66, Cl. 38.
Elgin Knit Sportswear, Inc., New York, N.Y. 710,302, canc. Cl. 39.
El Greco Leather Products Co. Inc., New York, N.Y. 825,817, pub. 12-27-66. Cl. 39.
Elite Sewing Machine Corp., New York, N.Y. 710,184, canc. Cl. 21.
Elliott Paint & Varnish Co., Chicago, Ill. 825,614, pub. 12-27-66. Cl. 16.
Elmes, Eve: *See—*
Eve of Roma.
Elmes, Eve, d.b.a. Eve of Roma, Rome, Italy. 825,892, pub. 12-27-66. Cl. 52.
Embassy Overseas Corp., Farmingdale, N.Y. 825,749, pub. 12-27-66. Cl. 34.
Empac-O-Matic, S.A., Mexico City, Mexico. 825,680, pub. 12-27-66. Cl. 23.
Endicott Johnson Corp., Endicott, N.Y. 825,804, pub. 12-27-66. Cl. 39.
Epic Chemicals, Inc., Brooklyn, N.Y. 825,554, pub. 12-27-66. Cl. 4.
Epic Chemicals, Inc., Brooklyn, N.Y. 825,560, pub. 12-27-66. Cl. 6.
Equipment Guide-Book Co., Palo Alto, Calif. 825,918. Cl. 38.
Essex Wire Corp., Fort Wayne, Ind. 428,996, ren. 3-14-67. Cl. 21.
Euphonics Corp., Villa Prades Industrial Sub-Division, Guaynabo, Puerto Rico. 825,762, pub. 12-27-66. Cl. 36.
Eversharp, Inc., Milford, Conn. 825,677, pub. 12-27-66. Cl. 23.
Evr-Gard Coatings Corp., Los Angeles, Calif. 825,617, pub. 12-27-66. Cl. 16.
Exeter Emperor Association: *See—*
Fremont Fruit Association.
Exquisite Form Industries, Inc., New York, N.Y. 825,840, pub. 12-27-66. Cl. 39.
F & F Shoe Co.: *See—*
Hand Made Boot & Shoe Co.
FMC Corp., New York, N.Y. 825,574, pub. 12-27-66. Cl. 6.
F.O.P.E. Di Odino Cazzola, Via Caviglia, Vicenza, Italy. 825,733, pub. 12-27-66. Cl. 28.
Fairfax Biological Laboratory: *See—*
Murray, Edgar A., Co.
Filatures Prouvost & Cie, La Lainiere de Roubaix, Roubaix (Nord), France. 825,861, pub. 12-27-66. Cl. 43.
Filatures Prouvost & Cie, La Lainiere de Roubaix, Roubaix (Nord), France. 825,862, pub. 12-27-66. Cl. 43.
Finn Industries, The, Chicago, Ill. 825,550, pub. 12-27-66. Cl. 2.
5 Associates Inc., Redworth City, Calif. 825,912. Cl. 38.
Fleck, Donald F., Jacksonville Beach, Fla. 825,742, pub. 12-27-66. Cl. 34.
Flexible Tubing Corp., The, Guilford, Conn. 710,263, canc. Cl. 35.
Flex-O-Glass, Inc.: *See—*
Glassweave Mfg. Co.
Florsheim Bros. Dry Goods Co. Ltd., The, Shreveport, La., to Interco Inc., Chicago, Ill. 229,063, ren. 3-14-67. Cl. 39.
Flying Educators, Inc., Van Nuys, Calif. 825,906, pub. 12-27-66. Cl. 200.
Folger Coffee Co., The, Cincinnati, Ohio. 825,549, pub. 12-27-66. Cl. 2.
Food Fair Stores, Inc., Philadelphia, Pa. 710,327, canc. Cl. 42.
Forrest Enterprises, Inc., Piqua, Ohio. 825,653, pub. 12-27-66. Cl. 22.
Forster Mfg. Co., Inc.: *See—*
Wallace Corp., The.
Fort Dodge Laboratories: *See—*
American Home Products Corp.
Foy Paint Co., Inc., The, d.b.a. The A. Burdsal Co., Cincinnati, Ohio. 710,152, canc. Cl. 16.
Francisco, Urbe, Renteria, Guipuzcoa, Spain. 710,187, canc. Cl. 21.
Free Enterprises Publications Inc., Washington, D.C. 825,792, pub. 12-27-66. Cl. 38.
Fremont Fruit Association, d.b.a. Exeter Emperor Association. W. F. Cosart Packing Co., Exeter, Calif. 310,863, new cert. Cl. 46.
Frigeco, Paris, France. 710,192, canc. Cl. 21.
Frito-Lay, Inc., Dallas, Tex. 825,876, pub. 12-27-66. Cl. 46.
Fritzsche Bros., Inc.: *See—*
Fritzsche Bros.
Fritzsche Bros., to Fritzsche Bros., Inc., New York, N.Y. 62,432, ren. 3-14-67. Cl. 6.
Gallenkamp Stores Co., Los Angeles, Calif. 710,305, canc. Cl. 39.
Garry Laboratories, Inc., Buffalo, N.Y. 710,372, canc. Cl. 16.
Geigy Cherical Corp., Ardsley, N.Y. 825,569, pub. 12-27-66. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 825,567, pub. 12-27-66. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 825,725, pub. 12-27-66. Cl. 26.
General Electric Co., Schenectady, N.Y. 825,732, pub. 12-27-66. Cl. 27.
General Star Products, Inc., New Haven, Conn. 825,737, pub. 12-27-66. Cl. 31.
Georgia Marble Co., The, Atlanta, Ga. 825,586, pub. 12-27-66. Cl. 12.
Georgia Marble Co., The, Atlanta, Ga. 825,587, pub. 12-27-66. Cl. 12.
Giannini Controls Corp., Duarte, Calif. 825,726, pub. 12-27-66. Cl. 26.
Gilmour Mfg. Co.: *See—*
Gilmour, Robert A.
Gilmour, Robert A., d.b.a. Gilmour Mfg. Co., Somerset, Pa. 825,689, pub. 9-20-66. Cl. 23.
Glassweave Mfg. Co., Bladen, Nebr., to Flex-O-Glass, Inc., d.b.a. Warp Bros., Chicago, Ill. 222,846, ren. 3-14-67. Cl. 12.
Glen Mfg., Inc., Milwaukee, Wis. 825,809, pub. 12-27-66. Cl. 39.
Glenn, Camille H., Louisville, Ky. 825,786, pub. 12-27-66. Cl. 38.
Glidden Co., The, Cleveland, Ohio. 825,612, pub. 12-27-66. Cl. 16.
Gobins, Cathy J., Phoenix, Ariz. 710,292, canc. Cl. 39.
Golden Crown Products Co., Inc., d.b.a. Canaveral Supply Co., Jacksonville, Fla. 825,629, pub. 12-27-66. Cl. 19.
Golume Builders Inc., Philadelphia, Pa. 825,913. Cl. 38.
Gorham Corp.: *See—*
Gorham Mfg. Co.
Gorham Mfg. Co., to Gorham Corp., Providence, R.I. 429,407, ren. 3-14-67. Cl. 28.
Gorham Mfg. Co., to Gorham Corp., Providence, R.I. 429,408, ren. 3-14-67. Cl. 28.
Gorham Mfg. Co., to Gorham Corp., Providence, R.I. 429,409, ren. 3-14-67. Cl. 28.
Gorham Mfg. Co., to Gorham Corp., Providence, R.I. 429,410, ren. 3-14-67. Cl. 28.
Grand Automotive Products, Inc., Chicago, Ill. 825,607, pub. 12-27-66. Cl. 13.
Great Neck Saw Mfg. Inc., Mineola, N.Y. 825,692, pub. 12-27-66. Cl. 23.
Great Neck Saw Manufacturers, Inc., Mineola, N.Y. 825,693, pub. 12-27-66. Cl. 23.
Great Western Battery Mfg. Corp., Abilene, Tex. 825,646, pub. 12-27-66. Cl. 21.
Gretsch, Fred., Mfg. Co., The, Brooklyn, N.Y. 825,766, pub. 12-27-66. Cl. 36.
Grover Junior Fashions Ltd., Bushey Heath, England. 825,807, pub. 12-27-66. Cl. 39.
Guaranteed Reservations, Inc., Palm Beach, Fla. 825,894, pub. 12-27-66. Cl. 101.
Gubbens A/S, Hundested, Denmark. 825,871, pub. 12-27-66. Cl. 46.
Guy-Claude Jacob, La Planchotte, France. 825,621, pub. 12-27-66. Multiple Class (Classes 18 and 46).
H & H Wholesale Nursery, Inc., Fillmore, N. Mex. 710,082, canc. Cl. 1.
Haase, Wilbert W., Co., Forest Park, Ill. 825,551, pub. 12-27-66. Cl. 2.
Haida, Hilde, Inc., Edmonds, from E. Svensson, Seattle, Wash. 825,585, pub. 12-27-66. Cl. 12.
Halpern & Christenfeld Inc., New York, N.Y. 825,838, pub. 12-27-66. Cl. 39.
Hamblet & Hayes Co., Salem, Mass. 825,565, pub. 12-27-66. Cl. 6.
Hammermill Paper Co., Erie, Pa. 825,783, pub. 12-27-66. Cl. 37
Hand Made Boot & Shoe Co., to F & F Shoe Co., Chippewa Falls, Wis. 62,940, ren. 3-14-67. Cl. 39.
Hardware Products Co., Boston, Mass. 224,994, ren. 3-14-67. Cl. 23.
Hark Importing Corp., New York, N.Y. 825,829, pub. 12-27-66. Cl. 39.
Harleyarts, Inc., New York, N.Y. 759,007, cor. Cl. 2.
Hart Schaffner & Marx, Chicago, Ill. 825,805, pub. 12-27-66. Cl 39.
Hartz Mountain Products Corp., New York, N.Y. 825,652, pub. 12-27-66. Cl. 22.
Harwil Co., Santa Monica, Calif. 825,670, pub. 12-27-66. Cl 23
Haver-Lockhart Laboratories, Inc., Shawnee, Kans. 825,624, pub. 11-22-66. Cl. 18.
Hercules Glue Co., Ltd., d.b.a. Colloidal Products Corp., Sausalito Calif. 825,576, pub. 12-27-66. Cl. 6.
Heydays Shoes, Inc., St. Louis, Mo. 710,376, canc. Cl. 39.
Highland Printers & Plastic Molders: *See—*
Naff, Robert K., and Gordon J. Naff.
Hiller, Sigmund F., d.b.a. Richlite Electric Products, Memphis, Tenn. 825,634, pub. 12-27-66. Cl. 21.
Hilton Clothes, Inc., New York, N.Y. 825,923. Cl. 42.
Hilton Clothes, Inc., New York, N.Y. 825,924. Cl. 42.
Holiday Magic, San Rafael, Calif. 825,890, pub. 12-27-66. Cl 51.
Horton & Converse, d.b.a. Professional Drug Products, Los Angeles, Calif. 825,625, pub. 12-27-66. Cl. 18.
Houston Engineers, Inc., Houston, Tex. 825,695, pub. 12-27-66. Cl. 23.
Hudnut, Richard: *See—*
Associated Products, Inc.
Avon Products, Inc.
Hudnut, Richard, Morris Plains, N.J. 427,401, ren. 3-14-67. Cl. 51.
Hudson Oxygen Therapy Sales Co., Los Angeles, Calif. 825,863. pub. 12-27-66. Cl. 44.
Humble Oil & Refining Co.: *See—*
Pennsylvania Lubricating Co.
Smith, D. B.,& Co., Inc.
Hycon Mfg. Co., Monrovia, Calif. 825,708, pub. 12-27-66. Cl. 26.
Hycon Mfg. Co., Monrovia, Calif. 825,637, pub. 12-27-66. Cl. 21.
Hy-Dynamic Co., The, Lake Bluff, Ill. 825,681, pub. 12-27-66. Cl. 23.
Impala Corp., The, Smithfield, Va. 710,246, canc. Cl. 27.
Imperial Knife Associated Companies, Inc., Providence, R.I. 825,683, puo. 12-27-66. Cl. 23.

Imperial Knife Associated Companies, Inc., Providence, R.I. 825,684, pub. 12–27–66. Cl. 23.

Imperial Knife Associated Companies, Inc., Providence, R.I. 825,685, pub. 12–27–66. Cl. 23.

Imperial Knife Associated Companies, Inc., Providence, R.I. 825,686, pub. 12–27–66. Cl. 23.

Indian Head Inc., New York, N.Y., from Indian Head Mills, Inc., New York, N.Y. 825,848, pub. 12–27–66. Cl. 42.

Indian Head Mills, Inc.: *See—*
Indian Head Inc.

Industrial Electric Reels, Inc., Omaha, Nebr. 825,642, pub. 12–27–66. Cl. 21.

Industrial Tools, Inc.: *See—*
Ojai Industrial Tools, Inc.

Ingersoll-Rand Co., New York, N.Y. 825,694, pub. 12–27–66. Cl. 23.

Inland Homes Corp., Piqua, Ohio. 825,589, pub. 12–27–66. Cl. 12.

Inner-Self Corp., from North Bay Coats, Inc., New York, N.Y. 710,316, canc. Cl. 39.

Instructional Aids Inc., Owatonna, Minn. 825,789, pub. 12–27–66. Cl. 38.

Interco Inc.: *See—*
Florsheim Bros. Dry Goods Co. Ltd., The.

Interco Inc., St. Louis, Mo. 825,830, pub. 12–27–66. Cl. 39.

International Car Corp.: *See—*
Nationwide Railroad Leasing, Inc.

International Duplex Corp., d.b.a. Duplex Corp., San Francisco, Calif. 710,227, canc. Cl. 24.

International Telephone and Telegraph Corp., New York, N.Y. 825,645, pub. 12–27–66. Cl. 21.

Jacob & Schey, New York, N.Y., to Alba-Waldensian, Inc., Valdese, N.C. 223,587, ren. 3–14–67. Cl. 39.

Jacobson Stores, Inc., Jackson, Mich. 825,800, pub. 12–27–66. Cl. 39.

Jamestown Leaf Tobacco Co., Inc., Richmond, Va. 825,619, pub. 12–27–66. Cl. 17.

Jamieson, Paul H., Dallas, Tex. 825,566, pub. 12–27–66. Cl. 6.

Jantzen Inc., Portland, Oreg. 825,722, pub. 12–27–66. Cl. 26.

Jantzen Inc., Portland, Oreg. 825,723, pub. 12–27–66. Cl. 26.

Jay Lighting Mfg. Co., Inc., Brooklyn, N.Y. 710,189, canc. Cl. 21.

Jay Lighting Mfg. Co., Inc., Brooklyn, N.Y. 710,190, canc. Cl. 21.

Jensen Mfg. The Muter Co., Chicago, Ill. 501,769. Am. 7(d). Cl. 21.

Jetzon Tire and Rubber Corp., Bridgeport, Conn. 825,758, pub. 12–27–66. Cl. 35.

Jones, Madam, Co.: *See—*
Valmor Products Co.

K-S-H Plastics, Inc., Kirkwood, Mo. 825,583, pub. 12–27–66. Cl. 12.

Kaiser Aluminum & Chemical Corp., Oakland, Calif. 825,593, pub. 12–27–66. Cl. 12.

Kaiser Products: *See—*
Kaiser, Stanley C.

Kaiser, Stanley C., d.b.a. Kaiser Products, Colorado Springs, Colo. 825.719, pub. 12–27–66. Cl. 26.

Karp, David, Co., to David Karp Co., Inc., New York, N.Y. 430,015, ren. 3–14–67. Cl. 28.

Karp, David, Co., Inc.: *See—*
Karp, David, Co.

Karpak Co., Minneapolis, Minn. 825,628, pub. 12–27–66. Cl. 19.

Kayser-Roth Corp.: *See—*
Phoenix Hosiery Co.

Kayser-Roth Corp., New York, N.Y. 825,841, pub. 12–27–66. Cl. 39.

Keapsit Bottle Co., The, Cincinnati, Ohio, to King-Seeley Thermos Co., Ann Arbor, Mich. 228,040, ren. 3–14–67. Cl. 2.

Kenrose Mfg. Co., Inc., New York, N.Y. 825,836, pub. 12–27–66. Cl. 39.

Keyes Fibre Co., Waterville, Maine. 825,548, pub. 12–27–66. Cl. 2.

Keystone Adjustable Cap Co., Philadelphia, Pa. 825,816, pub. 12–27–66. Cl. 39.

Kierulff Electronics, Inc., Los Angeles, Calif. 825,797, pub. 12–27–66. Cl. 38.

Kierulff Electronics, Inc., Los Angeles, Calif. 825,798, pub. 12–27–66. Cl. 38.

Kimberly-Clark Co., to Kimberly-Clarke Corp., Neenah, Wis. 229,755, ren. 3–14–67. Cl. 37.

Kimberly-Clarke Corp.: *See—*
Kimberly-Clark Co.

Kinemotive Corp., Farmingdale, N.Y. 825,671, pub. 12–27–66. Cl. 23.

Kinemotive Corp., Farmingdale, N.Y. 825,756, pub. 12–27–66. Cl. 35.

Kinemotive Corp., Farmingdale, N.Y. 825,757, pub. 12–27–66. Cl. 35.

King Graphite Products, Inc., Trenton, Mich. 710,113, canc. Cl. 6.

King, Llewellyn, Associates, Inc., Long Island City, N.Y. 825,794, pub. 12–27–66. Cl. 38.

King-Seeley Thermos Co.: *See—*
Keapsit Bottle Co., The.

Kistler Instrument Corp., Clarence, N.Y. 825,640, pub. 12–27–66. Cl. 21.

Kresge, S. S., Co., Detroit, Mich. 825,823, pub. 12–27–66. Cl. 39.

L & H Lumber Co., Sutherlin, Oreg. 825,592, pub. 12–27–66. Cl. 12.

Land O'Sun Dairies, Inc., Miami, Fla. 426,907, ren. 3–14–67. Cl. 46.

Lanman & Kemp-Barclay & Co. Inc., Palisades Park, N.J. 430,721, ren. 3–14–67. Cl. 52.

Larsen Products Corp., Bethesda, Md. 825,596, pub. 12–27–66. Cl. 12.

Latham, F., Corpus Christi, Tex. 825,928. Cl. 105.

Lawrence, Robert E., d.b.a. Western Records, Sunburst, Mont. 674,604, canc. Cl. 36.

Leatherflex Products Co., Newark, N.J. 710,084, canc. Cl. 1.

Leatherflex Products Co., Newark, N.J. 710,085, canc. Cl. 1.

Leatherflex Products Co., Newark, N.J. 710,086, canc. Cl. 1.

Leece-Neville Co., The, Cleveland, Ohio. 515,558. Am. 7(d). Cl. 21.

Lehn & Fink Products Corp.: *See—*
Beacon Co., The.

Lentheric Inc.: *See—*
Lentheric, Inc.

Lentheric, Inc., to Lentheric Inc., New York, N.Y. 424,776, ren. 3–14–67. Cl. 51.

Lerner Mfg., Inc., Melville, N.Y. 825,604, pub. 11–8–66. Cl. 13.

Lewis Supply Co., Inc., New York, N.Y. 710,176, canc. Cl. 19.

Liberty Records, Inc., Los Angeles, Calif. 825,763, pub. 12–27–66. Cl. 36.

Liberty Records, Inc., Los Angeles, Calif. 825,764, pub. 12–27–66. Cl. 36.

Lindsey, James G., d.b.a. Cherokee Stone Center, Harrison, Ark. 825,666, pub. 12–27–66. Cl. 23.

Lloyd, Stuart, Co.: *See—*
Rosenblum, Charles.

Lookout Vending & Supply: *See—*
Wood, Howard F.

Lopper and Mann Inc., New York, N.Y. 825,911. Multiple Class (Classes 23 and 30).

Lubell Bros., to Lubell Bros., Corp., New York, N.Y. 59,704, ren. 3–14–67. Cl. 39.

Lubell Bros., Corp.: *See—*
Lubell Bros.

Luft, George W., Co., Inc., The, Long Island City, N.Y. 710,359, canc. Cl. 51.

Lynch Corp., Detroit, Mich. 825,663, pub. 12–27–66. Multiple Class (Classes 23, 26, and 31).

Lynden Metal Craft Co., Inc., Lynden, Wash. 690,772, canc. Cl. 13.

MTA Productions, Ltd., New York, N.Y. 825,769, pub. 12–27–66. Cl. 36.

Macmillan Co., The, New York, N.Y. 825,793, pub. 12–27–66. Cl. 38.

MacMillan Petroleum Corp., Los Angeles, Calif. 719,885. Cl. 15.

Maco Magazine Corp. Maco Publishing Co., Inc., New York, N.Y. 685,582. Am. 7(d). Cl. 38.

Maco Magazine Corp. Maco Publishing Co. Inc., New York, N.Y. 697,141. Am. 7(d). Cl. 38.

Maco Magazine Corp. Maco Publishing Co. Inc., New York, N.Y. 793,675. Am. 7(d). Cl. 38.

Maco Publishing Co. Inc.: *See—*
Maco Magazine Corp.

Macy, R. H., & Co., Inc., New York, N.Y. 825,641, pub. 12–27–66. Cl. 21.

Maljana S.p.A., Milan, Italy. 825,818, pub. 12–27–66. Cl. 39.

Mallard, Inc., Detroit, Mich. 825,623, pub. 12–27–66. Cl. 18.

Manifold Supplies Co., Brooklyn, N.Y. 825,780, pub. 12–27–66. Cl. 37.

Maples, J. C., Co.: *See—*
Matson, F. C.

Maquinas De Coser Jotor, S.A., Havana, Cuba. 710,225, canc. Cl. 23.

Marathon Oil Co., Findlay, Ohio. 825,608, pub. 12–27–66. Cl. 15.

Marble Products Co. of Ga., Atlanta, Ga. 825,539, pub. 12–27–66. Cl. 1.

Martha Mills, Inc., New York, N.Y. 710,322, canc. Cl. 42.

Matson, F. C., d.b.a. J. G. Maples Co., Cleveland, Ohio. 820,376, cor. Cl. 46.

Maxon Shirt Co.: *See—*
Oxford Mfg. Co., Inc.

McGraw-Hill, Inc.: *See—*
Nursing Home Administrator, Inc.

McKesson & Robbins, Inc., New York, N.Y. 825,740, pub. 12–27–66. Cl. 32.

Mead Johnson & Co., Evansville, Ind. 219,116, ren. 3–14–67. Cl. 46.

Merck & Co., Inc.: *See—*
Sharp & Dohme. Inc.
Societe des Usines Chimiques Rhone-Poulenc.

Merrymaid Plastics Corp., from The Standfast Products Co., Cleveland, Ohio. 710.202, canc. Cl. 23.

Meyer, John, of Norwich, Inc., Norwich, Conn. 825,802, pub. 6–14–66. Cl. 39.

Midland-Ross Corp., Cleveland, Ohio. 710,178, canc. Cl. 19.

Miles Standard Corp., The, Saginaw, Mich. 825,697, pub. 12–27–66. Cl. 23.

Milwaukee Faucets, Inc., Milwaukee, Wis. 825,602, pub. 7–26–66. Cl. 13.

Milwhite Co. Inc., The, Houston, Tex. 710,251, canc. Cl. 31.

Mintons Ltd., Stoke-On-Trent, England. 427,236, ren. 3–14–67. Cl. 30.

Mr. Mod Shop, Inc., New Orleans, La. 825,729, pub. 12–27–66. Cl. 26.

Mr. Mod Shop, Inc., New Orleans, La. 825,736, pub. 12–27–66. Cl. 28.

Mr. Mod Shop, Inc., New Orleans, La. 825,847, pub. 12–27–66. Cl. 41.

Mr. Mod Shop, Inc., New Orleans, La. 825,889, pub. 12–27–66. Cl. 51.

Mitsubishi Pencil Co., Ltd., Shinagawa, Tokyo, Japan. 825,773, pub. 12–27–66. Cl. 37.

Molalla Forest Products Co., Cloverdale, Calif. 710,121, canc. Cl. 10.

Momar Mfg. Co., Inc., Birmingham, Ala. 710,193, canc. Cl. 21.

Monsanto Chemical Co., St. Louis, Mo., to Tull Chemical Co., Inc., Oxford, Ala. 430,377, ren. 3–14–67. Cl. 6.

Monsanto Co., St. Louis, Mo. 825,579, pub. 12–27–66. Cl. 6.

Monte Vardi Sportswear Co., Inc., New York, N.Y. 825,826, pub. 12–27–66. Cl. 39.

Montecatini, Societa Generale Per l'Industria Mineraria e Chimica, Largo Guido Donegani ½, Milan (134), Italy. 825,538, pub. 12–27–66. Cl. 1.

Morell Industries, Inc., Baltimore, Md. 710,369, canc. Cl. 12.

Morgan-Jones, Inc., New York, N.Y. 710,377, canc. Cl. 42.

Moser Paper Co., Chicago, Ill. 825,564, pub. 12–27–66. Cl. 6.

Moss Key-Rec Systems, Inc., Dayton, Ohio. 825,784, pub. 12–27–66. Cl. 37.

Mother's Cake & Cookie Co., Oakland, Calif. 825,873, pub. 12–27–66. Cl. 46.

Mother's Cake & Cookie Co., Oakland, Calif. 825,874, pub. 12–27–66. Cl. 46.

Mother's Cake & Cookie Co., Oakland, Calif. 825,875, pub. 12–27–66. Cl. 46.

Movie Star, Inc., New York, N.Y. 710,285, canc. Cl. 39.

Murray, Edgar A., Co., Detroit, Mich., to Howard A. Chittick, d.b.a. Fairfax Biological Laboratory, Clinton Corners, N.Y. 426,928, ren. 3–14–67. Cl. 6.

N. & B. Co., The, Milwaukie, Oreg. 825,831, pub. 12–27–66. Cl. 39.

Naff, Robert K., and Gordon J. Naff, d.b.a. Highland Printers & Plastic Molders, Pasadena, Calif. 825,547, pub. 12–27–66. Cl. 2.

Nashua Corp., Nashua, N.H. 825,795, pub ,12–27–66. Cl. 38.

National Association of Supermarket Apparel Distributors, New York, N.Y. 825,824, pub. 12–27–66. Cl. 39.

National Distillers and Chemical Corp.: *See—*
Daviess County Distilling Co., The.

National Distillers Products Co.: *See—*
Daviess County Distilling Co., The.

National Electrical Mfg., New York, N.Y. 825,791, pub. 12–27–66. Cl. 38.

National Jet Co., to National Jet Drill Co., Cumberland, Md. 426,838, ren. 3–14–67. Cl. 23.

National Jet Drill Co.: *See—*
National Jet Co.

National Press Club of Washington, D.C., The, Washington, D.C. 825,905, pub. 12–27–66. Cl. 200.

National Uni-Pac, Inc., Atlanta, Ga. 825,664, pub. 12–27–66. Cl. 23.

Nationwide Financial Corp., New York, N.Y. 825,901, pub. 12–27–66. Cl. 102.

Nationwide Railroad Leasing, Inc., Chicago, Ill., from International Car Corp., Chicago, Ill. 825,910. Cl. 19.

Nelson, James, Ltd., Nelson, England. 710,325, canc. Cl. 42.

Neumann & Wenzel Bijouteriewarenfabrik, Enns, Austria. 825,734, pub. 12–27–66. Cl. 28.

New York Mackintosh Clothing Co., Inc. New York Mackintosh, Inc., New York, N.Y. 814,568, cor. Cl. 39.

New York Mackintosh, Inc.: *See—*
New York Mackintosh Clothing Co., Inc.

Nielsen, A. C., Co., Chicago, Ill. 825,898, pub. 12–27–66. Cl. 101.

Noble and Noble Publishers, Inc., New York, N.Y. 825,799, pub. 12–27–66. Cl. 38.

North Bay Coats, Inc.: *See—*
Inner-Self Corp.

Northland Foods, Inc., Duluth. Minn. 691,013, canc. Cl. 46.

Northrup, King & Co., Minneapolis, Minn. 228,511, ren. 3–14–67. Cl. 1.

Norva Maskinfabrik A/S, Copenhagen, Denmark. 825,705, pub. 12–27–66. Cl. 24.

Nursing Home Administrator, Inc. McGraw-Hill, Inc., New York, N.Y. 668,074. Am. 7(d). Cl. 38.

Oak Electro Netics Corp., Crystal Lake, Ill. 825,650, pub. 12–27–66. Cl. 21.

Oilrid, Inc., Hollywood, Fla. 692,211, canc. Cl. 52.

Ojai Industrial Tools. Inc., d.b.a. Industrial Tools, Inc., Ojai, Calif. 825,675, pub. 12–27–66. Cl. 23.

Ortho Pharmaceutical Corp., Raritan, N.J. 825,867, pub. 12–27–66. Cl. 44.

Oxford Mfg. Co., Inc., Atlanta, Ga. 825 920. Cl. 39.

Oxford Mfg. Co., Inc., d.b.a. Maxon Shirt Co., Division, Atlanta, Ga. 825,921. Cl. 39.

Pacific Candle Co., Hayward, Calif. 825,609, pub. 12–27–66. Cl. 15.

Pacific Electro Magnetics Co., Inc., Palo Alto, Calif. 825,767, pub. 12–27–66. Cl. 36.

Pad Craft Mfg. Co.: *See—*
Trio Mills Mfg. Corp.

Parisian Bakeries, Inc., San Francisco, Calif. 825,925. Cl. 46.

Parke, Davis & Co., Detroit, Mich. 228,748, ren. 3–14–67. Cl. 18.

Partek Corp., Houston, Tex. 825,690, pub. 12–27–66. Cl. 23.

Pearson, William, Hamburg, Germany, to Plough, Inc., Memphis, Tenn. 59,517, ren. 3–14–67. Cl. 6.

Peninsular Paper Co., Ypsilanti, Mich. 825,778, pub. 12–27–66. Cl. 37.

Penn Controls, Inc., Goshen, Ind. 717,540. Am. 7(d). Cl. 26.

Pennsylvania Lubricating Co., Pittsburgh, Pa., to Humble Oil & Refining Co., Houston, Tex. 223,202, ren. 3–14–67. Cl. 15.

Pepsinic Seltzer Corp., Worcester, Mass. 825,620, pub. 12–27–66. Cl. 18.

Pfizer, Chas., & Co., Inc., New York, N.Y. 825,578, pub. 12–27–66. Cl. 6.

Pharmaseal Laboratories, Glendale, Calif. 825,868, pub. 12–27–66. Cl. 44.

Phifer Wire Products, Tuscaloosa, Ala. 825,599, pub. 12–27–66. Cl. 13.

Philippe, Louis, Inc., to American Home Products Corp., New York, N.Y. 226,523, ren. 3–14–67. Cl. 51.

Phillips, James A., Jr., Salisbury, Md. 825,748, pub. 12–27–66. Cl. 34.

Phoenix Hosiery Co., Milwaukee, Wis., to Kayser-Roth Corp., New York, N.Y. 429,773. ren. 3–14–67. Cl. 39.

Photographic Research Organization, Inc., New York, N.Y. 710,242, canc. Cl. 26.

Pickwick International, Inc., Long Island City, N.Y. 825,761, pub. 12–27–66. Cl. 36.

Pierre-Carole Corp., Miami, Fla. 825,657, pub. 12–27–66. Cl. 22.

Plasti-Stich, Inc., Port Chester, N.Y. 825,922. Cl. 40.

Plough, Inc.: *See—*
Pearson, William.

Ponder & Best, Hollywood, Calif. 825,715, pub. 12–27–66. Cl. 26.

Poust, Jack, & Co., Inc., New York, N.Y. 825,880, pub. 12–27–66. Cl. 47.

Preston, Jo, Cosmetics: *See—*
Preson, Josephine K.

Preston, Josephine K., d.b.a. Jo Preston Cosmetics, Wantagh, N.Y. 825,888, pub. 12–27–66. Cl. 51.

Pride, Thomas, Mills, Inc., Atlanta, Ga. 825,857, pub. 12–27–66. Cl. 42.

Procter & Gamble Co., The, Cincinnati, Ohio. 222,564, ren. 3–14–67. Cl. 52.

Procter & Gamble Co., The, Cincinnati, Ohio. 825,779, pub. 12–27–66. Cl. 37.

Professional Drug Products: *See—*
Horton & Converse.

Progressive Drugs of America, Inc., Chattanooga, Tenn. 825,908. Cl. 18.

Purwin's Cake Box Inc., Evanston, Ill. 710,380, canc. Cl. 46.

Pyles Industries, Inc., Southfield, Mich. 825,711, pub. 12–27–66. Cl. 26.

Quality Weaving Co., Philadelphia, Pa. 429,535, ren. 3–14–67. Cl. 38.

Quinn, K. J., & Co., Inc., Malden, Mass. 825,556, pub. 12–27–66. Cl. 6.

Quinn, K. J., & Co., Inc.., Malden, Mass. 825,557, pub. 12–27–66. Cl. 6.

Quinn, K. J., & Co., Inc., Malden, Mass. 825,558, pub. 12–27–66. Cl. 6.

Railway Research, Inc, Cleveland, Ohio. 825,721, pub. 12–27–66. Cl. 26.

Rapid-American Corp.: *See—*
Cohen, Joseph H., & Sons, Inc.

Rapid-American Corp., New York, N.Y. 825,834, pub. 12–27–66. Cl. 39.

Reactors, Inc., The, Norfolk, Va. 825,768, pub. 12–27–66. Cl. 36.

Red Star Yeast and Products Co., to Universe Foods Corp., Milwaukee. Wis. 430,604, ren. 3–14–67. Cl. 46.

Registered Fabrics Corp., New York, N.Y. 825,849, pub. 12–27–66. Cl. 42.

Retail Clerks International Association, Washington, D.C. 679,792, canc. Cl. 107.

Reusche-De Grace, San Francisco, Calif. 825,545, pub. 12–27–66. Cl. 2.

Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles. Calif. 825.544. pub. 12–27–66. Cl. 2.

Rexall Drug and Chemical Co., Los Angeles, Calif. 825,546, pub. 12–27–66. Cl. 2.

Rexall Drug and Chemical Co., d.b.a. The Absorbent Cotton Co., Los Angeles. Calif. 825,864, pub. 12–27–66. Cl. 44.

Rice Barton Corp., Worcester, Mass. 825,700, pub. 12–27–66. Cl. 23.

Richlite Electric Products: *See—*
Hiller, Sigmund F.

Ridsdale & Co. Ltd., Middlesbrough, England. 425,645, ren. 3–14–67. Cl. 6.

Rieber, Frank, d.b.a. Rieber Research Laboratory, New York, N.Y., to United Control Corp., Redmond, Wash. 428,453, ren. 3–14–67. Cl. 21.

Rieber Research Laboratory: *See—*
Rieber, Frank.

Ring Mfg. Corp., The, New York, N.Y. 825,580, pub. 12–27–66. Cl. 9

Rivetz, A., Co., Inc., Boston, Mass. 825,808, pub. 12–27–66. Cl. 39.

Roach-Appleton Mfg. Co., South Bend, Ind. 825,639, pub. 12–27–66. Multiple Class (Classes 21 and 23).

Rockwell Mfg. Co., Pittsburgh, Pa. 428,477, ren. 3–14–67. Cl. 15.

Rockwell Mfg Co., Pittsburgh, Pa. 428,478, ren. 3–14–67. Cl. 26.

Rockwell Mfg. Co., Pittsburgh, Pa. 428,699, ren. 3–14–67. Cl. 13.

Rollway Bearing Co., Inc., Syracuse, N.Y. 710,206, canc. Cl. 23.

Ronnie Hats, Inc., New York, N.Y. 710,289, canc. Cl. 39.
Rosenblum, Charles, d.b.a. Stuart Lloyd Co., New York, N.Y. 825,881, pub. 12-27-66. Cl. 49.
Rosenthal, Herbert, Jewelry Corp., New York, N.Y. 825,735, pub. 12-27-66. Cl. 28.
Ross Operating Valve Co., Detroit, Mich. 710,132, canc. Cl. 13.
Rotron Mfg. Co., Inc., Woodstock, N.Y. 825,747, pub. 12-27-66. Cl. 34.
Roy, Milton, Co., Philadelphia, Pa. 825,743, pub. 12-27-66. Cl. 34.
Royal Industries, Inc., Concord, N.C. 825,839, pub. 12-27-66. Cl. 39.
Royce Hosiery Mills, Inc., New York, N.Y. 825,819, pub. 12-27-66. Cl. 39.
Royco Instruments Inc., Menlo Park, Calif. 825,712, pub. 12-27-66. Cl. 26.
Ryan, Clyde R., d.b.a. Ryan Paint Co., Redwood City, Calif. 825,613, pub. 12-27-66. Cl. 16.
Ryan Paint Co.: *See—*
  Ryan, Clyde R.
S. A. Etablissements A. Van Haute-Vercauteren, Hamme/Durme, Belgium. 710,335, canc. Cl. 43.
S. A. Etablissements A. Van Haute-Vercauteren, Hamme/Durme, Belgium. 710,356, canc. Cl. 50.
St. Regis Paper Co., New York, N.Y. 710,094, canc. Cl. 2.
Samsel, Ralph, d.b.a. Ralph Samsel Co., El Centro, Calif. 825,872, pub. 12-27-66. Cl. 46.
Sanford Ink Co., Bellwood, Ill. 825,772, pub. 12-27-66. Cl. 37.
Saphira Creations, Inc., New York, N.Y. 825,713, pub. 12-27-66. Cl. 26.
Sarco Canada Ltd., Ontario, Canada. 825,707, pub. 12-27-66. Cl. 26.
Sarong, Inc., Dover, Del. 825,832, pub. 12-27-66. Cl. 39.
Saxon Paper Corp., New York, N.Y., from Weyerhaeuser Co., Tacoma, Wash. 825,771, pub. 12-27-66. Cl. 37.
Schenuit, Frank G., The, Rubber Co., Schenuit Industries, Inc., Baltimore, Md. 718,242. Am. 7(d). Cl. 35.
Schenuit Industries, Inc.: *See—*
  Schenuit, Frank G., Rubber Co., The.
Schneider, Gordon L., d.b.a. The Central Chemical Co., Fresno, Calif. 825,573, pub. 12-27-66. Cl. 6.
Schuurmans & Van Ginneken, Amsterdam-N, Netherlands. 825,696, pub. 12-27-66. Cl. 23.
Scripto, Inc., Atlanta, Ga. 825,781, pub. 12-27-66. Cl. 37.
Scripto, Inc., Atlanta, Ga. 825,782, pub. 12-27-66. Cl. 37.
Sea & Ski Corp., Reno, Nev. 825,803, pub. 12-27-66. Cl. 39.
Sea & Ski Corp., Millbrae, Calif., from Botany Industries, Inc., Reno, Nev. 825,885, pub. 12-6-66. Cl. 51.
Seagram, Joseph E., & Sons, Inc., New York, N.Y. 782,956, cor. Cl. 49.
Sekisui Chemical Co. Ltd. of Japan, Osaka, Japan. 825,730, pub. 12-27-66. Cl. 26.
Shapiro & Son Curtain Corp., New York, N.Y. 825,854, pub. 12-27-66. Cl. 42.
Sharp & Dohme, Inc., Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 429,358, ren. 3-14-67. Cl. 18.
Sharp & Dohme, Inc., Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 429,371, ren. 3-14-67. Cl. 18.
Shaw & Slavsky, Inc., Detroit, Mich. 825,883, pub. 12-27-66. Cl. 50.
Sheffield Corp., The, to The Bendix Corp., Dayton, Ohio. 429,434, ren. 3-14-67. Cl. 26.
Shimmer-Ol Co.: *See—*
  Cormier, Margaret.
Ship N' Shore, Inc., Upland, Pa. 825,825, pub. 12-27-66. Cl. 39.
Show Biz, Inc., Nashville, Tenn. 825,904, pub. 12-27-66. Cl. 107.
Showler, William W., d.b.a. Concentric System Co., Greensboro, N.C. 825,672, pub. 8-9-66. Cl. 23.
Simmon Brothers, Inc., Woodside, N.Y. 825,727, pub. 12-27-66. Cl. 26.
Simon Mattress Mfg. Co., San Francisco, Calif. 427,074, ren. 3-14-67. Cl. 32.
Simon Mattress Mfg. Co., San Francisco, Calif. 428,116, ren. 3-14-67. Cl. 22.
Simon Mattress Mfg. Co., San Francisco, Calif. 428,468, ren. 3-14-67. Cl. 42.
Sinclair & Powell Proprietary Ltd., Huntingdale, Victoria, Australia. 825,553, pub. 12-27-66. Cl. 2.
Singer Co., The, New York, N.Y. 825,703, pub. 12-27-66. Cl. 23.
Singing Needles, Inc.: *See—*
  Singing Needles, Inc.
Singing Needles, Inc. Singing Needles, Inc., Leola, Pa. 704,092. Am. 7(d). Cl. 39.
Skira, Albert, d.b.a. Editions d'Art Albert, Geneva, Switzerland. 825,788, pub. 12-27-66. Cl. 38.
Slumber Products Corp., Memphis, Tenn. 430,037, ren. 3-14-67. Cl. 32.
Smith, D. B., & Co., Inc., Utica, N.Y., to Humble Oil & Refining Co., Houston, Tex. 226,540, ren. 3-14-67. Cl. 6.
Snyder Mfg. Co., Philadelphia, Pa. 825,635, pub. 1-11-66. Cl. 21.
Societe des Usines, Chimiques Rhone-Poulenc, Paris, France, to Merck & Co., Inc., Rahway, N.J. 430,930, ren. 3-14-67. Cl. 18.
Societe Rhodiaceta, Paris, France. 825,833, pub. 12-27-66. Cl. 39.
Societe Rhodiaceta, Paris, France. 825,852, pub. 12-27-66. Cl. 42.
Societe Rhodiaceta, Paris, France. 825,860, pub. 12-27-66. Cl. 43.
Socolof, Jos., Co., Inc., Brooklyn, to Sweet Life Products Corp., Schenectady, N.Y. 228,059, ren. 3-14-67. Cl. 46.
Somerset Knitting Mills, Inc., Philadelphia, Pa. 825,806, pub. 12-27-66. Cl. 39.
Somerset Knitting Mills, Inc., Philadelphia, Pa. 825,813, pub. 12-27-66. Cl. 39.
Southern Elevator Co., Greensboro, N.C. 825,702, pub. 12-27-66. Cl. 23.
Spanner Boilers Ltd., Bracknell, England. 825,746, pub. 12-27-66. Cl. 34
Spectrum Fabrics Corp., d.b.a. Telespectrum, New York, N.Y. 825,902, pub. 12-27-66. Cl. 104.
Spencer Gifts, Inc., Atlantic City, N.J. 710,287, canc. Cl. 39.
Sperry Rand Corp., New York, N.Y. 825,720, pub. 12-27-66. Cl. 26.
Spinnerin Yarn Co., Inc., South Hackensack, N.J. 825,859, pub. 12-27-66. Cl. 43.
Sprague Electric Co.: *See—*
  Aladdin Industries, Inc.
Spring-Air Co., The, Chicago, Ill. 710,255, canc. Cl. 32.
Standard Oil Co., Whiting, Ind., and Chicago, Ill., to The American Oil Co., Chicago, Ill. 223,147, ren. 3-14-67. Cl. 15.
Standard Oil Co. of California, San Francisco, Calif. 825,752, pub. 12-27-66. Cl. 34.
Standfast Products Co., The: *See—*
  Merrymaid Plastics Corp.
Steinway, Max P., Detroit, Mich. 825,850, pub. 12-27-66. Cl. 42.
Stevens, J. P., Co., Inc., New York, N.Y. 710,330, canc. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 825,811, pub. 12-27-66. Cl. 39.
Stoll, Ulrich W., and Mira Stoll, Ann Arbor, Mich. 825,606, pub. 12-27-66. Cl. 13.
Stoller, Hugh S., d.b.a. Stoller Processing Co., Akron, Ohio. 825,542, pub. 12-27-66 Cl. 1.
Stoller Processing Co.: *See—*
  Stoller, Hugh S.
Stop-Motion Devices Corp., Plainview, N.Y. 825,704, pub. 12-27-66. Cl. 23.
Stretch Yarns, Inc., Fall River, Mass. 825,858, pub. 12-27-66. Cl. 43.
Stylors, Inc., Jacksonville, Fla. 825,870, pub. 12-27-66. Cl. 44.
Sumo Pumps Ltd., Crawley, England. 426,825, ren. 3-14-67. Cl. 23.
Svensson, Einar: *See—*
  Hide, Haida, Inc.
Sweet Life Products Corp.: *See—*
  Socolof, Jos., Co., Inc.
Target Stores, Inc., Minneapolis, Minn. 825,822, pub. 12-27-66. Cl. 39.
Taylor, R. Stevenson and Co., Ltd., Dumbarton, Scotland. 825,882, pub. 12-27-66. Cl. 49.
Telespectrum: *See—*
  Spectrum Fabrics Corp.
Tenneco Chemicals, Inc., New York, N.Y. 825,561, pub. 12-27-66. Cl. 6.
Terry Rub-A-Dub: *See—*
  Mountanos, Demetrios.
Theatravel Ticket Agency, Inc., New York, N.Y. 825,903, pub. 12-27-66. Cl. 107.
Thomas Industries Inc., Louisville, Ky. 825,644, pub. 12-27-66. Cl. 21.
Thompson, T., Tool: *See—*
  Thompson, Thomas G.
Thompson, Thomas G., d.b.a. T. Thompson Tool, West Middlesex, Pa. 710,216, canc. Cl. 23.
Torngren, C. W., Co., to C. W. Torngren Co., Inc., Somerville, Mass. 424,338, ren. 3-14-67. Cl. 14.
Torngren, C. W., Co., Inc.: *See—*
  Torngren, C. W., Co.
Townsend Engineering Co., Des Moines, Iowa. 825,667, pub. 12-27-66. Cl. 23.
Toyo Rayon Co., Ltd., Tokyo, Japan. 821,636, cor. Cl. 39.
Transene Co., Inc., Danvers, Mass. 825,648, pub. 12-27-66. Cl. 21.
Tri-Ex, Inc., Tulsa, Okla. 825 753, pub. 12-27-66. Cl. 34.
Tri-Lite Industries, Inc., Addison, Ill. 825,647, pub. 12-27-66. Cl. 21.
Trio Mills Mfg. Corp., Chicago, Ill., from Pad Craft Mfg. Co., New York, N.Y. 710,226, canc. Cl. 24.
Tulare County Lemon Association: *See—*
  Tulare County Lemon & Grapefruit Association.
Tulare County Lemon & Grapefruit Association, to Tulare County Lemon Association, Porterville, Calif. 226,214, ren. 3-14-67. Cl. 46.
Tulare County Lemon & Grapefruit Association, to Tulare County Lemon Association, Porterville, Calif. 226,215, ren. 3-14-67. Cl. 46.
Tull Chemical Co., Inc.: *See—*
  Monsanto Chemical Co.
Tupperware: *See—*
  Rexall Drug and Chemical Co.
Turl, Martha, and Associates, Inc., Eastchester, N.Y. 825,598, pub. 12-27-66. Cl. 12.
Ultra-Life Laboratories, Inc., East St. Louis, Ill. 825,877, pub. 12-27-66. Cl. 46.
Ulysse Nardin Societe Anonyme, Manufacture de Montres et Chronometres, Le Locle, Switzerland. 429,250, ren. 3-14-67. Cl. 27.
Union Bag & Paper Co., The. Union Camp Corp., New York, N.Y. 56,118. Am. 7(d). Cl. 37.

Union Bag & Paper Co., The. Union Camp Corp., New York, N.Y. 56,119. Am. 7(d). Cl. 37.
Union Bag & Paper Co., The. Union Camp Corp., New York, N.Y. 56,120. Am. 7(d). Cl. 37.
Union Bag & Paper Co., The. Union Camp Corp., New York, N.Y. 56,121. Am. 7(d). Cl. 37.
Union Bag & Paper Co., The. Union Camp Corp., New York, N.Y. 56,122. Am. 7(d). Cl. 37.
Union Bag & Paper Co., The. Union Camp Corp., New York, N.Y. 56,126. Am. 7(d). Cl. 37.
Union Bag & Paper Co., The. Union Camp Corp., New York, N.Y. 56,189. Am. 7(d). Cl. 37.
Union Bag & Paper Co., The. Union Camp Corp., New York, N.Y. 56,190. Am. 7(d). Cl. 37.
Union Bag & Paper Co., The. Union Camp Corp., New York, N.Y. 56,191. Am. 7(d). Cl. 37.
Union Bag & Paper Co., The. Union Camp Corp., New York, N.Y. 56,192. Am. 7(d). Cl. 37.
Union Bag & Paper Co., The. Union Camp Corp., New York, N.Y. 56,195. Am. 7(d). Cl. 37.
Union Bag & Paper Co., The. Union Camp Corp., New York, N.Y. 56,196. Am. 7(d). Cl. 37.
Union Camp Corp.: *See—*
  D. & S. Tablet Co.
  Union Bag & Paper Co., The.
Unishops, Inc., Jersey City, N.J. 825,827, pub. 12-27-66. Cl. 39.
United Control Corp.: *See—*
  Rieber, Frank.
United Lighting and Ceiling Co., Oakland, Calif. 825,754, pub. 12-27-66. Cl. 34.
United States Plywood, New York, N.Y., from Allied Building Components, Inc., Tacoma, Wash. 825,590, pub. 12-27-66. Cl. 12.
Universal Technical Products Inc., Forest Hills, N.Y. 825,679, pub. 12-27-66. Cl. 23.
Universe Foods Corp.: *See—*
  Red Star Yeast and Products Co.
Valmor Products Co., d.b.a. Madam Jones Co., to Valmor Products Co., d.b.a. Madam Jones Co., Chicago, Ill. 426,951, ren. 3-14-67. Cl. 51.
Vanity Fair Mills, Inc., Wyomissing, Reading, Pa. 825,844, pub. 12-27-66. Cl. 39.
Van Leer Corp. Consumers Digest, Inc., Chicago, Ill. 801,907. Am. 7(d). Cl. 38.
Veb Pentacon Dresden Kamera- und Kinowerke, Dresden, Germany. 825,717, pub. 12-27-66. Cl. 26.
Velocidad, Inc., Sunnyvale, Calif. 825,626, pub. 12-27-66. Cl. 19.
Vermogensverwaltungs G.m.b.H., Wetzlar, Germany. 825,718, pub. 12-27-66. Cl. 26.
Vitamins For Industry, Inc., Los Angeles, Calif. 710,373, canc. Cl. 18.
Viviane Woodard Corp., Panorama City, Calif. 825,887, pub. 12-27-66. Cl. 51.
Volume Builders Inc., Philadelphia, Pa. 825,914. Cl. 38.
Volume Builders Inc., Philadelphia, Pa. 825,915. Cl. 38.
Volume Builders Inc., Philadelphia, Pa. 825,916. Cl. 38.
Voorheis Industries, Inc., Caldwell, N.J. 825,755, pub. 12-27-66. Cl. 34.
Wagner Tool and Supply Corp., Hialeah, Fla. 710,237, canc. Cl. 26.
Wallace Corp., The, St. Louis, Mo., to Forster Mfg. Co., Inc., Wilton, Maine. 427,309, ren. 3-14-67. Cl. 44.
Wallace Laboratories, Inc., New Brunswick, N.J., to Carter-Wallace, Inc., New York, N.Y. 431,018, ren. 3-14-67. Cl. 18.
Warp Bros.: *See—*
  Flex-O-Glass, Inc.
Wayne, Evan, Knits, Inc., New York, N.Y. 825,812, pub. 12-27-66. Cl. 39.
Wayne Mfg. Co., Staatsburg, N.Y. 825,603, pub. 12-27-66. Cl. 13.
Weevil-Cide Co., The, Kansas City, Mo. 710,112, canc. Cl. 6.
Weldon Pajamas, Inc., New York, N.Y. 710,282, canc. Cl. 39.
Western Auto Supply Co., Kansas City, Mo. 710,262, canc. Cl. 35.
Western Litho Plate and Supply Co., St. Louis, Mo. 825,559, pub. 11-8-66. Multiple Class (Classes 6 and 50).
Western Newell Mfg. Co., Freeport, Ill. 825,600, pub. 12-27-66. Cl. 13.
Western Records: *See—*
  Lawrence, Robert E.
Weyerhaeuser Co.: *See—*
  Saxon Paper Corp.
Wheeler, William F., Toogoolawah, Newdigate, Near Dorking, England. 710,337, canc. Cl. 44.
Wheeling Corrugating Co., to Wheeling Steel Corp., Wheeling, W. Va. 224,171, ren. 3-14-67. Cl. 13.
Wheeling Steel Corp.: *See—*
  Wheeling Corrugating Co.
Winer Mfg. Co., Inc., Hammond, Ind. 710,310, canc. Cl. 39.
Wonder Toys, Inc., St. Paul, Minn. 825,656, pub. 12-27-66. Cl. 22.
Wood, Howard F., d.b.a. Lookout Vending & Supply, Chattanooga, Tenn. 825 691, pub. 12-27-66. Cl. 23.
Woodford Mfg. Co., Des Moines, Iowa. 825,688, pub. 9-20-66. Cl. 23.
Woolfolk Chemical Works, Ltd.: *See—*
  Woolfolk, J. W., Co., Inc., The.
Woolfolk, J. W., Co., Inc., The, to Woolfolk Chemical Works, Ltd., Fort Valley, Ga. 228,159, ren. 3-14-67. Cl. 6.
Woolsey, C. A., Paint & Color Co., Inc., New York, N.Y. 825,615, pub. 12-27-66. Cl. 16.
World Engines Inc., Cincinnati, Ohio. 825,660, pub. 12-27-66. Cl. 22.
World Gems Corp., Atlanta, Ga. 710,375, canc. Cl. 28.
Yandle Heating Supply, Inc., Charlotte, N.C. 825,750, pub. 12-27-66. Cl. 34.
Yardley of London, Inc., Totowa, N.J. 825,886, pub. 12-27-66 Cl. 51.
Yoshida Kogyo Kabushiki Kaisha, Chuo-ku, Tokyo, Japan. 710,138, canc. Cl. 13.

U.S. GOVERNMENT PRINTING OFFICE: O——1967

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

March 21, 1967 Volume 836 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of February 1967

Examiner affirmed	204
Examiner affirmed in part	44
Examiner reversed	64
Total	312

Removal From Register

Pursuant to the provisions of Rule 347 of the Rules of Practice of the United States Patent Office in Patent Cases, a letter was directed on January 24, 1967, to Mr. J. John Kleinberg at 301 East 47th St., Apt. 4K, New York, N.Y. 10017, the last post office address furnished by him to the Committee on Enrollment. No reply was received within the period of thirty days therein set. Accordingly, his name is being removed from the Register of Attorneys.

EDWIN L REYNOLDS.

Feb. 27, 1967. *Chairman, Committee on Enrollment.*

Disclaimer

3,269,470.—*Joseph L. Kelly, Jr.*, Dallas, Tex. ROTARY-PERCUSSION DRILL BIT WITH ANTI-WEDGING GAGE STRUCTURE. Patent dated Aug. 30, 1966. Disclaimer filed Feb. 10, 1967, by the assignee, *Hughes Tool Company*.

Hereby enters this disclaimer to claims 1–8 of said patent.

Registers of Attorneys and Agents

The following list shows the names and addresses of persons whose names have been restored to the Registers of Attorneys and Agents, pursuant to the provisions of Rule 347 of the Rules of Practice of the United States Patent Office in Patent Cases, in view of information which they have furnished to the Committee on Enrollment.

EDWIN L. REYNOLDS,

Feb. 27, 1967. *Chairman, Committee on Enrollment.*

Campbell, Charles E., Wykeham Road, Washington, Conn., 06793
Coleman, Nancy A., 314 Edmund St., Aberdeen, Md., 21001
Cook, Eugene B., Allis Chalmers, 1126 S. 70th St., West Allis, Wis., 53214
Davis, Alex, 167 E. 60th St., New York, N.Y., 10021
Fischer, Don A., Box 1756, Aspen, Colo., 81611
Hecht, Lester S., 18031 4th St., Tustin, Calif., 92680
Henry, Robert J., 919 Village Center, Lafayette, Calif., 94549,
Krasnow, Shelley, 315 Tudor Lane, Manassas, Va., 22110
Marquis, Harold L., Emory University, School of Law, Atlanta, Ga., 30322
Perrotta, Maxwell J., 705 Industrial Bank Bldg., 111 Westminster St., Providence, R.I., 02903
Snyder, Ray E., 513 S. Can Dota Ave., Mt. Prospect, Ill., 60056
Spear, Abbott, 73 Tremont St., Boston, Mass., 02108
Venable, William H., Blaw-Knox Co., 300 6th Ave., Pittsburgh, Pa., 15222

Erratum

Patent No. 3,279,009. Notice is given that the issuance of Patent No. 3,279,009 on October 18, 1966, was in error.

New Applications Received During January 1967

Patents	6606
Designs	386
Plant Patents	7
Reissues	11
Total	7010

Issue—March 21, 1967

Patents	1098	—No. 3,309,713 to No. 3,310,810, incl.
Designs	52	—No. 207,196 to No. 207,247, incl.
Plant Patents	3	—No. 2,727 to No. 2,729, incl.
Reissues	7	—No. 26,173 to No. 26,179, incl.
Total	1160	

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 13, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	8- 6-63	11-30-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	7-25-63	9-12-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	11-18-63	1-16-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	10- 7-63	3- 2-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7- 2-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-17-63	8-30-62
SECURITY, GROUP 220—S. BOYD, Manager Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	9-15-64	6- 5-63
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	7-26-63	7- 3-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	8- 8-63	11- 3-61
PHYSICS, GROUP 280—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager Industrial Arts; Household, Personal and Fine Arts.	10-18-65	3-12-65

Total number of pending applications (excluding Designs)	191,891
Total number of Design applications pending	4.039
Total number of applications awaiting action (excluding Designs)	140,377
Total number of Design applications awaiting action	2,418
Date of oldest new application awaiting action	July 2, 1963
Date of oldest amended application awaiting action	July 3, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during March 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents	Numbers 2,499,345 to 2,502,407, inclusive
Plant Patents	Numbers 926 to 929, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	4- 2-65	9- 3-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	1- 4-65	10-16-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	10- 8-64	7-16-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	6- 2-65	2-28-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	3-19-65	4-26-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2- 5-65	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE JAMES B. BOYER

No. 7562. Decided July 21, 1966

[53 CCPA — ; 363 F.2d 455 ; 150 USPQ 441]

1. PATENTABILITY—OBVIOUSNESS—ADMISSION AS TO STATE OF THE ART—35 U.S.C. 103.

Upon considering the patentability of claims to a cigarette-type smoking device, comprising a perforated combustible wrapper as defined therein enclosing a column of tobacco and a filter of non-tobacco filter material at the mouth end, in view of a prior art disclosure of perforated paper wrapped cigarette, *Held* that "This disclosure, coupled with appellant's admission that filter-tip cigarettes were old as of the time of his invention, constrains us to hold the invention obvious within the meaning of 35 U.S.C. 103."

2. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—RELIANCE UPON ONE FROM COMBINATION OF REFERENCES.

"The Examiner had rejected all claims as unpatentable over either Aghnides or Miller each taken with or without Harris. The Board said: 'The rejection "with or without" Harris thus becomes cumulative and we prefer to consider combinations including Harris.' We think legal support for our reliance on Harris alone, under these circumstances, can be found in *In re Bush*, 49 CCPA 752, 296 F.2d 491, 131 USPQ 263."

3. PATENTABILITY—COMBINATION—OBVIOUSNESS.

"What appellant has done, as we view the matter, is to perforate the wrapper of an admittedly old filter-tip cigarette. We think both doing this, and obtaining the alleged results, are clearly suggested by Harris. It is clear that Harris made perforations to obtain at least some of the very same goals as appellant, namely, ventilating, mixing, etc., with the ultimate objective of reducing the health hazards of cigarette smoking. As to the coaction between appellant's perforations and filter tip, we think it prefectly obvious that the filter will have less filtering to do, and hence be less apt to become 'overloaded,' if there is less filterable material in the smoke, as Harris says there will be when a perforated wrapper is used. Stated differently, we think it entirely obvious to one of ordinary skill in this art, whom we must assume had knowledge of Harris, that if perforations reduce the amount of material to be filtered, as is taught by Harris, then the *combination* of a perforated wrapper with a filter will give a cleaner filtered smoke product than using a filter alone. This is all appellant has convinced us he has done, and we are unable to find it to be patentable, notwithstanding the age of the prior art relied upon."

4. SAME—AFFIDAVIT.

"One reason we do not give the Rule 132 affidavit great weight is that it is largely directed to a comparison of the so-called 'confined-type cigarette' of Miller and Aghnides, that is, one in which the perforations are all rather close to the filter-tip end of the tobacco column, with the so-called 'distributed-type' cigarette of appellant. As we view this case, the issue is whether anything unexpected results from perforating substantially the entire length of tobacco wrapper in the admittedly old filter-tip cigarette. We think not in view of Harris."

5. SAME—EVIDENCE—COMMERCIAL SUCCESS.

"As to commercial success, in an invention of this kind we find it difficult to divorce success stemming from the invention, per se, from that resulting from sales promotion of the type used to sell cigarettes, to say nothing of smoking fads so stimulated. That distinction has certainly not been shown here."

6. SAME—PARTICULAR SUBJECT MATTER—"SMOKING METHOD AND MEANS."

The refusal of certain claims in an application entitled "Smoking Method and Means," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 772,034.

AFFIRMED.

W. Philip Churchill (*Tyler S. Raundy* of counsel) for appellant.

Joseph Schimmel (*J. F. Nakamura* of counsel) for the Commissioner of patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals,[1] adhered to on reconsideration, affirming the Examiner's rejection of claims 17–21 in application Serial No. 772,034, filed November 5, 1958, for "Smoking Method and Means." No claim is allowed.

The invention is a cigarette or cigarette-type smoking device consisting of a filter tip of non-tobacco filter material and a wrapper of combustible material surrounding a column of tobacco, the wrapper containing perforations or venting inlets distributed along substantially the entire length of the tobacco portion.

Appellant points out in his specification and brief that it has been found that because the amount of drawn-in oxygen for each unit of cross-sectional area is so much greater in cigarettes than in other smoking devices, cigarettes burn at temperatures as much as 200 degrees higher, and that published reports of independent researchers state that, although the specific component has not yet been identified as such, the lung cancer-causing component in smoke tar, as well as other undesirable components, is the result of these very high combustion temperatures.

Thus, according to appellant, one of the great problems facing the cigarette industry for a great many years has been the need for a cigarette which would give the smoker taste, flavor and enjoyment, without at the same time injecting into the smoker's mouth and lungs large quantities of tars and nicotine. Efficient, densely packed filters capable of reducing tars and nicotine to a safe low level had been tried, but were not acceptable to the smoking public, primarily because they were *too* efficient, i.e., a great amount of suction was required to bring flavor or taste through into the smoker's mouth. To reduce this pressure drop, filters were packed more loosely, with the obvious result of increasing the amount of nicotine, tars, and other harmful ingredients in the cigarette smoke entering the mouth and lungs.

Appellant discovered that by using an ordinary non-tobacco filter in combination with holes distributed along the length of the cigarette wrapper, tars and nicotine could be reduced to an allegedly "safe level," i.e., such level as to "significantly reduce cancer risk" according to recognized authorities in the field, and still provide the smoker with a pleasant smoke. The size, location, and number of holes vary, and are interdependent since it is the total amount of air which enters that matters, but three to five "pin-size holes of the same diameter located in the wrapper less than half way along the cigarette length from the lip end produce very satisfactory smoking enjoyment." The function and operation of the invention is further explained in appellant's brief:

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[1] Consisting of Examiners-in-Chief Dracopoulos and Brewrink, the latter writing the opinion, and Acting Examiner-in-Chief Andrews.

> These perforations or venting inlets are open at all times, so that when suction is applied to the filter end of the cigarette, air is drawn into the tobacco through these openings throughout the entire length of the cigarette between the filter and the burning zone. When suction is not applied to the filter end of the cigarette, smoke and warm gases accumulated in the tobacco column of the cigarette may escape from the cigarette through the wrapper to the atmosphere.
>
> Openings distributed the full length of the cigarette constantly dilute and cool the smoke in the tobacco column before it reaches the filter. The temperature of combustion is substantially lower. More complete combustion is obtained. And there is less accumulation of deposited and semi-condensed vapors in the column of unburned tobacco at any given instant. Condensates which otherwise accumulate in the unburned tobacco during the early stages are subsequently reheated and to some extent reburned as smoking of the cigarette progresses. Without openings distributed throughout the length of the cigarette, these accumulations of condensates, tars and the like in the remaining tobacco column become progressively more concentrated as smoking of the cigarette reduces the tobacco column to a smaller and smaller size. The distributed openings greatly reduce this accumulation of undesired constituents in the tobacco all the way through the smoking operation.
>
> In the Boyer cigarette, therefore, the filter tip is no longer required to work on the same kind of smoke—smoke which becomes more and more loaded (and overloaded) with objectionable tars, nicotine and other constituents as smoking of the cigarette progresses. In the Boyer cigarette, an ordinary free drawing filter tip can do its work efficiently all the way down the burning of the tobacco column.

All claims are directed to the above-indicated combination of a filter tip and column of tobacco enclosed by a combustible wrapper containing perforations. Claim 18 is illustrative:

> 18. A cigarette-type smoking device comprising as an article of manufacture a wrapper of combustible material and a column of tobacco inside said wrapper, said wrapper having a plurality of venting inlets spaced longitudinally from the mouth end of the tobacco column and distributed along substantially the full length of said tobacco column for admitting ambient air through said wrapper to enter behind the burning zone and to mix with and precondition the smoke in said tobacco when there is suction at the mouth end to reduce undesirable components of the smoke which would leave the mouth end of the tobacco column if said wrapper was an ordinary wrapper of a cigarette, and means for extending the total effective mixing length for mixing ambient air with the smoke in said device, said means including a filter of non-tobacco filter material mounted at the mouth end of the device for permitting the ambient air to mix additionally with the smoke after it leaves the tobacco column and before it reaches the mouth of the smoker.

The references are:

Harris, 439,004, October 21, 1890.
Aghnides, 2,923,647, February 2, 1960. (Filed July 9, 1957, as a continuation-in-part of Serial No. 131,382, filed Dec. 6, 1949, now abandoned.)
Miller, 3,020,915, February 13, 1962. (Filed Sept. 22, 1958, as a continuation-in-part of Serial No. 671,458, filed July 12, 1957, now abandoned, which is a continuation-in-part of Serial No. 453,254, filed Aug. 31, 1954, now abandoned.)

Through resort to Rule 131 affidavits, appellant has established, apparently to the satisfaction of the Patent Office, a date of invention prior to October 31, 1955, which date, it will be noted, is earlier than the filing dates of the applications issuing into the Aghnides and Miller patents. Much of the more than 350-page record and of the briefs is devoted to a discussion of (1) the factual question of what disclosure was, and what was not, carried forward into each of these

patents from their respective parent applications having filing dates prior to appellant's proven date of invention and (2) the legal question of what, if any, of that disclosure *not* carried forward into the issued patents can be relied upon as "prior art." Since we find it unnecessary to decide these questions, they, and the Aghnides and Miller patents, will not be discussed further.

Harris says:

> My invention relates to the hollow cylinders or paper wrappers at present used to encircle the tobacco of cigarettes, which are dense and impervious to the atmosphere from without, *and through which the subtle, injurious, and poisonous vapors eliminated from the tobacco within by heat and combustion are unable to escape, and are consequently drawn into the mouth of the smoker,* injuring the lips, drying the tongue and palate, and which, by means of the many nerves opening into the mouth and the tender follicles of the mucous membrane, are distributed through and absorbed by the system to its weakness and injury. *The smoke intermingled with these vapors, if inhaled persistently, is harmful to the throat, sometimes causing cancer,* and passing into the delicate air-cells of the lungs these vital organs become weakened, the nervous system shattered, and indigestion, intestinal sluggishness, heart-failure, heart-palpitation, and blood-poisoning from absorption are some of the evil consequences resulting.
>
> * * * * * * *
>
> *The object of my invention is to deprive cigarettes of their baneful effects and render them innocuous,* and this I accomplish by constructing them in the following manner: I encircle the tobacco with a paper wrapper, FIG. 1, having minute perforations or punctures *aa* extending around the cigarette from end to end, FIG. 2, *to admit the atmosphere to commingle with the tobacco-smoke during its entire passage through the cigarette, and at the same time allow egress to any subtle vapors,* and thus prevent the generation of the oils of creosote and nicotianine and the powerful alkaline, nicotine, cause the cigarettes to draw more freely, and remain burning much longer when out of the mouth.

[1] This disclosure, coupled with appellant's admission that filter-tip cigarettes were old as of the time of his invention, constrains us to hold the invention obvious within the meaning of 35 U.S.C. 103.[2]

In so holding, we are not unmindful of our often expressed view that where an invention, as here, resides in a combination, it is the obviousness of that combination which must be considered, not the parts thereof alone. Appellant, of course, insists his combination is not suggested by any of the references, and relies, as far as the Harris reference is concerned, primarily on the state of the art, as discussed in his specification and brief, plus such factors as commercial success and acceptance by the industry. In brief, his argument is predicated on various indicia of unobviousness, as recently discussed by the Supreme Court in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966).

Appellant also relies on an affidavit, filed under Rule 132, wherein certain characteristics of his invention such as the temperature and composition of smoke in the unburned tobacco portion and in that entering the smoker's mouth are discussed and compared with other cigarettes, all of which is alleged to establish the superiority of the invention over the prior art. The Examiner, the Board, and the Solicitor have disparaged the probative value of this affidavit saying it contains numerous unsupported factual assertions and opinions.

Our view is that taking the affidavit as proving everything appellant contends it does, and considering all of his arguments regarding indicia of unobviousness, we still do not find the invention to be nonobvious within the meaning of section 103.

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[2] [2] The Examiner had rejected all claims as unpatentable over either Aghnides or Miller each taken with or without Harris. The Board said:

> The rejection "with or without" Harris thus becomes cumulative and we prefer to consider combinations including Harris.

We think legal support for our reliance on Harris alone, under these circumstances, can be found in *In re Bush,* 49 CCPA 752, 296 F.2d 491, 131 USPQ 263.

[3] What appellant has done, as we view the matter, is to perforate the wrapper of an admittedly old filter-tip cigarette. We think both doing this, and obtaining the alleged results, are clearly suggested by Harris. It is clear that Harris made perforations to obtain at least some of the very same goals as appellant, namely, ventilating, mixing, etc., with the ultimate objective of reducing the health hazards of cigarette smoking. As to the coaction between appellant's perforations and filter tip, we think it perfectly obvious that the filter will have less filtering to do, and hence be less apt to become "overloaded," if there is less filterable material in the smoke, as Harris says there will be when a perforated wrapper is used. Stated differently, we think it entirely obvious to one of ordinary skill in this art, whom we must assume had knowledge of Harris, that if perforations reduce the amount of material to be filtered, as is taught by Harris, then the *combination* of a perforated wrapper with a filter will give a cleaner filtered smoke product than using a filter alone. This is all appellant has convinced us he has done, and we are unable to find it to be patentable, notwithstanding the age of the prior art relied upon.

[4] One reason we do not give the Rule 132 affidavit great weight is that it is largely directed to a comparison of the so-called "confined-type cigarette" of Miller and Aghnides, that is, one in which the perforations are all rather close to the filter-tip end of the tobacco column, with the so-called "distributed-type" cigarette of appellant. As we view this case, the issue is whether anything unexpected results from perforating substantially the entire length of tobacco wrapper in the admittedly old filter-tip cigarette. We think not in view of Harris.

[5] As to commercial success, in an invention of this kind we find it difficult to divorce success stemming from the invention, per se, from that resulting from sales promotion of the type used to sell cigarettes, to say nothing of smoking fads so stimulated. That distinction has certainly not been shown here.

Finally, appellant contends the Board erred when, in answering an argument before it that Harris teaches away from the invention, it concluded that the reference suggests using a "mouthpiece" with a distributed vent arrangement. The basis of appellant's contention is that the "mouthpiece" mentioned by Harris, while "having one or more orifices situated in the cover of the cigarette just outside the lips of the smoker," is structurally quite different from, and consequently could not suggest the use of, appellant's non-tobacco filter tip. Appellant also points out that Harris states that the then known mouthpiece he refers to "does not embrace, nor could it possibly attain, the objects and results accomplished effectually by my [Harris'] invention."

Our answer to appellant's contention is that we agree the two devices are structurally different, but, as should now be clear, we do not rely upon Harris for suggesting the use of a non-tobacco filter tip in combination with a tobacco column. For that we rely upon appellant's admission of what was old at the time his invention was made.

[6] The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE KARL ZIEGLER, HEINZ BREIL, HEINZ MARTIN, AND ERHARD HOLZKAMP

No. 7485. Decided August 4, 1966

[53 CCPA —; 363 F.2d 885; 150 USPQ 619]

1. APPLICATION—DISCLOSURE—INCORPORATION BY REFERENCE TO EARLIER APPLICATION.

"The nature of the invention here is an improvement in prior processes consisting of a discovery about the ratios of catalyst components used in those processes. Considering that nature within the context of the disclosure as set out above, we cannot say that the reference to the '412' application is a 'mere reference to a copending application.' It appears clear that the subject catalysts disclosed as part of the processes of the three applications are also the subjects of the improvements here. Although the appealed application refers to the '412' organic aluminum compounds as being 'of the general Formula R_2AlX * * *,' which is not the formula for the sesquichloride mixture, we are of the view that such a reference does include the sesquichloride by virtue of the above-quoted '412' disclosure that indicates the sesquichloride may be used in place of the compounds 'R_2AlX.' Thus we conclude that the teachings of the '412' application about the sesquichloride have been incorporated by reference into the appealed application."

2. SAME—SAME—CRITICAL RANGE MUST BE DISCLOSED—35 U.S.C. 112.

"The gist of appellant's argument that the range can be easily determined once the existence thereof is known, is contrary both to the disclosed sensitivity and criticality of a range, and also to the requirement of 35 U.S.C. 112 that *the invention* be described in such full, clear, concise, and exact terms as to enable any person skilled in this art to make and use the same. The background context of the invention as claimed here convinces us that it deals with more than the existence of the range alone. The determination of the range is a critical and integral part of the invention. This is particularly true in view of the fact that the catalyst mixtures per se are the subject of a prior invention, as acknowledged by the appealed application. The present invention involves the use of specific ratios of the catalyst components rather than the use broadly of the components."

3. INTERFERENCE—RIGHT TO MAKE—*Ex parte Card and Card* PRACTICE.

"We do not think this case one in which resort may be had to the practice described in the * * * [Commissioner's] notice of April 5, 1954 [relating to modifications of the so-called Card and Card practice, *Ex parte Card and Card*]. Where the same invention is disclosed by the parties but with slightly different ranges, the count in effect may be modified by permitting each party to submit his own range for his claim. The one party's claim in fact reads on the other. Such practice assumes that each of the interfering applications discloses a range for the same materials. Such practice is not applicable to the facts here since there is no disclosure of any aspect of a critical range for the sesquichloride."

APPEAL from the Patent Office. Serial No. 527,413.

AFFIRMED.

Arnold Sprung for appellants.

Clarence W. Moore (*Jack E. Armore* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court.

Appellants copied a claim in modified form from a patent of Weber et al. (Weber) for the purpose of provoking an interference on a catalyzed process for producing polyethylene. During the motion period of the resultant interference appellants' motion to add counts corresponding to Weber's other two claims, also modified by the omission of temperature and pressure limitations, was denied on the grounds that appellants had no right to make. The interference was eventually dissolved upon disclaimer by Weber. We are involved here in subsequent ex parte proceedings on claims 28 and 29 that correspond to the proposed counts which were not permitted in the interference.[1] Those two claims were rejected by the Examiner on the ground of insufficient support in the present application, 35 U.S.C. 112. Appellants have appealed the Board's decision affirming the rejection; we affirm.

Appellants disclose a process for controlling the degree of polymerization of a polyethylene formed by the reaction of gaseous ethylene in the presence of two-component Ziegler-type catalysts. Such catalysts are well known as a mixture of a metal organic compound and a compound of a heavy metal.

Appellants have discovered that the degree of polymerization, measured in terms of the average molecular weight of the resultant polyethylene, may be controlled by adjusting the molar ratio of the two catalyst components. So far as is pertinent here, appellants disclose that the organic metal compound catalyst component may be an organic aluminum compound of the general formula RAlXY, wherein R is H or a hydrocarbon radical, X is R or OR′, Y is R, a halogen atom or OR′, and R′ is a hydrocarbon radical. It is preferred to use dialkyl aluminum monohalides. Titanium tetrachloride is the most frequently mentioned example of the heavy metal catalyst component. Starting from a molar ratio of organic aluminum compound to titanium tetrachloride (referred to by appellants as Al:Ti) as an initially large value of about 12, the influence of reductions in the ratio on the molecular weight of the polymers is initially slight. Only a slight increase is observed by a reduction to a 3:1 ratio, but a reduction to 2:1 increases the molecular weight more strongly to a value of about 320,000. Appellants disclose that:

> * * * A zone then follows in which extraordinarily small changes in the conditions referred to exerts quite an unusually strong influence on the molecular weight of the polymers obtained. If a ratio of 2 Al:1 Ti is initially used and if the ratio is changed to 1:1 to 0.5:1, this causes a drop in the molecular weight from 320,000 to 20,000, so that it is possible to obtain any desired molecular weight between about 20,000 and 320,000 by a fine adjustment of the ratio between the organic aluminium compound and the titanium tetrachloride within this sensitive range.

Appellants also disclose that the commencement of the "sensitive range" or "zone" depends somewhat on polymerization conditions. The application continues:

> * * * The essential feature of the present invention does not consist so much in determining the accurate numerical limits of these sensitive zones for each conceivable combination, as in the fundamental discovery that there is in fact such a sensitive zone. The position of this zone can extremely easily be determined by the expert interested in this matter, after he has acquired this knowledge, by a small series of experiments and plotting t[he] experiments by means of curves.

The molar ratio Al:Ti is broadly stated to be within the range of from 8:1 to 0.2:1, although the "sensitive range" limits are noted to be different and narrower for each catalyst combination. For diethyl aluminum chloride and titanium tetrachloride the "sensitive range" is from 3:1 to 0.67:1 and for diisobutyl aluminum chloride the range is from 8:1 to 0.5:1.

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[1] The claims are part of appellants' application Serial No. 527,413, filed Aug. 9, 1955, for "Process for the Production of Polyethylenes." The Examiner allowed claims 1–18, and 22 (the count of the interference corresponding to Weber's claim 3), not involved in this appeal.

Appealed claim 28 reads:

> 28. A process for the polymerization of gaseous ethylene in the presence of a polymerization catalyst which comprises polymerizing the gaseous ethylene in the presence of a catalytic amount of a mixed catalyst of ethyl aluminum sesquichloride and titanium tetrachloride having a ratio of about 0.5–0.8 mol of titanium tetrachloride per mol of ethyl aluminum sesquichloride.

Claim 29 differs therefrom only in specifying a mole ratio range of "about 0.3–2.5" Ti to Al.[2]

The appealed claims are specific to $TiCl_4$ and ethyl aluminum sesquichloride. The sesquichloride is a mixture of diethyl aluminum chloride with ethyl aluminum dichloride. Appellants do not contend that either the sesquichloride or the molar ratios therefor find specific support in the present application taken alone. Rather, appellants base their contention for support of the limitations on another application, Serial No. 482,412 (hereinafter "412"), filed January 17, 1955, which is referred to in the appealed application. Applicants contend that the "412" application is referred to in the appealed application in such a manner as to be incorporated by reference therein. That manner of reference comprises part of the following background discussion of three applications, including the "412" application, relating to processes for the production of polyethylene:

> This invention relates to a process for the production of polyethylenes with predetermined degrees of polymerisation.
>
> Specifications application Serial No. 569,059, filed Nov. 15, 1954, application Ser. No. 482,412, filed Jan. 17, 1955, and application Ser. No. 482,413, filed Jan. 17, 1955, relate to processes for the production of valuable plastic-like polyethylenes of high molecular weight by polymerisation of ethylene under comparatively very gentle conditions of temperature and pressure in the presence of catalysts which are obtained from organic metal compounds together with compounds of the heavy metals of the sub-groups of the 4th–6th groups of the Periodic System. * * *
>
> * * * * * * *
>
> According to Specification application Ser. No. 482,412, filed Jan. 17, 1955, the organic metal compounds used are aluminium compounds of the general formula R_2AlX, in which R is a hydrogen atom or a hydrocarbon radical and X is *inter alia* a hydrogen or halogen atom, a hydroxyalkyl group or a hydroxyaryl group. Dialkyl aluminium monohalides or diaryl aluminium monohalides are preferably used as the organic aluminium compounds. When these compounds are used, compounds of the 8th sub-group of the Periodic System or compounds of manganese can be used as the heavy metal compounds instead of or in addition to the compounds of the metals of the 4th–6th sub-group of the Periodic System, including thorium and uranium.

Following that discussion, the appealed application states that "it has now been found that *in the processes set forth* * * *" (emphasis added) a "sensitive range" of catalyst component mole ratios has been discovered. "Processes set forth" is a clear reference to the processes in the three applications.

The Examiner rejected the claims for lack of support because "the present application does not disclose the use of the ethyl aluminum sesquichloride, titanium tetrachloride catalyst in the claimed mole ratios." The Examiner's position, as expressed in his answer, is that:

> * * * a mere reference to the copending application without any statement as to what it is relied on for is not sufficient to incorporate the teachings of the copending application into the present application. * * *

The Examiner would have the reference in the appealed application state a particular example for completion of the disclosure.

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[2] It is to be noted that claims 28 and 29, as derived from Weber, refer to the ratio as Ti:Al. Thus the values must be translated into their reciprocals in order to make direct comparison with the Ziegler applications here involved.

The pertinent disclosure in the "412" application on which appellants rely is as follows:

> The starting aluminum compounds in accordance with the invention need not be completely pure or homogenous. Crude products or solutions obtained in the course of the preparation of these compounds may be used. Furthermore, the polymerization catalyst may be prepared using mixtures of the aluminum compounds in accordance with the invention. Thus, for example, such catalysts can be prepared using the so-called alkyl-aluminum-sequihalides, i.e., mixtures of compounds $R_2AlHalogen+RAl(Halogen)_2$, as may be obtained by dissolving metallic aluminum in halogenated alkylenes.

Also, Example 1 of the "412" application is directed to the formation of a catalyst from 20 g. diethyl aluminum chloride and 1 g. $TiCl_4$, which is used to produce polyethylene. The example then concludes:

> The example is repeated using in place of the diethyl-aluminum monochloride the same quantity of so-called sesquichloride. The yield of polyethylene corresponds precisely to the total quantity of monomeric ethylene which has disappeared.

[1] The nature of the invention here is an improvement in prior processes consisting of a discovery about the ratios of catalyst components used in those processes. Considering that nature within the context of the diclosure as set out above, we cannot say that the reference to the "412" application is a "mere reference to a copending application." It appears clear that the subject catalysts disclosed as part of the processes of the three applications are also the subjects of the improvements here.[3] Although the appealed application refers to the "412" organic aluminum compounds as being "of the general formula R_2AlX * * *," which is not the formula for the sesquichloride mixture, we are of the view that such a reference does include the sesquichloride by virtue of the above-quoted "412" disclosure that indicates the sesquichloride may be used in place of the compounds "R_2AlX." Thus we conclude that the teachings of "412" application about the sesquichloride have been incorporated by reference into the appealed application. In that view we are in disagreement with the Examiner and the Board.

However, we do agree with the Examiner and the Board that even with the disclosure of the sesquichloride incorporated in the instant application, there is insufficient support for the limitations as to mole ratios reflective of the "sensitive range." On this point the Examiner's position, as stated in his answer, was that:

> * * * even if the teachings of the copending application are incorporated into the instant application, Example I of the copending application would only teach one skilled in the art that both the monochloride and the sesquichloride are operable for producing polymerization and would not teach that one skilled in the art should use the same mole ratio of sesquichloride : Ti as monochloride : Ti to effect a control of the molecular weight. * * *

From the teaching in the appealed application that the molar ratios are distinct for each different organic aluminum compound, the Examiner concluded that the disclosed molar ratio for the monochloride is not applicable to the sesquichloride. The Examiner calculated the "412" teaching as to sesquichloride corresponds to a Ti : Al ratio of 0.04, which is not within the claimed range.

Appellants argue that the gist of the two applications taken together is to teach one skilled in the art to use any of the catalyst systems disclosed in "412," and to use the molar ratios as taught in the present application. Appellants refer to the teaching of the appealed application that "the position of this zone can extremely easily be determined by the expert interested in this matter, after he has acquired this knowledge * * *" of the existence of the zone. Appellants concede that there is no specific disclosure of the claimed molar ratios.[4] They urge, however, that since the claims were copied for purposes of interference it is permissible to narrow the broad disclosed range of Al : Ti of from 8 : 1 to 0.2 : 1 to that of the appealed claims, 2 : 1 to 1.25 : 1 (claim 28) and 3.33 : 1 to 0.4 : 1 (claim 29), in accordance with the Commissioner's notice of April 5, 1954, 681 O.G. 864, relating to modifications of the so-called Card & Card practice, *Ex parte Card and Card*, 1904 C.D. 383, 112 O.G. 499.

In so arguing, appellants urge that the "412" case in the above-quoted portion teaches the equivalence of the sesquichloride to diethyl aluminum monochloride, and that the "same quantity" of each may be used. A disclosure of quantity is not the same as the needed disclosure of mole ratio. It is unrebutted on this record that the "same quantity" of sesquichloride corresponds to a mole ratio of 0.04 (Ti : Al), well outside both the ratio of claim 28 and that of claim 29, and also outside the broadest range claimed or disclosed. An equivalence is taught, but it is not that of ranges; and equivalency for the polymerization of ethylene is all that is taught. Such equivalence cannot be support for the invention relating to a "sensitive range." Thus, a range of Ti : Al of from 0.33–1.5 for diethyl aluminum chloride does not support the same, a narrowed, or a broader range for the sesquichloride.

[2] The gist of appellant's argument that the range can be easily determined once the existence thereof is known, is contrary both to the disclosed sensitivity and criticality of a range, and also to the requirement of 35 U.S.C. 112 that *the invention* be described in such full, clear, concise, and exact terms as to enable any person skilled in this art to make and use the same. The background context of the invention as claimed here convinces us that it deals with more than the existence of the range alone. The determination of the range is a critical and integral part of the invention. This is particularly true in view of the fact that the catalyst mixtures per se are the subject of a prior invention, as acknowledged by the appealed application. The present invention involves the use of specific ratios of the catalyst components rather than the use broadly of the components.

[3] We do not think this case one in which resort may be had to the practice described in the aforementioned notice of April 5, 1954. Where the same invention is disclosed by the parties but with slightly different ranges, the count in effect may be modified by permitting each party to submit his own range for his claim. The one party's claim in fact reads on the other. Such practice assumes that each of the interfering applications discloses a range for the same materials. Such practice is not applicable to the facts here since there is no disclosure of any aspect of a critical range for the sesquichloride. As noted above, a range for diethyl aluminum monochloride is not support for a range for the sesquichloride. This follows even though somewhat different "sensitive ranges" might be disclosed by each party as resulting from a different selection of molecular weights to be predetermined. Nor do we think appellants are entitled to assert

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[3] We note that no more reference than what is given for the catalysts of the "412" application was deemed necessary by the Primary Examiner in the interference to incorporate by reference into the appealed application operating conditions set forth in the "412" application.

[4] We do not agree with appellants that there is no question concerning support for the ranges of claim 28.

the broadly disclosed and claimed (claim 1) range of 8:1 to 0.2:1 for "a metal organic compound" as support for the ranges of the appealed claims. A substantial distinction exists between such a range and the ranges of claims 28 and 29. In part of that range there is clearly little or no effect on molecular weight by changes in the ratio for a given catalyst combination. Further, the broad range clearly has little applicability to any one specific catalyst, for each one of which the "sensitive range" is far narrower and different.

For the foregoing reasons, the decision of the Board is affirmed. AFFIRMED.

ALMOND, *J.*, concurs in the result.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,631,358, E. D. Hill, INK CARRIERS AND METHOD OF MAKING, **filed** Jan. 18, 1967, D.C.N.J. (Newark), Doc. Civ. 61–67, *Jomac Inc.* v. *United Roller Co., Inc. et al.*

2,656,508, W. H. Coulter, MEANS FOR COUNTING PARTICLES SUSPENDED IN A FLUID; **2,869,078**, same, FLUID METERING APPARATUS; **2,985,830**, same, SCANNER ELEMENT FOR PARTICLE ANALYZERS, **filed** Dec. 7, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c2256, *Coulter Electronics, Inc.* v. *Evanston Hospital Association.* **Same, filed** Dec. 13, 1966, D.C. Oreg. (Portland), Doc. Civ. 66–579, *Coulter Electronics, Inc.* v. *Sisters of Charity of Providence in Oregon.*

2,661,534, D. H. Keiser, Jr., SHEARING ACTION DEVICE, **filed** Dec. 9, 1966, D.C.N.J. (Newark), Doc. Civ. 1225–66, *Keiser Mfg. Co.* v. *J. Wiss & Sons Co.*

2,666,508, M. J. Nardulli, WINDOW SASH FRAME STRUCTURE; **2,799,060**, same, WINDOW STRUCTURES; **2,816,632**, same, AUXILIARY WINDOWS; **2,828,513**, same, WINDOW STRUCTURE; same, **2,828,514**, WINDOW STRUCTURE; **2,841,835**, same, WINDOW MOUNTING; **2,871,522**, same, WINDOW STRUCTURE; **2,874,421**, same, WINDOW STRUCTURES, **filed** Mar. 3, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c327, *James G. Wilborn & Sons, Inc.* v. *Brandex Tilt Sash, Inc. et al.* Second amended complaint dismissed without prejudice by order of the court, Jan. 21, 1967.

2,678,276, R. M. North, PROCESS OF MAKING A CONFECTIONERY OF THE GUMDROP TYPE, **filed** June 2, 1965, D.C., W.D. Tex. (San Antonio), Doc. 3553, *Thermal Equipment Corp.* v. *Judson's Candies, Inc.* Stipulation and order dismissing complaint without prejudice, Jan. 18, 1967.

2,742,327, T. Marks, FULLY AUTOMATIC MACHINE FOR MAKING BRUSHES, **filed** May 26, 1965, D.C., S.D.N.Y., Doc. Civ. 65–1612, *American Technical Machinery Corp.* v. *Flowerized Presentations, Inc.*

2,799,060. (See 2,666,508.)
2,816,632. (See 2,666,508.)
2,828,513. (See 2,666,508.)
2,828,514. (See 2,666,508.)
2,841,835. (See 2,666,508.)
2,869,078. (See 2,656,508.)
2,871,522. (See 2,666,508.)
2,874,421. (See 2,666,508.)
2,985,830. (See 2,656,508.)

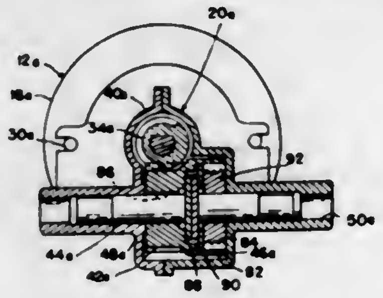
REISSUES

MARCH 21, 1967

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,173
TOP LIFT ASSEMBLY

Joseph Pickles, Dearborn, Mich., assignor to Ferro Manufacturing Corporation, a corporation of Michigan
Original No. 3,248,970, dated May 3, 1966, Ser. No. 245,126, Dec. 17, 1962. Application for reissue June 27, 1966, Ser. No. 564,707
7 Claims. (Cl. 74—665)

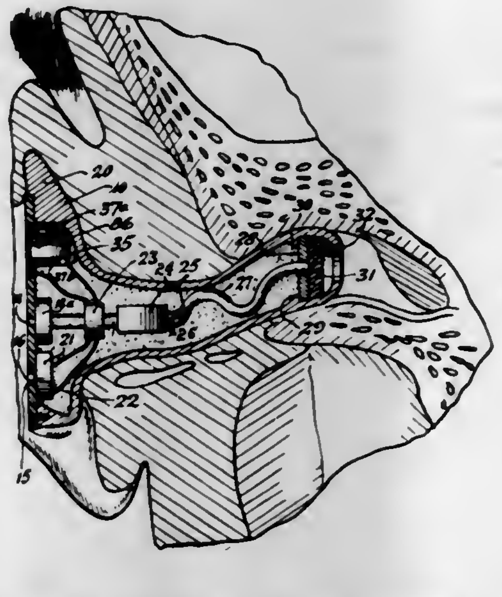


1. A lift assembly for convertible tops and the like comprising a single, single ended reversible electric motor including a drive shaft, a mounting bracket for mounting the motor substantially centrally, laterally of an automobile with the drive shaft extending longitudinally of the automobile, a worm fixedly secured to said drive shaft for rotation therewith, a worm gear having a stepped recess in one side thereof engaged with said worm, a housing secured to said bracket for rotatably mounting the worm gear in mesh with said worm, a pair of headed coupling members concentric with and extending from opposite sides of said worm gear having clutch surfaces on the heads thereof in engagement within the stepped recess in the worm gear, slot and key means for securing one of the coupling members to the worm gear for rotation therewith, a washer within the stepped recess, and plug means threadedly secured in the stepped recess for urging the washer into engagement with the heads of the coupling members in engagement with the bottom of the recess to vary the pressure on the coupling surfaces thereof, a separate housing at each side of the automobile, a worm rotatably mounted in each of the separate housings, a flexible shaft extending from each of the coupling members to a respective worm in the housings at the side of the automobile, a worm gear rotatably mounted within each of the housings at the side of the automobile in mesh with the worm therein, a pinion within each of the housings at the side of the automobile connected to said worm gear for rotation therewith, a separate rack extending through each of the housings at the side of the automobile engaged with the pinion in each of the housings and means for guiding the rack through the housing on linear movement thereof due to rotation of the respective pinion engaged therewith and means connecting one end of each rack to the convertible top of the automobile.

26,174
HEARING AID

Leslie P. Leale, San Mateo, Calif., assignor to Earmaster, Inc., Burlingame, Calif., a corporation of California
Original No. 3,170,046, dated Feb. 16, 1965, Ser. No. 157,144, Dec. 5, 1961. Application for reissue Jan. 14, 1966, Ser. No. 526,942
12 Claims. (Cl. 179—107)

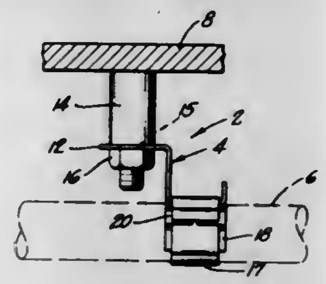
5. A self-contained hearing aid comprising:
(*a*) *a unitary housing,*
(*b*) *the housing having a main body portion which fits in the ear,*
(*c*) *an outer end of the main body portion having an opening to provide access to the interior of the housing,*
(*d*) *a coverplate removably attached to said body opening to totally enclose the housing,*
(*e*) *a battery compartment on said coverplate accessible from outside the housing,*



(*f*) *a microphone mounted to said coverplate,*
(*g*) *an amplifier circuit directly connected to said microphone, and*
(*h*) *a receiver connected to said amplifier circuit and to said microphone,*
(*i*) *said microphone, amplifier circuit, receiver and battery compartment being mounted to the coverplate so as to form an integral assembly insertable into, and removable from, the main body as a unit.*

26,175
CABLE HANGERS

William O. Wesseler, Rte. 5, Box 970, Bremerton, Wash. 98310
Original No. 2,939,664, dated June 7, 1960, Ser. No. 531,208, Aug. 29, 1955, which is a continuation of reissue application Ser. No. 155,891, filed Nov. 27, 1961. Application for reissue Jan. 29, 1965, Ser. No. 445,294
17 Claims. (Cl. 248—68)



1. A shock absorbing hanger apparatus adapted for supporting elongated pipes and cables comprising in combination a channel having a base portion *with a substantially flat external surface adapted to be engaged by such pipes and cables* and a pair of spacially disposed flange

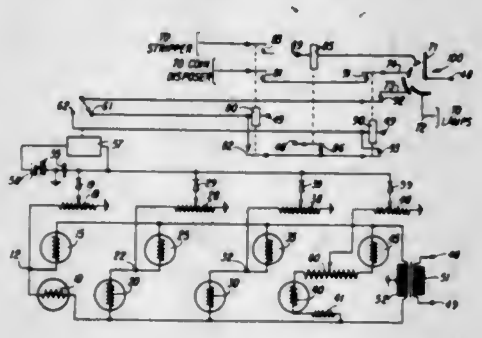
portions integrally connected to said base portion in angular relationship therewith, a laterally offset ear angularly projecting from at least one of said pair of flange portions, an aperture disposed in said ear, structural mounting means, means interconnecting said structural mounting means and said laterally offset ear for fastening same thereto at said aperture, a *flat unpreformed* flexible band looped completely around both the base portion of said channel between the flange portions thereof and the aforesaid elongated pipes and cables being supported, and means connected to said band for binding together the ends thereof and causing said band to be tensioned about said pipes, cables, and channel, whereby said pipes and cables [and said channel] are securely and conjointly clamped *to said substantially flat external surface of said channel base portion* for support thereby.

26,176
CURRENCY TESTING SYSTEM

John E. Steiner, Rockford, Ill., assignor to Automatic Canteen Company of America, Chicago, Ill., a corporation of Delaware

Original No. 3,114,445, dated Dec. 17, 1963, Ser. No. 95,725, Mar. 14, 1961. Application for reissue Nov. 23, 1965, Ser. No. 515,289

28 Claims. (Cl. 194—4)



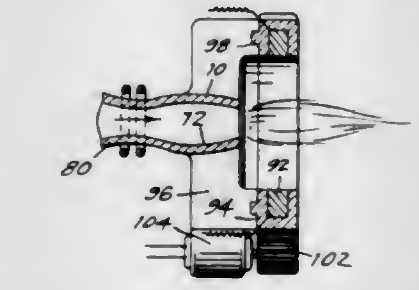
12. A currency testing arrangement for determining the validity of a currency note comprising a plurality of light responsive cells whose impedance varies in accordance with varying amounts of light transmitted thereto and associated with respective areas of said note for receiving respective amounts of light transmission therefrom, certain of said cells arranged in parallel, other respective ones of said cells connected in series with respective ones of certain cells, and a source of potential connected across all of said cells.

26,177
AUTOMATIC STEERING OF SPACE CRAFT

Alexander T. Deutsch, 1735 Riggs Place NW., Washington, D.C. 20009

Original No. 3,145,531, dated Aug. 25, 1964, Ser. No. 127,657, July 28, 1961. Application for reissue Apr. 15, 1966, Ser. No. 544,665

7 Claims. (Cl. 60—202)



1. In a means for steering a jet propelled device, comprising elongated annular walls, a main outlet jet coaxial with the body of said device to pass a propelling gas outwardly coaxial with the direction of movement of said device, means in said device for ionizing propellant gases passed therethrough as a jet, magnetic means for concentrating the ionized gas centrally of said device inward from the annular confining walls thereof, magnetic means for diverting the axial direction of flow of the concentrated jet as it is propulsively emitted from said device, and means for varying the direction of said magnetic field to effect steering of said device.

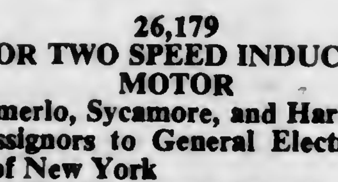
26,178
METHOD OF CONTROLLING MICROORGANISMS WITH 2-HALO-SUBSTITUTED ACETOPHENONES

George E. Lukes, Kentfield, and Thomas B. Williamson, Santa Clara, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Original No. 3,184,379, dated May 18, 1965, Ser. No. 172,849, Feb. 13, 1962. Application for reissue Oct. 4, 1965, Ser. No. 493,309

6 Claims. (Cl. 167—30)

1. A method of inhibiting the growth of microorganisms which comprises applying thereto a small but effective amount of a 2-halomethyl aryl ketone of the following formula:

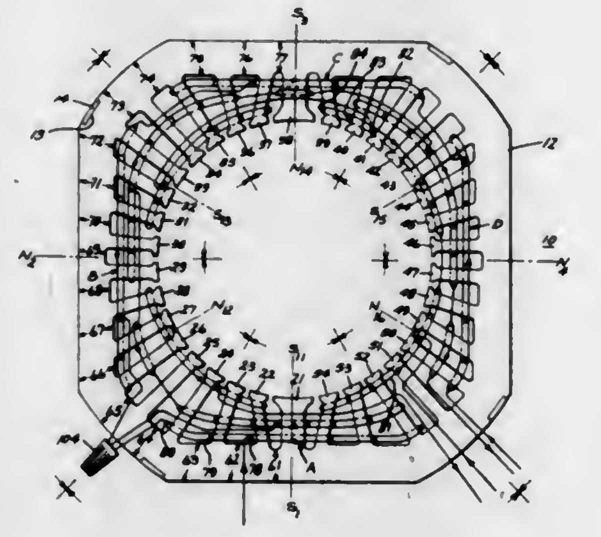


26,179
STATOR FOR TWO SPEED INDUCTION TYPE MOTOR

Allen A. Brammerlo, Sycamore, and Harold C. Stout, De Kalb, Ill., assignors to General Electric Company, a corporation of New York

Original No. 3,153,183, dated Oct. 13, 1964, Ser. No. 226,894, Sept. 28, 1962. Application for reissue Oct. 6, 1966, Ser. No. 589,174

7 Claims. (Cl. 318—224)



1. In a single phase induction type motor for operation selectively at two speeds, a stator including magnetic core comprising a yoke section and a plurality of angularly spaced apart teeth sections together defining a number of slots; a first main winding comprising a plurality of coils positioned in said slots to form at least two primary magnetic running poles for operating the motor at one speed; a second main winding having a plurality of coils positioned in said slots; at least a part of the coils in one primary running pole of said first winding connected in series relation with said second winding for energization therewith; said last-mentioned coils of said one pole being located in the same slots of the core as coils of said second main winding and being

arranged in additive magnetic relation therewith when said second winding is energized; said additive serially connected coils of both windings, together with the remaining coils of said second winding, defining an even number of primary running poles in excess of the number of the first winding running poles; the yoke section having a minimum magnetic depth in the region directly over the slots near the center of each of the lesser number of running poles and a maximum depth adjacent the region directly over the slots near the extremities of each of said last-mentioned poles; and the teeth sections located adjacent the respective centers of the higher number of running poles being greater in width than those respectively located at the extremities of the same poles.

PLANT PATENTS

GRANTED MARCH 21, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,727
ROSE PLANT

Herbert C. Swim, Ontario, and O. L. Weeks, Chino, Calif., assignors to Swim and Weeks, Chino, Calif., a co-partnership

Filed Mar. 2, 1966, Ser. No. 531,316

1 Claim. (Cl. Plt.—24)

A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of the attractive color and shape of the foliage, as disclosed, free production under glass of flowers of good petalage without material interruption during the winter season, relatively long peduncles as compared with other yellow-flowered floribunda varieties commonly grown under glass, permitting the flowers, when wrapped in bunches to be displayed above the leaves rather than inter-mixed with them, a bud form ranging from pointed to urn-shaped said buds maturing to open flowers having a form ranging from high-centered to flat, a thick and leathery texture of the flower petals, with resultant good lasting qualities of the flowers both on the plane and when cut, and a distinctive and attractive general color tonality of the flowers corresponding to near Vivid Yellow at the center with near white or yellowish-white over the outer portions when newly opened, but changing to between white and brilliant greenish-white in the three-days open flowers.

2,728
ROSE PLANT

Roy L. Byrum, Richmond, Ind., assignor to Joseph H. Hill Company, Richmond, Ind., a corporation of Indiana

Filed Mar. 15, 1966, Ser. No. 534,540

1 Claim. (Cl. Plt.—22)

A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of abundant dark green glossy foliage which enhances and intensifies the flower color; long and upright flower stems, with very few disbuds; abundant production of flowers of bright orange general color tonality which is unusual in the class of greenhouse forcing rose varieties; and excellent keeping qualities of the flowers as cut flowers.

2,729
ROSE PLANT

Eugene S. Boerner, Newark, N.Y., assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Apr. 14, 1966, Ser. No. 542,704

1 Claim. (Cl. Plt.—15)

A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a plant habit which attains many breaks and with the foliage extending down to the ground, large flowers having an attractive shape, a very rich and satiny yellow flower color corresponding to Lemon Chrome, lightly overcast with Pale Lemon Chrome and long retention of the flower color, with good resistance to sun and wind.

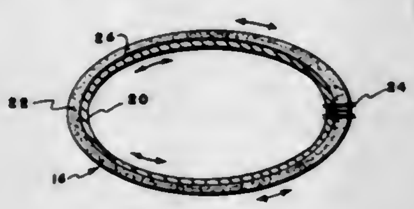
PATENTS

GRANTED MARCH 21, 1967

GENERAL AND MECHANICAL

3,309,713
SELF-SIZING SWEAT BAND

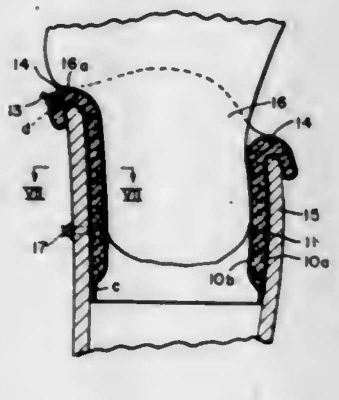
Theodore M. Kaufman, Rockville Centre, N.Y., assignor to Hat Corporation of America, Norwalk, Conn., a corporation of Delaware
Filed Sept. 4, 1964, Ser. No. 394,630
5 Claims. (Cl. 2—183)



1. A self-sizing headwear which includes a crown portion of a given head size; and comprises a sweat band of a normally relatively smaller head size than the given head size of said crown portion in which the said sweat band is comprised of a laminated material including the combination of a layer of stretch material including a spandex type component, said sweat band further including a layer of a foamed deformable and resilient material, an intermediate layer comprising bonding adhesive means having characteristics of stretch related to the stretch of said stretch material bonding said spandex component to said foamed material, said deformable and resilient material positioned around the said stretch material and between the said stretch material and the said crown portion; said laminated sweat band adapted to stretch circumferentially from its normal size to a size as large as said crown portion.

3,309,714
PNEUMATIC CUSHION SOCKET WITH A POROUS FILLER

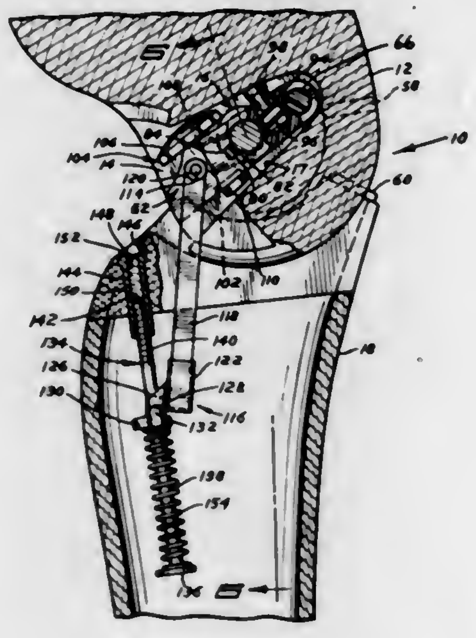
Laurence Porten, 5836 Clark Ave. Ext., Bethel Park, Pa. 15102
Filed Jan. 27, 1964, Ser. No. 340,324
7 Claims. (Cl. 3—20)



1. An improved prosthesis socket for receiving a stump and mounting it within a back open end portion of an artificial limb, a sleeve-like body having a back open end portion adapted to receive the stump, said body comprising a pliable air-tight cover of fabric material that has a smooth outer surface, said cover having spaced-apart inner and outer side walls along said body and connecting end closure walls that seal-off said inner and outer side walls to provide a closed-off inner chamber within and along the side walls of said body, a lightweight porous and resilient filler material defining a plurality of minute air spaces therewithin and positioned to extend fully along the chamber between said inner and outer side walls to fill the spacing, said filler material being secured along one side face to only one of said side walls and having a freely abutting relation along its opposed side face with the other of said side walls, said inner side wall being adapted to receive and fully conform to the configurations of the stump and said outer side wall being adapted to fit within the open end portion of the artificial limb, and valve means secured to project from one of said side walls and having a passageway connected to the free abutting side face of said filler material for introducing air fully along said face to the air spaces thereof and for expanding the air spaces to provide a desired uniform resilient holding strength to said body for effectively securing the artificial limb to the stump.

3,309,715
SAFETY KNEE ASSEMBLAGE WITH ADJUSTABLE MEANS FOR INCREASING OR DECREASING CLEARANCE BETWEEN BRAKING SURFACES

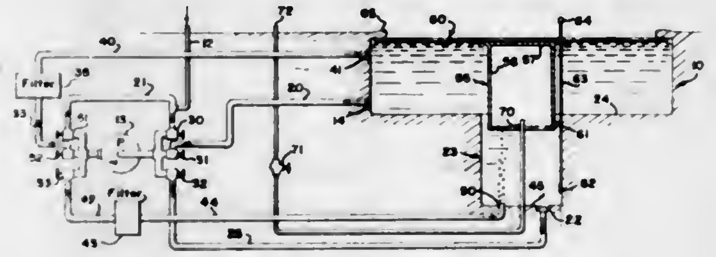
Hugo Otto Max Nader, Duderstadt, Hannover, and Werner Haupt, Duderstadt-Tiftlingerode, Germany, assignors to Otto Bock Orthopedic Industry, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Dec. 30, 1963, Ser. No. 334,091
14 Claims. (Cl. 3—27)



1. A safety knee assemblage comprising:
(a) an upper member;
(b) a lower member;
(c) a knee bolt pivotally connecting said members together to form a knee joint;
(d) a swing block pivotally connected near one end of a lower portion of said upper member,
(e) resilient means connected near the other end of said swing block and to said lower member for urging said members into a desired pivotal relationship with each other;
(f) said swing block having an aperture extending therethrough receiving said knee bolt;
(g) means for braking the pivotal movement of said members with respect to each other, and
(h) regulating means carried on said swing block and extending downwardly through said block for engaging a portion of said upper member for controlling the action of said braking means.

3,309,716
SWIMMING POOL NET ELEVATOR

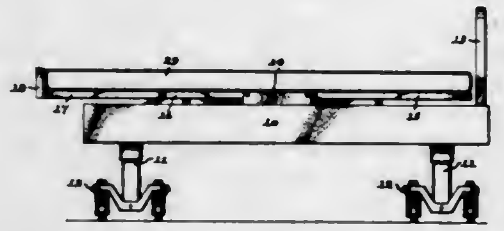
Earl L. Merritt, 50 W. Summit Drive, Redwood City, Calif. 94062
Filed Oct. 26, 1964, Ser. No. 406,383
4 Claims. (Cl. 4—172)



1. An automatic swimming pool net system comprising,
a safety net shaped to cover the surface area of a swimming pool,
a well formed in the floor of a swimming pool,
a cylinder having its upper end enclosed, said cylinder shaped to fit into said well, said cylinder attached to said safety net,
means for introducing a stream of air into said cylinder when said cylinder is within said well,
means for retaining and releasing said cylinder within said well against the buoyant force of air within said cylinder, said cylinder and said safety net rising to the surface of said pool when said retaining means are released, and
means for exhausting the air within said cylinder when said net and said cylinder are floating at the surface of said pool, to sink said cylinder and said net to the floor of said pool when said supply of air within said cylinder is exhausted.

3,309,717
HOSPITAL BED

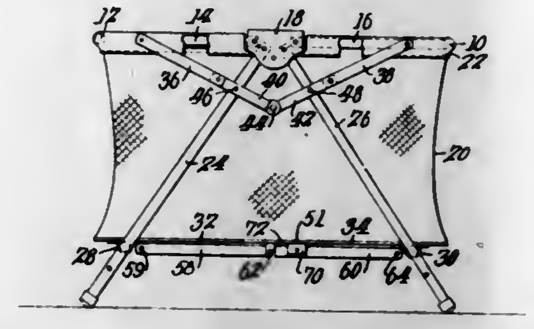
Warren R. Black, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed Mar. 20, 1963, Ser. No. 266,580
2 Claims. (Cl. 5—68)



1. In a bed: a base frame; mattress-supporting spring sections mounted on the base frame and including a foot spring section; a low footboard mounted on the foot spring section for swinging movement between a position extending perpendicularly upwardly from said foot spring section and a position of alignment with said foot spring section; and mattress-stops pivotally mounted in the outer end of the footboard and swingable from positions within the footboard to positions extending perpendicularly upwardly from the footboard when said footboard is in its position of alignment with said foot spring section, said mattress-stops serving as abutments for a mattress.

3,309,718
FOLDING PLAYPEN

Raymond J. Sarasin, Fitchburg, Mass., assignor to Thayer, Inc., Gardner, Mass., a corporation of Massachusetts
Filed Oct. 5, 1965, Ser. No. 493,186
1 Claim. (Cl. 5—98)



A folding playpen comprising a two part floor, said parts being of unequal width and being hinged together at their inner edges adjacent a central dividing line of the playpen, each part being hinged adjacent its outer edge to a part of the playpen adjacent the opposite edges thereof,
transversely supporting elements under and secured to each playpen floor part, said elements on one of said parts extending from the opposite edge portions thereof toward the corresponding elements on the other part and being pivoted together at their inner ends, the elements under the lesser floor part extending therefrom at the inner edge thereof,
the inner edges of the floor parts coming together when aligned with the playpen extended and leaving a gap when it is folded, the inner edge of the wider floor part resting on the extending portions of the elements secured to the lesser part, and the floor parts being held in horizontal extended condition thereby,
a pair of supporting leg members at each side of the playpen, a pair of U-shaped top members having free-ended arms, a pair of brackets, the arms being pivoted in pairs at their free ends to the brackets, the top members forming a rectangular open frame when coplanar, the uper ends of the leg members being pivoted in pairs to the brackets,
a generally tubular flexible net secured at one end to the frame formed by the two U-shaped top members, said net being limp and flexible when the top members are folded, said net at its other end being secured to the outer edges of the two floor parts and being stretched taut between the latter and the top members when the playpen is extended for use,
and a locking linkage interpivoted relative to each pair of leg members and said U-shaped top members, each locking linkage comprising a first pair of links each pivoted at one of its ends to an arm of a corresponding U-shaped top rail member intermediate the ends of such arm, a second pair of links each one of which is pivoted intermediate its ends to a respective supporting leg member intermediate the ends of the latter, each of said second links being pivoted to a respective first link at corresponding ends thereof, said second links being interpivoted at their opposite ends to each other between each pair of respective leg members and being otherwise freely movable and unrestricted,
each said locking linkage forming a dead center latching means for holding the U-shaped top members in extended horizontal condition when the floor parts are in extended horizontal condition, said U-shaped top members being foldable toward each other to a position at right angles to the extended condition thereof, and the leg members being simultaneously foldable toward each other to a condition generally parallel to said top members.

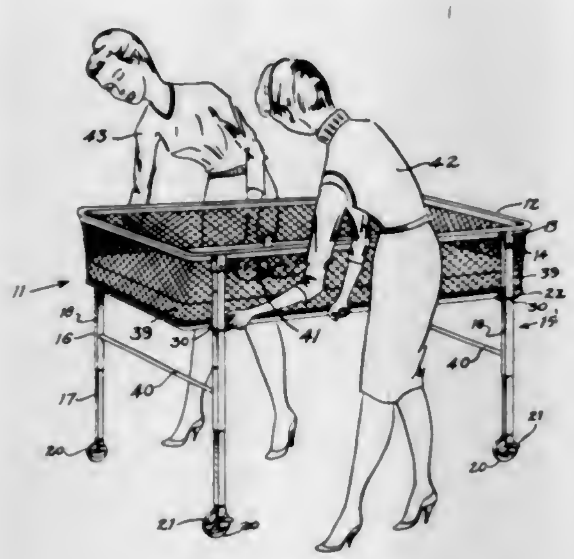
3,309,719

COMBINATION PLAYPEN CRIB AND DRESSING TABLE

Maximillan Bader and I Walton Bader, both of 3732 Lyme Ave., Brooklyn, N.Y. 11224

Filed Nov. 8, 1965, Ser. No. 506,810

3 Claims. (Cl. 5—98)



1. A combined playpen and dressing table comprising, in combination,

(a) an upper frame,

(b) a plurality of leg members, pivotally connected to said upper frame,

(c) a lower frame spaced from said upper frame slidably connected to said leg members and having a pair of oppositely positioned arcuate indented portions substantially centrally located within said lower frame,

(d) a strap type handle made of flexible material pivotally connected at each of its end portions within each of said intended portions, said handle normally lying along the interior face of the respective intended portion but being movable from said position to an operating position projecting from said frame,

(e) means carried by said lower frame adapted to selectively position said frame at spaced points upon said leg members,

(f) a substantially planar platform overlying said lower frame,

(g) a net member connected to said upper frame and partially underlying said platform.

3,309,720

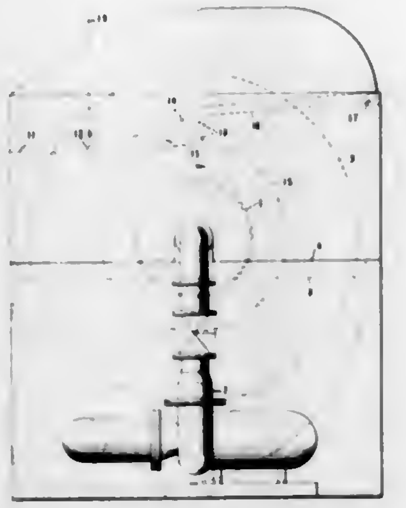
PROCESS FOR TREATING NONWOVEN PILE FABRICS

Paul Morrison Cole, Carrcroft, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Original application Nov. 27, 1963, Ser. No. 326,511, now Patent No. 3,262,291, dated July 27, 1966. Divided and this application Dec. 20, 1965, Ser. No. 514,802

4 Claims. (Cl. 8—154)

1. In a method for treating a nonwoven pile fabric with a fluid comprising the steps of initially winding a length of a fabric about a foraminous beam to form a wound roll of said fabric, and thereafter causing the roll to be at least partially submerged in a bath of treating fluid and effecting fluid treatment of said roll by rotating said roll in said bath and simultaneously cycling fluid from the bath into said beam and outwardly through the perforations thereof and into contact with the windings of said roll; the improvement wherein the intial winding about said beam is effected under compression as the beam is rotated to considerably reduce the thickness of said nonwoven pile fabric, the compression being effected in a direction normal to the plane of the fabric and applied across the width of the moving fabric as it tangentially contacts the outermost windings upon said beam.



3,309,721

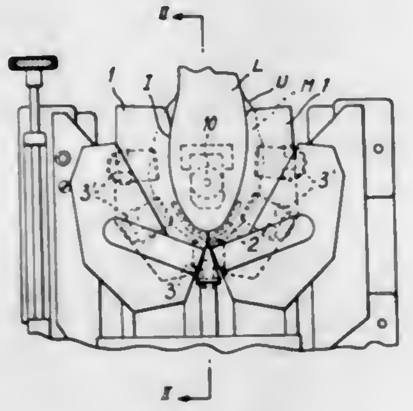
MACHINES FOR LASTING THE TOE ENDS OF SHOES

Charles Georges Jourdan, Rue Pailherey, Romans, France

Filed June 21, 1966, Ser. No. 559,300

Claims priority, application France, May 5, 1966, 60,371

3 Claims. (Cl. 12—8.8)



1. A machine for lasting the toe ends of shoes on a last by assembly of an upper and insole, comprising a displaceable last bearer or the like, pincers for stretching the said upper, wipers intended for inward movement folding against the said insole of the lasting margin of the said upper stretched on the said last, and entraining devices for displacing the said last bearer, for opening and closing the said pincers and for actuating the said wipers, in which an improved distributor device is of shape complementary to that of the last and has an edge coming into contact with the inner surface of the said lasting margin of the said upper and co-operating with the said wipers after the opening of the said pincers and at the start of the inward displacement of the said wipers intended to distribute the fullness of the said upper and hold the same stretched on the said last, the said distributor device comprising a cutting edge situated in a plane substantially parallel to that of the said wipers and directed outwards, for cutting a fraction of the thickness of the said lasting margin of the upper held between the said wipers and the edge of the said distributor, and devices for adjusting the relative positions of the said wipers and of the said distributor being incorporated to control the penetration of the cutting edge of the said distributor into the thickness of the said lasting margin of the upper.

3,309,722

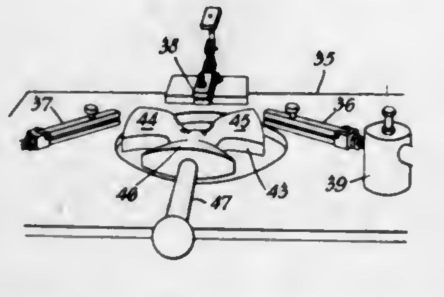
APPARATUS FOR PRESHAPING UPPERS

Alfred Alexander Staden, Wellingborough, England, assignor to The British Boot, Shoe and Allied Trades Research Association, Kettering, Northamptonshire, England, a British association

Original application Feb. 4, 1965, Ser. No. 430,327. Divided and this application Oct. 4, 1965, Ser. No. 492,822

Claims priority, application Great Britain, Feb. 10, 1964, 5,410/64

9 Claims. (Cl. 12—54.1)



1. Apparatus for preshaping an upper forepart blank comprising spaced clamps for engaging the blank adjacent its toe and waist marginal areas and positioned to support the blank in a taut substantially flat condition; a mould having a plurality of lobes positioned to engage selected marginal areas of the blank between said spaced clamps; and means for pressing the lobes against one face of the blank to stretch the marginal areas of the blank between said clamps.

3,309,723

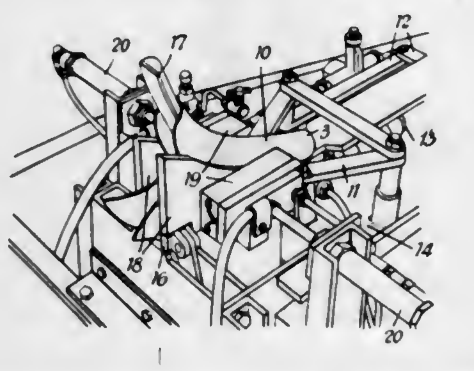
APPARATUS FOR PRESHAPING UPPERS

David Robert Dew, Kettering, England, assignor to The British Boot, Shoe and Allied Trades Research Association, Kettering, England, a British association

Original application Apr. 24, 1964, Ser. No. 362,365. Divided and this application Oct. 5, 1965, Ser. No. 493,190

Claims priority, application Great Britain, Apr. 25, 1963, 16,382/63

10 Claims. (Cl. 12—54.1)



1. Apparatus for preshaping upper foreparts comprising two clamps, each comprising a pair of jaws arranged to close up to a central jaw member for engaging opposite marginal portions of a folded forepart; means for increasing the separation between the two closed clamps; a bar associated with means for pushing the bar into the fold of the forepart; heating means on mounts arranged for moving the heating means up to the folded vamp where it is stretched between the clamps; and retractable water-permeable webs arranged for movement into position between the heating means and the folded vamp.

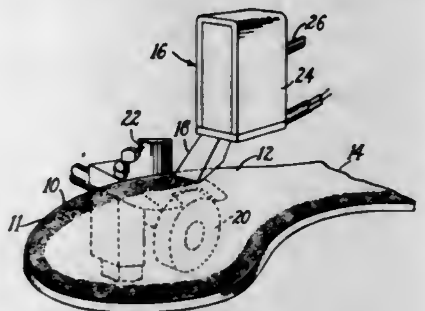
3,309,724

METHODS OF SOLE ATTACHING

Gordon V. Sprague, Jr., Danvers, and Conrad Rossitto, Andover, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey

Filed Apr. 1, 1964, Ser. No. 356,519

5 Claims. (Cl. 12—142)



1. The method of attaching a sole to a shoe upper comprising the steps of applying to a flexible outsole a band from about 0.005 to about 0.05 inch in thickness of thermoplastic substantially solvent-free synthetic polymer resin adhesive in hot fluid molten condition on the attaching marginal area of said outsole, the outer edge of said band being just inside the line of juncture between said sole and said shoe upper, and said adhesive having a melting point of from 80° to 200° C. and hardening to a strong, tough condition at a temperature of at least 50° C., heating the bottom of the shoe upper, assembling said outsole against said heated bottom while said adhesive is retained in molten adhesive condition by the sensible heat derived from the quantity and temperature of the adhesive applied, applying pressure first against marginal portions of said outsole to bend upward the portions of said sole adjacent the sole edge and press them against the shoe upper bottom to form a seal between said portions and the shoe upper bottom to resist flow of adhesive outward toward said sole edge, and thereafter applying pressure against further portions of said sole to squeeze said adhesive between said sole and said bottom of the shoe upper to force the molten adhesive to flow into adhesive engagement with said bottom and hardening said adhesive by dissipation of heat while maintaining pressure on said sole.

3,309,725

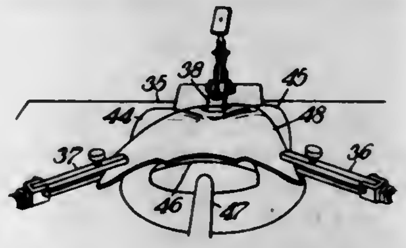
METHOD OF PRESHAPING SHOE UPPERS

Alfred Alexander Staden, Wellingborough, England, assignor to The British Boot, Shoe and Allied Trades Research Association, Kettering, Northamptonshire, England, a British association

Filed Feb. 4, 1965, Ser. No. 430,327

Claims priority, application Great Britain, Feb. 10, 1964, 5,410/64

14 Claims. (Cl. 12—146)

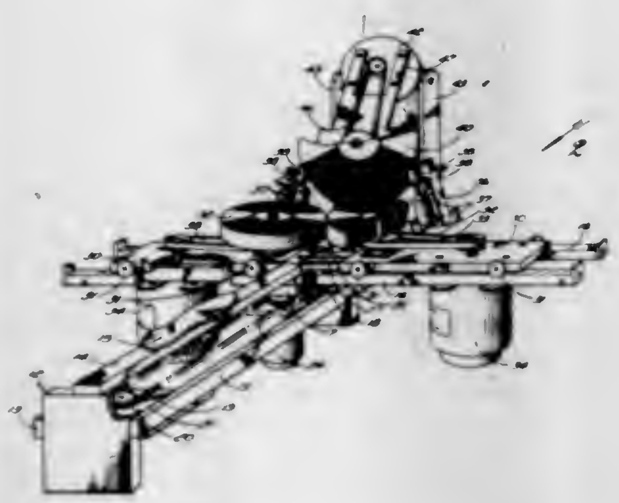


1. The method of preshaping a shoe upper forepart which comprises supporting a blank in a generally flat condition by gripping and holding the material of the blank at a plurality of spaced marginal portions only about its periphery and subsequently subjecting the thus supported blank to localized stretching between adjacent clamped portions by applying locally varying forces to selected portions of only the peripheral margins of the

blank to variously stretch parts of the peripheral margins and thus preshape the blank for subsequent lasting operations.

3,309,726
SHOE SHINING MACHINE

James H. Moore, 15264 Rudland, Roseville, Mich. 48066; Donald W. Gersten, 22670 Madison, St. Clair Shores, Mich. 48081; and Leonard W. Arndt, 42935 Utica Road, Warren, Mich. 48089
Filed Oct. 15, 1965, Ser. No. 496,552
1 Claim. (Cl. 15—32)



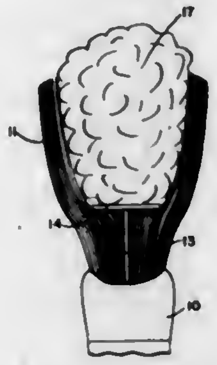
In a shoe shining machine, a support, a footrest on the support, a horizontal trackway on the support, a side buffer main carriage movable along the trackway, a pair of side buffing means carried by such carriage and movable thereby past the footrest to buff a shoe thereon, a toe buffer carriage movable along the same trackway, toe buffing means carried by the last mentioned carriage and comprising a buffer and a driving motor therefor rockable as a unit about an axis transverse to the trackway, and means for sequentially moving the first and second mentioned carriages into juxtaposition with respect to said footrest and then sequentially moving the second mentioned and first mentioned carriages away from such juxtaposition, said means for moving the aforesaid carriages comprising means for driving the main carriage and lost motion connecting means for driving the toe buffer carriage from the main carriage, said trackway including a pair of substantially horizontal rails extending on opposite sides of and below said footrest, transverse tracks on said main carriage, each of said side buffing means including a carrier for one of said side buffers, said carriers being movable laterally on said transverse tracks toward and from one another, means yieldably urging said carriers toward one another, an individual buffer journaled on top of each of said carriers, and a motor suspended beneath each of said carriers for driving such individual buffer.

3,309,727
FOAM SHAVE APPLIER

Earl D. Snodderly, Box 431, Johnson City, Tenn. 37601
Filed Mar. 23, 1965, Ser. No. 442,027
1 Claim. (Cl. 15—160)

A foam shave applier comprising

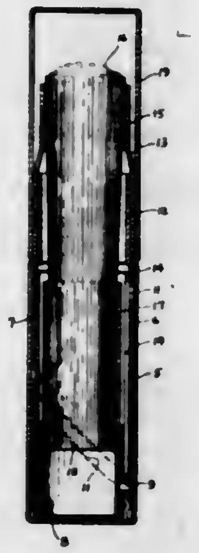
(a) a stand-handle,
(b) a brush base secured in the stand-handle,
(c) an assembly of shaving brush bristles having ends thereof affixed in said base,
(d) means for spreading the assembly as to major lengths of the bristles in a substantially hollow circular conformation to form a foam-receiving internal ever-open cavity at outer ends of the assembly, said means including a pin comprising
(e) a shank fastened in the brush base and extending a substantial distance outwardly of the base and outwardly of the adjacent end portion of the stand-handle,
(f) a spreading head on the shank at its outer free end portion embedded in the bristle assembly and causing the bristles to form into said circular conformation providing said cavity of which said head forms a base,



(g) the outer portion at least of said head being flat and smooth, and
(h) said pin head being thin and flat as to its undersurface and located in the brush assembly a distance within the cavity greater than half the length of the bristle assembly to produce a substantial cavity with a relatively dense side wall for holding shaving foam.

3,309,728
RETRACTABLE BRUSH HOLDER

Donald A. Seaver, West Chesire, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Feb. 17, 1965, Ser. No. 433,417
1 Claim. (Cl. 15—184)



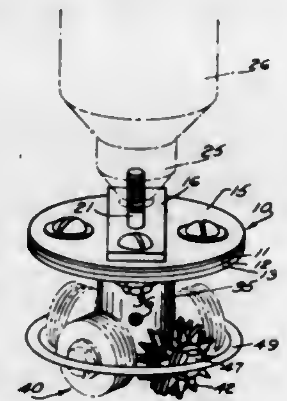
A retractable brush holder in the form of a swivel type container comprising

(a) an outer shell having a closed bottom end and an open top end;
(b) a cam sleeve fitting tightly inside said outer shell and having a spiral slot exetnding substantially throughout its length;
(c) an inner shell fitting loosely in said cam sleeve and having a vertical slot substantially co-extensive in its vertical dimension with said spiral slot;
(d) a carrier cup inside said inner shell and having a pin projecting through said vertical slot into engagement with said spiral slot;

(e) a brush having an elongated cylindrical ferrule and bristles anchored in and extending axially from the upper end of said ferrule, the bottom end of said ferrule fitting snugly in said carrier cup, the length of said ferrule being sufficient to shield said bristles from said slots when the carrier cup is fully retracted in the inside shell;
(f) said inner shell extending a substantial distance above said outer shell; an extension sleeve secured to the upper end of said inner shell, the bottom end of said extension sleeve being enlarged into an alignment with the upper edge of said outer shell, said extension sleeve projecting almost to the end of said bristles when the carrier cup is fully retracted and being of somewhat reduced diameter in its upper end portion to confine said bristles.

3,309,729
COATING REMOVER

Jasper Gilbert Dresser, Boynton Beach, Fla., assignor to Dresser Engineering, Inc., a corporation of Rhode Island
Filed July 17, 1964, Ser. No. 383,377
4 Claims. (Cl. 15—236)

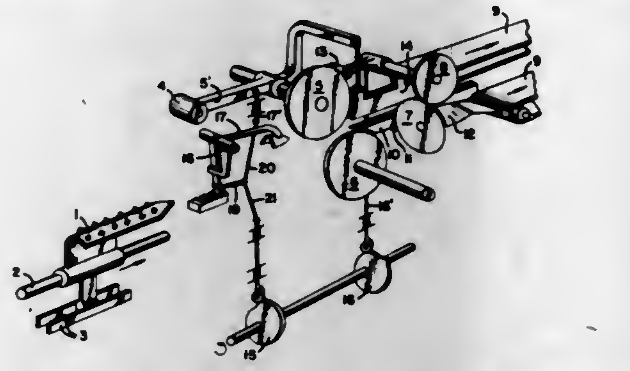


1. A device for removing a coating from a surface comprising a central hub, a plurality of shafts threaded into said central hub to rigidly mount them at one end thereof only with reference to said hub, said shafts extending radially outwardly from said hub, each shaft having a slot in its outer end surface, a removable guard ring encircling said shafts and frictionally lodged in said slot to prevent the shafts from turning to unthread from said hub and to act as a guard about said device, dressing means on said shafts and means for flexibly mounting said hub in a rotatable means.

3,309,730
FISH FILLETING MACHINES WITH DORSAL KNIVES, BELLY KNIVES, RIB KNIVES AND GUIDES ARRANGED THEREBETWEEN

Johannes Michael, Harmsdorf, via Ratzeburg, Germany, assignor to Nordischer Maschinenbau Rud. Baader, Lubeck, Germany, a firm
Filed Mar. 5, 1965, Ser. No. 437,419
Claims priority, application Germany, Mar. 7, 1964, N 24,575
1 Claim. (Cl. 17—4)

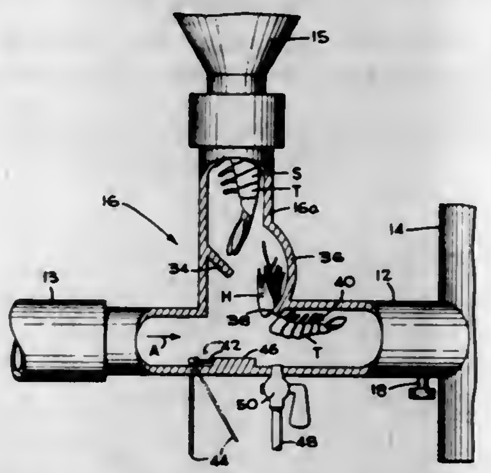
A fish filleting machine, comprising a pushing saddle for a decapitated fish with open belly cavity, a round guide carrying said saddle, rails guiding said saddle with said fish along a predetermined path, a pair of circular knives located in said path for cutting fillets from the vertebrae of said fish, an axle spaced from said knives, means connecting said knives with said axle for pivoting said knives about said axle, a pair of rigidly mounted circular knives located in said path for cutting fillets from the tail end to the belly cavity of said fish, a pair of flank knives located in said path for severing fillets from the ribs of said fish, a pair of circular knives located in said path for completely removing said fillets, conveyor belts located in said path and receiving the removed fillets, guides located in said path for collecting the spine of said fish, flaps located in front of said flank knives for controlling the belly flap of said fish, guides located behind said flank knives for deflecting said fillets, a measuring lever located in said path for measuring the height of the fish, an adjusting element connected with said measuring



lever and actuated thereby, means connecting said measuring lever with the first-mentioned means, a link connected with said adjusting element, a divided thrust rod connected with said link, a cam engaging said thrust rod, guides located in said path and connected with the first-mentioned means, another cam, and means contacting the second-mentioned cam and engaging the third-mentioned pair of knives, whereby the positions of the first and third-mentioned pair of knives and of the last-mentioned guides are adjusted.

3,309,731
METHOD FOR DEHEADING SHRIMP

Fred W. Stephenson, 625 Margaret St.,
Key West, Fla. 33040
Filed Aug. 30, 1965, Ser. No. 483,732
7 Claims. (Cl. 17—45)



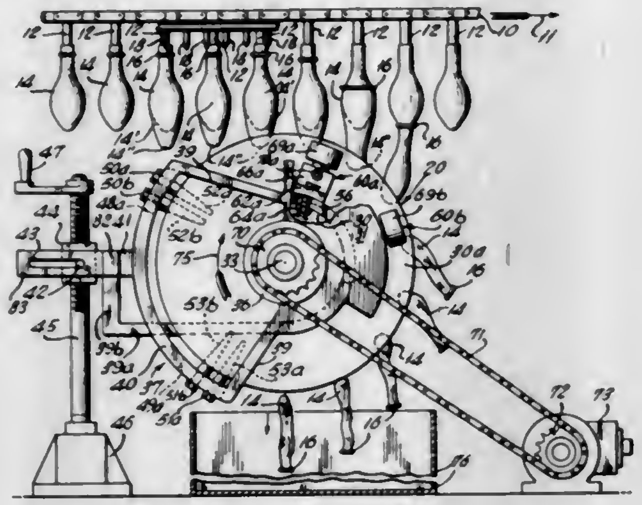
1. A method of deheading fish comprising the steps of positioning the fish so that the head or the body portion extends into a stream of high velocity fluid, supporting the juncture of such portions adjacent the edge of a stationary member, and exerting the force of the high velocity stream on one of such portions while the said juncture is supported to cause separation of such portions.

3,309,732
APPARATUS FOR STRIPPING ARTICLES FROM FORMS

Frits Cremer, New York, N.Y., assignor to Thomas M. Dodds, Inc., Garden City, N.Y., a corporation of New York
Filed Oct. 11, 1963, Ser. No. 315,617
11 Claims. (Cl. 18—2)

1. Apparatus for stripping articles from associated forms, comprising a companion pair of coaxial rotatable friction members having cooperating inner surfaces

adapted to engage said articles at an article gripping region, opening means for said friction members in advance of said gripping region for lateraly spacing said members to receive said articles therebetween, closing means for said friction members at said gripping region for clamping said articles between said friction members, a pluralty of forms having articles thereon, means for directing fluid pressure between said forms and articles to inflate the latter into surface-to-surface engagement with said inner surfaces of said members at said gripping region, and means to convey said plurality of forms and articles thereon in a predetermined longitudinal path through said gripping region whereby the inflated articles are concomitantly longitudinally conveyed and rotated away from said forms for stripping said articles therefrom by said members.



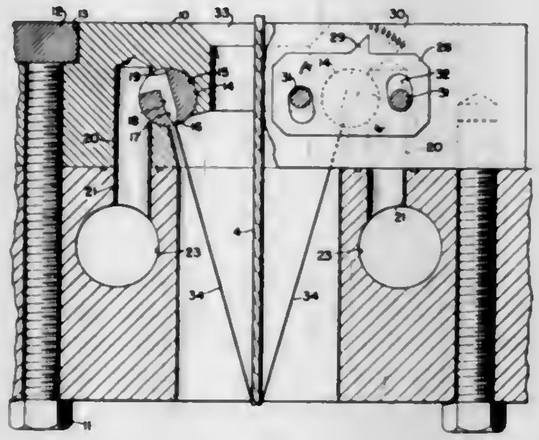
3,309,733

APPARATUS FOR PRODUCING METAL POWDER

Bertil G. Winstrom, Mequon, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed July 14, 1964, Ser. No. 382,526

5 Claims. (Cl. 18—2.5)



1. Apparatus for producing metal powder, which comprises a container for holding molten metal and having an opening therein for discharge of molten metal therefrom, a nozzle assembly disposed adjacent to the container and having a nozzle provided from an elongated solid bar, said nozzle bar having a longitudinally elongated slot extending through the nozzle bar generally centrally of the length of said bar from one side of the peripheral surface of the nozzle bar to the other, said slot having an inlet section and an intermediate section, and an outlet section disposed toward the stream of molten metal with the walls of the nozzle bar defining the inlet section being generally parallel and having greater width therebetween than the walls of the bar defining the outlet section of the slot, the walls of the outlet section also being generally parallel to each other, and the walls of the bar defining the intermediate section tapering from a greater width therebetween adjacent the inlet section to a lesser width at the outlet section to provide for gradual constriction of the fluid flowing through the nozzle bar to the outlet section for discharge therefrom in sheet-like form, liquid supply conduit means connected to the inlet section of the nozzle bar to supply liquid to the inlet section of the nozzle bar under substantially high pressure for flow therethrough and discharge from the outlet section against the molten metal to atomize the latter, means engaging the nozzle bar to prevent deflection and lateral enlargement of the slot due to the internal pressure of the liquid passing through the slot, and means to support the nozzle assembly adjacent to the container.

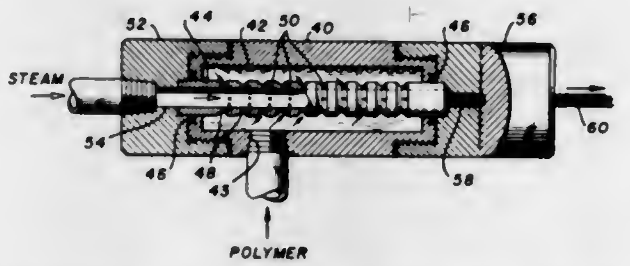
3,309,734

SPINNERETTE

George D. Bynum, Decatur, and Norman D. Sims, Trinity, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed July 27, 1964, Ser. No. 385,177

7 Claims. (Cl. 18—8)



1. Apparatus for producing filamentary materials, which comprises:

(a) a base member having a passageway extending throughout the major axis thereof, said passageway being divided into two portions having substantially different size diameters, said portions being connected by an abrupt shoulder,

(b) an inlet in the base member positioned intermediate the passageway portion having the larger diameter,

(c) an orificed element mounted in the base member, said element having small holes at an angle to the axis of the passageway for communication between the inlet and the passageway portion having the larger diameter,

(d) a first connection means for supplying a source of a filament-forming material to the inlet, and

(e) a second connection means connected to said larger diameter passageway portion upstream from the point where filament-forming material enters the passageway for supplying a fluid under pressure whereby the filament-forming material is forced through the smaller portion of the passageway.

3,309,735

METHODS AND MEANS FOR ROLLING METAL POWDER

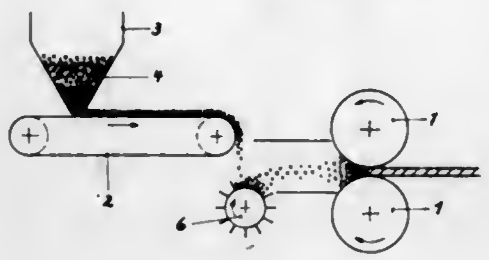
Eckard Gehring, Dusseldorf, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany

Filed Apr. 27, 1964, Ser. No. 362,864

Claims priority, application Germany, May 3, 1963, Sch 33,230

1 Claim. (Cl. 18—9)

Apparatus for rolling discrete metal particles, such as metal powder and metal granules into strips comprising a conveyer belt, a hopper for feeding metal particles to said belt, said hopper being located above said belt and having an outlet close to the belt, a pair of reducing rolls located in vertically spaced relationship with their axes horizontal and in vertical alignment, said rolls being located so that the space between the rolls is laterally spaced from but below the discharge end of said conveyer belt, and a bladed centrifugal device positioned below the discharge end of said conveyer belt and in advance of said rolls as regards the direction of rolling whereby metal particles falling by gravity from the discharge end of the conveyer belt drop onto the centrifugal device and are hurled toward and into the space between the rolls to maintain a supply of particles in the region of said space where compaction of said particles begins and ends in their movement between the rolls.



3,309,736

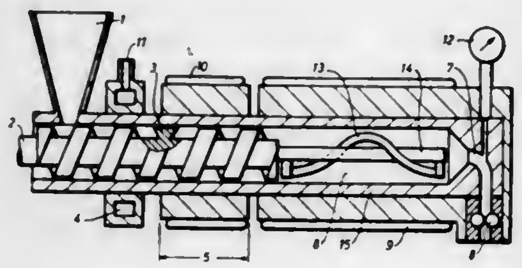
WORM PRESS

Wolf Rodenacker, Dormagen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed May 6, 1965, Ser. No. 453,657

Claims priority, application Germany, May 13, 1964, F 42,867

5 Claims. (Cl. 18—12)



1. A worm press for melting thermoplastic synthetic resins supplied in the form of shavings, which comprises a housing having an inlet disposed to receive thermoplastic resin shavings, an intermediate axial zone communicating at one end with said inlet, a heatable axial zone for melting such shavings and communicating with the other end of said intermediate zone, and an outlet communicating with said melting zone for discharging molten thermoplastic material therefrom; and a worm member disposed for rotation within said housing to convey shavings received at the inlet thereof through said intermediate zone and into said melting zone for melting therein, said worm member having a thread extending in axial length from said housing inlet through said intermediate zone and to said melting zone, said worm thread being laterally undercut at and along the root portion thereof to define a shaving conveying region between consecutive thread flights which is wider along the root than along the outer periphery of the worm member, whereby a portion of the outward radial component of shaving compaction pressure forces existing in said region acts against the laterally undercut portions of the thread thereby reducing the portion of such radially outward pressure forces acting against the housing.

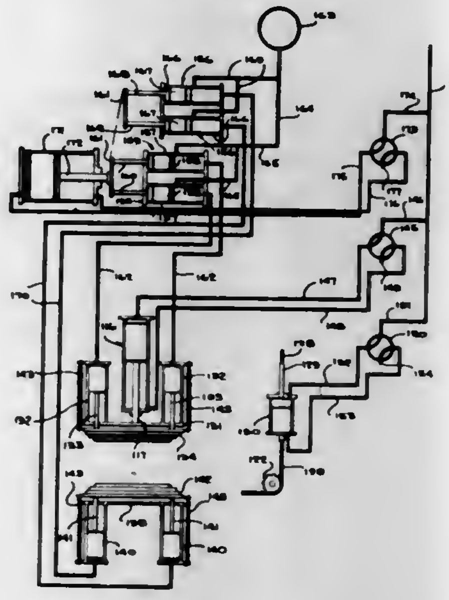
3,309,737

TIRE MOLD BEAD ALIGNING APPARATUS

Donald M. MacMillan, P.O. Box 557, Macon, Ga. 31202; Kenneth T. MacMillan, executor of said Donald M. MacMillan, deceased

Original application Mar. 29, 1960, Ser. No. 18,399, now Patent No. 3,137,032, dated June 16, 1964. Divided and this application Apr. 2, 1964, Ser. No. 356,816

5 Claims. (Cl. 18—18)



1. A bead aligning apparatus for engaging the beads of a tire to center a tire within a matrix, said bead aligning apparatus comprising a pair of opposed bead aligners for engaging tire beads of different diameters, and means for projecting and retracting said bead aligners at the same rate irrespective of variations between the resistances to the projecting and retracting.

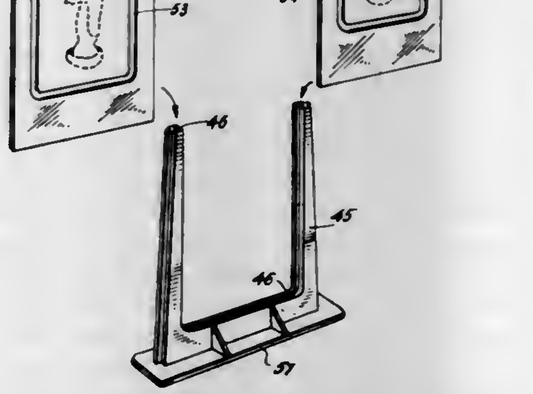
3,309,738

CASTING MOLD AND CLAMPING MEANS

Sol Friedman, 10 Ronald Drive, Monsey, N.Y. 10952

Filed Sept. 1, 1964, Ser. No. 393,601

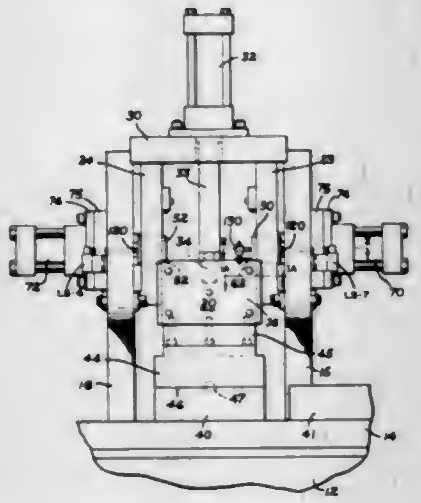
1 Claim. (Cl. 18—26)



A mold arrangement, comprising, in combination, two mold portions formed of sheet material and adapted to be juxtaposed so as to define therebetween a mold cavity, said mold portions including plane edge portions adapted, respectively, to be superposed in contact with each other when said mold portions are in a juxtaposed position; U-shaped frame means including a U-shaped inner edge face formed with a slot extending inwardly from said inner edge face for receiving said contacting edge portions and thereby maintaining said mold portions in juxtaposed position during casting of molding material in said mold cavity defined by said juxtaposed mold portions; and resilient means comprising a rigid member extending along the outer face of one of said mold portions and a resilient member attached to said rigid member and extending along the outer face of the other of said mold portions for pressing said two mold portions towards each other when the same are maintained in juxtaposed position.

3,309,739
PLASTIC INJECTION MACHINE

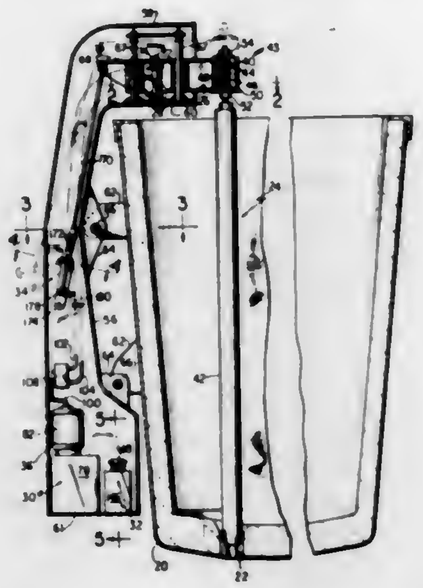
Elmer D. Trueblood, Dayton, Ohio, assignor to Trueblood, Inc., doing business as Union Tool & Engineering Co., Dayton, Ohio, a corporation of Ohio
Filed Apr. 20, 1964, Ser. No. 361,125
4 Claims. (Cl. 18—30)



1. In a plastic injection machine in which a first mold part cooperates with a succession of movable cooperating selectable mold parts fixedly mounted on a movable table, an improved clamping mechanism for closing said first mold part with each of said selectable mold parts over a range of variations in height and parallelism of said selectable mold parts with respect to said first mold part, comprising means forming guideways, a mold-supporting head mounted for opening and closing movement on said guideways, means defining clearance between said head and said guideways providing limited, self-aligning movement of said head with respect to said guideways in a plane transverse to the direction of the opening and closing movement of said head in said guideways, means on said head supporting said first mold part for movement therewith between an open retracted position and a closed position in which said first mold part is in closing engagement with a selected one of said cooperating mold parts, a first cylinder connected to move said head between said open and said closed positions, a pair of generally oppositely positioned locking cam members mounted for transverse reciprocal movement with respect to said guideways between retracted positions clear of said head and inward positions in engagement with said head, means on said head and said locking cam members defining mutually cooperating cam surfaces extending generally the width of said members and effective upon transverse inward movement of said cam members into engagement with said head to force said head and the said first mold part into closing engagement with each selected one of said selectable mold parts over variations in height and parallelism of said selectable mold parts with respect to said first mold part by limited transverse movement of said head in said guideways, and a cam member operating cylinder for each of said cam members connected to move said cam members between said restricted and said inward positions.

3,309,740
STOPPER ROD RIGGING FOR LADLES

Alfred Teplitz, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Apr. 21, 1964, Ser. No. 361,391
7 Claims. (Cl. 22—85)



1. Apparatus for precision pouring of molten steel into a continuous casting mold, said apparatus comprising:

(a) a bottom pour ladle having a bottom discharge opening,

(b) a stopper rod rigging including a stopper rod for controlling th edischarge of molten steel through said opening and a cross bar connected to said stopper rod,

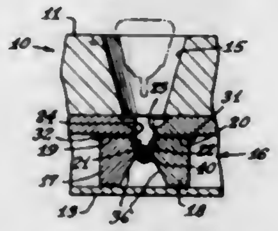
(c) a framework rigidly mounted on the side of the ladle,

(d) guide means comprising a plurality of guide members each secured directly to both said cross bar and said framework for guiding the vertical movements of said stopper rod rigging while preventing horizontal movement thereof, and

(e) an actuation system for said stopper rod rigging including a hydraulic motor directly connected to said framework and said cross bar and a hydraulic pump and control system mounted on said framework for controlling the movements of said hydraulic motor.

3,309,741
DIE CASTING APPARATUS WITH BENT SPRING MOLD MAINTAINING MEANS

James Philip La Point, 613 Georgia SE., Albuquerque, N. Mex. 87108
Filed Dec. 16, 1963, Ser. No. 330,873
6 Claims. (Cl. 22—94)



1. Apparatus for forming a die cast product comprising:

a housing having included in a wall thereof an opening for pouring and ejecting a casting;

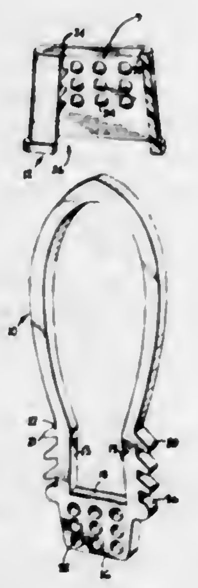
a pair of die members, including jaws having a portion of adjacent surfaces thereof beveled to form a V-shaped notch at the parting line therebetween when said jaws are in abutting engagement, contained and guided in said housing and being movable toward and away from each other in a straight line, said die members forming a mold cavity on their adjacent surfaces when held in abutting engagement, said mold cavity being aligned with said opening in said housing;

means for maintaining said die members in abutting engagement and for maintaining said mold cavity in alignment with said opening including a stop and a bent spring secured intermediate its ends to said housing and having two free segments of unequal tension each engaging one of said jaws to urge abutting engagement therebetween, the segment thereof having the greater tension being arranged to rest against the stop when said jaws are abutting and said parting line is in alignment with said opening;

and means interposable between said die members for moving said die members out of abutting engagement and for ejecting a die cast product from said mold cavity through said opening.

3,309,742
CLOSURE DEVICE

Wesley S. C. Chin, P.O. Box 8412, Los Angeles, Calif. 90008
Filed Dec. 17, 1965, Ser. No. 514,465
1 Claim. (Cl. 24—30.5)



A detachable closure device to close the open end of a bag, comprising:

a closed, loop-shaped bridle member, including a plurality of oppositely-disposed legs joined in spaced relationship to provide an opening therebetween through which the open end of a bag may be inserted, a wall having a smooth seat surface bridging between the lower portion of the joined legs;

a plurality of longitudinally-spaced deformable hooks projecting from opposite sides of said legs, the supper surface of each of the hooks being sloped downwardly and the bottom surface thereof being sloped downwardly and outwardly to an apex with the upper surface to form a root of larger dimension than the apex of the hook;

a sleeve member having an opening therethrough narrower than that of the width extent between the apexes of the said deformable hooks on the legs and adjustable lengthwise along said legs to deform the hooks in order to engage the sleeve to the hooks;

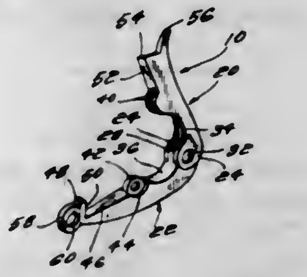
said sleeve member including a peripheral ridge means defined about said opening adjustably engageable with said hooks to prevent the removal of said bridle member from said sleeve opening;

a plurality of aligned through-openings in said wall bridging between said leg means, and a plurality of horizontally-disposed projections on the inner surface of said sleeve member in a spaced relationship corresponding to the relationship of said openings to lock a bag end by impaling the bag by said projections; and

stop means on said legs longitudinally spaced from said hooks and engageable by said peripheral sleeve ridge to limit the lengthwise adjustment of said bridle member relative to said sleeve member, said engagement of said sleeve member with said lateral hook projections being releasable by inward deformation of said legs.

3,309,743
JEWELRY CLASP

Gene Verri, Warwick, R.I., assignor to Coro, Inc., a corporation of New York
Filed Mar. 15, 1965, Ser. No. 439,562
3 Claims. (Cl. 24—116)



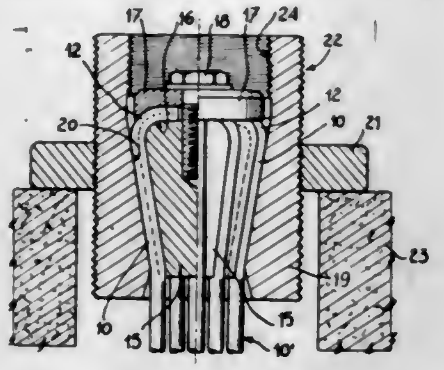
1. In a clasp construction for connecting an article of jewelry to an ornamental chain, a pair of members pivotally connected together at an end thereof and movable from an open position to a closed position, wherein the opposing edges of said members are located in engagement, both said members having arcuate shaped depressions formed in the opposing edges thereof that define a chain receiving opening when said members are located in the closed position thereof, spaced ears formed on the opposing edge of one of said members, a projecting portion formed on the opposing edge of the other of said members and receivable between said ears in friction engaging relation when said members are located in the closed position thereof, an eyelet joined to one of said members on the end thereof opposite to the pivot connection of said members and being located such that the axis thereof is parallel to the axis of the chain receiving opening, said article of jewelry being mounted on said eyelet through a connection that properly orients the article of jewelry when the chain is placed around the neck of a wearer, and a finger grip joined to one of said members on the end thereof that is opposite to said pivot connection and projecting outwardly of the member to which it is joined for ready engagement by said wearer, said finger grip being located adjacent to said eyelet in the closed position of said members and being positioned such that it is facing rearwardly so as to be normally hidden from external view when the ornamental chain is located around the neck of the wearer.

3,309,744
DEVICE FOR ANCHORING RODS

Virginio Sironi, Via Cernaia 31, and Davide Albertelli, Via Panizzi 15, both of Milan, Italy
Filed Jan. 20, 1964, Ser. No. 338,801
Claims priority, application Italy, Jan. 24, 1963, 682,002
7 Claims. (Cl. 24—122.6)

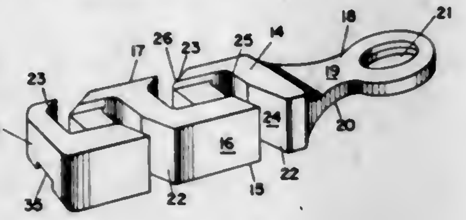
1. In an assembly for prestressing concrete beams or the like, an inner body of substantially frustoconical configuration, a plurality of elongated tension elements respectively having bent portions conforming to the configuration of the exterior surface of said body and distributed

about and engaging said exterior surface of said body, clamping means clamping said elements at their bent portions to said inner body, connecting means releasably connecting said clamping means directly to said inner body, and an outer sleeve surrounding said elements and said inner body and having an inner surface of frustoconical configuration engaging said bent portions of said elements so that when tension is applied to the latter they will be wedged between said inner body and said sleeve.



3,309,745
CABLE STAY

David H. Gintz, Edward W. Messmer, and Stanley Miodus, Erie, Pa., assignors to Plant Service Corporation, Erie, Pa., a corporation of Pennsylvania
Filed Apr. 12, 1965, Ser. No. 447,431
4 Claims. (Cl. 24—129)

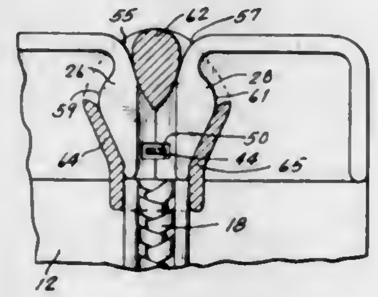


1. A stay comprising an elongated body having a first side and a second side,
a center line,
a first and a second edge,
two spaced first slots extending inward from said first edge past said center line,
and means to attach said stay to a building,
two spaced second slots formed in said body and extending from the said second edge past said center line,
one said first slot being disposed between two said second slots,
one said second slot being disposed between two said first slots,
a recess in one said first side between a said first and a said second slot,
a recess in said second side between a said first and a said second slot,
said first slots and said second slots each terminating in a slot portion inclined toward said means to attach said stay to a building.

3,309,746
END STOPS

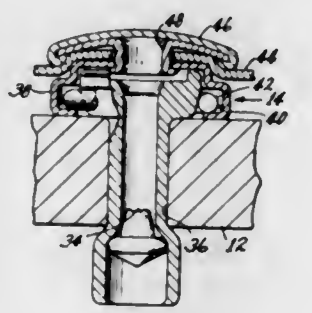
Alfred E. Carlile, Meadville, Pa., assignor to Talon, Inc., a corporation of Pennsylvania
Filed May 26, 1964, Ser. No. 370,172
7 Claims. (Cl. 24—205.11)

1. In an open end slide fastener which includes:
(a) a slider member,
(b) a pair of slide fastener tape stringers joined at one end thereof and each carrying a plurality of interlocking fastener elements adapted to be engaged and disengaged in response to the movement of said slider member towards the closed and open position, respectively,
(c) top stops secured to each of said stringers adjacent its endmost fastener element and at their respective open ends for preventing said slider member from being removed therefrom, said top stops adapted to be moved conjointly into substantially parallel relationship in response to the movement of said slider member to the fully closed position, the improvement comprising:
(d) detent means to project outwardly from the inner surface of one wing of said slider member and adapted for movement therewith;
(e) there being a longitudinally elongated channel portion carried by at least one of said top stops and containing a well therein such that when said slider member is moved to its fully closed position said channel portion will be moved intermediate said fastener elements with its upper surface lying in a plane to interfere with the passage of said detent means, movement of said slider member to said fully closed position enabling said detent means to move into position relative to said channel portion whereby said detent means is received within said well to impede the movement of said slider member from said fully closed position to said open position.



3,309,747
FASTENING DEVICES

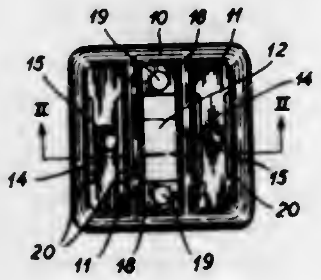
William W. Smith, Shelton, Conn., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Oct. 27, 1964, Ser. No. 406,706
4 Claims. (Cl. 24—208)



1. A snap fastener part, comprising a snap fastener element adapted to being mounted on an accessible surface of a relatively rigid and incompressible support member to receive and engage a mating snap fastener element, blind rivet means including a tubular rivet body formed integrally with and extending rearwardly from the snap fastener element, and means including a frangible mandrel disposed in the rivet body and projecting forwardly from the snap fastener element for setting said rivet by a pull exerted on the mandrel from the accessible side.

3,309,748
PLASTIC FASTENING MEMBER FOR SNAP FASTENERS

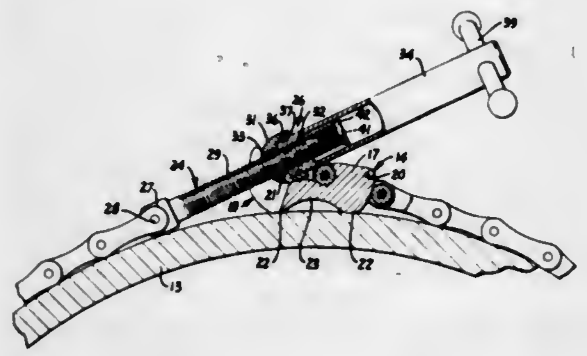
Louis Aackersberg Mortensen, Skodsborg Strandvej 196, Skodsborg, Denmark
Filed Sept. 29, 1964, Ser. No. 400,032
Claims priority, application Denmark, Nov. 12, 1963, 5,306/63
10 Claims. (Cl. 24—216)



5. A plastic fastening member for a snap fastener, said fastening member comprising a frame and resilient ribs fixed at both ends to said frame and extending in spaced relationship, locking means for locking said fastening member to a similar fastening member in superposed relationship, in which relationship the ribs of said fastening member are angularly offset in relation to the ribs of the similar fastening member, the ribs of said fastening member jointly defining with the ribs of the similar fastening member an opening delimited by the middle portions of said ribs, said opening being adapted for insertion therein of a studlike member having a transverse dimension larger than a transverse dimension of said opening, and said ribs being adapted to resiliently deflect to releasably engage said studlike member.

3,309,749
CHAIN COLLAR

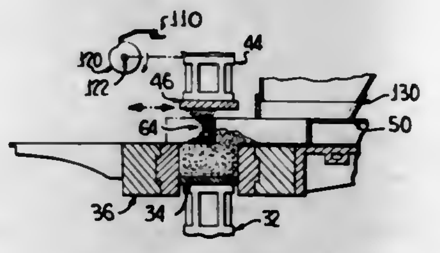
John B. Gill, 20433 Earl St., Torrance, Calif. 90503
Filed Nov. 19, 1965, Ser. No. 508,753
3 Claims. (Cl. 24—249)



1. A chain collar for a pipe, comprising a length of roller chain adapted for encircling a pipe, an elongated rod having an end secured to an end of said roller chain, a sleeve formed for receiving the other end of said rod in telescoping relation and having a threaded connection thereto whereby relative rotation of said sleeve on said rod will displace said rod axially into and out of said sleeve, a latch member journaled on the end of said sleeve confronting the end of said rod to which said chain is secured, and a connector unit having a bifurcated hook portion formed for releasably hooking over said latch member astride said rod and an opposed hook portion formed for releasably hooking into said chain at any desired location.

3,309,750
APPARATUS AND METHOD FOR MANUFACTURING BRICK

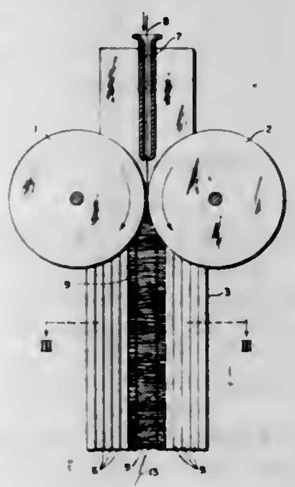
Henry R. Gally, Crown Point, Ind., assignor to E. J. Lavino and Company, Philadelphia, Pa., a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 409,830
4 Claims. (Cl. 25—45)



1. Apparatus for manufacturing brick comprising upper die means, lower die means, brick mold means for receiving said die means, charger means mounted for movement between said upper die means and said lower die means and in overlying relationship to said brick mold means, said charger means including front plate means, wetting means supported on said front plate means and extending outwardly therefrom and movable therewith, said wetting means including nozzle means adapted to create a liquid spray, said nozzle means including a first nozzle portion directed upwardly to direct liquid spray onto the undersurface of said upper die means, said nozzle means including a second nozzle portion directed downwardly to direct liquid spray onto the interior surfaces of said brick mold means and onto the upper surface of said lower die means upon movement of said charger means between said die means, and means connected with said wetting means for controlling the operation thereof in predetermined timed relationship to the movement of said charger means between said die means.

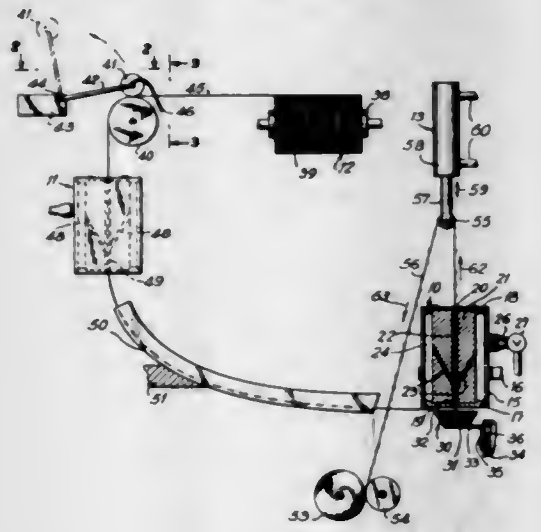
3,309,751
STUFFER BOX CRIMPING APPARATUS

James W. I. Heijnis and Pierre L. L. M. Rietjens, Arnhem, Netherlands, assignors to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Jan. 15, 1965, Ser. No. 425,863
Claims priority, application Netherlands, Jan. 25, 1964, 64/00599
1 Claim. (Cl. 28—1)



A stufferbox crimping apparatus comprising a pair of spaced, parallel flat plates forming a crimping chamber having a longitudinal axis and open sides, a pair of rotatable yarn gripping discs partially enclosed within said plates at one end thereof for supplying yarn to said crimping chamber, pressure exerting means at the other end of said plates whereby the yarn is folded in said chamber and adapted to release said yarn whenever the pressure exerted by said pressure means is overcome by the pressure of the yarn in said chamber, each of said plates having a central recess extending coextensively along said longitudinal axis from adjacent the yarn gripping nip point of the discs, said recesses forming a yarn path extending to a yarn discharge point; and serrations on each side of each recess for maintaining yarn in said yarn path during passage from the yarn gripping point of the discs to the yarn discharge point of the apparatus.

3,309,752
APPARATUS FOR PRODUCING SLUB YARN
Carl W. Nuissl, Sheldonville, Mass., assignor to Nuval Co., Cumberland, R.I., a corporation of Rhode Island
Filed Mar. 28, 1966, Ser. No. 538,032
2 Claims. (Cl. 28—1)



1. Apparatus for forming slubs in yarn comprising: a yarn supply, pneumatic means for blowing yarn from said supply under relatively light tension toward an open-top receptacle defining a turbulence chamber, means to guide said yarn into said receptacle, a slubbing nozzle directing air downwardly into said receptacle through the open top thereof, withdrawal means drawing slubbed yarn from said receptacle upwardly through said slubbing nozzle at a rate less than the rate of feed into said receptacle, means intermediate said slubbing nozzle and said withdrawal means for varying the rate of withdrawal of slubbed yarn from said receptacle to vary the frequency of slub formations, said intermediate means comprising a nonbinding yarn guide for continuously guiding the yarn from said stubbing nozzle and means to reciprocate same.

3,309,753
NEEDLE BOARD FOR FELTING LOOMS AND THE LIKE
Kurt Astor, Lambrecht, Pfalz, Germany, assignor to J. J. Marx, Lambrecht, Pfalz, Germany, a firm of Germany
Filed Apr. 14, 1965, Ser. No. 448,137
Claims priority, application Germany, Apr. 15, 1964, M 60,662
11 Claims. (Cl. 28—4)

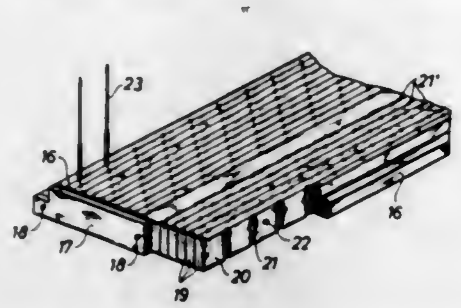
1. A needle board for felting looms and the like comprising in combination:

(1) a laminated structure composed of a multiplicity of juxtaposed strip-like laminae arranged with the width thereof determining the thickness of said board,

(2) a mounting frame supporting said structure,

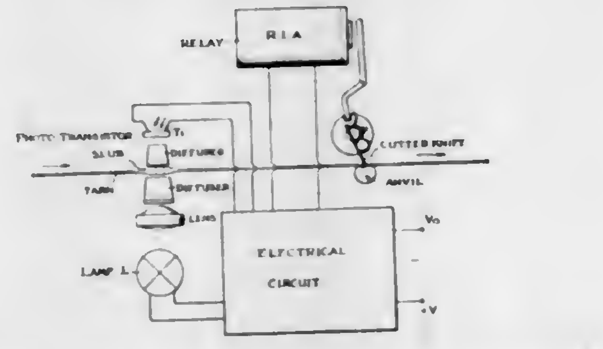
(3) means removably securing said frame to said structure, to firmly hold said laminae together, to form a compact needle board,

(4) each of said laminae being provided with a plurality of superficial transverse grooves with the grooves of adjoining laminae of said structure being aligned to form mounting holes through said board distributed over the area of said board according to a predetermined needle pattern, and



(5) a plurality of felting needles mounted in said holes.

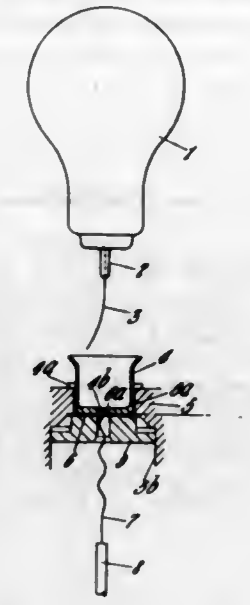
3,309,754
SELF-REGULATING LIGHT-RESPONSIVE DEVICES
Eric Metcalf, 12 Glebe Road, Headley Bordon, England
Continuation of application Ser. No. 138,503, Sept. 15, 1961. This application May 26, 1965, Ser. No. 465,234
Claims priority, application Great Britain, Sept. 23, 1960, 32,710/60
10 Claims. (Cl. 28—64)



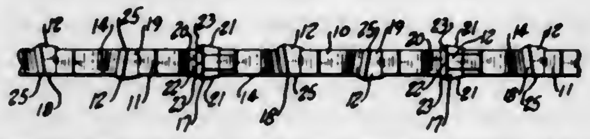
1. A yarn slub detector comprising an optical system having a lamp and a cooperating photo-sensitive device between which yarn may be drawn, a first transistor amplifier responsive to variations in the output from said photo-sensitive device which exceed a determined time duration for controlling the current through said lamp, and discriminator means for detecting short term variations in the output from said photo-sensitive device which result from the passage of an irregularity in said yarn through said optical system and for delivering electrical output signals indicative of such short term variations.

3,309,755
THREADING OF WIRES OR THE LIKE THROUGH APERTURES
Antony Harry Croucher, "Homewood," West End Lane, Esher, Surrey, England
Filed Apr. 8, 1965, Ser. No. 446,634
Claims priority, application Great Britain, May 13, 1964, 20,005/64
1 Claim. (Cl. 29—25.19)

An arrangement for threading wire or the like through an aperture in a member comprising a spiral element for picking up the wire or the like, a member reciprocable along the length of the spiral, having an aperture wide enough to take the wire diameter and free to move laterally in accordance with the spiral formation of the pick-up element for bringing the free end of the pick-up element into register with the aperture, means for advancing the pick-up element through the aperture in line with the general direction of the wire or the like to be picked up, means for rotating the pick-up element and wire with respect to each other to pick up the wire or the like and means for bringing the member and the wire together to pass the wire through the aperture.



3,309,756
CIRCULAR SAW
Arthur R. Segal, Jasper, Ind., assignor to North American Products Corp., Jasper, Ind., a corporation of Wisconsin
Filed Oct. 30, 1964, Ser. No. 407,829
1 Claim. (Cl. 29—95)



A cutting tool having a body with a cutting edge portion, and having spaced teeth which project outwardly from said cutting edge portion and laterally to its opposite sides, said teeth having cutting edges at the junctions between their faces and tip portions and being further characterized by the following:

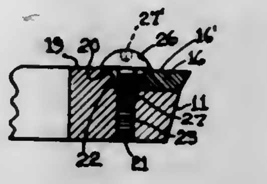
A. the faces of all the teeth being disposed at a rake angle which is between slightly positive and slightly negative;

B. the teeth being arranged in groups each comprising a lead tooth and a pair of finishing teeth following the lead tooth;

C. each finishing tooth having cutting and non-cutting corners at opposite sides of its tip portion,
   (1) each cutting corner comprising cutting edges at the tip and one side of its finishing tooth, which cutting edges are disposed at an angle of less than 90° to one another,
   (2) the cutting corners on the two finishing teeth of each group being disposed at opposite sides of said cutting edge portion and having sharp apexes which are adapted to travel in orbits spaced equal distances laterally to opposite sides of said cutting edge portion and define the width of the kerf cut by the tool,
   (3) and the finishing teeth of each group having their faces disposed at positive but opposite and equal shear angles;

D. and each lead tooth having sides which project equal distances laterally to opposite sides of said cutting edge portion of the tool, beyond the orbits of the non-cutting sides of the apexes of the finishing teeth but within the orbits of the apexes of the cutting corners on the finishing teeth, each lead tooth further having
   (1) a neutral face shear angle,
   (2) opposite sides which are convergent at the tip portion of the tooth,
   (3) and a square cutting edge at its tip at which the convergent sides of the tooth terminate.

3,309,757
BORING BARS
Ignatius Konwal, 335 Parkview Ave., Elmhurst, Ill. 60126
Filed Apr. 1, 1966, Ser. No. 539,508
2 Claims. (Cl. 29—96)



1. In combination, a tool holder comprising

(a) a bar having at one end portion a bit-receiving cavity,

(b) a bit mounted in said cavity,

(c) an elongated counterbore formed in said bar at one side of and opening into said cavity,

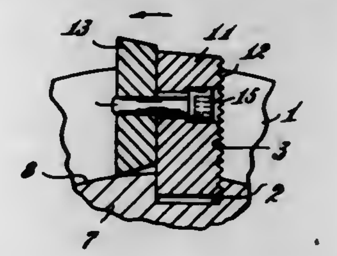
(d) the top surface of said bit when mounted in said cavity being in a plane above the bottom surface of said counterbore and below the top surface of said bar,

(e) said bar having an opening formed therein centrally with respect to said counterbore,

(f) a clamping screw having an enlarged head and a resilient shank threaded into said opening,

(g) said head being of a diameter less than the elongated length and greater than the width of said counterbore so as to span the width of said counterbore when initially threaded into said opening formed in said bar, said head having a portion bearing upon the top surface of said bar and an equal portion clampingly bearing upon the top surface of said bit when said clamping screw is further threaded into said opening with its resilient shank biased to cant said head into clamping engagement with said top surface of said bit below the plain of the top surface of said bar.

3,309,758
CUTTING TOOL
Thurston V. Williams, Wilton, N.H., assignor to The O.K. Tool Company, Inc., Milford, N.H., a corporation of New Hampshire
Filed Jan. 13, 1965, Ser. No. 425,290
12 Claims. (Cl. 29—105)

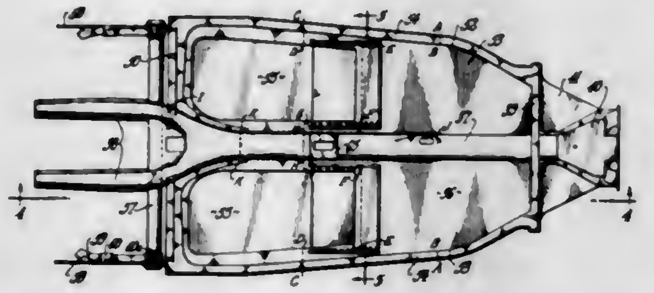


1. A cutting tool comprising a carrier movable in a predetermined direction, the carrier having a recess with a bottom, a mouth opposite the bottom and two sides, one side facing in said direction and the other side facing in the opposite direction, one end of the recess being open, a shelf extending endwise from the carrier at said open end, the shelf being offset from said mouth in the direction of said bottom to provide a shoulder at said end, a polygonal bit having one side seating on said shelf and another side seating on said shoulder, a bit backing mounted in said recess and projecting beyond said end behind

said bit, and means to hold the back of the bit against said backing with said sides of the bit seating on the shelf and shoulder as aforesaid.

3,309,759
METHOD OF RECONSTRUCTING A FRAME

Joseph C. Vittone, P.O. Box 169,
Riverside, Calif. 92502
Continuation of application Ser. No. 336,463, Jan. 8, 1964. This application May 19, 1966, Ser. No. 551,465
10 Claims. (Cl. 29—155)



1. The method of reconstructing a standard automotive sedan vehicle frame to one for service in an off-the-road class of vehicle, said standard frame being of the type having a horizontally disposed, longitudinal sheet metal tunnel provided at its forward end portion with a front cross member extending laterally in opposite directions therefrom, with a fork at its rearward end, a frame end plate projecting laterally from the furcations of the fork, and floor plates joined to and extending between said front cross member and said frame end plate, with inner edges of said floor plates joined to the bottom of said tunnel, and outer longitudinal edges thereof formed to include raised reinforcing box sections, that comprises:

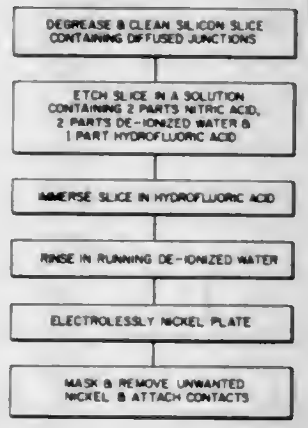
cutting away and discarding rearward portions of said floor plates, including making cuts extending inwardly from the outer longitudinal edges thereof to said tunnel, and along said tunnel forwardly of said fork for a distance of at least substantially a foot;

severing said tunnel at two transverse planes substantially a foot apart within the region along which said floor plates are cut away, and removing a corresponding section of said tunnel;

welding together the remaining cut ends of the tunnel; and reconstructing the floor plates to cover over areas opened up by the cutting away of portions thereof.

3,309,760
ATTACHING LEADS TO SEMICONDUCTORS

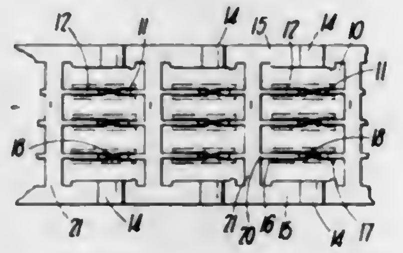
Frank J. Reznick, Neptune, and John G. Nussear, Edison, N.J., assignors to The Bendix Corporation, Holmdel, N.J., a corporation of Delaware
Filed Nov. 3, 1964, Ser. No. 408,634
1 Claim. (Cl. 29—155.5)


DEGREASE & CLEAN SILICON SLICE CONTAINING DIFFUSED JUNCTIONS
ETCH SLICE IN A SOLUTION CONTAINING 2 PARTS NITRIC ACID, 2 PARTS DE-IONIZED WATER & 1 PART HYDROFLUORIC ACID
IMMERSE SLICE IN HYDROFLUORIC ACID
RINSE IN RUNNING DE-IONIZED WATER
ELECTROLESSLY NICKEL PLATE
MASK & REMOVE UNWANTED NICKEL & ATTACH CONTACTS

A method of making ohmic contacts to a slice of silicon comprising: degreasing and cleaning said slice, then etching said slice in a 2:2:1 solution of 48% nitric acid, deionized water and concentrated hydrofluoric acid for approximately 15 seconds, next immersing said slice of semiconductor material in concentrated hydrofluoric acid for approximately 5 seconds, next rinsing in running deionized water, next electrolessly nickel-plating said slice, then removing unwanted portions of the nickel plate by etching, and finally attaching contacts to desired portions of the nickel plate remaining on the slice.

3,309,761
METHOD OF MAKING AND PLATING SOCKET CONTACTS

Stanley Thomas Deakin, Walton-on-Thames, Surrey, England, assignor to Sealectro Corporation, Mamaroneck, N.Y., a corporation of New York
Filed Aug. 13, 1963, Ser. No. 301,761
Claims priority, application Great Britain, Aug. 16, 1962, 31,480/62
1 Claim. (Cl. 29—155.55)



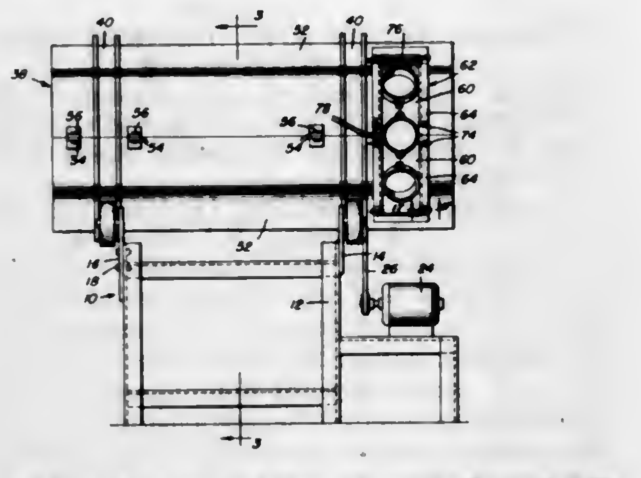
The method of making an electrical socket contact in the form of a channel-shaped member of resilient metal with the base of the channel omitted, or severed from the side walls, along an intermediate portion of the length of the member and the side walls of the channel being bowed inwardly along the said portion to provide, within the channel shape, resilient contact surfaces for engagement with a contact pin inserted lengthwise along the channel, which method comprises the steps of punching along a strip of resilient metal a succession of groups of apertures, each group comprising at least two apertures side by side across the strip, separated by a lengthwise bar left between the apertures, and bounded at the edges of the strip by side portions thereof, punching a lengthwise slot through each bar, intermediate in the length thereof; bending a portion of the strip out of the plane of said strip an aligned transverse curvature in the side portions and in the slotted portions of the bars, bending the portions of the bars on each side of the slots into positions perpendicular to the plane of the strip thereby to form two opposed contact surfaces curved towards one another on each bar, applying tension lengthwise to the strip thereby to reduce to some extent the curvature of the side portions and of the contact surfaces with consequential separation of the latter, plating the strip and then releasing the tension and severing from the rest of the strip the bars to constitute individual contacts.

3,309,762
METHOD FOR MAKING MOLDED SANDWICH TUBULAR SEPTIC TANKS AND OTHER MOLDED TUBULAR ARTICLES

Roscoe H. Harper, Lewistown, Pa., assignor to Harper Industries, Inc., Lewistown, Pa., a corporation of Pennsylvania
Filed Mar. 8, 1963, Ser. No. 263,989
5 Claims. (Cl. 29—157)

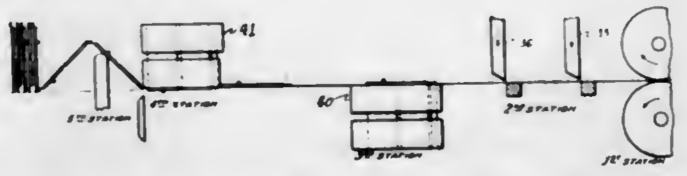
1. The method of molding a tubular object comprising lining a tubular rotatable mold with a wax mold release, then lining the mold with a layer of fiberglass fabric of a desired thickness that has been pre-wetted with thermosetting polyester resin to the approximate shape thereof, momentarily rotating the mold at a high speed to eliminate air pockets in and between the fabric, then continuing

the rotation but at a slow speed and then adding a layer of similarly pre-wet fiberless filler of a desired thickness to the pre-wet fabric, then increasing the speed of rotation and pumping hot air into the mold until the material jells, stopping the hot air and stopping the rotation of the mold, adding a second layer of similarly pre-wet fiberglass fabric of desired thickness therewithin to the approximate desired shape, then heating and rotating the mold, adding a second layer of similarly pre-wet the second layer of fabric into the filler layer and continuing the heat and rotation until the material solidifies, then releasing the tank body from the mold.



3,309,763
METHOD FOR MAKING A HEAT EXCHANGER

Edward P. Oddy and Lubomyr Kinal, Detroit, Mich., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application Dec. 20, 1962, Ser. No. 246,069, now Patent No. 3,182,481, dated May 11, 1965. Divided and this application Oct. 29, 1964, Ser. No. 413,675
4 Claims. (Cl. 29—157.3)



1. A method of forming a fin structure from an elongated strip of fin stock comprising the steps of:

(a) forming a plurality of transverse parallel slits in said fin stock defining at least one first section and at least one second section of said stock;

(b) forming a first series of tube apertures in said first section of said fin stock by bending a portion of said fin stock upwardly from said first section and a plurality of spacer elements having convoluted ends bent toward each other in said first section by bending a portion of said fin stock upwardly from said first section and bending said edges toward each other;

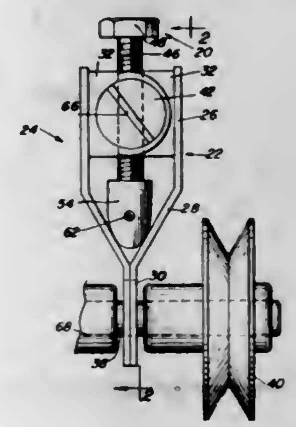
(c) forming a second series of tube apertures in said second section of said fin stock by bending a portion of said fin stock downwardly from said second section and a plurality of spacer elements having convoluted edges bent toward each other in said second section by bending a portion of said fin stock downwardly from said second section and bending said edges toward each other;

(d) folding one of said sections toward the other thereof such that said tube apertures are coaligned and said spacer elements of each said sections extend in the same direction with the spacer elements of one of said sections contacting the fin stock of said other of said sections, and

(e) inserting a plurality of tubes in said tube apertures.

3,309,764
PULLEY REMOVAL TOOL HAVING THIN, WIDE FACES ADAPTED TO BE FORCED APART BY SCREW OPERATED WEDGE ELEMENT

Henry G. Klatt, Jr., 5722 S. Elizabeth,
Chicago, Ill. 60636
Filed Jan. 29, 1965, Ser. No. 428,906
1 Claim. (Cl. 29—239)



A pulley removal tool, comprising, in combination,

(a) a pivot shaft, including a vertically disposed central bore therein,

(b) two oppositely disposed relatively thin, wide face members, each of said face members including

  (1) an upper face portion including pivot flanges movably attached to said pivot shaft,

  (2) a lower face portion with a bottom edge, including a re-entrant portion being adapted to receive a shaft member therein,

(c) a threaded operating screw member extending through said vertically disposed central bore, said screw member having a clip-receiving groove disposed near the bottom thereof,

(d) a generally wedge shaped force applying member attached to the lower end of said screw member so as to allow relative rotation between said force applying member and said screw member, said force applying member being of substantially the same horizontal extent as said face members and being adapted to contact said face members substantially along its entire horizontal extent, said force applying member having the top thereof attached to the bottom of said screw member with the point of said force applying member disposed downwardly and away from the bottom of said screw member, and

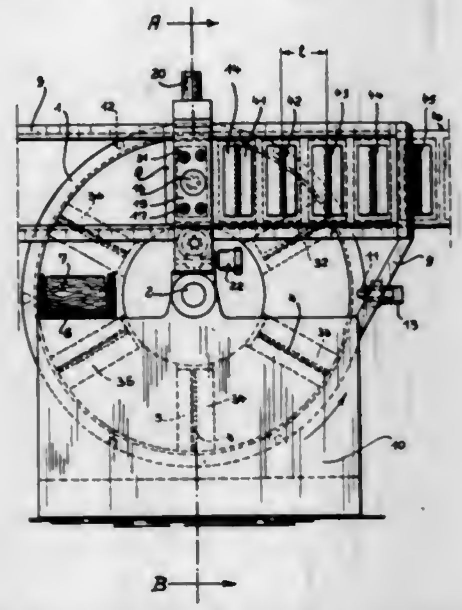
(e) clips for attaching said screw member to said force applying member, said clips being attached at one of the respective ends thereof to the sides of said force applying member, and extending therefrom over the top of said force applying member, and having the other respective ends thereof terminating at and engaging said clip-receiving groove in said screw member, whereby rotation of said screw member in one direction causes said force applying member to move downwardly between said face members and force said lower portions of said face members apart.

3,309,765
APPARATUS AND METHODS FOR REPLACING THE KNIFE UNITS OF A WOODCUTTING MACHINE

Paul Arthur Kirsten, Ernst-Moritz-Arndt-Strasse 6, Beuel, near Bonn, Germany
Filed June 11, 1965, Ser. No. 463,306
Claims priority, application, Germany, June 13, 1964, K 53,219
12 Claims. (Cl. 29—401)

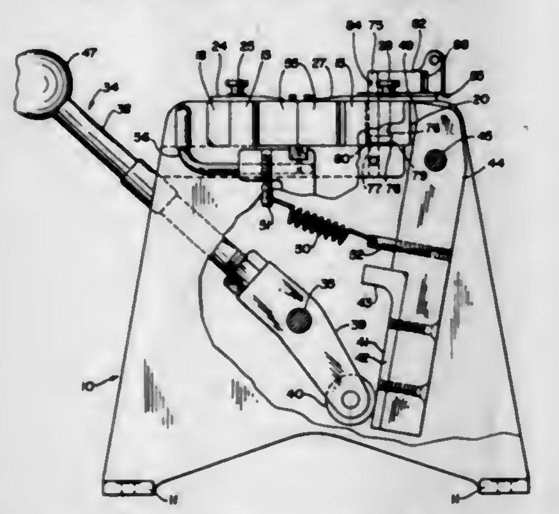
11. A method of replacing removable knife units on a rotatable carrier of a woodcutting machine, said method comprising detachably connecting replacement knife units

in receiving stations in a frame, moving the frame and carrier relative to one another between index positions to successively align the receiving stations one at a time with the units in the carrier, and successively moving one knife unit from the carrier to the frame and then replacing the knife unit with a replacement unit in the carrier.



3,309,766
COLD PRESSURE WELDING APPARATUS AND METHOD

Walter J. Rozmus, Hubbardsville, N.Y., assignor to Kelsey-Hayes Company, Utica, N.Y.
Filed Mar. 27, 1964, Ser. No. 355,350
22 Claims. (Cl. 29—470.1)



1. A device for effecting a weld comprising:
(a) a frame structure;
(b) a workpiece gripping die carried by the frame structure and having relatively movable sections, the sections having mating faces, each mating face having a recess therein defining a workpiece gripping opening when the faces are in abutment;
(c) die actuation means connected to the frame structure and operably connected to the die for selectively closing the die in workpiece gripping movement;
(d) die positioning means connected to the frame structure and operably connected to the die for selectively positioning the die sections one position at a time in loading and unloading positions;
(e) said die sections when in the loading position having the mating faces spaced a distance less than the lateral dimension of said workpiece gripping opening to define a loading opening in said die whereby a workpiece may be fed facilely longitudinally of the workpiece axis into said loading opening but not between the mating faces; and,
(f) said die sections when in the unloading position having the mating faces spaced a distance greater than the lateral dimension of said workpiece gripping opening whereby to facilitate removal of a workpiece.

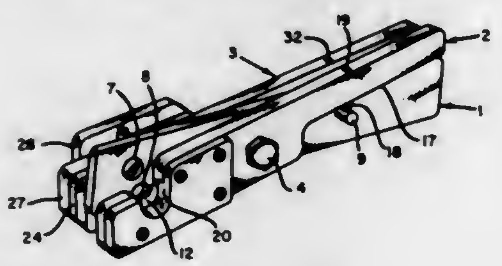
3,309,767
BRAZING ALLOY AND METHOD OF BRAZING WITH SAME

Lawrence Sama, Seaford, and George T. Pepino, Jr., Westbury, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Jan. 14, 1960, Ser. No. 2,554
3 Claims. (Cl. 29—494)

3. The method of brazing niobium and niobium alloys that consists in applying a finely divided alloy of titanium and 5 to 12 weigh percent silicon suspended in a liquid nitrocellulose carrier to the surfaces to be brazed, heating to a temperature of approximately 2700° F. in a non-oxidizing atmosphere for a period of approximately ten minutes to cause the braze to flow readily, and thereafter permitting the brazed surfaces to cool.

3,309,768
CABLE CUTTER FOR SIMULTANEOUSLY PERFORMING A PLURALITY OF SPACED CUTS

Franklin E. Thompson, 744 San Pablo, Sunnyvale, Calif. 94087
Filed Dec. 2, 1964, Ser. No. 415,543
3 Claims. (Cl. 30—91.1)



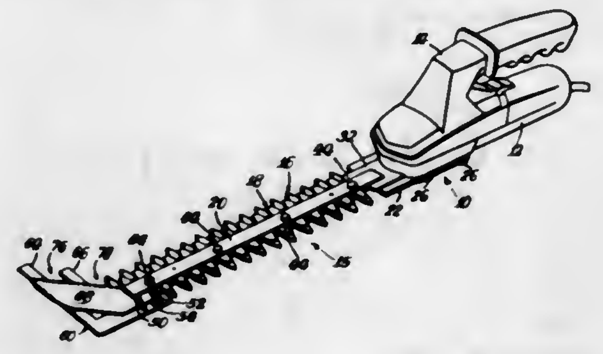
1. A cable cutter, comprising:
a cable holding arm;
a first cutting arm on one side of said holding arm;
a second cutting arm on the other side of said holding arm;
said holding arm and said first and said second cutting arms having longitudinal axes which are substantially parallel to each other;
a cable-engaging surface on said holding arm for receiving a length of cable disposed substantially perpendicular to said axes of said arms;
a cutter attached to each of said cutting arms, said cutter being spaced from each other along the length of said cable; and
pivot means interconnecting all three of said arms, said first and said second cutting arms being pivotable about said pivot means to bring said cutters into spaced engagement with a length of said cable in said cable-engaging surface of said holding arm.

3,309,769
HEDGE TRIMMER HAVING A RECIPROCATING SAW

Ralph C. Maxson, Skokie, Ill., assignor to Vermont American Corporation, Louisville, Ky., a corporation of Kentucky
Filed Mar. 22, 1965, Ser. No. 441,694
1 Claim. (Cl. 30—144)

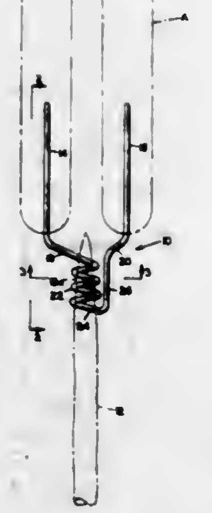
In a hedge trimmer or the like of the type having a first fixed cutting blade with a plurality of cutting teeth spaced along a longitudinal edge thereof, a second movable cutting blade having a plurality of cutting teeth

spaced along a longitudinal edge thereof, and drive means for reciprocating the movable blade along a longitudinal path relative to the fixed blade to effect cutting of relatively small branches, the improvement comprising, in combination, a saw blade carried on the outer end of said movable blade for reciprocation therewith to effect cutting of relatively large branches, said saw blade having a toothed cutting edge inclined to said longitudinal path of movement of said movable blade, and a generally F-shaped branch support member having a base portion carried on the outer end of said fixed blade and having a pair of longitudinally spaced depending legs which are adjacent said saw blade in side-by-side relation thereto and which together with the end of said fixed blade define a pair of longitudinally spaced branch-receiving slots both of which open in a direction generally perpendicular to said longitudinal path of movement of said movable blade and which are generally traversed by said saw blade in such a manner that when a branch to be cut is moved into one of said slots said branch will engage against said toothed cutting edge of said saw blade while supported in said slot, one of said slots being wider than the other to accommodate branches of varying sizes, and said F-shaped branch support member being longitudinally adjustable to vary the width of the innermost one of said pair of slots.



3,309,770
ROASTING FORK

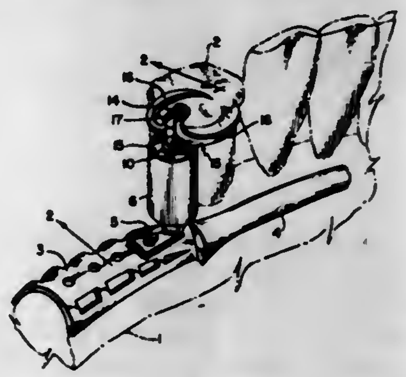
Willis M. McBride, Jr., 11304 SW. Boones Ferry Road, Portland, Oreg. 97219
Filed Jan. 17, 1966, Ser. No. 521,206
4 Claims. (Cl. 30—322)



1. A roasting fork formed from a single piece of bendable material comprising a pair of elongated, substantially parallel tines the forward ends of which comprise the terminal ends of said piece of material, and a rearward end structure interconnecting said tines; said rearward end structure including a conical, spiral coil portion leading rearwardly from the rearward end of one of said tines and having the apex thereof disposed forwardly, said coil portion being arranged to rotatably receive and grip a forward end of a handle, a laterally extending portion leading from the rearward end of said coil portion, and a forwardly extending portion leading from said laterally extending portion and leading to the rearward end of said other tine.

3,309,771
ARTIFICIAL DENTURES AND STRESS RELIEVING ATTACHMENT THEREFOR

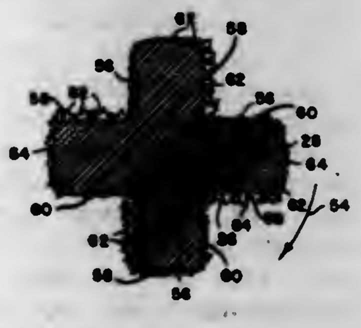
Holger S. Floren 1635 NE. 111th St., Miami, Fla. 33161
Filed Sept. 23, 1964, Ser. No. 398,523
6 Claims. (Cl. 32—7)



1. A partial denture having a pressure-actuated adjustable coupling device, a clasp for an abutment tooth and a saddle comprising, in combination, a saddle constituting a frame for the partial denture, a housing connected to the saddle and upstanding therefrom to lie closely adjacent to the side of an abutment tooth, the housing being chambered downwardly for its major height, the chamber being open at the top of the housing, a bushing fitting into the opening of the chamber, the bushing being apertured, an adjustable rod passing through the aperture in the bushing and having its lower end entering into the chamber, the chamber having fixed means within it for adjustable engagement with the lower part of the rod, a clasp for the abutment tooth, the upper end of the rod being attached to the clasp, the portion of the rod in the chamber having yieldable connection with the fixed means in said chamber whereby the attached clasp is automatically adjustable with respect to the saddle to minimize pressure upon the gums and the abutment tooth.

3,309,772
COMBINATION BLADED BUR DIAMOND DRILL

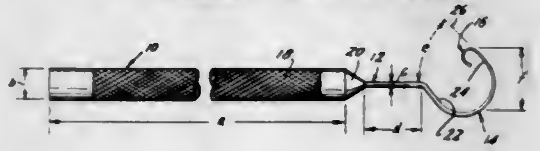
Nathaniel H. Lieb and Harvey E. Rosenbluth, Philadelphia, and Anthony J. Turchi, Bala Cynwyd, Pa., assignors to Star Dental Manufacturing Co., Inc. (also known as Star Dental Manufacturing Company, Inc., and Star Dental Mfg. Co., Inc.), a corporation of Delaware
Filed June 18, 1964, Ser. No. 376,018
7 Claims. (Cl. 32—48)



1. A dental bur comprising a shank and a head having a tip, said head having a plurality of grooves cut therein, said grooves extending to said tip, said grooves dividing

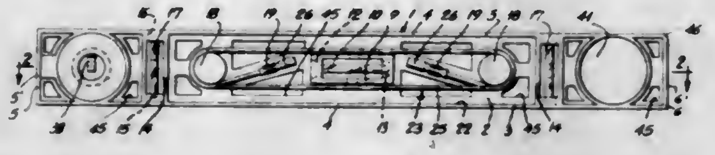
said head into a plurality of blades, with each blade having a leading blade surface and a trailing blade surface within said head, with each leading blade surface having diamonds bonded thereto, said head having land areas between said grooves, with said land areas also having diamonds bonded thereto, whereby said bur is adapted to be used for cutting and grinding operations.

3,309,773
DENTAL IMPLEMENT AND KIT
Robert Weller, 1932 Rockaway Parkway,
Valley Stream, N.Y. 11236
Filed May 7, 1964, Ser. No. 365,682
9 Claims. (Cl. 32—66)



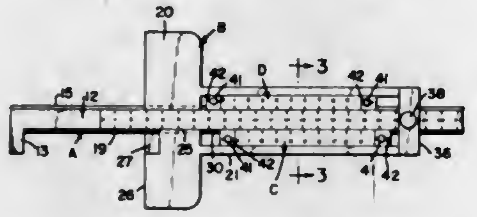
1. A dental implement for introducing ligatures or dental floss between teeth comprising a handle portion, a shank portion extending coaxially from said handle portion, and a working loop portion extending from said shank portion, said working loop portion defining a plane at least substantially coextensive with said handle and shank portions and including a free and portion constituting a thrust portion adapted to extend through an interdental space between adjacent teeth, said thrust portion being substantially rectilinear, said working loop portion including an engaging loop portion on said thrust portion and curving from the thrust portion in the same direction as the working loop portion, said engaging loop portion including a free end spaced from the thrust portion, said engaging loop portion having an inner diameter of about 0.02–0.04 inch, said working loop portion having a tapering cross-section and defining a free space of a transverse dimension of at least about 0.35 inch.

3,309,774
COMBINATION SPIRIT AND HYDROSTATIC LEVELS AND CHALK LINE
André Cloutier, 168 St. Faustin St., St. Jerome,
Quebec, Canada
Filed Sept. 20, 1965, Ser. No. 488,395
2 Claims. (Cl. 33—87)



1. A spirit level comprising a body having parallel top and bottom flanges, end flanges normal to said top and bottom flanges and a web joining said flanges along an edge thereof, a plurality of elongated spirit level tubes disposed in frames formed by said web and at an angle to each other, said body forming a cavity adjacent one of said end flanges, a spool rotatably mounted within said cavity, a handle for rotating said spool secured thereto a rope wound on said spool passing through an opening made in said one end flange, a knob attached to the outer end of said rope, said cavity adapted to receive chalk or other powder material for coating said rope to be used as a chalk line; said end flange, provided with an opening for the passage of said rope, forming a small recess at the outside face thereof for completely storing the knob secured to the outer end of said rope in the wound condition of said rope on said spool, and a cover removably closing said cavity and having a sliding fit with said spool for retaining powdered material within said cavity.

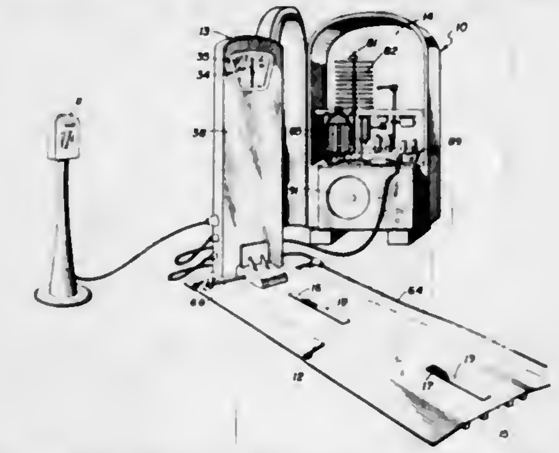
3,309,775
VERNIER TOOL
Le Roy R. Vieregge, 1885–79 E. Bayshore Road,
East Palo Alto, Calif. 94303
Filed May 6, 1964, Ser. No. 365,459
1 Claim. (Cl. 33—143)



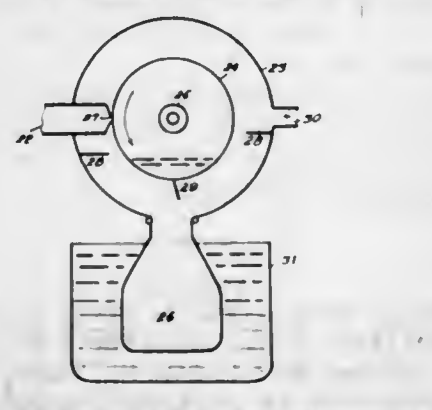
A precision measuring device comprising: a blade calibrated on one surface and having a rigid body including a pair of longitudinal edges, a pair of elongated ribs secured to and extending along respective longitudinal edges, said body being further provided at one end thereof with a foot rigid to and extending laterally from one of said longitudinal edges; a pair of rigid elongated vernier scales; a generally T-shaped frame, said frame comprising a reference block and a scale supporting frame extending perpendicularly therefrom, said reference block having a reference edge and slot extending transversely of said block and opening with said reference edge, said slot defined by a pair of spaced edges, each spaced edge having an undercut groove for slidably receiving a respective rib of said blade, said scale supporting frame having a groove defining a longitudinally extending planar portion aligned with said slot and of a width equal to that of the blade and ribs and stepped upstanding edge portions extending the length of the scale frame, said vernier scales being adjustably secured to the stepped portions such that they overhang a portion of the central planar portion, said overhanging portion of the vernier scales and said groove defining a further slot for slidably receiving the ribs of the blade, and an end section transversely spanning the scale frame at the end of the scale frame opposite the reference block and having locking means thereon for securing the blade in adjusted positions, said reference block being further provided with a recess at said reference edge and opening into the slot for receiving the foot, said foot having a pair of faces parallel to said reference edge; said vernier scales each having a calibrated upper surface co-planar with said one surface of said blade, the first of said vernier scales having a fiducial mark adapted to align with the zero calibration mark on said blade when one of said foot faces is aligned with said reference edge, the second of said vernier scales having a fiducial mark adapted to align with the zero calibration mark on said blade when the other of said foot faces is aligned with said reference edge.

3,309,776
AUTOMOBILE WHEEL ALIGNMENT APPARATUS
Martin S. Papazian, 123 Moreland St.,
Worcester, Mass. 01609
Filed June 6, 1963, Ser. No. 286,022
3 Claims. (Cl. 33—203.14)

1. Automobile wheel alignment apparatus, comprising
(a) a gage consisting of two bars over which the automobile passes to cause a movement of the bars proportional to the amount of mis-alignment of the wheels,
(b) a coin-operated switch located on one side of the gage,
(c) a reset switch located on the said one side of the gage,
(d) a selector mechanically connected to the bars to actuate a swingable arm which occupies a position dictated by the said movement of the bars, the selector having a plurality of switch contacts arranged in an arc for contact successively by the movable member, the arm having a pointed free end, the selector having a toothed bar which moves toward the pointed end of the arm to move it slightly, if necessary, into complete registry with one of the switch contacts,
(e) an indicator having a plurality of records, each bearing a distinctive message, one of the records being rendered operative when the movable member occupies a position corresponding to that one record, and
(f) a pressure-operated transfer switch located on the other side of the gage to render the indicator operative after the automobile has passed over the gage.



3,309,777
PROCESS FOR MAKING UNIFORMLY CONSTITUTED FINELY DIVIDED PARTICULATE MATERIAL
Robert S. Hutton, Curunda Heights, Canal Zone, assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 30, 1963, Ser. No. 305,890
5 Claims. (Cl. 34—5)

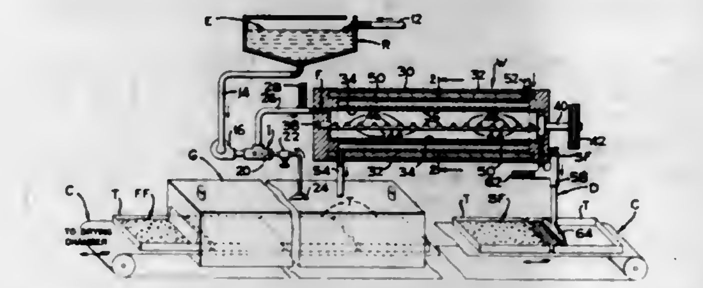


1. Method of drying biological suspensions to a dispersible aerosol form which comprises aerosolizing the biological suspension, partially surface drying the aerosol droplets to form particles, subsequently impinging the aerosol particles onto a cold collecting surface, thereby encompassing each of the particles in a layer of pure water ice, removing the frozen aerosol particles from the cold surface and freeze drying under vacuum.

3,309,778
WOOD DRYING METHOD
Robert W. Erickson, St. Paul, Minn., assignor to The Regents of the University of Minnesota, Minneapolis, Minn., a corporation of Minnesota
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,869
5 Claims. (Cl. 34—5)

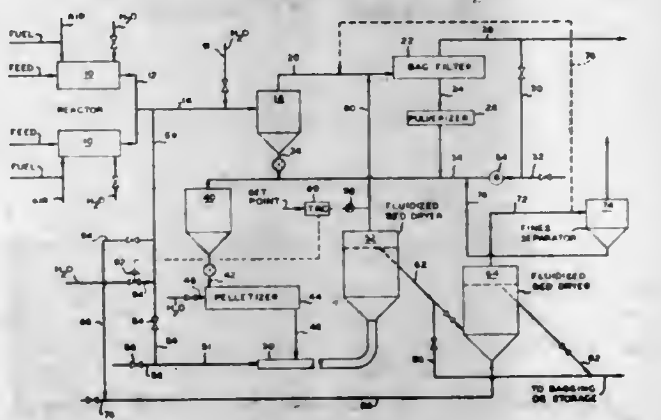
1. A method of accelerating the drying rate of lumber which is normally susceptible to damage if subjected to rapid drying at elevated temperatures and upgrading the lumber by minimizing occurrence of collapse and honeycombing and reducing shrinkage, which method comprises
(A) pretreating lumber in green condition by subjecting to freezing conditions to thoroughly freeze the liquid fraction therein, and then
(B) rapidly drying the prefrozen lumber by subjecting to conditions of high temperature above the critical temperature at which damage normally occurs and low relative humidity.

3,309,779
DEHYDRATION OF SOLIDS-BEARING LIQUIDS
Lewis F. Ginnette, Cupertino, Rauno A. Lampi, San Jose, and John A. Abbott, Menlo Park, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 2, 1966, Ser. No. 524,588
4 Claims. (Cl. 34—5)



1. A process for dehydrating solutions or the like comprising the steps of introducing an inert gas into the solution and whipping the solution to produce a foam; abstracting heat from the foam during whipping to produce a slush foam that comprises a conglomeration of concentrated solution, ice crystals and gas bubbles; abstracting heat from the slush foam until the solvent in the foam is substantially completely frozen to produce a frozen foam that encompasses a network of voids corresponding to the gas bubbles; placing the frozen foam in a vacuum drying chamber; and adding the heat of sublimation to the ice in the frozen foam while maintaining the total gas and water vapor pressure over the ice content, throughout substantially the entire ice structure, low enough to prevent water vapor molecules sublimed from the ice from remixing with the substantially dry solids content of the product.

3,309,780
PROCESS AND APPARATUS FOR DRYING WET PARTICULATE SOLIDS
Robert R. Goins, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Original application Apr. 9, 1962, Ser. No. 186,038, now Patent No. 3,238,634. Divided and this application Jan. 10, 1966, Ser. No. 519,644
6 Claims. (Cl. 34—10)



1. A process for drying wet pellets compacted from carbon black which comprises the steps of:
(1) entraining said pellets in a stream of hot drying gas comprising essentially smoke from the carbon

black reactor wherein the carbon black was produced, water-quenched to a temperature in the range of 500 to 1000° F. to form a suspension of said pellets in said gas;

(2) passing the suspension of step (1) through an elongated transport drying zone of substantial length to dry same substantially;

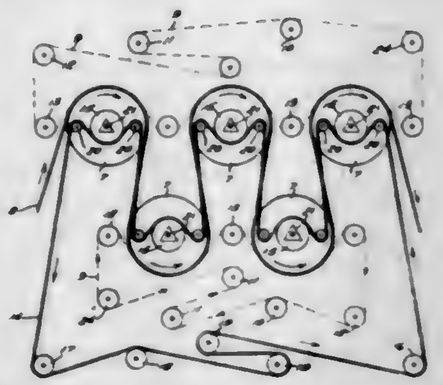
(3) passing said pellets from the zone of step (2) upwardly into a fluidized bed dryer of expanded lateral dimension relative to the zone of step (2), said gas being the fluidizing gas;

(4) maintaining said pellets in fluidized condition in the dryer of step (3) so as to further dry said pellets to a relatively low moisture content; and

(5) separately withdrawing gas and dried pellets from the dryer of step (3).

3,309,781
SPEED DIFFERENTIAL DRIVING METHOD AND APPARATUS

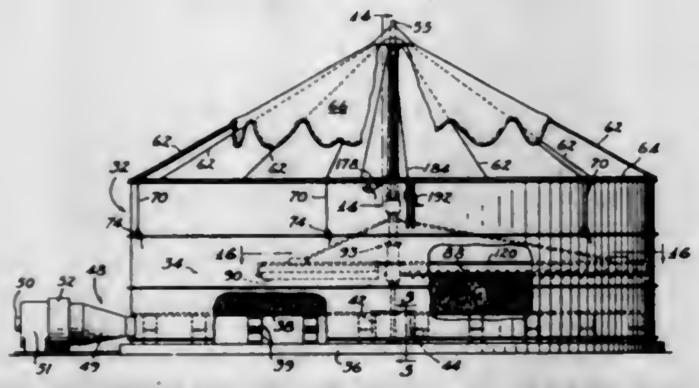
John D. Boadway, Grand'Mere, Quebec, Canada, assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 175,574, Feb. 26, 1962. This application Dec. 9, 1964, Ser. No. 417,003
12 Claims. (Cl. 34—25)



9. A method of rotatively driving a plurality of cylindrical members to differentially control the speeds of rotation thereof which comprises elastically connecting all of said members together to provide a closed driving system for transmission of rotative driving power from one to another of said members, applying a driving force to said system at at least one point therein, and selectively extracting power from the rotative driving power applied to each of said members.

3,309,782
METHOD AND APPARATUS FOR DRYING GRAIN IN A SHALLOW BIN

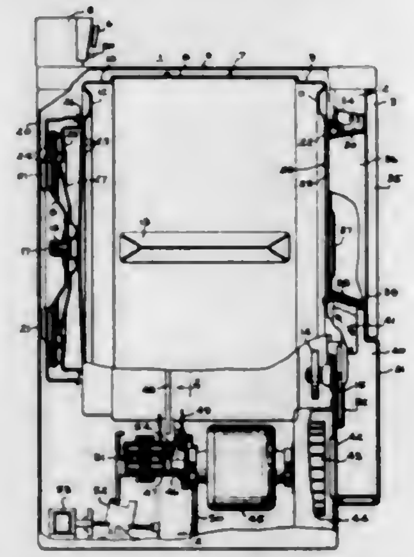
Franklin J. Ellis, 656 E. Highland, Wooster, Ohio 44691
Filed Jan. 4, 1966, Ser. No. 518,658
12 Claims. (Cl. 34—26)



1. In a method of drying grain, the steps comprising: loading grain onto a perforated floor of a circular container having upstanding sides, spreading the grain to form a layer three to six feet deep and with a concave contour to the upper surface of the layer, heating air, and forcing the heated air upwardly through the perforated floor and layer of grain.

3,309,783
CLOTHES DRYING MACHINE HAVING REVERSING DRUM DRIVE MEANS

Joseph C. Worst, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Mar. 9, 1964, Ser. No. 350,344
3 Claims. (Cl. 34—48)



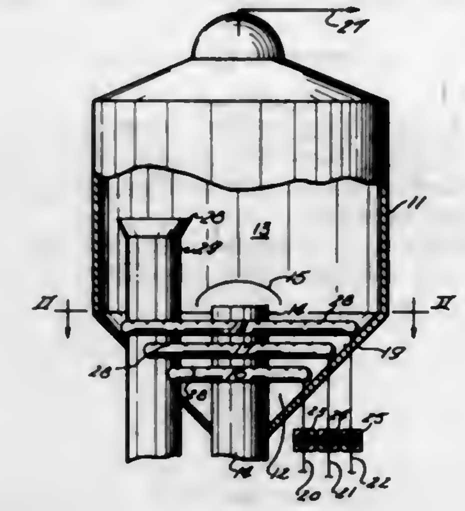
1. A clothes drying machine comprising:
(a) a clothes basket rotatable on a substantially non-vertical axis;
(b) heating means for heating clothes in said basket to cause drying thereof;
(c) drive means for rotating said basket alternatively in either one direction or in another direction;
(d) control means for providing a drying operation during which said heating means and said rotating means are operated;
(e) reversing means for cyclically causing said drive means to reverse the rotation of said basket during an operation;
(f) and manual means for selectively actuating said reversing means, so that a user of said drying machine may select unidirectional or cyclically reversing rotation of said clothes basket.

3,309,784
APPARATUS FOR CONTACTING FLUIDIZABLE SOLIDS WITH GASIFORM FLUIDS

George F. Adams, 2111 E. 26th St., Tulsa, Okla. 74114
Filed Mar. 16, 1964, Ser. No. 352,186
3 Claims. (Cl. 34—57)

2. Apparatus for contacting fluidizable solids and gas which comprises
a vertically disposed vessel;
outlet means in the upper portion of said vessel for removing gases;
means for laterally disposing said solids into said vessel to form a fluidized bed;
means to remove said fluidizable solids from said vessel;
means to distribute said gas substantially across the cross-section of said bed in substantially vertical annular zones in intimate contact with said fluidizable solids, said means to distribute said gas comprising:
a plurality of annularly and vertically spaced conduit rings disposed adjacent to and supported by the lower walls of said vessel, the upper side of each of said rings having apertures therein permitting gas flow therethrough in said substantially vertical annular zones,

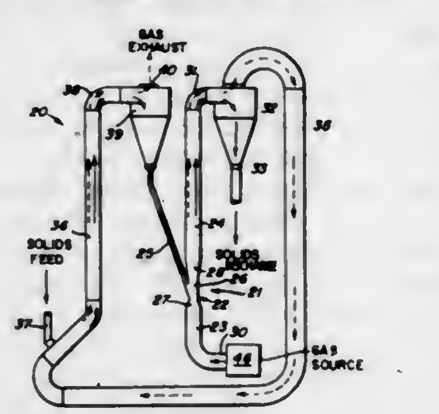
gas inlet means communicating with each of said rings for admitting gas thereto, and



means to variably regulate the flow of gas to each of said spaced rings to vary said intimate contacting in each of said annular zones.

3,309,785
APPARATUS FOR FORMING A GAS-SOLIDS SUSPENSION

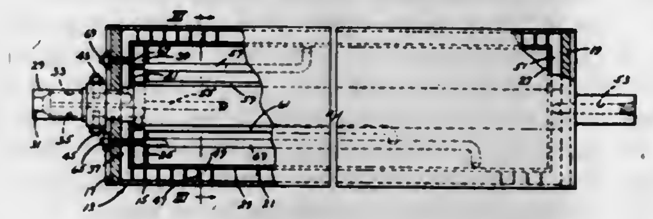
Richard E. King, Duluth, Minn., assignor to Northern Natural Gas Company, Omaha, Nebr., a corporation of Delaware, and W. S. Moore Co., Duluth, Minn.
Filed Oct. 23, 1964, Ser. No. 406,134
21 Claims. (Cl. 34—57)



1. Apparatus for forming a gas-solids suspension, said apparatus comprising:
a venturi throat zone;
a first conduit, upstream of said venturi throat zone, with an inner periphery curved in its entirety;
a gas source in communication with said first conduit;
a second conduit, downstream of said venturi throat zone, with an inner periphery curved in its entirety;
a venturi approach zone between said first conduit and the venturi throat zone;
a venturi recovery zone between said second conduit and the venturi throat zone;
said venturi zones and said conduits defining a path for movement of gas from the beginning of the first conduit to the end of the second conduit;
said venturi throat zone having a pair of flat parallel sides and a pair of curved sides each extending between said flat sides;
said venturi approach zone having a pair of flat sides, converging from the first conduit to the venturi throat zone, and a pair of curved sides each extending between said flat sides;
said venturi recovery zone having a pair of flat sides, diverging from the venturi throat zone to the second conduit, and a pair of curved sides each extending between said flat sides;
each flat side on the venturi throat zone being continuous with a respective flat side on the venturi approach zone and with a respective flat side on the venturi recovery zone;
each curved side on the venturi throat zone being continuous with a respective curved side on the venturi approach zone and with a respective curved side on the venturi recovery zone;
the cross-sectional area of said venturi throat zone being less than the cross-sectional area at any other location along said gas path;
the distance between parallel flat sides of the venturi throat zone being less than the smallest interior dimension, measured in a direction transverse to the direction of gas flow, at any other location along said gas path;
a first flat side of said venturi throat zone having a width, measured in a direction transverse to the direction of gas flow through the venturi throat zone, substantially greater than said distance between the parallel flat sides of the venturi throat zone;
a tube having one end joining the venturi throat zone at said first flat side;
and an opening in said first flat side defined by the junction therewith of said one end of said tube;
said gas path extending in an upward direction;
said tube extending angularly from said junction with the venturi throat zone, and in an upward direction.

3,309,786
HEATED ROLL

John D. Conti, Elkins Park, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 18, 1965, Ser. No. 440,717
5 Claims. (Cl. 34—124)



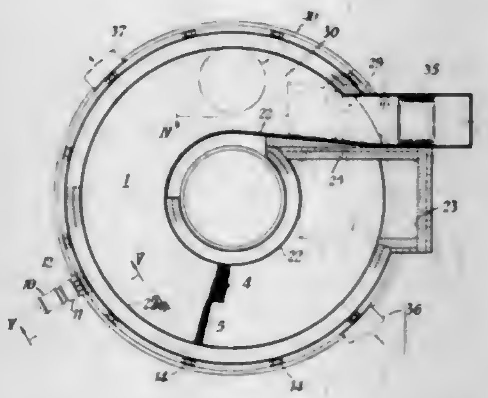
1. A heated roll including a pair of rotatable drums each having an annular wall and closed end walls, one of said drums positioned within the other and being spaced from the annular and end walls thereof, the spaces between the adjacent drum end walls forming fluid inlet and outlet chambers, means for delivering a heated fluid into said inlet chamber, means for discharging spent fluid from said outlet chamber, means partitioning the space between the drum annular walls into a helical channel extending between said inlet and outlet chambers, means providing a fluid supply chamber adjacent to said inlet chamber, means for delivering a heated fluid into said supply chamber, a series of conduits extending from said supply chamber and opening into said helical channel at different locations spaced longitudinally of said inner drum, and valve means for individually controlling the flow of heated fluid into said conduits from said supply chamber.

3,309,787
GRATE COOLERS

George Howard Forsyth, Joseph Hendrick Taylor, and Andrew Campbell Grant, Lancashire, England, assignors to Vickers-Armstrongs (Engineers) Limited, London, England, a British company
Filed Mar. 30, 1964, Ser. No. 355,745
Claims priority, application Great Britain, Apr. 3, 1963, 13,287/63
5 Claims. (Cl. 34—185)

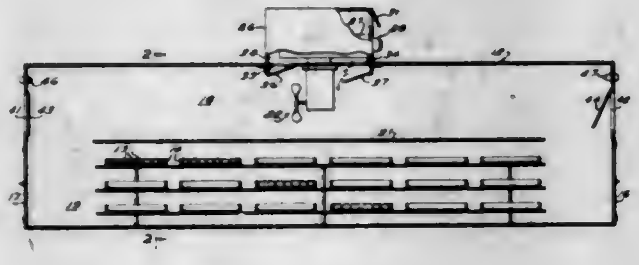
1. A heat exchanger comprising a housing, a rotatable annular grate mounted in said housing and constructed

and arranged to support material in a granular or nodular form, a first scraper carried by said housing and arranged above and adjacent the grate for removing said material from the grate, means for passing gases through the grate and through the material thereon to effect heat exchange between the material and the gases while the material is being carried to the scraper by the rotating grate, portions of said housing defining an upwardly facing surface beneath said grate spaced from said grate for receiving material droppings from said grate, other portions of said housing defining an outlet opening in said surface, and a second scraper carried by said grate and arranged beneath said grate and constructed and arranged to rotate with said grate adjacent said surface to displace said material droppings from said surface and into said outlet opening; a plurality of arcuately spaced generally radial baffles provided beneath the grate dividing the space beneath the grate into sections and constructed and arranged to inhibit flow of gases circumferentially of the grate beneath the grate; and further comprising at least two ducts arcuately spaced from each other around the grate, and drum means circumferentially bounding said sections and defining therebetween at least two compartments of arcuate form each communicating with respective of said at least two ducts, each compartment communicating with a plurality of said sections thereby communicating said at least two ducts with the space beneath the grate.



3,309,788
APPARATUS FOR DRYING FRUIT AND VEGETABLES AND OTHER PRODUCTS

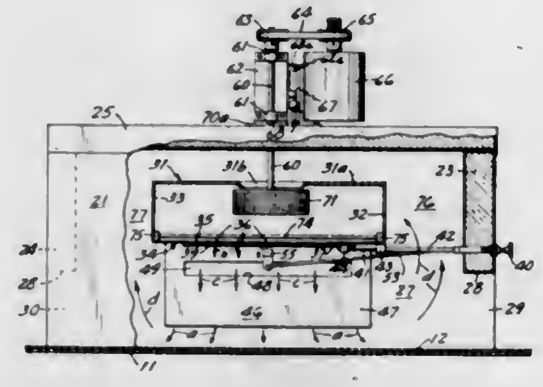
Fred F. Knipschild, 1057 Main St., St. Helena, Calif. 96042
Filed Nov. 19, 1963, Ser. No. 324,719
2 Claims. (Cl. 34—191)



1. Apparatus of the character described comprising an elongated housing defining a chamber and having product ingress and egress means at the opposite ends thereof, means in said chamber extending longitudinally and spaced from the ends thereof dividing the chamber into an upper portion and a lower portion adapted to receive product to be dried, reversible blower means associated with said upper chamber portion for circulating air through said chamber in both directions of longitudinal movement through said lower portion, and means delivering heated air to said blower means including a furnace overlying said upper portion of the chamber, and a pair of air inlet means communicating with said upper chamber portion on opposite sides of said blower means.

3,309,789
PACKAGE TREATING APPARATUS

Stanley D. Denker, New Richmond, Wis., assignor to Doughboy Industries, Inc., New Richmond, Wis., a corporation of Wisconsin
Filed Jan. 9, 1964, Ser. No. 336,739
8 Claims. (Cl. 34—225)

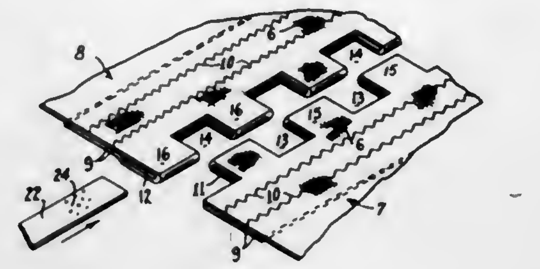


1. Apparatus shrinking a package wrapper into conformity with the exterior configuration of an object therein,
comprising a frame,
elongate means on the frame supporting and conveying such a wrapped package in a predetermined direction and including a package conveying surface upon which such a package is supported,
a hood on the frame and defining a heated air circulating chamber and said hood having front, rear, side and top walls, said hood being disposed in superposed relation with a portion of said surface, and said sidewalls extending along said elongate means and extending downwardly to said surface, said front and rear walls extending transversely across said elongate means and having lower edges spaced above said surface and cooperating with said surface in defining continuously open and unobstructed entrance and exit ports to permit unobstructed movement of the package on the surface and through the chamber,
and air heating, circulating and directing means in the chamber and producing upward sweeping of air across said open and unobstructed ports and within said chamber to minimize loss of heat and heated air at the ports, and also producing heating and shrinking of the package wrapper into conformity with the exterior configuration of the object therein.

3,309,790
LIGHT-WEIGHT DRYER FELT SEAMS

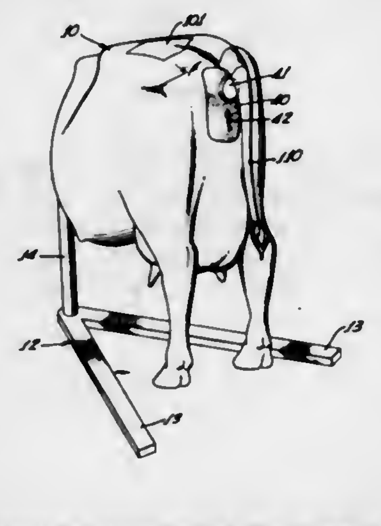
Donald G. MacBean, Pierrefonds, Quebec, Canada, assignor to Fabric Research Laboratories Inc., Dedham Mass.
Filed Oct. 2, 1964, Ser. No. 401,200
Claims priority, application Canada, Aug. 21, 1964, 910,062
4 Claims. (Cl. 34—243)

1. A lightweight endless belt for use in the dryer sections of a paper machine, the said belt formed from a length of fabric having an open weave of warp and weft strands, the said length of fabric having its ends joined together to form the endless belt, the joint of the belt comprising folded over end portions of the fabric stitched to form loops extending transversely of the fabric, the said looped portions of the fabric having notched out portions forming a series of transversely spaced apart looped projections, the projections in one end of the fabric being staggered in relation to the projections of the opposite end of the fabric with the projections in one end of the fabric interleaving with the notched out portions in the opposite end of the fabric when the ends of the fabric are brought together to form the endless belt, and a key fitted through the interleaved looped projections to secure the joint of the belt, the said key having a series of perforations throughout its length to maintain the porosity of the belt throughout the area of the joint.



3,309,791
ARTIFICIAL INSEMINATION TEACHING APPARATUS

Gerald L. Kelley, Sonora, and Roy U. Selover, Jr., Modesto, Calif., assignors to Kelver Company, a corporation of California
Filed Mar. 5, 1965, Ser. No. 437,354
32 Claims. (Cl. 35—1)

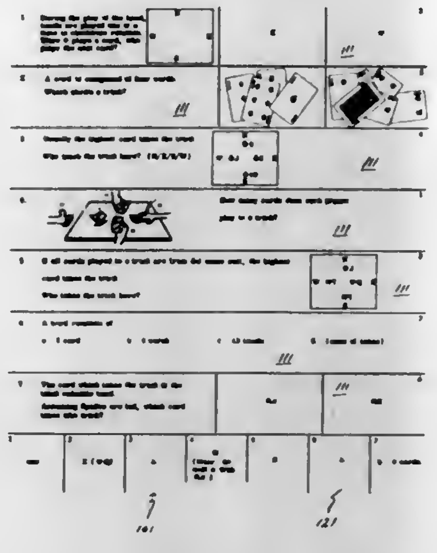


32. An apparatus for simulating the reproductive organ of a bovine animal or the like comprising
an elongated, cylindrically shaped member having a plurality of spaced discs mounted therewith, each disc including an inner portion having an overall circular shape and comprising a cluster of radially oriented bulbar masses with a skewed aperture through the center thereof.

3,309,792
TEACHING APPARATUS

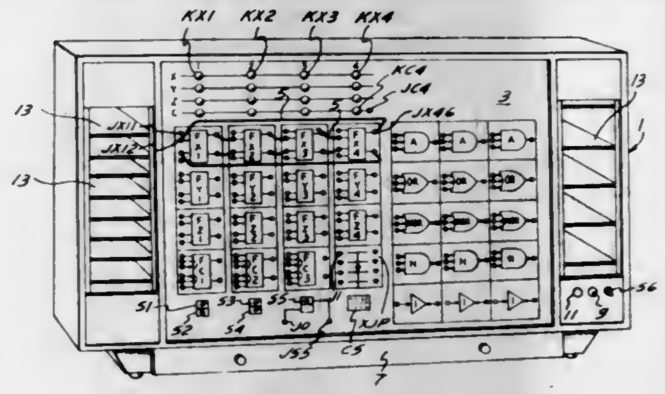
Donald T. Tosti, Albuquerque, N. Mex., assignor to Teaching Machines, Inc., Albuquerque, N. Mex., a corporation of Delaware
Filed Jan. 9, 1964, Ser. No. 336,766
9 Claims. (Cl. 35—8)

1. A teaching apparatus comprising a leaf, said leaf bearing indicia representing a plurality of stimuli including questions adapted to evoke student responses and arranged in frames, markings of predetermined shape sequentially arranged designating the order of consideration of the stimuli, a code designation adjoining each stimulus and arranged at random, each code designation of a shape different from the others, a confirmation for each stimulus, a mark of matchable configuration with each code designation disposed adjacent corresponding confirmations, whereupon matching of said code designations and said marks, the correct answers to the questions are observed.



3,309,793
DIGITAL COMPUTER TRAINER

Thomas C. Bartee, Lexington, Mass., assignor to Hickok Teaching Systems, Inc., Cambridge, Mass., a corporation of Ohio
Filed Nov. 30, 1964, Ser. No. 414,639
5 Claims. (Cl. 35—10)

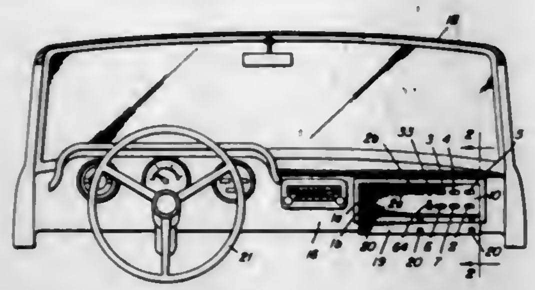


2. Training apparatus, comprising a display panel, a series of diagrams inscribed on said display panel, each diagram representing a logic circuit and indicating selected input and output terminals of the circuit, a jack mounted in said panel adjacent each terminal indication, a plurality of electrical logic circuits corresponding to the circuits represented by said diagrams mounted adjacent said panel, said circuits having external terminals corresponding to the terminals associated with said jacks and each terminal being connected to the corresponding jack, a set of patch cords for selectively connecting any selected group of said circuits into any of a predetermined set of relationships to produce operation when energized in accordance with a predetermined set of modes, adjustable clock means operatively connected to said circuits for producing clock pulses to cause operation of the interconnected circuits in the selected mode at a rate determined by the extent of adjustment of said clock means for energizing the circuits selected by said patch cords, and indicating means responsive to the potentials at selected points in said circuits for indicating the states of the circuits.

3,309,794

DRIVER TRAINING APPARATUS

Bruce D. Greenshields, 1025 Arbordale,
Ann Arbor, Mich. 48103
Filed Dec. 9, 1963, Ser. No. 329,037
16 Claims. (Cl. 35—11)

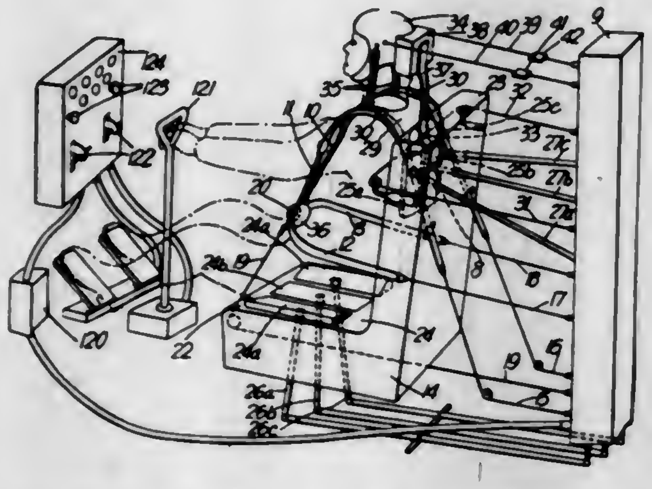


1. Apparatus for indicating driver behavior during the manipulation of vehicle controls comprising: means for sensing movement of at least one of the vehicle controls and for generating a signal corresponding to each such movement, a pair of digital counters adapted to register the cumulative total of signals generated by said sensing means, and means for activating one of said counters to register the cumulative total of signals occurring during a predetermined time interval and deactivating the other of said counters to retain the digital total registered thereon during a preceding time interval.

3,309,795

MECHANISMS FOR SIMULATING THE MOVEMENT OF VEHICLES

William Helmore, Kingston Hill, Surrey, England; Lloyds Bank Limited, 16 St. James's St., London S.W. 1, England, and Douglas Heather Johnson, 2 Gray's Inn Square, London, W.C. 1, England, executors of said William Helmore, deceased
Filed July 12, 1961, Ser. No. 126,799
Claims priority, application Great Britain, July 13, 1960, 24,491/60
21 Claims. (Cl. 35—12)

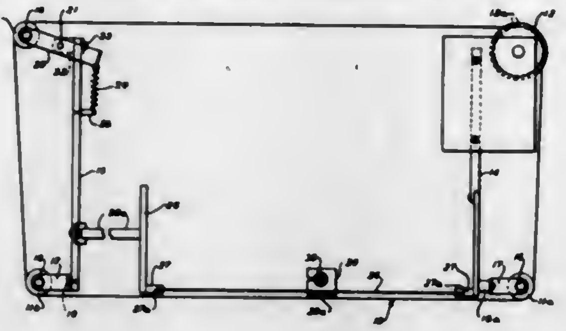


1. An apparatus to simulate changes in movement of a vehicle comprising a chair to be occupied by an occupant; harness means on said chair for engaging portions of the body of the occupant of said chair to hold said occupant yieldingly in position; a plurality of different selectively operable means for applying controllable, variable, independent pressures to selected portions of said occupant's body including external mechanical means for applying movement to parts of the chair and harness and said operable means and said harness means permitting a controled and restrained, yielding movement of the occupant's body limited by said harness in the selected direction of the applied pressure relative to the chair whereby inertia forces as would result from changes in movement of said chair are simulated.

3,309,796

SELECTIVE POINTER BAND SYSTEM FOR TEACHING MACHINES

Bruce N. Whitlock, Morris Plains, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Apr. 5, 1965, Ser. No. 445,413
12 Claims. (Cl. 35—76)

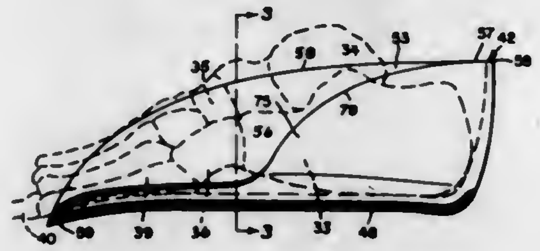


1. A selective pointer system for an exhibitor of a teaching machine, comprising a holder for a card medium having characters printed thereon along successive parallel lines, means for adjusting said holder vertically by intervals between successive lines, a pointer band mounted for movement crosswise of the card medium in the direction along said respective lines, said pointer band having thereon at intervals spaced at least by the width of said card medium a plurality of different indicating means forming different pointer style zones, means for driving said pointer band in directions lengthwise thereof, control means for said drive means including manually settable means for indexing said pointer band to bring a selected pointer style zone into registration with said card medium, and other control means for indexing said pointer band by intervals equal respectively to the spacing between successive characters printed on said card medium.

3,309,797

ANTI-INVERSION DEVICE FOR SNEAKERS

Joseph Arthur Poitras, 152 Glenwood St.,
Lowell Mass. 01845
Filed Mar. 17, 1964, Ser. No. 352,573
8 Claims. (Cl. 36—80)

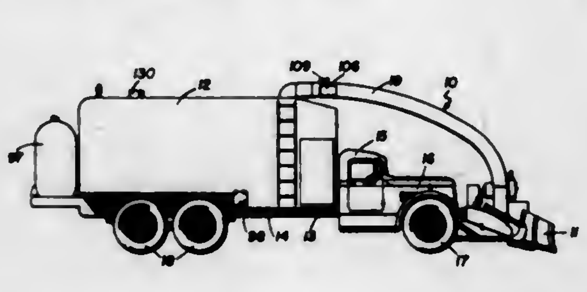


1. An anti-inversion device comprising:
a unitary, scoop-shaped body of substantially incompressible material adapted to fit around, and receive the oscalcis portion of the human foot to support the same against rocking or side slippage;
said body having an integral bottom extending forwardly from the heel, through the longitudinal arch to proximate the forward terminus of the metatarsals of the foot, said bottom being of substantially uniform, wedge-shaped section increasing in thickness from the outside to the inside thereof for supporting the medial structure of the foot from underneath,
said body having an integral, upstanding, self-supporting, inside wall extending from the heel through the longitudinal arch to proximate the forward terminus of the metatarsals of the foot, said inside wall being of substantially uniform wedge-shaped section decreasing in thickness from the lower to the upper portion thereof, and having a substantially vertical, intermediate portion, extending alongside the scaphoid, internal cuneiform and entire first metatarsal, for suporting the medial structure of the foot laterally from the inside, the lower and intermediate portions of said inside wall and the inside portion of said bottom being rigid and unyieldable and the remaining portions of said body being semi-rigid and yieldable.

3,309,798

SNOW MELTER

James E. Devlin and Alderico J. Eramo, Worcester, and Dominic Eramo and Harry V. O'Connor, Millbury, Mass., assignors to Doe Corporation, Millbury, Mass., a corporation of Massachusetts
Filed Sept. 13, 1963, Ser. No. 308,762
2 Claims. (Cl. 37—12)



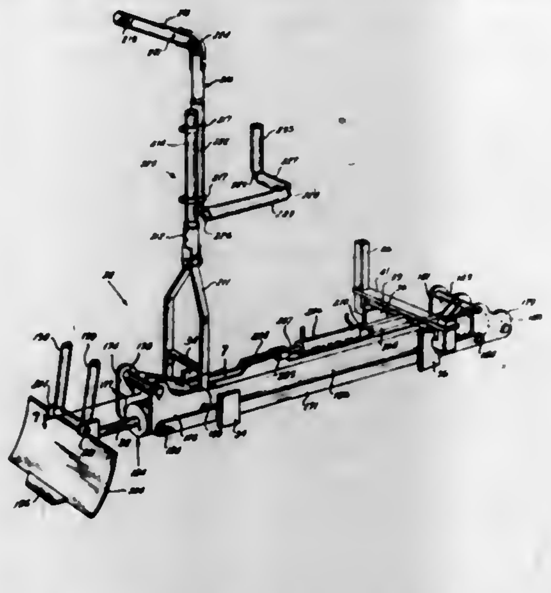
1. A snow melter, comprising
(a) a vehicle body having driven wheels,
(b) a loading apparatus at the front of the vehicle,
(c) a melting apparatus at the rear of the vehicle, and
(d) a duct leading from the loading apparatus to the melting apparatus,
the loading apparatus including a scoop for receiving the snow and a high-speed fan locating rearwardly of the scoop, the fan receiving the snow and introducing it into the duct at high velocity, the scoop being mounted on a transverse shaft for adjustment of the forward edge relative to the road surface, the scoop consisting of a rearward fixed plate and a forward movable plate, the movable plate being capable of sliding guided motion over the upper surface of the fixed plate, spring means being provided for resisting rearward movement of the movable plate relative to the fixed plate, the movable plate consisting of an upper and a lower portion held in spaced parallel relationship by a series of vertical pins, the fixed plate residing between the said upper and lower portions, each pin extending through a tear-drop-shaped aperture in the fixed plate, the cusps of the apertures residing at the longitudinal ends with the pins in the forward cusps.

3,309,799

LEVELLING SCRAPER FOR A TRENCH TRACTOR

Franklin C. Kinkade, R.R. 4, Creston, Iowa 50801
Filed Nov. 12, 1963, Ser. No. 323,018
8 Claims. (Cl. 37—80)

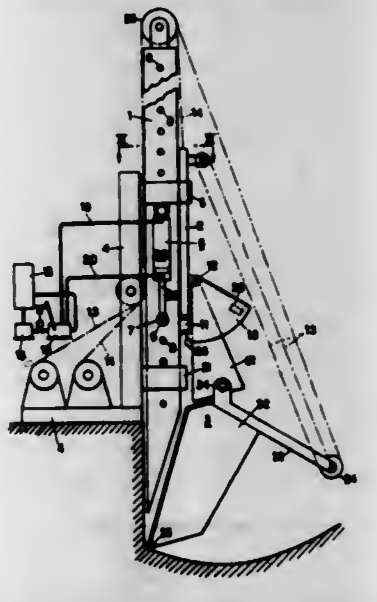
1. A scraper blade implement for a tractor having a frame and a pair of laterally spaced drive units comprising:
(a) a first double acting fluid motor means having a forwardly projected horizontally extended member drivable in opposite directions,
(b) means mounting the first fluid motor means on the frame between the spaced drive units for vertical movement relative to the frame with said projected member horizontally extended longitudinally of the frame,
(c) a second fluid motor means connected to the mounting means and to the frame operable to vertically move the mounting means and first fluid motor means relative to the frame, and
(d) scraper blade means connected to the forwardly projected member whereby the vertical position of the blade means follows the vertical position of the first double acting fluid motor means, said blade means, in a vertically moved position, being horizontally driven in opposite longitudinal directions by the first fluid motor means.



3,309,800

RIGID-GUIDE EXCAVATOR, PARTICULARLY SUITABLE FOR THE DIGGING OF TRENCHES WITH VERTICAL WALLS

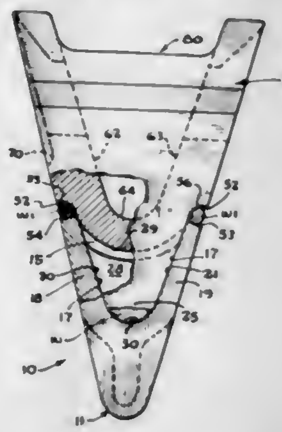
Ignazio Failla, Milan, Italy, assignor to E.L.S.E.—S.r.l., Milan, Italy, a company of Italy
Filed Nov. 18, 1963, Ser. No. 324,423
Claims priority, application Italy, Nov. 23, 1962, 23,068/62
3 Claims. (Cl. 37—103)



1. An excavator particularly for trenches and the like comprising a base frame member, a rigid guide member vertically, displaceably mounted on said base, a slide slidably mounted on the rigid guide member, an excavator collector bucket pivotally mounted on the lower end of said rigid guide member, said bucket being pivotal in the plane of the excavation, said bucket and said slide being operated by respective winch means, piston-cylinder means rigidly attached to said base frame member and adjustably connected to said rigid-guide member, manually operated distributor means operatively connected to

said piston-cylinder means to cause vertical displacement of said rigid guide member with respect to said base-frame member, said piston cylinder being fixed on one end to the base frame with the movable portion thereof adjustably connected to the rigid guide member so that said guide member and said base member may be adjusted in vertical succession at intervals not greater than the stroke of said piston cylinder, a plurality of holes in succession in said rigid guide member, an eyelet on the end of the movable portion of said piston cylinder arrangement, locking pins for fixedly interconnecting said holes with said eyelet, means for temporarily fixedly attaching said rigid guide means to said base frame during repositioning of the eyelet with respect to said holes.

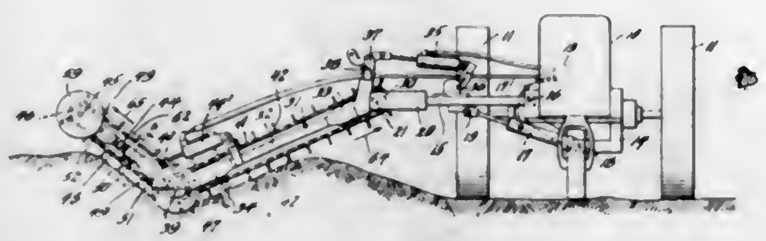
3,309,801
REPOINTER
Thomas A. Ratkowski, Chicago Heights, Ill., assignor to Abex Corporation, a corporation of Delaware
Filed May 5, 1964, Ser. No. 364,963
2 Claims. (Cl. 37—142)



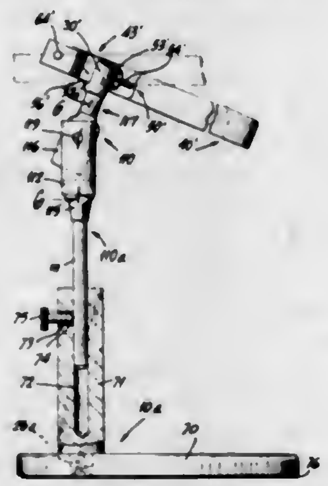
1. A repointer assembly adapted to be secured to a support on a base of a dipper bucket or the like to provide a replaceable lip or tooth portion for said bucket, said assembly comprising a holder means adapted to be secured to a support to extend forwardly from the base of said bucket; a forward portion on said holder means being substantially wedge-shaped; a cast-to-shape repointer adapted to be secured to said holder means to constitute with said holder means the repointer assembly; a receiving means in said repointer adapted to receive said forward portion of said holder means; top and bottom walls on said repointer being of a greater width than the width of said forward portion of said holder means to present laterally open recess areas for receiving welds; said walls on said repointer also being substantially co-extensive with said forward portion and exposing space between said forward portion and said receiving means to afford a weld cavity to join said holder means and said repointer; a pair of spaced tongue means on said repointer disposed intermediate said top and bottom walls to keep said top and bottom walls from spreading, and groove means in said holder means to receive said spaced tongue means.

3,309,802
DITCH FORMING AND CLEANING MECHANISM
Wade Baker, Rte. 2, Burley, Idaho 83318
Filed June 15, 1964, Ser. No. 375,202
10 Claims. (Cl. 37—191)

1. A ditch digging and cleaning implement comprising a first elongated frame, means for securing an end of said frame to a powered vehicle for angular movements about a first axis substantially parallel to the direction of travel of said vehicle, a second elongated frame having an end articulated to the other end of said first frame for relative angular movements of said second frame about a second axis parallel to said first axis, sprockets journaled on said second frame adjacent the respective ends thereof for rotation in a common plane substantially normal to said second axis, a continuous chain surrounding, engaging and extending between said sprockets, a plurality of cleats attached crosswise of said chain at spaced intervals for engaging said ditch for the digging operation, each cleat extending outwardly substantially at right angles to the direction of said chain at the point of attachment of said cleat, an auger journaled on said second frame adjacent its other end for rotation about an axis parallel to said other axes, means for producing angular movements of said first and second frames about said first and second axes, respectively, means for driving at least one of said sprockets, and means for rotating said auger, said auger having a spiral body for engagement with said ditch to provide advancing movement along said ditch upon said rotation to assist the movement of said implement in said direction of travel.

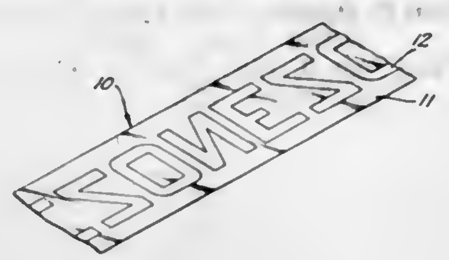


3,309,803
EMBROIDERY HOLDERS SUCH AS LAP AND FLOOR HOLDERS WITH CLAMPS THEREFOR
Erica M. S. Wilson, 1225 Park Ave., New York, N.Y. 10028
Filed Apr. 30, 1964, Ser. No. 363,867
9 Claims. (Cl. 38—102.2)



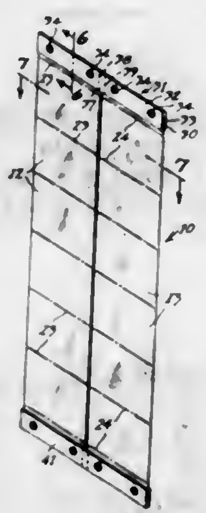
1. A cloth holder comprising in combination a base, a first member, means to rigidly attach said first member to said base, with said first member extending upwardly from said base, a second member having a vertical adjustable connection with said first member, means to retain said first and second members in vertically adjusted position, a third member, means to connect said third member to said second member for rotary adjustment about a horizontal axis, including means to adjust the friction between said second and third members to retard such adjustment, an inner ring, means to attach said inner ring to said third member, said third member constituting the only means for supporting said inner ring, cooperating means on said inner ring and third member to prevent rotation of said inner ring relative to an axis perpendicular to the longitudinal axis of said third member, an outer split ring fitted on said inner ring, and screw threaded means interconnecting the split ends of said outer ring, to tighten said outer ring on said inner ring.

3,309,804
PRINTED PLASTIC ARTICLE AND METHOD OF MAKING THE SAME
Merwyn C. Gill, Pasadena, Calif.
(4076 Easy St., El Monte, Calif. 91731)
Filed Mar. 19, 1965, Ser. No. 441,226
8 Claims. (Cl. 40—2)



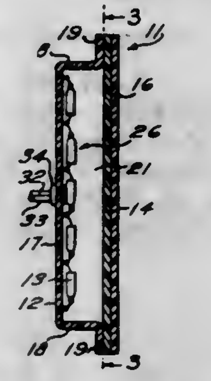
1. A method of making a printed plastic article comprising: applying a quantity of thermosetting resin printing material to a releasing strip to form a transfer strip; placing said transfer strip against the article to be imprinted, said article having an outer layer of the same thermosetting material as said printing material; applying heat and pressure to said transfer strip and said article; and removing said releasing strip after the combined thermosetting resin has reacted and cooled.

3,309,805
HOLDER FOR CARDS OR THE LIKE
John B. Thomas, ℅ Tennessee Paper & Box Co., P.O. Box 198, Gallatin, Tenn. 37066
Filed May 19, 1965, Ser. No. 457,032
5 Claims. (Cl. 40—128)



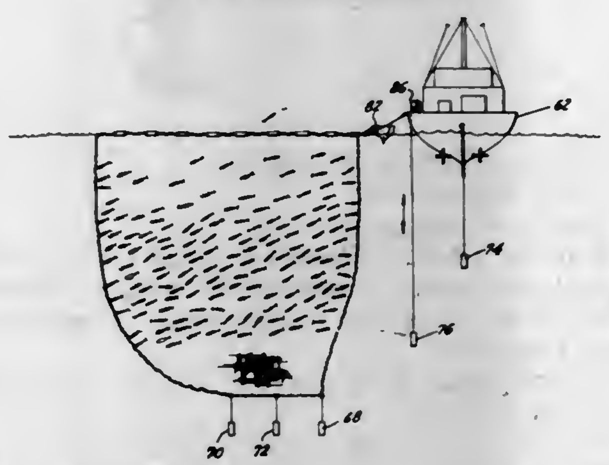
1. A holder for cards or the like comprising:
(a) a flexible member having a longitudinal medial axis and including a plurality of card pockets,
(b) said pockets being arranged on opposite sides of and opening toward said axis,
(c) first and second elongated flat members extending along and on opposite sides of one lateral edge of said flexible member,
(d) means securing said first and second elongated members to said lateral edge,
(e) a crease in said first member coinciding with said medial axis,
(f) a detachable section extending transversely from edge to edge of said second member and containing said medial axis, whereby removal of said section permits said first and second members to be folded along said crease and about said medial axis.

3,309,806
ILLUMINATED SIGN APPARATUS
Roy S. Gallagher, Santa Barbara, Calif., assignor, by mesne assignments, to Ronald W. Sheppard, Sparta, N.J.
Filed Apr. 30, 1962, Ser. No. 191,240
4 Claims. (Cl. 40—130)



3. An illuminated sign apparatus of the character described comprising, in combination, a housing including a substantially flat bottom portion with peripheral side walls extending away therefrom and a peripheral flange extending outwardly from adjacent the extended edges of said side walls, a light diffusing plate disposed over said flange to form an enclosed chamber, a first plurality of parallel spaced wires disposed in said chamber adjacent said bottom portion, a second plurality of parallel spaced wires disposed in said chamber adjacent said bottom portion and in alternating relationship with first plurality of wires, a pair of spaced insulating rods disposed transversely across said wires and secured thereto, said rods and wires forming a substantially unitary rigid grid structure, said grid structure being secured to said bottom portion to retain it against vibratory or shock movement, first means electrically connecting each of said first plurality of wires together, second means electrically connecting each of said second plurality of wires together, a plurality of gaseous discharge bulbs disposed adjacent said bottom portion and each electrically coupled between adjacent spaced pairs of said wires, and a plurality of resistors each interposed serially between one of said bulbs and one of said wires, said bulbs being spaced from said diffusing plate sufficiently to create a substantially uniform field of light visible on the exterior of said plate.

3,309,807
PNEUMATIC TECHNIQUE FOR CATCHING OR SCARING FISH
Melvin J. Wells, Torrance, Calif., assignor to Western Geophysical Company of America, Los Angeles, Calif.
Filed Apr. 22, 1964, Ser. No. 361,725
6 Claims. (Cl. 43—14)

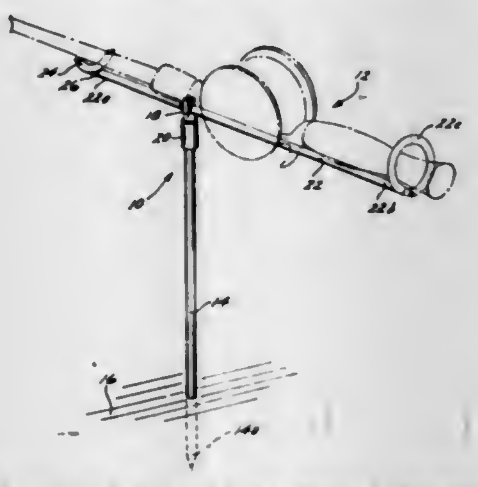


4. In combination,
means defining a first body of water having an opening connecting to a second body of water;

at least one pneumatic shock wave device;
means for supporting said device near said opening; and
means for selectively energizing the device to explosively release high pressure gas and generate a shock wave rising to an initial pressure peak within five milliseconds to prevent the passage of marine life through the opening.

3,309,808
FISH ROD HOLDER AND HOOK SETTER

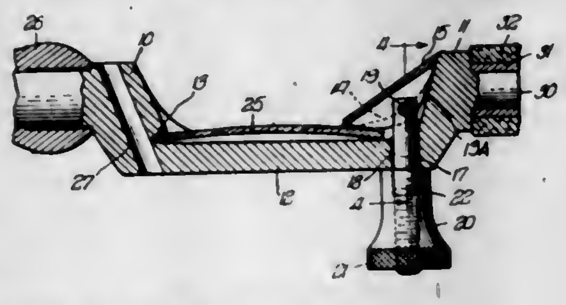
Alfred M. George, Sr., 432 S. 5th,
Jeannette, Pa. 15644
Filed Jan. 26, 1966, Ser. No. 523,053
6 Claims. (Cl. 43—15)



1. A fish rod holder and hook setter comprising in combination, a member to be anchored adjacent fishing water, a fish rod retaining element formed with holding means for retaining a fish rod, pivotal interconnecting means mounted on said member and having support means carrying said retaining element to permit pivotal movement of said retaining element about an axis normal to the fish rod thereon, and travel limiting means on said interconnecting means to abruptly stop pivotal movement of said element and rod thereon to effect setting of a fish hook associated with said rod.

3,309,809
FISH ROD HANDLE

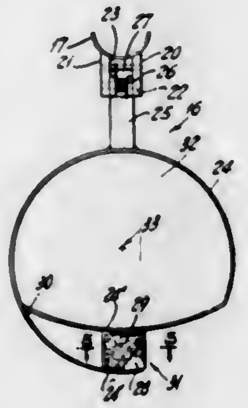
Rockton A. Bowker, 2817 E. 76th Place,
Chicago, Ill. 60652
Filed Dec. 11, 1964, Ser. No. 417,675
7 Claims. (Cl. 43—22)



1. A fishing rod handle comprising:
(1) a hand grip portion;
(2) a rod receiving portion;
(3) a middle portion disposed between the hand grip and the rod receiving portion and having a surface, offset from the axes of said portions, adapted to receive a reel base;
(4) a sloping wall at the junction of said surface and said grip portion;
(5) a socket at the junction of said surface and said rod receiving portion adapted to receive the forward end of a reel base;
(6) a wedge engaging said sloping wall and overhanging the rear end of a reel base;
(7) and means for forcing said wedge downwardly on said sloping wall thereby to force the forward end of a reel base into said socket and to clamp the rear end of the base onto said surface to secure the reel upon the handle.

3,309,810
CASTING MECHANISM FOR A FISHING ROD

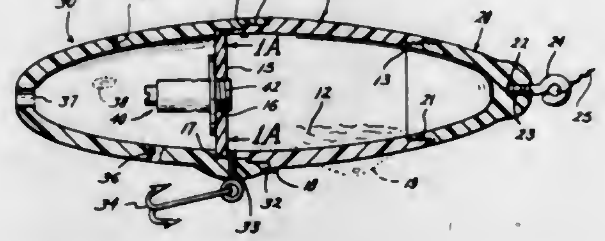
William F. Hannon, 1449 Farmington Ave.,
Berlin, Conn. 06037
Filed Sept. 9, 1965, Ser. No. 492,971
15 Claims. (Cl. 43—24)



4. A quick-release assembly for a spinning-reel-equipped fishing rod, comprising a generally flat circular open frame member and a base member hingedly connected at a location outside the opening of said frame member, said base member being adapted for mounting on a rod with the hinge axis transverse to the rod axis, and a finger lug carried by said frame member outside the opening and remote from the hinge axis and projecting radially outwardly of the axis of the opening.

3,309,811
FISH LURE

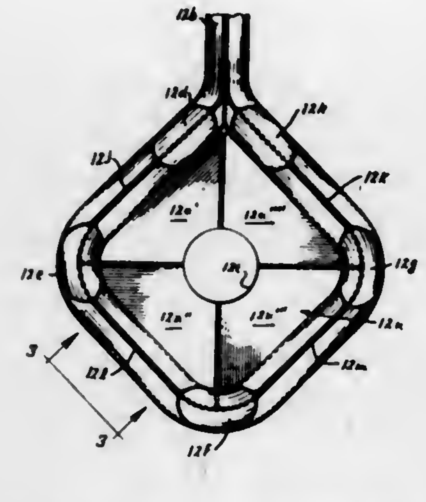
James T. Wimer, 2400 W. Briton Road,
Oklahoma City, Okla. 73120
Filed Oct. 16, 1964, Ser. No. 404,233
10 Claims. (Cl. 43—42.06)



1. An artificial fish lure including:
a hollow head portion of rigid construction having a gas escape hole through a portion of a wall thereof,
a hollow body portion connected to said head portion and containing a portion of a gas producing substance, and partition means separating said head and body portions,
conduit means through said partition means and connecting the hollow interiors of said head and said body,
valve means at least partially disposed within said conduit means, said valve means including a valve, a spring mechanism urging said valve to closed position, a gas exit portion controlled by said valve and means causing said spring to be compressed, thus causing said exit portion to be unblocked on gas pressure within said body portion exceeding a certain level.

3,309,812
FISH TRAP

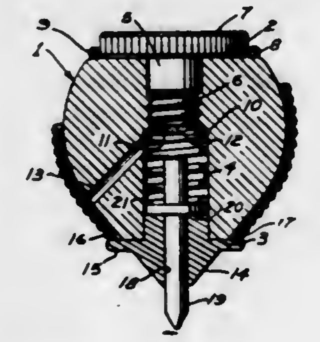
George C. Riecken, 2154 Adams Ave.,
Evansville, Ind. 47714
Filed Oct. 13, 1964, Ser. No. 403,462
2 Claims. (Cl. 43—103)



1. A foldable fish trap comprising a plurality of hollow collapsible frame members adapted to receive and to be expanded by a liquid, said frame members being in communication to provide an internal passageway system for said liquid, and wall members interposed between and connecting adjacent frame members to form therewith a fish trapping cavity when said frame members are expanded by said liquid, at least one of said wall members having an opening therein to permit passage of fish into said fish trapping cavity.

3,309,813
EXPLOSIVE CAP TOP

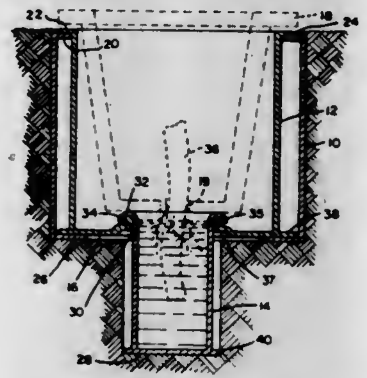
Irl E. Newlan, 5336 Hillmont Ave., Los Angeles, Calif. 90041, and George W. Stevenson, 20651 Clarendon, Woodland Hills, Calif. 91364
Filed Jan. 10, 1964, Ser. No. 337,094
2 Claims. (Cl. 46—66)



1. A top comprising:
(a) a substantially spherical body symmetrical about a vertical axis;
(b) parallel upper and lower flat surfaces formed on said body normal to said axis thereof;
(c) a circular recess formed in said body, on the axis thereof, and interconnecting said upper and lower flat surfaces thereon;
(d) means for removably mounting a cylindrical plug member formed in the upper portion of said recess;
(e) a plug member removably mounted in said mounting means, said plug being capable of positioning an explosive cap in said circular recess;
(f) an elongated spindle centrally disposed in said circular recess and slidably mounted along the axis thereof in a manner so as to allow its internal end to contact said explosive cap positioned by said plug member and its external end to extend from said body in a manner so as to serve as a spin member for said top;
(g) a flange member rigidly mounted to said spindle intermediate said ends, said flange member being disposed within said circular recess;
(h) a helical compression spring, having an outside diameter substantially larger than said spindle and adapted to fit into said circular recess, providing biasing means between said body and said flange in a manner so as to bias said spindle away from said plug member;
(i) a plurality of passageways directed radially outwardly and downwardly in respect to said recess, said passageways allowing the noise and gases of the exploding cap to issue to atmosphere in a manner so that said gases add lift to said top.

3,309,814
PLANT HOLDER

Irene L. Langley, 122 43rd Ave. NE.,
St. Petersburg, Fla. 33703
Filed Sept. 9, 1965, Ser. No. 486,012
9 Claims. (Cl. 47—41.1)



1. A plant holder for cemeteries comprising a cylindrical casing open at both ends adapted to be embedded in the ground with its upper end substantially flush with the ground, a plant receptacle having an open top and a bottom wall supported within the casing, and a water receptacle having an open top and a closed bottom mounted for movement longitudinally in said bottom wall and extended into the ground below the plane of said bottom wall, said plant receptacle adapted for inversion in said casing to present the water receptacle within the plant receptacle, and means for limiting movement of the water receptacle into and out of said plant receptacle.

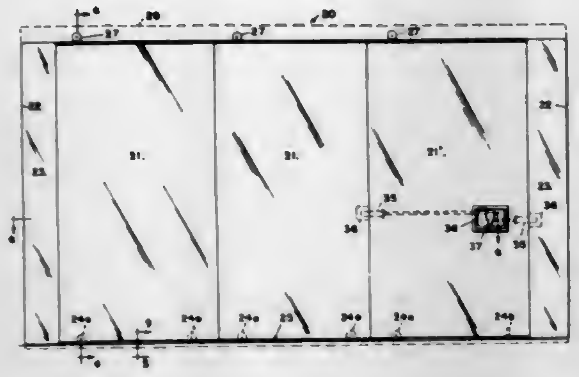
3,309,815
CULTIVATION OF HOP PLANTS

Yasuo Umeda, Yokohama-shi, Shigeo Sasaki, Kofu-shi, Shinkichi Kubo, Nirasaki-shi, and Hiroshi Kitami and Toru Sasahara, Yokohama-shi, Japan, assignors to Kirin Beer Kabushiki Kaisha, Chuo-ku, Japan, a joint-stock company of Japan
No Drawing. Filed May 26, 1965, Ser. No. 459,117
2 Claims. (Cl. 47—58)

1. In the cultivation of female hop plants (*Humulus lupulus* L.), a method for increasing the yield of female flowers and improving the quality of hops obtainable therefrom, which method comprises irradiating the said plants with artificial light of an illuminance of from 0.2 to 50 luxes as measured at the wire-trellises supporting the plants, the plants being so irradiated continuously from sunset to sunrise each night during a period of from 20 to 40 days starting from the time when the plants have attained a height of approximately 2 meters.

3,309,816
MOVABLE PARTITION STRUCTURES

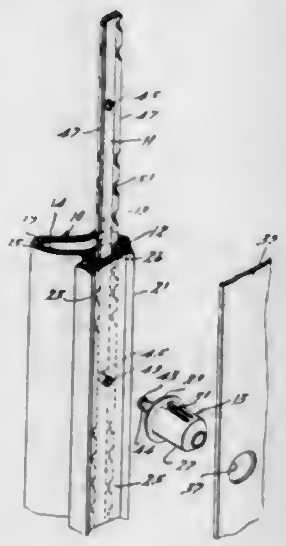
Benjamin D. Malone, Jr., P.O. Box 1415,
Punta Gorda, Fla. 33950
Filed May 28, 1964, Ser. No. 370,873
12 Claims. (Cl. 49—127)



1. In a movable partition structure, the combination of a set of vertical panels each having side edges and upper and lower edges, an elongated floor track having a pair of spaced parallel rails and including a laterally offset branch rail communicating with one of said rails adjacent one end of said floor track, a pair of longitudinally spaced rollers provided at the lower edge of each of said panels and engaging the respective rails of the floor track, an elongated overhead track, a stabilizing trolley provided at the upper edge of each panel in vertical alignment with one of said rollers at the lower edge, said trolley engaging said overhead track, said panels being individually movable from a coplanar partition forming position wherein their side edges are in abutment to a laterally stacked position overlying said branch rail, and latch means projectable and retractable through the side edge of one of said panels into the side edge of the next adjacent panel when said panels are in abutment.

3,309,817
MECHANICALLY FASTENED DOOR WEATHER STRIP

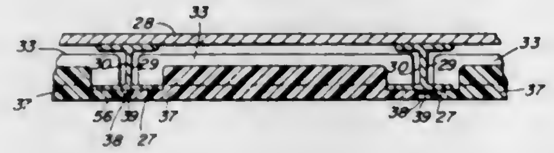
Colon Lewis Fisher, Keokuk, Iowa, assignor to Sheller Manufacturing Corporation, Detroit, Mich., a corporation of Indiana
Filed Aug. 17, 1964, Ser. No. 390,067
6 Claims. (Cl. 49—492)



1. A weather strip assembly comprising
a body of compressible elastomeric material having at least one longitudinally extending opening therethrough,
an elongated non-metallic carrier member removably positioned within said opening,
said carrier formed with a plurality of apertures therethrough adapted to align with apertures in said body,
a non-metallic fastener including an enlarged flexible head having a rounded outer end positioned in each of the aligned said apertures, said enlarged head adapted to snap through said carrier apertures and being removable therefrom under axial force applied thereto whereby to removably secure said body and said carrier together,
said fastener having a body portion, which includes means for fixedly uniting said assembly to a support surface.

3,309,818
BLAST CLEANING MACHINES AND REMOVABLE PANELS THEREFOR

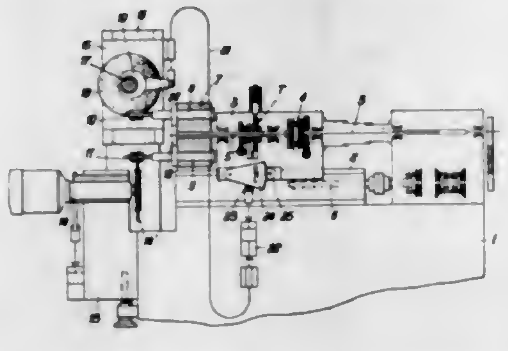
Delmont D. Brown, North Baltimore, Ohio, assignor to The D. S. Brown Company, North Baltimore, Ohio, a corporation of Ohio
Filed June 5, 1964, Ser. No. 373,027
7 Claims. (Cl. 51—8)



1. A blast cleaning machine comprising walls defining a blast cleaning chamber adapted to receive a workpiece to be blasted, means in said chamber for impelling small, hard particles against said workpiece, the top wall of said chamber being made of removable panels, each panel comprising a heavy, metal base to which is bonded a layer of polyurethane elastomer, said layers of polyurethane elastomers facing downwardly and forming abrasion-resistant strike surfaces on said top wall, fixedly mounted, parallel channel members extending along the top wall of said chamber, and said panels being slidably removably supported in said channels with opposite edges of said respective metal bases of said panels resting on said channel members.

3,309,819
MACHINE TOOL

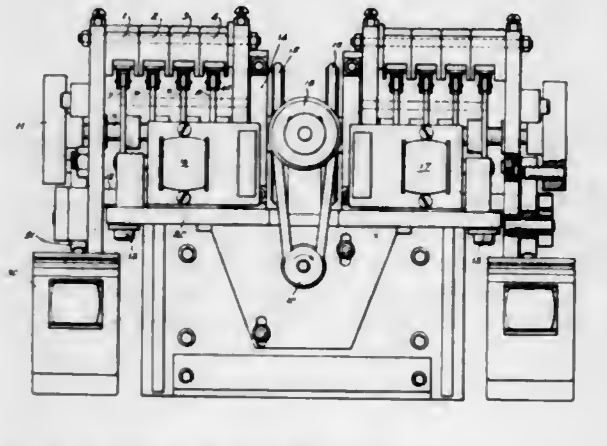
Knut Gühring, Ebingen, Wurttemberg, Germany, assignor to Gottlieb Gühring, Ebingen, Wurttemberg, Germany
Filed May 26, 1964, Ser. No. 370,241
Claims priority, application Germany, June 14, 1963, G 37,963
17 Claims. (Cl. 51—95)



1. A grinding machine which comprises a headstock, a turret spindle mounted in said headstock, a turret rotatably mounted on said turret spindle, at least two workpiece spindles mounted in regularly angularly spaced positions on said turret, two grinding wheel spindles disposed adjacent to the orbit of said workpiece spindles and spaced apart by the same angle as said workpiece spindles, each of said workpiece spindles being adapted to carry a workpiece, each of said grinding wheel spindles being adapted to carry a grinding wheel intersecting the orbit of said workpieces on said workpiece spindles, and locating means adapted to hold said turret in various positions which are spaced apart by the same angle as said workpiece spindles and in which each of said grinding wheel spindles is at a grinding distance from one of said workpiece spindles in the radial direction of said turret spindle, said workpiece spindles being adapted to carry twist drill blanks and said headstock being movable in the axial direction of said turret spindle relative to said grinding wheel spindles, and which comprises means including one of said grinding wheel spindles for grinding flutes having a tapered core in said blanks, and means comprising the other of said grinding wheel spindles for grinding a relief on said blanks.

3,309,820
FEED MECHANISM FOR GRINDING MACHINE

Elman R. Dunn, Roscoe, Ill., assignor to Landis Tool Company, Waynesboro, Pa.
Filed Aug. 19, 1964, Ser. No. 390,524
7 Claims. (Cl. 51—165)

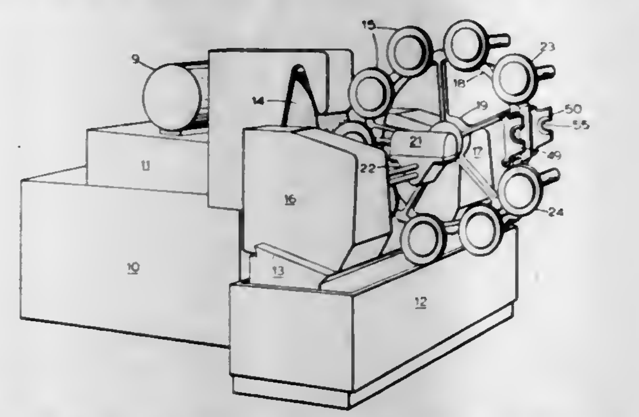


1. In a grinding machine having
(a) a feed mechanism for advancing and retracting a grinding wheel,
(b) means for actuating said feed mechanism comprising
(c) a stepping motor,
(d) means for controlling said stepping motor comprising
(e) a stepping switch mechanism having a plurality of switches,
(f) a corresponding plurality of rotatable cams for actuating said switches,
(g) means for rotating said cams continuously in either direction to actuate said feed mechanism in a rapid series of increments,
(h) means to engage and disengage said cams from said continuous rotating means,
(i) a ratchet mechanism for rotating said cams intermittently,
(j) means to actuate said ratchet mechanism and said cams to provide a single increment of feed or a predetermined number of increments.

3,309,821
AUTOMATIC WORK LOADING MECHANISM FOR MACHINE TOOLS

Paul J. Gruber and Rolf Grzymek, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 21, 1964, Ser. No. 391,196
4 Claims. (Cl. 51—165)

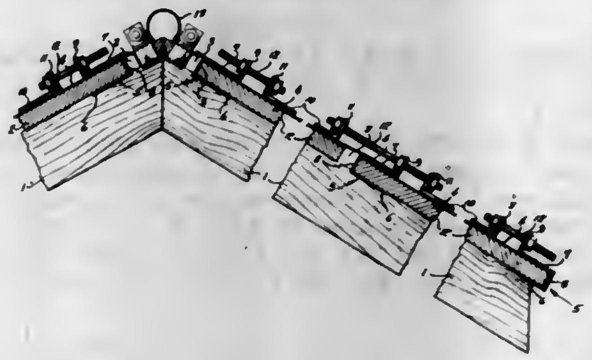
3. An automatic workpiece loader adapted for use with a precision grinding machine having a table surface and a pair of spaced support units thereon each having a center extending therefrom toward the other and adapted for rotatably supporting a workpiece on a work axis extending therebetween, the loader comprising:
(a) a wheel having a circumferential rim portion,
(b) means for supporting said wheel between the support units and above the table surface for rotation on an axis spaced from and parallel to the work axis,
(c) a plurality of work carriers equispaced around the periphery of said wheel, each carrier extending transversely through said rim portion in a direction parallel to the work axis to hold a workpiece across the periphery of said wheel and parallel to said work axis at a radial distance from the axis of wheel rotation corresponding to the spacing of the wheel rotation from the work axis,
(d) releasable means for securing each of said work carriers in a selected position in the rim portion to permit transverse adjustment of the position in which a workpiece is supported relative to said wheel, and



(e) means for indexing said wheel angularly through a fixed rotation to present said work carriers successively to an operating position between the centers.
4. The grinding machine loader of claim 3 wherein:
(a) said means for supporting the wheel is an arm extending from the side of one of the support units to one side of the central portion of said wheel,
(b) said means for indexing is housed in said one support unit from which said arm extends and is connected to the wheel through said arm,
(c) a retractable in-process gauge unit is provided and is adapted when advanced to measure a workpiece held between the centers, and
(d) a cantilever support extends from the side of one of said support units to a position adjacent to said wheel to hold said gauge unit in place inside the circular path described by workpieces carried by said work carriers.

3,309,822
EXTERIOR ANCHORING APPARATUS FOR SURFACE SHEET

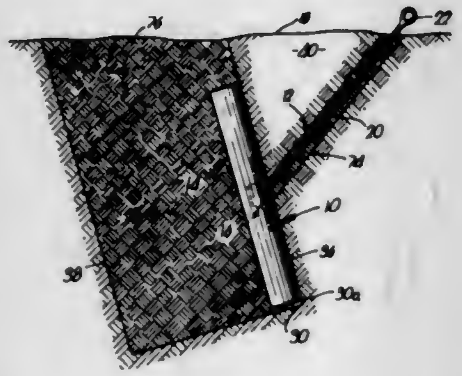
William H. Dunkin, Glacier Star Rte.,
Deming, Wash. 98244
Filed Sept. 3, 1965, Ser. No. 484,991
5 Claims. (Cl. 52—23)



1. Anchoring apparatus for surface sheets overlying sheathing, comprising hook means engaging an edge portion of a sheet and sheathing therebeneath, hold-down

tie-rod means closely overlying such surface sheet and in engagement therewith, one of said means having an eye projecting above such surface sheet, bolt means connected to the other of said means and extending through said eye, and nut means securing said bolt means in said eye.

3,309,823
EARTH ANCHOR HAVING TENSION ROD GUIDE AND SECURING STRUCTURE THEREON
Carl W. Yager and William L. Hollander, Centralia, Mo., assignors to A. B. Chance Company, Centralia, Mo., a corporation of Missouri
Filed July 2, 1964, Ser. No. 379,926
14 Claims. (Cl. 52—166)



1. An anchor assembly adapted to be buried in the ground and connected to a structure for bracing the latter said assembly comprising:

an anchor member having a bearing surface and adapted to be positioned in an excavation therefor in the ground with said surface in firm engagement with the ground;

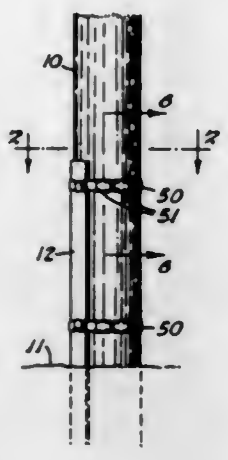
an elongated coupling element for connecting said anchor member to the structure and provided with a connector section on one extremity thereof, said anchor member being provided with spaced side plates thereon defining a locking station for receiving said connector section therebetween;

a cross pin carried by the side plates on the anchor member at said station for engaging and locking the connector section and thereby said element to the anchor member when the connector section is received in said station; and

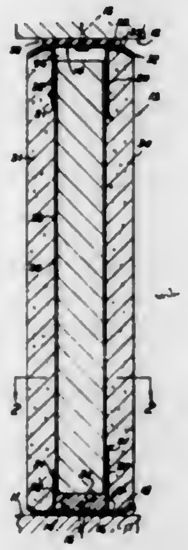
means on the anchor member at said station for guiding the connector section of the element into proper disposition at said station for connection to the anchor means by said locking means and operable to facilitate insertion of the connector section into the station as the element is manipulated from above the level of the earth and shifted through the ground in spaced relationship to said excavation, toward said anchor member and at an angle with respect to said surface thereof.

3,309,824
REINFORCED POLE STRUCTURE AND METHOD OF BANDING A REINFORCING STUB TO A POLE
George F. Barrett, Littleton, Colo., assignor, by direct and mesne assignments, to The Kamphausen Company, Englewood, Colo., a corporation of Colorado
Original application Apr. 22, 1963, Ser. No. 274,491, now Patent No. 3,193,252, dated July 6, 1965. Divided and this application Dec. 28, 1964, Ser. No. 430,786
3 Claims. (Cl. 52—170)

3. A reinforced pole structure comprising a wood pole having its lower end embedded in the ground, a reinforcing element comprising an elongated metal member of arcuate transverse cross section disposed against the pole with its convex side toward the same and its lower end extending into the ground, and means securing the reinforcing element against the pole comprising a metal band nailed to the pole at one end and extending about the pole and the reinforcing member, the other end of said band overlapping the nailed end, and means securing the overlapped portions of said band securely to each other.



3,309,825
RESILIENTLY MOUNTED PLASTER PARTITION SYSTEM FOR BUILDINGS
Daniel L. Zinn, Warren, Mich. (8881 Central Ave., Detroit, Mich. 48204), and Raymond W. Richards, 17731 Sumner Ave., Detroit, Mich. 48240
Filed Jan. 24, 1964, Ser. No. 340,031
1 Claim. (Cl. 52—241)



An improved partition wall construction for use between the floor and ceilings of a building, comprising:

an elongated floor track extending along and attached to the floor, said floor track being generally channel shaped with a pair of upwardly extending spaced flanges, and a pair of screed line flanges extending outwardly beyond said spaced flanges along the floor on opposite sides of said track and terminating in upwardly inclined edges;

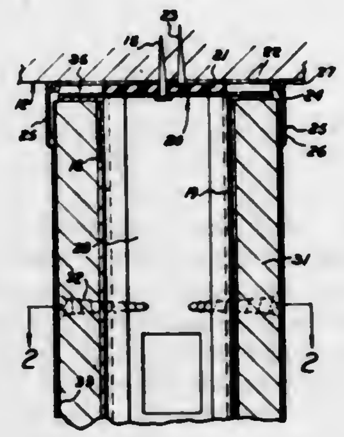
an elongated ceiling track extending along and resiliently attached to the ceiling through an interposed elongated resilient gasket, said ceiling track being generally channel shaped with a pair of downwardly extending spaced flanges and a pair of screed line flanges extending outwardly beyond said space flanges along the ceiling on opposite sides of said track and terminating in downwardly inclined edges;

vertical rigid wall supporting means having its upper and lower edges nested between and retained by said spaced flanges of said ceiling and floor tracks, respectively; and

a plaster wall coating applied to the opposite faces of said wall supporting means and extending upwardly and downwardly to said screed line flanges of said ceiling and floor tracks, respectively;

whereby the plaster portion of said wall is firmly but resiliently connected between the floor and ceiling and is spaced away from both the floor and ceiling surfaces by said screed line flanges.

3,309,826
RESILIENTLY MOUNTED DRY WALL PARTITION FOR BUILDING STRUCTURES
Daniel L. Zinn, 8881 Central Ave., Warren, Mich. 48204
Filed Jan. 24, 1964, Ser. No. 340,032
3 Claims. (Cl. 52—241)



1. In a wall partition for use between a concrete floor and ceiling of a building;

an elongated floor track upon and extending along the floor secured thereto and including a pair of upright spaced flanges;

an elongated metal partition cap upon and extending along the ceiling secured thereto directly above the floor track and including a pair of spaced depending channel flanges;

an elongated ceiling track adjacent to and extending along the ceiling nested within said cap and secured thereto directly above the floor track including a pair of spaced depending flanges;

an elongated compressible resilient gasket interposed and secured between said cap and ceiling track;

a longitudinally disposed upright support medium interposed between said tracks with its respective top and bottom edges snugly nested and retained between said pairs of ceiling and floor track flanges; and

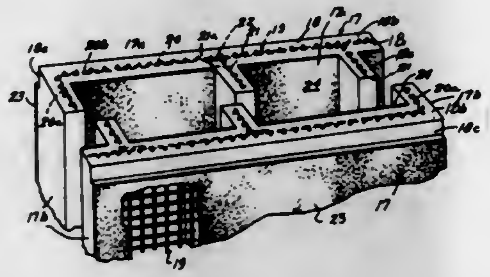
wall boards bearing against the floor and ceiling track flanges secured to said support medium and interposed between the floor and ceiling tracks, and with the upper edge of said wall boards nested within and engaging said cap channel flanges.

3,309,827
EXPANDABLE BUILDING PANEL
Joseph A. Nicosia, 819 N. Thatcher Ave., River Forest, Ill. 60305
Filed Nov. 8, 1965, Ser. No. 516,819
10 Claims. (Cl. 52—241)

6. An expandable building panel construction comprising:

a pair of reinforced molded sections each having a main panel portion;

said main panel portions being coextensive and each having a set of spacing flange legs extending in spaced parallel relation throughout substantially the length of opposite side margins of the respective panel portions and disposed in complementary relation along the opposite edges of the panel portions such that one of the legs at each side projects in substantially the edge plane of the opposed panel portions and the respective legs of the sections having lapping surfaces which are normal to the respective planes of said panel portions whereby the panels are expandably adjustable relative to one another while said lapping surfaces remain together;

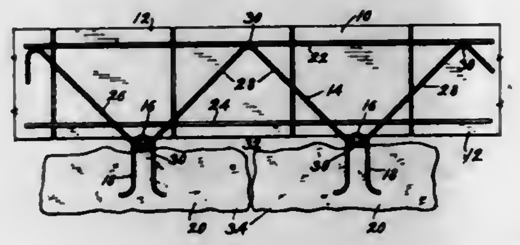


means securing said lapping surfaces of the legs in the expandably adjusted relation of the sections;

said legs and the panel portions defining therebetween at least one passageway extending the full length of the panel sections and closed at the sides of the sections by the lapping legs;

and channel members engaging the remaining edges of said panel and closing the opposite ends of said passageway.

3,309,828
TIE ASSEMBLY FOR FACED MASONRY WALL STRUCTURES
Charles J. Tribble, N. Broadway Star Rte., Boulder, Colo. 80302
Filed Feb. 4, 1963, Ser. No. 256,009
12 Claims. (Cl. 52—426)

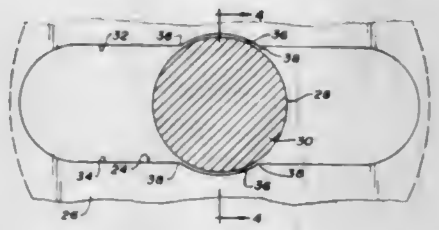


1. In combination: reinforcing means adapted to be cast into the mortar joint between courses of flat-faced generally rectangular blocks forming a back-up wall, said reinforcing means including bight-forming portions projecting from at least one face of the back-up wall at longitudinally-spaced intervals; rod means adapted to be passed through at least two of the bights projecting from the surface of the back-up wall, said bights being located one above the other and comprising portions of reinforcing means cast in different courses; and, tie means adapted to be cast into the mortar joints between courses of irregularly-shaped blocks erected as a facing adjacent the surface of the back-up wall having the rods secured thereto, said tie means including means securing same to the rod means for adjustable movement in the direction of the length of the latter and a portion projecting from said securing means into position for insertion into the joint between facing blocks laid one on top of the other, said tie and

rod means cooperating with the reinforcing means to fasten the facing blocks to the back-up wall thus forming a unitary wall structure irrespective of whether the mortar joints between courses of the back-up wall are aligned with joints between the facing blocks.

3,309,829
NAILING SLOT STRUCTURE FOR PANEL

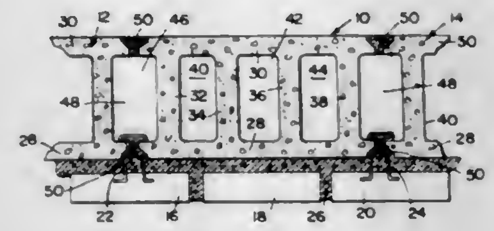
Jack A. Berridge, Alameda, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed July 14, 1964, Ser. No. 382,480
7 Claims. (Cl. 52—506)



1. An anchoring or covering structure comprising the combination with sheathing of an elastic sheet metal panel having a plurality of aligned nailing slots of generally uniform, given width, each slot having an enlarged central portion of a greater width than the given width, and headed nails securing the panel to the sheathing, each nail having its shank driven through the enlarged central portion of one of the slots, and having a shank diameter small enough to be freely received only at the enlarged central portion of the associated slot, but of somewhat greater diameter than the given width of the slot.

3,309,830
SLOTTED BLOCK WALL CONSTRUCTION WITH INTERFITTED WIRE TIE

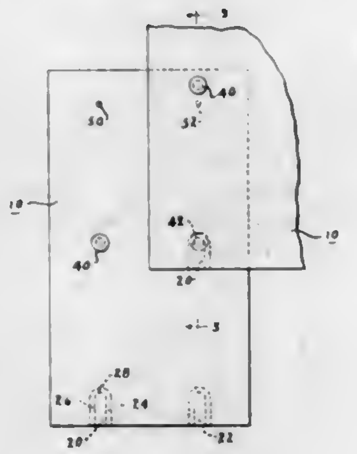
Edward T. Fitzgerald, 4 Stevens Place, Melrose, Mass. 02177; Isabel Fitzgerald, administratrix of said Edward T. Fitzgerald, deceased
Filed Sept. 13, 1963, Ser. No. 308,869
2 Claims. (Cl. 52—513)



1. A wall construction comprising
a plurality of courses of hollow blocks,
said blocks in each course defining a row of vertically extending cells and a continuous front panel,
spaced vertically extending slots provided in the front panel and communicating with an inner surface of each of selected cells, said slots each comprising a first pair of opposed walls meeting said front panel at opposed corners and extending rearwardly therefrom to a second pair of opposed walls extending further into said block toward said inner surface and meeting a third pair of facing walls which extend to said inner surface,
ties each having a head and a pair of arms integral with the head and twisted together within the slots, said arms having portions lying outside the outer surface of the panel with portions of said head and said arms of each tie in each slot contacting said inner surface and said second pair of opposed walls, respectively, and a facing covering the outer panels of the block courses and anchored to the blocks by the ties.

3,309,831
PLASTIC SHINGLE WITH INTERFITTING MEANS

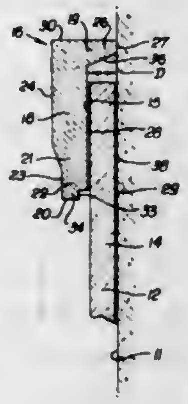
Arthur Misch, St. Joseph County, Mich. (2101 Peachtree Lane, South Bend, Ind. 46617), and Ramon Wayne Messner, St. Joseph County, Ind. (525 S. Washington St., Constantine, Mich. 49042)
Filed Dec. 9, 1964, Ser. No. 417,013
8 Claims. (Cl. 52—546)



1. A shingle, clapboard and the like, comprising a tapered panel of flexible plastic material with a thick lower end and a thin upper end, a plurality of grooves extending inwardly from said lower end and having lateral recesses and shoulders on each side of the grooves and a curved recess at the end of the groove, and a lug for each groove, said lug being nearer the upper end than said groove and being in longitudinal alignment with said groove on the opposite side of the shingle, and said lug having a neck and head for slipping into said groove and recesses, respectively, when the shingle is applied to a supporting structure.

3,309,832
EDGE TRIM ELEMENT FOR CERAMIC WALL CONSTRUCTION

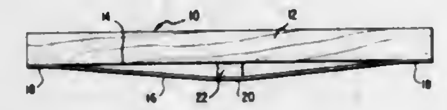
Elmer J. Filsinger, Glendale, Calif., assignor to International Pipe and Ceramics Corporation, Los Angeles, Calif., a corporation of Delaware
Filed May 19, 1964, Ser. No. 368,564
3 Claims. (Cl. 52—610)



1. A ceramic trim element adapted for multi-purpose use in wall structures employing a plurality of ceramic tile assembled in a pattern, comprising: a ceramic body member including: a main body portion of uniform width having a front glazed surface, a glazed edge face, and a back unglazed surface; said main body portion having adjacent said glazed edge face a longitudinal edge section of reduced thickness providing a longitudinally extending front surface recess; and a leg portion projecting from the back surface of the main body portion at the edge opposite the reduced edge section and generally normal thereto, said leg portion having uniform width for the length of the main body portion and having an outer glazed surface merging with the outer glazed surface of the main body portion, a glazed edge face and a sloping unglazed back face merging with the back unglazed surface of the main body portion.

3,309,833
STRUCTURAL WOODEN BEAMS

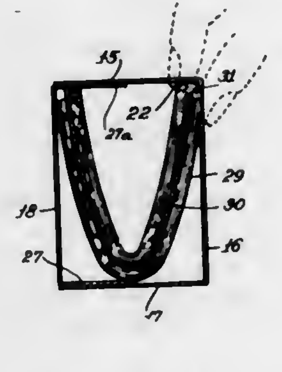
John C. Jureit, Miami, Fla., assignor to Automated Building Components, Inc., Miami, Fla., a corporation of Florida
Filed May 22, 1963, Ser. No. 282,299
8 Claims. (Cl. 52—691)



1. A structural wooden beam comprising an elongated wooden member adapted to be subjected to transverse loads so as to cause tensile stresses on one side of its neutral surface and an elongated metal strip extending along a surface of said beam subject to said tensile stress, said metal strip extending along at least the major portion of the entire longitudinal length of said surface subject to said tensile stress and attached thereto solely by means of a plurality of slender elongated nail-like teeth struck from said strip and pressed into said wooden member, there being at least a group of said teeth disposed adjacent each end of said strip, said teeth having a length adequate to provide withdrawal resistance which maintain said strip in position on said wooden beam.

3,309,834
DISPENSING CARTON SUITABLE FOR PLASTIC BAGS AND THE LIKE

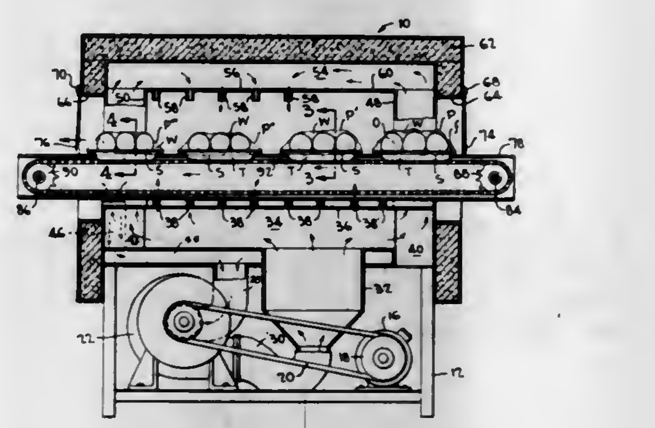
Kenneth T. Buttery, Kalamazoo, Mich., assignor, by mesne assignments, to Brown Company, a corporation of Delaware
Original application Oct. 4, 1963, Ser. No. 314,025, now Patent No. 3,195,772, dated July 20, 1965. Divided and this application Mar. 12, 1965, Ser. No. 439,292
5 Claims. (Cl. 53—21)



1. A method of filling a dispensing carton with a plurality of thin sheet-form articles, said carton having means for providing an exit slot, said method comprising folding said sheet-form articles around the leading edge and adjacent the sides of a sheet-form insert member, bowing said insert member and inserting said insert member and said sheet-form articles into said carton in arcuate form with the leading edge of said insert member supporting the folds of said sheet-form articles in position adjacent said exit slot providing means, and closing said carton.

3,309,835
METHOD AND APPARATUS FOR PRODUCING PACKAGES WITH A HEAT-SHRINK FILM

William S. Peppler, Chappaqua, N.Y., assignor to Diamond International Corporation, a corporation of Delaware
Filed Jan. 23, 1964, Ser. No. 339,651
3 Claims. (Cl. 53—30)



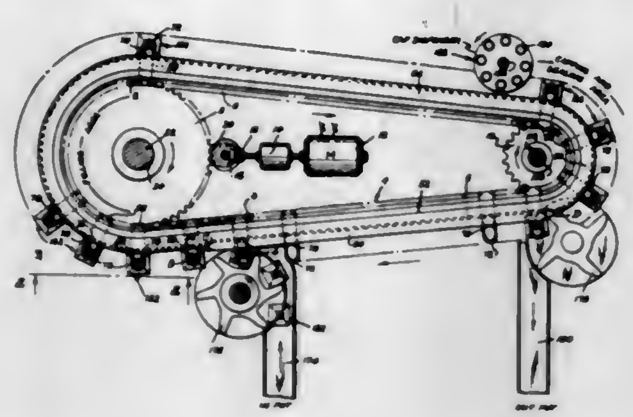
1. The method for producing a package comprising a peripherally flanged tray, a product therein, and a tensioned heat-shrunk film wrapper circumposed thereabout and including wrapper seals disposed beneath the peripheral flange of the tray, comprising the steps of:
(a) circumposing a loose, heat-shrinkable wrapper about a peripherally flanged tray filled with a product and orienting seals of said loose wrapper in a position below a plane passing through the peripheral flange of said tray;
(b) continuously conveying said tray and wrapper thereabout through a predetermined path of travel within an enclosing tunnel;
(c) directing a blast of hot air, while said tray and wrapper are conveyed, only from beneath said tray and conveyor and upwardly toward the under surface of said tray and wrapper while leaving the upper surface of said tray and wrapper exposed, and shrinking said wrapper so that the wrapper seals are disposed within an area spaced from and inwardly below said tray peripheral flange; and
(d) directing a blast of hot air simultaneously only toward the upper and lower surfaces of said tray and wrapper while said tray and wrapper are being conveyed whereby said wrapper is finally shrunk and said wrapper is formed without excessive tension being imposed on said wrapper seals and accordingly inhibiting rupture of said wrapper seals.

3,309,836
METHOD AND APPARATUS FOR FILLING AND HEAT-SEALING PLASTIC CONTAINERS

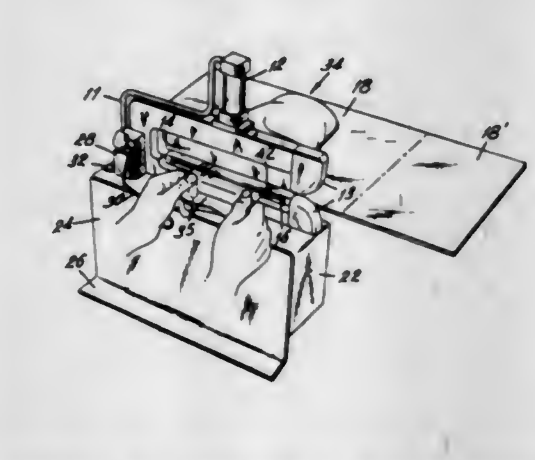
Fulton W. Hallowell, Jr., Levittown, Pa., assignor to R. E. Hartung Company, Inc., a corporation of New Jersey
Filed May 29, 1963, Ser. No. 284,261
8 Claims. (Cl. 53—39)

1. The process of heat-sealing a closure to a liquid filled, lightweight thermoplastic bottle having a radially outwardly extending flange at the upper extremity thereof, consisting of: supporting said bottle solely by said flange; applying a heat-sealable closure to the upper surface of said flange; clamping said closure and said flange between

said support and a sealing head at concentric, spaced-apart circular areas and simultaneously pressing an annular, heated element against said closure concentric with and between said spaced-apart circular areas to heat-seal said closure to said flange only between said concentric, spaced-apart circular areas; and simultaneously releasing said closure and said flange from between said sealing head, said heated element and said support.

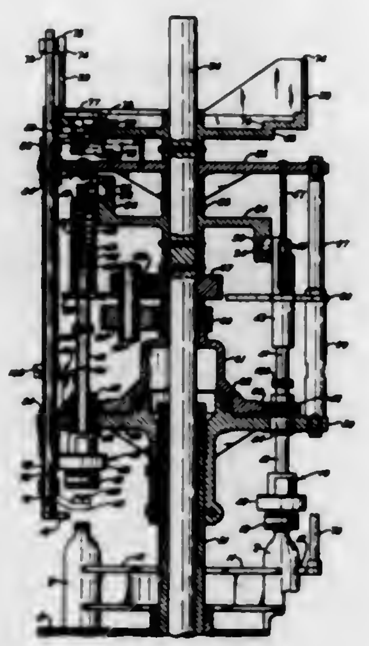


3,309,837
METHOD AND APPARATUS FOR PRODUCING A PACKAGE
Clifford C. Faust, La Grange, and Alvin E. Ericson, Chicago, Ill., assignors to Union Carbide Corporation, a corporation of New York
Filed Oct. 21, 1964, Ser. No. 405,438
7 Claims. (Cl. 53—39)



1. A method for producing a package comprising an article completely encased in an elastic thermoplastic film under tension which comprises (a) prealigning said article in an open-mouth bag of elastic thermoplastic film at a first station, said bag having a length greater than that required to encase said article, (b) straightening the mouth of said bag at said first station, (c) moving said article in said bag to a second station, (d) applying tension to the open-mouth end of said bag in a longitudinal direction so as to tension said bag about said article, (e) applying a transverse clamping force to the mouth of said bag while under tension in an area immediately adjacent said article, (f) relaxing the tension on the open-mouth end of said bag while maintaining said clamping force, (g) heat sealing said bag in a transverse region coextensive with said clamping area, (h) reapplying tension to the open-mouth end of said bag at the termination of said heat sealing while maintaining said clamping force to sever the excess portion of said bag along the edge of said region furthest from said article, (i) cooling said sealed region while maintaining said clamping force, (j) releasing said clamping force, and (k) removing said package from said second station by the force of gravity.

3,309,838
CAPPING MACHINE
Charles V. Wilhere, Pittsburgh, Pa., assignor to Horix Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 17, 1964, Ser. No. 360,652
12 Claims. (Cl. 53—67)

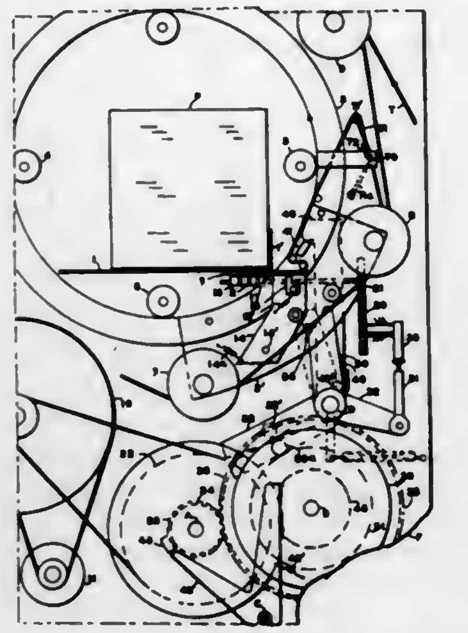


1. In a machine of the type described, having a rotary turret and a plurality of vertically reciprocable spindles mounted on the turret and means for feeding containers successively onto the turret and for positioning each container in closure receiving alignment with a spindle and a source of closures adjacent the periphery of the turret and a transfer arm associated with each spindle for normally picking up a closure from the source and transferring it to the spindle for application to a container, means for assuring the pick up of a closure by each transfer arm only in response to the presence of a container in closure receiving alignment with the spindle associated with that arm, said means comprising: sensing means operable solely in response to downward movement of the spindle for determining the presence or absence of a container in closure receiving alignment with said spindle, and cam means responsive to such sensing means for preventing the transfer arm from picking up a closure from said source in the absence of such a container.

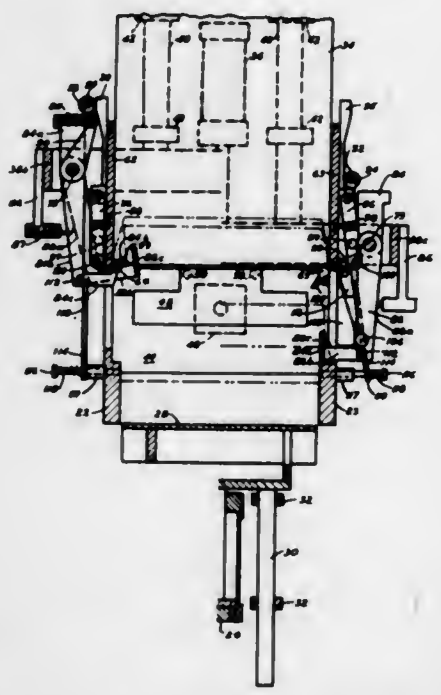
3,309,839
PACKAGE BANDING MACHINE
Floyd A. Lyon, Brookville, N.Y., assignor to Halm Instrument Co., Inc., Glen Head, N.Y.
Filed Sept. 26, 1963, Ser. No. 311,794
2 Claims. (Cl. 53—198)

1. Banding means comprising,
a frame,
a package holding table on said frame,
a vertical rotatable ring mounted around said table,
means to rotate said ring,
a tape feeder mounted on said ring,
a plurality of tape rollers equally spaced around said ring,
means to clamp the end of said tape to said table,
said tape feeding means being adapted to carry said tape around said package,
means to take up slack in said tape caused by overtravel of said tape feeding means,
means to seal said tape to form a band around said package,

means to cut said tape,
means to grip said tape before cutting,
and means to feed the cut end of said tape to said clamp.



3,309,840
PACKAGING MACHINE
Viktoras Bilaisis, 7355 S. Sacramento Blvd., Chicago, Ill. 60629
Filed Apr. 30, 1964, Ser. No. 363,761
32 Claims. (Cl. 53—243)

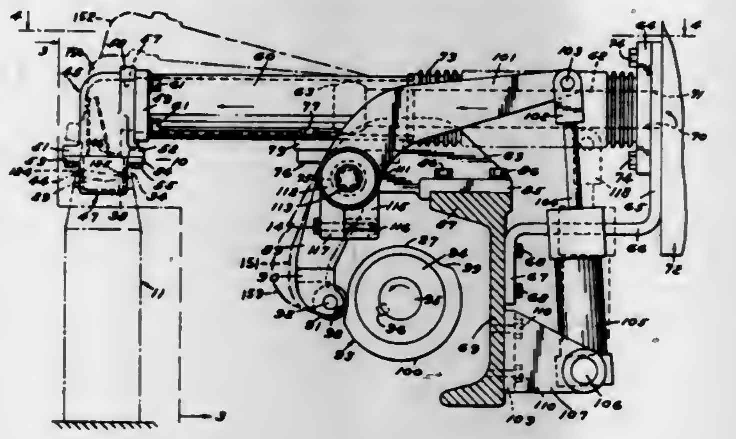


1. A packaging machine for feeding containers one at a time from the bottom of a stack of inverted nested containers and for packing articles therein, said machine comprising

(a) a pair of spaced, vertically reciprocable, openable and closable gripping means each including a pair of gripping portions openable to receive therebetween and closable to grip therebetween a respective one of a pair of opposite end portions of a bottom container in a stack of inverted nested containers, said gripping means being lowerable from an upper position to move said bottom container downwardly from said stack and dispose said container in an inverted position for receiving articles fed upwardly thereinto, and

(b) a vertically reciprocable table for horizontally receiving articles fed thereto in a lower position thereof, said table being raisable from said lower position to push articles thereon upwardly into said inverted container held by said gripping means to fill said inverted container with said articles and to push said articles farther to strip said filled inverted container from said gripping means and dispose said filled inverted container on said table in an upper position of said table.

3,309,841
SELECTIVE TOP HEATER FOR PLASTIC COATED PAPERBOARD CONTAINER PACKAGING MACHINES
Harry B. Egleston, Livonia, and Melvin W. Miller, Detroit, Mich., assignors to Ex-Cell-O Corporation
Filed May 18, 1964, Ser. No. 368,430
16 Claims. (Cl. 53—373)

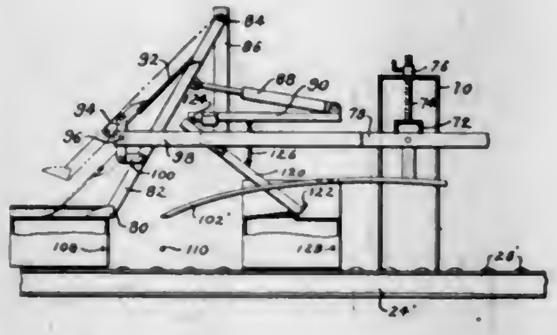


11. In a container packaging machine including means for closing the closure elements of thermoplastic coated containers, a conveyor means for carrying the containers through the machine to the closing means, and a power drive shaft for operating the machine; a heating apparatus for heating the thermoplastic coated sealing surfaces of container closure elements, comprising:

(a) a hot air housing disposed over said conveyor;
(b) a hot air manifold connected to said heater housing;
(c) means pivotally supporting said manifold on the machine;
(d) means connecting said hot air manifold to a source of hot air under pressure;
(e) means mounted on said machine and connected to said hot air manifold for selective pivoting of the manifold and hot air housing to move the housing between a lower operative heating position adjacent the sealing surfaces of the closure elements of a container on a conveyor and a first raised inoperative heating position above the container or a second raised inactive heating position above the container;
(f) said means for pivoting a manifold comprises an actuator lever connected at one end thereof to the means for pivotally supporting said manifold on the machine and provided at the other end with a cam follower;
(g) a cam operatively mounted on said machine drive shaft and engagable with said cam follower for pivoting the housing between the heating position and the first raised inoperative heating position;
(h) a second lever pivotally mounted on said machine and having one end thereof connected to the means for pivotally supporting said manifold on the machine; and
(i) a power cylinder mounted on said machine and operatively connected to the other end of said second lever and operative to move the second lever in one

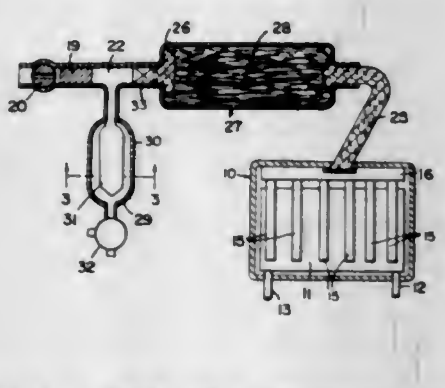
direction to raise the housing to said inactive heating position, and in the other direction to maintain said cam follower in operative engagement with said cam.

3,309,842
CARTON FLAP-OPENING APPARATUS
Boyd J. Arnett, deceased, late of Los Gatos, Calif; Lillian F. Arnett, 22100 Summit Road, Los Gatos, Calif. 95030, administratrix of estate of Boyd J. Arnett
Filed Feb. 27, 1964, Ser. No. 347,927
7 Claims. (Cl. 53—382)



1. A carton flap opener which comprises means for moving a carton in upright disposition along a predetermined path, a carriage supported for movement above and along the carton path, an arm pivotally supported about a horizontal axis on said carriage and arranged to swing downwardly so that the lower extremity thereof can enter the carton path, said arm having a hook at its lower extremity adapted to engage the transversly-disposed edge of one flap of a moving carton, and means for moving said carriage in the direction of carton motion at a speed substantially greater than the speed of carton advance whereby said hook engages and opens the carton flap.

3,309,843
LIQUID HANDLING SYSTEM
Peter Nicholas Rigopulos, Boston, and Richard Hardin Blackmer, Topsfield, Mass., assignors to General Electric Company, a corporation of New York
Filed Oct. 10, 1962, Ser. No. 229,679
8 Claims. (Cl. 55—35)



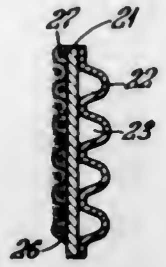
1. A method of selectively removing liquid from a compartment containing a gas-vapor mixture and substantially removed from the influence of gravity comprising

condensing said vapor to a liquid on a solid surface within the compartment,

transporting by capillary action the condensed vapor from the surface directly to a conduit containing a wick extending from the compartment to a point exterior of the compartment, and

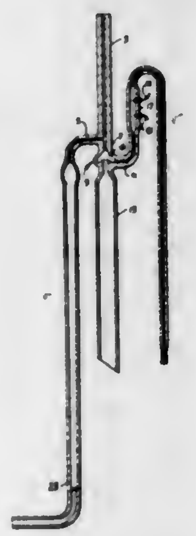
establishing a positive pressure within the compartment with respect to the exterior point to expel liquid from the conduit.

3,309,844
PROCESS FOR ADSORBING GASES
Russell A. Hemstreet and Donald M. Ruttenbur, Kenmore, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Nov. 29, 1963, Ser. No. 326,949
3 Claims. (Cl. 55—75)



1. A process for adsorbing a gas, which process comprises providing said gas at a first temperature and contacting said gas with a solid agglomerate and simultaneously cooling such agglomerate to a second lower temperature by heat exchange with a colder solid surface in contiguous association therewith, said agglomerate comprising a major amount of a finely divided crystalline zeolitic molecular sieve adsorbent and a minor amount of a finely divided elemental metal having a melting point over 300° C. uniformly dispersed throughout the agglomerate.

3,309,845
GAS-LIQUID CONTACT APPARATUS
Dale M. Coulson, 884 Colorado Ave., Palo Alto, Calif. 94303
Filed Apr. 10, 1964, Ser. No. 358,762
2 Claims. (Cl. 55—228)



1. A gas-liquid contact apparatus comprising in combination:

(a) a first generally vertical capillary tube for the introduction of a gas into the apparatus;

(b) a second generally horizontal capillary tube entering into the first tube at substantially right angles thereto;

(c) a smooth walled gas-liquid contact capillary tube, the contact tube forming a continuation of the first tube and extending downwardly from the junction of the first and second tubes;

(d) a separator section at the lower terminal end of the contact capillary tube, said separator section comprising an enlarged chamber having a gently flared entrance leading from the contact tube;

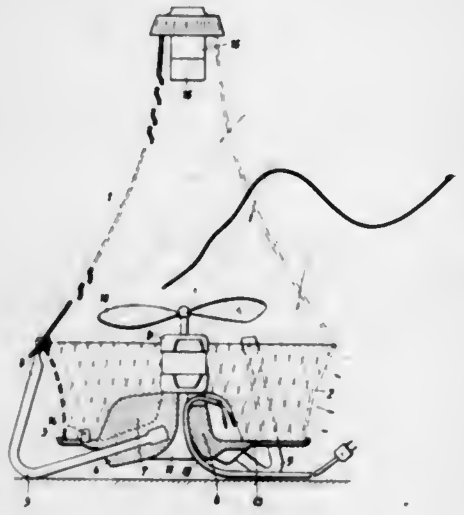
(e) a side capillary tube leading at right angles from the separator section;

(f) an enlarged tube leading from said separator section and extending generally downwardly therefrom;

(g) a barrier extending upwardly from the bottom of the separator section between the side capillary tube and the enlarged tube;

(h) said tubes being so proportioned that liquid will flow down the walls of the contact and separation sections with gas flowing downwardly at the center of the hollow, liquid-wall column so formed and said barrier and said separator section being so constructed to cause a pool of liquid to form in the bottom portion of the separator section so that a portion of the liquid having gas dissolved therein will flow out the side capillary tube and the balance of the gas and liquid will flow over said barrier and out the enlarged tube.

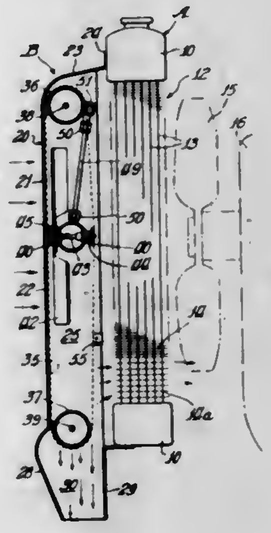
3,309,846
HEATER-VENTILATOR
Jurgen Schneider, 9 St. Michaelstrasse 59, Siegen, Westphalia, Germany
Filed May 21, 1964, Ser. No. 369,328
Claims priority, application Germany, May 21, 1963, Sch 33,315; May 24, 1963, Sch 33,789
12 Claims. (Cl. 55—233)



1. A heater ventilator having a blower and comprising in combination:

a housing having an upwardly tapering upper portion provided with air inlet means and a lower portion provided with air outlet means for delivering air radially with respect to such blower in an approximately horizontal direction, a base plate formed of a molded substance mounted at the lower end of said housing and having a middle portion extending upwardly, said middle portion having a funnel shaped opening therethrough and having a cross-sectional area which diminishes in the upward direction, said base plate further having a lower surface including an annular outer portion and a funnel-shaped inner portion whose outer extremity is contiguous with said annular portion and whose inner extremity is contiguous with said funnel shaped opening of said middle portion to create a smooth transition between said annular portion and said funnel shaped opening, said base plate further having an upper surface having a plurality of substantially vertical ribs extending radially outward from said middle portion for mechanically stiffening said base plate and for preventing a circular movement of the air supplied by said blower, ventilator means including said blower and an electric motor, said electric motor being mounted upon an upper surface of said middle portion of said base plate and said blower extending upwardly from said motor, and an electric cable extending through and being laterally supported by, said funnel shaped opening to an upper side of said base plate and connected to said electric motor, said funnel shaped opening having gently curving walls for preventing the sharp bending of said cable and for permitting said cable to emerge from said opening in any radial direction.

3,309,847
FILTERING MEANS FOR A HEAT EXCHANGER
Desmond M. Donaldson, Halton, Ontario, Canada, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Continuation of abandoned application Ser. No. 98,452, Mar. 27, 1961. This application Sept. 23, 1964, Ser. No. 403,425
1 Claim. (Cl. 55—268)



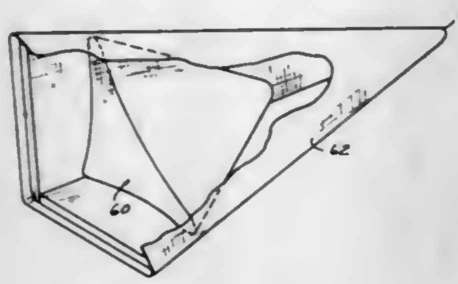
In a heat exchanger of the vehicle-type including an engine fan for moving a stream of air through said heat exchanger, a self-cleaning filtering device for removing particles from said stream of air comprising: a housing having an opening therethrough connected to said heat exchanger, said opening defining an area substantially equivalent to the frontal area of said heat exchanger, said housing defining a first chamber and a second chamber therein, said first chamber being in alignment with said opening, said second chamber being a low pressure chamber located remote from said opening, rotatable means including a pair of spaced apart drums and a flexible foraminous belt carried by said spaced apart drums, said rotatable means being positioned within said housing whereby rotation thereof is effective to move a portion of said belt through said first chamber in confronting relationship with said stream of air whereby said foraminous belt in combination with said driven stream of air is effective to filter particles from said driven stream of air and thence to move said portion of said foraminous belt into said second chamber whereby said portion of said foraminous belt is remote said opening and is remote said driven stream of air and whereby said particles are free to fall from said portion of said foraminous belt, and driving means positioned within said housing driven by said stream of air, said driving means being connected to said rotatable means and being effective to rotate said rotatable means.

3,309,848
AIR FILTRATION
Louis Schwab, P.O. Box 5146, Orlando, Fla. 32805
Filed June 19, 1964, Ser. No. 376,543
7 Claims. (Cl. 55—341)

1. A filter unit for use in separating entrained particles carried by an air stream comprising:

(1) a hollow outer member formed of air-permeable filtering material having a triangular upstream open

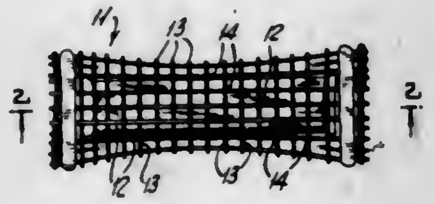
end and a downstream closed end, the member consisting of three wall portions which taper from the upstream end to the downstream closed end, the upstream open end comprising a triangular base having resilient legs which are outwardly and coplanarly bowed, the wall portions being affixed to the base; and



(2) an inner hollow tapering pre-filter member, formed of filtering material disposed within and attached to member 1 at a plurality of spaced apart points, the downstream end of the pre-filter terminating inwardly of the downstream end of member (1), the pre-filter being spaced from the inner walls of member (1) except for the area where the pre-filter is attached to member (1), such spacing allowing a peripheral portion of the air stream to bypass the pre-filter.

3,309,849
AIR TREATING DEVICE

Samuel I. Ward, West Hartford, Conn., assignor to Crystal Research Laboratories, Inc., Hartford, Conn., a corporation of Connecticut
Filed Dec. 31, 1964, Ser. No. 422,709
3 Claims. (Cl. 55—387)

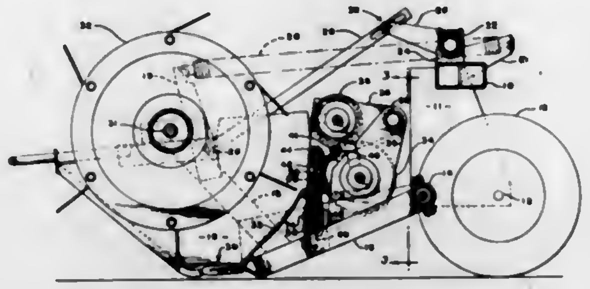


1. An air treating device comprising a tubular, open mesh container made of a plurality of criss-cross flexible plastic strands, and at least one cartridge within said container, said cartridge comprising air permeable walls and particles of air-treating materials within said cartridge, the ends of said container being sealed permanently to enclose said cartridge therein.

3,309,850
HAY HARVESTING MACHINE

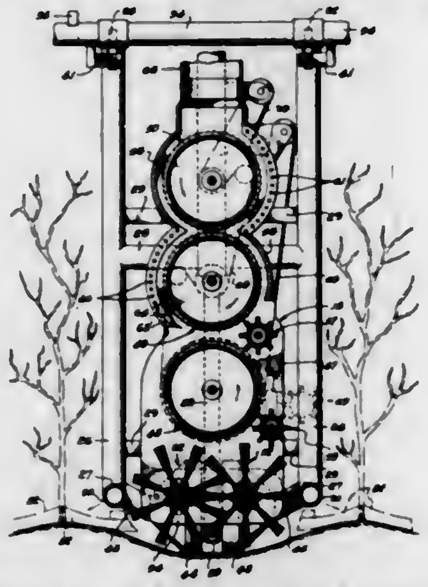
Emmett F. Glass, Akron, and John K. Hale and Richard P. Bernhardt, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Jan. 5, 1965, Ser. No. 423,538
5 Claims. (Cl. 56—1)

1. A hay conditioning device comprising a mobile frame adapted to travel in a forward direction, a first hay conditioning roll journalled on said frame in a fixed position and extending transverse to the direction of travel, a second hay conditioning roll normally engaging said first roll and disposed above and parallel to said first roll, means mounting said second roll on said frame for rotation about its own axis and for vertical swinging movement upwardly out of engagement with said first roll, a single elongated coil tension spring supported on said frame parallel to said rolls and disposed below said second roll, first and second guide means mounted on said frame respectively below the ends of said second roll, first and second flexible members respectively connected to the ends of said coil spring and to said second roll mounting means adjacent the ends of said second roll, said first and second flexible members extending downwardly from said roll mounting means respectively to said first and second guide means and then laterally inwardly toward the ends of said spring whereby the tension of said spring on said flexible members biases said second roll downwardly into engagement with said first roll, and selectively operable means for varying the tension of said spring to vary the biasing force on said second roll.



3,309,851
COTTON SCAVENGER

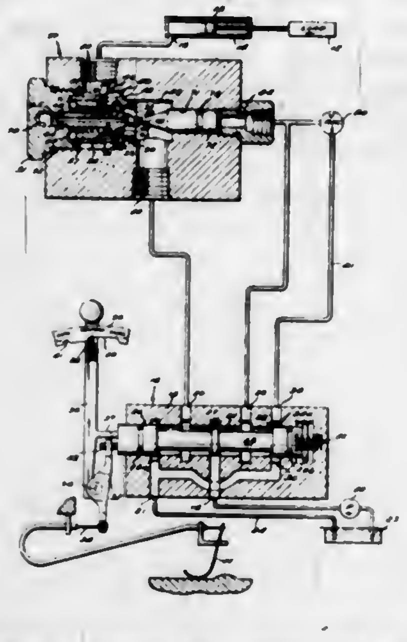
Robert D. Logan, Rte. 1, Box 49, Blythe, Calif. 92225
Filed Aug. 7, 1963, Ser. No. 300,592
47 Claims. (Cl. 56—12)



1. Apparatus for salvaging cotton from the ground comprising, a main frame including means for supporting the same for advance between rows of cotton plants, cotton cleaning means mounted on said main frame including debris destructor means and a plurality of rotary toothed cylinders arranged in superimposed relation to one another and effective to transfer cotton upwardly while the associated debris is being broken apart and rejected from the apparatus, said debris destructor means rotating in opposition to and closely beside said toothed cylinders and effective in cooperation therewith to break leaves, stalks, and the like into bits and to cast them away from cotton engaged with teeth of said toothed cylinders, and means underlying said main frame effective to sweep cotton from the ground and including means for elevating the cotton from the ground and casting the same upwardly against the teeth of the lowest one of said toothed cylinders.

3,309,852
HYDRAULIC SYSTEM AND VALVE ARRANGEMENT THEREIN

John D. Allen, South Euclid, Ohio, assignor to Fawick Corporation, a corporation of Michigan
Filed Jan. 20, 1964, Ser. No. 339,009
5 Claims. (Cl. 56—208)



1. A hydraulic system for controlling the height of a cutting head on a vehicle having ground-engaging feeler means, said system comprising:

a reservoir for hydraulic liquid;

a pump connected to said reservoir to pump liquid therefrom;

a hydraulic motor for raising and lowering said cutting head;

an open-center valve having an inlet port connected to the pump outlet, a motor port connected to said motor, a return port connected to the reservoir, an additional port, and a reciprocable valve spool positioned between said inlet, return, motor and additional ports and controlling the respective liquid flows between said ports, said valve spool having a neutral position in which it connects said inlet port to said return port, said valve spool having a "raise" position at one side of said neutral position in which it connects said inlet port to said motor port and blocks said return port from both said inlet port and said motor port and connects said additional port to said return port, said valve spool having a "lower" position at the opposite side of said neutral position in which it connects said motor port to said return port and blocks said inlet port from both said return and motor ports and connects said inlet port to said additional port, and spring means in said valve biasing said valve spool to its "lower" position;

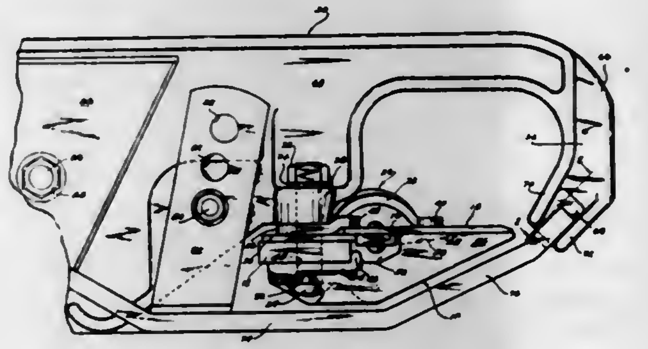
a normally-closed counterbalance valve connected between said motor port and the hydraulic motor and preventing return flow from the motor in said neutral position of said reciprocable valve means, said counterbalance valve being responsive to liquid pressure at said motor port to open in said "raise" position of said reciprocable valve means, and a movable pressure-responsive member connected to said additional port and operable by liquid pressure thereat in said "lower" position of said reciprocable valve means to hold said counterbalance valve open for return flow from said motor to said motor port and thence to said return port at a rate proportional to the liquid pressure at said additional port acting on said movable pressure-responsive member;

a movable rigid modulating member operated by said ground-engaging feeler means and engaging said reciprocable valve means in opposition to said spring means, said modulating member being movable inwardly against the urging of said spring means to position said valve spool in its "raise" position and being movable outwardly to permit said spring means to position said valve spool in its "lower" position;

and a manual control member selectively engageable with said valve spool in opposition to said spring means to position said valve spool in its "raise" position independent of the position of said modulating member.

3,309,853
AGRICULTURAL IMPLEMENT

Laurel R. Yeske, 3607 Pheasant Run, Rockford, Ill. 61103
Original application Apr. 19, 1962, Ser. No. 188,750. Divided and this application July 9, 1965, Ser. No. 484,496
6 Claims. (Cl. 56—314)



1. In an outer shoe for a cutting mechanism of the type including a guard bar, a series of guard fingers fixed thereto, fastening means for fixing said guard fingers to said guard bar and a sickle bar reciprocably guided on said bar and having a series of cutting blades fixed thereto in position to cooperate with the guard fingers, and hold down means for said cutting blades, said outer shoe comprising a

member transverse to said guard bar extending upwardly and rearwardly from said guard bar,

means on said member engaged with the fastening means of one of said fingers for securing said member on said guard bar and also engaged with said hold down means, a

slipper connected to said member and extending generally beneath said member, said slipper being positioned to engage the ground and support said member and said guard bar for travel therealong, and

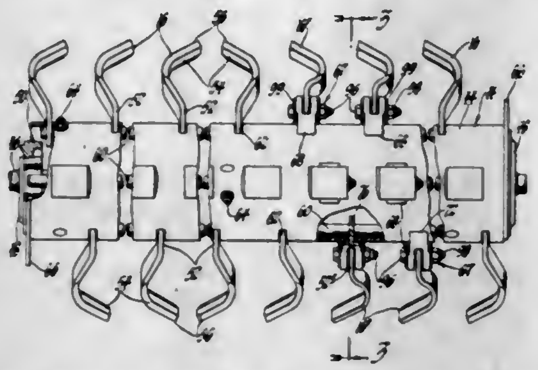
means on said slipper engaged with said member for determining the position of said slipper relative to said member whereby to maintain the cutting mechanism at a predetermined height above the ground, and the last mentioned means having another position in which it causes said slipper to maintain said cutting mechanism at a different height above the ground.

3,309,854
HEAVY DUTY FLAIL ROTOR

Melville J. Mitchell, Birmingham, and Fred W. Noller, Farmington, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich.
Filed Apr. 24, 1964, Ser. No. 362,265
6 Claims. (Cl. 56—504)

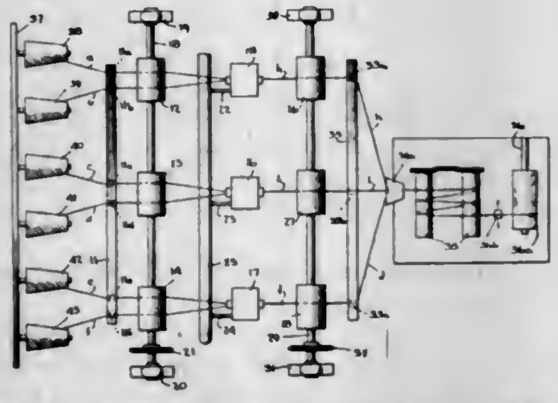
1. A flail rotor for agricultural implements and the like comprising; an elongate rotor casing, a plurality of cutter assemblies mounted on the rotor casing, each of said cutter assemblies including lug means projecting radially outward from said rotor casing, an opening in

said lug means having an axis parallel to the longitudinal axis of said rotor casing, a bushing rotatably mounted in said opening, a portion of reduced diameter formed on said bushing, a cutting element having an apertured shank portion rotatably mounted on the reduced diameter portion of said bushing, the aperture of said shank portion having a diameter less than the diameter of the opening in said lug means, and means axially clamping said shank portion against said bushing for frictionally restraining said cutting element against rotation relative to said bushing but permitting free rotation of said bushing in said lug means.



3,309,855
PROCESS AND APPARATUS FOR PRODUCING BULKED PLIED YARN

Reiner G. Stoll and Ralph H. Balch, Charlotte, N.C., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed June 9, 1961, Ser. No. 115,979
10 Claims. (Cl. 57—34)

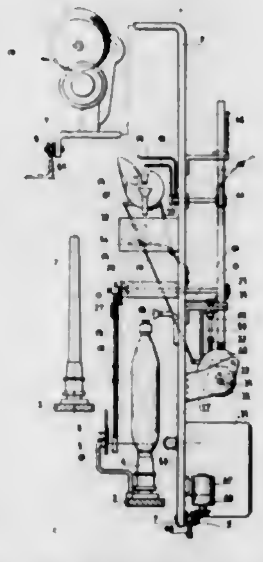


1. The process of producing plied yarn, which comprises in one continuous operational sequence feeding a plurality of strands of continuous filament synthetic yarn at a predetermined overfeed ratio ranging from about 5 to 50% through a texturizing zone, subjecting each of said yarn strands while in said texturizing zone to an associated filament-deforming action so as to increase the denier of said yarn strands, said texturizing zone being of the type which does not produce filament breaks, feeding said strands with their continuous filaments so deformed to a plying zone at a predetermined drawdown ratio ranging from about 1 to 50%, and twisting said yarn strands about one another while in said plying zone to form the desired continuous filament plied yarn.

7. Apparatus for producing plied yarn in one continuous operational sequence, comprising means for feeding a plurality of strands of continuous filament synthetic yarn at a predetermined overfeed ratio ranging from about 5 to 50% through a texturizing zone, means in said texturizing zone for subjecting each of said yarn strands while passing therethrough to an associated filament-deforming action, said filament-deforming action being of the type which does not produce filament breakage, means for feeding said strands with their continuous filaments so deformed at a drawdown ratio ranging from about 1 to 50% through a plying zone, and means in said plying zone for twisting the texturized yarn strands about one another to form the desired continuous filament plied yarn.

3,309,856
DEVICE FOR THE SPINNING OR TWINING AND WINDING OF YARNS

Hendrik Albert Zoetman, Enschede, and Gijsbertus Cornelis van den Berg, Groenlo, Netherlands, assignors to N.V. Maatschappij voor Industriele Research en Ontwikkeling, Enschede, Netherlands
Filed July 24, 1963, Ser. No. 297,386
Claims priority, application Netherlands, Sept. 13, 1962, 283,204
8 Claims. (Cl. 57—34)



1. Apparatus for the spinning or twining of yarn and the rewinding of the yarn into large yarn bodies, comprising a spinning or twining machine having a plurality of spinning or twining spindles arranged in a row, means for holding doffed full tubes in a row substantially adjacent the row of spinning or twining spindles, a winding machine for rewinding the yarn from the doffed tubes into larger bobbins, and means mounting said winding machine for shifting movement along said spinning or twining machine to effect rewinding of successive doffed tubes in said row thereof.

3,309,857
APPARATUS FOR PROCESSING CABLE-LIKE ELEMENTS

Otto Haugwitz, La Celle-Saint-Cloud, France, assignor to Societe Anonyme Geoffroy-Delore, Paris, France, a French company
Filed Apr. 8, 1964, Ser. No. 358,245
Claims priority, application France, Apr. 12, 1963, 931,400; Dec. 2, 1963, 955,680
23 Claims. (Cl. 57—58.83)

1. Apparatus for imparting differential rotation to spaced sections of a flexible cable-like element about the axis of the element whereby to control the degree of twist present in said element, which apparatus comprises guide means constraining the element to follow a curved path having coaxial end portions extending in a common direction, said path having at all points thereof a radius of curvature greater than the radius above which smooth bodily rotation of the element about its own axis is permitted, means for rotating the constraining means about the common axis of said end portions, and including means for inducing rotation of the element about its own axis throughout the extent of said path, whereby to impart to the section of the element present at one end portion of the path an angular velocity differing from that of the section of the element present at the other end portion of the path.

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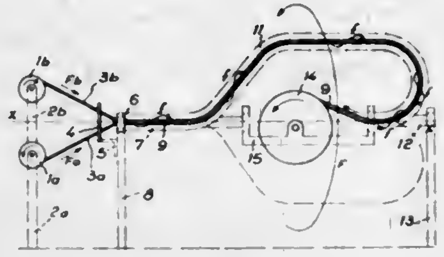
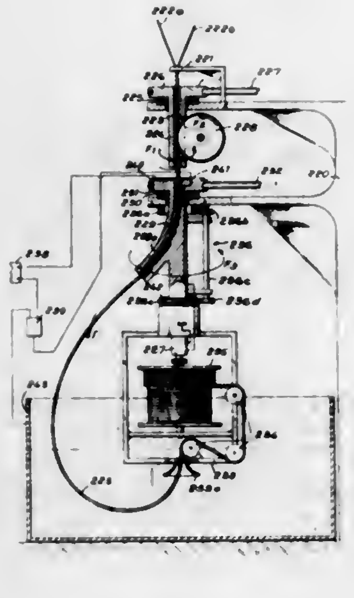
16. Apparatus for feeding a cable-like element comprising rotatable guide means constraining said element to follow a path including an axial input end portion followed by a radially diverging portion and an output end portion coaxially aligned with and spaced from said input end portion and extending in the same direction, said element being unconstrained over an intermediate portion of said path between said diverging portion and said output end portion, means for rotating the guide means about the common axis of said end portions whereby the element will belly out under centrifugal force into a large radius loop in said intermediate unconstrained portion thereof so as to allow the element to revolve bodily about its own axis throughout said path, and means for feeding the element axially from said input towards said output end of the path whereby to impart differential rotation to the section of said element present at said end portion of the path and control the degree of twist in said element.

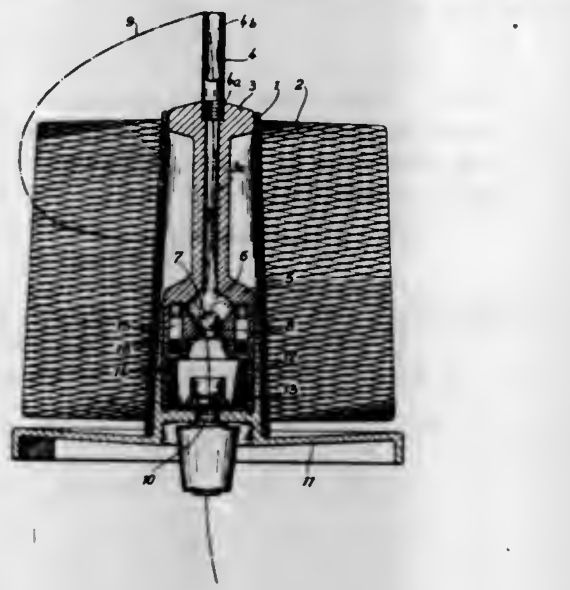




3,309,858
THREAD BRAKE, ESPECIALLY FOR DOUBLE TWIST SPINDLES

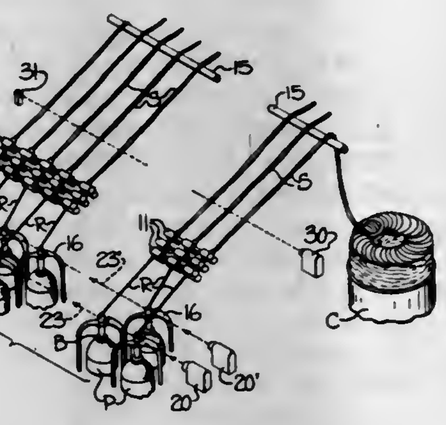
Gustav Franzen, Neersen, near Krefeld, Germany, assignor to Palitex Project-Company G.m.b.H., Krefeld, Germany
Filed July 31, 1964, Ser. No. 386,627
Claims priority, application Germany, Aug. 9, 1963, N 23,587
10 Claims. (Cl. 57—58.86)

1. In combination with a tubular member having an axial bore with a thread inlet and a thread outlet for conveying a thread therethrough, especially for double twist spindles: a thread brake having housing means defining a chamber provided with a chamber inlet communcating with said thread outlet and also provided with a chamber outlet for conveying a thread from said chamber inlet to and through said chamber outlet, first brake means associated with said housing means, second brake means arranged for cooperation with said first brake means and movable relative toward and away from said first brake means for respectively engaging and disengaging a thread therebetween which is conveyed into said chamber through said axial bore of said tubular member, and magnetic means axially movable selectively toward and away from one of said brake means to control the positions of said two brake means relative to each other.



3,309,859
CONTROL SYSTEM FOR TEXTILE ROVING FRAME

Benny L. Vehorn, Charlotte, N.C., assignor to James L. Highsmith and Company, Charlotte, N.C., a corporation of North Carolina
Filed Jan. 11, 1966, Ser. No. 519,921
9 Claims. (Cl. 57—81)

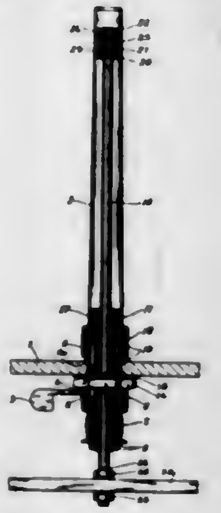


5. In a roving frame having a row of drafting units, guide means spaced rearwardly of the units and over which all sliver strands being drafted normally pass forwardly in a parallel plane to the units, and a row of aligned rotatable flyers for receiving textile roving strands from corresponding units and forming wound packages therefrom; the combination therewith of a control system for stopping the frame upon occurrence of an interrupted strand comprising:

- photoelectric means including a light source adjacent one end of the row of flyers, a photoelectric receiver adjacent the other end of the row and in the path of light from said light source, a signal generating means operatively connected to said receiver for generating a control signal in response to a rapid change in the intensity of light being applied to said receiver, said receiver having a scanning axis defining a detection area extending closely adjacent and longitudinally of the row of flyers and spaced forwardly of, above, and outside the paths of rotation of the upper extremities of the flyers such that any light reflected from the flyers is ineffective with respect to the receiver such as to cause said generating means to generate a control signal, but wherein the detection area is so located that any interrupted roving strands pass through said area and cause a rapid change in the intensity of the light being applied to said receiver by said light source to generate a control signal, frame stopping means operatively connected to said signal generating means and responsive to a control signal being generated by said signal generating means for stopping the roving frame.

3,309,860
SPINNING OR TWISTING SPINDLE WITH A DEAD SPINDLE SHANK

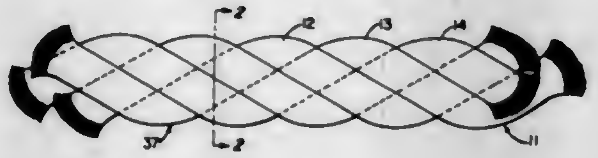
Johann Jacob Keyser, Grabenallee 16,
Aarau, Switzerland
Filed May 3, 1965, Ser. No. 452,612
7 Claims. (Cl. 57—130)



1. A textile spindle arrangement especially for spinning and twisting spindles, which includes: a first spindle shank member, supporting means for supporting said spindle shank member, first rotor means mounted on said first shank member for supporting the upper end portion of a spindle sleeve, a second spindle shank member substantially coaxially surrounding a portion of said first shank member and including second rotor means connected to said second shank member for supporting the lower end portion of a spindle sleeve, and bearing means rotatably journalling said second shank member on the outer peripheral surface thereof and independently of said first shank member while holding said second shank member substantially coaxial with regard to said first shank member.

3,309,861
POLYURETHANE COATED GLASS ROPE

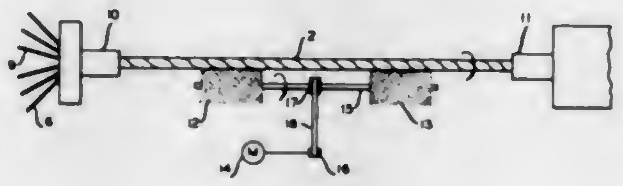
Robert M. Pierson, Hudson, and Anthony F. Finelli, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed May 14, 1964, Ser. No. 367,406
2 Claims. (Cl. 57—140)



1. A glass rope comprising outer elements surrounded by an elastic sheathing characterized in that the glass elements of the rope are twisted with narrow gaps between them and in that the material of the elastic sheathing penetrates through these gaps to essentially enclose said glass elements, said elastic sheathing comprising (1) a reactive hydrogen containing polymeric material having a molecular weight of about 700 to 10,000 selected from the group consisting of the polyester polyols, polyether polyols and polyesteramides, (2) an organopolyisocyanate, and (3) a cross-linking agent selected from the class consisting of diamines, amino alcohols and glycols.

3,309,862
ROPE MANUFACTURING PROCESS

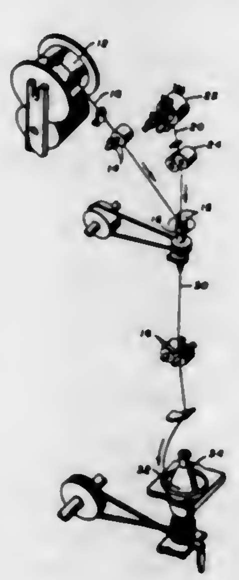
Henry A. Hood, Moorestown, N.J., assignor to Wall Industries, Inc., a corporation of Delaware
Filed Nov. 15, 1965, Ser. No. 507,856
5 Claims. (Cl. 57—160)



1. In the production of a rope by wrapping a plurality of strands about one another, said strands having a plurality of yarns at least on the outer surface thereof, each yarn being composed of at least a plurality of multifilament plastic fibers, the improvement comprising scuffing said strands before laying same into a rope.

3,309,863
PRODUCTION OF ELASTIC YARNS ON THE WOOLEN SYSTEM

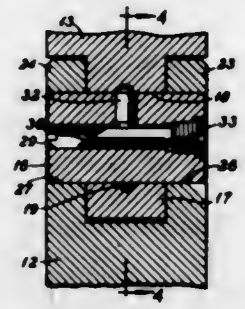
Peter P. Hermes, Decatur, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,657
3 Claims. (Cl. 57—163)



1. A method of making an elastic high-bulk yarn by a combined core and wrap spinning process which comprises feeding an untwisted elastic continuous filament into a stretch zone at a constant first feed, feeding a roving of staple fibers into the stretch zone, imposing a draft on the filament and roving, imparting a false twist to the roving, forming a loosely wrapped yarn in said stretch zone by allowing the false twisted fibers to wrap about the untwisted elongated filament, withdrawing the yarn from the stretch zone at a predetermined constant second speed, and twisting the yarn together during take-up under tension to produce an elastic high-bulk yarn.

3,309,864
FLEXIBLE LINK CONNECTION

Charles J. Arndt, Harvey, and Walter Silks, Downers Grove, Ill., assignors, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 6, 1964, Ser. No. 409,542
4 Claims. (Cl. 59—85)



1. In a flexible link chain, means for axially securing a rotatable hinge joint comprising:

a chain link having a circular aperture extending therethrough provided with an annular groove between the ends thereof;

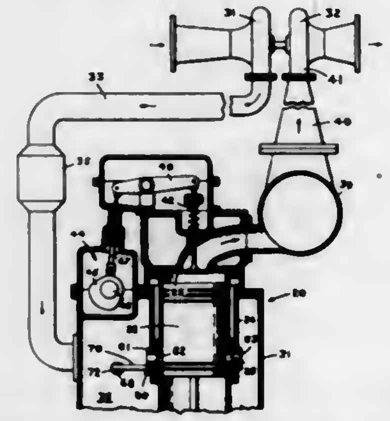
a pin rotatable in said circular aperture having an axial internally threaded end portion communicating with a radial passageway;

a detent slideable along said passageway toward and from said annular groove; and

a threaded locking member engageable with the threaded end portion of said pin and with said detent, effective to move said detent into engagement with said annular groove responsive to progression of said locking member in said pin.

3,309,865
INTERNAL COMBUSTION ENGINE

William M. Kauffmann, Hamburg, and Dietrich Birkholz, Williamsburg, N.Y., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 454,233
4 Claims. (Cl. 60—13)

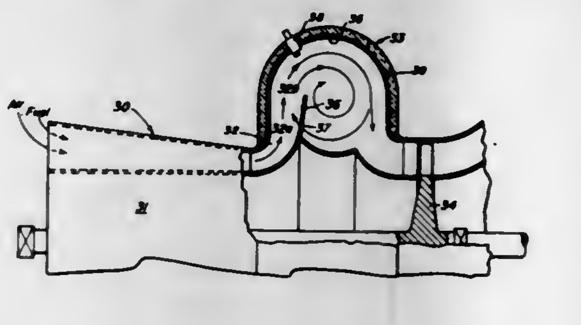


1. In a two stroke internal combustion engine the combination of:

(a) a cylinder,
(b) a piston slideable in said cylinder and disposed for engagement with said cylinder,
(c) crank shaft means connected to said piston for reciprocating the piston in the cylinder through a stroke having a top dead center position and a bottom dead center position,
(d) inlet means including a plurality of ports extending through said cylinder at a point therein above the piston when it is in the bottom dead center position of the stroke,
(e) at least two exhaust openings for said cylinder,
(f) rotary sleeve regulating means about said cylinder wall,
(g) means for rotating said rotary sleeve means to normally maintain said inlet means closed,
(h) cam means connected between said crank shaft means and said rotary sleeve regulating means for rotating said rotary sleeve means to open the inlet openings when said piston is substantially at the bottom dead center position thereof,
(i) an exhaust closure means for each of said exhaust openings disposed to maintain said exhaust openings normally closed and operative to conduct the flow of combusted gases from said cylinder through said exhaust openings,
(j) cam means connected between said crank means and said exhaust closure means for opening each of said exhaust closure means before said piston reaches bottom dead center position of the stroke and for serially closing said exhaust closure means at different times during the movement of said piston from the bottom dead center position to the top dead center position of the stroke,
(k) said cam means for the rotary sleeve means and said cam means for the exhaust closure means so connected to said crank shaft means as to permit unsymmetrical opening of said inlet opening means after said exhaust closure means are opened and unsymmetrical closing of said inlet opening means before the respective exhaust closure means are serially closed,
(l) exhaust manifold means in communication with said cylinder exhaust openings,
(m) inlet manifold means in communication with said inlet regulating means,
(n) turbo-charging means including a turbine in communication with said exhaust manifold and a compressor in communication with said inlet manifold,
(o) and said exhaust closure means disposed to operate independently of engine load conditions, whereby scavenging of combustion gases occurs independently of engine load whenever said rotary sleeve means and both exhaust means are opened so that all combusted gases are discharged into said exhaust manifold to thereby obtain improved combustion cycle efficiency for two stroke internal combustion engine operation.

3,309,866
COMBUSTION PROCESS AND APPARATUS

Paul H. Kydd, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 11, 1965, Ser. No. 439,020
17 Claims. (Cl. 60—39.02)



1. A power plant comprising in combination,
(a) a compressor,
    (1) said compressor having circumferentially disposed outlet means and having inlet means for receiving the combustion air input to said power plant,
(b) means connected to said inlet means for injecting fuel into said inlet means and thereby into the combustion air,

(c) a combustor housing comprising a confining toroid surface enclosing a volume within which compressed fuel-air mixture input is permitted to contact hot substantially completely burned gases present therein,

(1) said enclosing surface being directly exposed on one side thereof to the hot gases,

(d) a layer of solid insulation material covering the opposite side of said enclosing surface from said one side exposed to the hot gases to suppress the escape of heat from said volume,

(e) a first hollow annular conduit connected along the radially inward extent thereof in flow communication with said outlet means to receive compressed fuel-air flow exiting therefrom at high kinetic energy and being connected along the radially outward extent thereof in flow communication with said volume to introduce thereto at high velocity in a radial direction the compressed fuel-air flow so received, whereby the incoming fuel-gas mixture is thoroughly mixed with and heated by the hot burned gases in said volume,

(f) a turbine mounted adjacent said combustor housing,

(1) said turbine having inlet means, rotor means and exhaust means, and

(g) a second hollow annular conduit connected along the radially outward extent thereof in flow communication with said volume to receive burned gases exiting therefrom and connected along the radially inward extent thereof in direct flow communication with said turbine inlet means to direct radially inwardly thereto the burned gases so received.

15. A method of burning fuel for the production of power comprising the steps of:

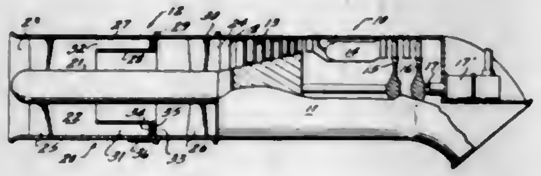
(a) introducing a mixture of compressed fuel and compressed air into the toroidal volume of a combustor housing at high velocity,

(b) promoting recirculation of the incoming mixture with hot substantially completely burned gas present in said volume to heat the gross gas mixture above the oxidation temperature of the fuel component to maintain combustion in the absence of a flame front, and below the temperature necessary to sustain a flame front,

(c) causing gases entering said volume to remain therein for at least about 0.1 second, and

(d) conducting burned gas from said volume without dilution or cooling thereof below the oxidation temperature to drive a turbine rotor.

3,309,867
AXIAL FLOW SEPARATOR
Fredric Franklin Ehrich, Marblehead, Mass., assignor to General Electric Company, a corporation of New York
Filed Mar. 31, 1965, Ser. No. 444,264
16 Claims. (Cl. 60—39.09)



1. In a gas turbine engine assembly including a compressor, a combustor, and a turbine in serial flow arrangement, a separator for removing extraneous matter from the stream of air supplied to the compressor, and separator comprising:

means forming an axially extending annular passageway having at opposite ends thereof an annular inlet, and an annular outlet communicating with the compressor,

a row of circumferentially spaced radially extending turning vanes adjacent said inlet for imparting swirl to the air stream flowing through said passageway, thereby to direct extraneous matter carried by said air stream toward the periphery of said passageway,

outer wall means downstream of said swirl producing means defining collection means for receiving the extraneous matter,

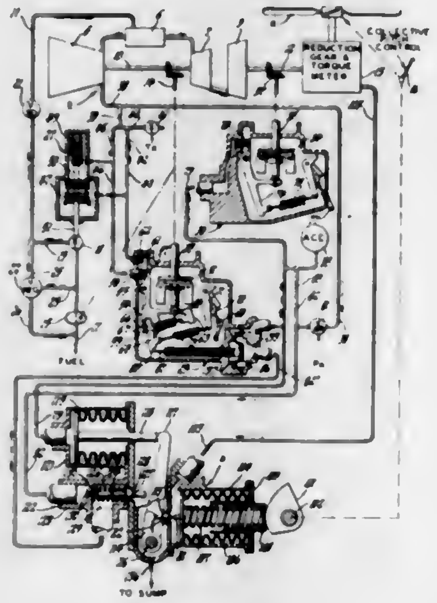
said collection means comprising a first annular wall member and a second annular wall member coaxially mounted with respect to said first wall member,

the upstream end of said second wall member being of substantially smaller diameter than the axially corresponding portion of said first wall member such that an annular collection cavity having substantial radial extent is defined between said first and second wall members,

fluid communication means interconnecting said annular collection cavity and said passageway for returning to said passageway air flowing into said cavity with the extraneous matter,

and filter means in said fluid communication means for preventing the return of extracted extraneous matter to said passageway through said fluid communication means.

3,309,868
ENGINE CONTROL WITH ANTICIPATOR
Noel L. Downing and William J. Steinmetz, Jr., Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 11, 1965, Ser. No. 478,818
7 Claims. (Cl. 60—39.16)



1. A control system for a gas turbine engine connected to and driving a variable load comprising, in combination,

operator-controllable means for varying engine power output

means for controlling engine fuel actuated by the said means

operator-controllable means for varying the power demand of the load

means transmitting a signal indicative of engine power output to the load

a settable governing means responsive to engine speed effective to regulate engine fuel

the governing means including means establishing a reference signal and

means responsive to engine speed effective to derive a governing signal from the reference signal and to decrease the governing signal relative to the reference signal upon overspeed and further including

differential responsive means normally responsive to the reference and governing signals effective to vary engine fuel in the direction to reduce fuel upon overspeed, and

anticipator means operative to accelerate engine response to an increase in load including

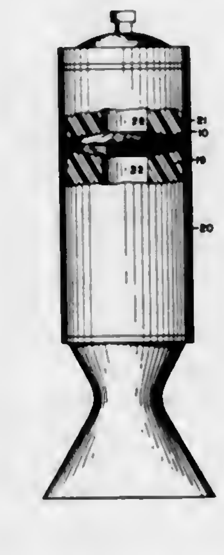
means shiftable from a normal condition to an operated condition to disconnect the reference signal from the differential responsive means and connect instead a signal lower than the reference signal

means responsive to the power demand varying means coupled to the shiftable means, and

means responsive to the engine power output signal coupled to the shiftable means

the two last-mentioned means being so connected that the shiftable means remains in normal condition above a predetermined power output level and also below a predetermined power demand level and is operated in response to higher power demand concurrent with lower power output.

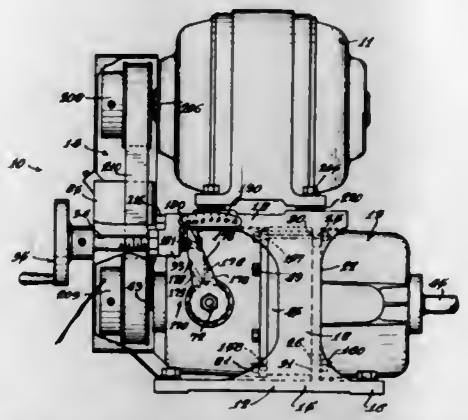
3,309,869
COMBUSTIBLE SLOT FORMER FOR SOLID PROPELLANT ROCKET MOTORS
Walter S. Terry, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,190
6 Claims. (Cl. 60—39.47)



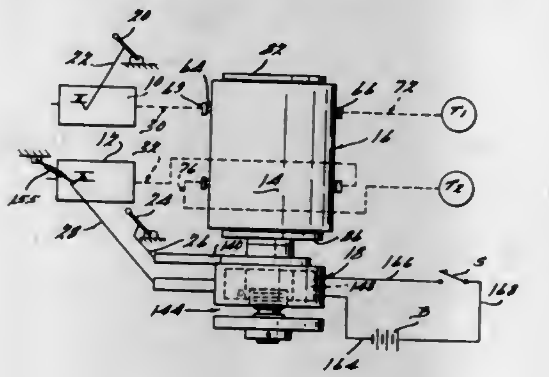
1. A combustible slot former comprising a pair of half sections, each of said sections having reinforcing ribs therein whereby when said sections are positioned in superimposed relation to each other said ribs will prevent the collapse of said sections.

3,309,870
HYDROSTATIC TRANSMISSION
John W. Pinkerton, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed July 6, 1965, Ser. No. 469,399
12 Claims. (Cl. 60—53)

1. A hydrostatic transmission assembly, comprising: a hydraulic transmission cartridge including a first axial piston hydraulic unit adapted to receive and deliver fluid, a second axial piston hydraulic unit adapted to receive and deliver fluid, each of said hydraulic units including a rotatable cylinder block, cam means for reciprocating pistons therein and a housing surrounding the block and cam means, and a valve plate having ports therein communicating with said first and second hydraulic units, said cylinder blocks both slidably engaging said valve plate, said first and second hydraulic units being in back-to-back relation, having a common axis of rotation and being fixed together with said valve plate as a unit; a base member surrounding and supporting said cartridge, said base member being constructed to permit the insertion of said cartridge as a unit without the disassembly of the cartridge or base member, and means for releasably attaching said cartridge to said base member whereby the cartridge may be inserted as a unit in the base.



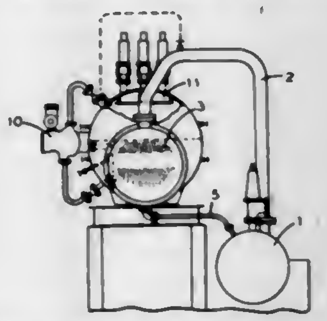
3,309,871
ENGINE SYNCHRONIZING MECHANISM
Winton J. Kelly, 485 Westwood, Birmingham, Mich. 48009
Filed Jan. 7, 1964, Ser. No. 336,310
11 Claims. (Cl. 60—97)



1. A control assembly for controlling the rotational speed of master and slave prime movers having master and slave control mechanisms, respectively, operable for determining their speeds, comprising: first means connected to the master control mechanism and being selectively actuable for actuating the master control mechanism, second means connectible to the slave control mechanism of the slave prime mover and being selectively actuable when connected for actuating the slave control mechanism, a rotatable member, differential gear means including said rotatable member and connected to the master and slave prime movers for sensing their speeds and for providing a first rotational signal varying in magnitude in accordance with variations in the magnitude of the rotational speed of the master and a second rotational signal varying in magnitude in accordance with variations in the magnitude of the rotational speed of the slave and for providing rotation of said rotatable member in one direction responsively to the magnitude of said first signal exceeding that of said second signal and in an opposite direction responsively to the magnitude of said second signal exceeding that of said first signal, connecting means actuable for connecting said rotatable member to the slave control mechanism and for actuating the slave control mechanism for increasing and decreasing the rotational speed of the slave prime mover in accordance with rotation of said rotatable member in said one and opposite directions, respectively, and actuating means selectively actuable to one condition for connecting said

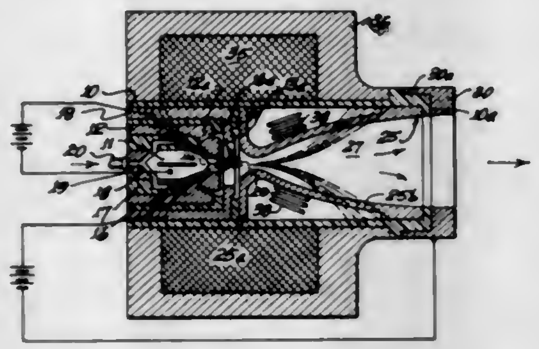
second means to the slave control mechanism and for deactuating said connecting means and to a second condition for disconnecting said second means from the slave control mechanism and for actuating said connecting means.

3,309,872
VAPOR GENERATING APPARATUS
Edward George Hutchings, Wembley, Middlesex, England, assignor to Babcock & Wilcox Limited, London, England, a corporation of Great Britain
Filed Apr. 14, 1965, Ser. No. 448,206
Claims priority, application Great Britain, Apr. 17, 1964, 16,118/64
9 Claims. (Cl. 60—104)



1. Vapor generating plant having means for supplying vapor at high pressure, a low pressure boiler arranged to operate with said high pressure vapor as heating medium, and valve means arranged to control the rate of flow of high pressure vapor to the low pressure boiler and to adjust the rate of flow automatically in response to the demand on the low pressure boiler.

3,309,873
PLASMA ACCELERATOR USING HALL CURRENTS
Gordon L. Cann, Laguna Beach, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California
Filed Aug. 31, 1964, Ser. No. 394,383
5 Claims. (Cl. 60—203)



1. A plasma accelerator comprising, in combination:

(a) Tubular casing means having an axisymmetric supersonic expansion nozzle therein extending longitudinally between a sonic orifice inlet and a nozzle outlet, the longitudinal axis of said nozzle defining a reference axis for the accelerator;

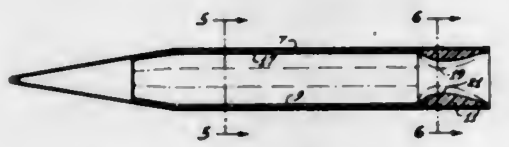
(b) An arc gap device disposed adjacent said sonic orifice inlet for at least partially ionizing a gas stream and injecting the resulting gas plasma axially into said sonic orifice inlet, said arc gap device including a first cathode electrode and an anode electrode between which a first electric discharge is maintained to partially ionize said gas stream;

(c) Means for maintaining an axisymmertic second electric discharge extending axially through said nozzle between a second cathode electrode disposed at the nozzle outlet and said anode electrode of said arc gap device, whereby a plasma jet defining an axial current flow through said nozzle is established;

(d) Means for establishing a rotating first magnetic field within a first predetermined longitudinal portion of said nozzle, said first magnetic field rotating about said reference axis substantially transversely thereto; and

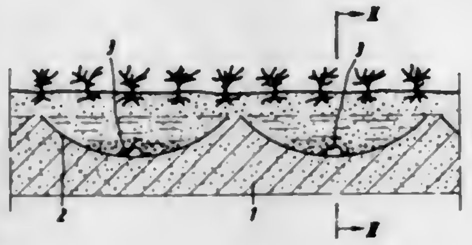
(e) Means for maintaining a second magnetic field within a second predetermined longitudinal portion of said nozzle, said second magnetic field being axisymmetric with respect to said reference axis and strongly fringing so that the total radial components of the magnetic lines of force of said second magnetic field greatly predominate over the axial components of the magnetic lines of force of said second magnetic field and cross the current density lines of the axial current flow of said plasma jet through said nozzle, the field strength of said second magnetic field being sufficiently strong with respect to the ambient pressure in said nozzle so that the magnetic field interactions predominate over the gas dynamic forces to axially accelerate said plasma jet through said nozzle.

3,309,874
ABLATIVE NOZZLE
Bert B. Gould, 669 Vistamont, Berkeley, Calif. 94708
Filed Feb. 4, 1965, Ser. No. 431,781
5 Claims. (Cl. 60—253)



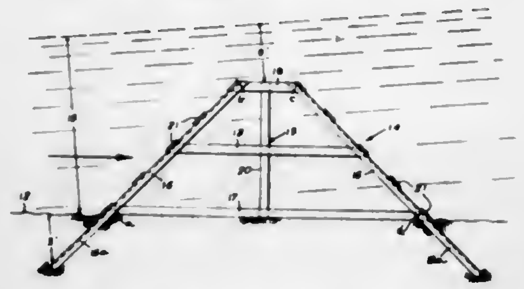
1. A miniature rocket having an elongate casing, a propellant grain lining the interior of the casing with a perforation extending lengthwise through the central portion of the grain, and a nozzle on the end of the casing in axial alignment with the perforation, said nozzle having a restricted throat portion which provides a restricted passage in axial alignment with the perforation, said throat portion being formed of ablative material which in cross-section varies in composition from the inside out with the material making up the inner portion ablating more rapidly than the material making up the outer portion as the combustion gases pass through the nozzle whereby the rate of ablation decreases during burning of the grain.

3,309,875
IRRIGATION INSTALLATION AND MOBILE VEHICLE FOR PRODUCING THE SAME
Paul Niederwemmer, Im Birkenbusch, St. Mauritz 3, Munster, Germany
Filed June 29, 1964, Ser. No. 378,727
Claims priority, application Germany, July 5, 1963, N 23,425
6 Claims. (Cl. 61—13)



1. An installation for irrigating arid and semi-arid soils, including an elongated arcuate imperforate flexible plastic foil positioned in a compacted excavated channel in the soil for serving as a water reservoir, said arcuate plastic foil having the concavity there of directed upwardly with upper spaced terminal edges extending axially thereof and located slightly below the maximum soil tilling depth, and a flexible perforated water supply conduit supported within the concavity by the lower portion of the arcuate plastic foil and extending axially of the foil below the plane of said edges.

3,309,876
EROSION PREVENTION APPARATUS
John M. Potter, 2224 Paris St., Virginia Beach, Va. 23454
Filed Feb. 13, 1964, Ser. No. 344,591
4 Claims. (Cl. 61—3)



1. An erosion prevention system for preventing seashore beach erosion comprising a plurality of elongated frameworks positioned out from the beach submerged below the mean low water level without obstruction to navigation of surface craft thereover and in a position generally endwise adjacent each other to follow the general contour of the beach line, each elongated framework having a plurality of spaced apart transverse generally triangular frames with two legs of each frame diverging downwardly and interconnected with a base cross piece immediately adjacent the ocean bottom, at least some of said legs of the frames extending divergently downwardly beyond the cross pieces into the ocean bottom to anchor said elongated framework thereto, each framework having a plurality of spaced apart elongated baffle members connecting the legs of said two legs of each of said spaced apart frames defining shoreward and seaward faces of the framework and the baffle members having upwardly extending planar surfaces with their axes extending generally horizontally and arranged in a common plane on the shoreward face and on the seaward face and the two faces upwardly convergent at attitudes with respect to the general vertical height of each framework so as to retard the motion of the water, the lowermost baffle members being immediately adjacent the cross piece and the ocean bottom and the topmost baffle members being positioned on the legs of said frames below the mean low water without obstruction to navigation of surface craft, the other baffle members being spaced apart therebetween, and from each other a distance greater than the upwardly width of each planar surface, whereby incoming wave motion of the sea passes over and through the frameworks and between the baffles and is slowed down as it rushes up the ocean bottom and floor of the beach and has its undertow motion and backwash rate of flow arrested so that the sand carried in and the sand stirred up is deposited on the beach area spaced well shoreward in from said frameworks.

3,309,877
VIBRATOR FOR COMPACTING SOIL
Wilhelm Degen, Zeppelinallee 89, Frankfurt am Main, Germany
Original application Sept. 7, 1960, Ser. No. 54,434, now Patent No. 3,246,223, dated Apr. 12, 1966. Divided and this application Jan. 27, 1966, Ser. No. 523,321
10 Claims. (Cl. 61—35)

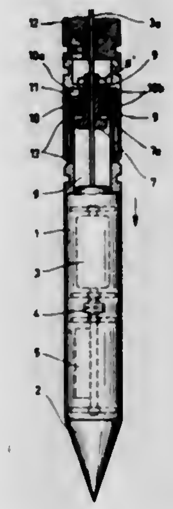
1. A vibrator arrangement for compacting soil, comprising

(a) an elongated vibrator member having a vertically extending longitudinal axis;

(b) oscillator meanss for oscillating said member transversely of said axis;

(c) a suspension rod member superposed on said vibrator member and elongated in the direction of said axis;

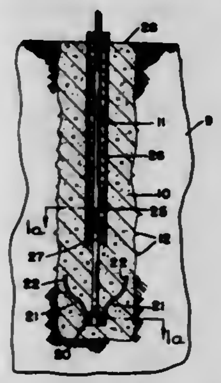
(d) moving means for moving said members axially toward and away from each other while said vibrator member engages soil to be compacted;



(e) resilient damping means interposed between said members for simultaneous abutting engagement therewith when said members axially move toward each other; and

(f) abutment means on each of said members engageable for limiting axial movement of said members away from each other, said abutment means being disengaged when said damping means is in simultaneous engagement with said members.

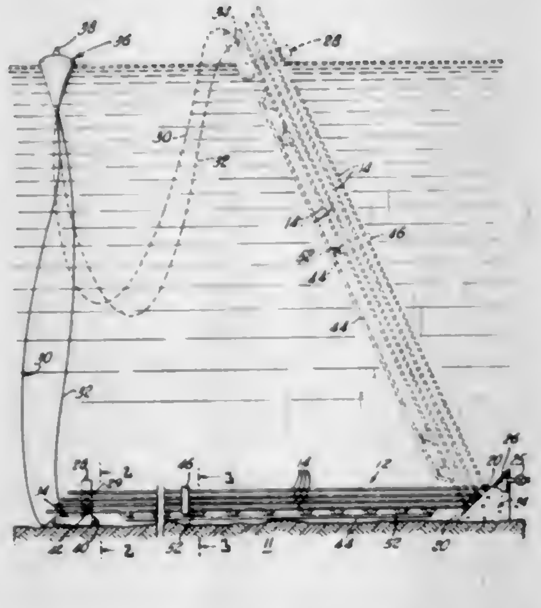
3,309,878
METHOD OF FORMING PILES
Bruce A. Lamberton, Berea, Ohio, assignor, by mesne assignments, to Construction Techniques, Inc., Cleveland, Ohio, a corporation of Delaware
Filed Sept. 3, 1964, Ser. No. 394,189
5 Claims. (Cl. 61—53.62)



1. A method of forming a one-piece concrete pile formed in situ extending below the earth's surface and adapted to withstand uplift forces, comprising the steps of forming a substantially vertical hole in the earth's surface with an upper opening, inserting a reinforcing rod with a body portion and a lower anchor means into said hole with said anchor means near the bottom of said hole, said rod having a protective sleeve extending from a position near said anchor to a position above the upper opening of said hole for preventing said concrete mixture from contacting said body portion of said reinforcing rod along a substantial portion of the length thereof, filling said hole with a plastic, hardenable concrete mixture, causing a hydraulic pressure on said mixture to force said mixture outwardly into said earth, allowing said concrete mixture to harden to form a concrete pile having an upper and a lower portion, supporting a rod receiving

member near the upper portion of said concrete pile, placing said reinforcing rod under tension between said rod receiving member and said lower anchor means, and securing said rod in a tensioned condition so the complete length of said concrete pile between said upper and lower portions is compressed.

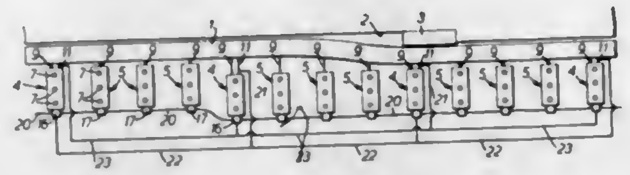
3,309,879
SUBMARINE CONDUIT SYSTEM
William F. Miller, Ventura, Calif., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,214
8 Claims. (Cl. 61—72.3)



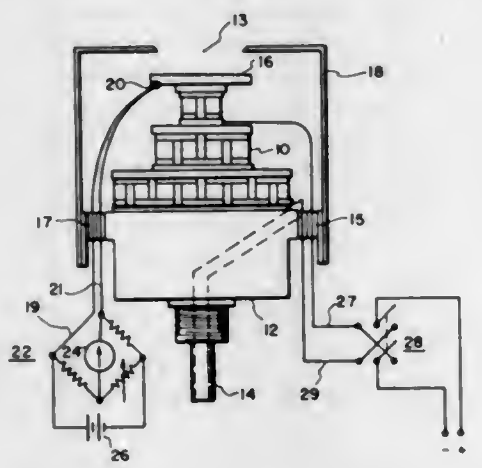
1. In a submarine conduit system located below the surface of a body of water, means for enabling surface access to said system for maintenance, control and similar operations, comprising at least one pipe loop, said pipe loop comprising an elongated U-shaped extension of the conduit system which normally rests in a lower position in a generally horizontal plane below the surface of said body of water, mobile connecting means connecting the ends of said loop with said conduit system permitting the pipe loop to swing upwardly in a vertical plane about the axes of said conduits to an upper position where the outer extremity of the loop extends to the vicinity of the surface of said body of water, pipe manifold means connected at the outer extremity of said loop, a buoyancy chamber in the vicinity of said manifold for lifting said manifold to said upper position, and means for flooding said chamber to enable said manifold to settle to said lower position.

3,309,880
MINING APPARATUS
Michael Charles Potts, Prestbury, Frank Pawling, Charlton Kings, and Douglas Herbert Hewlett Bolton, Winchcombe, England, assignors to Dowty Mining Equipment Limited, Tewkesbury, England, a British company
Filed July 21, 1964, Ser. No. 384,201
Claims priority, application Great Britain, July 22, 1963, 28,875/63
7 Claims. (Cl. 61—45)

1. Mining apparatus including a series of advanceable roof supports, a guide means for a cutting machine, at least some of the roof supports having a fluid-pressure-operated jack means operable to apply an advancing force to the guide means, means for advancing each roof support, at least one fluid-pressure-operated prop incorporated in each roof support and operable to set the roof support against the mine roof, or to release the same preparatory to its advance, a control valve assembly operatively connected with each roof support and operable to control the supply of fluid under pressure to said prop, and also operable to control the supply of such fluid to said jack means, to cause the roof support to undergo and advancing operation following release of said prop, means for sending a fluid-pressure signal from each roof support to the control valve assembly of the next roof support to actuate the latter, at least some of the roof supports including sensing means responsive to the amount of advance of that portion of the guide means in front of the roof support to halt the advance of the series of roof supports at a predetermined position until such portion has been advanced by a predetermined amount relative to the roof support, each sensing means including a fluid-flow control valve associated with said jack means and operated by a predetermined advance of the jack means to allow the advance of the series of roof supports to continue.



3,309,881
BLACK BODY RADIATION SOURCE
Henry P. Beerman, Stamford, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Apr. 14, 1964, Ser. No. 359,622
4 Claims. (Cl. 62—3)



1. A black body radiation source which may be heated or cooled for controlling the temperature thereof and allowing said source to be operated at temperatures above and below the environmental temperature in which the source is used, comprising, in combination,

(a) a cascaded thermoelectric unit having a direct current potential applied thereto with the polarity of said potential determining whether the unit produces a heating or a cooling effect,

(b) a black body radiation source of high emissivity mounted on the top stage of said cascaded thermoelectric unit which is adapted to be heated or cooled thereby,

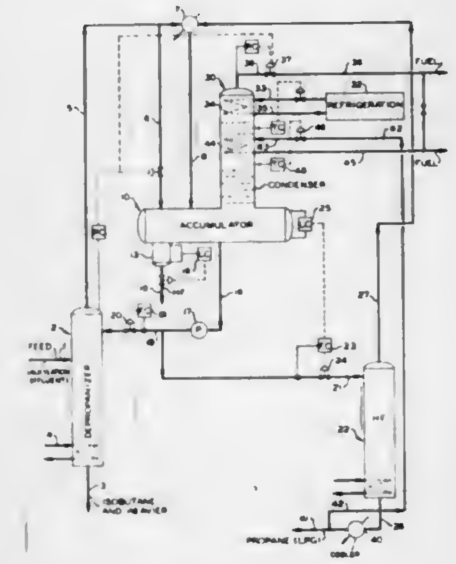
(c) means encasing said unit and said source,

(d) means for sending a controlled stream of dry gas through said last named means and over said source to prevent moisture from the surrounding air from settling on said source,

(e) means including a temperature sensitive element mounted in said source for determining the temperature of said source, and

(f) means for changing the polarity of the direct current potential applied to said thermoelectric unit whereby said source may be operated at desired temperatures either above or below the ambient temperature in which the source is operating.

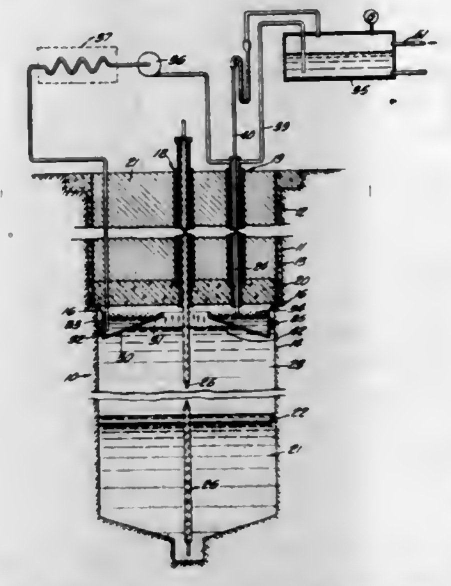
3,309,882
EMPLOYING BOTTOMS OF A SECOND FRACTIONATOR AS A REFRIGERANT MEDIUM FOR FIRST FRACTIONATOR OVERHEAD
Eldred J. Cabanaw, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 17, 1964, Ser. No. 418,981
3 Claims. (Cl. 62—28)



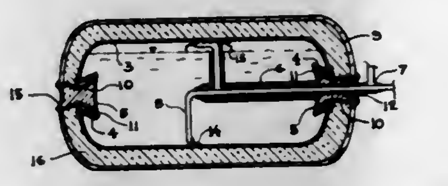
1. In a method for operating a fractionation system which comprises charging to a fractionation zone a feed to be fractionated therein, fractionating said feed to produce a bottoms product which is withdrawn therefrom and an overhead containing gas or vapor, passing said overhead to a cooling zone, therein cooling said overhead, passing the thus cooled overhead to an accumulation zone, in said accumulation zone separating a liquid phase and a gas or vapor phase containing said desired gas or vapor, removing the liquid phase from said accumulation zone, passing at least a portion of the removed liquid phase to said fractionation zone as reflux therefor and passing the remainder thereof to a second fractionation zone wherein a bottoms product and an overhead product are obtained, passing gas or vapor phase in said accumulation zone to a condensing zone wherein desired gas or vapor is condensed and recovered and the remaining gas or vapor removed overhead from said condensing zone, the improvement which comprises utilizing at least a portion of the bottoms product from said second fractionation zone as a primary coolant in said condensing zone.

3,309,883
UNDERGROUND CRYOGENIC STORAGE OF LIQUEFIED GAS
Willis D. Waterman, Salina, Kans., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,585
10 Claims. (Cl. 62—45)

1. The method of constructing an underground storage cell for liquefied gas, comprising: forming a borehole in the earth, maintaining a drilling liquid in the borehole to prevent caving of the walls of the borehole, placing a layer of buffer liquid in the borehole above the drilling liquid, introducing refrigerant into the borehole above the buffer liquid while removing drilling liquid from the borehole below the buffer liquid, to cause the layer of buffer liquid to move progressively downward in the borehole, the buffer liquid having a specific gravity greater than the refrigerant and less than drilling fluid and being immiscible with both, whereby the earth wall of the borehole is frozen progressively downward by the refrigerant.



3,309,884
DEWAR DESIGN FOR STORAGE AND TRANSPORTATION OF LOW TEMPERATURE FLUIDS
Richard S. Pauliukonis, 6660 Greenbriar Drive, Cleveland, Ohio 44130
Filed Oct. 11, 1965, Ser. No. 494,974
6 Claims. (Cl. 62—45)



1. A Dewar assembly for storage of cryogenic fluids comprising an inner fluid-holding vessel, an outer jacket, an insulation between the inner vessel and outer jacket, rigid heads for the inner vessel and outer jacket, support members of conical shape permanently attached to the rigid heads of the inner vessel and outer jacket and hermetically sealed thereafter to enable evacuation of the insulation for optimum performance, a garter spring placed between the conically shaped support members for transmission of loads from inner vessel into the outer jacket at reduced rates of heat leakage to inside vessel, due to resistances created at contact points, said garter spring and support members being assembled in nested shock absorbing relation, means for fluid communication from outside to the inner vessel or vice versa via tubular conduit members coaxially and centrally placed and jacketed for reduced influx of heat, both support members being axially oriented to distribute the lateral load uniformly to both ends of the vessel and to control the central location of the inner vessel relative to the outer jacket during the service life of the Dewar.

3,309,885
ABSORPTION REFRIGERATION
Thomas W. Phillips, Orange, Kevin P. Murphy, Bernardsville, and Richard F. Sweeney, Randolph Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 4, 1966, Ser. No. 525,141
9 Claims. (Cl. 62—112)

1. The method of absorption refrigeration comprising the steps of:

(a) evaporating, in the vicinity of a body to be cooled, a refrigerant comprising a member selected from the group consisting of a perhalogenated ketone and a perhalogenated acyl fluoride, which perhalogenated ketone and perhalogenated acyl fluoride contain only fluorine and chlorine as halogen substitution,

(b) bringing the evaporated refrigerant vapors in contact with an ionizable salt having the formula MX, in which M is Ag, an alkali metal, or a tetraalkylammonium ion and X is F or CN, under conditions operative to form a heat decomposable complex between the refrigerant component and the absorbent component,

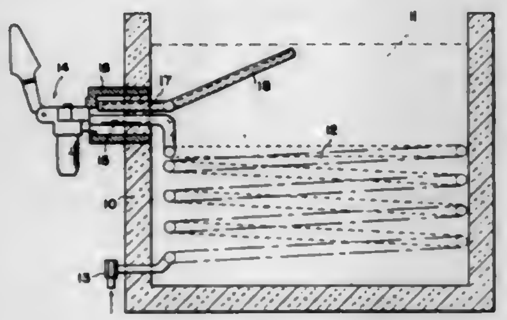
(c) heating the complex to decompose the same into absorbent and gaseous refrigerant,

(d) condensing the refrigerant gas and

(e) returning the refrigerant in liquid form to the vicinity of the body to be cooled for reevaporation and recycling.

3,309,886
SECONDARY REFRIGERATION APPARATUS

Frank Welty, Youngstown, Ohio, assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Sept. 15, 1965, Ser. No. 487,499
6 Claims. (Cl. 62—119)



1. In liquid product dispensing apparatus having a tank for receiving a quantity of liquid coolant maintained in a refrigerated condition, a dispensing faucet adjacent the tank, and a product conduit within the tank below the level of coolant maintained therein and extending from the tank to said faucet, the combination with said tank and conduit of a hermetically sealed secondary refrigeration unit comprising a first tubular section extending from the tank in proximal relationship to the segment of said conduit projecting therefrom and terminating adjacent said faucet, an inclined second tubular section communicating with said first tubular section, disposed to be substantially submerged in the coolant maintained in said tank and in a location with the extremity thereof remote from said first tubular section at a higher elevation than the opposite extremity of the same, and a quantity of a pressurized refrigerant in said unit and characterized by the property under said pressure of condensing at the temperature of the coolant maintained in said tank and vaporizing at the ambient temperature normally surrounding the faucet whereby the unit is operable to prevent warm-up of the product delivered to the faucet particularly during low demand periods.

3,309,887
HOUSEHOLD REFRIGERATOR INCLUDING DEFROST CONTROL MEANS

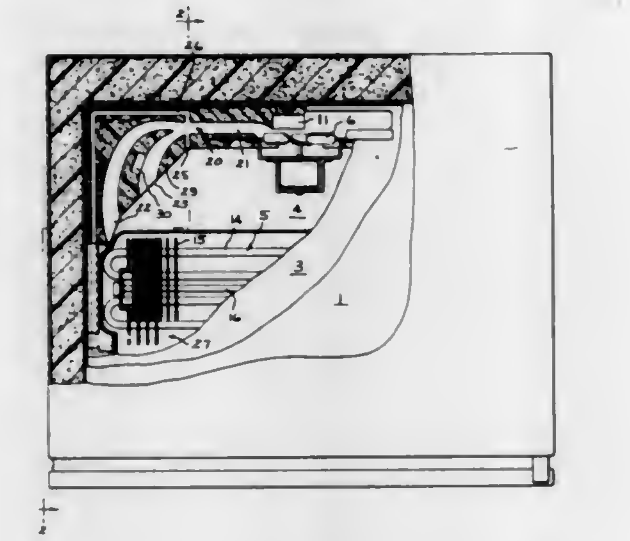
Dwight W. Jacobus, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Oct. 18, 1965, Ser. No. 496,804
4 Claims. (Cl. 62—140)

1. A refrigerator comprising a storage compartment, an evaporator chamber containing an evaporator operating at frost collecting temperatures, an air circulating means including a fan for circulating a stream of air from said compartment through said chamber and evaporator and back to said compartment, and defrost means for periodically defrosting said evaporator; the improvement comprising:

means for controlling operation of said defrost means including a fluid amplifier having an inlet for receiving air discharged from said fan, and first and second outlets communicating with a lower pressure point in said air stream ahead of said fan,

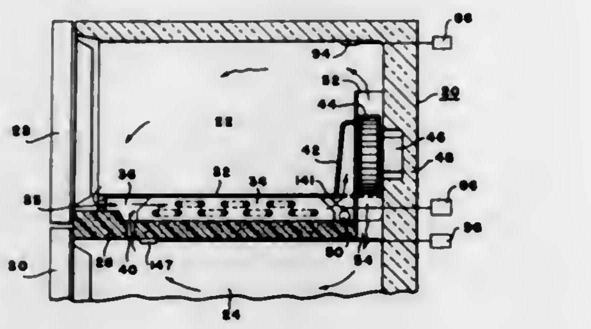
said amplifier including control port means operable in response to a pressure change in said air stream for changing the flow of air from said first outlet to said second outlet, and

means in one of said outlets responsive to said change for controlling the operation of said defrost means.



3,309,888
REFRIGERATING APPARATUS INCLUDING DEFROST MEANS

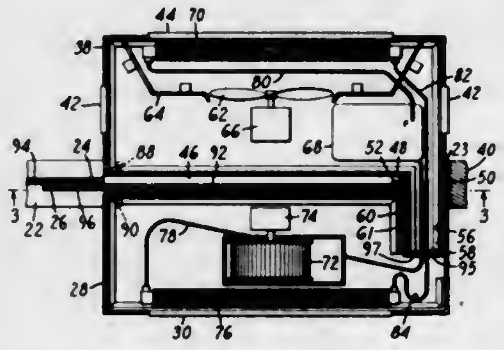
James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 24, 1965, Ser. No. 457,968
9 Claims. (Cl. 62—156)



1. Refrigerating apparatus including insulating means enclosing a compartment to be cooled, refrigerant evaporating means for cooling said compartment, fan means for circulating air into heat transfer with said evaporating means and thence into heat transfer with said compartment to be cooled, a refrigerant compressing and condensing means operatively connected to said evaporating means for circulating a refrigerating fluid thereto, a cycling control switch means for cycling said compressing means to provide operating and idle periods, a starting control for said compressing means, means for defrosting said evaporating means at less frequent intervals than said operating periods comprising means for delivering warm refrigerant fluid in heat transfer with said evaporating means, means interlocked with said starting control for initiating operation of said defrosting means only after normal idle periods of said switch means and comprising a defrost control switch means connected in series with said cycling control means and responsive to frost conditions of said evaporating means for initiating the operation of said defrosting means.

3,309,889
AIR CONDITIONER FOR SLIDING WINDOWS

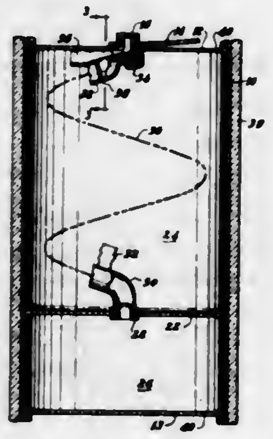
Carl A. Copp, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 11, 1966, Ser. No. 533,471
9 Claims. (Cl. 62—262)



1. A window air conditioner for laterally slidable windows including an enclosing casing having a deep notch extending inwardly from one side, said notch having a width sufficient to receive a substantial portion of a window, said casing having having a neck portion at the inner end of said deep notch connecting outer and inner larger portions, said outer and inner portions each having an air inlet and an air outlet and a refrigerating means in said casing comprising a compressor and condenser means in said outer portion and evaporating means in said inner portion and having operating connections extending through said neck portion connecting said compressor and condenser means and said evaporating means.

3,309,890
REFRIGERATED DISPOSABLE CONTAINER

Eugene R. Barnett, 6268 Windsor Ave., Indianapolis, Ind. 46201, and Willard L. Barnett, 3367 W. Michigan St., Indianapolis, Ind. 46222
Filed Mar. 15, 1965, Ser. No. 439,682
6 Claims. (Cl. 62—294)



1. A disposable container having self-contained means for changing the temperature of the contents thereof, comprising:

a casing having a top panel and a bottom panel;

a partition, defining between it and the casing-top an upper chamber within which the container contents are placed, and defining between the partition and the casing-bottom a lower chamber for containing refrigerant fluid under pressure;

a tube extending upwardly from the partition, the tube bore communicating with the refrigerant chamber but not the container-contents chamber;

an expansion valve for co-operating with the other parts and the refrigerant fluid to cool the refrigerant fluid flowing into the tube;

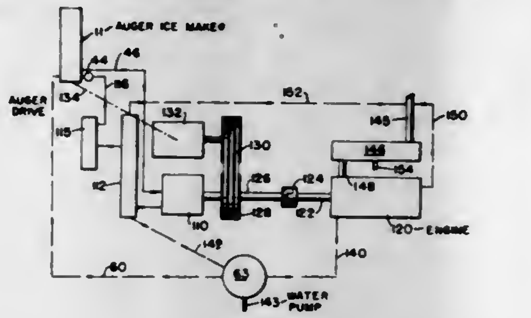
the tube extending upwardly to a closed terminus adjacent the casing-top;

means providing for opening of the said closed tube-terminus to permit the refrigerant to flow through the said tube;

the tube being under compression between the top panel and the partition and providing that the tube will be moved upwardly for convenient grasp by the user upon the casing-top being opened.

3,309,891
SALT WATER ICE MAKING MACHINE

Leonard A. Stiller, Fort Lauderdale, Fla., assignor to Lasco Industries, Inc., Fort Lauderdale, Fla., a corporation of Florida
Filed Jan. 10, 1966, Ser. No. 519,742
9 Claims. (Cl. 62—323)



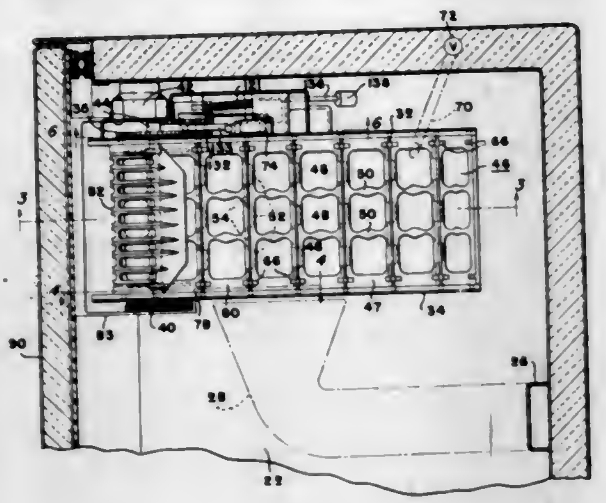
6. An ice making machine comprising a cylinder defining therein a freezing chamber, means for admitting water into said chamber, means for chilling said chamber to form ice on the wall thereof comprising an evaporator surrounding said cylinder, an ice outlet from said freezing chamber, rotatable auger means in said chamber for removing ice from said chamber wall and delivering the same to said ice outlet, an expansion valve, a compressor, a condenser, means for conveying a coolant from the evaporator to the compressor, from the compressor to the condenser, from the condenser to the expansion valve and from the expansion valve to the evaporator, drives for operating said compressor and for rotating said auger means respectively, a single engine for operating both said drives, a water pump, a water inlet to said pump, first outlet passage means from said pump to said means for admitting water to said chamber, second outlet passage means from said pump to said condenser, third outlet passage means from said pump to the cooling system of said engine, said engine having an exhaust line, and means for delivering the water from said condenser and from said engine cooling system to said exhaust line.

3,309,892
FLEXIBLE BELT-TYPE ICE MAKER

John J. O'Connell and Leonard J. Mann, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,405
10 Claims. (Cl. 62—345)

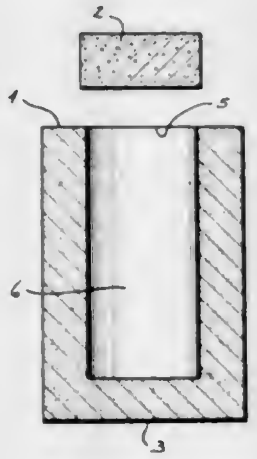
1. A liquid freezer including a belt having liquid holding compartments, means for filling the compartments with liquid to be frozen, means for freezing the liquid in said

compartments, a rotatable means for driving said belt, a drive motor, a one way clutch operably connecting said drive motor and said rotatable means for driving said belt, said rotatable means being also provided with manually operable means for driving said belt.



3,309,893
SHIPPING CONTAINER

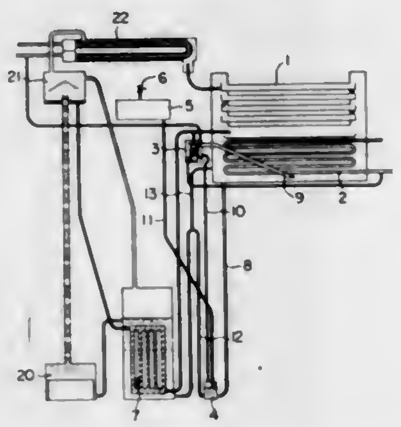
Milton Heffler, High Point, and William L. Collins, Kernersville, N.C., assignors to Phillips-Foscue Corp., High Point, N.C., a corporation of North Carolina
Continuation of application Ser. No. 458,834, May 17, 1965. This application Jan. 3, 1966, Ser. No. 525,792
2 Claims. (Cl. 62—372)



1. A shipping container for the transmittal of vaccines packed in Dry Ice under predetermined temperature maintenance, comprising:
- (1) an elongated body,
  - (a) being quadrilateral in cross section,
  - (b) formed of a rigid, inflexible polyurethane foam,
  - (c) having a heat-conductivity factor (K-factor) in the range of .11 to .20,
- (2) said body being integrally provided with a cavity for receiving vaccines packed in Dry Ice,
  - (a) being of circular cross section,
  - (b) opening at one end of said body and being closed at its other end,
- (3) a closure for said cavity
  - (a) being of cylindrical form,
  - (b) having a diameter greater than that of said cavity
  - (c) being formed of resilient, flexible, and porous polyurethane foam for sealing engagement within the open end of said cavity for forming a tight joint with the walls thereof while permitting the escape of gases emitted by said Dry Ice within the container thereby preventing development within the container of potentially hazardous pressures, and
  - (d) having a heat conductivity factor (K factor) in the range of .22 to .35.

3,309,894
DEVICE FOR SEPARATING, REMOVING, AND STORING NON-CONDENSABLE GAS IN ABSORPTION-TYPE REFRIGERATORS

Kazumi Tamada, Niwa-gun, Japan, assignor to Howa Sangyo Kabushiki Kaisha Aichi-ken, Japan, a joint-stock company of Japan
Filed Jan. 28, 1966, Ser. No. 523,793
Claims priority, application Japan, Mar. 17, 1965, 40/15,531
1 Claim. (Cl. 62—475)

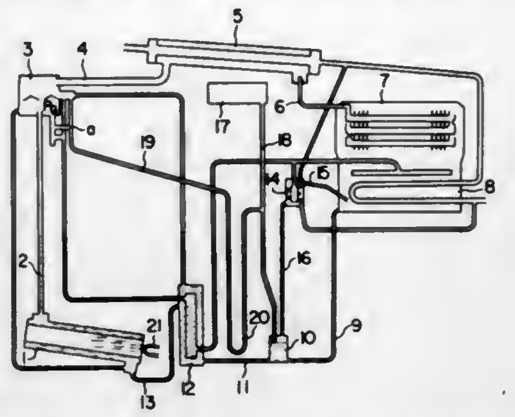


In a refrigerator of the absorption type including an absorber, a separation pot, a dilute solution descent pipe interconnecting the respective lower parts of the absorber and the separation pot, and a heat exchanger, a device for separating, removing, and storing non-condensable gas comprising: a purge pump communicatively connected on its suction side to the lower part of the absorber and on its discharge side to the upper part of the separation pot through a thin gas-liquid descent pipe; an inverted U-shaped tube interconnecting the liquid outlet of the separation pot and the dilute solution inlet of the heat exchanger, the upper, U-bend part of the inverted U-shaped tube communicating wtih interior of the absorber; and a storage chamber for storing non-condensable gas, said storage chamber having a gas exhaust valve at its upper part and being communicatively connected through a gas separation pipe to the separation pot, said gas separation pipe extending downwardly into the interior of the separation pot and terminating at an intermediate level in the separation pot.

3,309,895
ABSORPTION TYPE REFRIGERATOR

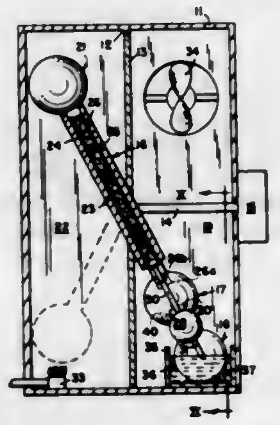
Kazumi Tamada, Niwa-gun, Japan, assignor to Howa Sangyo Kabushiki Kaisha Nagoya-shi, Japan, a Japanese joint-stock company
Filed Jan. 28, 1966, Ser. No. 523,794
Claims priority, application Japan, July 1, 1965, 40/38,973
1 Claim. (Cl. 62—475)

In an absorption type refrigerator having a generator, a gas-liquid separator, a condenser, an evaporator, an absorber, a separation pot, and a heat exchanger, all constituting an enclosed, sealed-in system, means for preventing non-condensable gas existing within said system from adversely affecting the cooling efficiency of the system, said means comprising a purge pump communicatively connected between the absorber and the separation pot, a gas separator pipe, a non-condensable gas storage chamber communicatively connected through the gas separator pipe to the upper part of the separation pot, and a U-shaped tube through which the gas-liquid separator is communicatively connected to an intermediate part of the separator pipe.



3,309,896
REFRIGERATION

Louis H. Leonard, Jr., Dewitt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,072
12 Claims. (Cl. 62—477)

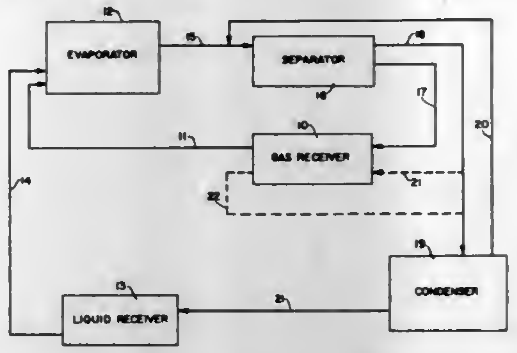


1. In an absorption refrigeration machine, the combination of an absorber for holding absorbent solution, an evaporator communicating with said absorber for holding refrigerant and for the passage of refrigerant into said absorber, a generator separate from said absorber for reconcentrating weak solution directed thereto from said absorber, means providing communication between said absorber and said generator for the passage of the refrigerant and solution therebetween, means for selectively positioning said generator above and below said absorber and evaporator for the flow of refrigerant and solution between the generator and the absorber and evaporator, and means for heating said generator when the generator is at a lower elevation than said absorber.

3,309,897
CONSTANT PRESSURE REFRIGERATION CYCLE

Jacob Bruce Russell, 7713 Haney Drive, New Orleans, La. 70127
Filed Oct. 21, 1965, Ser. No. 499,888
12 Claims. (Cl. 62—512)

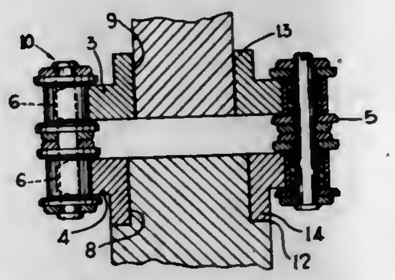
1. An essentially constant pressure refrigeration process comprising:
- (a) evaporating a refrigerant in the presence of a dry gas to form a refrigerant vapor-dry gas mixture thereby absorbing heat from a zone to be cooled,
- (b) separating the refrigerant vapor-dry gas mixture at essentially constant pressure into separate vaporous refrigerant and dry gas streams,
- (c) condensing the vaporous refrigerant stream to liquid refrigerant by removing heat therefrom,
- (d) passing a portion of the dry gas back into the refrigerant vapor-dry gas mixture before separation thereof, and



- (e) continually returning the dry gas and liquid refrigerant to the zone undergoing cooling.

3,309,898
EARTH DRILL DRIVE

Fred H. Fehrmann, St. Ann, and Charles L. Rassieur, University City, Mo., assignors to Central Mine Equipment Company, St. Louis, Mo., a corporation of Missouri
Filed June 14, 1965, Ser. No. 463,525
7 Claims. (Cl. 64—11)



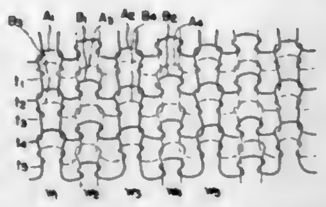
1. A flexible drive assembly for use with an earth drilling device, comprising a lower drive shaft, an upper driven shaft, said upper shaft adapted to be swung away from said lower shaft, and a flexible coupling interconnecting said shafts, said flexible coupling comprising an upper section having a hub portion, said hub portion having a non-circular hole through it conforming in shape and size to a cross section of a lower end of said upper shaft and adapted to slidably receive said lower end, and a lower section having a hub portion, said hub portion having a non-circular hole through it conforming in shape and size to a cross section of an upper end of said lower shaft and adapted to slidably receive said upper end, said upper conforming hole being smaller in each corresponding cross sectional dimension than said lower conforming hole, and abutment means on said lower shaft, said abutment means adapted to engage the hub portion of said lower section to limit the axial movement of said coupling in one direction.

3,309,899
MACHINE FOR AND METHOD OF KNITTING RUN-RESISTANT FABRIC

Noboru Miyata, Kawasaki-shi, and Masayoshi Suzuki, Kanagawa-ku, Yokohama-shi, Kanagawa-ken, Japan, assignors to Naigai Amimono Limited Co., Tokyo, Japan
Filed Jan. 17, 1964, Ser. No. 338,380
Claims priority, application Japan, Jan. 21, 1963, 38/1,777
9 Claims. (Cl. 66—13)

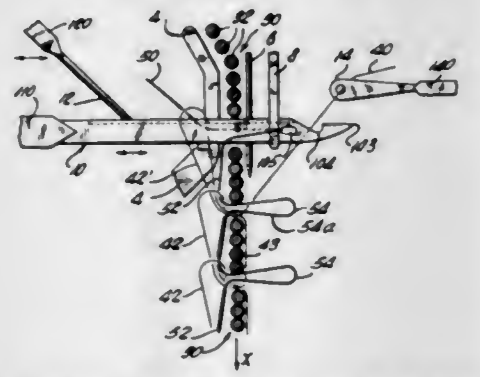
1. The method of producing tubular run-proof hosiery on a circular knitting machine having a multiplicity of double-latch needles arranged in circumferentially-spaced relation about a common axis, parallel therewith, and rotatable as a unit about said axis and individually translatable along said axis, alternate ones of said needles forming a first set, the remaining ones of said needles forming

a second set, said method comprising, translating said first set of needles in succession by means of a first set of cams while simultaneously translating said second set of needles in succession by a second set of cams independent of but fixedly related with said first set of cams, for each rotation of said needles as a unit and feeding first and second threads to said needles at two points circumferentially spaced about said common axis, said needles acting on said first and second threads to form two contiguous courses for each rotation of said needles as a unit, each said course consisting of elongated flat loops alternating with short coiled loops, each coiled loop of one course being coiled about each side of a corresponding flat loop of the next contiguous course.



3,309,900
KNITTING MACHINES FOR THE PRODUCTION OF PILE FABRICS

Wolfgang Wünsch, Hartmut Kreisel, and Gerd Rüger, all of Karl-Marx-Stadt, Germany, assignors to Veb Nähwirkmaschinenbau Malimo Karl-Marx-Stadt, Karl-Marx-Stadt, Germany
Filed Nov. 18, 1964, Ser. No. 412,198
3 Claims. (Cl. 66—85)

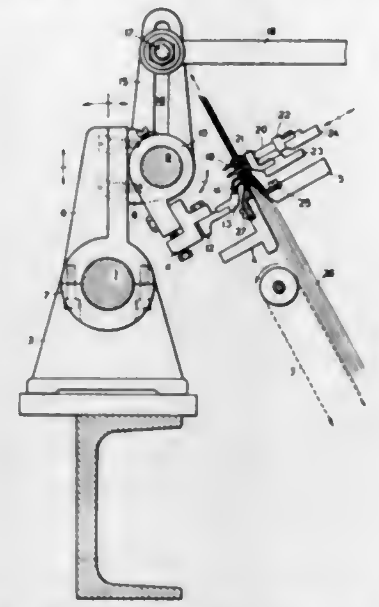


1. In a machine for producing pile fabrics from a foundation and at least two thread chains, and having therein a plurality of reciprocable needles positioned for piercing the back side of said foundation and a plurality of thread guides positioned on the front side of said foundation, the improvement comprising eye needles having hooks therein between the eye and the point of the needle, means for reciprocating said needles to draw a loop from one thread chain from said back side to said front side, means for applying another thread chain into said hooks to draw a loop from said front side to said back side, and means to form pile loops at least from one of said thread chains on reciprocation of said needles.

3,309,901
APPARATUS FOR REINFORCING A FIBROUS MATERIAL

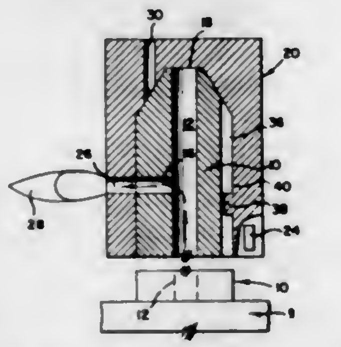
Antonín Daňhel and Miroslav Tocháček, Brno, and Jaromír Sedlecký, Prague, Czechoslovakia, assignors to Elitex, Sdruzeni Podniku Textilniho Strojirenstvi, Liberec, Czechoslovakia
Continuation of application Ser. No. 357,980, Apr. 7, 1964. This application Feb. 28, 1966, Ser. No. 534,582
Claims priority, application Czechoslovakia, Apr. 12, 1963, 2,145/63
20 Claims. (Cl. 66—85)

1. An apparatus for reinforcing a fibrous material, comprising, in combination, supporting means for supporting a fibrous material having two sides; sinker means operable on one side of the material for engaging and displacing parts of said material on said one side of the material; and needle means operable for penetrating said material and being movable between a position located on said one side for receiving said parts of said material from said sinker means and another position located on the other side of the material, said needle means driving said parts through said material for reinforcing the same.



3,309,902
VARIABLE FLAME GAS LIGHTER

Yoshio Kanamaru, Tokyo, Japan, assignor to Kanamaru Shoten, Ltd., Tokyo, Japan
Filed Feb. 14, 1966, Ser. No. 527,205
Claims priority, application Japan, Mar. 5, 1965, 40/12,415; Jan. 21, 1966, 41/4,369
4 Claims. (Cl. 67—4)



1. In a lighter of the type having a reservoir constructed to hold gas fuel under pressure and an ignition mechanism, the combination therewith of a flame diverting system, comprising:

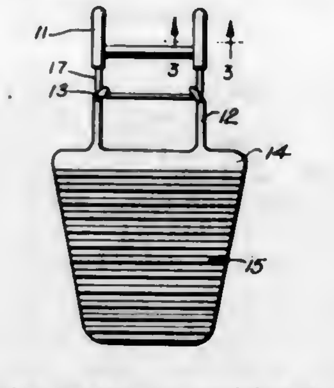
A. a burner nozzle mounted upon said lighter in close proximity to the ignition mechanism for transporting the gas fuel from the reservoir to point of ignition, said nozzle including first and second intersecting passageways;

B. a deflecting body covering the top portion of said nozzle, said deflecting body including first and second passageways terminating outwardly therein in first and second openings located generally perpendicular to each other; and

C. means for moving said deflecting body relative to said nozzle between first and second positions such that when said first passageways of both said nozzle and said body are aligned in said first position, the ignited gas is directed from said nozzle generally vertically for cigarette lighting while when said second passageways of both said nozzle and said body are aligned in said second position, the ignited gas is directed from said nozzle generally horizontally for pipe lighting.

3,309,903
DIAPER WASHING BOARD

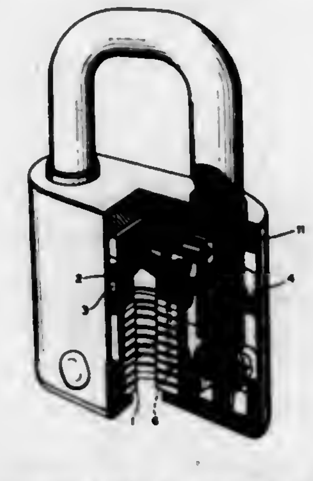
Shirley A. Despins, 1031 Lisbon Ave., Hartland, Wis. 53029
Filed Feb. 7, 1966, Ser. No. 525,683
1 Claim. (Cl. 68—223)



A diaper washing board comprising a clamp member having a U-shaped attachment secured thereto, a washing board having at least one outwardly extending prong, a ring secured to said prong, said U-shaped attachment being pivotally secured to said ring, said clamp being adapted to be removably secured to an edge of a toilet seat bowl, thus providing holding means for said board, the main portion of said board being provided with a corrugated surface upon the upper side thereof for washing diapers thereupon, the contour of said board being adapted to fit within a toilet bowl, said washing board having a longitudinal cross-sectional configuration of arcuate character to conform to a concave inner surface of said toilet bowl, said upper side of said washing board having said corrugations being accordingly concave, the outer portion of said clamp being provided with at least one hook for removably securing said clamp to the upper edge of said toilet seat bowl, and said corrugated surface comprising a plurality of laterally disposed indentations.

3,309,904
MEANS FOR MOUNTING A CYLINDER IN A PADLOCK

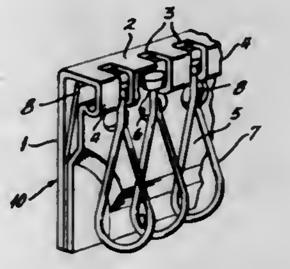
Armas Kalervo Niilola, Helsinki, Finland, assignor to O/Y Wartsila A/B, Helsinki, Finland
Filed Oct. 13, 1964, Ser. No. 403,459
Claims priority, application Finland, Oct. 23, 1963, 2,062/63
3 Claims. (Cl. 70—51)



1. A padlock comprising a casing, a centering plate slidably mounted in said casing, said plate having a central aperture, a lock cylinder having a circumferential groove, said lock cylinder extending perpendicular to the plate and being turnably mounted in the aperture of said plate with the latter engaged in said circumferential groove, such that the groove provides the only friction surface between the turnable cylinder and the stationary centering plate, said plate having an outer contour corresponding to the inner surface of the casing, and a locking bar for selectively locking the lock cylinder and the plate against rotation, said plate having a groove opening into said aperture for receiving a portion of the locking bar when the plate and cylinder are locked.

3,309,905
KEY PLATE

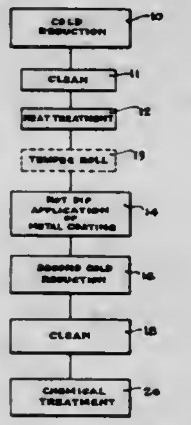
Paul C. Shepherd, Clayton, Mo., assignor to Prince Gardner Company, Inc., St. Louis, Mo., a corporation of Pennsylvania
Filed Nov. 20, 1964, Ser. No. 412,680
1 Claim. (Cl. 70—456)



A key plate comprising a base portion for attachment to a support body, a barrel portion connected to the base portion, a front plate connected to the barrel and to the base portion, a trough formed in the barrel adjacent to its connection to the front plate, said trough formed with a concave face facing the barrel and overlying a portion of the front plate, key retainer slots formed in the barrel and the trough, front entry key retainer openings formed in the front plate and communicating with the slots in the trough and barrel, said openings being greater in size than the slots to admit the head of a key retainer therethrough, said key retainer head being larger than the slots, and a latch spring positioned between the front plate and the base wall and extending into the barrel adjacent to the front entry key retainer openings, said latch spring being biased against the underside of the front plate, the trough being sized to accommodate the head of the key retainer so that the key retainer is retained in the trough and is not lost from the key plate if the spring latch becomes inoperative.

3,309,906
LIGHT GAUGE, HOT DIP METAL COATED STEEL PRODUCTS

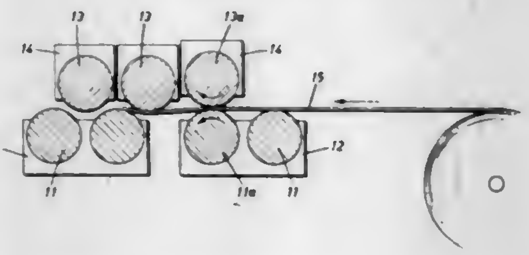
Leslie M. Bernick, Calumet City, Ill., and William C. Sievert, Chesterton, Ind., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 22, 1963, Ser. No. 274,425
3 Claims. (Cl. 72—47)



1. A process of producing a thin gauge steel strip having a hot dip protective metal coating thereon which comprises; reducing a hot mill steel band in a first cold rolling operation to form an intermediate steel strip having a thickness substantially greater than the final desired thickness of said thin gauge steel strip, subjecting said

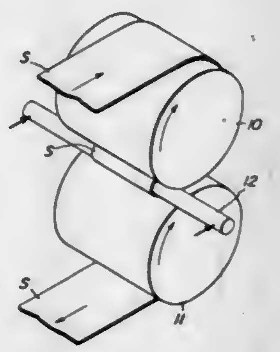
steel strip to an annealing treatment to restore the ductility lost in said first cold rolling operation, treating said steel strip to provide a hot dip protective metal coating thereon, passing said metal strip with the metal coating through a final cold reduction operation in the presence of a rolling lubricant to effect a percentage reduction in the thickness of the said strip between about 25 and 50 percent, and thereafter subjecting said steel strip to chemical treatment to remove objectionable surface contamitions; whereby a strong thin gauge hot dip metal coated steel plate is produced.

3,309,907
FLATTENER FOR STRAIGHTENING CURVED SHEET MATERIAL
Richard Steinhardt, Toronto, Ontario, Canada, assignor to SMS Manufacturing Company Ltd., Toronto, Ontario, Canada
Filed June 22, 1964, Ser. No. 376,859
8 Claims. (Cl. 72—164)



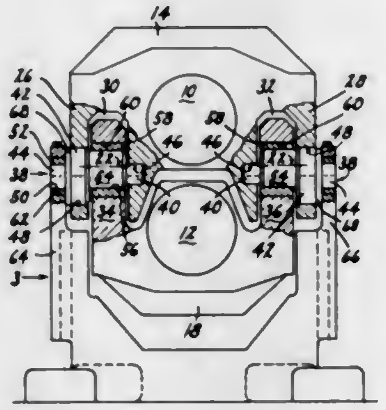
1. A flattener for straightening curved sheet material such as a coiled metal strip, said flattener comprising: at least first, second and third rotatable rollers, said rollers being spaced apart from each other and being located in a first position relative to each other wherein the axes of rotation of said rollers are disposed substantially parallel to each other and are located at the apices of a triangle with the axis of rotation of said second roller being located intermediate and thereby laterally offset from the axes of rotation of said first and third rollers and also on one side of a line joining the axes of rotation of said first and third rollers; means for laterally shifting at least one of said first and second rollers relative to each other to a second position, in said second position said first and second rollers being in alignment and pinch roll relationship with each other with one of said first and second rollers being located substantially directly above the other of said first and second rollers with reference to said line; and means for rotating at least one of said first and second rollers.

3,309,908
ROLLING METHOD AND APPARATUS
Louis F. Coffin, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 28, 1964, Ser. No. 399,549
5 Claims. (Cl. 72—213)



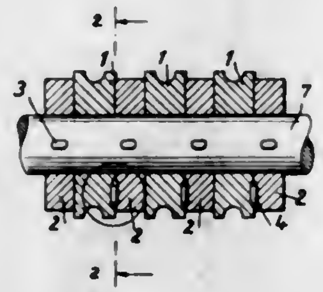
1. Apparatus for increasing the length and reducing the thickness of metal strip, sheet or foil stock which comprises two contact rolls together defining a gap or saddle, a floating third roll disposed between the two contact rolls and having a strip-engaging central portion and end portions, and third roll bending means engaging the third roll at two paints separated by the said central portion to move said end portions toward the two contact rolls.

3,309,909
MILLS FOR ROLLING METAL
Alexander Ian Wilson, 14 Whitely Lane, Sheffield, England
Filed Jan. 28, 1964, Ser. No. 340,738
Claims priority, application Great Britain, Feb. 6, 1963, 4,842/63
10 Claims. (Cl. 72—237)



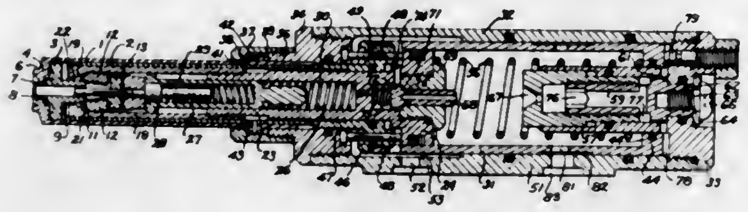
3. A rolling mill, comprising a frame, an upper roll, a lower roll, an end mounting including a bearing mounted on each end of each roll, a roll chock for each end of each roll, vertically extending lugs formed on each roll chock, horizontally extending means for connecting together the lugs of adjacent chocks for relative pivotal movement of said chocks in a vertical plane parallel to the roll axes, adjustable eccentrics associated with the means for pivotally connecting together adjacent chocks, and means for suspending the roll chocks and rolls in the frame.

3,309,910
MULTIPLE COLD ROLLING MILL
Fritz Zeunert, Rheydt, and Heinz Fahrenholz, Monchen-Gladbach, Germany, assignors to Mannesmann-Meer Aktiengesellschaft, Monchen-Gladbach, Germany, a corporation of Germany
Filed Feb. 12, 1965, Ser. No. 432,153
Claims priority, application Germany, Feb. 18, 1964, M 59,975
5 Claims. (Cl. 72—238)



1. In a multiple cold rolling mill of the step-back type, a driving carrier shaft, a series of annular roll elements having external ring grooves and being heat shrunk onto said carrier shaft, a plurality of spacer disks loosely mounted and keyed on said shaft, each roll element being adjacent at least one spacer disk, and drive means establishing a driving connection between said carrier shaft and said roll elements, by way of said spacer disks comprising each roll element defining with at least one adjoining spacer disk a radial chamber, and a drive member fitting into and disposed in each chamber.

3,309,911
HYDRAULICALLY OPERATED CONTROLLED STROKE GUN HEAD
Walter R. Simmons, Buena Park, Calif., assignor to Textron Industries, Inc., a corporation of Delaware
Filed June 8, 1964, Ser. No. 373,420
11 Claims. (Cl. 72—391)



1. In a device for setting a rivet of the type wherein a first element is pulled and reaction force is applied to a second element to clinch the work and wherein means are coacting with said elements under reaction force to interlock said elements;

(a) means for pulling said first element

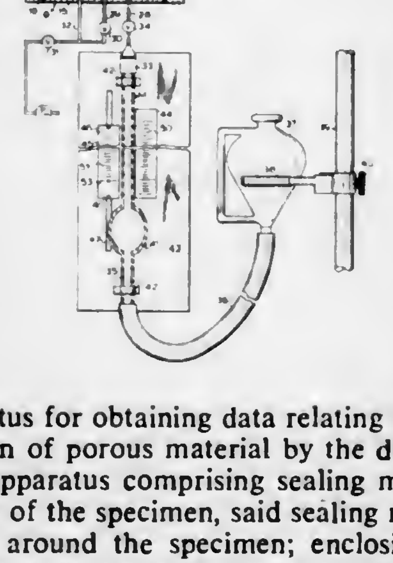
(b) a pair of pressure members one within the other being movable relatively to one another to apply reaction force sequentially in the direction of the second element

(c) means for directing reaction force to the outer pressure member

(d) means activated by said pulling means after a predetermined stroke of pull of said pulling means to direct reaction force to the inner pressure members and to said coacting means for interlocking said elements,

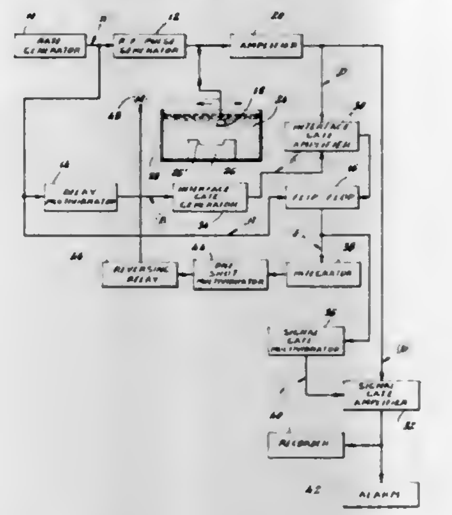
(e) and coacting means between said pressure members to apply pressure to the outer pressure member through said inner pressure member after the interlocking of said element thereby to break said first element.

3,309,912
POROSITY DATA APPARATUS
Paul Boland and Julian D. Fleming, Jr., De Kalb County, and Joe N. Harris, Atlanta, Ga., assignors to Georgia Tech Research Institute, Atlanta, Ga., a corporation of Georgia
Filed Sept. 20, 1963, Ser. No. 310,196
11 Claims. (Cl. 73—38)



1. Apparatus for obtaining data relating to the porosity of a specimen of porous material by the displacement of a gas, said apparatus comprising sealing means for sealing the pores of the specimen, said sealing means forming an envelope around the specimen; enclosing means for enclosing the envelope within a gas-tight cavity; valve means for selectively permitting the entry of the gas into the cavity and into the envelope; and measuring means for determining the volumes of the gas which enter the cavity and the envelope.

3,309,913
ULTRASONIC INSPECTION
Frederick G. Weighart, Brookfield, Conn., assignor to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed Oct. 1, 1963, Ser. No. 312,979
11 Claims. (Cl. 73—67.8)

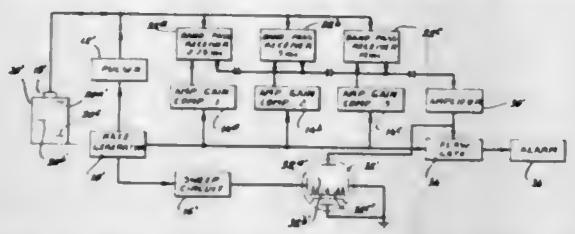


1. Ultrasonic inspection apparatus which comprises: rate generator means adapted to generate periodic timing pulses of electrical energy; pulse generator means responsive to the output fo said rate generator means to generate a radio frequency pulse in response to each timing pulse; an electro-mechanical transducer in energizable relationship from said pulse generator means and positioned to direct mechanical wave energy into a workpiece through an entrant surface thereof and to receive reflected mechanical wave energy therefrom to produce electrical echo signals corresponding thereto; a normally closed interface gate amplifier connected to receive the electrical echo signals from said transducer; a normally closed signal gate amplifier connected to receive the electrical echo signals from said transducer; interface gate control means connected to open said interface gate amplifier; delay means connected to receive timing pulses from said rate generator means and energize said gate control means a predetermined time after each of said timing pulses; bistable signal generating means responsive to said rate generator means to produce a first stable output upon receipt of a timing pulse therefrom and responsive to said interface gate amplifier to produce a second stable output upon receipt of transducer electrical echo signals passed therethrough; signal gate control means connected to open said signal gate amplifier in response to a second stable output from said bistable generating means; utilization means actuatable by electrical echo signals from said transducer passed through said signal gate amplifier; and transducer scanning control means responsive to the output of said bistable signal generating means to vary the relative scanning pattern between said transducer and said workpiece after continuation of a first stable output for a preselected time period.

3,309,914
ULTRASONIC INSPECTION
Frederick G. Weighart, Brookfield, Conn., assignor to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed Oct. 7, 1963, Ser. No. 314,277
12 Claims. (Cl. 73—67.9)

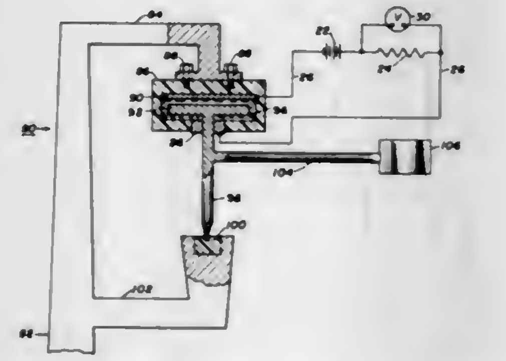
6. Apparatus for ultrasonic testing which comprises: rate generator means arranged to generate periodic electrical timing signals; pulser means connected to receive said timing signals and generate a multiple frequency electrical pulse in response to each timing signal; ultrasonic transducer means connected to receive each of said electrical pulses and generate an ultrasonic multiple fre-

quency mechanical wave corresponding thereto, said transducer means being responsive to mechanical echo waves received during the intervals between said pulses to generate electrical echo signals corresponding thereto; broad band receiver means connected to receive and amplify substantially all of said electrical echo signals having frequencies within a preselected first range of frequencies; a plurality of filter means connected to receive the output from said receiver means, each filter means being adapted to pass a different frequency component; actuating means responsive to said timing signals and connected to actuate said filter means to sequentially pass different frequency components therefrom; and indicator means connected to receive the passed frequency components and provide a physical indication thereof.



3,309,915
APPARATUS FOR CONVERTING MECHANICAL ENERGY TO ELECTRICAL ENERGY

Robert B. McEuen, Barrington, Robert M. Haines, Crystal Lake, Donald L. Klass, Barrington, and Thomas W. Martinek, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Dec. 23, 1963, Ser. No. 332,482
17 Claims. (Cl. 73—71.2)

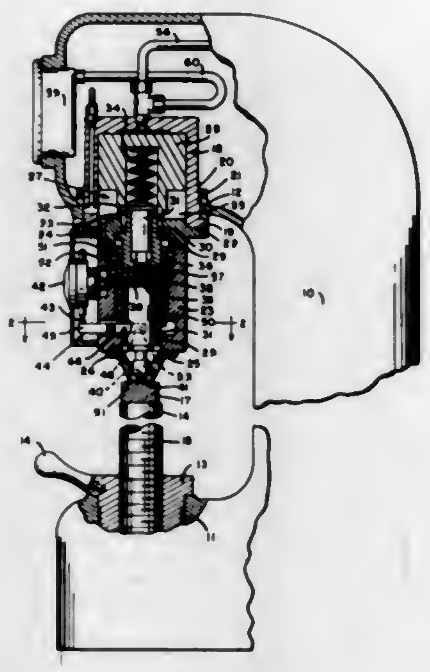


1. A seismometer comprising two spaced bodies mounted for relative movement and having opposing, electrically conductive surfaces, a shear-responsive liquid confined in the space between said electrically conductive surfaces, inertial means adapted to move said bodies with respect to each other when said seismometer is subjected to vibration and an electrical circuit connected between said electrically conductive surfaces to measure a change in electrokinetic property of the liquid.

3,309,916
HARDNESS TESTER

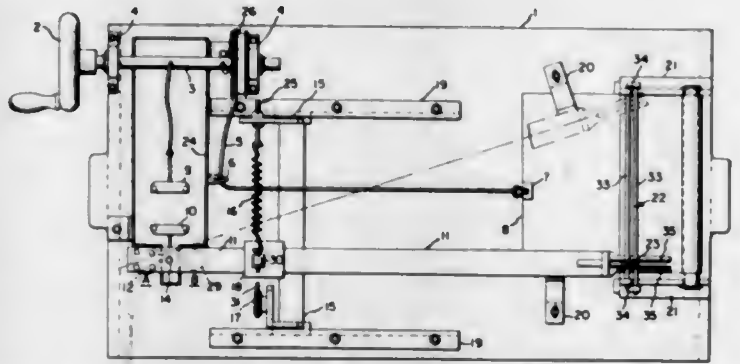
Carl F. Pearson, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 18, 1963, Ser. No. 324,509
5 Claims. (Cl. 73—81)

4. In a hardness tester, a frame including a cylinder means therein; a work support adjustably secured to said frame; a plunger reciprocably mounted in said frame in line with said work support; sleeve means surrounding said plunger; a ball held by said plunger at its end nearest said work support; arcuate means secured to said sleeve means and surrounding the end of said plunger that supports said ball; adjustable screw means for providing relative movement between said work support and said surrounding means to bring the two together in abutting relation; a hollow piston in said cylinder; a plunger means within said piston; an indicator on said frame; reciprocable means including yoke and fulcrumed lever means interconnecting said piston with said sleeve means for operating said indicator; clutching means including ball means between said plunger and said piston; a lost motion pin and slot connection between said piston and plunger for rendering effective said clutching means, and means for actuating said piston whereby the hardness of metal may be tested in a hardness tester.



3,309,917
TENSILE TESTING APPARATUS

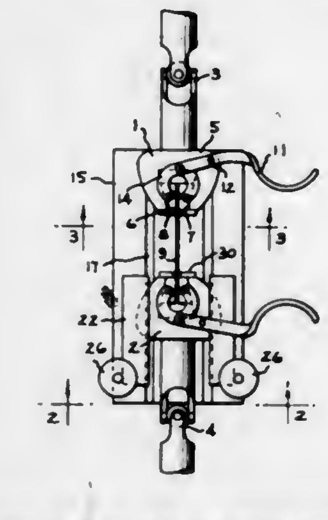
Walter C. Stetter, New Castle, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,695
6 Claims. (Cl. 73—89)



1. An instrument for testing materials comprising: a base plate; supports mounted on said plate; a shaft rotatably mounted through said supports having a reel attached to one end thereof and drive means cooperatively attached to the other end of said shaft adapted to rotate said shaft; a lever arm parallel to said shaft, said lever arm pivoted near one end on a fulcrum and having a writing instrument attached at the opposite end; tensioning means cooperatively associated with said lever arm intermediate said fulcrum and said writing instrument for adjusting the extent of the stress load placed on the lever arm; sample clamps mounted between said shaft and said lever arm, one clamp flexibly attached to said shaft and the other clamp rigidly attached to said lever arm at a point adjacent the fulcrum; and means for supporting a recording chart under said writing instrument and connecting means secured to said reel and adapted to be secured to said recording chart for advancing said chart proportionally to the movement of said reel upon rotating said shaft.

3,309,918
TEST SAMPLE HOLDING AND ALIGNMENT MEANS FOR TENSILE TESTING MACHINES

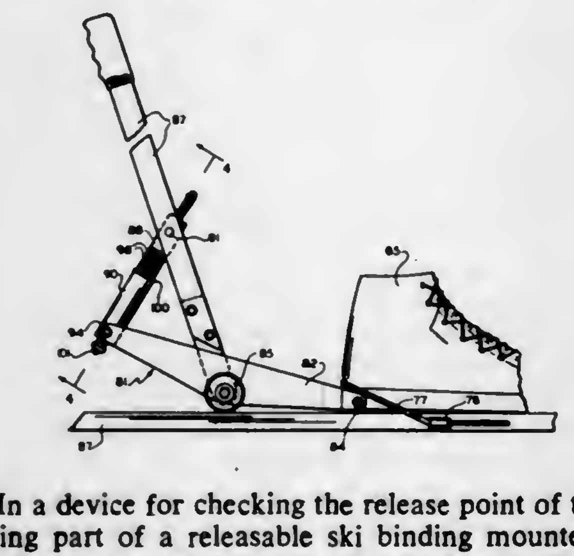
Benjamin B. Scott, Louisville, and Kenneth R. Davis, Anchorage, Ky., assignors to General Electric Company, a corporation of New York
Filed Mar. 22, 1965, Ser. No. 441,542
2 Claims. (Cl. 73—103)



1. A specimen holder for a tensile testing machine having upper and lower relatively movable tension elements, said holder comprising a base plate having spaced, vertical grooves therein, a pair of axially aligned opposed grips including universal joint means for respectively connecting said grips to said elements, one of said grips being rigidly secured to one end of said base plate, the other of said grips being slidably mounted in said grooves for movement relative to said one of said grips, and means for retaining said other of said grips in engagement with said grooves, said grips including jaws for anchoring the specimen in parallel alignment with said grooves, said holder including counterweight means for counterbalancing the weight of said plate to maintain said plate in vertical alignment with the axis of movement of said tension elements.

3,309,919
SKI BINDING RELEASE CHECKING DEVICE

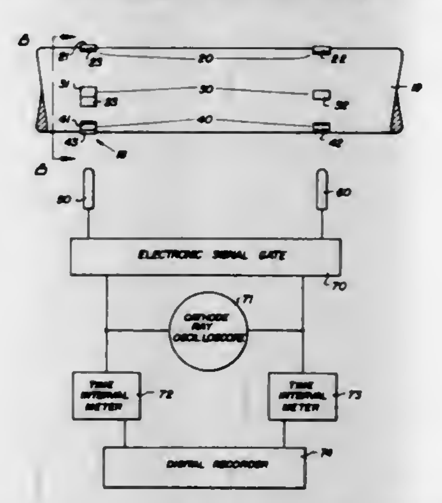
Gordon C. Lipe, W. Lake Road, Skaneateles, N.Y. 13152, and Charles W. Hinds, Skaneateles, N.Y.; said Hinds assignor to said Lipe
Original application Apr. 22, 1965, Ser. No. 452,448. Divided and this application Apr. 5, 1966, Ser. No. 540,367
2 Claims. (Cl. 73—133)



1. In a device for checking the release point of the heel engaging part of a releasable ski binding mounted on a ski, a frame having means at the forward end thereof adapted to underlie the heel of a ski boot mounted in the ski binding, roller means on said frame engageable with the ski rearwardly of the boot heel and forming a fulcrum for the frame whereby a downward force on its rear end will cause an upward force on the heel underlying means at its forward end, a handle assembly pivotally connected to said frame adjacent its fulcrum forming means and extending upwardly and rearwardly therefrom, means connecting said handle assembly at a point spaced above said fulcrum forming means with the rear end of the frame so that a downward force applied to the handle assembly is transmitted to the rear end of the frame, said connecting means including a movable tubular actuator telescopically received in a second tubular member and a spring positioned in said actuator and member against which the actuator is moved by the handle assembly until the resultant upward force on the boot heel causes the binding to release, and means which coact with graduation marks on said movable tubular actuator to indicate the point at which the binding releases.

3,309,920
TORSION MONITORING APPARATUS

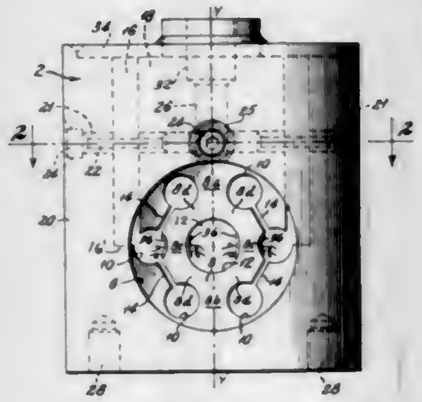
Robert M. Cuthbert, Ladner, British Columbia, Canada, assignor to British Columbia Research Council of the University of British Columbia, Canada
Filed June 2, 1964, Ser. No. 371,950
1 Claim. (Cl. 73—136)



Apparatus for monitoring torsional phenomena of a rotating shaft under conditions of varying speed and torque, comprising first and second reflectors adapted to be secured in axially spaced relationship to a shaft to be tested, a third reflector in a common rotational plane with the first reflector and set at a predetermined angle thereto in said connom plane, a light source for and in alignment with the second reflector, a light source for and in alignment with the first and third reflectors, first electro-optical sensor means spaced radially from the shaft for and in alignment with the first and third reflectors, second electro-optical sensor means spaced radially from the shaft for and in alignment with the second reeflctor, each of said sensor means being positioned to be actuated by light reflected by the respective reflector to said sensor means, said first and second sensor means generating first pairs of electrical signals when the first and second reflectors respectively pass the positions of common optical alignment therewith to indicate a time interval between said signals of each first pair, said first sensor means generating second pairs of signals when the first and third reflectors pass the respective positions of common optical alignment to indicate a time interval between the said signals of each second pair, and means operated by each of said pairs of signals to measure said time intervals between the signals of each of said pairs, said interval between the signals of each first pair being a function of the torsional displacement of the shaft and the time interval between the signals of each second pair being a function of the rotational velocity of the shaft; said means operated by said pairs of signals comprising an electrical signal gate connected to the two sensor means for selecting pairs of signals in accordance with a predetermined order for monitoring, and two time interval meters connected to the gate adapted to measure the time intervals between the respective signals of the two pairs of signals.

3,309,921
SOLID BLOCK TRANSDUCER

Ronald G. Eckard and Wilford Johns, Cumberland, Md., assignors, by mesne assignments, to Torold Corporation, Huntsville, Ala., a corporation of Alabama
Filed Feb. 14, 1964, Ser. No. 345,009
5 Claims. (Cl. 73—141)

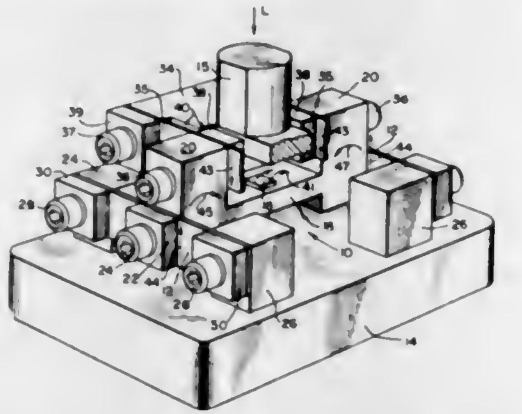


1. Apparatus for use in a load-sensing device, said apparatus comprising a cylindrical block having an axis of revolution, said central hole being counterbored from extending through said block perpendicular to said axis of revolution, said central hole being counterbored from each side to form a web symmetrically placed in said block with respect to said axis of revolution, a first pair of holes formed in said web on each side of said central hole and being symmetrically placed with respect to said central hole and on an axis perpendicular to said axis of revolution and extending through the center of said central hole, second and third pairs of holes formed in said web and being symmetrically placed on each side of said axis of revolution with said second pair of holes above and said third pair of holes lower than said first pair of holes, slots formed interconnecting said holes of said first, second and third pairs of holes in said web on the same side of said axis of revolution, a cylindrical slot formed in one end of said cylindrical block to a depth intersecting said first pair of holes, the inner diameter of said cylindrical slot being such that said cylindrical slot intersects said first pair of holes to form a load applying cylinder, the portions of said web along said axis of revolution connecting said load applying cylinder, said web and the outer portion of said cylindrical block.

3,309,922
CONSTANT MOMENT LOAD CELL

Malcolm Green, Newton, Mass., assignor to Schaevitz-Bytrex Corporation, Waltham, Mass.
Filed Oct. 9, 1964, Ser. No. 402,827
9 Claims. (Cl. 73—141)

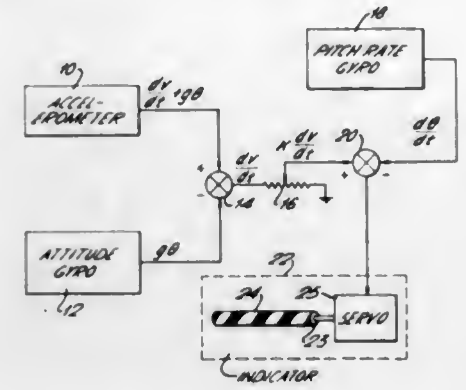
5. A load cell comprising, in combination:
- (A) a beam member having
  - (a) a horizontally extending beam, and,
  - (b) vertically extending posts at opposite ends of said beam;
- (B) a base structure;
- (C) a first elongated horizontal torsion member associated with each of said posts, said first torsion members
  - (a) extending parallel to each other and
  - (b) substantially normal to the lengthwise axis of said beam, and
  - (c) each being
    - (1) anchored at a first point thereon to said base structure, and
    - (2) rigidly connected at another point thereon spaced therealong from said first point to a vertical face of a respective one of said posts,
- (D) means operative to sense deflection of said beam out of the plane of the longitudinal axes of said beam and said torsion members, whereby upon application of a load to said beam member in a direction substantially normal to said plane said torsion members twist between said points to allow deflection of said beam out of said plane and this deflection is sensed to produce a load signal;
- (E) a rigid horizontally disposed plate presenting a load receiving surface; and
- (F) a second elongated horizontal torsion member associated with each post, said second elongated torsion members
  - (a) extending parallel to each other, and
  - (b) to said first torsion members, and
  - (c) each being
    - (1) anchored at one point thereon to said loading plate and
    - (2) rigidly connected to a point thereon spaced therealong from said one point to a vertical face of the respective post opposite the face on that post to which the corresponding first torsion member is connected, whereby said load may be applied to said beam member through said loading plate and said second torsion members allow deflection of said beam relative to said loading plate.



3,309,923
AIRCRAFT INSTRUMENTS

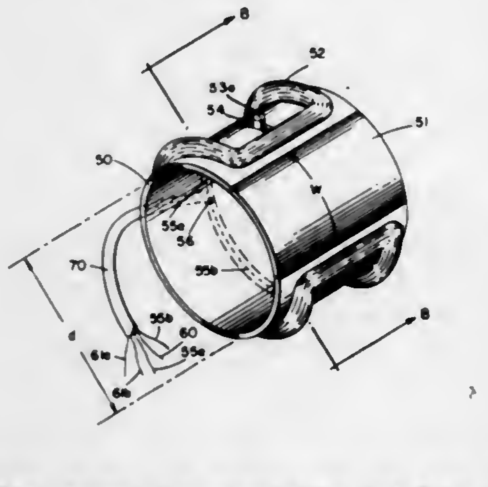
Roger Ivan Bishop and Eric Raymond Kendall, Cheltenham, England, and Russell Arthur Palmer, deceased, late of Cheltenham, England, by Daphne Palmer, executrix, Felixstowe, Suffolk, England, assignors to S. Smith & Sons (England) Limited, London, England, a British company
Filed Nov. 18, 1963, Ser. No. 326,654
Claims priority, application Great Britain, Nov. 20, 1962, 43,762/62
15 Claims. (Cl. 73—178)

15. Apparatus for generating a signal which is continuously representative of the deviation in actual rate of change of pitch attitude of an aircraft from a prescribed rate of change of pitch attitude which is defined at each instant for said aircraft at least throughout that portion of its climb phase when its forwardly acceleration is varying comprising, means for generating a first signal which is representative of the forward acceleration of the aircraft, means for generating a second signal which is representative of the rate of change of pitch attitude of the aircraft, means having said first and second signals applied thereto and deriving a third signal representative of the difference in magnitude and sign between said first and second signals, utilization means, and means for continuously coupling said third signal to said utilization means at least throughout the period of varying forward acceleration of the aircraft.



3,309,924
ELECTROMAGNETIC FLOW METER

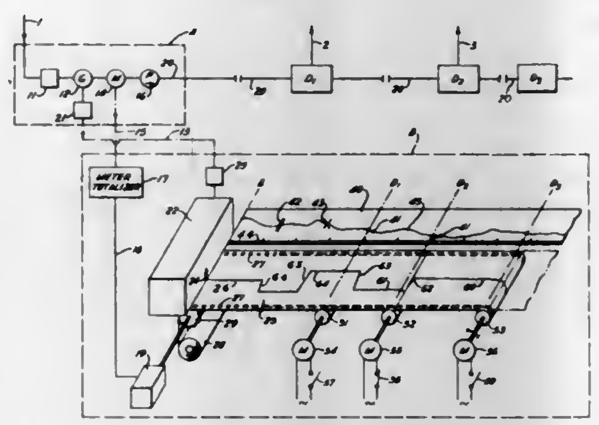
Alexander Kolin and Roger Wisshaupt, Los Angeles, Calif., assignors to The Regents of The University of California, a corporation of California
Filed June 22, 1964, Ser. No. 376,906
11 Claims. (Cl. 73—194)



3. A flow sensor for monitoring the flow of blood or other electrically conductive fluid through a blood vessel or deformable conduit comprising:
- a tubular dielectric support member having an aperture therethrough of transverse dimension and shape corresponding to the blood vessel or conduit to be monitored;
- a pair of electrodes penetrating the support member at spaced positions;
- lead means connected to respective electrodes;
- a single coil comprising a number of turns of insulated wire;
- said coil formed to conform with the external surface of the support member and positioned thereon so as to generate a magnetic field in the lumen having a component transverse to the fluid flow;
- said coil including portions extending over greater than half of the circumferential length of the support member;
- said support member longitudinally segmented in the peripheral region outside of the coil to constitute an openable portion for insertion of a deformable fluid conduit into the aperture; and
- lead means for said coil to conduct current to the coil to generate the magnetic field.

3,309,925
PIPELINE APPARATUS

Ernest A. Slade, Tulsa, Okla., assignor to Warren Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Oct. 15, 1963, Ser. No. 316,248
11 Claims. (Cl. 73—198)



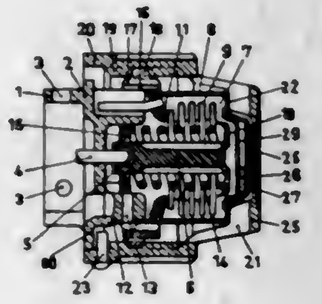
1. Apparatus for monitoring at a monitor location the simultaneous transportation of a plurality of products in a pipeline having an acceptance point and a plurality of spaced delivery points which comprises
- volumetric measuring means connected to the pipeline at the acceptance point,
- means connected to the pipeline at the acceptance point responsive to a characteristic parameter identifying the product accepted,
- recording means at the monitor location connected to said parameter-responsive means and adapted to record the indication thereof,
- a continuous movable chart adapted to traverse said recording means, said chart being cooperable with said recording means to continuously record the responses of said parameter-responsive means on said chart, said chart being cooperable with said recording means to continuously record the responses of said parameter-responsive means on said chart,
- chart advancing means connected to said volumetric measuring means adapted to advance said chart in proportion to the volume of product accepted, and
- plurality of chart take-up means spaced from each other by distances proportional to the actual pipeline volume between said delivery points, whereby the number of different products and the amount of each product delivered to each of said delivery points is indicated by the portions of said chart on each of said take-up means.

3,309,926
THERMOSTATIC VALVE REGULATOR

Helmar Trost Nielsen, Nordborg, and Knud Aage Hansen, Sonderborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed July 6, 1964, Ser. No. 380,466
Claims priority, application Germany, July 13, 1963, D 41,989
5 Claims. (Cl. 73—368.7)

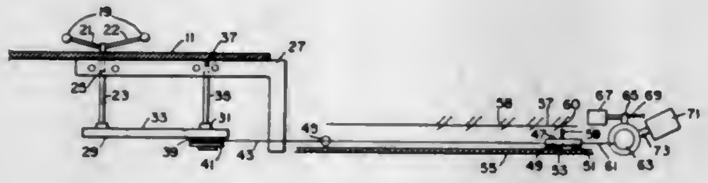
1. In an automatic thermostatic valve regulator for automatically thermostatically controlling a valve having an actuable operating element for opening and closing the valve, said regulator comprising, means for mounting said regulator on a valve to be thermostatically controlled, actuator means comprising temperature-responsive means including a temperature-responsive fluid for sensing ambient temperature and responding to variations thereof for actuating said valve operating element in response to said variations of the ambient temperature being sensed, a spring in said actuator means operably connected to

said valve operating element in operation for biasing said operating element in a given direction corresponding to an operating condition of said valve, means for setting the value of the force applied by said spring comprising means defining an abutment in said actuator means on which said spring bears, means in said actuator means mounting said abutment movable in a direction axially of a longitudinal axis of said actuator means, said abutment comprising means extending outwardly of said actuator means comprising an external thread, a rotatable cylindrical adjustment element on said regulator for setting operating temperatures and mounted circumferentially of said actuator means and having an internal thread complementary with said external thread for moving said abutment in a direction axially of said longitudinal axis upon rotation of said cylindrical element for variably compressing said spring, said cylindrical element having a transverse portion extending transversely of said actuator means, and said spring being disposed biasing said abutment in a direction axially of said longitudinal axis for biasing said cylindrical element in an axial direction for causing said transverse portion of said cylindrical element to bear on said actuator means to hold said actuator means and said cylindrical element in axially-assembled relationship, a stationary stop on said actuator means, a stop on said cylindrical element for engaging the stop on said actuator and means rotatably driven in conjunction with said cylindrical element having a stop variably positionable angularly relative to said stop on said cylindrical element for jointly with said stationary stop establishing a range of temperatures within which said operating temperature is settable by limiting the angular rotation of said cylindrical element relative to said actuator means and thereby limit the axial travel of said abutment.



3,309,927
AUTOMATIC GOLF MACHINE

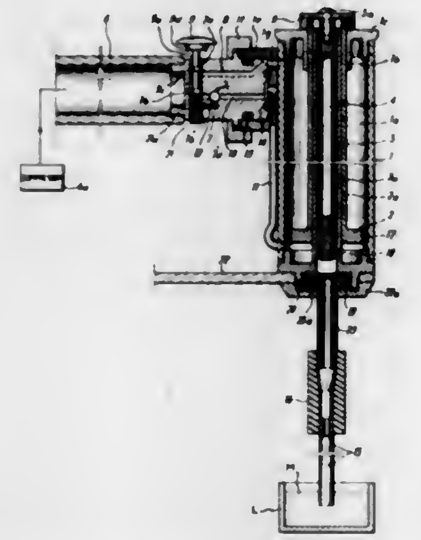
Philip T. Ferranti, 129 N. Jacobus Ave., Tucson, Ariz. 85705; Alyce Ferranti, fiduciary of said Philip T. Ferranti, deceased
Filed June 7, 1963, Ser. No. 286,897
6 Claims. (Cl. 73—379)



5. A golf machine comprising a golf ball, driven by a club forcibly contacting said ball, having at least one aperture thereon, said golf ball having at least one microswitch mounted therein; said micro-switch having actuating means positioned to protrude through said aperture whereby the switch is actuated when said golf ball is driven and said switch being electrically connected to means including indicia to indicate when said actuating means has been actuated, said golf ball being affixed to a pivot, said pivot including means for indicating the force with which said club contacts said ball.

3,309,928
APPARATUS FOR WITHDRAWING SAMPLES FROM MOLTEN METAL BATHS

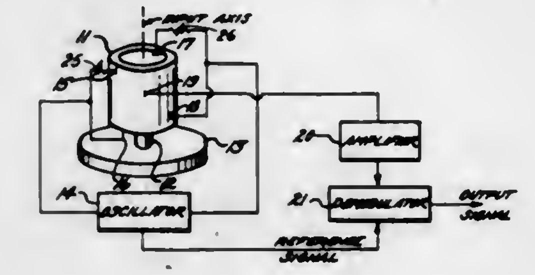
Gilbert Cavalier, Saint-Germain-en-Laye, France, assignor to Institut de Recherches de la Siderurgie Francaise, Saint-Germain-en-Laye, France
Original application Nov. 13, 1962, Ser. No. 236,804, now Patent No. 3,255,634, dated June 14, 1966. Divided and this application Jan. 12, 1966, Ser. No. 520,249
Claims priority, application France, Nov. 14, 1961, 878,790, Patent 1,313,201
7 Claims. (Cl. 73—425.6)



1. An apparatus for withdrawing samples from molten metal, comprising a sampling tube of heat-resistant material having a first end insertable into molten metal and a second end; and adjustable pressure reducing means connected with the second end of said tube for evacuating air therefrom and for thereby causing molten metal to penetrate into the tube when said first end is inserted into a supply of molten metal, said pressure reducing means comprising a first cylinder, a second cylinder located within and coaxial with said first cylinder and communicating with the second end of said tube, an annular piston reciprocably received in said first cylinder and surrounding said second cylinder, a plunger reciprocable in the interior of said second cylinder, a hollow piston rod slidably guided on said second cylinder and connecting said piston and said plunger, a source of compressed gas, a pair of conduit means respectively providing communication between said source of gas and opposite ends of said first cylinder, and valve means in said conduit means for controlling the flow of a fluid into and from said first cylinder to thereby move said plunger whereby the plunger evacuates air from said tube while moving in a given direction, said valve means comprising a manually operable valve member normally assuming a first position in which it permits compressed gas to flow from said source through one of said conduit means to said first cylinder and to compel said piston to move in a direction counter to said given direction, said valve member being movable to a second position in which the fluid flowing from said source through the other of said conduit means to said first cylinder compels the plunger to advance in said given direction, and adjustable throttling means in said other conduit means for throttling flow of compressed gas therethrough to regulate the speed of movement of said plunger in said given direction in dependence on the adjustment of said throttling means.

3,309,929
IMPEDANCE TUNING OF A PIEZOELECTRIC DEVICE

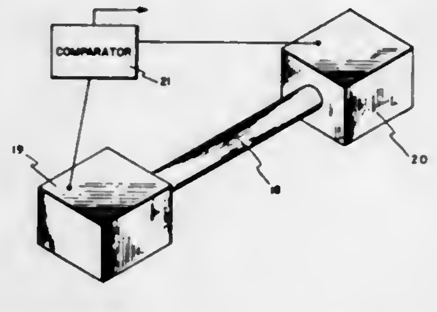
Arthur L. Simmons, Annapolis, and John J. Buckley, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 16, 1964, Ser. No. 352,403
2 Claims. (Cl. 73—505)



1. An apparatus for determining angular velocity of a rotating object comprising:
- (a) a piezoelectric cylinder mounted on the rotating object;
- (b) an oscillator connected to the cylinder for causing radial vibration of the cylinder while the cylinder rotates causing torsional vibration thereof, the torsional vibration being indicative of angular velocity;
- (c) and means for tuning the cylinder wherein the tuning means comprise;
  - plated strips longitudinally connected to the cylinder in pairs and variable impedances connecting pairs of the strips.

3,309,930
PARTICLE INERTIA PLATFORM

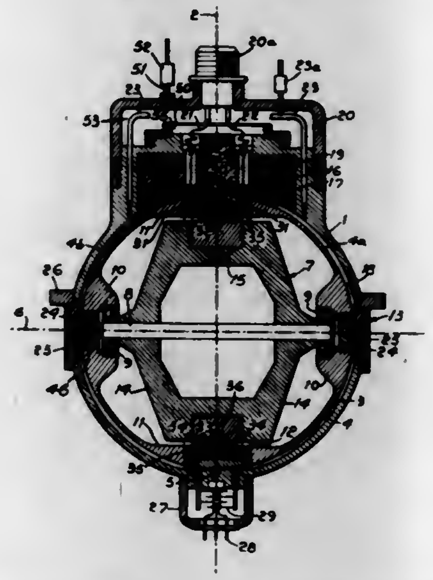
William H. Jones, Santa Monica, Calif., assignor, by mesne assignments, to Lear Siegler Inc., Santa Monica, Calif., a corporation of Delaware
Filed Feb. 1, 1962, Ser. No. 170,321
1 Claim. (Cl. 73—516)



An accelerometer comprising a gas-tight container,
a radioactive gas in said container,
first and second radioactive detecting means located in spaced apart relation in said container for detecting variations in radioactivity due to variations and density of said radioactive gas upon acceleration of said container in a direction in line with said detecting means,
a comparator means connected to the outputs of the first and second radioactivity detecting means wherein the outputs from said first and second detecting means are compared, and a comparator output signal provided indicative of the magnitude and direction of the acceleration along said line.

3,309,931
GYROSCOPE

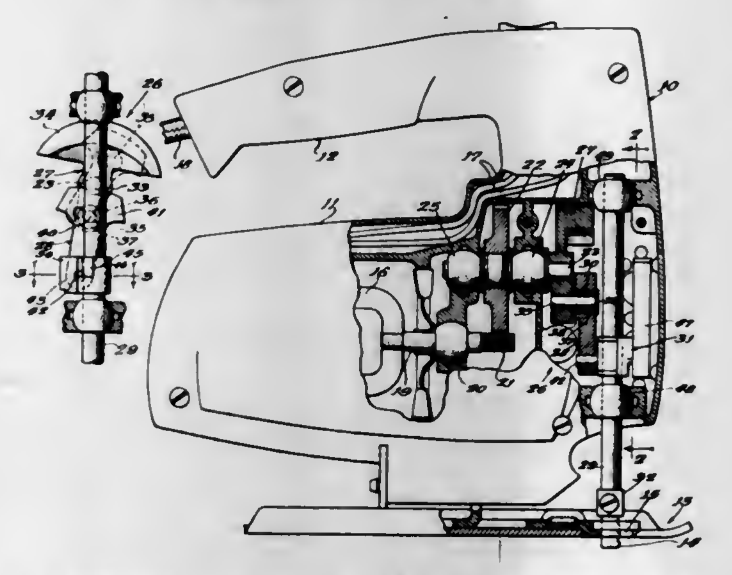
Paul R. Adams, Upper Montclair, N.J., and Carlos C. Miller, Jr., Northridge, and Richard S. Bovitz, Los Angeles, Calif., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed June 26, 1963, Ser. No. 290,683
14 Claims. (Cl. 74—5.6)



1. A gyroscope comprising a housing having a spherical inner surface, gimbal means including a hollow sphere with the outer surface corresponding with said inner surface of said housing and spaced apart therefrom, means supporting said gimbal means for rotation about a gimbaling axis within said housing, a motor stator comprising a first annulus being an equatorial section of said gimbal means, a gyrowheel disposed centrally within said gimbal means, a motor rotor comprising a second annulus concentric with said first annulus carried by said gyrowheel, said rotor being adapted to be driven by magnetic fields produced by said stator when said stator is energized, floatation fluid filling the space between said housing and said gimbal means and supporting said gimbal means from said housing, all parts of said gimbal means, stator gyrowheel, and rotor being symmetrically disposed relative to one critical plane containing said gimbaling axis.

3,309,932
DRIVE MECHANISM FOR USE IN SAWS AND THE LIKE

Robert K. Davis, St. Charles, Ill., assignor to Portable Electric Tools, Inc., a corporation of Illinois
Filed June 4, 1964, Ser. No. 372,568
7 Claims. (Cl. 74—44)



1. Apparatus comprising: a tool holder; means for guiding said tool holder for reciprocal movement along

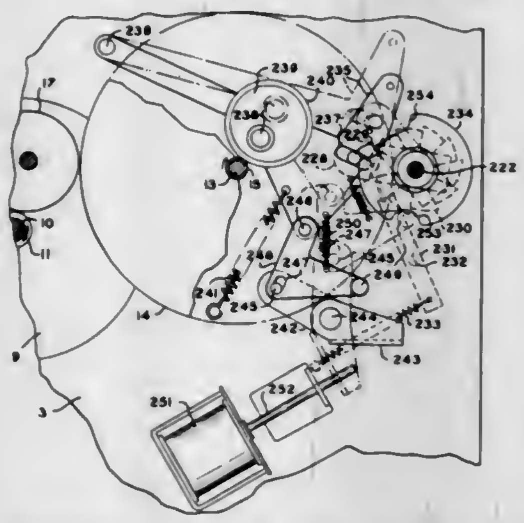
a preselected path; a driver rotatable selectively in opposite directions of rotation about a first axis intersecting said path; a crank arm fixed to said driver; a connecting link having first and second spaced portions; means pivotally connecting said first portion of said link to the crank arm at a preselected distance from said first axis; and means connecting said second portion of said link to said tool holder for pivotal movement of said second portion about a second axis parallel to said first axis and spaced from said path of reciprocation of said tool holder, said connecting means precluding relative movement between said second portion and said tool holder in the direction of said path.

3,309,933
CAM SHAFT DRIVE ASSEMBLY

Sheldon Lee Pastor, St. Paul, Minn., and Rudolph A. Rom, Naperville, and Myron Zarr, Chicago, Ill., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Original application May 8, 1961, Ser. No. 108,352, now Patent No. 3,149,797, dated Sept. 22, 1964. Divided and this application July 13, 1964, Ser. No. 382,109

5 Claims. (Cl. 74—125)



1. In combination, a drive shaft, an arm mounted for pivotal movement on an axis parallel with that of said drive shaft, an eccentric circular cam mounted on said arm for rotation on an axis parallel with that of said drive shaft, means biasing said cam toward engagement with said drive shaft, rotation of said drive shaft while said cam is engaged therewith effecting rotation of said cam and oscillatory movement of said arm, a cam shaft, a driving connection for effecting rotation of said cam shaft in response to oscillatory movement of said arm, said driving connection comprising a single direction clutch having an oscillatable first member connected to said arm, and a cooperating second member fixed to said cam shaft, releasable holding means associated with said arm for holding the latter substantially in its retracted position farthest from said drive shaft when moved to said retracted position, and control means including an indexing cam carried by said cam shaft for engagement by said holding means for rendering said holding means operative or inoperative to hold the arm retracted when said cam shaft reaches preselected positions.

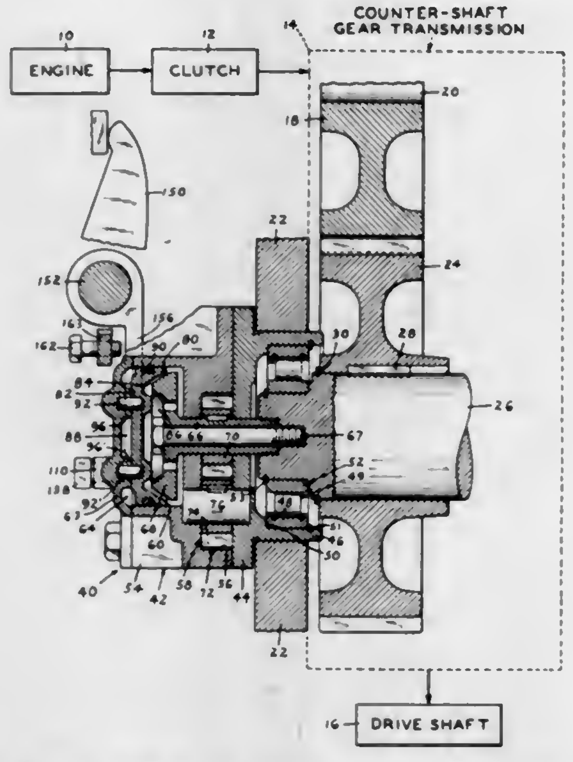
3,309,934
GEAR TRANSMISSION OIL PUMP AND COUNTERSHAFT BRAKE MECHANISM

Carl J. Gustafsson, Landskrona, Sweden, and Arthur L. Stepansky, Hagerstown, Md., assignors to Mack Trucks, Inc., Plainfield, N.J., a corporation of New York

Filed June 10, 1964, Ser. No. 373,934

8 Claims. (Cl. 74—339)

1. A countershaft brake mechanism for vehicles having a clutch and a gear transmission having a countershaft, comprising means defining a pressure chamber, first frictional brake means operably coupled to said countershaft and disposed in said chamber, a piston disposed in said chamber for movement toward and away from said brake means, means coupled to said piston to impede the rotation thereof, second frictional brake means on said piston and movable therewith into engagement with said first brake means to retard the rotation of said countershaft, oil pump means operably coupled to said countershaft, and means responsive to operation of said clutch for selectively supplying oil under pressure from said pump to said chamber to move said piston toward said first brake means and engage said second brake means therewith.



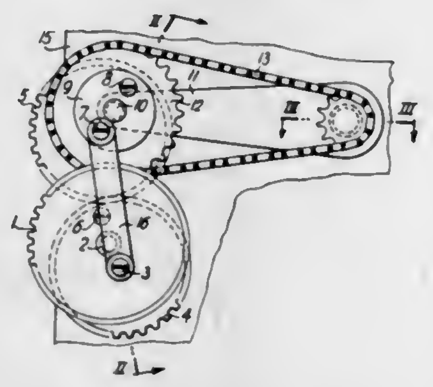
3,309,935
NON-UNIFORM MOTION ESTABLISHING GEARING

Josef Jurný, Sebranice, and Jaroslav Kovář, Sebrov, Czechoslovakia, assignors to Adamovské Strojírny, narodní podnik, adamov u Brno, Czechoslovakia

Filed July 8, 1964, Ser. No. 381,132

Claims priority, application Czechoslovakia, July 15, 1963, 4,069/63

5 Claims. (Cl. 74—393)



1. A transmission for converting uniform rotary motion into rotary motion of cyclically varying speed comprising, in combination:

(a) a support;
(b) an input member and an output member mounted on said support for rotation about respective fixed axes;

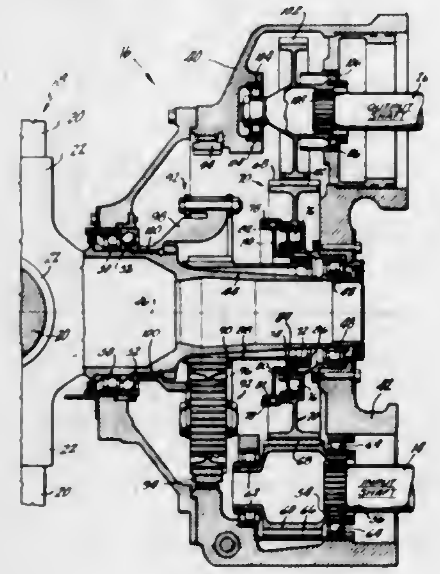
(c) a first gear member mounted on said support for rotation about an axis eccentric relative to said gear member;
(d) a rocker arm having one end portion secured to said support for pivoting movement about a fixed axis, and a free end portion spaced from said secured end portion.
(e) a second gear member mounted on said free end portion for rotation about an axis eccentric relative to said second gear member;
(f) connecting means holding said first and second gear members in meshing engagement; and
(g) motion transmitting means operatively interposed between said gear members and said input and output members respectively for rotating one of said gear members in response to rotation of said input member, and for rotating said output member in response to rotation of the other gear member.

3,309,936
REDUCTION GEAR CONSTRUCTION

Leonard L. Gaubis, East Granby, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Oct. 8, 1964, Ser. No. 402,589

7 Claims. (Cl. 74—410)



1. In a reduction gear system, a housing, a first gear, means supporting said first gear from said housing, a second gear connected to drive said first gear, a planetary gear system, means to support said planetary gear system, flexible drive means connecting said first gear and said planetary gear system, said first gear support means including a flexible support bearing engaging and supporting said first gear.

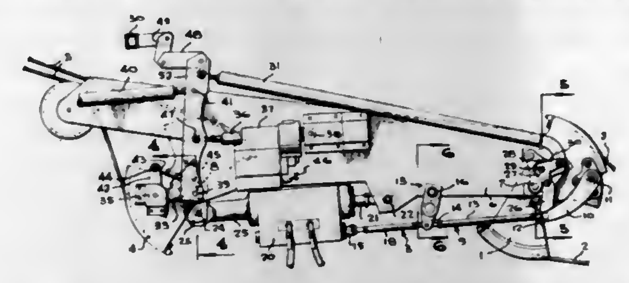
3,309,937
COORDINATING CONTROL LINKAGE

Donald N. Meyers, Philadelphia, Pa., and Oleg Stroukoff, Gloucester City, N.J., assignors to Piasecki Aircraft Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 2, 1965, Ser. No. 429,814

8 Claims. (Cl. 74—471)

1. Control linkage for coordinating movement of two output instrumentalities each having variable movement comprising, a mounting frame, a driving element pivotally mounted on the mounting frame, a driven element pivotally mounted on the mounting frame, means coupling the driving and driven elements to transmit movement from the driving to the driven elements, means on the driven element for connection to one of said output instrumentalities whereby the said one instrumentality will be moved when the driven element is moved, and means to adjust the means coupling the driving and driven elements to vary the ratio of driving element movement transmitted to the driven element including means for interconnecting the means coupling the driving and driven elements and the second of said output instrumentalities and responsive to position settings of the said second output instrumentality.

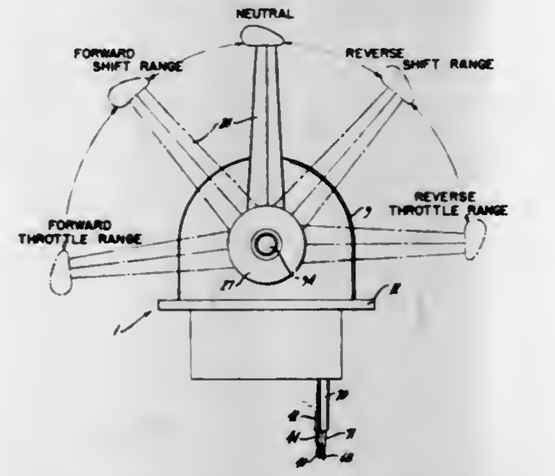


3,309,938
SINGLE LEVER REMOTE CONTROL FOR MARINE PROPULSION UNITS

Charles Frank Pervier, Oshkosh, Wis., assignor to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Delaware

Filed June 16, 1964, Ser. No. 375,504

16 Claims. (Cl. 74—472)



1. In a control for an engine driven marine propulsion unit having throttle and gear shift means, a housing, throttle and gear shift control arms pivotally mounted on said housing and operatively connected to the throttle and gear shift means respectively of the engine driven propulsion unit, a shaft member rotatably supported by the housing, separate actuating means for the throttle and gear shift control arms mounted on the shaft member adjacent to the corresponding arms, means separate from and carried by the shaft member for coupling the respective actuating means together to provide for operation of the throttle and gear shift means upon rotation of the shaft member, and means adapted to move the coupling means axially relative to the shaft member and thereby decouple the actuating means for the gear shift control arm from the actuating means for the throttle control arm whereby to provide for operation of the throttle means only upon rotation of the shaft member.

3,309,939
AUTOMATIC CONTROL VALVE SYSTEM FOR A MULTIPLE SPEED-RATIO POWER TRANSMISSION SYSTEM

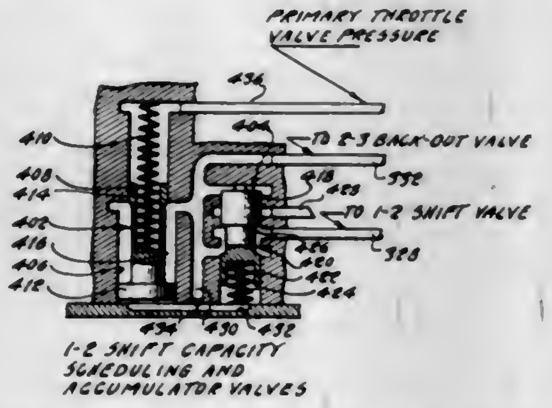
Stanley L. Pierce, Jr., Madison Heights, Mich., assignor to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Jan. 21, 1965, Ser. No. 426,928

12 Claims. (Cl. 74—472)

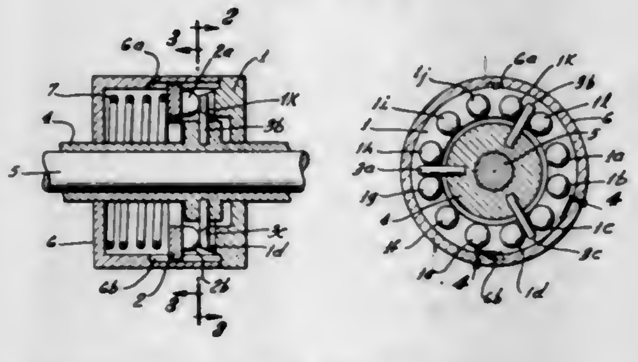
3. In an automatic power transmission system having gear elements adapted to form a driving connection between a driving member and a driven member, means

including a fluid friction torque establishing device for controlling the relative motion of the gear elements of said system to establish speed-ratio changes, a fluid pressure operated servo connected to a pressure operated part of said friction torque establishing device for actuating the same, a fluid pressure source, conduit structure interconnecting said source and said servo, fluid pressure regulator valve mean in said conduit structure for maintaining a controlled, effective pressure in said conduit structure and an accumulator valve system adapted to cushion the rate of application of said servo as fluid pressure is distributed thereto, said accumulator valve system comprising a pressure regulator valve means for varying the magnitude of the pressure made available to said servo, a modifier valve means for changing the pressure regulating characteristics of said regulator valve means including a movable accumulator piston, one side of the piston being in fluid communication with said servo, a flow restricting orifice having one side thereof in fluid communication with said servo and the other side thereof in fluid communication with the other side of said piston, and passage means for distributing to said regulator valve means the pressure differential that exists across said orifice, a source of a fluid pressure signal that is proportional in magnitude to the torque delivery requirements of said system, and a fluid connection between said signal source and said modifier valve means for modifying the regulating characteristics of the latter as the torque delivery requirements change.



3,309,940
DETENTION MECHANISM FOR ROTARY SWITCHES, PARTICULARLY STEPPING SWITCHES

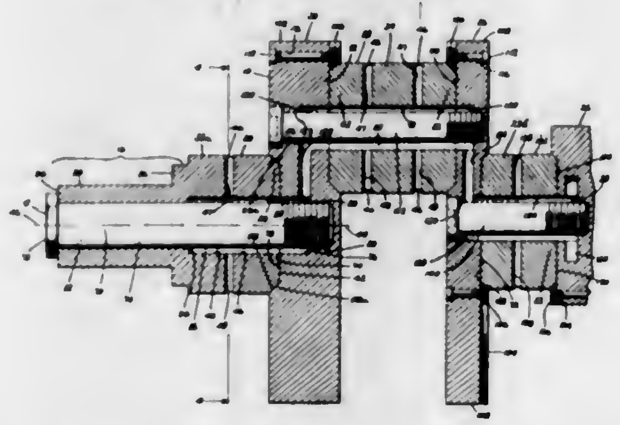
Wolfgang Rösl, Heilsbronn, Middle Franconia, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,018
Claims priority, application Germany, Nov. 27, 1963, W 31,632
4 Claims. (Cl. 74—527)



1. A detent mechanism comprising:
a pair of plates, each having a series of spaced cams
  defining a series of gaps between the cams;
said plates being arranged with the cams in opposing
  staggered relation so that each cam of one plate is aligned with a gap on the other plate;
means supporting said plates to permit relative movement of the plates toward and away from each other while being relatively fixed in a plane parallel to the plates;
spring means urging said plates toward each other;
detent pin means including a pin sized to fit in one of said gaps between adjacent ones of said cams; and
means for sequentially moving said pin from a gap between adjacent cams of one plate to a gap between adjacent cams in the other one of said plates.

3,309,941
SECTIONAL CRANKSHAFT

James C. Kappel, 1505 Archer Ave., Fort Wayne, Ind. 47708
Filed July 15, 1965, Ser. No. 472,192
4 Claims. (Cl. 74—597)



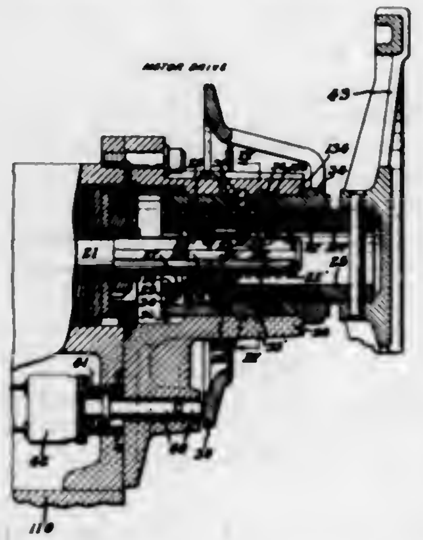
1. For use in a crankshaft, the combination comprising two crank cheeks and a bearing pin secured therebetween, said bearing pin having opposite ends and a cylindrical bearing surface, said crank cheeks each having slot means therein extending from a boundary of said crank cheek inwardly thereof for receiving one of said bearing pin ends, said slot means of said two crank cheeks being placed in facing relationship and in registry with each other, said bearing pin ends respectively being positioned in said slot means, pin means holding said bearing pin ends to said crank cheeks within said slot means, and stop means secured to said crank cheeks laterally of said slot means and adjacent to said bearing pin ends for holding said bearing pin ends against longitudinal movement in said slot means toward said boundary, said pin means and said slot means cooperating to hold said bearing pin ends in said slot means, respectively, said cylindrical bearing surface extending between said two crank cheeks.

3,309,942
PUSH-PULL HANDWHEEL AND MOTOR DRIVE

Samuel I. Caldwell, Drexel Hill, Pa., assignor to King of Prussia Research and Development Corporation, King of Prussia, Pa., a corporation of Pennsylvania
Filed May 27, 1965, Ser. No. 459,204
19 Claims. (Cl. 74—625)

1. A mechanical drive comprising: a tubular housing; a shaft within said housing to be driven rotationally; a power drive normally connected to said shaft; a handwheel drive normally disconnected from but connectable to said shaft by axial movement of said handwheel in one direction, said handwheel drive including a tubular drive sleeve disposed co-axially within said housing and encircling said shaft at spaced separation therefrom, said handwheel drive sleeve having internal splines projecting into its bore for a limited axial portion thereof; a coupling fixed on said shaft against angular movement but adapted for limited axial movement, said coupling being normally displaced axially from and out of engagement with said spline portion of said handwheel drive sleeve

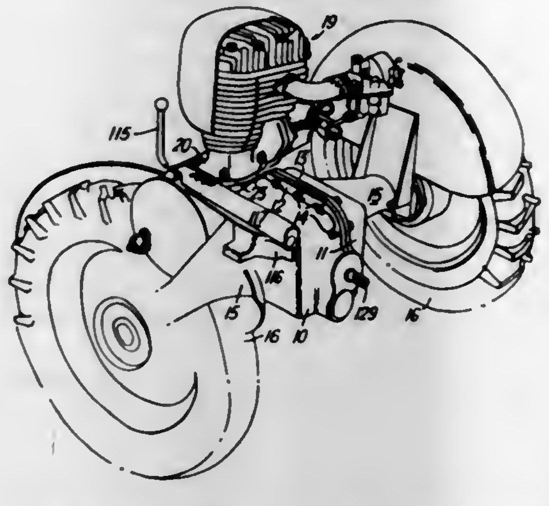
but adapted to be placed into engagement therewith by movement of said handwheel drive sleeve axially in said one direction; switch means electrically connected to said power drive and having a plunger protruding from said housing; a switch flange having a skirt portion disposed to mechanically operate said switch plunger in response to axial movement of said switch flange, said switch flange having a tubular sleeve portion disposed co-axially within said housing and located concentrically between said housing and said handwheel drive sleeve; locking means normally tending to lock said switch flange sleeve axially in relation to said housing, said locking means being releasable in response to force applied thereto resulting from axial movement of said handwheel drive sleeve; a centralizing spring assembly coupled to said handwheel drive sleeve and also to said switch flange sleeve and tending to maintain said switch flange axially centered relative to said handwheel drive sleeve, the centralizing spring of said assembly being adapted to store energy in response to axial movement of said handwheel drive sleeve and then to release its stored energy to move said switch flange axially to restore the axial relationship of said switch flange and handwheel drive sleeve, the axial position of said switch flange controlling the condition of said switch means, whereby the electrical energization and de-energization of said power drive means is dependent upon the axial position of said handwheel.



3,309,943
VEHICLE POWER UNIT

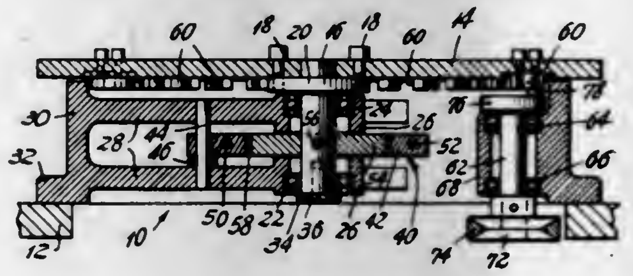
Jerzy Kosman, Kenilworth, and Horace C. De Gruyther, Coventry, England, assignors to Massey-Ferguson (United Kingdom) Limited, London, England, a British company
Filed Apr. 23, 1964, Ser. No. 361,962
Claims priority, application Great Britain, May 1, 1963, 17,185/63
11 Claims. (Cl. 74—701)

1. A power unit and rear axle assembly for tractors and similar vehicles including an engine crankshaft, a transmission unit, a differential unit, and clutch means for selectively establishing and disestablishing drive between the crankshaft and transmission unit, the improvement wherein the crankshaft, transmission unit, and differential unit are disposed in a single housing removable as a unit from the vehicle and supported on the rear axles of the vehicle to provide maximum traction, said housing comprising a pair of central housing portions with complementary rims, a tubular, generally trumpet shaped shaft housing extending from each of said central housing portions on an axis transverse to the plane of said rims, said housing portions being secured together at said rims to define a central housing having a portion which projects forwardly of the tubular shaft housings, said engine crankshaft being journaled in the forward portion of said housing on an axis parallel with the axes of the tubular shaft housings, said transmission unit being mounted in said housing rearwardly of said crankshaft and disposed in parallel relationship with the axes of said tubular shaft housings, said differential unit being mounted in said central housing beneath said transmission unit and having a pair of output shafts journaled respectively for rotation in said tubular shaft housings, and said engine crankshaft projecting externally of said central housing, the externally projecting portion of said crankshaft carrying said clutch means externally of the housing.



3,309,944
APPARATUS FOR POSITIONING AND INDEXING WORKPIECES

William Vangor, 325 High Ridge Road, Fairfield, Conn. 06430
Filed June 8, 1964, Ser. No. 373,338
9 Claims. (Cl. 74—822)



1. Apparatus for transporting and indexing workpieces comprising
- (A) a flat substantially circular horizontally disposed workpiece supporting table, said table having a centrally located shaft extending from one side thereof,
- (B) a frame having means mounting said table shaft for rotation about a vertical axis and having a portion thereof disposed adjacent the periphery of said table,
- (C) braking means supported by said frame and operatively associated with said table shaft for preventing movement of said table shaft when no driving force is applied thereto and for imparting resistance to movement of said table shaft when a driving force is applied thereto,
- (D) a plurality of circumfernetially spaced apart abutment members secured to said one side of said table adjacent the periphery thereof,
- (E) rotary drive means mounted on said peripherally disposed portion of said frame and operable through a portion of each revolution to engage one of said abutment members and apply a driving force thereto sufficient to move said abutment member, table and table shaft through a predetermined arc in opposition to said resistance to movement of said braking means

whereby said table rotates intermittently about said vertical axis in response to successive rotations of said drive means, said drive means comprising

(1) a driven shaft journaled for rotation in said peripherally disposed portion of said frame, and

(2) a drive member eccentrically connected to said driven shaft and constrained to move in an orbital path about said driven shaft which intersects the path of travel of said abutment members whereby said drive member engages and moves one of said abutment members during a portion of its orbital path, and

(F) power means for rotating said drive means, said power means comprising

(1) a cylinder secured to said peripheral portion of said frame and having opposite end closures,

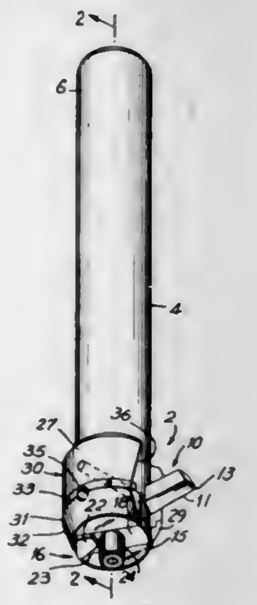
(2) a piston sealingly slidably mounted in said cylinder,

(3) means interconnecting said piston and said driven shaft for imparting intermittent rotary motion to said driven shaft in response to reciprocatory motion of said piston and operable to cause rotation of said driven shaft when said piston moves in one direction and prevent counterrotation of said driven shaft when said piston moves in the opposite direction, and

(4) means for introducing fluid under pressure into said cylinder successively on opposite sides of said piston whereby said piston reciprocates to and fro to drive said driven shaft, said drive member and said table intermittently in one direction only.

3,309,945
CUTTING TOOL

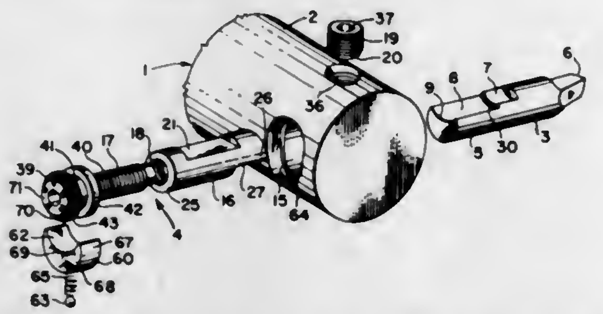
William Halpern, Haviland Road,
Harrison, N.Y. 10528
Filed May 13, 1965, Ser. No. 455,447
14 Claims. (Cl. 77—58)



1. A boring tool comprising, the combination of, a boring bar having a tool end which is adapted to project into a workpiece while it is supported at its other end, an end-cutting bit mounted upon said tool end of said boring bar and presenting a cutting edge which leads said boring bar in the longitudinal movement to a workpiece, said end-cutting bit being adapted to produce a hole with a cylindrical surface concentric with the axis of said boring bar, a boring bit rigidly mounted upon said tool end of said boring bar and presenting a cutting edge through a radial boring zone which extends radially from a minimum radius which is less than the maximum radius of said end-cutting bit to the maximum radius of the hole which is being bored, a nose cone having a sleeve portion slidably mounted upon said boring bar and presenting bearing surface means which is part of a frustrum of a cone and which has a minimum radius which is less than the maximum radius of said cutting edge of said end-cutting bit and a maximum radius which is greater than the maximum radius of said cutting edge of said end-cutting bit whereby said bearing surface means is adapted to be projected against and rest upon the end of the hole produced by said end-cutting bit, said nose cone being positioned with said bearing surface in trailing relationship with respect to said end-cutting bit, and resilient means resiliently urging said nose cone longitudinally of said boring bar toward a rest position wherein a portion of said bearing surface means is in leading relationship with respect to said boring bit, said resilient means permitting said boring bar to be projected longitudinally against the action of said resilient means to a position wherein the cutting edge of said boring bit intersects the cone frustrum of said bearing surface means and wherein said bearing surface means is resiliently nested in the hole produced by said end-cutting bit.

3,309,946
BORING TOOL

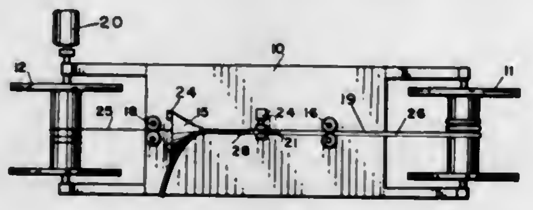
Albert Thomas, 114 E. James St., Munhall, Pa. 15120
Filed Aug. 18, 1965, Ser. No. 480,593
19 Claims. (Cl. 77—58)



1. A boring tool comprising a body member having a bore therein for receipt of a cutting element, an adjusting means mounted in said body member for movement in a direction parallel to the axis of said cutting element and in contact with a portion of said cutting element, and means for urging said adjusting means toward said cutting element and thus said cutting element against the wall of said bore to establish tight frictional contact between said adjusting means and said cutting element, whereby movement of said adjusting means in opposite directions will cause axial movement of said cutting element into and out of said body member.

3,309,947
APPARATUS FOR REMOVING A COVERING FROM CORE MATERIAL

Garvy M. Denney, Carrollton, Ga., assignor to Southwire Company, Carrollton, Ga., a corporation of Georgia
Filed Aug. 16, 1965, Ser. No. 479,913
2 Claims. (Cl. 81—9.51)



1. Apparatus for removing the covering from around a core material comprising:

(a) support means;

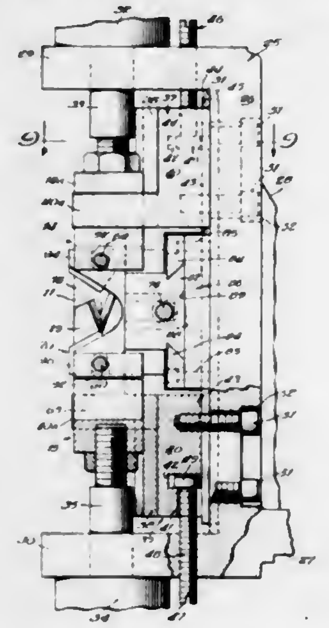
(b) deforming means carried by said support means for forming a strained zone in the said covering by mechanically deforming said covering, said deforming means including a peripheral edge which is positioned to engage said covering and which is too dull to pierce said covering;

(c) separating means carried by said support means for forcing said covering outwardly away from said core material so that said covering splits in said strained zone; and

(d) means for moving said core material with respect to said deforming means and said separating means.

3,309,948
WIRE CUTTING AND STRIPPING APPARATUS ADJUSTABLE FOR SIZES AND LENGTHS OF WIRE TO BE STRIPPED

Henry R. Falken, Lancaster, Ohio, assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan
Filed Jan. 10, 1966, Ser. No. 519,548
9 Claims. (Cl. 81—9.51)

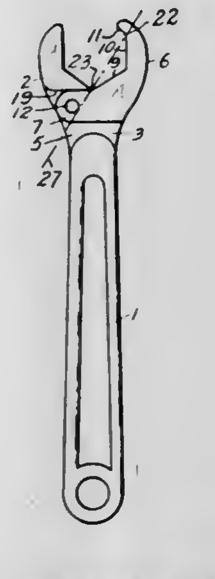


1. Wire cutting and stripping apparatus comprising frame means, a pair of blade holders on said frame means movable toward and away from one another, first, second and third blade means on each of said blade holders, the blade means on one blade holder cooperating with the respective blade means on the other blade holder for performing selected operations on insulated wire, said first cooperating blade means and said third cooperating blade means being supported on said blade holders for cutting the insulation without cutting the wire, said second cooperating blade means being supported on said blade holders for severing the wire, first means for adjusting the blade holders with respect to one another to vary the relative movement of the first and third blade means to accommodate insulated wire of different dimensions, and second means for adjusting the transverse positions of the first and third blade means relative to the second blade means to vary the length of insulation stripped from a wire.

3,309,949
SNAP-ON TYPE RATCHETING FLARE-NUT WRENCH

Ted Neff, 1575 W. Rialto Ave.,
San Bernardino, Calif. 92410
Filed May 16, 1966, Ser. No. 559,028
2 Claims. (Cl. 81—111)

1. A wrench having a ratchet-like operation comprising a first head having a reduced portion and a second head having a hinged connection with the first head, said first head having a handle portion integral therewith and a jaw portion at the outer extremity of said head, said jaw portion having two angular jaw surfaces of predetermined length, a first of the two surfaces bearing at a 60 degree angle outward and upward from the longitudinal axis of the wrench handle, a second of the two surfaces extending upward at a 120 degree angle from the end of the first surface and in substantially parallel alinement with the longitudinal axis of the handle, said second head having three angular jaw surfaces, two of which are the same length and the third being shorter than the first two, a first of the two surfaces of the same length extending outward and upward at a 60 degree angle from the longitudinal axis of the handle, a second of the two surfaces projecting upward from the end of the first at a 120 degree angle from the upper end of the first and in substantially parallel alinement with the longitudinal axis of the wrench handle, the third short surface of the second head extending upward and inward from the end of the second surface of said second head at a 120 degree angle and being rounded at its outer end thereby forming a hook-like portion on the second head to encompass the corner of a hexagonally shaped workpiece, said second head being bifurcated to form extending arms projecting laterally at a 90 degree angle to the longitudinal axis of the wrench handle and straddling the reduced portion of the first head, shoulders formed on opposite sides of the first head against which said arms of the hinged second head abut thereby restricting the upward pivotal travel of the second head, a recess in a curved portion of the reduced portion on the first head in which is retained one end of a spring means, said spring means being compressed between oppositely facing walls on said first head and second head to a point where the second jaw surfaces on both heads are in parallel alinement and the arms on the second head are resting against the shoulders on the first head.

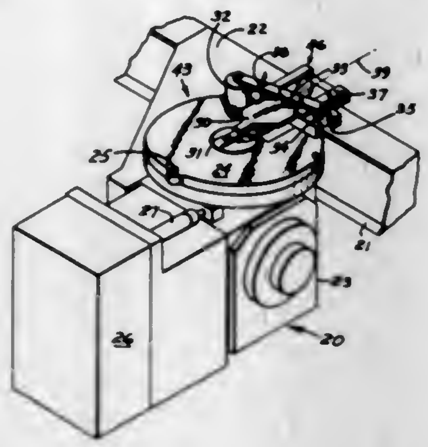


3,309,950
TRACER STYLUS ADJUSTMENT

Paul J. Weaver, Pasadena, Calif., assignor to True-Trace Corporation, El Monte, Calif., a corporation of Connecticut
Filed July 6, 1965, Ser. No. 469,424
4 Claims. (Cl. 82—14)

1. Apparatus for a tracer-controlled machine tool which duplicates in a workpiece the shape of a pattern, comprising: a tracer having a body, power-control means effective to control power of a machine tool, a first stylus and a second stylus mounted to the body, both styluses being effective to adjust the power-control means, the first stylus being movable to a first position where it projects beyond the second stylus so as to contact the pattern instead of the second stylus, and being movable to a second position where the second stylus contacts the pattern instead of the first stylus, thereby providing two reference spacings between the pattern and the tracer, the power passed by the power-control means

being effective to cause the machine tool to undergo motions similar to those of the stylus which contacts the pattern; a universally tiltable head to which both styluses are mounted; a rotatable cam; a track carried by said rotatable cam; a cam follower following said track to move the first stylus; a motor for turning said cam to a predetermined position, a follow potentiometer responsive to the cam position; another potentiometer settable to establish a desired cam position; a bridge network responsive to the conditions of the potentiometers and supplying a signal to cause said motor to turn the cam to the desired position.

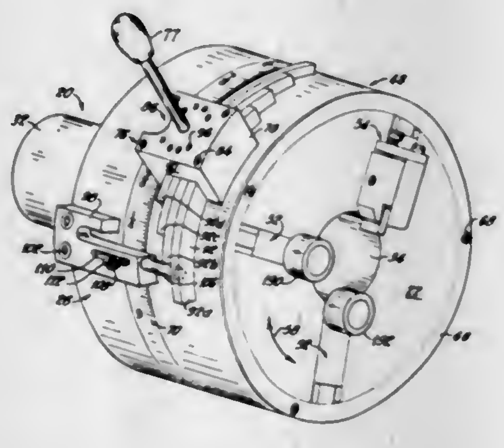


3,309,951

MACHINE TOOL TURNING HEAD

Sylvester Patt, Willoughby, Ohio, assignor to The Patt Brothers Company, Willoughby, Ohio, a corporation of Ohio

Filed Sept. 15, 1964, Ser. No. 396,489
16 Claims. (Cl. 82—35)



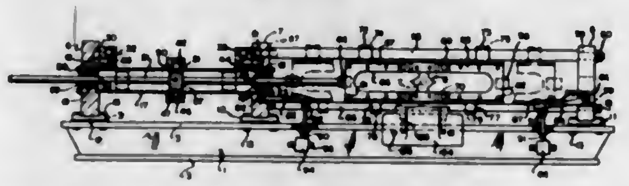
1. In a turner head,
a cylindrical body member having a working face and said face having a geometric center,
radially extending slideway means in said face,
a support roll carrier and a tool carrier slidable respectively in said slideway means and radially of said face,
said carriers each including outwardly extending cam follower means,
means biasing said carriers radially outwardly of said face,
a cam ring movable around said cylindrical body member and having cam surface means engageable with said follower means to simultaneously move said follower means to thereby move said carriers to radial working distances from the center of said face,
an elongated, curved rod-like stop member contoured to conform to the exterior of said cam ring,
a generally U-shaped holder for said stop member mounted on the exterior of said cam ring to embrace said stop member and having means to hold said stop member against the exterior of said cam ring,
an abutment member mounted on the exterior of said cylindrical body member to engage said stop member on movement of said cam ring,
and means for locking said cam ring against movement when placed in an adjusted position.

3,309,952

FLYING CUT-OFF

Joseph S. Walsh, Fairview Park, Ohio, assignor to The Yoder Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 8, 1964, Ser. No. 336,417
24 Claims. (Cl. 83—37)



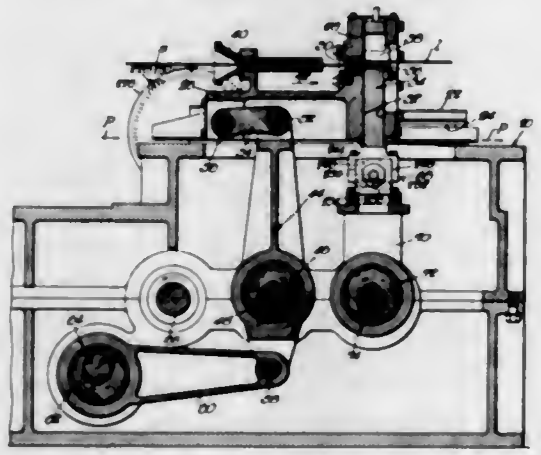
1. The method of making successive cuts in an elongated travelling tubular workpiece and the like comprising the steps of applying a high pressure driving force to a cutting tool while holding such cutting tool stationary to build up a substantially explosive driving force, and releasing such cutting tool to drive the same substantially explosively fully through such workpiece at high speed in one direction to sever such workpiece; and then substantially explosively driving such tool without reversal thereof fully through such workpiece in the opposite direction at high speed again to sever such workpiece.

3,309,953

FLYING SHEAR OF VARIABLE CUT LENGTHS

Karl W. Hallden, Thomaston, Conn., assignor to The Hallden Machine Company, Thomaston, Conn., a corporation of Connecticut

Filed Aug. 4, 1965, Ser. No. 477,263
20 Claims. (Cl. 83—305)



4. In a flying shear, the combination with a shear frame and gate carrying companion shear blades, respectively, of which said frame is guided for rectilinear movement in a plane and said gate is guided on said frame for movement with its blade into and from shearing relation with the other blade, an arm having with said frame a pivot connection floatable substantially normal to said plane, and three turntable eccentrics of which a first eccentric turnably supports said arm, a second eccentric has a follower strap pivotally connected with said gate, and a third eccentric has a follower strap pivotally connected with said arm remote from said first eccentric, of a first power drive including driven members turnable with said eccentrics, respectively, for driving the latter at a one-to-one ratio and said first and third eccentrics in the same direction; clutch means between said first and third eccentrics and respective driven members for their disengagement from and reengagement with each other to permit angular adjustment of the disengaged eccentrics relative to each other and to said second eccentric into different relative positions in which, on their reengagement with the respective driven members and power drive, the combined oscillation imparted by them to said arm will be of correspondingly different amplitudes; means for feeding stock to said blades; another power drive for said feeding means; and means for varying the speed rate of one of said power drives according to adjustment of said first and third eccentrics.

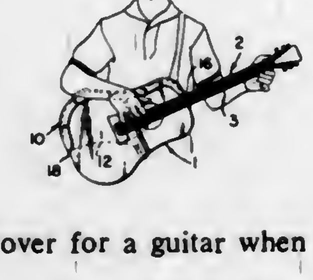
7. The combination in a flying shear as set forth in claim 4, in which said pivot connection between said gate and follower strap is another eccentric, and there is further provided means for turning said other eccentric into positions in which its eccentricity is additive to, respectively subtractive from, the eccentricity of said second eccentric at the times of cut for cut and mis-cut actions, respectively, of said blades.

3,309,954

PARTIAL COVER FOR A GUITAR

Lawrence Phillips, 10845 Childs St., Silver Spring, Md. 20901; Stanley Paymer and Arthur J. Paymer, 11500 Yates St., Silver Spring, Md. 20902; and George D. Yeatman, 12218 Connecticut Ave., Silver Spring, Md. 20902

Filed Jan. 12, 1966, Ser. No. 520,295
3 Claims. (Cl. 84—453)



1. A partial cover for a guitar when in use, comprising:
(a) a back cover member adapted to cover the upper rear side of a guitar and having an upper edge which conforms to the outline of the guitar;
(b) a top cover member integral along an edge with said upper edge of said back cover member which covers the top edge of the guitar;
(c) a strap member connected at one end to the midportion of the top cover free edge and of sufficient length to extend across the front side and around the guitar body to engage the lower portion of said back cover member;
(d) the cover unit forming a unitary partial guitar cover which leaves the front stringed side open and can readily be slipped over the top of the guitar and fastened in snug fitting position thereon; and
(e) cue card holder means integral with said top member of said cover for supporting cue cards in position on said top member so that they are easily read by the guitar player when the guitar is being played, but are hidden from general view of the audience.

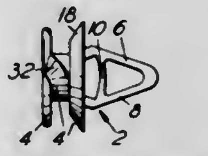
3,309,955

FASTENER WITH ROTATABLY ENGAGED HEAD

Albert E. Turnbull and George McDonald, Slough, England, assignors to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Oct. 13, 1964, Ser. No. 403,557
Claims priority, application Great Britain, Oct. 14, 1963, 40,449/63
4 Claims. (Cl. 85—5)

1. An integral, one piece, plastic fastener adapted to connect a complementary panel member to a support member in spaced relation thereto, said complementary panel member having an uninterrupted circular aperture of predetermined diameter and said support member having an aperture to be placed in alignment with said circular aperture, said fastener including a shank with a substantially circular head at one end thereof, said shank having a resilient first portion at the end opposite the head adapted to be accepted within the support member aperture and a solid second portion integral with the central portion of said head, said second portion adapted to fill a substantial portion of said panel aperture, a continuous resilient dished flange extending outwardly from said shank substantially at the juncture of said first and second portions and thence downwardly toward said first portion, said head being substantially planar and circular in configuration and extending laterally from said second portion, the diametral extent of said head being substantially greater than the diameter of the aperture in said panel member, a substantially right-angular V-shaped cut-out extending axially through said head, said cut-out removing a substantial portion of one quadrant of said head, at least one edge of said head adjacent said cut-out being reduced in thickness, said second portion of said shank having material removed therefrom by an axial continuation of said cut-out to provide a reduced cross section capable of being canted within the aperture in said panel member, the diametral measurement of said head from the apex of said cut-out to the opposite peripheral edge being equal to or less than the diameter of said panel aperture whereby said fastener head can be twisted through said panel aperture with a screwing action of one turn, said dished flange having a diameter greater than both of said apertures so as to resiliently seal off the aperture in said support panel and act as a spacer between said panel.

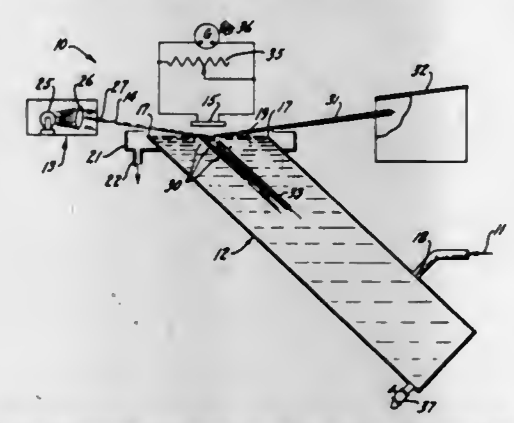


3,309,956

EXTENDED RANGE TURBIDIMETER

Clifford C. Hach, Ames, Iowa, assignor to Hach Chemical Company, Ames, Iowa, a corporation of Iowa

Filed July 5, 1962, Ser. No. 207,649
2 Claims. (Cl. 88—14)



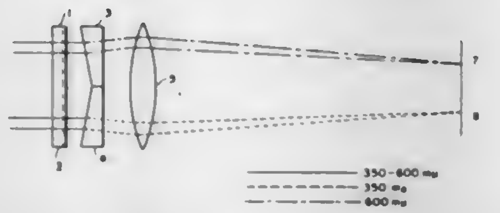
1. A turbidimeter comprising, in combination, a lamp, a lens and shutter positioned adjacent said lamp for directing a narrow beam of light at a sharply acute angle substantially less than 45° with respect to the horizontal, an elongated fluid sample container, said container having an open top whose edge portions lie in a substantially horizontal plane, said means including an inlet opening in said container for introducing fluid below said open top so that fluid will spill over said edge portions and maintain a flowing smooth upper fluid surface in the container, a trough for collecting and discharging fluid spilled over said edge portions, said container being angled so that said light beam strikes said fluid surface and the elongated

dimension of the container parallels the portion of said beam that is refracted into the fluid, and a light sensitive device positioned closely above the area where said beam strikes said fluid and just out of said light beam for detecting light scattered upwardly from particles at or just beneath said surface.

3,309,957
CINESPECTROGRAPH SPECTRUM ORDER SEPARATION

Thomas F. McHenry, Norwalk, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed May 21, 1963, Ser. No. 281,886
6 Claims. (Cl. 88—14)



1. A spectrograph comprising in combination and in optical alignment,

(a) at least one grating, a plurality of filter wedges receiving rays from said gratings and having transmission characteristics for separating spectral orders and for deviating rays from the respective spectral orders along separate divergent paths,

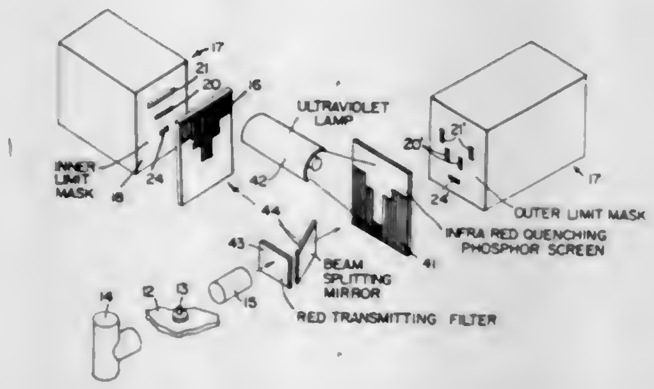
(b) means for imaging the spectral orders after passing through each wedge onto separate locations in a predetermined image plane, and

(c) radiation detectors located to receive the spectral image and responsive to the particular radiations in the spectra.

3,309,958
FLYING SPOT SYSTEM FOR COMPARING AN OBJECT WITH TOLERANCE MASKS

William Simon, Cambridge, Mass., assignor to Image Instruments, Inc., Newton Lower Falls, Mass., a corporation of Delaware

Continuation of application Ser. No. 159,829, Dec. 18, 1961. This application Oct. 11, 1965, Ser. No. 500,474
15 Claims. (Cl. 88—14)

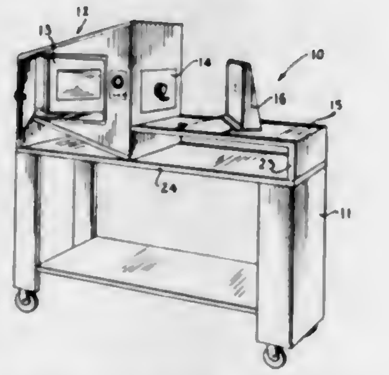


1. Optical inspection apparatus comprising means to provide illumination in the form of a spot of light, means to scan said spot in a series of sequential lines to cover an area, means to bring light from said spot to a focus on an object under observation and on mask means determining maximum and minimum acceptable limits of dimensions of the object, said mask means comprising first and second masking members each located in a path of said light, each member having a region which substantially passes said light and a region which substantially blocks said light, each of said regions having an outline which corresponds to the shape of said object, one of said outlines being larger than the other so that said one outline defines said maximum limits and said other outline defines said minimum limits, means to receive the light from said spot passing said object and means to receive light from said spot passing the masking means, said receiving means each being arranged to provide signals corresponding to the light picked up, and means responsive to said signals to provide a further signal indicative of the point-by-point relationship of the object with said limits.

3,309,959
REPROPORTIONING CAMERA

Edward Rondthaler, Croton-on-Hudson, Richard J. Decker, Huntington, and Michael A. Scotto, Bronx, N.Y., assignors to Electrographic Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 3, 1965, Ser. No. 429,999
3 Claims. (Cl. 88—24)



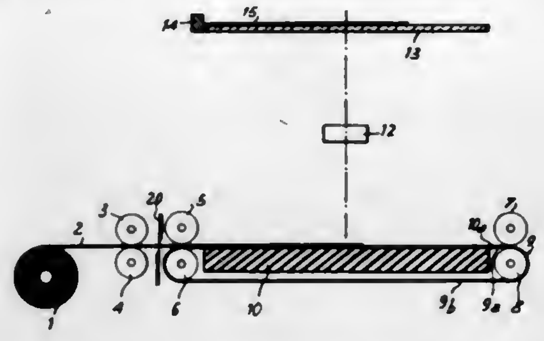
1. A reproportioning camera, comprising: a camera box housing including illumination means and an opening therein for a camera lens, a focus bed, said housing and said bed each having slide means, each of said slide means being in a common plane and comprising a pair of parallel tracks, one track of each pair of tracks having a straight edge, a focus board detachably slidably mounted on said focus bed slide means, a copyboard detachably slidably mounted on said housing box slide means, each of said copyboard and said focus board being pivotally mounted on a base member having a straight edge adapted to be brought into sliding contact with the corresponding straight edge of each of said pair of tracks for said focus bed and said housing box, whereby said copyboard and said focus board may be slidably repositioned as desired as solid, integrated structures in squared-up alignment with respect to each other, means mounting said lens over said housing opening for universal movement, said camera lens mounting means including a lensboard and magnetic means attaching said lensboard to said camera box housing, and reproportioning scale means for each of said focus board, copyboard, and lens, said scales reading directly in percentages of reproportionment.

3,309,960
PHOTOGRAPHIC REPRODUCING APPARATUS

Marcel Louis Alexandré Delplanque, 19 Rue du Dr. Blanche, Paris, France

Filed Mar. 2, 1965, Ser. No. 436,485
Claims priority, application France, Apr. 21, 1964, 971,754
2 Claims. (Cl. 88—24)

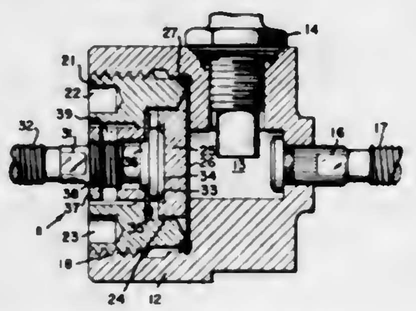
1. In a photographic reproducing apparatus of the type including an objective projecting an image of the matter to be reproduced, comprising an endless conveying strip adapted to retain electrostatic charges and having one flight extending substantially in the plane of image formation of said objective, said flights having a front face confronting said objective and a back face, said strip adapted to carry on said front face a photosensitive sheet into the area where said image is formed, means for temporarily affixing said sheet to said strip by electrostatic attraction, a stationary carrier plate, one face of which extending parallel and immediately adjacent said back face, said plate adapted to receive and retain electrostatic charges, means to electrostatically charge said plate and said strip to cause adherence by electrostatic attraction between said plate and said back face of said flight on one hand and between said front face of said flight and said photosensitive sheet on the other hand, said adherence taking place at least in the area where said image is formed.



3,309,961
HERMETICALLY SEALED EXPLOSIVE RELEASE MECHANISM

David A. Lee, Inglewood, Calif., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed June 30, 1964, Ser. No. 379,072
1 Claim. (Cl. 89—1)



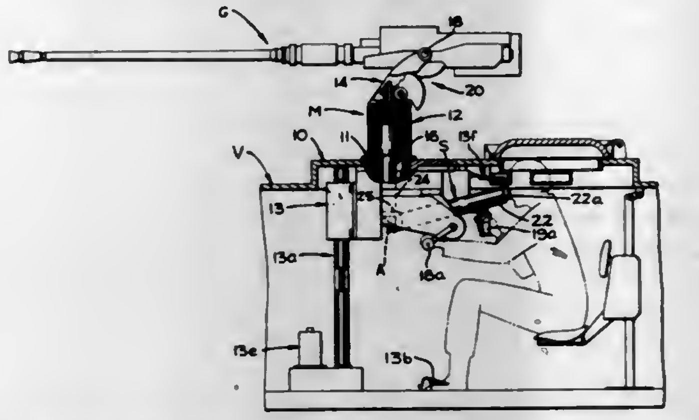
A hermetically sealed explosive release mechanism comprising:

- a body having a pressure chamber therein;
- a retaining shoulder at one end of said pressure chamber;
- an elongated member having an enlarged head portion in said body;
- an annular retaining ring interposed between and engaging said shoulder and enlarged head portion;
- a piston in said pressure chamber engaging said enlarged head portion, said piston being spaced from and adapted to be stopped by said retaining shoulder;
- a diaphragm attached to said body and engaging said piston, said diaphragm extending across said pressure chamber to prevent passage of gas therefrom;
- a bevelled support adjacent the point of attachment of said diaphragm to said body to support said diaphragm upon pressurization of said pressure chamber,
- a retainer nut mounted in said body and having a bore for accommodation of said elongated member, said nut forming said retaining shoulder, said diaphragm being supported by said body and said retaining nut;
- whereby when said pressure chamber is pressurized, said diaphragm and piston is adapted to force said elongated member against said annular retaining ring to shear said ring and allow said elongated member to separate from said housing, said piston being stopped by said shoulder to support said diaphragm.

3,309,962
GUN MOUNT AND GUNSIGHT ASSEMBLY

Clarence W. Lykam, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 435,947
15 Claims. (Cl. 89—41)

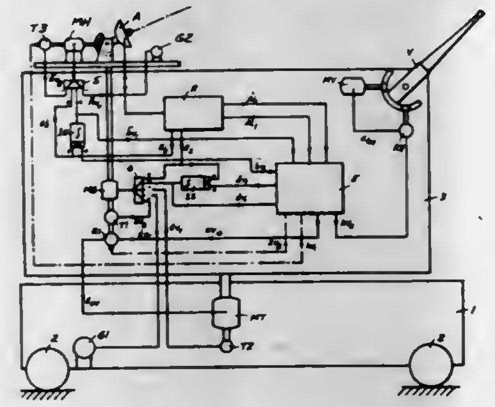


15. A gun and gun mount assembly, and a periscopic gunsight, said gun mount assembly comprising a hollow pedestal, a pair of spaced gun trunnions, trunnion support means rotatably mounted on said pedestal, a gun mounted on said trunnions for motion in elevation, means for moving said trunnion support means and the gun in azimuth, axially slidable sleeve means within said trunnion support means for moving said gun in elevation, said gunsight having fixed periscope tube means mounted coaxially within said axially slidable sleeve means, said gunsight having rotatably mounted azimuth and elevation mirror means mounted on the upper end of said fixed periscope tube and disposed between said trunnions, and means connecting said mirror means to said assembly for rotating both mirror means in azimuth and the elevation mirror means alone in elevation in accordance with motion of the gun in azimuth and in elevation, respectively.

3,309,963
FIRE CONTROL SYSTEM FOR AN ANTI-AIRCRAFT WEAPON CARRIER

Hans Manne Alvar Salomonsson, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a Swedish company

Filed Apr. 27, 1965, Ser. No. 451,179
Claims priority, application Sweden, May 5, 1964, 5,582/64
8 Claims. (Cl. 89—41)



2. An anti-aircraft weapon carrier, comprising in combination, a mobile chassis; a turret mounted on said chassis for rotation about a vertical axis; an anti-aircraft weapon mounted for elevation in said turret; a first servomotor for rotating said turret relative to said chassis and a second servomotor for elevating said weapon relative to said turret; a fire control system comprising a radar sight including a radar antenna layable in traverse and in elevation for determining the position and the velocity of a target in a spheric coordinate system and for generating a first error signal representing the traverse

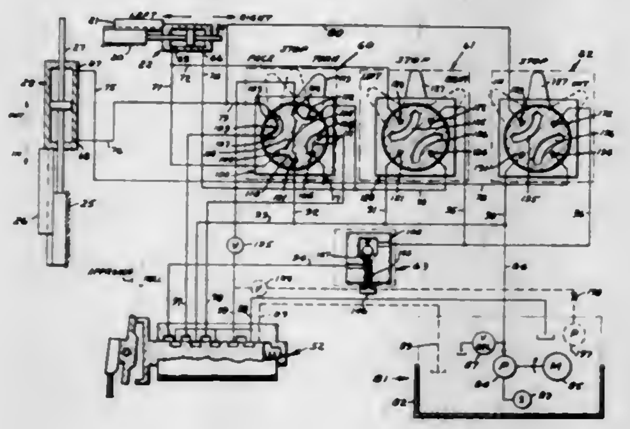
angular deviation between the antenna direction and the direction to the target and a second error signal representing the elevational angular deviation between the antenna direction and the direction to the target; a fire control computer supplied from said radar sight with data regarding the position and the velocity of the target and arranged to calculate from said data a point of aim for said weapon for firing at said target, said radar antenna being mounted on said turret so as to be layable in traverse and in elevation relative to said turret, a third servomotor for traversing said antenna relative to said turret; a fourth servomotor for elevating said antenna relative to said turret, said first error signal being supplied as control signal to said third servomotor and said second error signal being supplied as a control signal to said fourth servomotor; means for determining the traverse angular velocity of said antenna relative to the ground and generating a signal proportional thereto, said signal being supplied as a negative feedback signal to said third servomotor, said fire control computer being arranged to calculate the traverse angle between the direction to the target and the direction to said point of aim; comparison means for comparing said traverse angle with the traverse angle between the antenna direction and the direction of the weapon and for producing a signal representing the difference between said two traverse angles, said signal being supplied as a control signal to said first servomotor, said fire control computer being also arranged to calculate the traverse angular acceleration of the target on the basis of a predetermined assumption regarding the future movement of the target and to produce a signal proportional to said traverse angular acceleration; and an integrator circuit having an input and an output, said signal proportional to the calculated traverse angular acceleration of the target and said first error signal being supplied to the input of said integrator circuit, the output signal from said integrator circuit being supplied to said third servomotor as an additional control signal therefor.

3,309,964
MACHINE TOOL

Paul J. Weaver, Pasadena, Calif., assignor to True-Trage Corporation, El Monte, Calif., a corporation of Connecticut

Continuation of abandoned application Ser. No. 368,971, May 20, 1964, which is a division of application Ser. No. 126,383, June 1, 1961, now Patent No. 3,161,095, dated Dec. 15, 1964. This application Apr. 11, 1966, Ser. No. 544,661

11 Claims. (Cl. 91—36)



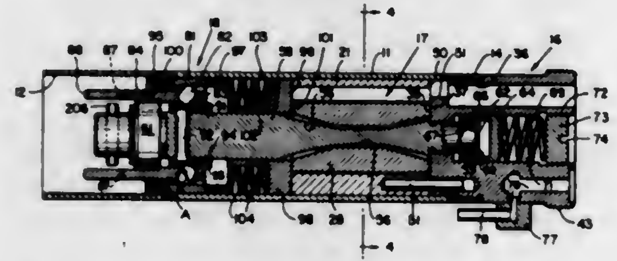
1. In a hydraulic circuit for controlling the operation of a hydraulic motor which in turn drives a machine tool component, the motor having a pair of ports, the rate of flow of liquid through the motor being determined by a tracer valve having the function of reversibly selecting either of said ports as an inlet port and the other as an outlet port, the improvement comprising: a shunt passage including a bi-directional flow orifice between and interconnecting said ports so as to supplement fluid flow from the outlet port with fluid supply from the inlet port regardless of which is selected as the inlet and which is selected as the outlet port.

3,309,965
COMBINED FLUID MOTOR AND SPEED REDUCER FOR DRIVING DENTAL TOOLS

Egon R. Weickgenannt, Rochester, N.Y., assignor to Ritter Pfaudler Corporation, a corporation of New York

Filed Feb. 27, 1964, Ser. No. 347,813

15 Claims. (Cl. 91—58)



1. A fluid motor comprising in combination:

(a) a rotor having blades;

(b) a shaft fixed with respect to said rotor;

(c) a bearing having inner and outer races, anti-friction members, and an extended bearing retainer between said races and embracing said anti-friction members;

(d) means for driving the inner race of the bearing from said shaft;

(e) means for applying pressure on said anti-friction members to reduce the speed of rotation of said retainer below that of the shaft; and

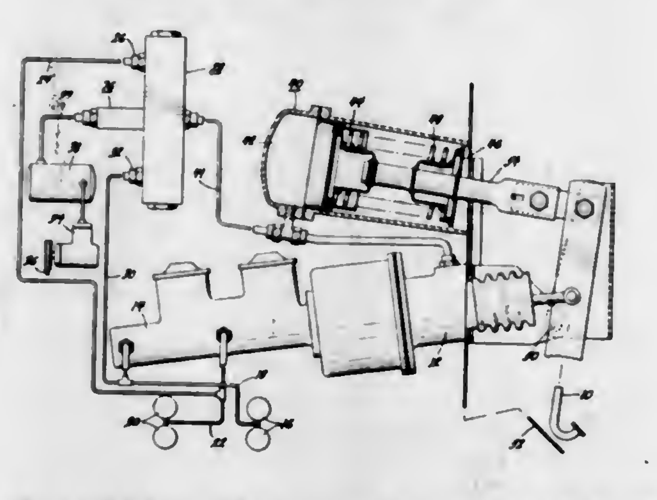
(f) means for driving a cutting instrument from said retainer.

3,309,966
DIFFERENTIAL PRESSURE HYDRAULIC VALVE AND FLUID MOTOR

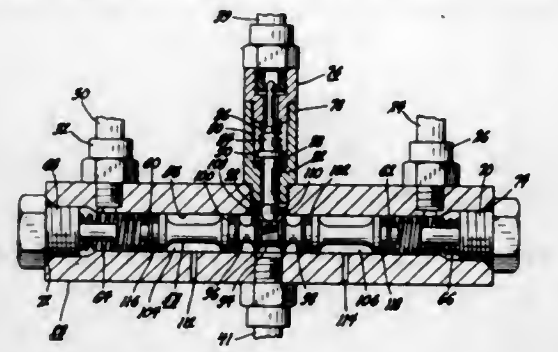
Jack T. Cornillaud, Dearborn, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 11, 1964, Ser. No. 374,362

8 Claims. (Cl. 91—391)



1. In a vehicle braking system having a single actuator pedal and two independent hydraulic systems, a control device comprising: a control body; a chamber extending through said control body; inlet means for a fluid medium into said chamber; outlet means for a fluid medium from said chamber disposed in fluid communication with said inlet means; piston means slidably disposed in said chamber and biased into centered disposition relative to the inlet means; fluid entry means into said chamber providing an equal hydraulic pressure on opposite ends of said piston means to maintain said piston means in centered disposition in said chamber, said piston means being responsive to a pressure differential between its opposite ends to move said inlet means out of fluid communication with said outlet means and latches at an extreme of movement to maintain fluid communication shut-off until the pressure imbalance disappears.

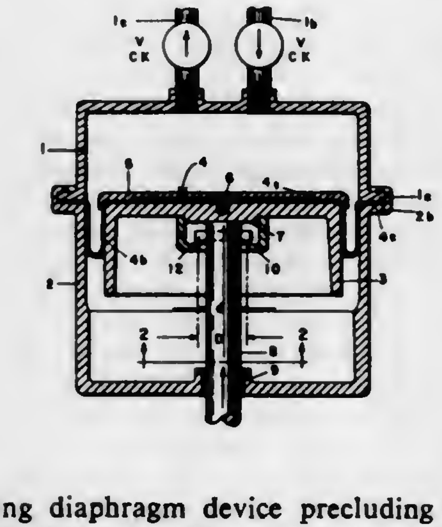


3,309,967
ROLLING DIAPHRAGM DEVICES HAVING LOOSE COUPLING BETWEEN PISTON AND PISTON ROD TO RENDER THE PISTON FLOATING

John F. Taplin, 15 Sewall St.,
West Newton, Mass. 02165

Filed Jan. 25, 1965, Ser. No. 427,846

2 Claims. (Cl. 92—101)



1. A rolling diaphragm device precluding damage to the rolling diaphragm resulting from a misalignment of the piston and of the piston rod of the device, said rolling diaphragm device including

(a) a cylinder body having an internal cylindrical wall;

(b) a reciprocating piston arranged inside of said cylinder body and defining a gap between the lateral wall thereof and said cylindrical wall of said cylinder body;

(c) a rolling diaphragm having a radially outer flange clamped to said cylinder body, a radially inner flange clamped to said piston, and a rolling wall intermediate said radially outer flange and said radially inner flange forming a convolution situated inside said gap;

(d) a piston rod for operating said piston, said piston rod having a circular cross-section of predetermined diameter;

(e) a slide-bearing for said piston rod integral with said cylinder body;

(f) a plate member arranged inside said piston at right angles to the axis thereof and forming an integral part thereof, said plate member having a circular aperture coaxial to said piston and having a larger diameter than said piston rod, said piston rod projecting through said aperture leaving a substantial radial clearance between said piston rod and said aperture in said plate member allowing the end of said piston rod adjacent said piston to move radially relative to said piston within the limits of said aperture; and

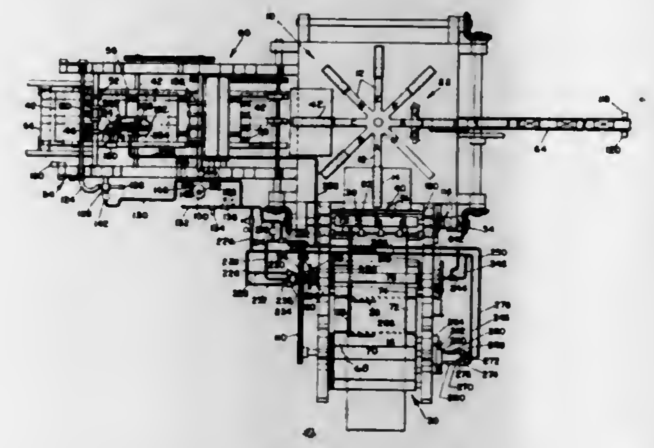
(g) abutment means on said piston rod cooperating with said plate member and projecting transversely across the portion of said piston rod situated between the end of said piston rod adjacent said piston and said circular aperture in said plate member, whereby said plate member allows movement of said abutment means relative to said piston in a direction longitudinally of said piston rod within limits defined by said piston and said circular aperture in said plate member.

3,309,968
PACKAGING MACHINE

John W. Scully, Raynham, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts

Filed Nov. 4, 1964, Ser. No. 408,877

28 Claims. (Cl. 93—44.1)



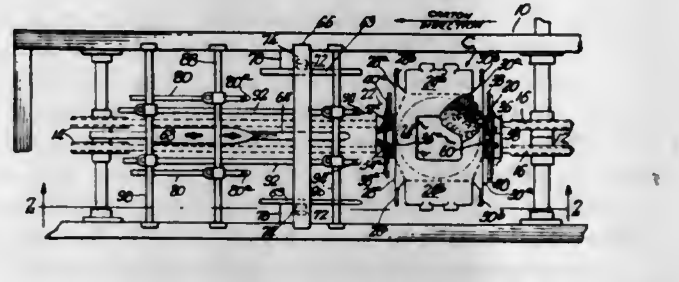
1. In a packaging machine of the character described, in combination, means for producing lined cartons including means for feeding lining material into the machine to be formed into lining bags, means for feeding carton blanks into the machine to be wrapped about the lining bags to provide lined cartons, and means under the control of the operator for discontinuing the feed of carton blanks and lining material while permitting the machine to cycle without producing lined cartons.

3,309,969
METHODS AND MACHINES FOR FORMING CARTONS

Edwin J. Plough, Wadsworth, Ohio, assignor, by mesne assignments, to Packaging Corporation of America, a corporation of Delaware

Filed Sept. 28, 1964, Ser. No. 399,778

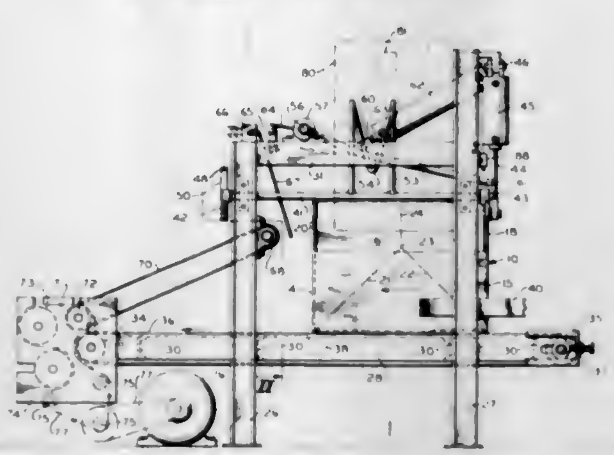
16 Claims. (Cl. 93—49)



4. A machine for folding gussets disposed adjacent one end of a tubular carton blank comprising a conveyor for supporting and moving such blank in one direction, first means disposed at a station of travel of the conveyed blank for spreading opposite sides of such blank while being moved by said conveyor, and second means carried by said conveyor and operative subsequent to spreading of the sides for folding the gussets inward between such spread sides as such blank is moved by said conveyor.

3,309,970
METHOD AND MEANS FOR FLAT FOLDING BOTTOM SEALED CARTONS

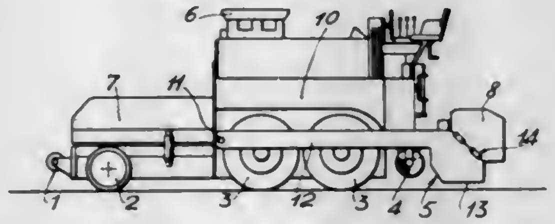
Frank D. Pierce, Salinas, Calif., assignor to Klemark, Inc., Salinas, Calif., a corporation of California
Filed Sept. 8, 1964, Ser. No. 394,991
8 Claims. (Cl. 93—53)



1. A machine for folding bottom sealed paper cartons in flat form without creasing or weakening the end panels or bottom thereof in combination, means for activating the folding means upon proper positioning of the carton within the machine, rotating arms to engage the interior of the side panels at substantially the longitudinal midpoint of the carton to collapse the sides outwardly, rear pressure folding means engaging the rear end panel of the carton to collapse it forwardly and moving said folded carton forward, and compression means for flattening the folded and collapsed carton.

3,309,971
EXTENSIBLE LEVELLING APPARATUS TO BE USED IN CONNECTION WITH FINISHERS FOR THE SPREADING OF BITUMINOUS CONGLOMERATES

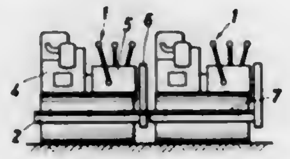
Domenico Domenighetti, Via Nosetto 6, Bellinzona, Switzerland
Filed May 25, 1964, Ser. No. 369,809
Claims priority, application Switzerland, Aug. 5, 1963, 9,789/63
5 Claims. (Cl. 94—45)

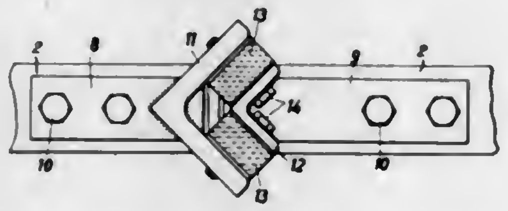


1. A leveling apparatus for road pavings, comprising in combination, a vehicle body having front and rear ends, a box-like screed carried by and disposed at the rear end of said vehicle body, said screed being horizontally elongated in a direction transverse of the vehicle body and including a pavement engaging bottom, a front wall, a pair of side walls and a top wall member, the transverse length of said screed corresponding substantially to the width of the vehicle body, a pair of box-like screed extensions operatively disposed at the respective opposite sides of said screed and projecting laterally outwardly beyond sides of the vehicle body, each of said screed extensions including a pavement engaging bottom, a front wall and an inner side wall, and hinge means connecting the inner side wall of each screed extension to the adjacent side wall of the screed at the junction of the screed side wall with the screed top wall member, whereby said screed extensions may be hingedly swung from their operative position beyond sides of the vehicle body to an inoperative position wherein they are superposed on said screed top wall member, said top wall member of the screed and axes of said hinge means being downwardly inclined, whereby the screed extensions in their operative position are forwardly offset from their inoperative position.

3,309,972
VIBRATING ROAD ROLLER

Hermann Peters, Boppard (Rhine), Germany, assignor to BOMAG Bopparder Maschinenbaugesellschaft m.b.H., Boppard (Rhine), Germany
Filed June 22, 1964, Ser. No. 376,813
Claims priority, application Germany, June 21, 1963, B 72,374
2 Claims. (Cl. 94—50)



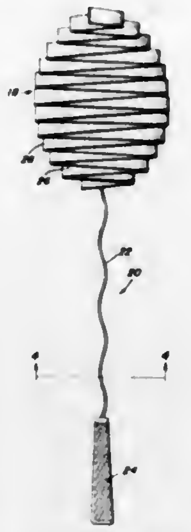


1. A vibrating road roller combine comprising a first power driven and separately operable and controllable road unit having a roller supporting frame and a pair of rollers arranged within said frame one behind the other and rotatably mounted on said frame, at least one second substantially similar road unit arranged alongside said first road unit with the axes of the respective rollers within the frame of said second unit substantially parallel to the axes of the corresponding rollers within the frame of said first road unit, a coupling member extending between said units at each end of said roller supporting frames of said first and second units and being secured to respective ends of said frames and holding said first and second units together for combined movement and preventing relative up and down movement of said units, said coupling member including a first set of straps each being separately secured at a respective end of said frame of said first road unit and a second set of straps each being separately secured to a respective end of said frame of said second road unit, a first angle iron member including two vertical divergent legs held to each of said first set of straps, a second angle iron member including two divergent vertical legs parallel to respective legs of said first angle iron member and held to each of said second set of straps and being in parallel relationship to said first angle iron member with the angle tip of each of said first and second angle iron members being centered along the respective axes of said first and second straps, a bolt connected between the vertical legs of said first angle iron member and the vertical legs of said second angle iron member, and a spring pad disposed around each of said bolts between the respective vertical legs of said angle iron members, said spring pads permitting some relative movement between said angle iron members.

3,309,973
LIGHT BLOCKING TOOL FOR PHOTOGRAPHIC PRINTING

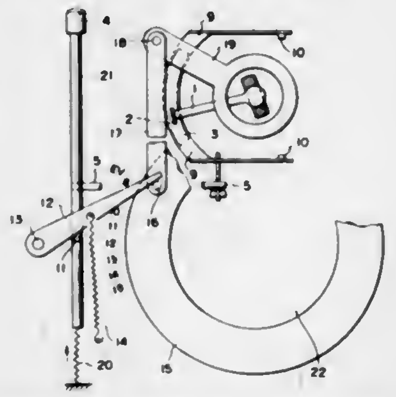
Ernest F. Engler, 110 N. Wilson St., Casper, Wyo. 82601
Filed Oct. 26, 1964, Ser. No. 406,528
16 Claims. (Cl. 95—1)

1. A tool for dodging a photographic image projected onto a photo-sensitive surface during a predetermined exposure period comprising, a light blocking portion and a handle portion, said handle portion including an elongated spiral rod member having a longitudinal axis, said light blocking portion being connected to one end of the handle portion and including a continuous rigid strip of material folded into divider sections extending symmetrically from opposite sides of said longitudinal axis in a transverse plane, said divider sections being spaced along said longitudinal axis at an angle to said transverse plane for passage of light therebetween.



3,309,974
EXPOSURE CONTROL MECHANISM

Ichiro Yoshiyama, Toyokawa, Tatsuo Kobayashi, Kaizuka, and Masaichiro Konishi, Nishinomiya, Japan, assignors to Minolta Camera Kabushiki Kaisha, Minami-ku, Osaka, Japan, a corporation of Japan
Filed Apr. 20, 1964, Ser. No. 360,872
Claims priority, application Japan, Apr. 24, 1963, 38/21,433
6 Claims. (Cl. 95—10)

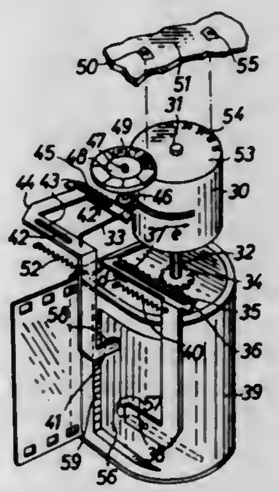


1. In an exposure control mechanism for a camera, the combination comprising,

(a) an exposure meter having an indicator needle adapted to be oscillated in an arc in accordance with the brightness of the object to be photographed,
(b) the outer edge of said indicator needle being bent perpendicular to the length of said needle,
(c) teeth means formed on said outer edge,
(d) a fixed surface positioned below and parallel to said indicator needle,
(e) an elastic member located on said surface adjacent to said edge of said indicator needle and conforming in shape to the arc of movement of said needle,
(f) yoke means positioned above and normally parallel to said indicator needle,
(g) means for pivoting said yoke means into contact with said needle so as to press said teeth into engagement with said elastic member,
(h) a scanner lever coaxially mounted with said indicator needle for rotation in an arc between said indicator needle and said fixed surface,
(i) a rotatable exposure valve setting ring adapted to control the shutter setting of the camera,
(j) actuating means connected at one end to said scanner lever and at the opposite end to said setting ring for adjusting the same,
(k) restoring means for normally retaining said actuating means in an inoperating condition,
(l) manually settable operating means for disabling said restoring means and thereby releasing said actuating means, and
(m) said scanner lever being rotated until arrested at an operative position by engagement with said edge portion of said indicator needle.

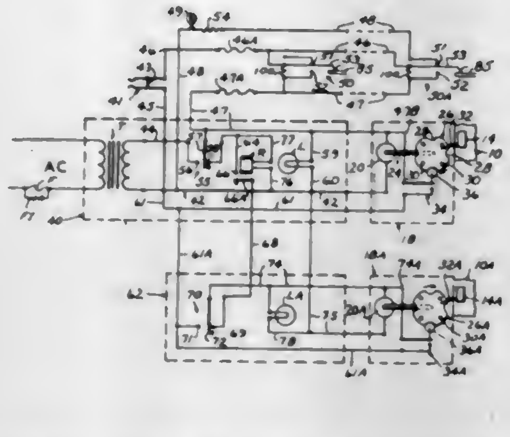
3,309,975
STRUCTURE FOR ADJUSTING A CAMERA ACCORDING TO CHARACTERISTICS OF FILM EXPOSED THEREIN

Rudolf Kremp, Grunwald, Munich, and Paul Frost and Fridolin Hennig, Munich, Germany, assignors to AGFA Aktiengesellschaft, Leverkusen, Germany
Filed June 30, 1964, Ser. No. 379,134
Claims priority, application Germany, July 4, 1963, A 43,495; Oct. 25, 1963, A 44,393
5 Claims. (Cl. 95—10)



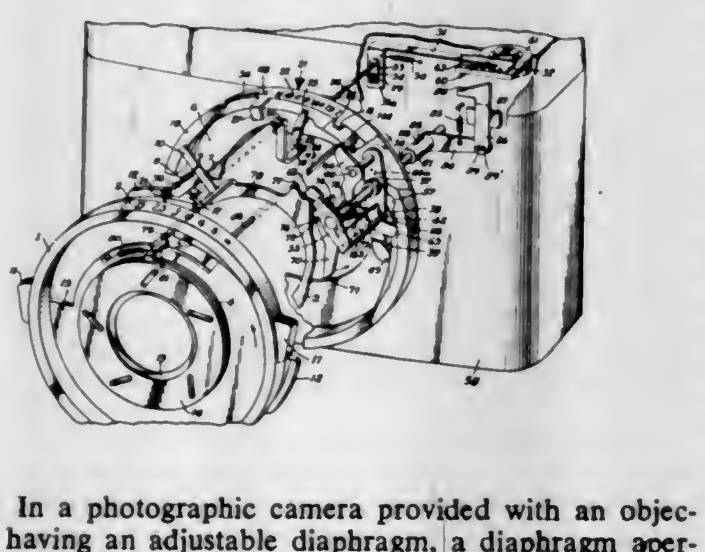
1. In a camera which is adapted to accommodate a container which contains film which is adapted to be exposed in the camera, in combination, support means forming part of the camera and having a compartment which is adapted to receive a film container; a film container adapted to be inserted into said compartment and having at its leading face as seen in the direction of insertion of said container into said compartment a pair of signal generating means respectively indicative of the speed and the type of the film which is in the container; a pair of sensing means movably carried by said support means and extending into that region of said compartment which is adjacent said leading face of said container, said pair of sensing means being respectively located in the paths along which said pair of signal generating means move during introduction of said container into said compartment to receive a signal generated by the respective signal generating means in response to insertion of said container in said compartment, so that when said container is in said compartment said pair of sensing means will be placed into conditions which are respectively indicative of the speed and type of film which is in said container; and a pair of signal transmitting means operatively connected to said pair of sensing means to transmit signals received thereby, one of said pair of signal transmitting means indicating the type of film which is in said container and the other of said pair of signal transmitting means automatically adjusting the camera according to the speed of the film which is in the container.

3,309,976
MEANS FOR OBTAINING A PHOTOGRAPHIC RECORD OF A ROBBERY
Earl W. Reiss, 16 Fairview Drive,
East St. Louis, Ill. 62203
Filed Dec. 14, 1964, Ser. No. 418,020
3 Claims. (Cl. 95—11)



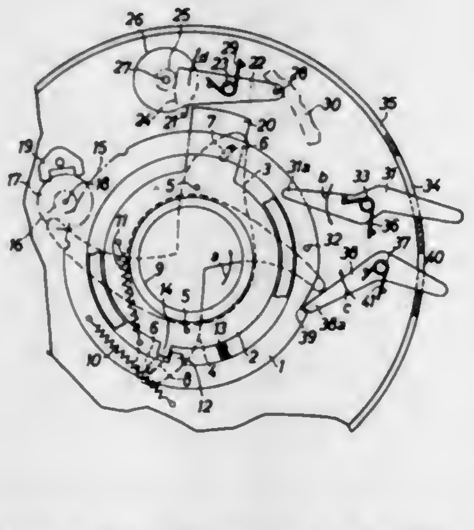
1. In a robbery recording system the combination with a self operated sequence camera having a starting button, of: means mounted adjacent the camera for moving the starting button to camera operating position in response to an alarm signal, including, a motor, a gear train driven by said motor, a shaft driven by said gear train, a disk-like cam coaxially connected with said shaft, circumferentially spaced-apart pins connected to one face of said cam and projecting outwardly of said cam parallel with the longitudinal axis of said shaft, a trip-finger secured to said starting button and having an end portion disposed in the path of travel of said pins; a transformer, said transformer having its primary side connected with a source of electrical energy; alarm signal means including a till switch having a pair of spaced apart terminals and having a spring contact interposed between said pair of terminals; and wiring connecting the secondary side of said transformer to said motor through said alarm signal means.

3,309,977
PHOTOGRAPHIC CAMERA WITH AUTOMATIC FLASH EXPOSURE MECHANISM
Edgar Sauer, Stuttgart-Rohr, Willi Günther, Stuttgart-Mohringen, and Heinz Köppen, Stuttgart, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany
Filed Jan. 15, 1964, Ser. No. 337,813
Claims priority, application Germany, Jan. 16, 1963,
Z 9,856
9 Claims. (Cl. 95—45)



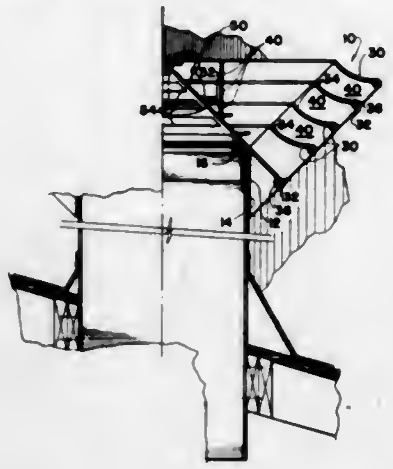
1. In a photographic camera provided with an objective having an adjustable diaphragm, a diaphragm aperture adjusting mechanism including means for preselecting the diaphragm aperture to be adjusted, an automatic exposure adjusting means, and an actuating ring extending concentrically about the optical axis of said objective for selectively adjusting the camera to a plurality of operating ranges, namely to a flash exposure range, an automatic exposure range and a manually adjustable diaphragm aperture range, the improvement comprising means for selectively attaching to said camera any one of a number of interchangeable objectives of different and variable focal lengths respectively, and means for adjusting the adjusting range of said actuating ring to the respective different and variable focal lengths of said interchangeable objectives including an arresting device operatively connected with said actuating ring, said interchangeable objective being provided with a control member thereon for rendering said arresting device ineffective, said control member having a cam thereon for a locking lever pivotally carried by said actuating ring and forming a portion of said arresting device away from its locking position when said interchangeable objective is attached to the camera (FIG. 3).

3,309,978
CAMERA SHUTTER WHICH ALSO FUNCTIONS AS A DIAPHRAGM
Gerd Kiper, Unterhaching, near Munich, Germany, assignor to AGFA Aktiengesellschaft, Leverkusen, Germany
Filed Jan. 29, 1965, Ser. No. 428,931
Claims priority, application Germany, Oct. 5, 1963,
A 44,226; Aug. 1, 1964, A 46,752
12 Claims. (Cl. 95—63)



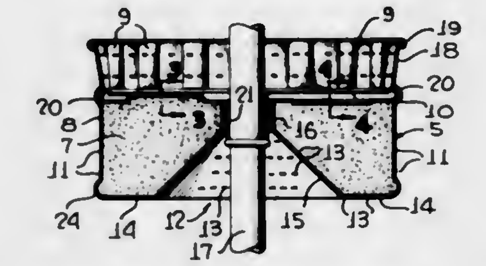
1. In a camera, in combination, a plurality of shutter blades; a pair of coaxial shutter ring means operatively connected to said shutter blades for opening and closing the latter, one of said ring means being a leading ring means which returns from a cocked position to a rest position in advance of the other of the ring means, which is a trailing ring means, for opening the shutter blades to make an exposure, the trailing ring means upon following the leading ring means to its rest position returning the blades to their closed position; first retarding means operatively connected to said leading ring means for retarding the return thereof to said rest position during the entire return movement of said leading ring means and with a retarding force which gradually increases during return of said leading ring means so that initially said leading ring means during the return thereof can accelerate toward its rest position; and adjustable second retarding means operatively connected to said trailing ring means for retarding the release thereof, for return from a cocked to a rest position, to an extent which is adjustable for releasing said trailing ring means before, at, or after the end of the return movement of said leading ring means.

3,309,979
VENTILATING DEVICE
Charles K. Razak, 301 Bitting Bldg.,
Wichita, Kans. 67202
Filed Dec. 21, 1964, Ser. No. 420,017
3 Claims. (Cl. 98—78)



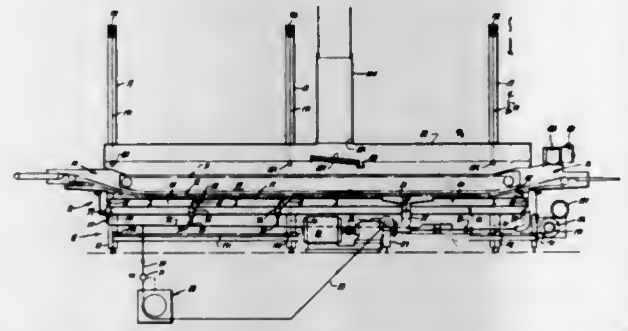
3. A ventilating device comprising, a base having an aperture, a plurality of vertically spaced apertured first baffle elements mounted on said base, said first baffle elements arranged vertically in generally increasing size and defining a generally vertical air passage through the apertures thereof and the aperture in said base of generally upwardly increasing cross sectional area, the outside edge portion of said first baffle elements being substantially tangential to the horizontal and the inside edge substantially tangential to an upwardly projecting and outwardly sloping inclined plane, a plurality of spaced substantially vertically disposed second baffle elements positioned between and transverse to said first baffle elements, said second baffle elements connected to said base, an upwardly projecting cap mounted over said aperture in said base and inside said first baffle elements, said cap having a sloping surface, and a plurality of spaced outwardly extending tabs in said surface overlying openings therein, said ventilator device adapted to produce an updraft in said air passage, irrespective of prevailing wind direction and inclination, while preventing rain, snow and hail from entering said aperture in said base.

3,309,980
DISPOSABLE COFFEE CONTAINER
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 3, 1964, Ser. No. 349,117
15 Claims. (Cl. 99—295)



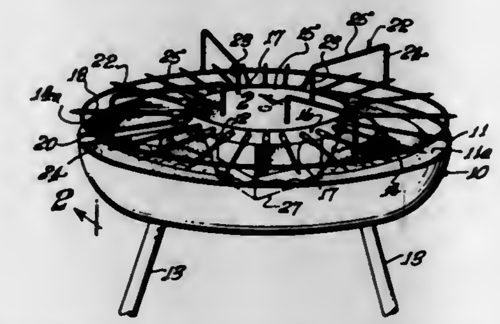
1. A disposable coffee container formed of thin sheet material and comprising a generally cup-shaped body having a bottom centrally apertured for mounting over a percolator tube, and a side wall having therein circumferentially spaced upright stiffener beads, said side wall including shouldering placed intermediately of the height of said side wall and at a predetermined distance above the bottom wall to provide cover disc seating means, a generally planar cover disc centrally apertured for mounting over a percolator tube and having a peripheral edge portion seated on said seating means to adapt the side wall for peripherally defining a coffee grounds confining chamber beneath said cover disc and a percolating water receiving chamber above said disc, the bottom being perforated, and the disc having radially disposed spaced stiffener beads and radially disposed slits disposed intermediately of said radially disposed stiffener beads to pass therethrough water which may be delivered into the body from a percolator tube over which the body may be mounted.

3,309,981
FOOD COOKER
Clark K. Benson and Andrew A. Caridis, both of Millbrae, Calif., assignors to Heat and Control, Incorporated, San Francisco, Calif., a corporation of California
Filed July 6, 1965, Ser. No. 469,685
9 Claims. (Cl. 99—405)



1. In a food cooker, a vat having inlet and discharge ends and adapted to hold a quantity of oil, a drain mounted in the vat intermediate the ends of the same and serving as the sole drain for the vat, external heat exchanger means for heating the oil in the vat, means connecting the drain to the heat exchanger, means for supplying oil from the heat exchanger to the vat so that oil flows from the inlet end of the vat to the drain and back to the heat exchanger, and means for supplying oil from the heat exchanger to the vat so that oil flows in the vat from the discharge end of the vat to the drain in a direction substantially opposite the flow of the oil from the inlet end of the vat.

3,309,982
COOKING APPARATUS
Frank H. Surks, 824 N. Stanley,
Los Angeles, Calif. 90046
Filed Dec. 15, 1964, Ser. No. 418,475
9 Claims. (Cl. 99—420)

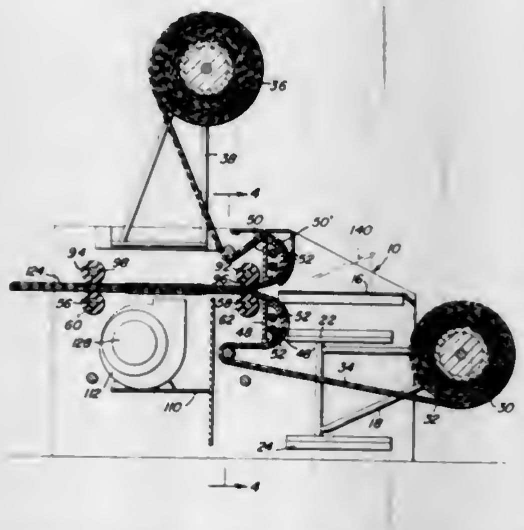


8. An improved cooking apparatus comprising: a hollow base having an annular heating area, a hub member within said heating area mounted on said base for rotation about a substantially vertical axis; means for rotating said hub member; annular reaction means adjacent said hub member and fixedly supported on said base; plural radially extending shaft means carried by said hub member having socket means at their outer ends and including means engaging said reaction means for rotating said shaft means upon orbiting motion of said shaft means as carried by said hub as said hub rotates; skewers extending radially over said annular heating area, said skewers having their

inner ends in said socket means, and ring means concentric with said reaction means outwardly of said annular heating area for supporting the outer ends of said skewers, said ring means being in substantially the same horizontal plane as said socket means.

3,309,983
CONTINUOUS PLASTIC LAMINATOR

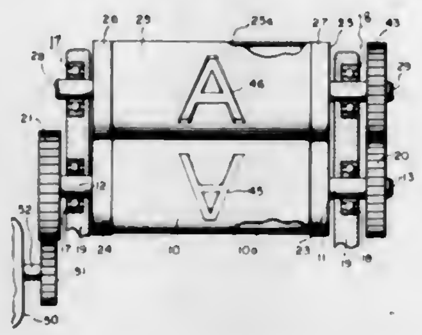
Lloyd L. Dresser, Honeoye, N.Y., assignor to D-S Industries, Inc., a corporation of New York
Filed Dec. 14, 1964, Ser. No. 418,123
4 Claims. (Cl. 100—93)



1. A continuous plastic laminator adapted to laminate articles such as cards and the like between sheets of double sided plastic including adjacent sides which may be rendered slightly fluent at a temperature lower than a temperature at which the remote sides are rendered fluent, said laminator including support means adapted to journal a pair of rolls on which said sheets are wound, a pair of stationary and elongated generally parallel guides supported from said support means and defining a pair of transversely arcuate guide surfaces facing in the same general direction and spaced slightly apart in a plane disposed normal to said direction, said surfaces being defined by a non-stick material and being adapted to have said sheets of plastic passed thereabout from said rolls for movement of said sheets over said guide surfaces with said remote sides of said sheets in contact therewith toward the adjacent edge of said surfaces, heating means disposed behind said guide surfaces and in good heat transfer relation therewith for heating the latter and the remote sides of said sheets engaged therewith and therefore also heating said adjacent sides to a temperature less than the temperature to which the remote sides of said sheets are heated, a pair of driven resilient pressure rollers generally paralleling said guides and journaled from said support means in position closely adjacent said adjacent edges and spaced slightly from said guides in the other direction for compressively engaging and pulling said sheets over said guide surfaces and thereafter between said adjacent edges, said pressure rollers being yieldingly urged into peripheral contact with each other, a pair of juxtaposed and generally parallel driven resilient stretch rollers journalled from said support means and positioned relative to said pressure rollers to receive said sheets after passing between said pressure rollers, said stretch rollers being adapted to frictionally grip said remote sides of said sheets and being driven at a slightly greater peripheral speed than said pressure rollers, and cooling means disposed between said pressure and stretch rollers along the intended path of said sheets extending between said pressure and stretch rollers and operative to cool said sheets in the portions thereof extending between said pressure and stretch rollers along said path, said laminator being free of means operative to hasten cooling of said sheets prior to their passing from said pressure rollers and free of means operative to heat said sheets after passing between said pressure rollers.

3,309,984
METHOD OF PREPARING EMBOSSING ROLLERS

Robert MacKay, Lyndon, Ky., assignor to MacKay Engraving Corporation, Louisville, Ky., a corporation of Kentucky
Filed Dec. 11, 1963, Ser. No. 329,791
2 Claims. (Cl. 101—32)

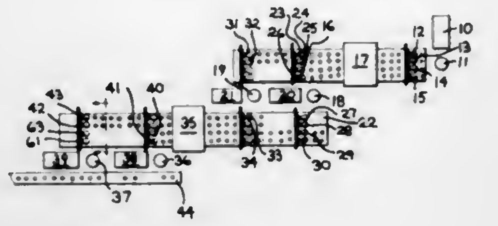


1. In a method of embossing sheet material, the steps of providing first and second rotatable assemblies including first and second rolls each having a cylindrical intermediate face and annular end bearings at opposite ends of said intermediate face with said annular end bearings of both rolls having the same diameter, mandrels projecting from the ends of said rolls and gears secured on said mandrels, the diameter of said intermediate face of said first roll being greater than the diameter of said end bearings and the diameter of said intermediate face of said second roll being approximately equal to the diameter of said end bearings, etching said intermediate face of said first roll to provide etched portions of reduced diameter and unetched projecting portions, etching said intermediate face of said second roll to provide etched recessed portions mating with said unetched projecting portions of said intermediate face of said first roll and unetched portions mating with said etched portions of said intermediate face of said first roll, thereby to define a design image to be embossed, the etching of said intermediate faces of said rolls being carried out to an extent such that with said end bearings in engagement a slight spacing is provided between said unetched projecting portions of said intermediate face of said first roll and said etched recessed portions of said second roll and also between said etched portions of said intermediate face of said first roll and said unetched portions of said intermediate face of said second roll, said slight spacing being sufficient for passage of sheet material between said intermediate faces while said end bearings are in engagement, and rotatably driving said assemblies while meshing said gears maintaining said end bearings in engagement and feeding sheet material between said intermediate faces.

3,309,985
SCREEN DECORATING APPARATUS

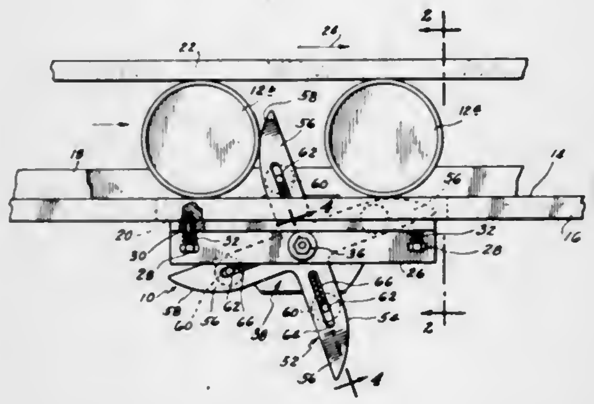
Edward A. Nowak, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Original application June 5, 1964, Ser. No. 372,871. Divided and this application Apr. 8, 1966, Ser. No. 541,160
2 Claims. (Cl. 101—35)

1. A signalling system for eliminating errors in the selection of ware for multiple screen decorating comprising, a supply conveyor having ware arranged in rows thereon with each row containing ware decorated by rotation in the same direction, a first set of indicators positioned above said conveyor and corresponding to each row, a two-way screen decorating machine positioned adjacent said conveyor, means connected between said decorating machine and said first set of indicators for selectively energizing said indicators in response to operation of said machine, whereby said indicators indicate from which row on the supply conveyor the ware is to be selected for decorating on said machine, an outgoing conveyor mounted adjacent said machine having a width sufficient to accommodate plural ware in side-by-side rows thereon, a second set of indicators positioned above said outgoing conveyor and corresponding to each row, means connected between said decorating machine and said second set of indicators for selectively energizing said second set of indicators in response to operation of said machine whereby said second set of indicators indicate in which row of the outgoing conveyor the ware is to be placed after decoration.



3,309,986
APPARATUS FOR MARKING CYLINDRICAL ARTICLES

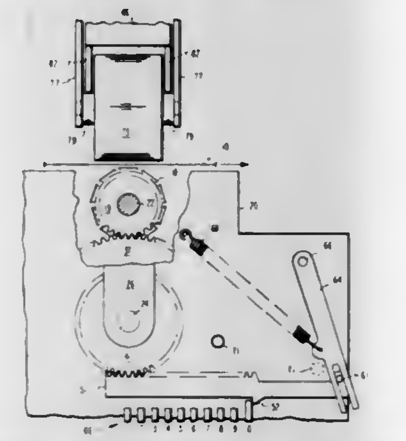
Francis C. Worth, Ridgewood, N.Y., assignor to Adolph Gottscho, Inc., Hillside, N.J., a corporation of New York
Filed May 28, 1964, Ser. No. 371,046
13 Claims. (Cl. 101—39)



1. An apparatus for applying impressions of a liquid substance to succesive cylindrical articles rolling along a straight path, said apparatus comprising a body carrying a die element having a planar operative surface with a configuration conforming to that of the impressions to be applied, means supporting said body adjacent said straight path with said operative surface of the die element being disposed substantially co-planar with said straight path so that, as each article rolls past said body, the article effects rolling contact with said operative surface, a star wheel member rotatable about an axis extending through said body and having radial arms dimensioned to project into said straight path, thereby to be driven by the sucessive articles rolling along the latter, a plurality of transfer rollers each rotatably carried by an arm of said star wheel member to move with the latter along a closed path extending around said body and having a portion at which rollers of the plurality of transfer rollers successively effect rolling contact with said operative surface of the die element, and a liquid supplying member extending along another portion of said closed path remote from the first mentioned portion and at which the rollers successively effect rolling contact with, and receive liquid from said liquid supplying member, whereby each transfer roller sequentially receives liquid from said supplying member and transfers the liquid to said operative surface for application by the latter to an article passing said body and driving the star wheel member.

3,309,987
IMPRINTING APPARATUS

Frederic C. Pexton, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 22, 1965, Ser. No. 515,619
10 Claims. (Cl. 101—79)



1. In a printing apparatus, the combination comprising:

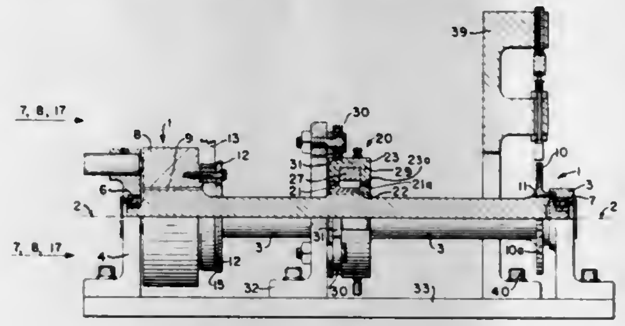
a print platen;

means for driving said platen to apply printing pressure to the surface of a document lying in a print plane; and

a rotatable print wheel having a plurality of character-bearing print members pivotally mounted about its periphery, each of said members being constrained so as to pivot in an arc which is radially fixed with respect to the center of rotation of said wheel, said wheel being selectively indexable to place the surface of a character into substantialy alignment with said print plane on the opposite side of said document from said platen, said print members being resiliently biased to an initial position whereby said platen, in applying said printing pressure, urges the surface of said substantially aligned character to pivot into exact alignment with said plane.

3,309,988
INTERMITTENT MOTION APPARATUS

William S. Touchman, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Aug. 3, 1964, Ser. No. 387,085
48 Claims. (Cl. 101—93)



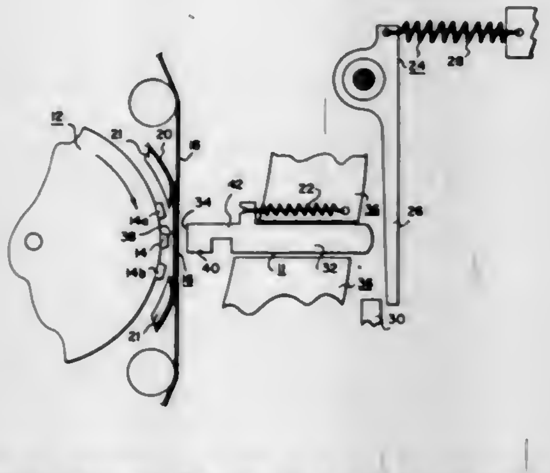
1. An intermittent motion device comprising rotatable drive means,

means for continuously rotating said drive means at a substantially constant speed,

and magnetic oscillating means for oscillating said drive means substantially at the resonant frequency of said device while said drive means is continuously rotating, whereby a portion of said drive means is caused to effectively dwell a desired number of times for each revolution of said drive means.

3,309,989
PRINT HAMMER

Karsten Solheim, Phoenix, Ariz., and Arlie Jay Duckett, Livermore, Calif., assignors to General Electric Company, a corporation of New York
Filed Sept. 16, 1965, Ser. No. 487,799
3 Claims. (Cl. 101—93)



1. A print hammer for use in a printer having a printing medium located between the print hammer and a rotatable print drum, said printer having means for impinging said hammer onto said medium to impact the medium against a printing surface of a print character formed on the drum, said hammer comprising: a main body member; a hammer head including a surface adapted to strike said medium and to impact said medium against the printing surface of said character; and a resiliently flexible portion, said portion serving to connect said head to one end of said member, said portion being asymmetrically connected to said head to provide a portion which flexes when the surface of said head impacts the medium against the surface of said character to effect parallel alignment of the two surfaces, said portion causing said head to return to its original position relative to said member when the surface of said head no longer makes contact with the medium.

3,309,990
PROCESS FOR THE PREPARATION OF PRINTING PLATES

Kurt-Walter Klüpfel and Martha Tomanek, Wiesbaden-Biebrich, and Fritz Endermann, Wiesbaden, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
No Drawing. Filed Dec. 26, 1961, Ser. No. 162,278
Claims priority, application Germany, Jan. 25, 1961, K 42,722
15 Claims. (Cl. 101—149.2)

1. A process for the preparation of a printing plate which comprises treating a photoelectrically conductive insulating layer, containing at least one inorganic photosemiconductor and having a developed and fixed electrostatic image thereon, with an aqueous solution of at least one salt selected from the group consisting of ferrocyanides and ferricyanides, in admixture with polyvinyl phosphonic acid whereby hydrophilic properties are imparted to the image-free areas of the layer.

3,309,991
REPRODUCTION PROCESS BY MEANS OF HEAT

Hildegard Haydn and Edith Weyde, both of Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 25, 1962, Ser. No. 168,799
Claims priority, application Germany, Feb. 7, 1961, A 36,672; Apr. 8, 1961, A 37,157
4 Claims. (Cl. 101—149.4)

1. A process for producing a duplicate copy of an original print which contains an image formed of a substance that absorbs infrared rays which comprises

(a) placing a face of the original print into contact with a face of a reception sheet formed of a thermoplastic resin that has a softening point between 80 and 200° C. and is selected from the group consisting of polyamides, rubber hydrochloride, polyvinyl acetals, cellulose ethers, cellulose esters, polyesters, and polymers of ethylene, vinylchloride, vinylidene chloride and styrene, said sheet being about 0.01 mm. thick, both of which are in contact with a stratum of a distinguishable organic substance that has a melting or subliming point lower than the softening point of the reception sheet uniformly distributed at the contacting faces of the original print and the reception sheet,

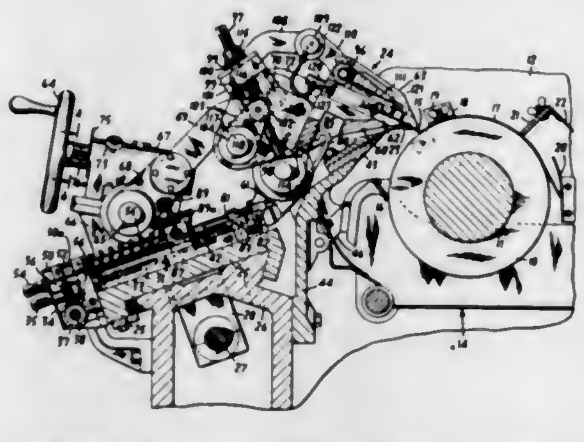
(b) uniformly exposing the said assembly of print, reception sheet and distinguishable organic substance to infrared radiation for such a period that the heat developed in the image portions of the original print by absorption of the infrared radiation softens the portions of the thermoplastic reception sheet that are adjacent to the heated image portions of the original print and causes the distinguishable organic substance to migrate into the thus softened portions of the reception sheet, and

(c) separating the original print from the reception sheet so that said sheet preferentially retains the organic substance in portions thereof that correspond to the image of the original print, to produce a duplicate copy of the original print.

4. A process as defined by claim 1 in which the organic substance is a dye and the separated reception sheet only containing the preferentially retained portions of the dye is pressed successively against a plurality of copy sheets in the presence of a solvent for that dye, to make spirit-type copies.

3,309,992
BLADE ADJUSTING AND CLAMPING METHOD AND APPARATUS

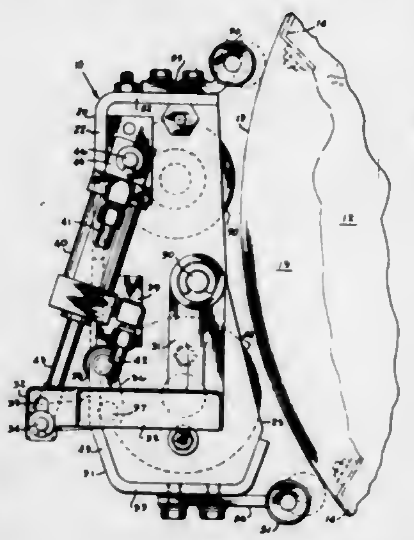
John C. Motter, York, Pa., assignor to John C. Motter Printing Press Co., York, Pa., a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,384
16 Claims. (Cl. 101—169)



1. A blade clamping apparatus for use with cylinders of different circumference comprising a frame carrying clamping means for a blade which in operative position acts in cooperation with the surface of the cylinder, support means for the frame adjustable to bodily translate the frame toward and away from the cylinder so that the frame can be adjusted to desired position for a particular size cylinder, means carried by the support means for pivotally mounting the frame on the support means so that the frame can be pivotally moved between retracted and operative positions, means angularly orienting the frame to compensate for a cylinder of different size so that in the proper adjusted position of the support means with the frame pivoted into operative position with respect to the cylinder, a blade clamped in the clamping means will be in the desired angular relationship with the surface of the particular size cylinder, and a spring pivotally mounted intermediate its ends independently of said support means and of said pivotal frame, one end of the spring engaging and counterbalancing the pivotal frame and the other end resisting pivotal movement of the spring.

3,309,993
PRINTING CYLINDER CLEANER

Elmer C. Grembecki, Skokie, and Adolph J. Nelson, La Grange, Ill., assignors to Oxy-Dry International Limited, Shannon, Ireland, a corporation of Ireland
Filed Jan. 26, 1965, Ser. No. 428,027
8 Claims. (Cl. 101—425)

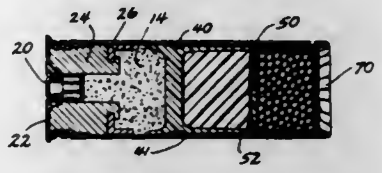


1. A cleaner for cleaning the cylindrical surface of a printing cylinder having bearer surfaces at the ends thereof comprising: a pivotal housing assembly; means mounting cleaning means in said assembly, said cleaning means including a rotatable brush and a wiper roller; means for supplying cleaning liquid to said brush including liquid pump means and applicator means, said pump means adapted to deliver a predetermined, measurable quantity of cleaning liquid to said applicator means, said applicator means adapted to apply said liquid to the upper surface of said brush; means normally locating said housing assembly in an inoperative position, said means adapted to pivot said housing assembly into a first operative position wherein said brush engages the surface of said printing cylinder and into a second operative position wherein said wiper roller engages the surface of said printing cylinder; roller stop means provided on said housing assembly cooperating with the bearer surfaces of said printing cylinder to locate said housing assembly in each of said operative positions; said pivoting means holding said stop means in cooperative relationship with said bearer surfaces under pressure, whereby said cleaner is held in rigid operative position during each of the brushing and wiping actions.

3,309,994
SHOT SHELL

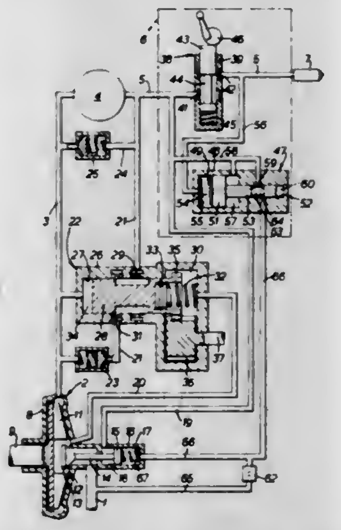
Frederick A. Lage, Gladbrook, Iowa 50635
Filed Mar. 29, 1965, Ser. No. 443,480
4 Claims. (Cl. 102—42)

1. In a shot shell, a shot shell casing, a quantity of powder at one end of said shot shell casing, a shot sleeve adjacent said powder and said shot sleeve being closed at one end and open at the opposite end, said shot sleeve having an annular groove formed in the external surface thereof adjacent said closed one end, said shot sleeve including a shot wad adjacent said closed end; a quantity of shot disposed at least partially within the open end of said shot sleeve and being adjacent the other end of said shot shell casing; and said sleeve including a sidewall serrated longitudinal and uniformly decreasing in thickness.



3,309,995
LIQUID PUMPING APPARATUS

Stanley R. Tyler, Cheltenham, England, assignor to Dowty Fuel Systems Limited, Cheltenham, England, a British company
Filed Feb. 25, 1965, Ser. No. 435,198
Claims priority, application Great Britain, Mar. 9, 1964, 9,868/64
6 Claims. (Cl. 103—11)



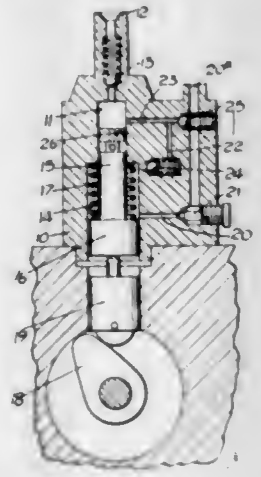
1. Pumping apparatus comprising a centrifugal pump having an inlet arranged for connection with a source of liquid, a valve in the inlet, flow control means operable upon said inlet valve to control the flow of liquid into the centrifugal pump such that the liquid therein forms, when the pump is driven, an annulus whose radial depth controls the pump outlet pressure, positive displacement pump means connected to the outlet of the centrifugal pump and having an outlet for connection with a load at pressure, said pump means including flow-regulating means operable to vary the effective delivery of said pump means when the maximum delivery of which said pump means is capable at a given pump speed exceeds the controlled liquid flow through the centrifugal pump and a movable control member of said flow-regulating means responsive to the fluid pressure across the liquid annulus in the centrifugal pump.

3,309,996
LIQUID FUEL INJECTION PUMPS

Andrew Carlo Rosselli, Teddington, England, assignor to C.A.V. Limited, London, England
Filed Feb. 26, 1965, Ser. No. 435,416
2 Claims. (Cl. 103—41)

1. A liquid fuel injection pump comprising in combination, a pump body, a cylindrical bore in the body, a cylinder coaxial with the bore and at the inner end thereof, an axially movable plunger slidable within the bore, and a

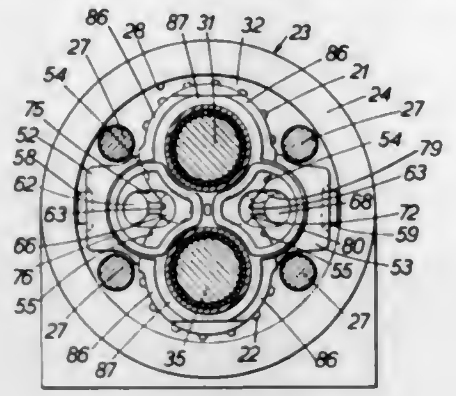
piston mounted on the plunger and sliding within said cylinder, first resilient means urging the plunger and piston out of the bore and cylinder respectively, said plunger and piston being adapted to be moved inwardly in timed relationship with an engine with which the pump is associated, the swept volume of the plunger being less than that of the piston, an outlet at the outer end of the bore, a delivery valve in said outlet for preventing the flow of fuel into the bore, a fuel inlet passage at the inner end of the cylinder, said inlet passage being arranged to be uncovered by the piston near the outward limit of its stroke, a port formed in the wall of the bore, said port being arranged to be uncovered by the plunger near the outward limit of its travel, a transfer passage serving to connect the inner end of said cylinder with said port, a cylindrical chamber in the body part, a valve member mounted in said chamber, a second resilient means loading said valve member in a direction towards one end of the chamber, said one end of the chamber communicating with said cylinder so that the pressure of fuel in the cylinder will move the valve member against the action of said resilient means, said transfer passage opening into said chamber at a position to be uncovered to said one end of the cylinder after an initial movement of the valve member, and a further passage opening into the wall of said chamber at a position to be uncovered to said one end of the chamber when the valve member has moved further, said further passage allowing escape of excess fuel from said cylinder and a variable restrictor in said inlet passage, said restrictor being arranged to restrict the rate at which fuel can flow through said inlet passage.



3,309,997
GEAR PUMP OR MOTOR

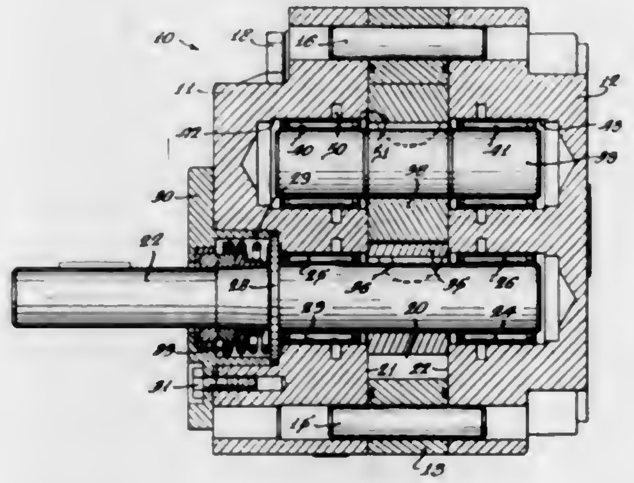
Yasuo Kita, Kyoto, Japan, assignor to Shimadzu Seisakusho Ltd., Kyoto, Japan
Filed June 2, 1965, Ser. No. 460,760
Claims priority, application Japan, July 31, 1964 (utility model), 39/61,017 (utility model), 39/61,018 (utility model), 39/61,019, 39/43,750
7 Claims. (Cl. 103—126)

1. A gear pump or motor comprising, a casing having a side wall and opposed end closures, said casing having a fluid inlet and a fluid outlet in one of said end closures, a pair of intermeshing gears located within said casing, a gear periphery sealing member covering the peripheral portions of said gears near their meshing area at the low pressure side, said gear periphery sealing member having arcually concave sealing surfaces corresponding to the addendum circles of said gears and being floatingly supported within said casing so that during operation said sealing member is automatically urged by the pressure within said casing toward the peripheral surfaces of said meshing gears, and a pair of thrust plates located on opposite sides of said intermeshing gears, each of said thrust plates having peripheral portions for receiving and positioning said gear periphery sealing member therebetween, said peripheral portions being shaped as to receive the sealing surfaces of said gear periphery sealing member in sealing relationship, said thrust plates and a gear end sealing member coacting to form inlet and outlet passages for the fluid to be introduced into tooth spaces at the inlet side and to be discharged from tooth spaces at the outlet side, said inlet and outlet passages being formed substantially in axial directions to and communicating with said respective fluid inlet and outlet.



3,309,998
GEAR PUMP WITH HEAT CONTROL

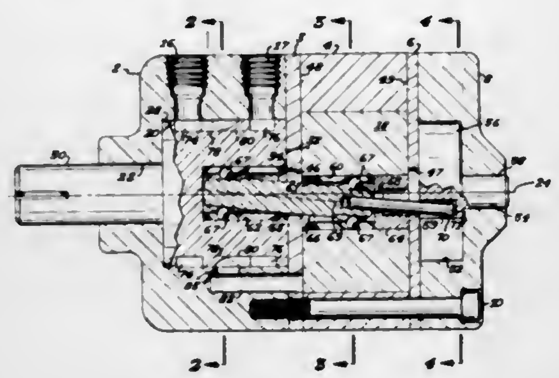
David N. Polaski, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Illinois
Filed Aug. 9, 1965, Ser. No. 478,243
5 Claims. (Cl. 103—126)



1. A hydraulic fluid translating device, comprising; a first housing member, a second housing member, a generally annular spacer plate between said first and second housing members, means securing said housing members and spacer plate in axially fixed relation to each other defining a chamber therewithin, two pairs of axially aligned bores in said housing members opening to said chamber, a first power shaft rotatably mounted in one of said bores and extending from one of said housing members, a second shaft mounted in the other of said bores, interengaging gears mounted on said shafts defining expanding and contracting fluid chambers and adapted to deliver and receive fluid through one of said housing members, said spacer plate having a width to achieve a predetermined clearance between the sides of the gears and the housing members to maintain a fluid seal and boundary lubrication therebetween, and means for compensating for the thermal expansion of the housing members, the gears and the spacer plate including a hollow groove in each of said bores of sufficient size and located with respect to said chamber to permit axial deflection of said housing members into said grooves upon thermal expansion of the members, gears or plate, said fluid chambers being sealed from said grooves.

3,309,999
DRIVE MECHANISM FOR GEROTOR GEAR SET

Earl Patterson, Jr., Excelsior, Minn., assignor to Char-Lynn Company, Minneapolis, Minn., a corporation of Minnesota
Filed June 21, 1965, Ser. No. 465,343
6 Claims. (Cl. 103—130)

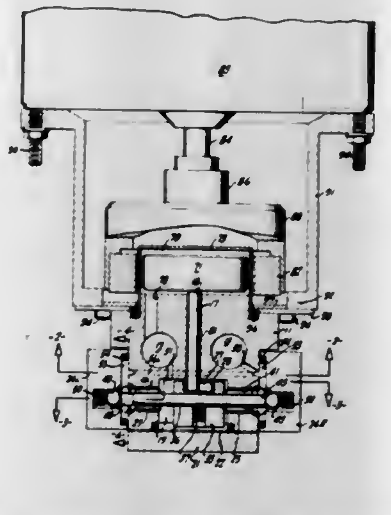


1. A drive mechanism comprising relatively stationary frame means, a generally annularly shaped internally toothed ring element having an axis in fixed relation to said frame means, an externally toothed star element having at least one tooth less than said ring element and having an axis, said star element being disposed eccentrically in said ring element for orbital movement about the axis of said ring element and rotational movement about its own axis in the opposite direction from and at a slower speed than said orbital movement during relative movement between said elements, first and second rotatable members supported by said frame means for rotation around said ring element axis, shaft means extending between said star element and said first rotatable member, said shaft means having an axis which intersects said axes of said ring and star elements, universal joint means for respectively connecting said first rotatable member and said star element to said shaft means to provide for rotational movement of said first rotatable member in synchronism with said rotational movement of said star element, said second rotatable member having a radially extending slot with walls extending parallel to said ring element axis, said shaft means including a shaft portion which is coaxial relative to said shaft means axis and extends into said slot to provide rotational movement of said second rotatable member in synchronism with said orbital movement of said star element, said shaft portion having a transverse dimension substantially equal to the width of said slot and being rotatable relative to either said shaft means axis or to said rotatable member or both.

3,310,000
DUPLEX PLUNGER METERING PUMP

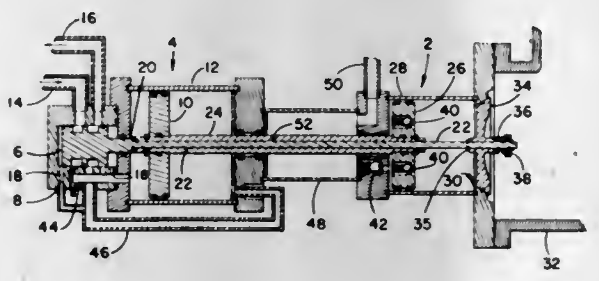
Thomas B. Martin, % Micro-Pump Corp., P.O. Box 392, Danville, Calif. 94526
Filed Feb. 28, 1966, Ser. No. 530,703
5 Claims. (Cl. 103—171)

1. A duplex metering pump comprising a casing formed at one end with a pump crankcase, a shaft, means for rotating said shaft in said casing, a plunger having pistons at opposite ends reciprocable in said crankcase, said plunger being a unitary member, means for transmitting rotary motion of said shaft into reciprocating motion of said plunger, a pair of ported cylinders mounted at opposite sides of said crankcase, each said cylinder receiving one said piston mounted at opposite sides of said crankcase and extending diametrically oppositely transverse to said shaft, cylinder heads on said casing, each forming a discharge chamber adjacent the outer end of said cylinder, check means in each said discharge chamber, resilient means biasing said check means to close off the outer end of said cylinder, means forming an inlet port into said casing, said casing formed to transmit fluid from said inlet port to the port of each said cylinder, said plunger arranged so that alternately each said piston on its discharge stroke first closes the port in its cylinder and then expels fluid in said cylinder past said check means against the force of said resilient means into said discharge chamber and then on its suction stroke releases said check means to closed position and draws fluid from said crankcase into said cylinder and means forming a discharge port to receive the discharge from each said discharge chamber, said pistons on each discharge stroke coming into close proximity with said check means, communication from each said cylinder to its corresponding discharge port being direct with said check means immediately beyond said cylinder, whereby the space between said piston at the end of its discharge stroke and said check means is substantially nil.



3,310,001
PUMP FOR HIGHLY VOLATILE LIQUID

Thomas F. Bickley, Arlington, Tex., assignor to LTV Aerospace Corporation, Dallas, Tex., a corporation of Delaware
Filed July 9, 1965, Ser. No. 470,782
4 Claims. (Cl. 103—227)



1. A pump comprising:

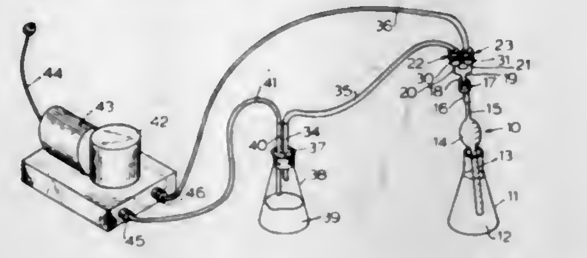
a pump chamber having an inlet opening dimensioned to minimize the pressure drop of liquid passing through said opening,
a piston slideable within said pump chamber,
a fluid motor including
a driving piston, and
a motor valve positionable by said driving piston,
sleeve means internal of said pump coupling said driving piston to drive said pump piston and to open said valve means upon movement of said driving piston to a first position, and
shaft means carried by said motor valve and slideable within said sleeve means to close said valve means in response to movement of said driving piston to a second position.

3,310,002
PIPETTE PUMP

Sam W. Wilburn, Chapel Hill, N.C., assignor to Robbin Laboratories, Inc., Chapel Hill, N.C., a corporation of North Carolina

Filed Oct. 18, 1965, Ser. No. 496,866

8 Claims. (Cl. 103—235)



1. An apparatus for drawing measured quantities of a liquid into and expelling the same from a pipette which is partially submerged in said liquid comprising:

a primary conduit connected at one end to said pipette and branching at the other end to form a first and a second conduit;

an air displacement pump having an inlet and an outlet, said inlet and said outlet having a first and a second tube respectively connected thereto and extending outwardly therefrom, said pump when energized being effective to simultaneously create a negative pressure in said first tube and a positive pressure in said second tube, said first and second tubes being associated respectively with first and second openings normally communicating said first and second tubes with the atmosphere; and

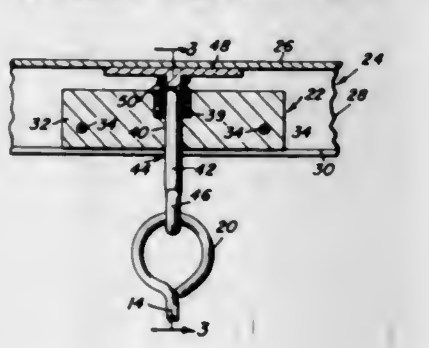
flexible valve means having a first passageway connecting said first conduit with said first tube and a second passageway connecting said second conduit with said second tube, said first and said second passageways each having a ball securely seated therein, said balls normally blocking air communication between said tubes and conduits, said pump normally forcing air to flow into said first opening and out said second opening, said first passageway when selectively flexed, with said first opening being closed, being effective to communicate said first tube with said first conduit to draw liquid into said pipette and said second passageway when selectively flexed, with said second opening closed, being effective to communicate said second tube with said second conduit to expel liquid from said pipette.

3,310,003
INTRAVENOUS BOTTLE TROLLEY AND TRACK

Joe H. Bryan, 765 Avalon Road, Jackson, Miss. 39206

Filed Sept. 29, 1964, Ser. No. 400,151

5 Claims. (Cl. 104—94)



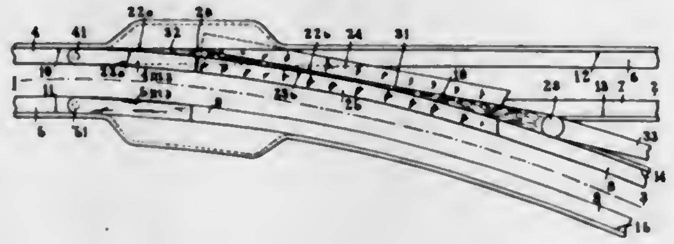
1. In combination, an inverted intravenous bottle, clamp means embracing and carried by said bottle, a yoke operatively joined to and supporting said clamp means, a link connected at a lower end to said yoke, said link adapted when in use to assume a generally vertical self-adjusting bottle suspending position and having an eye at an upper end, track means comprising a hollow rail channel-shaped in transverse cross-section and embodying a stationary horizontally elongated web having depending spaced parallel channel walls having turned-in coplanar companion flanges coacting and providing tracks, said flanges having spaced apart edges defining and providing an intervening trackway, trolley means embodying an elongated block-like body located in the hollow channel portion of said rail and supportd on said flanges and shiftable back and forth at will, a brake unit embodying a spring-biased brake shoe operatively cooperable with said web, said brake shoe provided with a depending stem operatively joined to said body and projecting downwardly through and beyond the trackway and terminating in an eye with which the eye on said link is hingedly connected.

3,310,004
RAILWAY SWITCH

Lucien Felix Chadenson, Paris, France, assignor to Societe Anonyme Safege-Transport, Paris, France

Filed Jan. 15, 1965, Ser. No. 425,714

6 Claims. (Cl. 104—130)



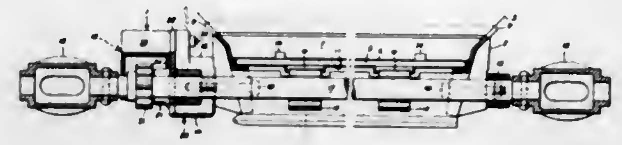
1. A switching device for railway systems in which the vehicles are equipped with carrier wheels mounted on pneumatic tires and with guide means such as wheels generally but not exclusively horizontal provided preferably with tires, mounted on the frame or on each bogie truck of the vehicle and engaging lateral guiding surfaces extending at right angles to the wheel-supporting surfaces and parallel to the longitudinal axis of the rolling surface, said device comprising a movable member adapted to pivot about a vertical axis situated at the point of crossing of the inner guiding tracks of the direct line and of the branch line; means for locking said movable member in two end positions, one end position corresponding to the passage to the direct line, the other to the branch line; said movable member consisting of at least a first and second element in longitudinal relative alignment, the second element pivoting in relation to the first element about a vertical axis, each one of said elements being bound laterally by a plane vertical face on the side of the direct line and by a curved vertical face having a curvature corresponding to the curvature of the branch line on the side of the branch line, and means for interconnecting said two elements whereby, in each one of the end positions in which they can be locked, which correspond to the direct line and to the branch line, respectively, the outer vertical surface of the second element lies against the outer guiding track of the inoperative line, and the inner vertical surfaces of the two elements are in longitudinal alignment with each other and with the inner guiding track of the operative line, only said first element of the movable member being provided with wheel supporting surfaces projecting laterally from both sides of the lower portion thereof; and other movable wheel supporting surfaces pivotally attached to the fixed inner supporting track of the operative line for selectively coacting with said second element of said movable member.

3,310,005
RAILWAY HOPPER DISCHARGE GATE ACTUATING GEARING MECHANISM

Walter L. Floehr, Toledo, Ohio, Edmund R. Aller, Portage, Ind., and Lee H. Shils, Chicago, Ill., assignors to Unitcast Corporation, Toledo, Ohio, a corporation of Ohio

Filed June 26, 1964, Ser. No. 378,198

8 Claims. (Cl. 105—305)



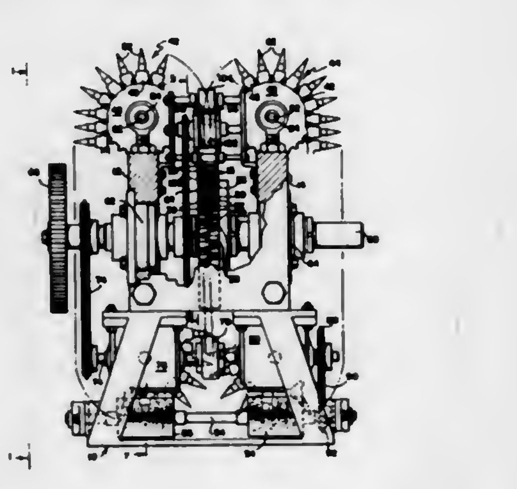
1. A mechanism for operating a discharge gate of a railway hopper car comprising a driving shaft driveable from each side of said car, a driven shaft offset radially from said driving shaft and driveably connectable to said gate for driving said gate between opened and closed positions, and a single power connection between said shafts for transmitting force therebetween and to said gate on drive of said drive shaft from either of said sides.

3,310,006
DOUGH FORMING MACHINE AND PROCESS

Mark Hasten, John T. Haub, and Verne E. Weiss, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware

Filed Feb. 14, 1964, Ser. No. 345,035

15 Claims. (Cl. 107—1)



15. An apparatus to form two flattened strips of dough-like material into individual generally cone-shaped pieces, said apparatus comprising:

(a) feed means to feed said two strips lengthwise into a forming area in a manner that said strips are generally proximate and facing one another in general parallel relationship at said forming area,

(b) two wheels arranged side-by-side and generally tangent to one another, the circumferential face of at least one wheel being formed with a plurality of cutting and joining edges arranged in a general zigzag pattern, said cutting edges being slanted with respect to one another, said one wheel also being provided with a plurality of tapered recesses formed by a pair of angled planes, each recess being located between a pair of adjacent cutting and joining edges and being tapered in the general direction in which said edges are slanted toward one another, and

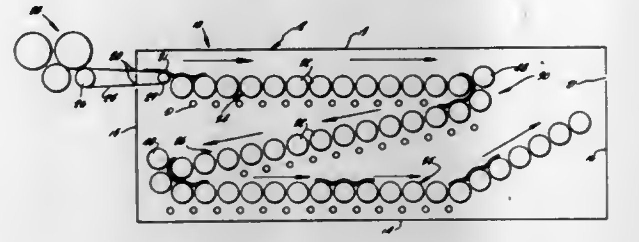
(c) means to rotate said wheels oppositely to one another so as to cut tapered parts from each of said strips of material, each of which parts is joined to a matching part of material from the other strip.

3,310,007
TORTILLA OVEN

John C. Ford, 3736 Clayton Ave., Los Angeles, Calif. 90027

Filed Jan. 14, 1964, Ser. No. 337,651

4 Claims. (Cl. 107—57)



1. An oven for baking tortillas comprising

(a) an insulated enclosure,

(b) a triple-pass tortilla conveyor in the enclosure comprised of a plurality of cylindrical rollers mounted in the enclosure for rotation about fixed parallelly aligned axes, the rollers being arranged to define
  (i) a first run of rollers disposed substantially horizontally in the enclosure and having a terminal end,
  (ii) a second run of rollers disposed substantially horizontally in the enclosure in vertically spaced apart relation to the first run and having a beginning end, and
  (iii) a third run of rollers extending from the terminal end of the first run to the beginning end of the second run,

(c) means for rotating the rollers so that the first and second runs of rollers rotate in one direction, and so that the third run of rollers rotates in the opposite direction so that a tortilla is transported from the first to the second runs of rollers,

(d) controllable means interiorly of the enclosure at selected locations along the conveyor for heating a tortilla during transport thereof by the conveyor through the enclosure, and

(e) means in the enclosure disposed in cooperation with the terminal end of the first run of rollers and with the beginning end of the second run of rollers for turning a tortilla twice during passage thereof along the conveyor and including at least one roller disposed adjacent the terminal end of the first run and the beginning end of the second run, respectively.

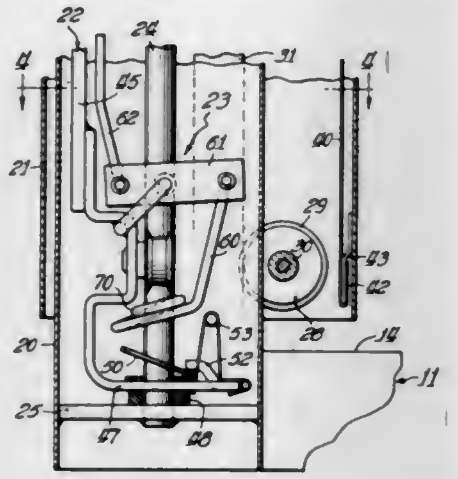
3,310,008
OVERBED TABLE

Peter Aleksa and Fred Pruim, both of Chicago, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

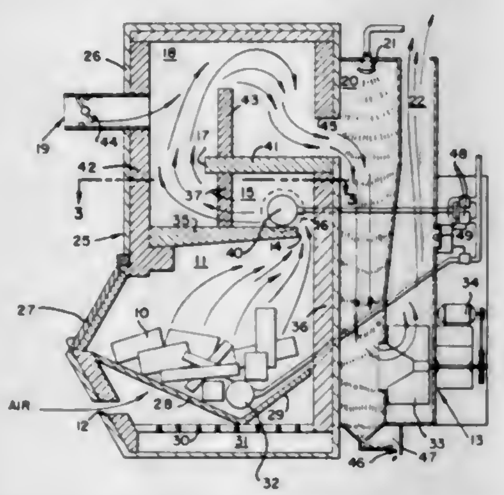
Filed Dec. 15, 1965, Ser. No. 514,066

1 Claim. (Cl. 108—146)

An improved vertically adjustable overbed table comprising a base having a vertical tubular extension, a top having a vertical tubular extension telescopically movably mounted over said tubular base extension, means for urging said top upwardly to partially support the weight of said top, a vertical shaft secured to said base and extending upwardly within the base extension and said top extension, a brake carriage secured to said top and extending downwardly into said tubular base extension and terminating in a brake supporting platform perpendicular and adjacent to said shaft, a brake plate loosely mounted around said shaft and supported from beneath by said platform in a position substantially perpendicular to the axis of said shaft and adapted to frictionally grip said shaft when pivoted upwardly from said platform at a predetermined angle with respect to the axis of said shaft, a brake retaining arm extending from said platform and over one side of said plate for confining that side of said plate to limited axial movement thereof along said shaft with respect to said brake carriage, means adjacent said arm for urging said brake into engagement with said shaft for causing said brake to frictionally engage said shaft and to be pivoted upwardly thereby from said carriage when said carriage is urged downwardly with respect plate 50, and is pivotally secured to the pivot link 61 at to said shaft, and means for selectively releasing said brake to eliminate the braking effect thereto to allow said top to be moved downwardly.

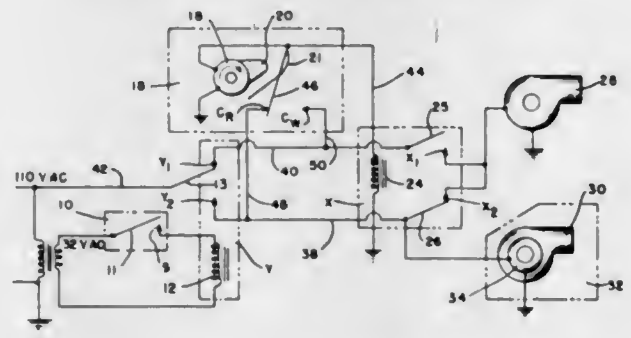


3,310,009
INCINERATOR FOR REFUSE MATERIAL
John H. Jacobs, 5908 Sherwood,
Oakland, Calif. 94611
Filed Mar. 5, 1964, Ser. No. 349,598
4 Claims. (Cl. 110—8)



1. A compact incinerator for completely burning combustible material comprising: means defining three vertically stacked chambers, the lowermost chamber being a primary combustion chamber, the intermediate chamber being a secondary combustion chamber, and the uppermost chamber being a cooling chamber; said primary combustion chamber having an air inlet opening and communicating with said secondary combustion chamber through an orifice; said second combustion chamber having a second air inlet opening and communicating with said cooling chamber through a restricted opening; said cooling chamber having a third air inlet opening and a discharge opening; burner means disposed within said primary combustion chamber for igniting combustible material; second burner means disposed within said secondary combustion chamber for supplementing heat generated by complete burning of volatilized material passing through said chamber; and means for exhausting gases through the discharge opening of said cooling chamber while simultaneously inducing an air flow through said primary and secondary combustion chambers, said first air inlet opening admitting insufficient air for complete combustion but sufficient to partially burn and volatilize combustible material, said second air inlet opening admitting a metered amount of air for complete combustion in said second chamber, and said third air inlet opening admitting a volume of air approximately equal to gases emitted through said restricted opening to materially reduce the temperature of gases withdrawn from said second combustion chamber into said cooling chamber.

3,310,010
DRAFT FAN CONTROL CIRCUIT FOR UNDERFEED STOKER FIRED COAL FURNACES
William W. Robson, Jr., 1621 Highland,
Wilmette, Ill. 60091
Filed Oct. 19, 1964, Ser. No. 404,989
7 Claims. (Cl. 110—101)



1. A draft control circuit for a stoker-fed coal-fired furnace having a stoker, a plurality of fractional blowers compositely supplying a full forced draft to said furnace,

thermostat means having a two position heat demand which means including connections arranged to activate the stoker and one of the blowers in its heat demand position,

timer means having a two position switch controlled thereby including connections to the heat demand switch means arranged to activate the timer means for a predetermined period of time in one of its positions at the start of said heat demand position and for a subsequent predetermined period of time when the thermostat means and said heat demand switch means resume their other position, and

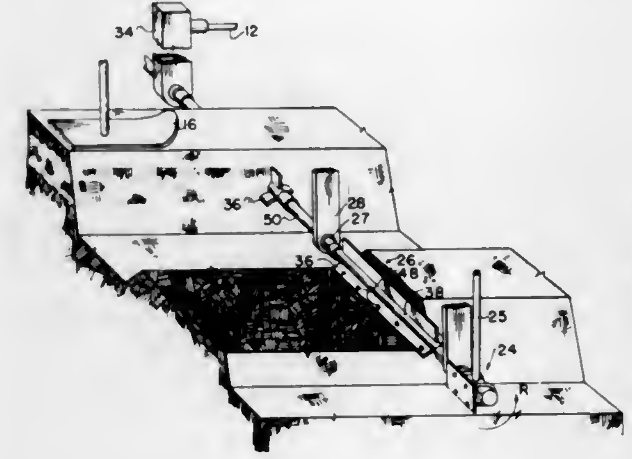
relay means including connections to the timer means arranged for energization and deenergization concurrently with activation of said timer means and including two switches and connections therefrom to the blowers arranged to activate said blowers independently,

said heat demand switch in its said other position and said timer means switch in the other one of its positions energizing said relay means to close one of its switches to activate the other of said blowers in series with said heat demand switch and timer means switch in their said other positions whereby a partial draft is supplied whenever the timer means is energized.

3,310,011
HERBICIDE AND OTHER AGRICULTURAL CHEMICAL DISTRIBUTOR
Thomas W. Miller, Box 666, Dimmitt, Tex. 79027
Filed Apr. 5, 1965, Ser. No. 445,598
7 Claims. (Cl. 111—1)

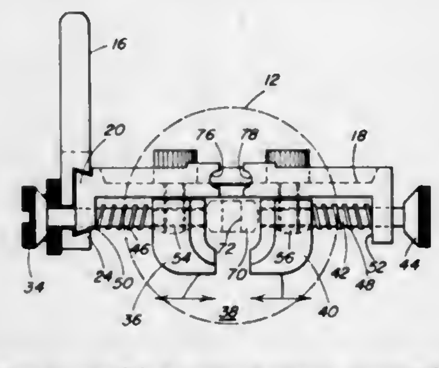
1. A machine for incorporating agricultural chemicals into the soil comprising:
(a) a frame,
(b) means for drawing said frame along the ground,
(c) a plurality of shanks depending from said frame,
(d) chemical supply means mounted on said frame,
(e) a hollow rod journaled to said shanks, rotatable therein and disposed transversely of the line of travel of said frame,

(f) said shanks forming means for operating said rod beneath the surface of the earth,
  (ff) said rod having circumferentially-disposed earth working portions, the length of which are no greater than about the diameter of the rod,



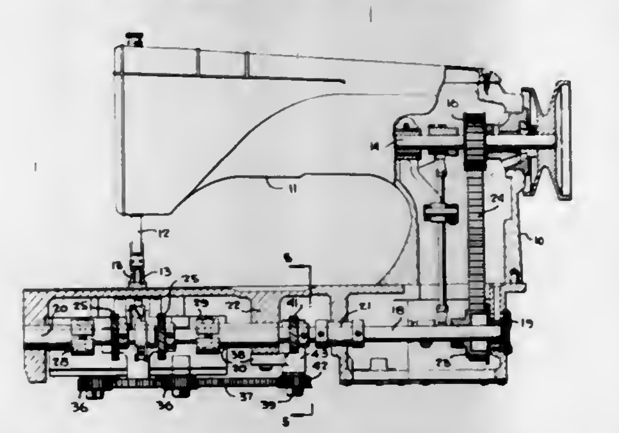
(g) said portions having apertures defined therein and in fluid communication with said hollow rod which, in turn, is in fluid communication with said chemical supply means, whereby when said machine is in motion the chemicals are dispensed and worked into said soil.

3,310,012
FOUR-WAY ADJUSTABLE SHOE FOR SHANKED BUTTONS
Angelo Micale, 995 Nassau St.,
North Brunswick, N.J. 08902
Filed Nov. 25, 1964, Ser. No. 414,029
2 Claims. (Cl. 112—114)



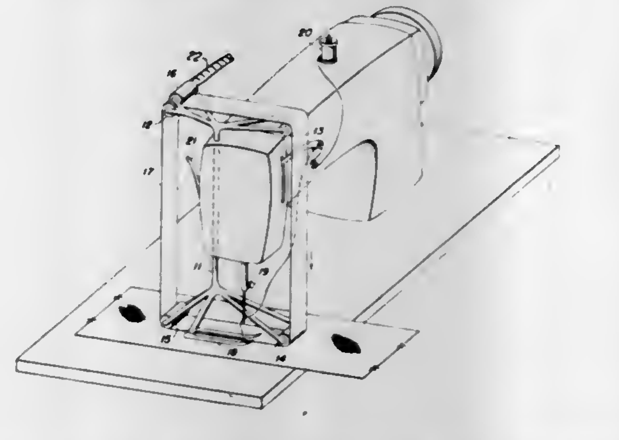
1. A sewing machine attachment comprising a vertically extending attachment piece for connecting the attachment to a sewing machine, a horizontally extending plate connected to said vertically extending attachment piece, said horizontal plate having a needle slot formed therein extending inwardly of said plate from an edge thereof through which the needle of the sewing machine is to pass in sewing shank buttons, a vise having jaws centered at said slot, said jaws being guided for straight line movement in a direction perpendicular to said slot, spring biasing means equally biasing each of said jaws toward each other, said jaws having a vertical extension passing through aligned guide slots on opposite sides of said slot, said guide slots being formed in said horizontal plate perpendicular to said needle slot, locking means for fixedly securing said extensions to said horizontal plate when said jaws are to be locked in a predetermined position, said locking means, when inoperative to lock said extensions to said horizontal plate, allowing free movement of said jaws in a direction perpendicular to said needle slot, connection means for connecting said vertically extending attachment piece to said horizontally extending plate, said connecting means including guide means for guiding said horizontally extending plate for forward and backward movement relative to said vertically extending attachment piece, and a locking device for locking said horizontally extending plate in position relative to said vertically extending attachment piece.

3,310,013
ROTARY CAM OPENER MECHANISM
Clarence C. Smith, Chicago, Ill., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 16, 1963, Ser. No. 316,731
9 Claims. (Cl. 112—184)



1. In a lock-stitch sewing machine having a work supporting base, a rotary drive shaft journalled longitudinally in said base, a hook shaft mounted in said base, gears connecting said drive shaft to said hook shaft, a rotary cam shaft mounted parallel to said hook shaft, a sprocket on the cam shaft, a gear adjustably carried by the drive shaft, a bracket, a journal bearing carried by said bracket separate and apart from the hook shaft mounting and mounted on the base, means for adjusting said bracket longitudinally of the drive shaft, an independent shaft revolvably mounted in the journal bearing, a gear on one end of the last named shaft in engagement with the adjustable gear on the drive shaft, a sprocket on the opposite end of the independent shaft and a drive belt connecting said last named sprocket with the sprocket on the cam shaft.

3,310,014
SEWING MACHINE
Anthony G. Tucci, 96—02 103rd Ave.,
Ozone Park, N.Y. 11417
Filed Mar. 9, 1964, Ser. No. 350,224
4 Claims. (Cl. 112—212)



1. A sewing machine comprising in combination a presser foot, a supporting surface, said surface being perforated by a needle hole, an endless belt located entirely on one side of said surface, a portion of said belt being positioned to traverse a portion of said surface adjacent said needle hole, said presser foot urging said belt toward said surface, drive means for causing longitudinal motion of said belt, and control means for lifting said presser foot and said traversing portion of said belt simultaneously away from said surface.

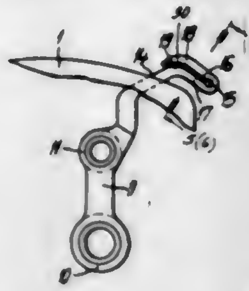
3,310,015
SEWING MACHINE THREAD GUIDING MEANS

Fritz Gegauf, Jr., Steckborn, Switzerland, assignor to Fritz Gegauf Aktiengesellschaft Bernina-Nähmaschinenfabrik, Steckborn, Switzerland

Filed Jan. 31, 1964, Ser. No. 341,554

Claims priority, application Switzerland, Apr. 18, 1963, 4,981/63

8 Claims. (Cl. 112—245)



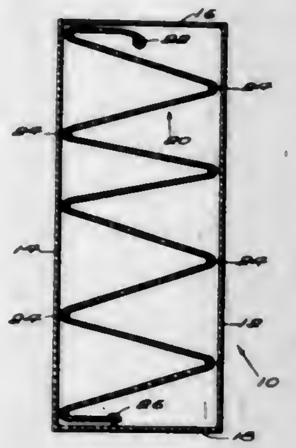
1. In a sewing machine having means for articulating a needle carried by a needle bar, the improvement comprising a take-up lever connected to said means for articulating the needle and having an elongated slot defined therein; said slot having a lowermost portion for accommodating the thread during the sewing operation, the lowermost portion being adapted to move in substantially a vertical reciprocating movement, said take-up lever having a first portion which extends obliquely upwardly, said first portion having a high rounded surface portion connected to the upper end of said obliquely extending portion, said first portion having a downwardly extending portion extending from the high rounded surface portion of the obliquely extending portion and a second portion spaced from and overlying the first portion and extending around the top of the high rounded surface portion and obliquely downwardly from the high rounded surface portion to said first portion, and said lowermost portion of the slot being defined at the juncture of said first and second portions, the length of the slot and the high rounded surface portion being such that the thread will not normally be able to move upwardly over the high rounded surface portion during the operation of said lever.

3,310,016
CARGO ANTI-SHIFTING APPARATUS

Edwin B. Lopker, Fort Lauderdale, Fla., assignor to A. L. Mechling Barge Lines, Inc., Joliet, Ill., a corporation of Delaware

Filed June 23, 1965, Ser. No. 466,276

9 Claims. (Cl. 114—75)



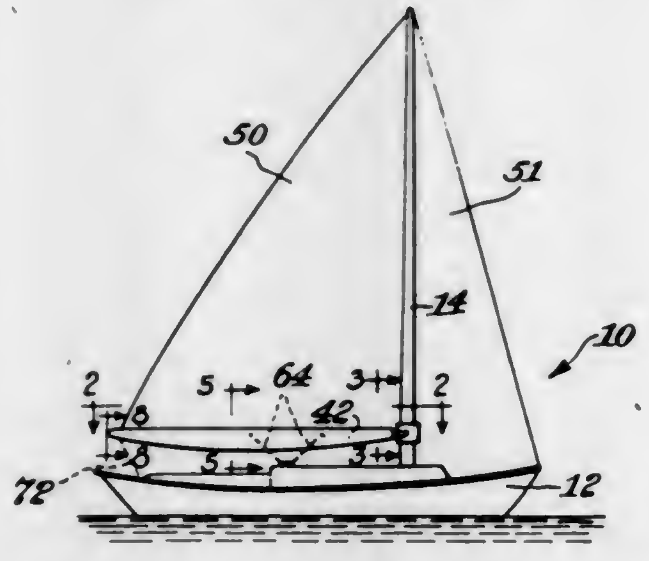
1. In a cargo hold having a bottom, two end walls and two side walls, a fluid cargo anti-surging structure for quickly converting the cargo hold from a single large hold into a plurality of smaller compartments, comprising a plurality of vertical-extending post means arranged adjacent said side walls, flexible baffle means loosely wound around said post means in a zig-zag fashion, said baffle means extending vertically from adjacent the bottom of said hold to above the free level of the liquid cargo, capstan means at one end of said hold, said baffle means being secured at one end to said capstan means, and means securing the other end of said baffle means at the other end of said hold, said capstan means being adapted to tighten said baffle means after it is secured at said other end of the hold and said baffle means being adapted to be wound around said capstan means when the baffle means is not secured at said other end.

3,310,017
AERODYNAMIC SAIL, BOOM AND JAW FOR BOATS

Sid Dyer, Great Neck, N.Y., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 30, 1964, Ser. No. 414,800

9 Claims. (Cl. 114—98)



1. The combination of a sail, mast and variable control camber inducing boom interconnected to each other having a propulsive area for assuming a horizontal contour of aerodynamic advantage comprising brace means for adjusting the camber of said boom to obtain a horizontal aerodynamic advantage for maximum forward drive.

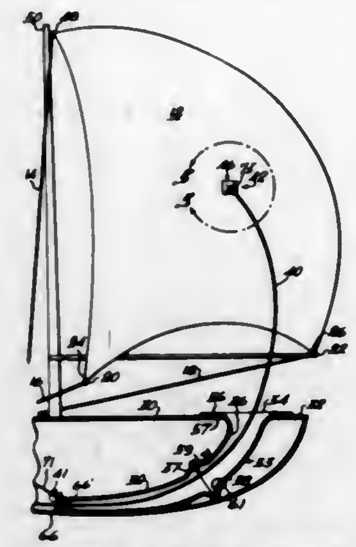
3,310,018
TRIANGULARLY-SHAPED SAIL LAUNCHING AND RETRACTING MEANS

William C. Roberts, Jr., North Palm Beach, and Walter B. Kerr, West Palm Beach, Fla.; said Kerr assignor to W. C. Roberts, Jr., North Palm Beach, Fla.

Filed Oct. 6, 1966, Ser. No. 584,756

9 Claims. (Cl. 114—104)

1. In a boat of the type adapted to use a spinnaker sail of generally triangular configuration and having three sail corners having an attachment means for a line to extend from each corner, a spinnaker storage compartment means comprising: a diffuser section having an enlarged open funnel mouth facing upwardly and smoothly accessible through an opening in the deck and extending depthwise and rearwardly in a smooth, continuous curve, and a main body section, said sections merging and blending, and said body section terminating in a generally sternwise facing opening, and a sail retract line to connect to the central area of said spinnaker to extend through the storage compartment and opening and to the rear of the boat so that the sail may be retracted by pulling the said sail retract line and drawing the central zone of the sail as the leading portion into a nested position adjacent the opening with the sail extending toward the mouth, the center line of the said storage compartment from a plane across the mouth and a plane across the opening of the body section being of a length at least substantially equal to the distance between the center of the central zone of the spinnaker and the margin at the corners of the sail so the sail is adapted to be housed in the compartment when not in use and is adapted to be withdrawn from the compartment by three lines connected to the attachment means respectively.

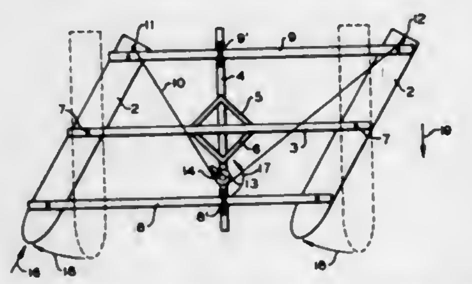


3,310,019
FLOATS

James A. Standridge and Brian D. Nicholson, Lafayette, La., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed June 18, 1965, Ser. No. 465,074

2 Claims. (Cl. 114—235)



2. Apparatus for maintaining a towed member substantially on course comprising a frame means carrying a fixed cross member and at least one bidirectionally freely slidable cross member disposed on at least one side of said fixed cross member, at least two float means rotatably attached to each of said fixed and freely slidable cross members, rudder means carried on each of said float means, a rotatable means carried by at least one of said frame means and said fixed cross member between said at least two float means, a flexible means attached to said float means and carried by said rotatable means, said flexible means being attached to said float means in a manner such that rotation of said rotatable means causes rotation of said float means in substantially the same direction, and means for attaching said towed member to said frame means.

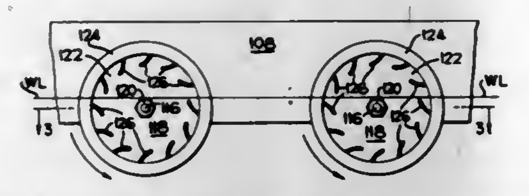
3,310,020
APPARATUS FOR PROPELLING BUOYANT VEHICLES

Arthur J. Slemmons, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Original application Sept. 26, 1963, Ser. No. 311,695, now Patent No. 3,238,913, dated Mar. 8, 1966. Divided and this application Nov. 15, 1965, Ser. No. 507,789

6 Claims. (Cl. 115—1)

1. An apparatus for propelling a buoyant vehicle in water comprising, propulsion wheels on said vehicle, and means on said wheels for developing hydrodynamic forces during rotation thereof in water, said means extending generally parallel to the axis of rotation of said wheels, said means being in the shape of hydrofoil blades so that during translation thereof through the water, a vertical force urging the vehicle upwardly and a horizontal force in the direction of a desired vehicle motion are produced, the wheels of said vehicle comprise rubber tires mounted on discs, and said hydrofoil blades being secured on said discs.

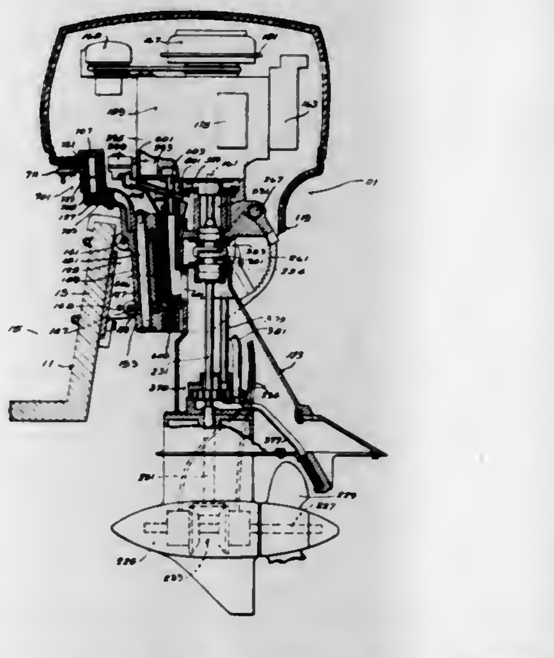


3,310,021
ENGINE

William J. Shimanckas, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware

Filed Apr. 27, 1965, Ser. No. 451,117

20 Claims. (Cl. 115—17)



1. The combination in an outboard motor of a swivel bracket, means connected to said swivel bracket for positively fixing said swivel bracket relative to the transom of a boat, a propulsion unit carried by said swivel bracket for dirigible movement about an axis which is generally upright when said swivel bracket is fixed to the boat transom, said propulsion unit including a power head, a lower unit, and means pivotally connecting said power head and said lower unit for tilting of said lower unit relative to said power head.

3,310,022
EXHAUST SYSTEM FOR OUTBOARD MOTORS

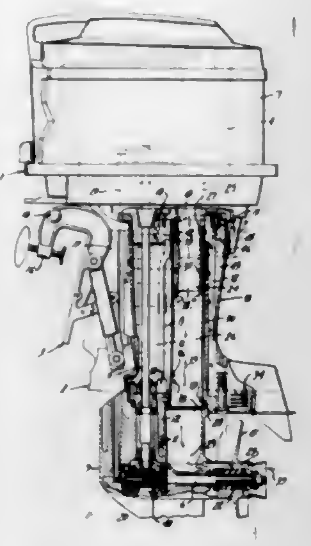
Delhardt K. Kollman, Oshkosh, Wis., assignor to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Delaware

Filed Aug. 23, 1965, Ser. No. 481,488

9 Claims. (Cl. 115—17)

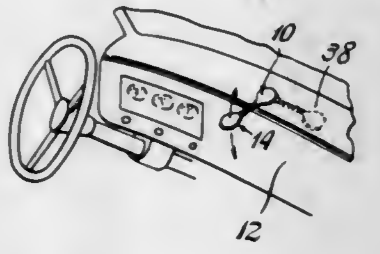
1. In an outboard motor having a drive unit with an internal combustion engine mounted thereon and an underwater propeller drive unit depending at the lower end thereof, an engine exhaust system comprising an exhaust pipe extending downwardly from the engine in said drive unit, exhaust discharge means communicating with the lower end of said pipe to discharge the exhaust therefrom, a water jacket for said pipe, inlet and outlet

means including inlet and outlet ports to continually flow water through said jacket during operation of said engine, and port means substantially smaller than said water



inlet port means to bleed a limited quantity of water from said jacket directly into the exhaust stream flowing through said pipe.

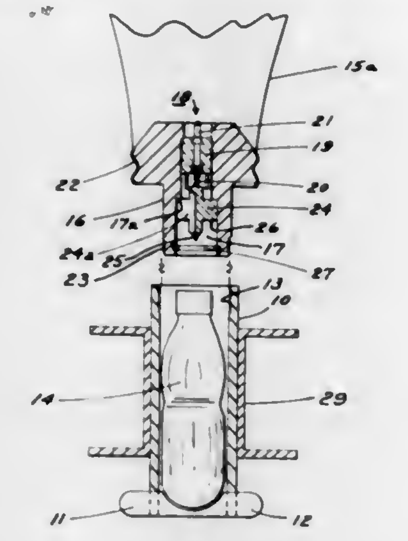
3,310,023
ANIMATED REMINDER DEVICE
Douglas F. Linsley, Box 324, Westport, Conn. 06880
Filed Aug. 23, 1965, Ser. No. 481,633
9 Claims. (Cl. 116—28)



1. A reminder device comprising, in combination:
(a) a base,
(b) a signal member, and
(c) manually operable connector means including a resilient mounting between said base and signal member, for maintaining the member either in an operative position remote from the base and providing for substantial attention-arresting oscillation of the member in air, or else in a stationary and inoperative position juxtaposed to the base and restrained thereby against movement.

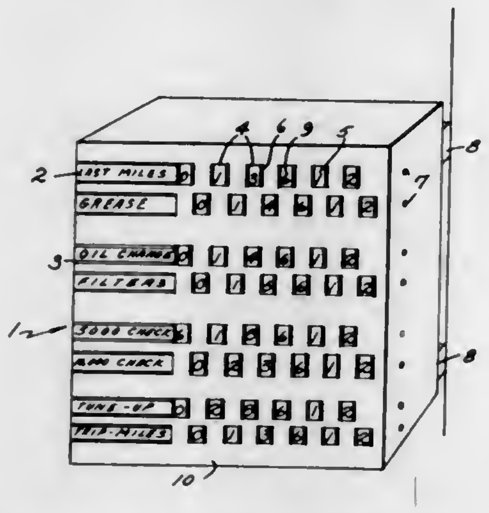
3,310,024
SIGNAL BALLOON
Robert C. McConnell, 408 Red Haw Road,
Dayton, Ohio 45405
Filed Oct. 23, 1965, Ser. No. 503,179
2 Claims. (Cl. 116—124)

1. In a signal device,
an inflatable balloon having a neck portion,
closure means mounted within said neck portion and having a passageway adapted to receive pressurized fluid and to admit said fluid into the interior of the balloon, valve means biased to closed position and disposed within said passageway, a member movably disposed within said passageway and engageable with said valve means for opening the same in at least one position of said member,
said member having a piercing portion for puncturing a pressurized fluid container, annular yieldable means carried by said closure means and at least partially projecting into said passageway for sealingly engaging the neck portion of said container and for retaining said movable member within said passageway, tether means connected to said closure means,
inflation means including a container having a neck portion and having a pressurized lighter-than-air fluid therein, and



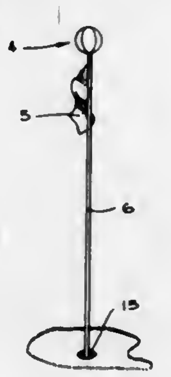
means including a housing member for readily detachably connecting said inflation means to said closure means and operable to move said container into puncturing relation with said piercing portion and with said neck portion extending into said passageway and sealingly engaged by said yieldable means and simultaneously causing said member to move to said one position, and
thereby automatically admitting pressurized fluid from said container when so connected to said closure means into the interior of the balloon and to prevent escape of fluid from the balloon when said container is detached.

3,310,025
AUTOMOBILE MILEAGE REMINDER METER
Russell F. Egner, 621 Sheridan St.,
Chillum, Md. 20783
Filed June 14, 1966, Ser. No. 557,553
2 Claims. (Cl. 116—133)



1. An automobile mileage reminder meter comprising:
a housing;
a plurality of shafts disposed in said housing with their axes in spaced, generally parallel relationship;
a plurality of indicia cylinders mounted for individual rotation on each of said shafts at spaced points along the shaft length,
the spacing between adjacent shafts being less than the diameter of the cylinders mounted thereon,
the cylinders on each shaft being arranged in staggered alternating relation with the cylinders on each adjacent shaft so that the cylinders on one shaft overlap with the cylinders on adjacent shafts,
each of said cylinders carrying a plurality of indicia around its peripheral surface;
a plurality of windows in said housing corresponding to the plurality of cylinders,
each window exposing one of the indicia on the peripheral surface of the corresponding cylinder;
wheel means integral with each cylinder accessible through the corresponding window for individually rotating the cylinder to change the visible indicia;
a plurality of detent-engaging surfaces provided at spaced points around the periphery of each wheel means in general correspondence to the indicia thereon; and
a spring-biased detent for each cylinder affixed to said housing for engagement with said surfaces of said cylinder one at a time to releasably hold said cylinder against rotation with a selected indicia visible through the window corresponding thereto.

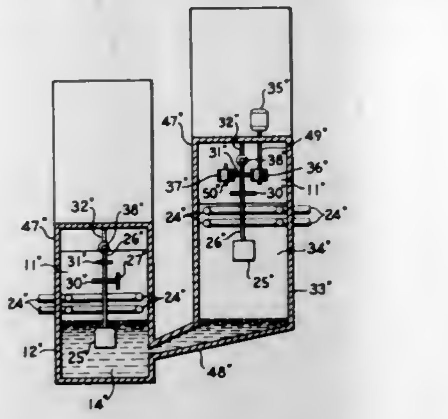
3,310,026
GOLF FLAGPOLE RETRIEVER
Roger P. Baird, Jr., Henrico, Va., assignor to Auto Rinse Corporation, Richmond, Va.
Filed Oct. 23, 1965, Ser. No. 504,026
3 Claims. (Cl. 116—173)



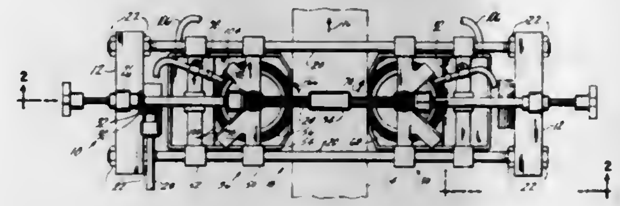
1. A golf flag pole retrieving device comprising an elongated, flexible, tubular support member, a plurality of angularly spaced, integrally formed, rod-like elements constituting a cage-like member, said cage-like member mounted on one end of said tubular member, said tubular member being adapted for axial mounting on said flag pole.

3,310,027
LIQUID COATING APPARATUS
Otto H. Lindemann, Buffalo, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Apr. 20, 1964, Ser. No. 360,902
6 Claims. (Cl. 118—52)

1. A coating apparatus, suitable for coating articles with a liquid coating composition comprising film-forming ingredients and a halogenated hydrocarbon solvent, which apparatus comprises (1) a coating tank, said coating tank having means for rotating articles being coated while in said coating tank, (2) a spin-enclosure, physically separated from said coating tank, the bottom of said spin enclosure formed integral with an intermediate sidewall section of the coating tank whereby to communicate therewith and to maintain a common fluid body, said spin-enclosure having means for maintaining a solvent vapor atmosphere therein and means for spinning coated articles in said solvent vapor atmosphere at a peripheral speed sufficient to remove substantially all excess coating material therefrom, and (3) conveying means for moving articles to and from said coating tank and said spin-enclosure.



3,310,028
JOINT GLUING MECHANISM IN A BOOK CASING-IN MACHINE
James H. Thorp, West Hartford, Conn., assignor to The Smyth Manufacturing Company, Bloomfield, Conn., a corporation of Connecticut
Filed Sept. 17, 1964, Ser. No. 397,202
10 Claims. (Cl. 118—227)

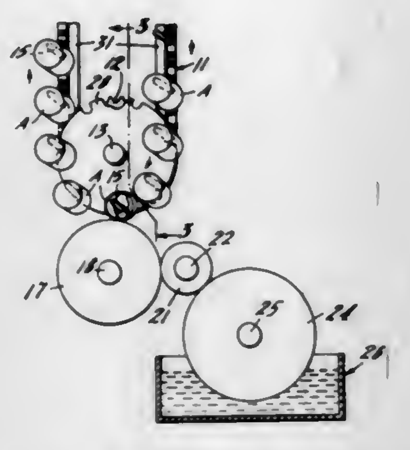


1. In a casing-in machine which includes mechanism for feeding fillers toward a casing-in station whereat cases are mated with the fillers, the improvement comprising glue reservoir defining means, a pair of horizontally opposed glue rollers each of which is rotatably mounted at one side of the longitudinal path of movement of said fillers for rotation about vertical axes, each of said glue rollers having a peripheral contour which conforms in vertical section generally to the relatively narrow joint area of the filler to be glued, conduit means for continuously delivering glue from said reservoir to each of said rollers, means for rotating said rollers, means for moving said rollers in opposite directions generally horizontally toward and away from said filler path and in timed relationship with the movement of fillers therepast, and a shallow drip pan below each of said rollers, said drip pans being in communication with said glue reservoir defining means so that glue in said pans is returned to said reservoir.

3,310,029
TUBE COATING APPARATUS
Charles Ivanoff and Eibert Jansen, Ottawa, Ontario, Canada, assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 5, 1962, Ser. No. 242,438
4 Claims. (Cl. 118—230)

1. An apparatus for exteriorly coating rigid and semirigid containers having at least one end open, comprising a rotatable application roll, means for supplying coating material to the outer face of said roll, a conveyor movable along a path of travel adjacent to and in spaced relation to said roll, and a pin projecting from said conveyor and having a free end over which a container can be slipped for conveying the container suspended thereon into engagement with the outer face of said roll, said pin being of materially less diameter than

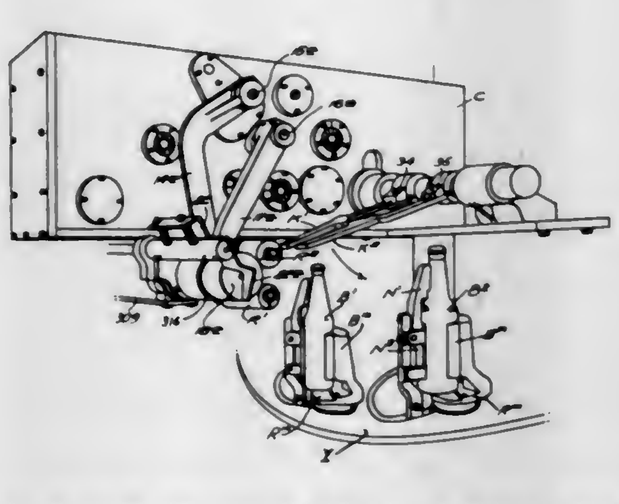
the diameter of said container and being located to pass over said roll in spaced relation thereto at least a distance greater than the thickness of the side wall of said container to freely and unsupportedly drag said container across the coated face of said roll for free frictional rotation thereon to affix a film of said coating material to said container, said pin also being disposed at an angle horizontally to the axis of said roll in a direction opposite to the rotation of said roll to urge said container toward said conveyor to insure against displacement of the container from said pin during the coating operation.



3,310,030

APPARATUS FOR APPLYING GUM TO A LABEL PICKER

Sidney T. Carter, Shrewsbury, Mass., assignor to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin
Original application May 20, 1963, Ser. No. 281,624, now Patent No. 3,262,422, dated July 26, 1966. Divided and this application Oct. 20, 1965, Ser. No. 498,409
13 Claims. (Cl. 118—261)

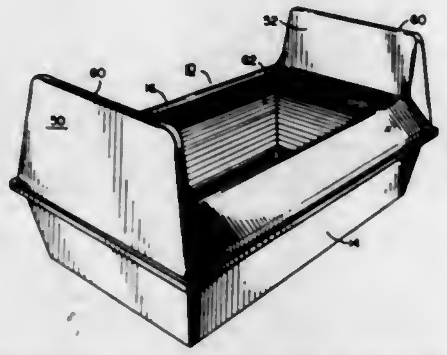


1. A labeling machine of the kind wherein liquid gum is taken from a supply and applied to a label picker and wherein the gum is held in an open-topped receptacle or gum box having therein a rotatable gum-elevating roll so arranged as to be partially immersed in the liquid gum, a smoothly cylindrical gum-supply roll whose axis is parallel to that of the elevating roll and whose peripheral surface is above the level of the gum in the receptacle and which is so arranged as to receive gum from the elevating roll, means for rotating the gum-supply roll at a predetermined angular velocity, characterized in that the supply roll has a peripheral groove approximately midway between its ends with gear teeth disposed in said groove, the tips of the teeth being substantially flush with the periphery of the roll, and the gum-elevating roll has a peripheral row of teeth which mesh with the teeth of the supply roll, whereby the motion of the supply roll is transmitted to the elevating roll, further characterized in having a doctor blade, having a rectilinear edge extending from end-to-end of the supply roll and which is parallel to the axis of the roll, and means for adjusting said edge toward or from the periphery of the roll thereby to provide the surface of the supply roll with a layer of gum of predetermined uniform thickness.

3,310,031

SANITARY CAT BOX

Henry E. Lowe, Jr., Cassopolis, Mich. 49031
Filed June 28, 1965, Ser. No. 467,408
2 Claims. (Cl. 119—1)

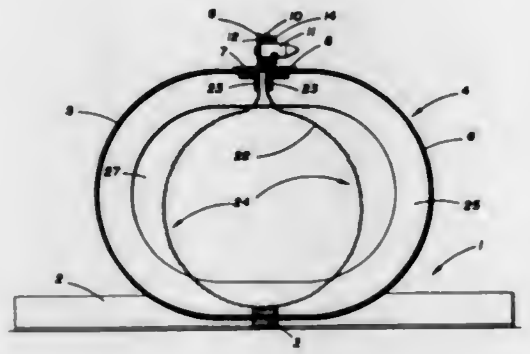


2. A sanitary cat box comprising a generally rectangularly shaped elongated pan for filler material having walls forming on open top and having an upwardly facing groove around the upper edge thereof, a cat orienting structure mounted on the upper edge of said pan with the lower edge of said structure seated in said groove, said structure including side walls extending upwardly and inwardly and forming an elongated opening, and a restraining panel with an inwardly facing side at each end of said structure connected to the side walls of said structure and projecting substantially above said side walls and extending substantially across the end of said elongated opening, the inner side of said restraining panels being positioned directly above the open top of said pan.

3,310,032

BIRD RELEASER FOR BIRD DOG TRAINING DEVICE

Hugh D. Adams, 625 N. Verduga Road, Turlock, Calif. 95380
Filed Oct. 22, 1965, Ser. No. 501,868
9 Claims. (Cl. 119—15.6)

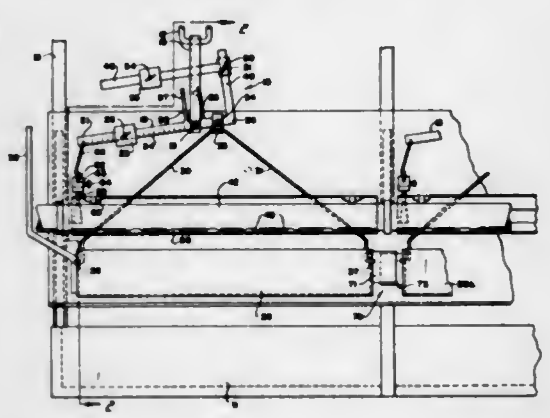


5. A cage device, for reception and subsequent release of a live bird during training of a bird dog, comprising a support, an elongated sheet of flexible but spring steel secured intermediate its ends to the support, the opposed longitudinal sections of said sheet being normally upwardly and inwardly bowed to place them under load and to provide a substantially cylindrical body, remote controlled releasable latch means connecting adjacent edge portions of said bowed sections, the latter forcefully springing apart upon release of said latch means, a flexible panel secured at opposite ends to related edge portions of said sections, said panel normally depending from said edge portions as a downwardly looped sling within the body and for reception of the bird, and means closing the sling at the ends without obstructing movement thereof or of said sections; the flexible panel being snapped taut and the bird tossed into the air when such sections forcefully spring apart upon release of the latch means.

3,310,033

ANIMAL FOOD PORTIONING APPARATUS

Heinz Eichholz, Schapen 4441, Kreis Lingen, Germany
Filed Sept. 9, 1965, Ser. No. 495,007
Claims priority, application Germany, Apr. 16, 1962, E 22,743
20 Claims. (Cl. 119—56)



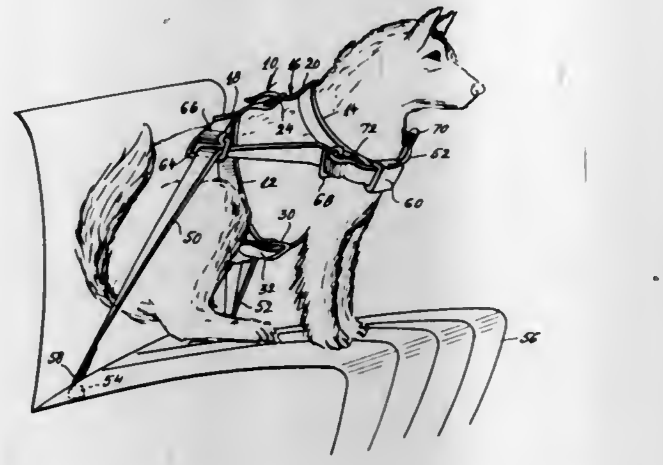
1. Apparatus for portioning animal food in predetermined amounts, comprising pivot means, a balance arm mounted on said pivot means, adjustable balance means on one side of the pivot means and connected to the arm for normally retaining said arm in a first unbalance position, the centre of gravity of said balance means being located above said pivot means and remaining at a constant distance therefrom during balancing movement of the arm, a receptacle carried by the arm on the other side of the pivot means and positioned to receive food from a supply source, said receptacle moving the arm to a second unbalance position opposite the first unbalance position the instant said receptacle receives a predetermined weight of food, said balance means retaining the arm in the first unbalance position until said predetermined food weight is reached, and shut-off means for the supply source operatively connected to said one side of the balance arm adapted to stop the flow of food into the receptacle when the arm swings to the second unbalance position, the location of the centre of gravity of said balancing means causing the movement of the arm to accelerate as said arm moves towards the second unbalance position, thereby accelerating the operation of said shut-off means quickly to stop said flow of food.

3,310,034

SAFETY HARNESS AND COLLAR

Harry S. Dishart, 137 Prospect Park SE., Brooklyn, N.Y. 11218
Filed Sept. 9, 1965, Ser. No. 486,152
12 Claims. (Cl. 119—96)

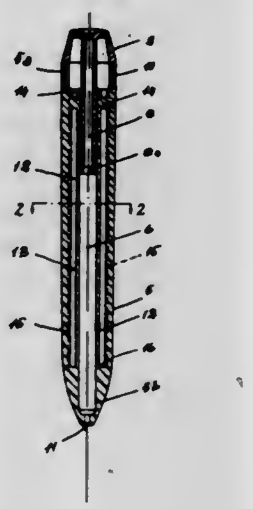
1. A dog safety harness comprising a back strap adapted to overlie the back of a dog, strap means for embracing the neck and chest of a dog and secured to one end of said back strap, a body encircling strap secured to the other end of the back strap, a pair of elongated straps, means on one end of the straps for fastening said one end to a seat in an automobile, means on the other end of the pair of straps for fastening said other ends to each other around the chest of a dog positioned on a seat of an automobile, and means for guiding said pair of straps along the body of a dog for encirclement around the chest of the dog.



3,310,035

WRITING IMPLEMENT

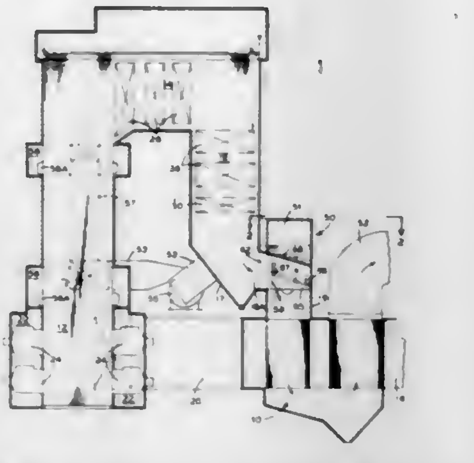
Domenico Cena, Via Leini 25, Settimo Torinese, Italy
Filed Aug. 2, 1965, Ser. No. 476,242
Claims priority, application Italy, Mar. 3, 1965, 4,861/65
1 Claim. (Cl. 120—42.12)



In a ball-point pen the combination of: a longitudinal container tapered and perforated at one extremity and fully open at the other extremity; an integral axially positioned longitudinal housing within said container for receiving a cartridge and having an inner diameter slightly larger than the diameter of said ink cartridge; a cap snugly connectable to the internal surface of said container at said fully open extremity thereof and an integral axial, hollow sheath for snugly retaining therein the non-writing extremity of said ink cartridge, said sheath being partially insertable into said housing; a plurality of cartridge receptacles positioned longitudinally in the annulus between the outer surface of said housing and the inner surface of said container, each receptacle being separated from the adjoining one by means of ribs protruding inwardly from said inner surface of said container, the lower extremity of said receptacles ending at the junction of the tapered and non-tapered portions of said container.

3,310,036
GAS OFF-TAKE SYSTEM

Arthur M. Frendberg, Akron, and Richard P. Siegfried, Bath Township, Summit County, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 28, 1965, Ser. No. 490,813
8 Claims. (Cl. 122—1)

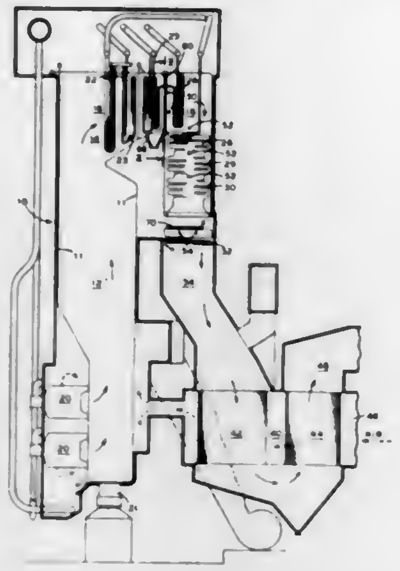


1. A gas off-take system comprising first duct means having a substantially rectangular cross-sectional flow area and forming a passageway confining the flow of a stream of solids-laden gas, said passageway including a first portion, a second portion of greater width than said first portion, and a flaring portion interconnecting said first and second portions, second duct means disposed outside of said passageway transversely with respect to said first duct means for collecting and confining the flow of gas withdrawn from said gas stream, and means for evenly distributing gas across the width of said second portion of said first duct means including a plurality of gas off-take channel elements spaced within said flaring portion at regular intervals thereacross, said channel elements being oriented in diverging positions with respect to each other in the direction of gas flow, each of said channel elements being in communication with said second duct means and having formed therein inlet opening means disposed within said passageway in a plane having a substantially horizontal component and being substantially perpendicular to the flow of said solids-laden gas in said passageway, whereby gas flowing through said passageway and into said opening means is required to take a substantial 180° turn to enter said channel members.

3,310,037
VAPOR GENERATING APPARATUS

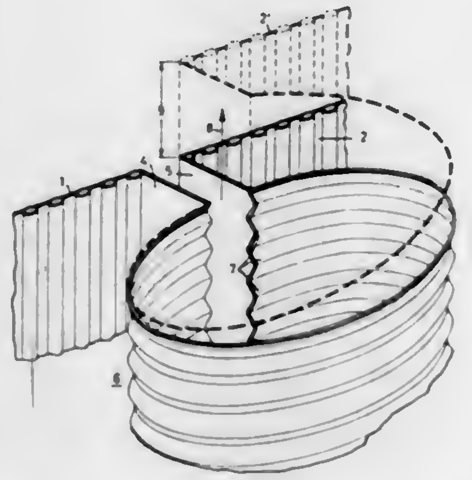
Leon H. Coykendall, Wadsworth, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 23, 1965, Ser. No. 503,433
2 Claims. (Cl. 122—392)

1. In a vapor generating and superheating unit, a furnace, means for burning ash bearing solid fuel in said furnace, a passageway having an inlet connected to said furnace and having horizontally and vertically extending portions, means for conducting passing gaseous products of combustion and entrained solid particles through the horizontally and vertically extending portions of said passageway, economizer heat transfer apparatus disposed in the vertically extending portion of said passageway and including a plurality of tube rows extending in horizontal direction relative to the vertically extending portion of said passageway, at least one of said tube rows including spaced tubes having extended heat transfer surfaces disposed at least partly in the spaces between the tubes of each row, said heat transfer apparatus further including auxiliary tubing spaced from said tube rows on the upstream side thereof to define a cavity therebetween and extending in horizontal direction relative to said passageway, said auxiliary tubing being provided with extended heat transfer surfaces defining flow spaces no larger than the flow spaces between tubes in any of said tube rows whereby solid particles entrained in the gas stream and flowing from said furnace downwardly through the vertically extending portion of said passageway are intercepted at said auxiliary tubing, and soot blower apparatus disposed in said cavity and adapted for operative association with said auxiliary tubing for dislodging in upstream direction any particles lodged in the flow spaces of said auxiliary tubing.



3,310,038
GAP-SEALING STRUCTURE, PARTICULARLY FOR PARALLEL-TUBE HEATING SURFACES OF STEAM BOILERS AND OTHER HEAT EXCHANGERS

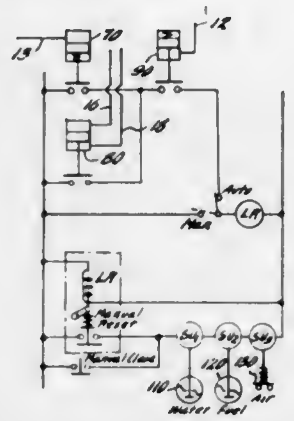
Ludwig Kuchelbacher, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany, a corporation of Germany
Filed Dec. 14, 1964, Ser. No. 417,858
Claims priority, application Germany, Dec. 19, 1963, S 88,794
6 Claims. (Cl. 122—494)



1. A bridging structure for sealing gaps between parallel-tube walls of steam boilers, heat exchangers and the like, comprising two adjacent component walls each having parallel tubes for working fluid, said two components forming between each other a longitudinal gap parallel to said tubes, a compensator forming a longitudinally slotted jacket of generally C-shaped cross section and extending along said gap in bridging relation thereto with the jacket slot in registry with said gap and the jacket edges in permanent sealing connection with said respective members along said gap, said compensator jacket having compensating corrugations transverse to longitudinal direction of said gap.

3,310,039
SAFETY CONTROL SYSTEM FOR STEAM GENERATORS

Harry H. Holt, ℅ Broaches Grocery, Rte. 4, Florence, S.C. 29501
Filed Oct. 11, 1965, Ser. No. 494,505
7 Claims. (Cl. 122—504)

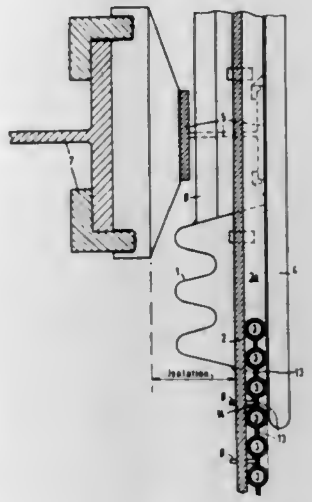


2. A wet tube steam generator comprising sources of fuel and water supply and means for regulating air flow through the combustion chamber, control means for regulating said fuel and water supply, said control means including further means monitoring the operation of the generator and providing a pressure control signal; means for terminating operation of the generator in the event of a tube rupture, said means comprising a plurality of pressure responsive switches, one of said switches being responsive to air pressure in the combustion chamber, the second of said switches operating in response to variations in the ratio feed water flow to steam output, the third switch responding to pressure on the output side of the generator, said first and third switches being connected in series and said second and third switches also being connected in series, said second-mentioned switch being connected in a parallel circuit with respect to said first-mentioned switch, means regulating flow from said water source to and the rate of fuel combustion in said generator, said means being operable to a closed position when either said first and said third-mentioned switch or said second and third mentioned switch is closed due to abnormal conditions sensed in the generator whereby tube rupture therein will result in cut-off of the supply of fuel and water to the generator.

3,310,040
ONCE-THROUGH BOILER WITH WELDED TUBE SYSTEM

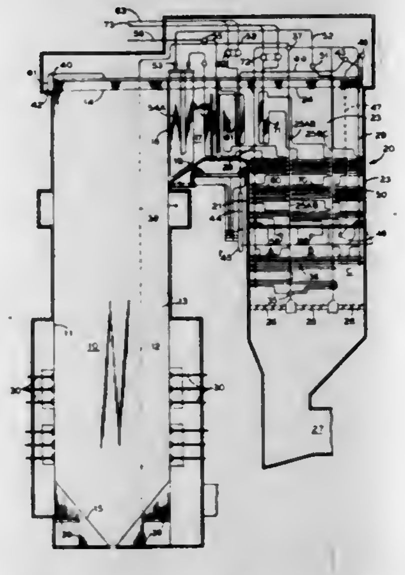
Rupprecht Michel, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Mar. 25, 1965, Ser. No. 442,605
Claims priority, application Germany, Mar. 26, 1964, S 90,244
2 Claims. (Cl. 122—510)

1. A once-through superpressure-fired steam boiler comprising a combustion chamber, an evaporator system including a plurality of evaporator tubes upwardly sloping at a slight incline and extending around said combustion chamber, vertically extending supports disposed in spaced relationship to said combustion chamber, a plurality of strips disposed between and welded to adjacent of said tubes so that said tubes and said strips form a tube wall, brackets secured to said supports and welded to said strips for supporting said tube wall on said supports, said evaporator tubes terminating in vertically extending outlet tubes, said outlet tubes being disposed between said chamber and said supports, a superheater disposed between said combustion chamber and said evaporator tubes and independently suspended from said evaporator system, said superheater including a plurality of U-shaped tubes, a plurality of strips welded to and spaced adjacent of said U-shaped tubes to form superheater wall sections spaced from one another in a common plane, the spaces between said superheater wall sections lying in said common plane and parallel to the supports for said evaporator system, and vertical diaphragm sheeting sealing said spaces against said combustion chamber.



3,310,041
VAPOR GENERATOR HEATING GAS PASS TUBE SUPPORT AND PARTITION WALL CONSTRUCTION

Walter A. Hansen and Wolodymyr Strileckyj, Akron, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 4, 1965, Ser. No. 477,213
8 Claims. (Cl. 122—510)



1. In a vapor generator, wall means forming an upright gas pass, means supplying high temperature heating gases to said gas pass for flow therethrough, partition means dividing said gas pass into a plurality of parallel flow gas sections, a first fluid heating tube bank positioned in one of said gas sections, a second fluid heating tube bank positioned in another of said gas sections, a third fluid heating tube bank disposed below said first and second fluid heating tube banks and having portions thereof positioned within the gas sections in which said first and second fluid heating tube banks are positioned, damper means arranged for proportioning the flow of heating gases through said gas sections, and means for supporting the weight of the first and second tube banks and the third

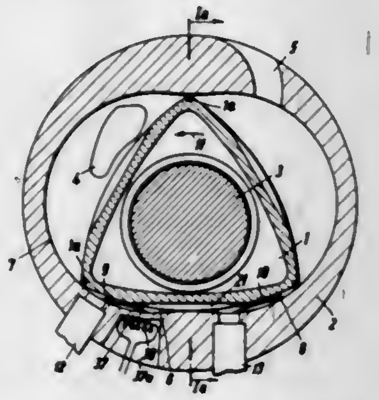
tube banks substantially free of load-bearing attachment to said wall means, said last named means including a plurality of tubes connected to said third tube bank and extending upwardly therefrom through said gas pass, at least a portion of said tubes being arranged in side-by-side parallel relation and being rigidly weld-united along at least a portion of their lengths to form a gas impervious wall portion of said partition means, means connecting said first and second and third fluid heating tube banks to said tubes forming said wall portion of said partition means in load-bearing relationship, and means for top supporting said tubes.

3,310,042
ROTARY PISTON INTERNAL COMBUSTION ENGINE

Herbert H. Haas, Bergisch, Gladbach, Germany, assignor to Klöckner-Humboldt-Deutz Aktiengesellschaft, Cologne, Germany

Filed Nov. 29, 1962, Ser. No. 241,115

8 Claims. (Cl. 123—8)



1. A rotary piston internal combustion engine, which comprises: a first engine member having a cavity therein with side walls and having an inner peripheral contour with a plurality of arched surfaces with at least two inwardly extending crests, a second engine member in said cavity having an arched outer contour with at least three outwardly extending crest means for engagement with said inner contour, one of said engine members being rotatable relative to the other engine member and defining therewith working chambers which vary in volume during a relative rotation of said engine members with regard to each other, said working chambers including a combustion chamber adapted during a rotation of one of said members relative to the other one of said members to be subdivided by one of said crests into two partial combustion chamber means, and means for injecting fuel into said partial combustion chamber means, said second engine member being provided with passage means establishing communication between said partial combustion chamber means and fanning out in the manner of rays.

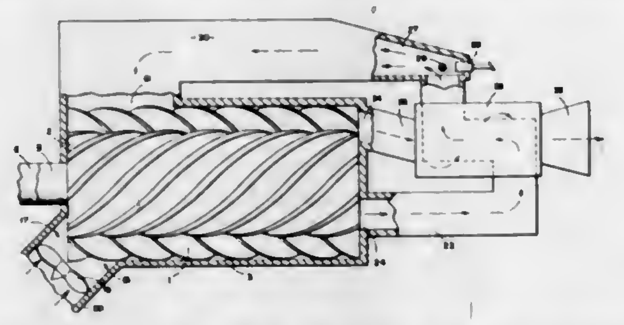
3,310,043
ROTARY EXTERNAL COMBUSTION ENGINES

Russell W. Gamage, 8201 Tuscany Ave., Playa Del Rey, Calif. 90291

Filed May 17, 1965, Ser. No. 467,158

10 Claims. (Cl. 123—12)

1. A rotary external combustion engine comprising: a single pair of meshing rotors, one of said rotors having a plurality of helical grooves therein and the other of said rotors having a plurality of helical teeth to mesh and mate with said helical grooves; a casing closely surrounding said rotors and having an air inlet port therein for admitting air into the confined region between said casing and rotors near one end therof on the side of the rotors where they are rolling together, said rotors acting progressively to diminish the volume of the air as it is moved by said teeth toward the opposite end of said rotors; said casing having a compressed air discharge port therein adjacent said opposite end of said rotors; and a hot gas intake port in the side of said casing opposite from said air inlet port and adjacent the first mentioned ends of said rotors, said hot gas intake port communicating with the region where the teeth of the toothed rotor begin to leave said grooves; a conduit for conducting the compressed air from said compressed air discharge port to said hot gas intake port; means for introducing fuel into said conduit; means for igniting the fuel and air in said conduit, the mixture of fuel and air that is heated and expanded by its combustion acting to separate the helical teeth and grooves and turn the rotors as the expanding volume of the mixture is moved by said teeth toward said opposite end of said rotors; said casing having an exhaust port adjacent said opposite end to allow the exhaust gases to escape therethrough; the helical twist of said grooves and teeth and the relative location of said air inlet and exhaust ports being such that any given groove or intertooth channel is simultaneously in communication with said air inlet and exhaust ports during the scavenging phase to permit the ingestion of fresh air into said groove through said air inlet port and the expulsion of exhaust gases from said exhaust port; and means for forcing said ingestion and expulsion.

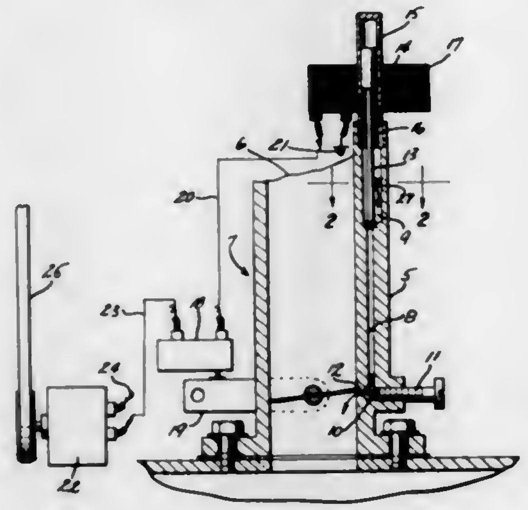


3,310,044
ELECTRICALLY OPERATED SOLENOID CUTOFF VALVE FOR GASOLINE CARBURETORS

Bruce T. Haverstick, Rte. 3, Box 200, Hillsboro, Oreg. 97123

Filed Mar. 26, 1965, Ser. No. 443,004

3 Claims. (Cl. 123—102)



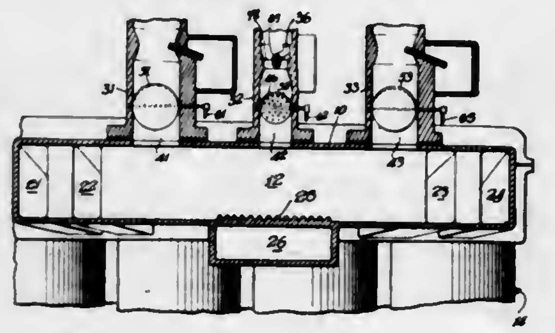
1. An electrically operated solenoid cutoff valve for gasoline carburetors comprising a gasoline carburetor; a valve in the fuel intake of the said carburetor, and the sail valve having an enlarged head that is slidably incased in a leak-proof brass shell having its lower end pressed into the top of the said carburetor casing; an electric solenoid encompassing the said brass shell in a position that will cause the said electric solenoid to control the movement of the said valve; and mechanism adapted to activate the said electric solenoid as the speed of the internal combustion engine varies; and the said carburetor being connected to the said internal combustion engine.

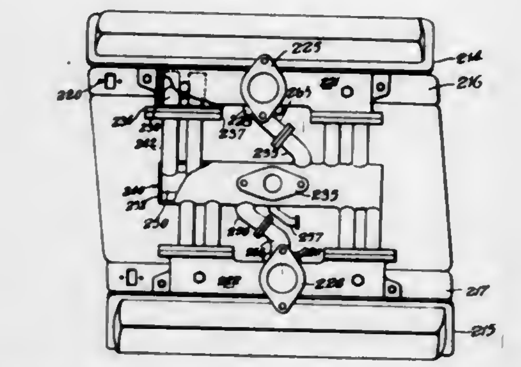
3,310,045
INTERNAL COMBUSTION ENGINE FUEL FEEDING SYSTEM

Earl Bartholomew, Birmingham, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Filed Mar. 30, 1965, Ser. No. 443,956

17 Claims. (Cl. 123—127)





1. A carburetion assembly having a primary carburetor barrel of relatively small cross-sectional area for low power operation and a secondary fuel mixture supply system having throat means with a relatively large cross-sectional area for high power operation, the primary barrel including a venturi-metered jet that provides all idle as well as operating mixture for the low power operations, said primary barrel being provided with a throttle valve therein, and the cross-sectional areas of the primary and secondary systems being such that when both are wide open the primary system supplies not more than about 14% of the total fuel mixture.

14. A carburetor having a venturi jet that provides all the fuel for idle operation, a butterfly throttle valve downstream of the jet and connected to seat in closed position against a throttle bore, the valve being perforated for passage of idle fuel therethrough, said bore having a pocket spanning a section of its interior where the butterfly seats to provide a by-pass around the throttle valve, and an adjustment member adjustably positioned in said pocket to vary the amount of by-pass.

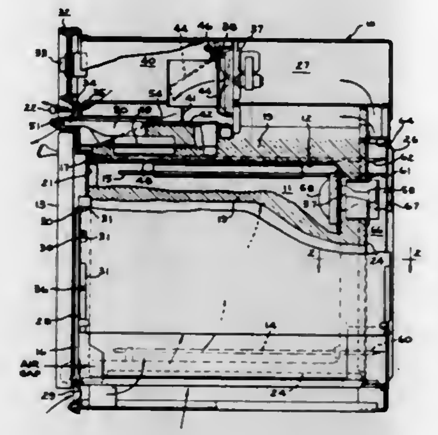
3,310,046
DOMESTIC OVEN WITH AIR COOLING SYSTEM

George A. Scott, Jeffersontown, and James K. Newell, Jr., Louisville, Ky., assignors to General Electric Company, a corporation of New York

Filed Mar. 2, 1965, Ser. No. 436,436

14 Claims. (Cl. 126—21)

1. A domestic built-in wall oven comprising inner walls defining an oven cooking cavity, one wall having an access opening and a door for closing said opening, heating means for cooking foods placed within the oven cavity, thermal insulating means surrounding the walls of the oven cavity, an outer oven cabinet surrounding the insulated oven walls but outwardly spaced therefrom to form a cooling air chamber therebetween, the air chamber having air inlet openings and air outlet openings, blower means within the oven cabinet for forcing relatively cool air through the air chamber so as to dissipate some of the heat that is present in the inner oven walls, and an oven control panel located above the oven door, the air outlet openings being disposed between the oven door and control panel to provide a thermal break in the heat path between the oven cavity and the oven control panel, the air inlet openings being located beneath the oven door as well as in the outer oven cabinet at the opposite sides of the door near the top thereof.

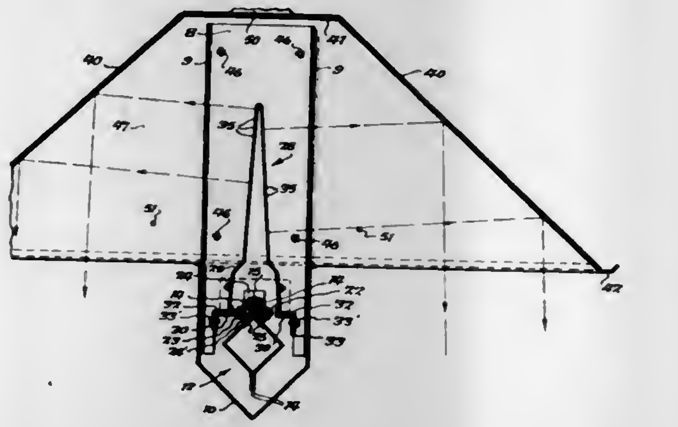


3,310,047
GAS BURNING INFRA-RED HEATING DEVICE

Robert G. Budden, Clarence, N.Y., assignor to Roberts-Gordon Appliance Corporation, Buffalo, N.Y.

Filed Mar. 22, 1965, Ser. No. 441,696

2 Claims. (Cl. 126—92)



1. An infra-red heating device including a gas burner extending lengthwise of said device,

a radiant heat emitter including a pair of panels extending upwardly and meeting at their upper ends to form an inverted V-shaped structure,

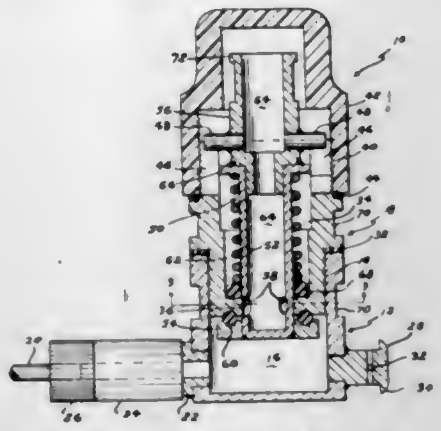
said panels being of perforated metal of high heat emitting surfaces and having their lower parts flared outwardly to form between them a passage for flame and hot products of combustion and in which said burner is arranged,

and a reflector having inclined, downwardly extending reflecting surfaces arranged at opposite sides of said heat emitter and which reflects radiant heat from said emitter downwardly,

said reflector forming a hood about said radiant heat emitter and confining the products of combustion about said emitter and venting the same only from the lower edges thereof.

3,310,048
EXSANGUINATION VALVE

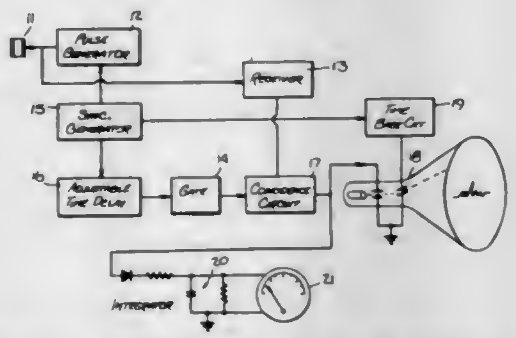
Dean E. Ewing, Albuquerque, N. Mex.
(2121 Kenwood Ave., Fort Wayne, Ind. 46805)
Filed Dec. 17, 1963, Ser. No. 331,325
13 Claims. (Cl. 128—2)



1. An exsanguination valve for joining to the blood stream of a test subject by means of a catheter tube and permitting the repeated withdrawal of blood samples with a syringe attachable to and detachable from said exsanguination valve comprising: a housing having a cavity open at one end and an inlet communicating with the cavity in said housing and joinable to said catheter tube, a valve seat member joined to said housing and closing the open end of the cavity in said housing and having a cavity open at one end and at the opposite end of said cavity having a closed end wall with a circular passage therethrough adjacent to the cavity in said housing, and a valve plug having a cavity open at the outer end and extending into an elongated cylindrical closed end tube passing through and axially movable in the circular passage in said valve seat member with the closed end extending into the cavity in said housing and having at least one port in the cylindrical tube of said valve plug axially located to be within the circular passage through the closed end wall of said valve seat member when said valve is in the normally closed position and further having an adapter at the open outer end of said valve plug for removably joining to said syringe permitting said valve plug to be axially moved to bring the ports in said valve plug in communication with the cavity in said housing permitting said syringe to withdraw blood through said valve and catheter tube from said test subject.

3,310,049
ULTRASONIC CARDIAC VOLUME MEASUREMENTS

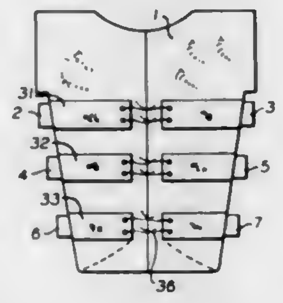
Manfred E. Clynes, Palisades, N.Y., assignor to Air-Shields, Inc., Hatboro, Pa., a corporation of Delaware
Filed Sept. 17, 1963, Ser. No. 309,443
6 Claims. (Cl. 128—2.05)



1. The method of measuring the instantaneous volume of an organic chamber, comprising the steps of irradiating the chamber with periodic pulses of ultrasonic energy in multiple directions angularly displaced from each other to cause said pulses to strike the walls of said chamber at various points thereon, detecting during the interval between successive pulses ultrasonic energy reflected from the walls of said chamber, and integrating said detected energy to produce a value which is a function of the instantaneous volume of said chamber.

3,310,050
MASSAGING GARMENT WITH VIBRATORS LOCATED IN BACK AND CHEST SECTIONS

Herman Goldfarb, 1616 160th St., Whitestone, N.Y. 11357
Filed Apr. 2, 1964, Ser. No. 356,832
9 Claims. (Cl. 128—41)



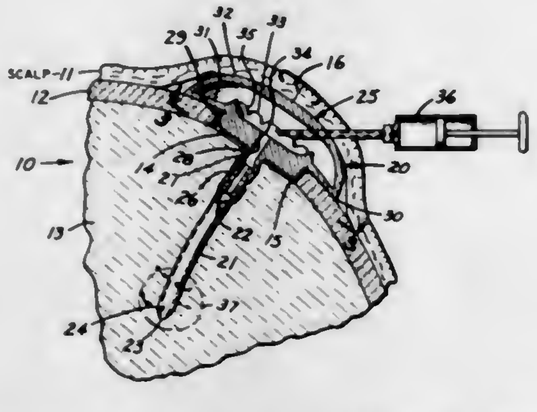
1. A therapeutic garment for applying predetermined mechanical pulsations to the pulmonary lobes of the body to dislodge accumulations of mucus in the respiratory system,

said garment being dimensioned to overlie the chest and back of a body,

said garment carrying a plurality of means for impacting the body, means for securing said impacting means to said garment at locations adapted to directly and selectively overlie the chest and back, said impacting means adapted to impact the body at predetermined successive areas by applying pulsating forces thereto directed substantially perpendicular to the underlying skin with said forces having sufficient strength to dislodge accumulations of mucus in the underlying respiratory system.

3,310,051
SURGICAL RESERVOIR FOR IMPLANTATION BENEATH THE SKIN

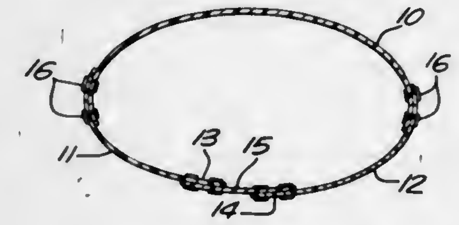
Rudolf R. Schulte, 3328 Calle Fresno, Santa Barbara, Calif. 93105
Filed Dec. 10, 1963, Ser. No. 329,443
2 Claims. (Cl. 128—216)



1. A reservoir element for implantation in a human being comprising: a tube having a central passage and adapted to be inserted into the body so that its passage communicates with a selected region to be treated; and a capsule of a size to be placed beneath the skin so as to rest between the skin and the bony structure of the body, said capsule comprising an envelope having an inner cavity bounded by a first and a second wall, the first wall being adapted to lay on surface to surface contact with said bony structure, the second wall being domed and springily flexible so as to be deformable and movable toward the first wall so as to reduce the volume of the cavity as the result of external force thereon, and to return to its dome shape of its own accord when the force is removed, there being a passage through said first wall connected to the passage in the tube, and a crown formed inside the cavity around the entrance of the passage thereinto, said crown having notches thereon, whereby the walls are prevented from adhering to each other and also from shutting off flow through the passage when the capsule is compressed, the second wall being made of material which permits puncture by a needle and is self-sealing after the needle is withdrawn.

3,310,052
APPARATUS FOR FIGURE REDUCING

William M. Ward, Jr., Santa Maria, Calif.
(14331 Amar Road, La Puente, Calif. 91744)
Filed July 15, 1963, Ser. No. 295,172
1 Claim. (Cl. 128—293)

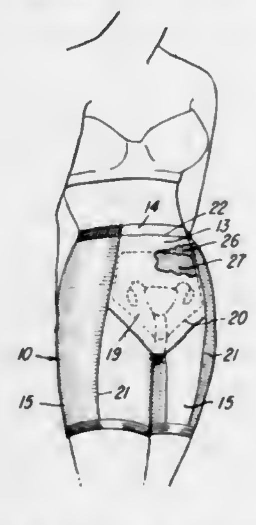


A figure-reducing torso jacket for the human body comprising:

a front panel, a left rear panel, a right rear panel, and a rear connecting panel, each being substantially rectangular and consisting of a sheet of air and moisture impervious stretchable rubber material; and two vertical rows of snap fastener elements on each vertical side edge of each of said panels; the relative widths of said panels being such that in the assembled position of the jacket the rows of fasteners on said front panel are vertically aligned at the sides of the wearer's body, while the fasteners at the sides of said connecting panel are adjacent respective sides of the wearer's spinal column.

3,310,053
RADIATION PROTECTIVE GIRDLE

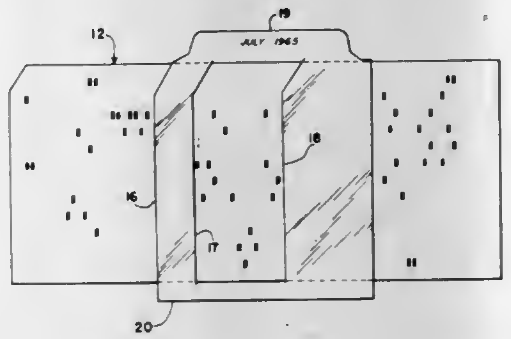
Norma C. Greenwood, 3933 Talcott Ave., Winston-Salem, N.C. 27106
Filed Mar. 25, 1964, Ser. No. 354,660
3 Claims. (Cl. 128—577)



2. A girdle having X-ray protection means comprising a front panel, a rear panel, and elastic side panels, said panels being seamed together to form a panty having a crotch portion and depending leg portions the front panel disposed between the elastic side panels and extending over the abdominal and gonadal regions when in position on the wearer, said front panel having at least two layers of superposed fabric forming a shield-receiving pocket therebetween, said pocket extending from the waist band to the crotch portion, the lower portion of said pocket defined by upwardly diverging seams, a flexible sheet opaque to gamma radiation and having an area to cover at least the gonadal region positioned in said compartment between said fabric layers.

3,310,054
FILE CARD MARKER

Betty Lee S. Phillips, Gloucester Point, Va., assignor to the United States of America as represented by the National Aeronautics and Space Administration
Filed July 20, 1965, Ser. No. 473,537
2 Claims. (Cl. 129—16.7)



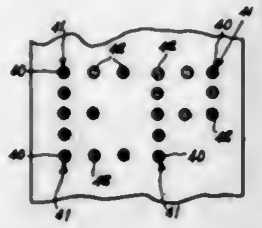
1. A business machine file card marker comprising: a generally rectangular marker; said marker constructed of a single, unfolded piece of material having uniform thickness throughout having a dimension which is greater than the width of a business card received thereby and a length that is a fraction of the length of the business machine card; said marker having a first slit starting above the marker bottom and terminating below the marker top the major portion of which is perpendicular to the bottom of the marker; a similar second slit spaced from said first slit and being parallel thereto; said slits being of sufficient dimension to receive a business card without damaging the edges yet capable of holding a business card snugly; said slits having a portion thereof near at least one of the ends of the slits skewed to facilitate insertion of a business card; said slits being spaced inward from the edges of the marker so that edge portions of the marker are located in front of an inserted business card and the center portion in back of an inserted business card or vice versa depending on how the card is inserted; said marker being placeable at any position along the length of a business machine card permitting the edge portions of adjacent staggered markers to overlap and occupy the same area; and tab means formed integral with the marker adapted to project above an inserted business machine card for identification.

3,310,055
CIGARETTE-TYPE SMOKING MEDIA

James B. Boyer, 140 Cabrini Blvd., New York, N.Y. 10033
Filed Nov. 6, 1962, Ser. No. 235,731
3 Claims. (Cl. 131—9)

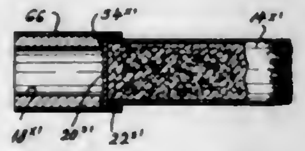
1. A cigarette comprising a wrapper of combustible material and a quantity of tobacco inside said wrapper, said wrapper having therein a plurality of relatively small discrete apertures located within an area of the outer surface of the wrapper which is spaced from the mouth end of the cigarette, and means for reinforcing said wrap-

per at said surface, said last-mentioned means comprising a plurality of discrete deposits of printer's ink applied to said outer surface, each of said deposits surrounding the perimeter of a respective different one of said apertures.



3,310,056
PARTITION DISC FOR INHALE-PROOF CIGARETTES

Zoltan Rieder, 569 W. 192nd St., New York, N.Y. 10040
Filed Jan. 14, 1964, Ser. No. 337,549
1 Claim. (Cl. 131—10.5)



A conventionally shaped cigarette which has a wrapper and tobacco comprising a filter assembly including a paper tube of a thickness substantially greater than the wrapper and forming an extension of the cigarette, a cup-shaped filtering element interposed between the inner end of the tube and the inner end of the tobacco, said filtering element receiving the adjacent end of the cigarette, and a tubular paper sheath covering the tube coextensive with the end of the paper tube and extending over the wrapper to completely cover the cup-shaped element, the said filter element being secured to the cigarette by an adhesive on the wrapper and the paper tube, and said cup-shaped filtering element being made of paper of tissue weight corresponding to that of Fourdrinier sheets of the order of ten to eighteen pounds per ream of five hundred sheets.

3,310,057
STABILIZED RECONSTITUTED TOBACCO FOIL

Albert B. Savage, Midland, and Julius C. Aldrich, Mount Pleasant, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 30, 1964, Ser. No. 363,974
12 Claims. (Cl. 131—15)

1. In a process for the preparation of a reconstituted tobacco foil from finely divided tobacco and a cellulosic binder wherein the tobacco and cellulosic binder are intermixed in the presence of water, the improvement whereby the tobacco has enhanced color stability during manufacture of the reconstituted tobacco foil which comprises:

- (A) Treating 100 parts of finely divided tobacco with from about 2 to 30 parts of a liquid polyoxyalkylene polyol wherein the oxyalkylene groups are oxypropylene and/or oxybutylene groups and characterized by:
  - (1) a water solubility of less than about 2 weight percent at 25° C.,
  - (2) a viscosity of 100 to 1,200 centistokes at 25° C., and
  - (3) an average molecular weight of from about 500 to 5,000; and
- (B) Intermixing therewith the cellulosic binder and forming a reconstituted tobacco foil.

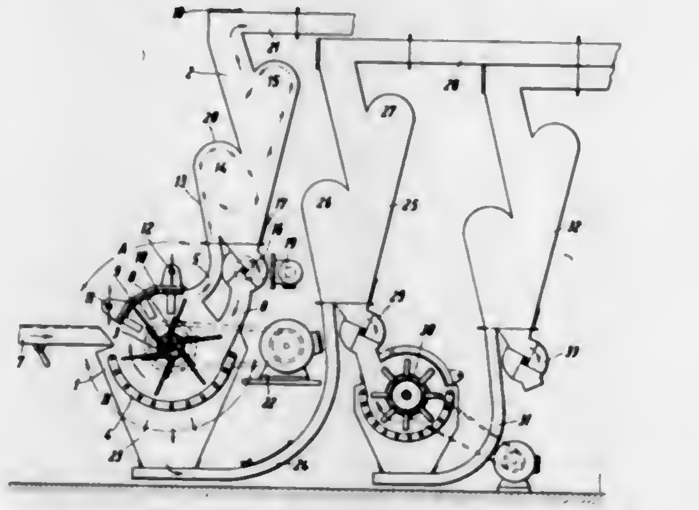
3,310,058
PROCESS FOR THE MANUFACTURE OF RECONSTITUTED TOBACCO FOIL

Albert B. Savage, Midland, and Julius C. Aldrich, Mount Pleasant, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 20, 1964, Ser. No. 361,221
10 Claims. (Cl. 131—17)

8. A reconstituted tobacco foil comprising finely divided tobacco and a minor proportion of alkali-soluble methyl cellulose characterized by a degree of substitution of from about 0.2 to 0.7 and a viscosity of from about 15 to 100 cps. as a 2 percent solution in dilute caustic at 20° C.

3,310,059
APPARATUS FOR REMOVING THE RIBS FROM TOBACCO LEAVES OR THE LIKE MATERIAL AND CLASSIFYING SAME

Josef Grinzinger, Lahr, Black Forest, Germany, assignor to Maschinenfabrik und Eisengiesserei A. Heinen G.m.b.H., Varel, Oldenburg, Germany
Filed Sept. 28, 1964, Ser. No. 399,738
Claims priority, application Germany, Sept. 30, 1963, B 73,698
10 Claims. (Cl. 131—146)



1. An apparatus for removing ribs from tobacco leaves and classifying by air separation the leaf parts separated from ribs and stems, comprising a rib-removing machine including an impeller fitted with beating teeth and a beater basket cooperating with said impeller, said rib-removing machine having a separating section and a beating section following said separating section and formed by said beater basket, a first air separator connected to said rib-removing machine between said separating section and said beating section and receiving the deribbed leaf parts stripped-off in the separating section of the rib-removing machine, and a second air separator connected to the beating section of the rib-removing machine, the oversized leaf parts remaining over after separation being reintroduced at least from said first air separator in the region between the separating section and the beating section into the rib-removing machine.

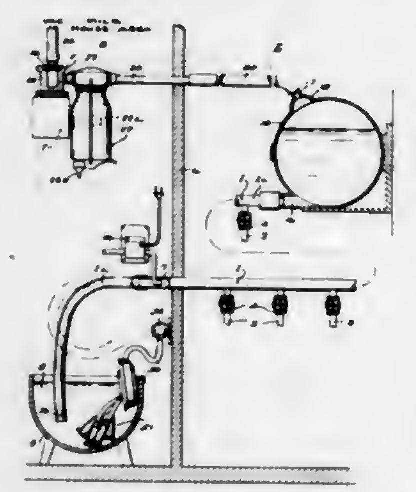
3,310,060
CELLULOSIC FILTER FOR TOBACCO SMOKE

James C. Rickards, Brevard, and William F. Owens, Jr., Pisgah Forest, N.C., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Aug. 31, 1964, Ser. No. 393,815
5 Claims. (Cl. 131—267)

5. A filter for tobacco smoke comprising a carrier element of cellulose consolidated in rod form, said carrier element having uniformly incorporated therein about 5% to 25% by weight of a normally liquid polyethoxylated monohydric derivative of a hydrocarbon, containing about five to fifteen moles of ethylene oxide per mole of said derivative, said derivative being selected from the group consisting of alkylphenols and saturated alcohols and containing 10 to 20 carbon atoms.

3,310,061
MILK LINE EQUIPMENT

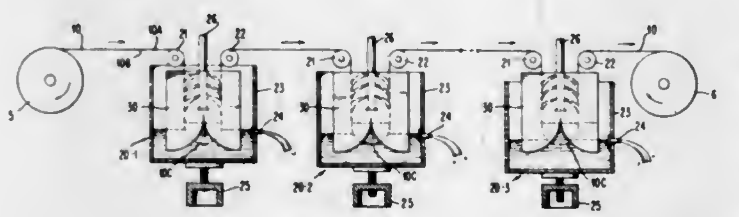
Lloyd F. Bender, Hayward, Wis. 54843
Filed Mar. 26, 1965, Ser. No. 443,055
2 Claims. (Cl. 134—58)



1. A milk line cleansing system for a barn area and a separate milk house area, said system comprising, a cleaning solution tank in said milk house area, a solenoid operated valve means located in said milk house area and connected to a source of vacuum, an electric motor driven timer for actuating said solenoid operated valve means, a sealed fluid accumulator located in said barn area and having a lower fluid opening and an upper vacuum and air opening, a milk line extending through said barn area and terminating at one end in fluid communication with the lower opening of said accumulator and the other end adapted to terminate in said solution tank in said milk house area, said other end of said milk line constituting a long flexible conduit which can be moved from said solution tank to other tanks, said valve means including a shiftable valve element, flexible conduit means connected directly to and shiftable with said valve element for connecting it to said source of vacuum, another conduit placing said upper opening of said accumulator in communication with said valve means, said valve means including a vent to atmosphere and being shiftable between a position in which said accumulator is in communication with said vacuum source and a second position in which said accumulator is in communication via said conduit means with atmospheric air in said milk house area.

3,310,062
WEB TENSIONING DEVICE

John B. Little, Chappaqua, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 27, 1965, Ser. No. 459,269
13 Claims. (Cl. 134—64)



1. A web tensioning apparatus comprising:

(a) means for guiding the web to form a freely hanging pendulous loop therein;

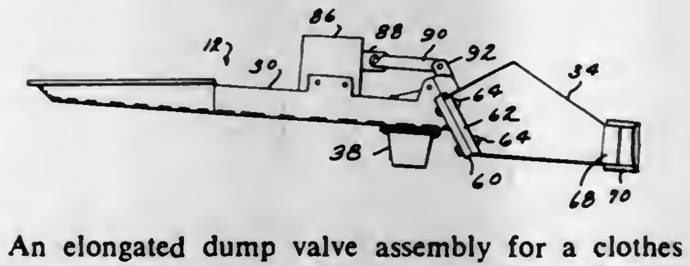
(b) a pair of walled members straddling the edges of the web, coextensive with the loop therein, and spaced apart a distance equal to the width of the web to form, together with the web, a liquid-retaining chamber;

(c) and means for inducing a continuous flow of liquid into the chamber formed by said walled members and said loops;

whereby a volume of liquid will be entrapped in said chamber to tension the web, and the loop will automatically sag under the weight of the entrapped liquid to a position beneath the said walled members wherein the openings thus produced will provide an efflux of liquid from said chamber equal to the flow of liquid induced thereinto.

3,310,063
WASHING MACHINE DUMP VALVE

Rivers Edwin Edwards, 4103 14th Ave. W., Bradenton, Fla. 33505
Filed June 5, 1964, Ser. No. 372,828
7 Claims. (Cl. 137—216)



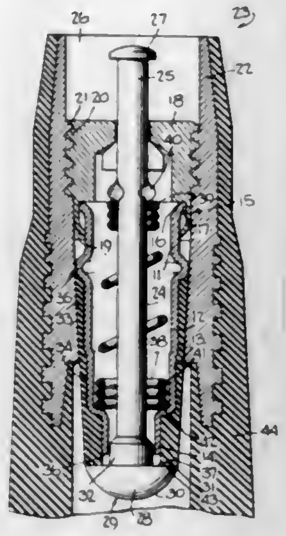
6. An elongated dump valve assembly for a clothes washing machine, said assembly being inclined when in use and comprising: a generally straight conduit-like portion having an upper inlet opening at one end, said inlet opening defining the inlet end of said assembly; means defining an outlet portion of said assembly, said means including a tubular end adapted to be connected with the end of a hose or the like and an enclosed section of larger transverse dimensions than said tubular end and said conduit-like portion, said section connecting said tubular end with the downstream portion of said conduit-like portion and having a relatively large vent therein at a location substantially above the junction with said conduit-like portion; movable closure means carried by said assembly at said junction; control means for moving said member between open and closed positions to thereby control the flow of waste water out of the washing machine; and means for removing solid objects from waste water passing through said conduit-like portion so as to prevent clogging of said tubular end, said means comprising a trap depending from said valve assembly at a location upstream of said tubular end.

3,310,064
VALVE CORE

Frank J. Voos, Stratford, Conn., assignor to National Distillers and Chemical Corporation, Richmond, Va., a corporation of Virginia
Filed Jan. 22, 1964, Ser. No. 339,518
4 Claims. (Cl. 137—234.5)

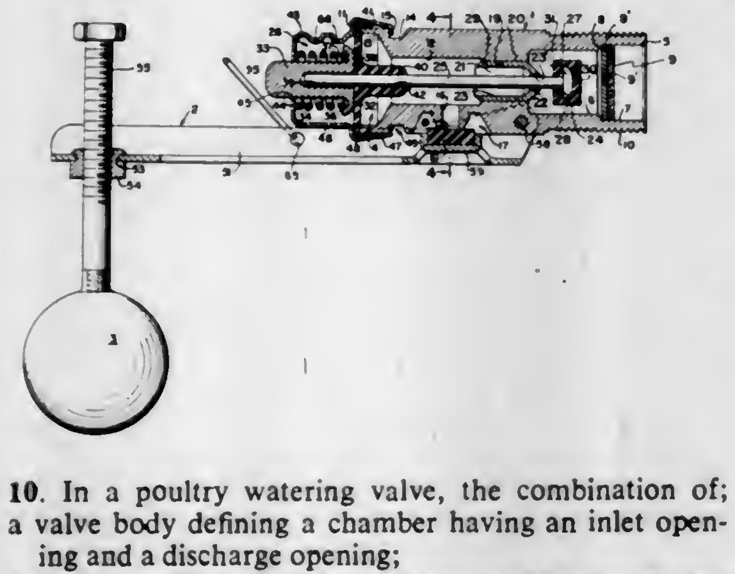
1. A pneumatic tire valve core comprising a tubular barrel having an axially extending annular lip portion at one end thereof and a screw plug member at the other end thereof adapted to mate with the internal threads of a tire valve stem, an elastomeric sleeve disposed on said barrel and having an axial portion thereof adapted to seal said core within the tire valve stem and an end portion thereof extending beyond the end of said lip portion and spaced radially inwardly from the wall of said stem, a spring biased valve pin disposed axially in said barrel having an enlarged sealing head disposed externally of the lip end thereof with a substantially flat

annular sealing face thereon movable against the bottom edge of said end portion in resilient sealing relationship, said end portion of said sleeve and said sleeve remains spaced from the wall of said stem laterally yieldable under pneumatic pressure to a point at which said sealing face engages the end of said lip portion.



3,310,065
COMPACT POULTRY WATERING DEVICE

James B. Godshalk, Chester Spring, Pa., assignor to Fox Products Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 21, 1964, Ser. No. 361,398
10 Claims. (Cl. 137—390)

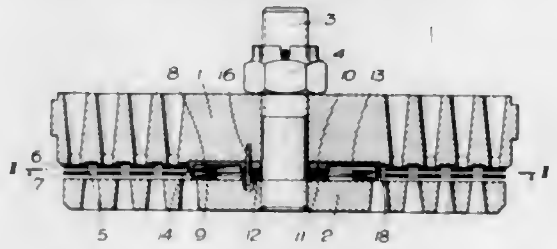


10. In a poultry watering valve, the combination of;
a valve body defining a chamber having an inlet opening and a discharge opening;
a first moveable valve element arranged for movement between a first position in which it opens said inlet opening and a second position in which it closes said inlet opening;
a second moveable valve element operatively disposed with respect to said discharge opening;
actuating means responsive to the fluid pressure in said chamber to actuate said first moveable valve element to said second position whenever the pressure in said chamber equals a predetermined value and maintain the same in said first position whenever said pressure is less than said predetermined value;
said actuating means comprising
- a diaphragm responsive to the pressure in said chamber,
- an operating rod extending through said diaphragm adjacent the center of said diaphragm, and
- an elongated annular projection on said diaphragm having an interior surface in elastic gripping engagement with said operating rod and an exterior surface;

said exterior surface of said projection being exposed to the pressure in said chamber to enable said pressure to compress the interior surface of said projection into tight sealing engagement with said rod,
whereby leakage from said chamber between said diaphragm and said rod is prevented at the various pressures in said chamber.

3,310,066
PLATE VALVE

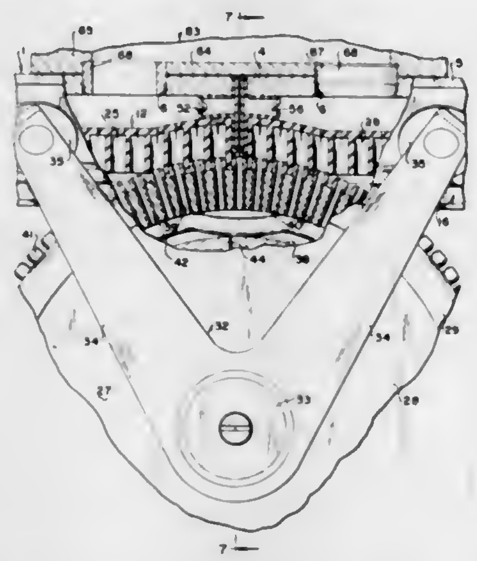
Theodor Karl Kebler, Vienna, Austria, assignor to Hoerbiger Ventilwerke Aktiengesellschaft, Vienna, Austria
Filed Nov. 29, 1963, Ser. No. 326,773
Claims priority, application Austria, Dec. 12, 1962, A 9,691/62
7 Claims. (Cl. 137—516.13)



1. A plate valve, comprising a valve seat, a valve guard arranged in spaced relation to the valve seat to provide a gap, and plate-shaped closing members comprising a valve plate and a spring plate located in said gap and provided with passage slots, at least one of said plates being freely guided by means of flexible guide arms located thereon, and deflecting means whereby the flow of the medium passing through the valve is deflected from the guide arms by the deflecting means formed by projections which protrude into the said gap in an axial direction of the valve so that the gap in the area between the guide arms and their associated plates is partitioned while leaving recesses for the passage of the guide arms.

3,310,067
FLUID CONDUCTOR AND TAKE-OFF APPARATUS

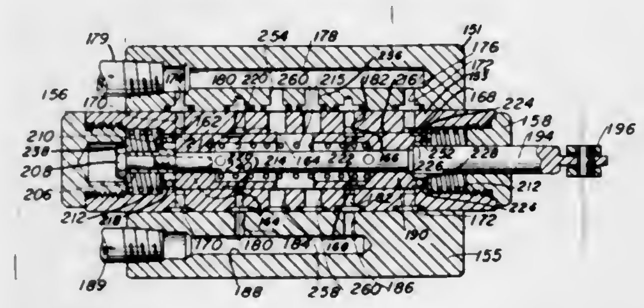
John L. Meyer, Robinson Township, Ottawa County, Mich., assignor to Gardner-Denver Company, a corporation of Delaware
Filed Apr. 16, 1964, Ser. No. 360,344
16 Claims. (Cl. 137—580)



11. A fluid conductor tappable at spaced points along its length comprising:
an elongated rigid housing generally defining three walls of the conductor chamber; an elongated resilient member joined along its edges to said housing and defining a deformable wall; said deformable wall having openings therein which are normally sealed, and which are opened to release pressure fluid from said chamber when said deformable wall is deflected into said chamber by a fluid take-off member;
end seals for said conductor each comprising a cuplike member formed of resilient deformable material, extending into the end of the conductor; the side walls of said cup member being relatively thin and the side walls being formed for a close fit with the inner surfaces of the chamber walls to provide lateral sealing against said walls when said seal is subject to conductor pressure; and
means for securing said end seals to said conductor housing; said end seals being deformed when said deformable wall is deflected into said chamber at the end thereof to maintain the seal between the end seal and the walls of the chamber.

3,310,068
FLOW REGULATOR VALVES AND HYDRAULIC SYSTEMS

John R. McGuire, Northfield, and Louis C. Harms, Evanston, Ill., assignors to Fluid Power Accessories, Inc., Glenview, Ill., a corporation of Illinois
Filed Oct. 5, 1964, Ser. No. 403,442
8 Claims. (Cl. 137—625.69)

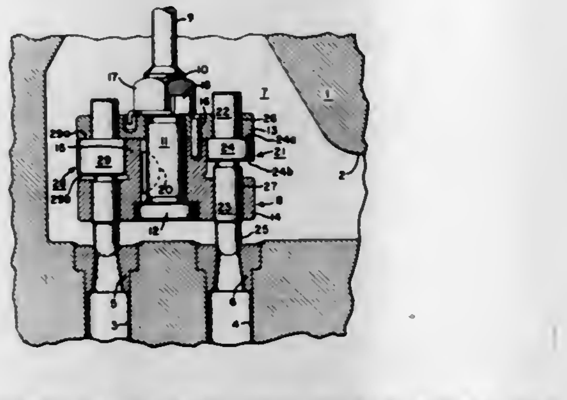


1. A self regulating hydraulic valve arrangement comprising fluid conduit means extending between an input opening and an output opening, a first valve element, means mounting said first valve element for movement to control the flow of fluid through said conduit means by varying its cross section at a given location therealong, a bypass conduit extending from said conduit means at a location between said given location and said output opening, a second valve element interposed along said bypass conduit to control fluid flow therethrough, a valve actuator arranged to control movements of said first valve element and resilient means interposed between said valve actuator and said second valve element, said resilient means and said second valve element being arranged such that movement of said valve actuator in a direction corresponding to increasing flow through said conduit means, correspondingly imposes an increased resilient bias urging said second valve element to a conduit closing position.

3,310,069
PLURAL SEQUENTIALLY OPENING AND CLOSING VALVE MECHANISM

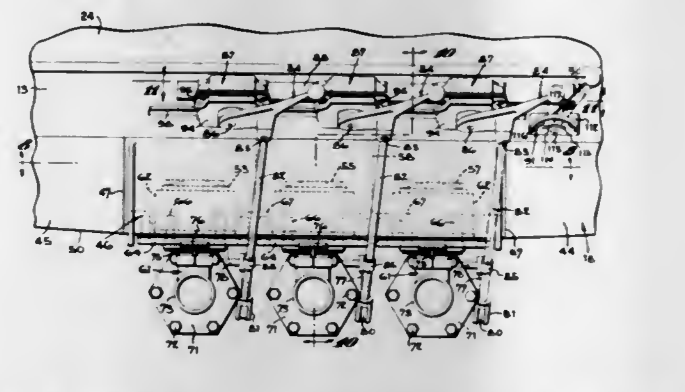
Herbert N. Hoffman, Lunenburg, Mass., assignor to General Electric Company, a corporation of New York
Filed June 8, 1964, Ser. No. 373,249
5 Claims. (Cl. 137—630.19)

1. A multiple valve mechanism comprising:
a housing defining a valve inlet chamber and defining a plurality of discharge outlets having valve seats disposed therein,
a lift beam comprising upper and lower vertically spaced plate members defining respectively a plurality of, upper and lower vertically aligned openings,
a plurality of valve members each having an upper stem portion disposed in one of said upper openings, a lower stem portion disposed in one of said lower openings, a seating portion arranged to cooperate with one of said valve seats, and an enlarged abutment portion separating said stem portions and disposed in the space between said plate members, the undersides of said abutment portions being of varying distances from the respective seating portions when all the seating portions are disposed in the valve seats so as to have their undersides sequentially contacted by the lower plate member as the lift beam is raised.



3,310,070
SELECTIVE VALVE ACTUATING MECHANISM FOR VESSELS

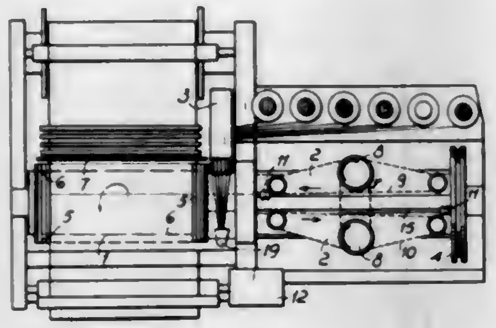
James J. Black, Cincinnati, Ohio, assignor, by mesne assignments, to Pullman Incorporated, a corporation of Delaware
Original application Apr. 21, 1961, Ser. No. 104,641, now Patent No. 3,187,766, dated June 8, 1965. Divided and this application Feb. 7, 1964, Ser. No. 349,521
12 Claims. (Cl. 137—637.1)



1. In a valving system for a vessel having a valve chamber including a plurality of normally closed discharge valves, a mechanism for opening said valves individually comprising, an actuating element connected to each of said valves and adapted to open the valves, respective control means for each of said valves including a rotary element for each actuating element and connected to each valve actuating element, a valve operating lever coupled to each of said rotary elements, whereby upon swinging motion of the lever in valve opening direction, the valve is shifted to an open position, and shiftable selector means interconnected with said rotary elements and normally locking said operating levers in valve closing position, said selector means comprising reciprocable means having a plurality of spaced apart locking lug portions, one locking lug portion having locking engagement with each respective rotary element, said selector means adapted to move one of said lug portions out of registry with a complemental rotary element to release one of said rotary elements upon being shifted to a selected release position, thereby adapting the selected lever and valve to be shifted to an open position.

3,310,071
RECTILINEAR LOOM OF THE "PICK-PICK" TYPE

Salvatore Mauri, Via Vittorio Veneto 80,
Albese, Como, Italy
Filed June 9, 1964, Ser. No. 373,744
2 Claims. (Cl. 139—122)

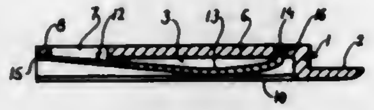


1. A rectilinear loom of the "pick-pick" type comprising, in combination, a continuously unidirectionally rotating picking comb composed of a plurality of coaxial circular disks axially separated by coaxial annular spacers; a reduction comb; the number of disks corresponding to the width of the warp in the reduction comb; heddles reciprocating the warp yarns to provide sheds; said picking comb being formed with a plurality of grooves in its periphery each extending rectilinearly parallel to the axis of said picking comb, said grooves being spaced equiangularly of the circumferential periphery of said picking comb; a plurality of weft bearer needles equal in number to said grooves and insertable independently into, and completely retractable independently from, said grooves; a needle insertion control adjacent one axial end of said picking comb and supporting said needles to extend in alignment with said grooves in the retracted positions of said needles; dobby-controlled weft feeding means positioned between said one axial end of said picking comb and the inner ends of said needles and operable to selectively position any one of a plurality of weft yarns in advance of the inner end of a needle, in accordance with the dobby pattern, for direct engagement with the inner end of the needle; said weft feeding means feeding the weft yarns transversely of the axis of the picking comb from one side thereof; suction means at the other side of the picking comb holding the free ends of the weft yarns for extension of the weft yarns transversely of the picking comb and, except for the selectively positioned weft yarn, out of the path of needle reciprocation; chain feeding means included in said insertion control and operable, as said grooves successively reach a first angular position relative to said weft feeding means, to successively advance said needles into and through the grooves to successively engage the weft yarns and lay them through said grooves; said chain feeding means, as said grooves successively reach a second angular position beyond said first angular position, successively retracting said needles completely from said grooves.

3,310,072
GRIPPER FOR GRIPPER LOOMS

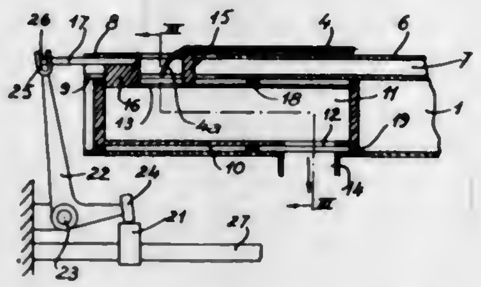
Václav Stróbl, Liberec, Czechoslovakia, assignor to Elitex, Liberec, Czechoslovakia
Filed Mar. 2, 1965, Ser. No. 436,519
Claims priority, application Czechoslovakia, Mar. 5, 1964, 1,258/64
13 Claims. (Cl. 139—125)

1. A gripper for gripper looms, comprising an elongated hollow housing defining a longitudinally extending internal chamber open at one end thereof, said housing having a first wall and a second wall, respectively disposed at the opposite sides of said chamber; and a leaf spring removably accommodated in said chamber, said spring having a first and a second end portion, said first end portion engaging said first wall at a first point distant from the open end of said chamber and said second end portion engaging said first wall at a second point adjacent to the open end of said chamber, and a median portion engaging only said second wall so that said leaf spring is retained in said chamber and stressed by engagement with said walls and forms with said first wall a clamping means.



3,310,073
WEFT THREAD RETAINING AND CUTTING DEVICE FOR SHUTTLELESS LOOMS

Marcel Claeys, Lyon, France, assignor to Office Prive des Inventions Modernes O.F.P.R.I.M., Villeurbanne, Rhone, France, a French limited-liability company
Filed Mar. 2, 1965, Ser. No. 436,477
Claims priority, application France, Oct. 13, 1964, 45,209, Patent 1,419,036
5 Claims. (Cl. 139—194)

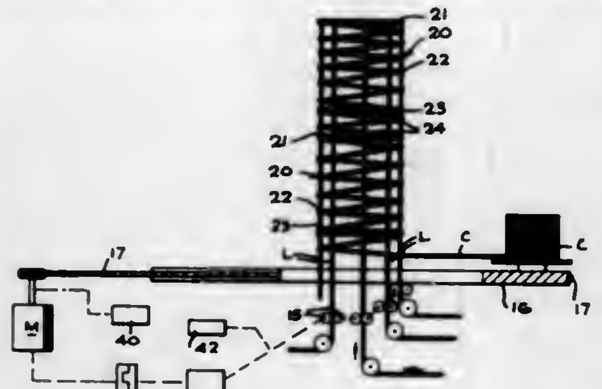


1. In a shuttleless weaving loom having a dummy shuttle and a lay provided with a horizontal main tube, a weft retaining and cutting device at each end of the said lay main tube, comprising the combination of a cylindrical sleeve gas-tightly and slidably mounted within said lay main tube; a thrust member rigidly secured to the upper portion of said cylindrical sleeve; a sliding plate movable in a reciprocating movement along the upper side of said lay main tube and having a cutting front edge adapted to strike the said thrust member during each stroke of the said reciprocating movement; the side walls of said cylindrical sleeve and lay main tube between said thrust member and said sliding plate cutting edge having registering openings therein adapted to suctionally retain the end of the weft thread therein, said openings being closed by the said sliding plate when the said cutting edge of the latter strikes said thrust member to sever the end of the weft thread; and suction means connected to the interior of said cylindrical sleeve while permitting the sleeve to be moved axially of the main tube to adjust for varying widths of fabrics.

3,310,074
MEANS FOR CONTROLLING MANUFACTURE OF WIRE CAGES

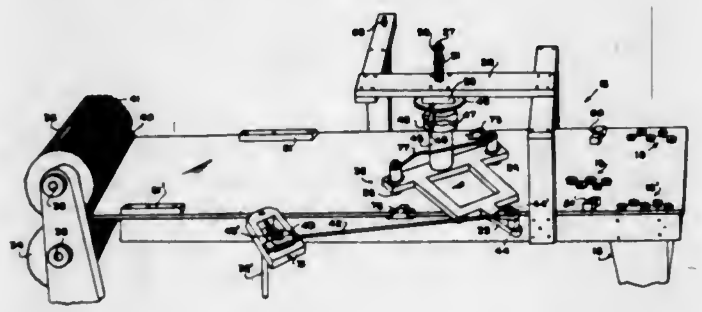
George E. Huck, Fullerton, and Bruce C. Irwin, La Mirada, Calif., assignors to American Pipe and Construction Co., Monterey Park, Calif., a corporation of California
Filed Dec. 9, 1963, Ser. No. 329,106
10 Claims. (Cl. 140—112)

1. In means for controlling apparatus for making wire cages wherein the apparatus includes wire drive means for advancing a group of longitudinal wires in parallel relation and in a given pattern, wire wrap means for causing a circumferential wire to be wrapped around said longitudinal wires as the same are advanced, and welding means for joining the intersections of the circumferential wire with the longitudinal wires, a first sensing means for incrementally sensing the travel distance of said wire wrap means, a second sensing means for incrementally sensing the travel distance of said wire drive means, presettable adjustable means operable in response to said first and second sensing means to interrupt automatically the operation of the wire drive means in a predetermined sequence and for predetermined times in relation to the travel of said wire wrap means.



3,310,075
AUTOMATIC MACHINES FOR FORMING AN INTERMEDIATE ZIG-ZAG WIRE AND WELDING IT TO OUTER PARALLEL WIRES

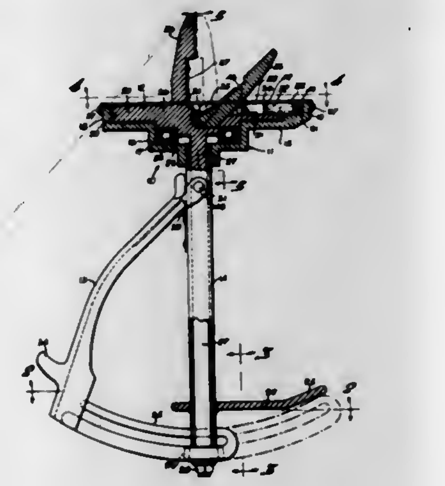
Sam Larkin, 254 Beach 140th St.,
Belle Harbor, N.Y. 10030
Filed Nov. 23, 1964, Ser. No. 413,096
11 Claims. (Cl. 140—112)



1. In a machine for bending a middle wire into zig-zag formation between two spaced straight parallel wires, both coplanar with the middle wire and in contact with alternate bends made in said middle wire respectively and then welding the contacting regions of said wires to effect a unitary structure, a frame, means on the frame for supporting two wires coming to one end of the machine from off sources of supply so that said wires shall lie along straight parallel lines spaced apart a predetermined distance, means on the frame for supporting a bendable wire coming to said one end of the machine between said two wires, from a source of supply, a first mechanism on the frame, adapted when actuated, to move said three wires towards the other end of the machine; said three wires when on the machine, lying on a common plane, a member intermediate the ends of the machine, positioned spaced from and parallel to said plane and having two spaced, electrically connected bending rollers thereon between said parallel lines; said bending rollers extending from one face of said member, in one position of said member, substantially to said plane, and adapted when in said one position to intercept said middle wire when the latter is on the machine, means to oscillate said member; the distance between said bending rollers, measured between remote points thereof, being greater than the distance between said parallel lines, means on the other face of said member, supporting said member midway between said bending rollers for oscillation between said parallel lines, a second mechanism adapted when actuated, to move said member along its axis of oscillation to a second position away from said plane so said bending rollers clear said middle wire when the latter is on the machine and back again to said first position, a means to actuate said mechanisms in a predetermined timed relation and an electrical induction welding apparatus comprising a transformer having primary and secondary windings and two electrodes fixed on the frame, insulated therefrom and from each other and connected respectively to the terminals of said secondary winding; said electrodes being positioned so that when said parallel wires are on the machine, they will be between said electrodes and each of said parallel wires will contact one of said electrodes respectively and each of said bending rollers being adjacent one of said electrodes when said oscillatable member is moved in one direction to the end of its travel in said direction whereat when said wires are on the machine, each of said rollers will press the middle wire and one of said parallel wires against one of said electrodes respectively; said electrodes and bending rollers having comparatively high electrical conductivity.

3,310,076
WIRE TYING TOOL

Wsewolod B. Lawrow, 8 Elm St., Clifton, N.J. 07013
Filed Mar. 2, 1965, Ser. No. 436,500
9 Claims. (Cl. 140—119)



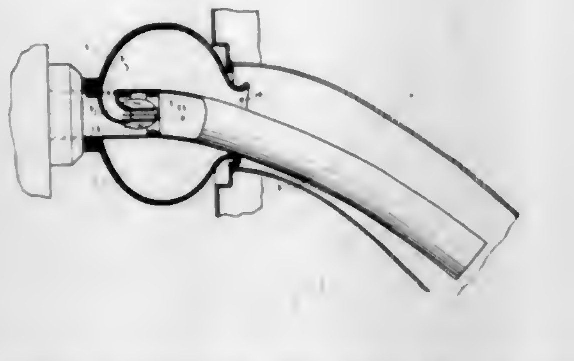
1. A wire tying tool comprising, in combination, an elongated fixed handle member, a housing secured to one end of said handle member, a head member rotatably disposed in said housing, said head member having a fixed jaw member extending outwardly thereof, a movable jaw member journalled at one end with respect to said head member for swinging movement in and out of clamping position with respect to said fixed jaw member, manually actuated mechanism for rotating said head member with respect to said housing and handle member, and means controlled by the rotation of said head member for swinging said movable jaw member into and out of clamping engagement with respect to said fixed jaw member.

3,310,077
FILLING DEVICE WITH VAPOR RECOVERY MEANS

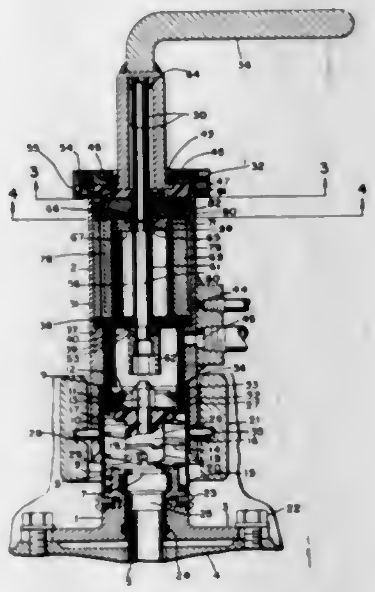
John L. Mero, Newport News, Va.
(2172 Blackmore Court, San Diego, Calif. 92109)
Filed Apr. 17, 1964, Ser. No. 360,669
7 Claims. (Cl. 141—286)

1. A filling device for filling tanks with vaporizable liquid, comprising
a filling spout,
a cap adapted to span the filling opening of such tank and seal the same when applied to said opening,

said cap fitting tightly about said filling spout and having an opening through which said spout freely emerges,
and means co-operating with said cap for recovering liquid and vapor emerging from such tank during filling thereof.

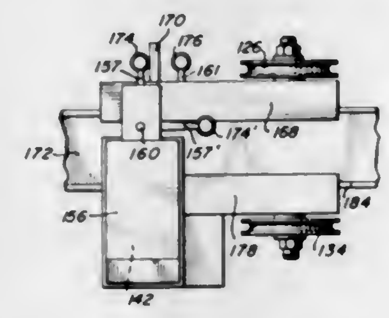


3,310,078
SEMI-AUTOMATIC FILLING DEVICE
Paul C. Barrett, Kent, and George W. Stambaugh, Akron, Ohio, assignors to The General Tire & Rubber Company, a corporation of Ohio
Filed May 5, 1964, Ser. No. 365,079
6 Claims. (Cl. 141—348)



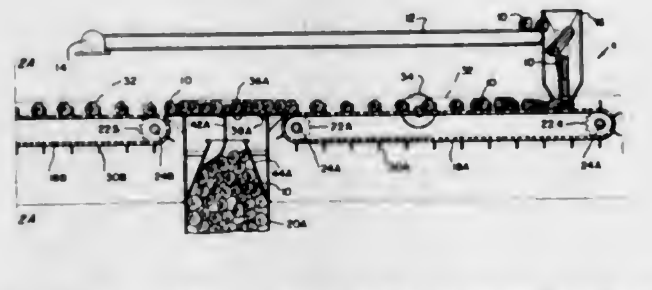
1. A filling device for use with a valve containing a cam-operated compressible elastomeric sealing element comprising:
(A) a housing adapted to telescopically engage said valve in an airtight relationship;
(B) an air passage from an external source of air under pressure through said housing to said valve;
(C) a shaft rotatably and slidably mounted within said housing and having a socket on one end to operate said cam;
(D) a handle adapted to slidably receive said shaft and to impart rotational motion thereto; and
(E) means operable in response to the rotation of the handle to slidably move said socket into and out of engagement with said cam, said means comprising
  (1) a cylinder within a housing,
  (2) a piston secured to the shaft and adapted for oscillatory movement within the cylinder, and
  (3) An assembly whereby air pressure from an external source is transmitted to the cylinder to operate the piston.

3,310,079
LUMBER PROCESSING SYSTEM
Milton H. Mater, Corvallis, Oreg., assignor to Appleton Machine Company, a corporation of Wisconsin
Filed June 23, 1965, Ser. No. 466,244
7 Claims. (Cl. 143—37)



7. A lumber processing system which comprises: a plurality of relatively laterally shiftable saws; an outfeed conveying apparatus positioned adjacent said saws in board-receiving relationship therewith, said apparatus comprising at least one outfeed belt; means for supporting said belt; said supporting means including a track upon which said belt can slide laterally; means for driving said belt; means for automatically laterally shifting said belt to position the same intermediate the cutting planes of two of said saws, said laterally shifting means being responsive to relative lateral shifting of said two saws; a control switch comprising a switch body with a pivotable member extending therefrom, said member being adapted to actuate said lateral shifting means when in a first position and to deactuate said lateral shifting means when in a second position, first means for transmitting pivotal movement to said member to position the same in its first position, said first transmission means being operable in response to lateral shift of said edger saw; second means for transmitting pivotal movement to said member in a direction opposite the abovementioned pivotal movement to position the same in its second position, said second transmission means being operable in response to lateral shift of said outfeed belt.

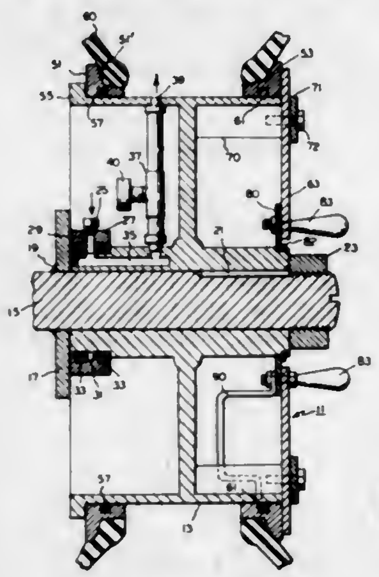
3,310,080
CENTRILOADER
Henri A. Delcellier, Beaurepaire, Quebec, Canada, assignor to Canadian Ingersoll-Rand Co., Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed July 6, 1964, Ser. No. 380,290
15 Claims. (Cl. 143—49)



1. An apparatus for automatically loading cut logs into a magazine, said apparatus comprising:
conveyor means for transporting cut logs to said magazine;

drive means for operating said conveyor means;
gate means intermediate said conveyor means and said magazine and movable between a position wherein cut logs are permitted to pass from said conveyor means into said magazine and a position wherein cut logs are prevented from passing from said conveyor means into said magazine;
means for detecting when said magazine is filled with cut logs;
control means connected to said gate means and said detecting means to be responsive to said detecting means to position said gate means in said position wherein cut logs are prevented from passing from said conveyor means into said magazine when said magazine is filled with logs; and
means for aligning cut logs passing from said conveyor means into said magazine after the cut logs have passed from said conveyor means.

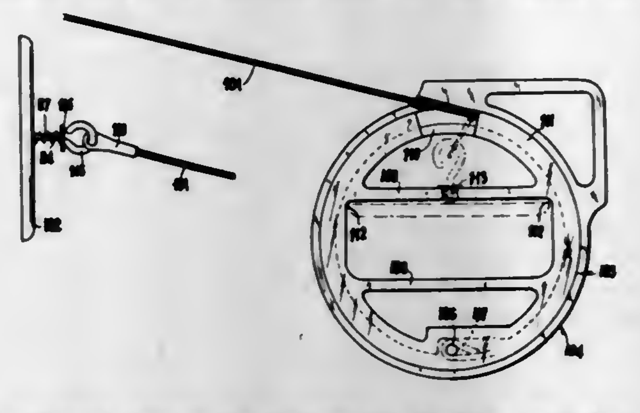
3,310,081
MOUNTING MANDREL FOR BUFFING MACHINES AND THE LIKE
William S. Cahill, Sr., 205 Robertson Ave., Danville, Va. 24541
Filed May 25, 1966, Ser. No. 552,929
8 Claims. (Cl. 144—288)



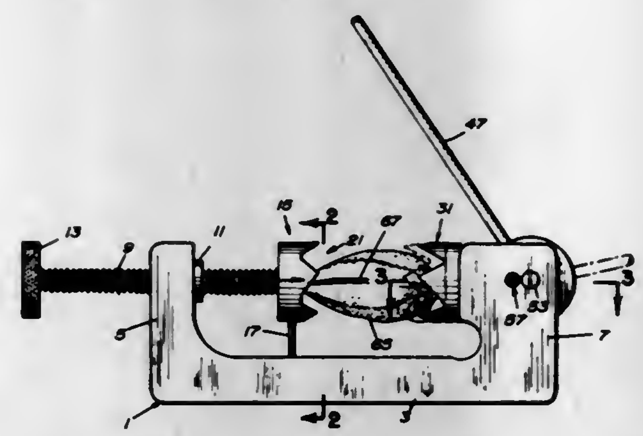
1. For use with a buffing machine and the like having a spindle drive mechanism, a tire mounting mandrel comprising, in combination a drum; means securing the drum to the spindle drive mechanism in driving relation thereto; said drum having an air passage opening at a fixed location in its periphery; a pair of tire receiving flanges removably carried by the drum periphery; thrust plate guiding means carried by the drum at spaced locations along at least one peripheral edge thereof; slide rails; means rotatable relative to the drum for carrying the slide rails and moving said rails relative to the guiding means outwardly and inwardly of the drum periphery; and means for locking the slide rails against movement.

3,310,082
HAND TOOL
Raymond de la Tramerye, Paris, France, assignor to Sociéte Anonyme Tubest, Paris, France, a company of France
Filed July 31, 1964, Ser. No. 386,703
Claims priority, application France, Aug. 2, 1963, 943,540; Mar. 25, 1964, 968,817
7 Claims. (Cl. 145—31)

1. A pocket saw comprising a flexible tool having opposite extremities and asperities on the periphery thereof, first gripping means attached to one of said extremities, second gripping means attached to the other of said extremities, at least said first gripping means including a drum structure permitting the winding up of substantially the entire length of the tool thereon, and means on said first gripping means for releasably locking said first and second gripping means together when said tool is wound up on said drum.



3,310,083
NUTCRACKER
Lloyd E. Jennings, 525 Timber Lane, Falls Church, Va. 22046
Filed July 29, 1964, Ser. No. 386,018
1 Claim. (Cl. 146—16)

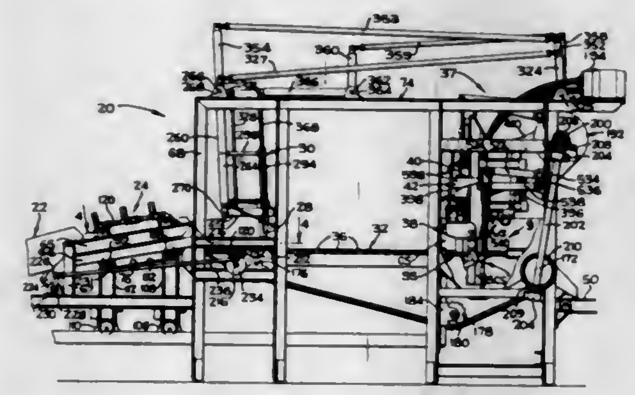


A nutcracker comprising a pair of oppositely disposed generally circular heads and each head comprising a body from which blades project, a supporting base and said heads being operatively mounted thereon in spaced opposing relation for movement toward and from each other, one of said heads being an adjusting head, means for moving said adjusting head toward and from the other head, and the other of said heads being a pressure-generating head, manual operating means for projecting said pressure-operating head with a limited movement toward and from said adjusting head, and said blades on each of said heads being circumferentially disposed thereon, the blades of one head facing the blades of the other head and each blade of one head being aligned with a blade on the other head, and all of the blades of each head extending angularly outwardly and forwardly from said bodies to the periphery of each head, and each blade is formed with a cutting edge and the included angle between the sides of each cutting edge is approximately 6° and each blade is provided with a bevel extending downwardly from each side of the cutting edge and the included angle between the bevel is approximately 70°.

3,310,084
APPLE CORING MACHINE
Gerald R. Anderson, Campbell, and Sherman H. Creed and John T. Parker, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,485
10 Claims. (Cl. 146—52)

1. A machine for processing apples or the like comprising means for orienting each apple with its stem-blossom axis disposed in a substantially vertical plane,

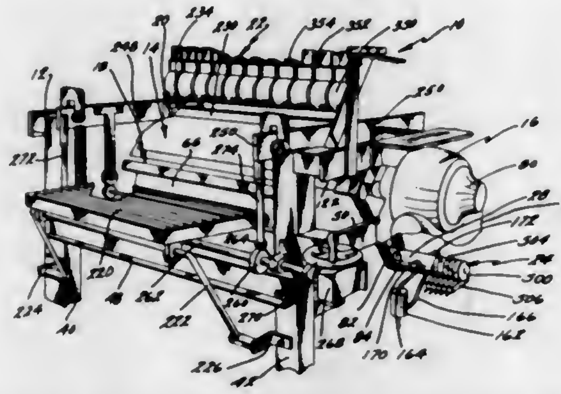
a processing conveyor disposed adjacent said orienting means, a plurality of evenly spaced pockets formed in said conveyor, each pocket having a flat bottom with a centrally disposed aperture therein, means for transferring each oriented apple from said orienting means to adjacent pockets in said processing conveyor for forming a line of equally spaced aligned apples on said conveyor, a horizontally oscillating carriage disposed above said conveyor and moving in the same direction and at the same speed as said conveyor for a portion of its travel, a vertically movable carrier on said oscillating carriage, a stemming tube secured to said carrier for cutting a cylindrical opening through a first apple to sever the stem material therefrom, a stem ejector rod disposed within said stemming tube for reciprocal movement relative thereto, said rod being arranged to engage the upper end cavity of said first apple to accurately center said cavity relative to said stemming tube, a centering pin supported by said carriage below said conveyor and movable through the opening in the first one of said pockets into engagement with the lower end cavity of said first apple for centering the lower end of said apple and for supporting the apple above said first pocket while said stemming tube is being moved through a major portion of said apple, coring means supported by said carriage and said carrier and including a continuously rotating seed cell cutter, said coring means being supported above a second apple having its stem material removed and a tubular stem cavity therein, said rotating seed cell cutter having a semi-cylindrical section and a curved leading end arranged to locate said cylindrical stem material cavity and recenter said apple, gauging means on said coring means operable in accordance with the height of the apple for positioning the seed cell cutter at the vertical midpoint of said stem cavity and for thereafter controlling movement of the seed cell cutter outwardly a distance sufficient to sever the seed cell from the second apple, and drive means for operating in timed relation said aligning means, said spacing means, said processing conveyor, said carriage, said carrier, said stem ejector rod, said centering means and said coring means.



3,310,085
SKINNING MACHINE

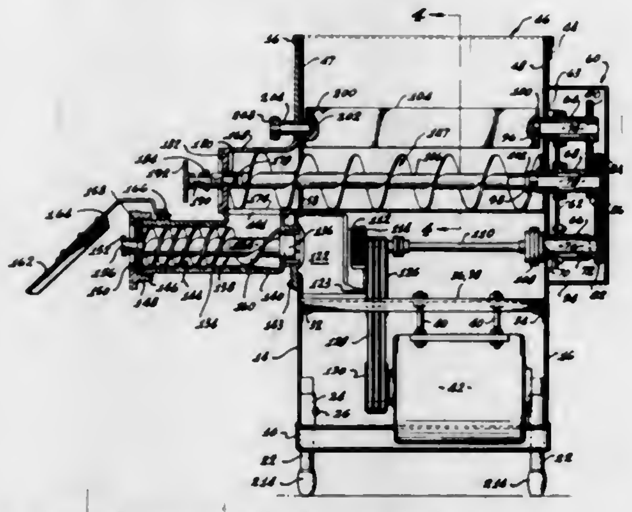
Paul F. Burch, Rockford, Mich., assignor to Wolverine Shoe & Tanning Corporation, Rockford, Mich., a corporation of Michigan
Filed Mar. 11, 1964, Ser. No. 351,246
12 Claims. (Cl. 146—130)

1. A skinning machine capable of skinning in one operation a double hogside having a backbone region in the center thereof, comprising: a supporting framework; a drum rotatably mounted to said framework, and having an elongated, axially extending clamping notch in its periphery; clamping means in said notch for gripping one teat strip belly edge; a skinning knife mounted adjacent said drum, closely spaced a skin thickness from its periphery, to slice meat from a clamped skin moving with said drum; knife mounting means supporting the ends of said knife on said framework; shifting means operably connected between said framework and said knife mounting means, causing the edge of said knife to only momentarily lift slightly away from the periphery of said drum a fraction of an inch when actuated to cause the backbone region of a double hogside to pass said blade without cutting through the skin; and actuator control means operably associated with said shifting means and being constructed and arranged to be only momentarily responsive at the rotational position of said drum when the backbone region is adjacent said knife to momentarily lift said knife said fraction of an inch while said drum passes through said particular position to prevent the blade from cutting through the backbone region of a double hogside, and to drop said blade back said fraction of an inch toward said drum to enable skinning of the remainder of the double hogside.



3,310,086
AUTOMATIC MEAT GRINDING APPARATUS

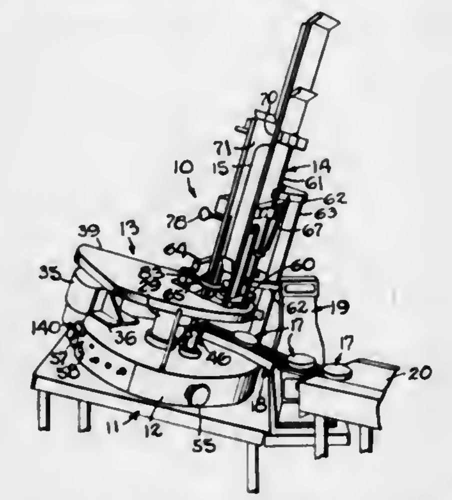
William Lasar, 2540 E. 114th St., Los Angeles, Calif. 90059
Filed Dec. 14, 1964, Ser. No. 418,153
4 Claims. (Cl. 146—186)



1. A food material grinder, comprising:
a feed hopper that receives food to be ground;
a compression chamber axially extending from one side of the bottom portion of said feed hopper;
a first horizontal rotatable feed screw in the bottom portion of said feed hopper and extending into said compression chamber;
a second horizontal feed screw parallel to said first feed screw having an inlet portion and a discharge portion;
closed connector means extending radially from said compression chamber into the inlet portion of said second feed screw;
grinder means connected to the discharge portion of said second feed screw means;
an elongated horizontal agitator rotatably supported in said feed hopper adjacent to the upper portion of said first feed screw;
and power means for simultaneously driving said first and second feed screws and said agitator member, with rotation of said agitator preventing said food from bridging over said first feed screw, and rotation of said first feed screw forcing said food through said compression chamber and connector means under pressure into the inlet portion of said second feed screw.

3,310,087
SLICING MACHINE LOAF CARRIER

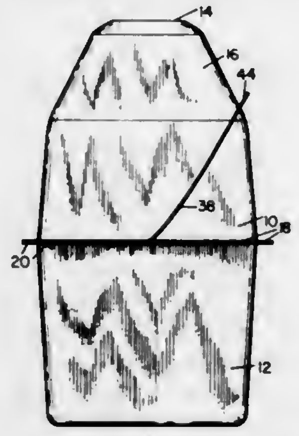
Theodore G. Werder, Chicago, and Hilmar O. Schuetze, Des Plaines, Ill., assignors to Great Lakes Stamp & Mfg. Co., Inc., Chicago, Ill., a corporation of Illinois
Original application Nov. 28, 1961, Ser. No. 155,270, now Patent No. 3,161,215, dated Dec. 15, 1964. Divided and this application May 29, 1964, Ser. No. 378,090
2 Claims. (Cl. 146—217)



1. A loaf carrier for a slicing machine comprising, in combination, a frame, an elongated L-shaped trough mounted on said frame, an elongated movable wall mounted on said frame for movement toward and away from, while remaining parallel to, one wall of said trough, said movable wall being positioned adjacent and normal to the other wall of said trough, means for biasing said movable wall toward said one wall, means including a manually operated element for moving and holding said movable wall against said bias, endless feed-conveyor elements mounted on both said movable wall and said one wall in opposed relation, and means for driving said feed-conveyor elements on each side of said walls in all positions of said movable wall.

3,310,088
BLOW MOLDED TWO-PIECE CARTON

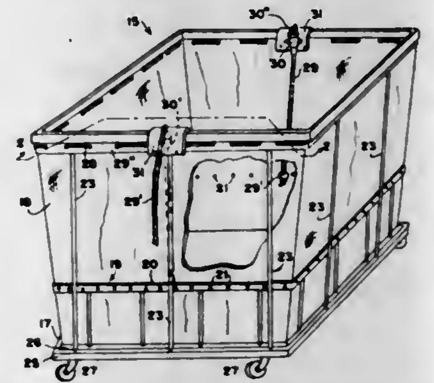
Edmund Hildebrandt and Siegfried Fahnrich, both of 6 Cedar St., Clinton, Mass. 01510
Filed Nov. 19, 1964, Ser. No. 412,385
6 Claims. (Cl. 150—.5)



1. A leakproof container comprising two half portions of relatively thin molded plastic material, said half portions being nestable and each half portion comprising a relatively deep box-like continuous container member having a closed bottom and an open top, one container member however being provided with a pouring opening, a peripheral flange integrally molded with each half portion surrounding the open top thereof, said flanges being substatnially co-extensive in area, size and shape and being capable of being secured together by heat-sealing, with one container portion inverted with relation to the other container portion thereof, and a handle for the container, the handle being in the general form of a U and being integral at its ends to one of the container half portions at opposite sides thereof, said handle ends being integral with the flange of one of said container half portions.

3,310,089
HAMPERS

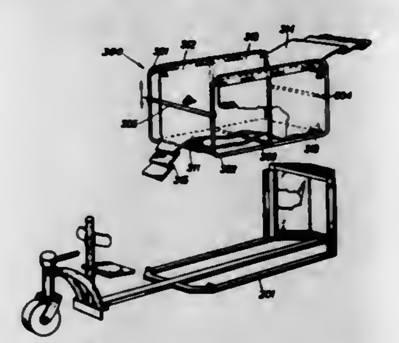
Max Silverman, 3850 Sedgwick Ave., New York, N.Y. 10463
Filed Oct. 4, 1965, Ser. No. 492,832
5 Claims. (Cl. 150—51)



1. In a hamper of the character described, a frame including a raised horizontally positioned first ring, a sack of pliable material; the mouth rim of said sack being mounted on said first ring whereby the sack depends therefrom in extended condition, a rigid second ring horizontally positioned on the sack a predetermined distance up from the bottom of the sack; said sack and second ring being secured to one another circumferentially; means connected to the second ring to raise it to the region of the mouth of the sack whereupon the sack portion depending from said second ring serves as a receptacle whose mouth is accessible at the mouth region of the sack, and means to releasably hold said second ring in a raised position.

3,310,090
CARRYING BIN FOR AGRICULTURAL MACHINE

John Balthes, Jr., Port Burwell, Ontario, Canada, assignor to Balthes Farms Equipment Manufacturing Limited, Port Burwell, Ontario, Canada
Original application Apr. 29, 1963, Ser. No. 276,403, now Patent No. 3,217,823, dated Nov. 16, 1965. Divided and this application Oct. 22, 1965, Ser. No. 513,889
4 Claims. (Cl. 150—51)



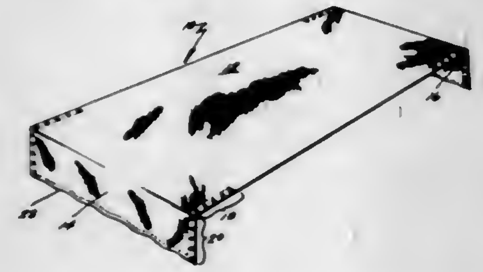
1. A carrying bin comprising in combination a pair of spaced apart sides, each of said sides comprising end, top and bottom rails, a flexible container secured in said

frame at least to said top rails, and a transverse member slidably connected between a pair of end rails.

3,310,091
SELF-RETAINING ADJUSTABLE COVER FOR TABLES AND THE LIKE

Carmen R. Geisen and Edward D. Jenkins, Belding, Mich.; said Carmen R. Geisen assignor to John N. Geisen, Belding, Mich.

Filed Oct. 22, 1965, Ser. No. 501,464
5 Claims. (Cl. 150—52)

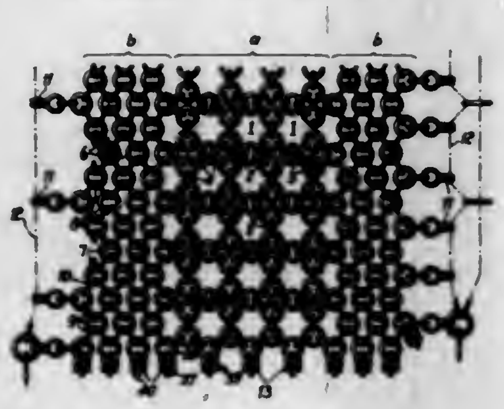


1. A self-retaining cover assembly for generally flat-topped objects such as tables, benches, and the like, comprising: a sheet of material of sufficient size to cover a desired object and having sides and ends, at least some of said ends being foldable to be doubled beneath a corresponding end of an object covered by said sheet to at least partially envelope the said end of the object; the sides of the sheet along at least one edge of the doubled end portions thereof being detachably connectable together to define a lateral edge of a pocket about the enveloped end of the object covered; and the sides of said sheet along both edges of at least one doubled end portion pocket being detachably and longitudinally adjustably connectable together, such that the depth of said pocket may be varied to change the effective length of said cover.

3,310,092
PROTECTIVE CHAINS FOR TIRES

Werner H. Rieger, Unterkochen, Wurttemberg, Germany, assignor to RUD-Kettenfabrik Rieger & Dietz, Unterkochen, Germany, a German firm

Filed Feb. 26, 1965, Ser. No. 435,579
Claims priority, application Germany, May 22, 1964, R 28,486; Oct. 6, 1964, R 29,282; Dec. 22, 1964, R 29,746
8 Claims. (Cl. 152—171)

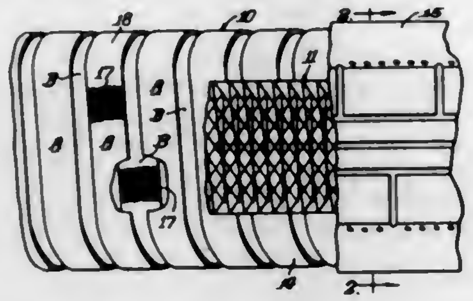


1. Protective chain means for tires comprising: chain links arranged alternately perpendicular and parallel to the tire surface, said parallel links being in the form of rings, said perpendicular links being in the form of circular rings in those areas of said chain means covering the tire tread surface and each said perpendicular link defining an opening whose diameter is of the order of twice the diameter of the material constituting said parallel links and said perpendicular links being in the form of ovals in those areas of said chain means covering the tire sidewalls.

3,310,093
RESTRICTIVE TREAD COMPONENT FOR PNEUMATIC TIRES

Larry C. Frazier, Prescott, Ariz., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware

Filed May 21, 1965, Ser. No. 457,718
11 Claims. (Cl. 152—361)

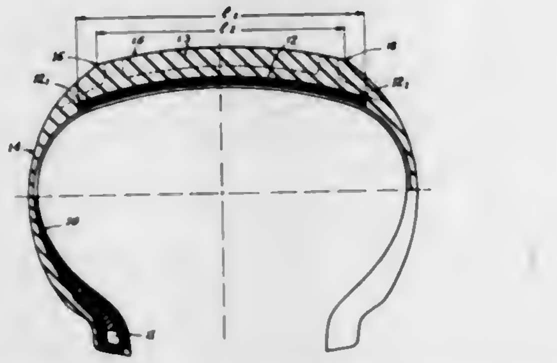


1. A restrictive tread component for use between the crown of a carcass and tread of a pneumatic tire comprising first and second superposed annular plies defined by continuous cord reinforcing means, said cord means in said first ply lying in a plurality of circumferentially successive first leg portions extending transversely of said crown of said carcass, and in a plurality of circumferentially successive second leg portions extending each from said leg portions, respectively, and transversely of said crown of said carcass and at a different angle than the angle of said first leg portions, and said cord means in said second ply lying in a plurality of circumferentially successive third leg portions extending each from said second leg portions, respectively, and transversely of said crown of said carcass, and in a plurality of circumferentially successive fourth leg portions extending each from said third leg portions, respectively, and transversely of said crown of said carcass at a different angle than the angle of said third leg portions.

3,310,094
OUTER CASINGS FOR PNEUMATIC TIRES

Henri Marcel Prevost, Paris, France, assignor to Societe Anonyme dite: Pneumatiques, Caoutchouc Manufacture et Plastiques Kleber Colombes, Colombes, Seine, France

Filed May 24, 1965, Ser. No. 458,306
Claims priority, application France, May 27, 1964, 976,280
4 Claims. (Cl. 152—361)

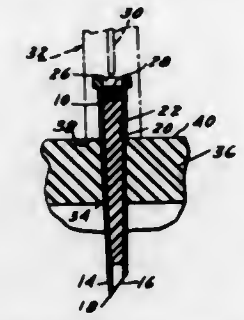


1. A pneumatic tire casing comprising a radial carcass composed of one or more cord layers, a tread and an inextensible circumferential reinforcement between the carcass and the tread, said reinforcement being composed of one or more pairs of plies in which the cords are symmetrically inclined at a small angle with respect to the equatorial plane of the tire, said one or more cords of the carcass and the plies of the reinforcement being embedded in a relatively hard rubber mixture having a Shore A hardness of at least about 75, and said reinforcement having a width at least 10% greater than the width of the area of contact of the tire tread with the ground under normal conditions of pressure and load.

3,310,095
TIRE REPAIR MEANS

Thomas H. Klune, 12105 Gothic, Granada Hills, Calif. 91344

Filed Aug. 10, 1964, Ser. No. 392,963
12 Claims. (Cl. 152—370)



1. A tire repair device, comprising:

(A) an elongated metallic tube tapering slightly from one end to the other and having a passage therethrough with a corresponding taper;

(B) a radial, flange-like head at the larger end of said plug, said head having a plurality of sides for releasable connection with an applicator tool;

(C) an end portion at the smaller end of said tube, said end portion having curved taper slightly greater than the rest of the tube and having one side beveled to provide a penetrating point at the free tip of said end portion;

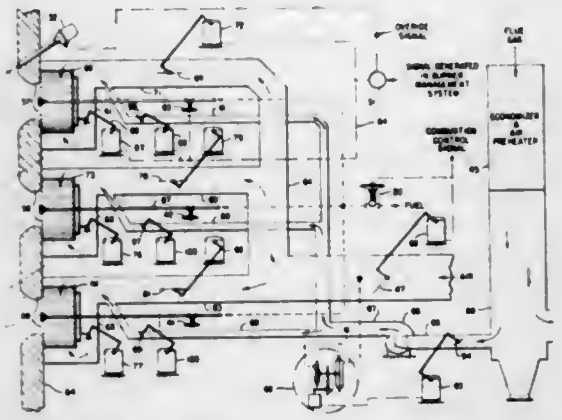
(D) elastic, resilient material disposed within the passage through the tube and constituting a sealing plug, said sealing plug being in a stretched condition within said passage and extrudable from the small end of the passage into a puncture opening or the like through the wall of a tire and expandable where not confined within said puncture opening; and

(E) a pressure plug of pliable material disposed in said passage and engageable with the end of the sealing plug adjacent the larger end of the tube, said pressure plug being of harder material than said sealing plug.

3,310,096
APPARATUS FOR SECURING BURNERS

Guy M. Baudelet de Livois, Paris, France, assignor to Controle Bailey (Societe Anonyme), a company of France

Filed July 8, 1965, Ser. No. 470,413
Claims priority, application France, Aug. 5, 1964, 984,257
8 Claims. (Cl. 158—1)

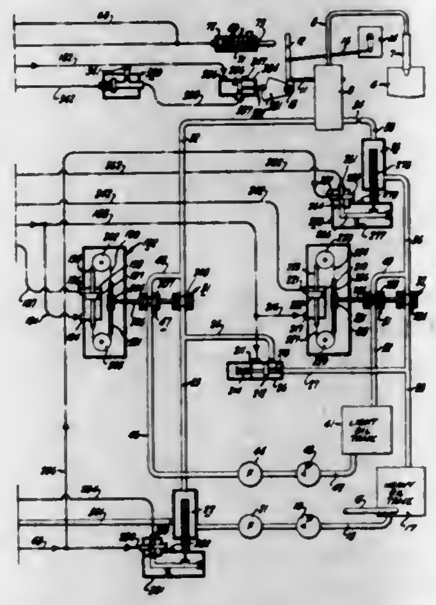


1. Burner control apparatus comprising, in combination, a fuel burner, a windbox for supplying air to said burner, an air supply duct connected to said windbox, a first shut-off damper in said duct, an inert gas supply duct connected to said air supply duct between the burner and shut-off damper, a second shut-off damper in said inert gas supply duct and signal responsive means for closing said first damper and concurrently opening said second damper and means responsive to failure of flame from said burner generating the signal to which said signal responsive means responds.

3,310,097
FUEL CONTROL SYSTEM

Alfred R. Fleischer, Pleasant Hill, and Maurice H. Lowrey, Pleasanton, Calif., assignors to General Metals Corporation, Oakland, Calif., a corporation of California

Filed Mar. 23, 1965, Ser. No. 442,046
6 Claims. (Cl. 158—36)

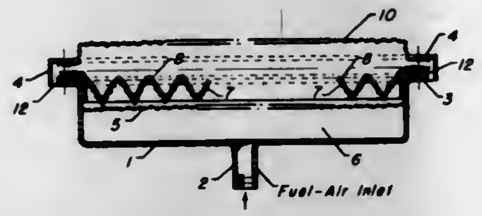


3. A dual fuel system for an engine comprising means for receiving surplus fuel oil from said engine, a pair of fuel oil tanks, means for directing said surplus fuel oil from said receiving means into either of said fuel oil tanks, and means responsive to the temperature of said surplus fuel oil in said receiving means for controlling said directing means.

3,310,098
CATALYTIC INFRA-RED HEATER

Leslie C. Hardison, Chippewa Falls, Wis., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Aug. 12, 1966, Ser. No. 572,118
5 Claims. (Cl. 158—99)

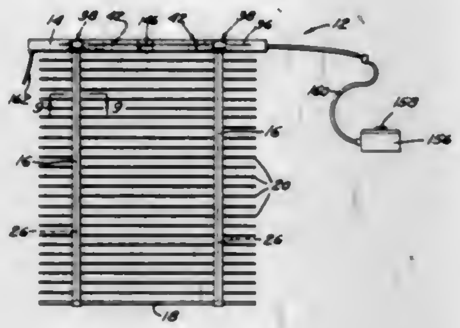


1. A catalytic infra-red heater unit for supplying high temperature radiant heat which comprises in combination, a housing section having an inlet port for a fuel-air stream thereto and an unenclosed face for heat radiation and flue gas flow therefrom, at least one corrugated-form non-catalytic metal alloy screen member across said housing and said unenclosed face thereof, at least one corrugated-form all-metal alloy screen member coated with an all-metal oxidizing catalyst and positioned externally over and directly adjacent to said non-catalytic screen, the corrugations of said non-catalytic screen extending into matching corrugations of said coated screen, whereby the fuel-air stream passing outwardly from the interior of said housing and through said screen members will be preheated by said non-catalytic screen and catalytically oxidized as it leaves the surface of the coated screen and provide flameless infra-red heat emission therefrom.

3,310,099
ELECTRIC VENETIAN BLIND

Edwin J. Hunter and Davison B. Swing, Riverside, Calif.; said Swing assignor of fifteen percent to said Hunter and twenty percent to George H. Starrett, Riverside, Calif.

Filed July 19, 1965, Ser. No. 472,780
14 Claims. (Cl. 160—171)



1. In an electrically operated Venetian blind having a headrail, at least two ladder tapes depending from said headrail near opposite ends thereof, a plurality of vertically spaced, horizontally extending slats supported by said ladder tapes, a bottomrail attached to the bottom ends of said ladder tapes, and at least two lift cords extending downwardly from said headrail through aligned cord holes in said slats to points of attachment with said bottomrail, the improvement comprising:

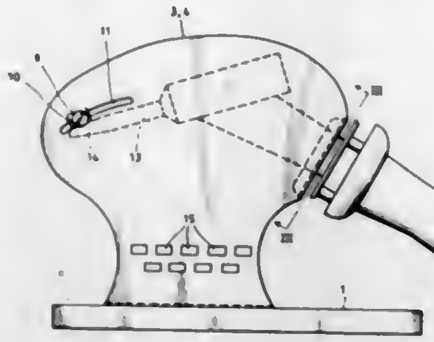
- a drive shaft extending lengthwise of said headrail and supported thereon for rotation;
- a pair of tape drums rotatably supported on said headrail in line with said ladder tapes, the upper ends of said ladder tapes passing on opposite sides of said tape drums and being attached thereto;
- a pair of lift cord drums rotatably supported on said headrail in line with said lift cords, the upper ends of said lift cords being attached to said lift cord drums and being wound thereon when the drum is turned;
- an electric motor connected to said drive shaft to drive the same;
- means for driving each of said lift cord drums from said drive shaft; and
- other means for driving each of said tape drums from said drive shaft, including speed-reduction gears and a clutch;
- said clutch being operable to drive said tape drum through a predetermined angular distance between a first extremity of tilt in one direction and a second extremity of tilt in the other direction, said clutch disengaging the drive to said tape drum when the latter reaches either of said extremities and said drive shaft continues to turn;
- said tape drum thereafter remaining stationary while said lift cord drum continues to turn with said drive shaft to raise or lower the blind.

3,310,100
STAND FOR AN ELECTRICAL SOLDERING IRON WITH ADJUSTABLE HEAT EXCHANGE MEANS

Göran Ygfors, Studievagen 15, Sollentuna, Sweden

Filed Nov. 19, 1964, Ser. No. 412,417
Claims priority, application Sweden, Nov. 29, 1963, 13,279/63
8 Claims. (Cl. 165—80)

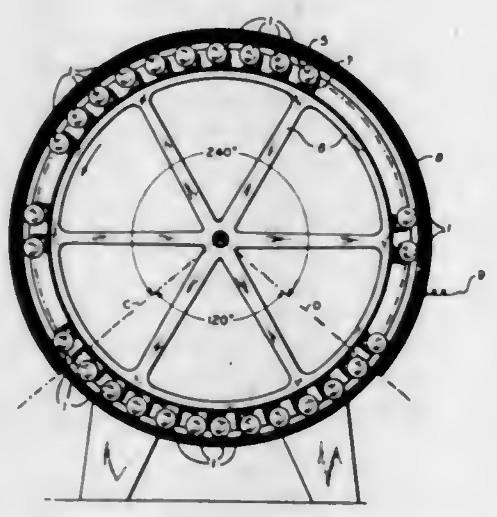
1. A stand for an electrical soldering iron having a frame, said frame comprising rear supporting means, said rear supporting means being arranged to support said soldering iron from beneath when the soldering iron is placed in said stand with its longitudinal axis in a horizontal direction or somewhat inclined to the horizontal direction, said rear supporting means being further arranged to support said soldering iron between its weight centre and its soldering tip, and front supporting means, said front supporting means being arranged to support said soldering iron from above, near its soldering tip, wherein said front supporting means is displaceable in the longitudinal direction of the soldering iron.



3,310,101
HEAT EXCHANGE METHOD AND APPARATUS

William A. Sommer, Elgin, Ill., assignor to The Borden Company, New York, N.Y., a corporation of New Jersey

Filed Nov. 16, 1964, Ser. No. 411,217
6 Claims. (Cl. 165—120)



1. An improved heat exchange apparatus for processing comestibles canned in sealed magnetizable cans comprising:

(1) a substantially cylindrical casing having an inlet and outlet;

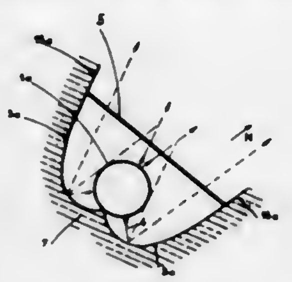
(2) a rotatable reel being within the chamber defined by said casing, and on the periphery of said reel there being a canway channel and longitudinal rails, which said channel and rails define can compartments with said casing; and,

(3) magnetic means for magnetizing said cans, and said means in conjunction with said reel and rails to impart non-vibratory unidirectional rotation to cans traveling along said canway channel, said means being extended axially along the periphery of the heating portion of said chamber from about the inlet of said chamber at least the distance required to raise the temperature of said canned comestibles to their sterilization temperature, and extending circumferentially about the periphery of the heating portion of said chamber for at least that portion of the casing wherein the frictional forces in the can compartment are insufficient to impart rotating motion to the can.

3,310,102
DEVICES FOR LOWERING THE TEMPERATURE OF A BODY BY HEAT RADIATION THEREFROM

Felix Trombe, Paris, France, assignor to Centre National de la Recherche Scientifique, Paris, France

Filed Oct. 14, 1965, Ser. No. 495,922
Claims priority, application France, June 23, 1962, 901,741; Dec. 27, 1962, 919,861; Jan. 29, 1963, 922,935; July 27, 1964, 983,175
27 Claims. (Cl. 165—133)



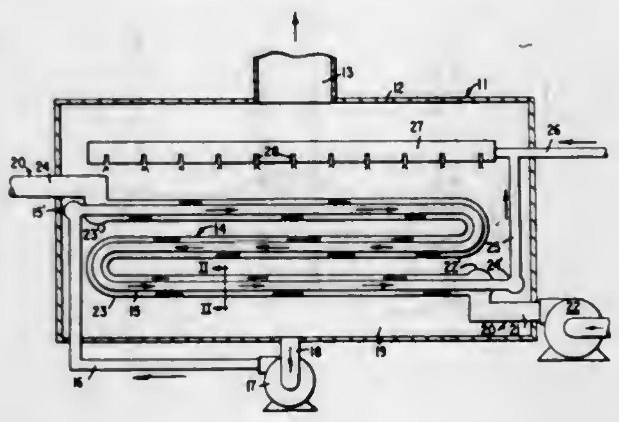
24. A cold producing device which comprises in combination,

- a radiating body capable of giving off rays within the wavelength bands for which the atmosphere is transparent,
- an opaque envelope surrounding said radiating body for thermally insulating it from the earth, said envelope including an opening positioned to prevent direct radiations from the sun and from the earth from reaching said body,
- a reflecting lining carried by the internal face of said envelope, said lining diverging outwardly toward said opening to reflect the radiations emitted by said body into the atmosphere, and
- a screen of a material transparent to radiations of the wavelengths for which the atmosphere is transparent, out of contact with said body, closing said opening to isolate said body from the atmosphere, said envelope being filled with carbon dioxide.

3,310,103
DIRECT CONTACT HEAT EXCHANGER

William T. Osborne, East Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Original application Oct. 8, 1964, Ser. No. 402,427, now Patent No. 3,258,933, dated July 5, 1966. Divided and this application Mar. 15, 1966, Ser. No. 534,530
2 Claims. (Cl. 165—141)



1. In a heat exchanger, the combination of:

(a) a shell;

(b) a heat exchange tube bundle mounted within said shell, said tube bundle being of tube-in-tube construction;

(c) a spray header mounted above said tube bundle to spray a mixture of refrigerant and primary fluid medium over said tube bundle;

(d) a refrigerant inlet line connecting with said spray header;

(e) means for circulating a secondary fluid medium through said shell and tube bundle;

(f) a sump forming the lower part of said shell below the tube bundle for collecting said primary fluid and any unvaporized refrigerant sprayed over the tubes;

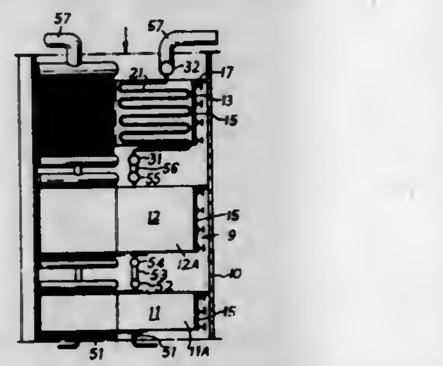
(g) means circulating said primary fluid from said sump through a conduit within each tube of said tube bundle, means connecting said conduits with refrigerant inlet line to permit a mixture of refrigerant and primary fluid to be supplied to the header; and

(h) a refrigerant vapor outlet to discharge vapors from said shell.

3,310,104
TUBE BANK HEAT EXCHANGER WITH SUPPORTS

Jean Frederic Tillequin, Paris, France, assignor to Babcock & Wilcox, Limited, London, England, a corporation of Great Britain

Filed Dec. 23, 1963, Ser. No. 332,796
Claims priority, application France, Dec. 29, 1962, 920,186, Patent 1,351,602
3 Claims. (Cl. 165—145)



1. A tubulous heat exchanger including an elongated casing of hexagonal prismatic form arranged with its longitudinal central axis in an upright position, three tube banks of identical rhombic prismatic form disposed within and substantially filling said casing, each of said tube banks disposed with a space subtended on two sides by an adjacent pair of sides of said casing and extending along the other two sides from the casing to the longitudinal central axis of the casing, said tube banks each including tubes having straight tube lengths connected by return bends, said straight tube lengths disposed parallel to one of said adjacent pair of sides of said casing which bound the space containing the tube lengths, a vertical column located along said central axis, a plurality of vertical columns each located at one of the corners of said casing, a pair of spaced parallel support beams for each of said tube banks, one of said beams extending between columns located at adjacent corners of said casing and parallel with the said straight tube lengths of the adjacent tube banks and the other said beam extending between said column along the said central axis and a column located in a corner of the casing, and a number of crossbars mounted on said pair of beams for supporting the tubes in said tube bank.

3,310,105
HEAT EXCHANGER WITH COMBINED CLOSING MEMBER AND FLUID DISTRIBUTOR

Alan G. Butt, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin

Filed June 15, 1964, Ser. No. 374,973
10 Claims. (Cl. 165—166)

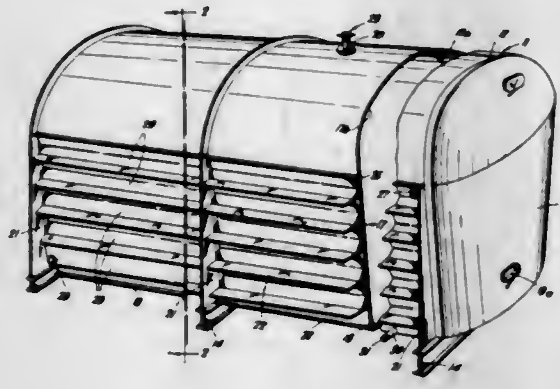
1. A plate type heat exchanger comprising first, second and third heat conducting plates stacked in spaced substantially parallel face-to-face relationship; sealing means

extending between adjacent faces of said first and second plates along the margin thereof sealingly connecting said first and second plates thereby defining a first fluid passage between said first and second plates for the passage of a first heat exchange fluid; a fluid inlet and a fluid outlet for said first fluid passage; sealing means extending between adjacent faces of said second and third plates along the margin thereof sealingly connecting said second and third plates thereby defining a second fluid passage between said second and third plates for the passage of

a second heat exchange fluid to be heat exchanged with said first heat exchange fluid; a fluid inlet and a fluid outlet for said second fluid passage; said last mentioned sealing means being a substantially closed duct extending along the margin of said second and third plates and sealingly bridging therebetween having the interior thereof connected in fluid communication with said first fluid passage adjacent the inlet thereof for directing a third heat exchange fluid for distribution at the inlet of said first fluid passage.

3,310,106
MULTIPURPOSE PROCESS VESSEL FOR HEAT TRANSFER OPERATIONS

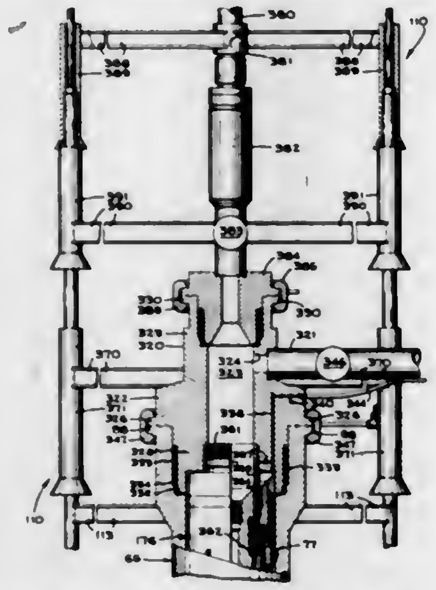
Louis A. Leseelleur and Nicholas J. Lucas, both of London, Ontario, Canada, assignors to John Labatt Limited, London, Ontario, Canada
Filed June 14, 1965, Ser. No. 463,734
Claims priority, application Canada, Sept. 14, 1964, 911,662
11 Claims. (Cl. 165—169)



1. A process tank of generally rectangular cross-section, said tank having a metal bottom, a metal top, metal side walls interconnecting the bottom and top, and end members joined to the bottom, side and top walls to form a closed tank, a plurality of vertically extending horizontally spaced reinforcing members secured to said side walls, a plurality of horizontally extending vertically spaced stiffening members extending substantially perpendicularly from said side walls, a plurality of horizontally extending members each of which is fixed along one longitudinal edge thereof to said sidewall and along the opposite longitudinal edge thereof to one said stiffening member to form a heat exchange passage of right triangular cross section, inlet and outlet means for passage of heat exchange fluid through said triangular passages, and closeable openings in said vessel for introducing material therein and for withdrawing material therefrom.

3,310,107
UNDERWATER WELL METHOD AND APPARATUS

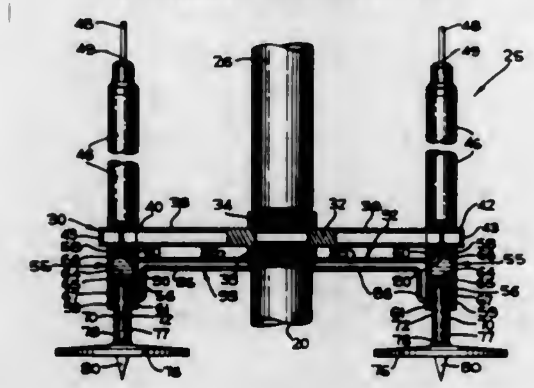
John R. Yancey, Houston, Tex., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 23, 1963, Ser. No. 318,318
22 Claims. (Cl. 166—0.6)



22. In a method for completing a well through a wellhead and a blowout preventer attached to the top of the wellhead, the steps of lowering a string of pipe through said preventer and wellhead, hanging said string in the wellhead in fluid-tight relation therewith, said string being blocked to the flow of fluid upward therein from the well into the wellhead, replacing the blowout preventer with a flow line and attached flow line adapter that connects to said wellhead and establishes fluid communication between said string and said flow line, and opening said string to the passage of fluid upward through said string, into said wellhead and adapter, and into said flow line.

3,310,108
GUIDING APPARATUS FOR INSTALLING WELL EQUIPMENT

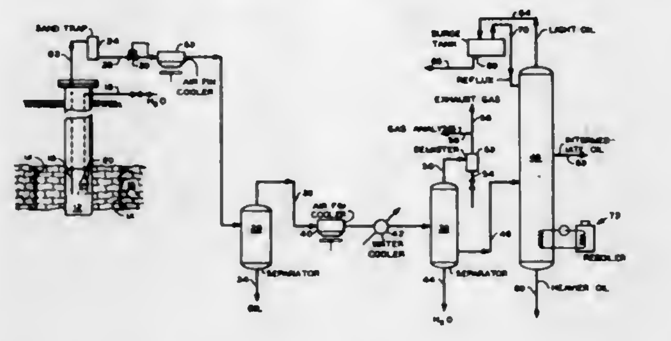
John R. Yancey, Houston, Tex., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Dec. 9, 1963, Ser. No. 328,817
6 Claims. (Cl. 166—.5)



1. In an apparatus for guiding well equipment into an underwater well, a base having a predetermined plane and adapted for connection to a casing projectable into the well hole, flexible means for lowering said base toward the bottom of the body of water in which the well is located, said flexible means defining a guide path extending upwards through the water from said base and earth engaging means for maintaining the plane of the base in substantially right-angular relation to said path, irrespective of the contour of said bottom, when the base is supported adjacent to said bottom.

3,310,109
PROCESS AND APPARATUS FOR COMBINATION UPGRADING OF OIL IN SITU AND REFINING THEREOF

John W. Marx, William B. Belknap, and Joseph C. Trantham, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 6, 1964, Ser. No. 409,407
7 Claims. (Cl. 166—7)

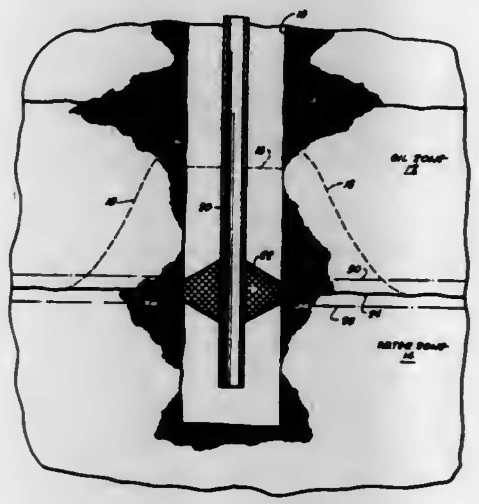


1. A process for producing selected hydrocarbons from subterranean oil sand penetrated by an injection well and a production well, which comprises the steps of:
- (a) heating said oil by in situ combustion of a portion thereof so as to heat and crack another substantial portion thereof to lighter normally gaseous and liquid hydrocarbons, thereby producing an effluent vapor stream at a temperature in the range of about 500 to 800° F. and a pressure in the range of about 500 to 2000 p.s.i.g.;
- (b) recovering the vapor stream of step (a) from said production well;
- (c) removing any sand contained in the vapor stream of step (b);
- (d) reducing the pressure of the vapor stream of step (c) to about 300 p.s.i.g. and the temperature to not more than about 500° F.;
- (e) separating the liquid oil from the vapor fraction of the stream of step (d) under the pressure and temperature conditions of step (d) and separately recovering each fraction;
- (f) further cooling the vapor fraction of step (e) to a temperature substantially below the boiling point of water at ambient pressure to separate a water fraction, a liquid oil fraction, and a vapor fraction and separately recovering each fraction; and
- (g) fractionating the oil fraction of (f) into an overhead light hydrocarbon fraction, at least one intermediate fraction, and a heavier bottoms fraction.

7. Apparatus comprising in combination:
- (1) a well head connected by casing and tubing with an oil producing zone;
- (2) a first liquid-vapor separator having an inlet for an oil feed, an outlet for liquid oil in a lower section, and a vapor outlet in an upper section;
- (3) a first conduit connecting said well head with the feed inlet to the first separator of (2);
- (4) an expansion valve and an indirect heat exchanger downstream thereof in the first conduit of (3);
- (5) a second liquid-vapor separator having a feed inlet in an intermediate section, a water outlet in a lower section, a liquid oil outlet in a section intermediate said water outlet and said feed inlet;
- (6) a second conduit connecting the vapor outlet of the first separator of (3) with the feed inlet of the second separator of (5);
- (7) indirect heat exchange means in the second conduit of (6);
- (8) a fractionator having a feed inlet for liquid oil in an intermediate section, an outlet for a bottoms fraction, an outlet for an overhead fraction, an outlet for an intermediate fraction, a reboiler connected with the lower section; a reflux means connected with the upper section thereof and with the overhead outlet; and
- (9) a third conduit connecting the liquid oil outlet of the second separator of (5) with the feed inlet of the fractionator of (8).

3,310,110
SHUTTING OFF WATER FROM OIL WELLS

William L. Martin, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Sept. 14, 1964, Ser. No. 396,265
8 Claims. (Cl. 166—32)



1. A method of minimizing the intrusion of water into an oil zone and into a well bore penetrating the oil zone from a water zone underlying the oil zone, comprising the steps of:
- extending the well bore into the water zone;
- injecting a liquid into the oil zone which is miscible with the oil in the oil zone and which contains an oil soluble reactant;
- simultaneously injecting water into the water zone, with the injected water containing a water-soluble material which will react with the oil-soluble reactant to form an insoluble precipitate; and
- contacting the injected oil solution with the injected water solution at approximately the interface between the oil and water zones to form an impermeable barrier around the well bore between said zones.

3,310,111
METHOD OF CONTROLLING SOLIDS IN FLUIDS FROM WELLS

Joseph P. Pavlich and David G. Calvert, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 17, 1964, Ser. No. 345,084
10 Claims. (Cl. 166—33)

1. The method of consolidating an incompetent stratum in a subterranean formation penetrated by a well which comprises injecting down the borehole of the well and into contact with at least a portion of said stratum a composition consisting essentially of a liquid resin settable to a fluid-permeable solid, a bonding material consisting essentially of [3-(glycidyloxy)propyl]trimethoxysilane in an amount of between about 0.15 and about 10 percent, based on the volume of resin employed, whereby the bonding material is brought into contact with at least a portion of the individual grains comprising the exposed incompetent formation and provides a bond between such grains and said liquid resin, and an organic carrier vehicle selected from the class consisting of liquid hydrocarbons and C_1 to C_4 aliphatic alcohols, removing residual liquid composition from the borehole and retaining said com-

position in contact with the incompetent stratum until the composition has substantially set to form a unitary fluid-permeable consolidated mass with contacted particles of said stratum.

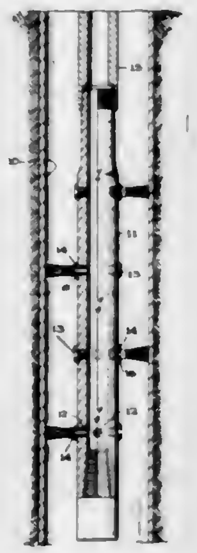
3,310,112
WELL FRACTURING METHOD

Emery H. Nielsen, Wheatridge, Colo., and Lloyd V. Volkel, Vernal, Utah, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 9, 1964, Ser. No. 350,587
10 Claims. (Cl. 166—42)

1. The method of fracturing at least one fluid bearing stratum in a subterranean formation penetrated by a well which consists essentially of injecting down the well and back into the stratum, at fracturing pressure, a fluid composition comprising an intimate mixture of a particulate propping agent dispersed in a gelled liquid selected from the class consisting of aqueous and hydrocarbon liquids and emulsions thereof which have admixed therewith a gelling agent selected from the class consisting of synthetic polymers, natural gums, and carboxylic acid-alkali metal hydroxide reaction products in an amount sufficient to provide a gelled liquid slurry, and liquid carbon carbon dioxide in an amount sufficient to provide at least five volume units of liquid carbon dioxide per volume unit of said liquid slurry at fracturing pressure, and after said mixture has been injected, releasing the pressure at the well head whereby a substantial portion of the so injected gelled liquid is carried back out of the well by the carbon dioxide which, upon such release of pressure, tends to become a gas.

3,310,113
WELL CLEANER

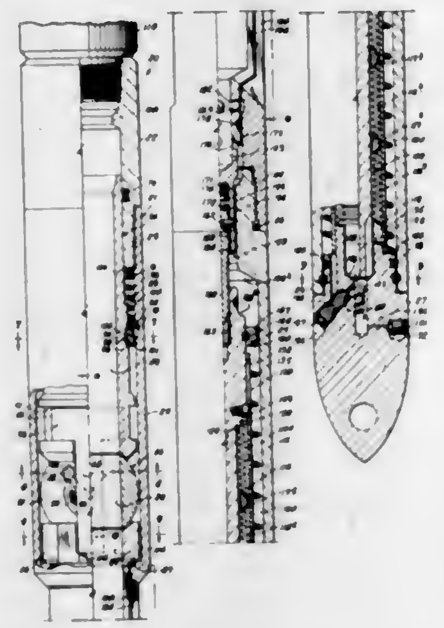
Mabre P. Maness, Box 131, Mount Pleasant, Mich. 48858
Filed June 12, 1964, Ser. No. 374,725
7 Claims. (Cl. 166—173)



1. In an apparatus for cleaning the interior of well casing and bores, the combination comprising at least one section of pipe bored and threaded at predetermined locations in a plane normal to the length of said section, apertured, threaded plugs positioned in at least a plurality of said bores, said plugs having front planar walls, axially apertured nozzle means threadedly secured into said plugs, abrading means surrounding said nozzle means and offstanding from the planar wall of said plug, whereby when said pipe is lowered into a well and pressure is introduced thereinto the interior of the well may be cleaned by the abrading means and the fluid emitted from said nozzle means.

3,310,114
PRESSURE OPERATED SAFETY VALVE

William W. Dollison, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed July 1, 1964, Ser. No. 379,457
15 Claims. (Cl. 166—224)



1. A valve including: a housing having a flow passage open at its upper end and a lateral port communicating said passage with the exterior of the housing below its upper end; valve means in said housing for closing said passage to fluid flow therethrough from said port, said valve means in said housing having seat means coengageable when said valve means is in closed position providing a metal to metal seal between said valve means and said housing; and means responsive to fluid pressure exteriorly of said housing for moving said valve means to closed position when the pressure exteriorly of the housing falls below a predetermined value comprising bellows means disposed in said housing and connected to said valve means for moving said valve means, said bellows and said housing having a charge chamber for holding a charge of gas under pressure biasing said bellows means to move said valve means to closed position, said bellows means being exposed to fluid pressure from exterior of the housing for moving said bellows means to move said valve means to open position when the pressure exteriorly of the housing rises to a first predetermined value with respect to the effective pressure of the charge in the bellows, said bellows means moving said valve means to closed position when the pressure acting on the bellows from the exterior of the housing declines below a second predetermined value with respect to the charge of gas under pressure confined within the bellows, said valve means when in closed position being exposed to pressure from exteriorly of the housing entering said housing through said lateral port whereby said pressure acts on said valve means to maintain said valve means in said closed position.

3,310,115
NON-METALLIC HORSESHOE AND METHOD OF ATTACHING SAME TO A HORSE'S HOOF

Clayton E. Ward, 9714 Ambro Lane, Woodson Terrace, St. Louis, Mo. 63134
Filed May 17, 1965, Ser. No. 456,350
12 Claims. (Cl. 168—4)

6. A non-metallic, flexible horseshoe which has:

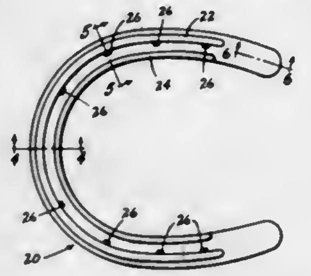
(a) an upstanding rib on the upper surface thereof, and

(b) nail-receiving passages in said horseshoe,

(c) said rib being adapted to extend within a preformed complementary groove in a horse's hoof,

(d) said rib on said upper surface of said horseshoe fitting within, and coacting with, said groove in said hoof, as soon as said horseshoe is nailed to said hoof, to minimize the laterally-directed forces on horseshoe nails in said nail-receiving passages,

(e) said rib on said upper surface of said horseshoe fitting within, and coacting with, said groove in said hoof, as soon as said horseshoe is nailed to said hoof, to resist the entry of mud and particles of foreign matter into the space between said horseshoe and said hoof,



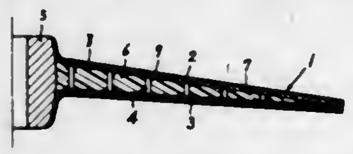
(f) said rib having the rear ends thereof disposed forwardly of the rear ends of the arms of said horseshoe,

(g) said rib having a configuration in plan that generally conforms to the configuration in plan of said horseshoe,

(h) said rib constituting a means for stiffening said horseshoe along a line generally parallel to the center line of said horseshoe.

3,310,116
MARINE PROPELLER

Shogo Saeki, Tamano, Okayama, and Hiroji Matsumoto, Nishinomiya, Hyogo, Japan, assignors to Mitsui Shipbuilding and Engineering Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Feb. 16, 1966, Ser. No. 527,799
3 Claims. (Cl. 170—159)



1. A marine propeller comprising a hub and hollow blades mounted about the periphery of said hub, said hollow blades comprising a pair of plates conforming in outline to each other and formed to the desired blade form on the front and back sides, said plates being interconnected about their periphery to form a hollow blade structure, stiffening rods spanning between said plates, an inlet opening in said blade, a vent port in said blade spaced from said inlet opening, a cellular stuffing composition formed in place in said hollow blade by introduction of the ingredients thereof through said inlet opening, and means to seal said inlet opening and vent port including a synthetic resin film coating said blade.

3,310,117
HELICOPTER SPAR HAVING INTEGRAL MASS AND STIFFNESS CONTROL PROVISIONS

Cornell J. Slivinsky and Stanley Steed, both of Traverse City, Mich., assignors to Parsons Corporation, Traverse City, Mich., a corporation of Michigan
Filed Apr. 8, 1966, Ser. No. 541,163
6 Claims. (Cl. 170—159)

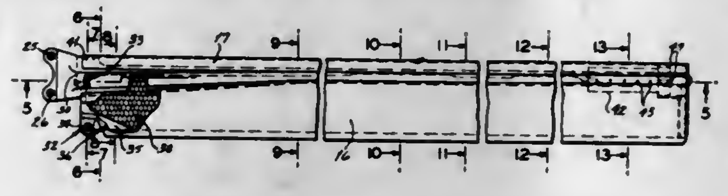
1. Spined construction for helicopter rotor blades and the like, comprising

an integral spar and root juncture member

formed along the greater part of the blade span to an H-section having a vertical web portion and upper and lower skin-support flange portions projecting forward and aft thereof,

the vertical web portion being of varying thickness along the blade span, which variation is characterized generally by an increase in thickness inboard toward the root juncture portion of said integral member,

whereby the mass and stiffness characteristics of the blade are controlled by design variation of such web portion thickness along the blade span,



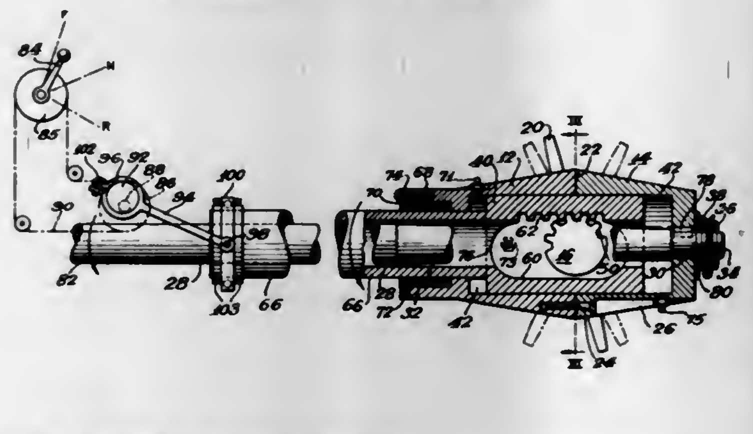
the root juncture portion being solid throughout its entire depth and from substantially the leading edge to the aft extent of the thickened vertical web portion,

in combination with a curved leading edge plate secured to the forward-projecting upper and lower skin-support flanges, and

aft section structure including skins secured to the upper and lower aft-projecting skin-support flange portions.

3,310,118
CONTROLLABLE PITCH BOAT PROPELLER

Franklin K. Smith, McHenry County, Ill. (180 N. Main St., Crystal Lake, Ill. 60014)
Filed July 13, 1966, Ser. No. 564,855
6 Claims. (Cl. 170—160.43)



1. In a marine propulsion drive:

a hub having propeller pinion shafts journalled in sealed external openings therein, with the shafts generally in a coplanar arrangement with one another and in right angular relationship to the hub;

a main shaft arranged in the hub, and with an annular space between;

a one-piece gear sleeve between the hub and shaft capable of longitudinal movement within said space;

there being pinion shaft receiving slots formed in the one-piece gear sleeve, registered in the radial direction with the hub openings and elongated in the longitudinal direction, the pinion shafts and gear sleeve having means establishing interengagement therebetween within the sleeve slots;

forward closure means sealing the hub and a main sleeve continuation of the gear sleeve at a first end;

means for imparting rotational movement to said shaft and thereby to the hub and pinion shafts for revolving the drive at a desired speed setting;

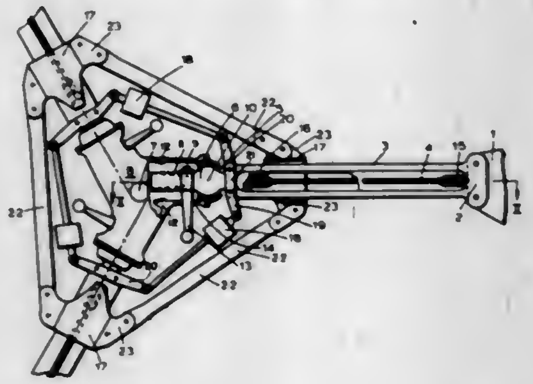
means for imparting the longitudinal movement to the main sleeve and thereby to the gear sleeve for turning the pinion shafts into a desired pitch setting; and

rearward closure means sealing, and providing the sole mechanical interconnection between, the hub and said shaft at a second end; said interengagement characterized by pinions, and mating rack teeth (62)

formed integral with the gear sleeve and confined within the slots; each pinion shaft characterized by:
  a smooth journal intermediate the ends thereof;
  a blade carried at the outer end preventing inward radial movements of the shaft; and
one of said pinions carried at the inner end, said pinion meshing with the adjacent rack teeth and preventing both relative rotational movement of the gear sleeve and outward radial movement of the shaft; the means for imparting longitudinal movement characterized by:
  a rotatable eccentric (92);
  screw adjusted gripping means on the eccentric;
  a link interconnecting the gripping means and the main sleeve continuation; and
manual means for rotating the eccentric; the shaft tapering in the direction of the second end so as to provide relief whereby the slots in the gear sleeve intercommunicate with one another and with the space between the shaft and hub at said second end;
the sleeve dividing said space into chamber portions; and
lubricant fitting means in the hub communicating with a plurality of said chamber portions.

3,310,119
ROTOR HEADS FOR ROTARY WING AIRCRAFT

Kenneth Watson, Yeovil, England, assignor to Westland Aircraft Limited, Yeovil, Somerset, England
Filed June 30, 1965, Ser. No. 468,540
Claims priority, application Great Britain, July 4, 1964, 27,681/64
6 Claims. (Cl. 170—160.53)

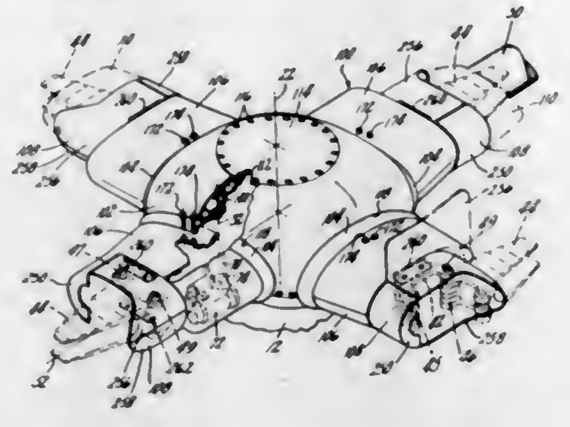


1. A rotor head assembly for a rotary wing aircraft, comprising a rotor hub, a plurality of rotor blade assemblies articulately mounted to extend from said rotor hub, an intermediate retaining member surrounding each rotor blade assembly substantially adjacent said rotor hub, primary tension straps extending between and attached to each respective retaining member and its associated rotor blade assembly for allowing flexing of the rotor blade assembly in a first direction, and secondary tension straps connected to and extending between adjacent intermediate retaining members of adjacent rotor blade assemblies for retaining said retaining members relative to said rotor hub and allowing flexing of the rotor blade assemblies in a second direction at a substantial angle to said first direction.

3,310,120
ROTOR HEAD FAIRING FOR ARTICULATED AIRCRAFT ROTOR

Luigi Vacca, Milford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 538,492
21 Claims. (Cl. 170—160.56)

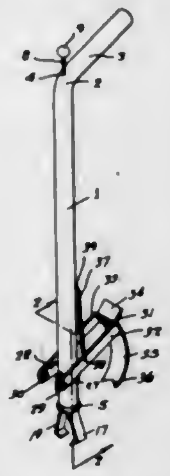
12. In combination in an aircraft,
(a) a rotor head rotatable about an axis of rotation,
(b) rotor blades,
(c) means connecting said blades to said rotor head so that said blades are capable of flapping motion and lead-lag motion,
(d) a rigid fairing enveloping said rotor head and having cutouts therein through which said blades pass,
(e) a plurality of first sleeves each enveloping one of said blades and projecting through one of said cutouts in close proximity thereto,



(f) a plurality of second sleeves each enveloping one of said blades and projecting through one of said first sleeves in close proximity thereto,
(g) and means mounting said pluralities of sleeves so that the sleeves of one of said pluralities will move with said blades in one of said flapping and lead-lag motions and, further, so that the sleeves of both of said pluralities will move with said blades in the other of said flapping and lead-lag motions.

3,310,121
COMBINATION ROOT CUTTER AND PLANT PULLER

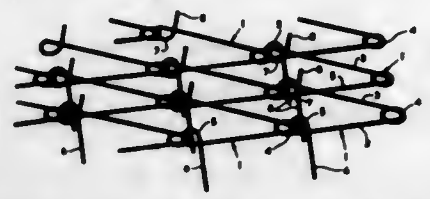
Joseph P. Hussar, 74 Federal St., Weymouth, Mass. 02188
Filed July 13, 1964, Ser. No. 381,972
3 Claims. (Cl. 171—62)



1. A root cutter and growth puller comprising a tubular shaft having a bore with an outwardly flared end portion, an inverted U-shaped resilient member having divergent leg portions terminating in opposing jaws, said resilient member being positioned in and extending from said shaft bore with said divergent leg portions slideably bearing against said shaft bore flared end portion, means for moving said resilient member longitudinally of said shaft bore, an arcuate cutter, a pair of legs fixedly connected to said arcuate cutter, a band adjustably mounted on the exterior of said shaft adjacent said flared end, pins pivotally connecting said legs to said band and resilient means tending to hold said arcuate cutter alongside said shaft.

3,310,122
CHAIN HARROWS

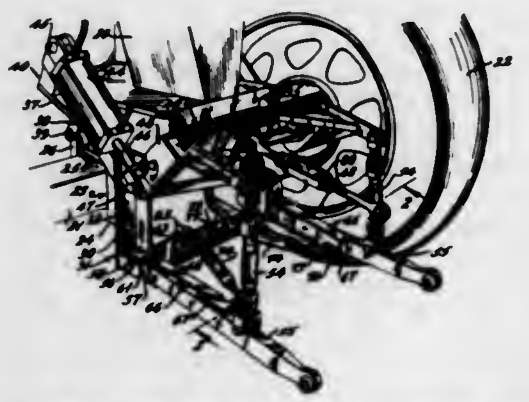
Tony Mack, Lake Wilcox, Ontario, Canada, assignor to General Steel Wares Limited, Toronto, Ontario, Canada
Filed June 19, 1964, Ser. No. 378,092
6 Claims. (Cl. 172—34)



1. A harrow comprising a plurality of substantially identical strong resilient metal rods, each bent into a generally horizontal V with a horizontal loop turned through greater than 360° at the apex of said V and a pair of arms having unequal lengths diverging from said apex; a first of said pair of arms having at the rear thereof a generally vertical loop turned through less than 360° and forming a downwardly extending tine, said tine being a single supporting tine for each of said rods; the second of said pair of arms having at the rear thereof a generally vertical loop turned through less than 360° and forming an upwardly extending tine; the tine formed in the shorter of said pair of arms being longer than the tine formed in the longer of said pair of arms; said rods being swingably articulated to one another by loose engagement of the loops formed in the ends of said arms of forward rods in the apex loops of following rods to form a net supported by said supporting tines; the tines formed in said arms of each of said rods extending slightly forwardly of the generally vertical loops from which they depend, each tine extending at a small angle from the vertical towards the other arm of said pair of arms from which the tine depends, when viewed from the front of said harrow; and towing means for towing said net, with which towing means the apices of the leading rods are swingably linked.

3,310,123
TRACTOR HITCH SELECTIVELY ADJUSTABLE STABILIZER

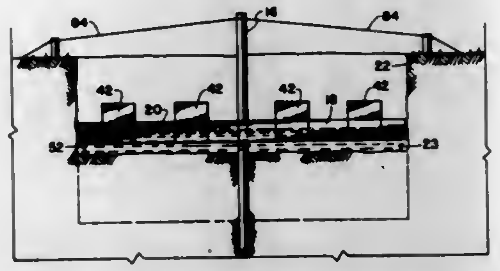
Paul D. Abbott, P.O. Box 187, Blytheville, Ark. 72315
Filed Dec. 8, 1964, Ser. No. 416,700
5 Claims. (Cl. 172—450)



5. A tractor hitch selectively adjustable stabilizer for mounting on a propelling vehicle comprising a pair of spaced universal members pivotally mounted on said vehicle for movement of said members in a generally vertical direction, a lift arm pivotally mounted on each of said universal members for movement in a generally horizontal direction, a stabilizer arm pivotally mounted on each of said universal members adjacent to each of said lift arms for movement in a generally horizontal direction, each stabilizer arm including means selectively engageable with at least one side of said lift arm, an adjustable connecting member pivotally connected at one end to said selectively engageable means and pivotally connected at the opposite end to said vehicle substantially in alignment with the pivot permitting vertical movement, whereby each lift arm is freely movable in a generally vertical direction and is freely movable in one direction in a horizontal plane.

3,310,124
METHOD AND APPARATUS OF EXCAVATION

John T. Farmer, 447 S. Pittsburgh, Tulsa, Okla. 74112
Filed Apr. 13, 1964, Ser. No. 359,343
11 Claims. (Cl. 175—7)



1. A method of excavation consisting of drilling an initial vertical bore, providing a pivot means in the vertical bore, floating a drilling means around the pivot means rotating the drilling means about the pivot means to provide a large diameter excavation therearound, and removing the residue of the drilling from the excavation substantially continuously during the drilling of the excavation.

7. In an excavation apparatus, an elongated drilling barge rotatably disposed in the excavation, a first row of longitudinally spaced pneumatic drills provided on the drilling barge, a second row of longitudinally spaced pneumatic drills disposed on the drilling barge in staggered relationship with respect to the drills of the first row, means carried by the drilling barge for supplying fluid power for operation of the pneumatic drills, pumping barge means rotatably disposed in the excavation and movable simultaneously with the drilling barge, a plurality of pumps provided on said pumping barge for removing cuttings from the bottom of the excavation during the operation of the drills, settlement tank means provided in association with the pumps for receiving the cuttings therefrom.

3,310,125
METHOD FOR INCREASING DRILLING RATE

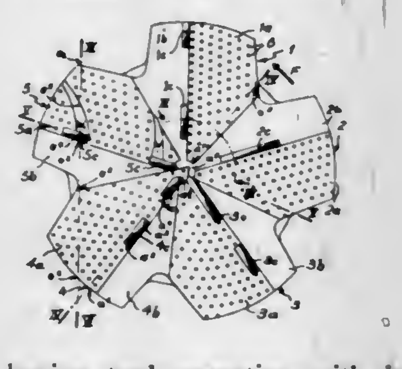
Henry C. H. Darley, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 29, 1963, Ser. No. 305,542
7 Claims. (Cl. 175—66)

1. A method of drilling wells into earth formations which comprises:
  rotating a drill bit on the bottom of the well to produce earth formation cuttings,
  simultaneously pumping into the well and through the drill bit and thence out of the well an aqueous drilling fluid having an oil-containing oil-dispersed colloid emulsified therein as a sealing agent,
  said drilling emulsion being substantially free of water-dispersed solids when originally added to the well,
  circulating the drilling emulsion in and out of the well to coat the well wall and the water-dispersible earth formation cuttings with said oil-dispersed colloid and to remove the cuttings from the well,
  treating the returning drilling fluid at the surface to reduce the entrained water-dispersed earth solids content made up of said cuttings, and
  recirculating into the well said low-viscosity drilling emulsion after reducing the water-dispersed earth solids content thereof to below 2% by weight of the emulsion.

3,310,126

ROTARY BORING TOOLS OPERATING WITH JETS OF FLUID

Serge Gstalder and Jean Raynal, Pau, Basses-Pyrenees, France, assignors to Societe Anonyme: Societe Nationale des Petroles d'Aquitaine, Paris, France
Filed May 25, 1964, Ser. No. 370,005
Claims priority, application France, May 28, 1963, 936,172
9 Claims. (Cl. 175—329)

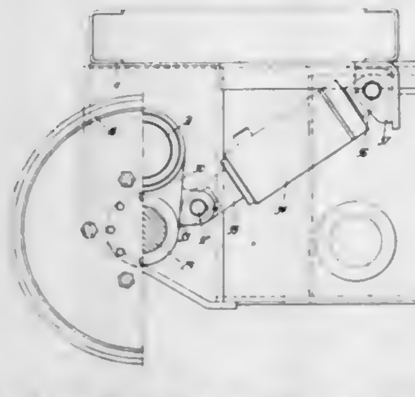


1. A rotary boring tool operating with jets of fluid, comprising: a boring head having adjacent areas in the working face thereof provided with a plurality of elongated fluid delivery apertures in the outer surface thereof for the distribution of boring fluid under pressure perpendicular to said surface, said boring head having a central channel connected with said delivery apertures for the passage of pressurized boring fluid; boring members secured to said areas forming boring areas; boring fluid discharge grooves separating said boring areas; said elongated delivery apertures for jets of boring fluid being arranged lengthwise along a plurality of meridians extending from adjacent the center of said working face outwardly to the outer periphery of the boring area of the boring head, the fluid delivery apertures of the various meridians describing circular patterns during rotation of said tool, the assembly of said circular patterns covering all the boring area of said tool, and the sum of the length of all of the apertures being equal to the length of at least one meridian.

3,310,127

AUTOMATIC ENDLESS TRACK TENSION ADJUSTING MEANS

Erwin-Walter Siber, Longueuil, Quebec, and Marvin William Keary, La Salle, Quebec, Canada, assignors to Go-Tract Limited, Longueuil, Quebec, Canada, a Canadian company
Filed Mar. 17, 1965, Ser. No. 440,529
Claims priority, application Great Britain, Feb. 17, 1965, 6,940/65
10 Claims. (Cl. 180—9.2)

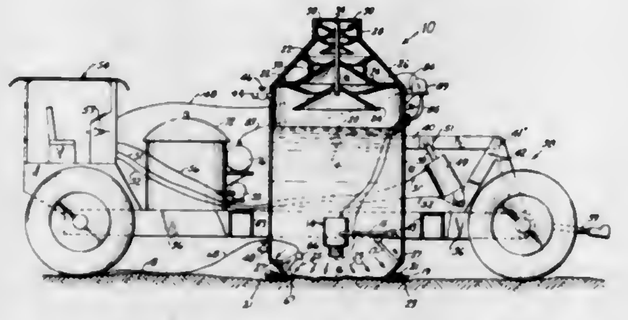


1. A track laying vehicle comprising at least one endless track, a movable member over which the track is entrained, a hydraulic circuit which comprises a hydraulic ram for adjusting the position of the movable member to adjust the tension in the endless track, means for supplying said circuit with hydraulic liquid under pressure, at least one pressure relief valve in said circuit to prevent the pressure applied to the ram from exceeding a respective predetermined value, at least one control valve in said circuit which is settable to alter the pressure applied to the ram, and a forward and reverse directional control means which both controls the direction in which the vehicle is driven and concurrently adjusts the control valve, to alter the pressure applied to the ram, whenever a predetermined change occurs in the said direction.

3,310,128

SEISMIC EXPLORATION METHODS AND SYSTEMS

Stephen V. Chelminski, Redding, Conn., assignor to Bolt Associates, Inc., East Norwalk, Conn.
Filed Jan. 24, 1964, Ser. No. 340,097
13 Claims. (Cl. 181—.5)



6. A mobile impulse source for making seismic surveys on land of earth formations comprising a tank having a flexible end portion, a vehicle for carrying said tank, mounting means for movably mounting the tank on said vehicle, force mechanism for pressing the tank downwardly firmly against the surface of the earth with the flexible end portion of the tank firmly against the earth, means for putting liquid in the tank against said flexible end portion, and repeater means located in the liquid in said tank abruptly releasing pressurized gas into the liquid in the tank for propagating a powerful sound impulse through the liquid and through said flexible end portion into the earth.

11. An exploration system for making a seismic survey of earth formations comprising a plurality of tanks containing liquid each having a displaceable portion in contact with the earth, a plurality of repeater means, each of said repeater means being positioned in a respective tank in position to be in the liquid therein, each of said repeater means having fast travelling piston means repeatedly containing highly pressurized gas in the repeater means and repeatedly abruptly releasing the pressurized gas into the liquid in each tank for transmitting seismic impulses through said displaceable portions of the respective tanks into the earth, a plurality of electrically actuated valves, each of said valves controlling the respective piston means for abruptly releasing the pressurized gas, a plurality of geophones arranged at spaced intervals in vibration receiving relationship with the earth, recording means connected to said geophones for recording the vibrations travelling through the earth from said impulses, and electrical control means connected to said valves for abruptly releasing the pressurized gas from said repeater means into the liquid in the respective tanks at timed intervals.

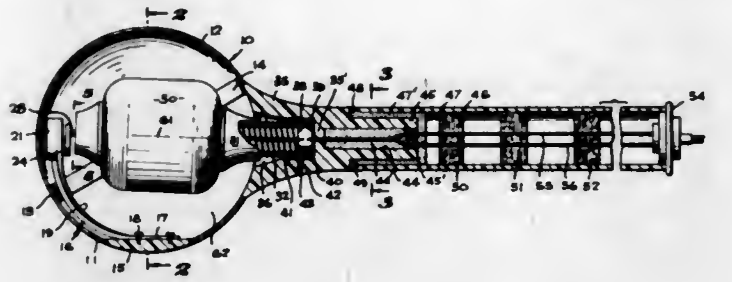
3,310,129

SONAR WAND

Harold T. Sawyer, Los Angeles, Calif., assignor of seventeen and one-half percent to Vernon D. Beehler, Los Angeles, Calif.
Filed Sept. 8, 1964, Ser. No. 394,686
17 Claims. (Cl. 181—0.5)

1. A portable sound source comprising a hollow substantially rounded liquid tight shell of resonating character and of relatively stiff resilient consistency having a chamber therein, a power actuated cyclically movable mass, said shell being substantially homogeneous and enveloping

said mass on all sides, a connecting area on an unsupported portion of said shell in line with the direction of cyclical motion of said mass and a positive non-yielding mounting

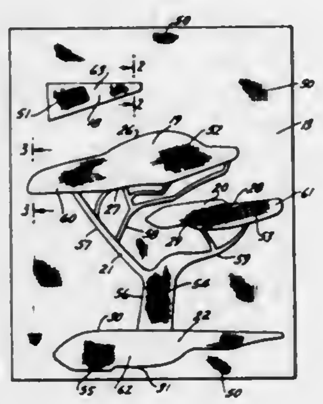


for said mass on said shell having a connection at one location only thereof to said connecting area and having another connection to said mass.

3,310,130

DECORATIVE SCREENING APPLIQUES

Betty Freet, 412 E. Walnut St., Hanover, Pa. 17331
Substituted for abandoned application Ser. No. 85,569, Jan. 30, 1961. This application June 1, 1966, Ser. No. 562,412
6 Claims. (Cl. 161—18)



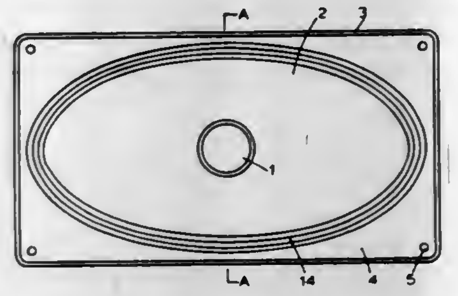
1. A decorative three dimensional superimposed stiff open mesh wire screening of aluminum and copper strands of 0.01 to 0.03 inch in diameter having a spacing of about $\frac{1}{32}$ to $\frac{3}{32}$ of an inch mounted on a solid base supporting plaque serving as a supporting back of the type composed of superimposed stiff woven wire screening of aluminum and copper having strands with a dimension of 0.1 inch to 0.3 inch with an open mesh formed by spacing strands $\frac{1}{32}$ to $\frac{3}{32}$ of an inch comprising a supporting back, a flat woven wire cloth placed flatly thereof extending the full width and length of the base plaque and irregular shaped woven wire appliques applied thereto upon the flat woven wire cloth to form a design, the angular relationship of the appliques in respect to the flat woven wire cloth being such as to give a three dimensional effect.

3,310,131

REINFORCING CAP FOR MOVING COIL LOUDSPEAKERS

Dennis Charles Ward, Iver, England, assignor to Electric & Musical Industries Limited, Hayes, England, a company of Great Britain
Filed June 11, 1964, Ser. No. 374,447
Claims priority, application Great Britain, Jan. 30, 1964, 3,925/64
6 Claims. (Cl. 181—32)

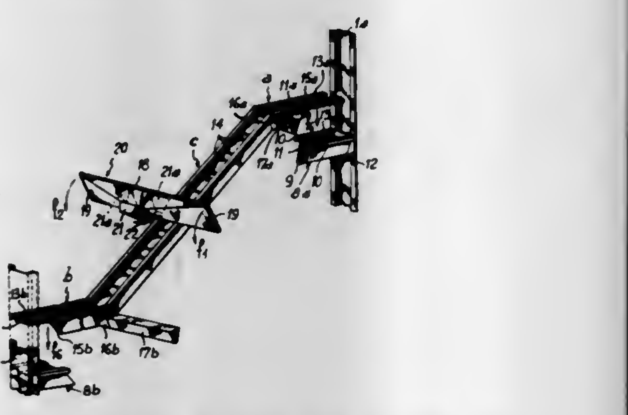
1. In an electro-acoustic device of the moving coil type, an elliptical conical diaphragm, an opening in the diaphragm, a moving coil affixed to the diaphragm around said opening, a cap affixed to the diaphragm so as to close said opening, said cap comprising a layer of stiff material formed with a plurality of apertures, said layer having greater rigidity than the material of the diaphragm, and a layer of air pervious dust excluding material applied to said first layer.



3,310,132

PREFABRICATED STAIRCASE STRUCTURE

Robert C. Rolland 7 Place Stanislas, Cannes, France
Filed Jan. 21, 1964, Ser. No. 339,200
Claims priority, application Great Britain, Jan. 25, 1963, 3,143/63
2 Claims. (Cl. 182—189)



1. A staircase comprising at least one stringer and a plurality of prefabricated step members engageable from above with said stringer at locations regularly spaced along said stringer and extending transversely with respect to the latter, and stringer including an elongated channel member having downwardly converging sides and a bottom web extending between said sides and having transversely elongated slots in said web at locations spaced apart along the stringer, each of said step members including a base having downwardly converging sides engageable with said sides of the channel member to transversely locate the step member with respect to said stringer when being lowered onto the latter, said base of each step member further having a flat-webbed hook extending from the bottom of said base and opening forwardly below the latter so as to be guided transversely into step-securing engagement with one of said slots by the interengagement of said sides of the base and channel member when a step member is lowered onto the stringer, and means on each step member interlocking with the next lower step member on said stringer to prevent movement of said next lower step member in the direction for disengaging said flat-webbed hook from the slot of said bottom web in which it is engaged.

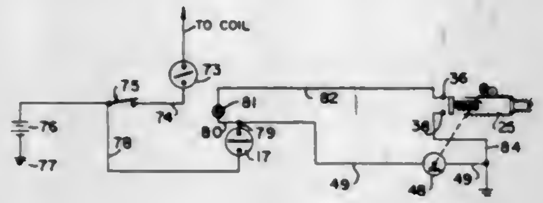
3,310,133

REMOTE OPERATED OIL DRAIN

Forrest D. Eaker, 821 N. Wood Ave., Florence, Ala. 35632
Filed May 20, 1964, Ser. No. 368,959
3 Claims. (Cl. 184—1.5)

1. A remotely operated oil drain device for attachment to an internal combustion engine having a crankcase and

a drainage port therefor, said device comprising a hollow body, means for connecting said body to said drainage port providing communication between said body and said crankcase, said body having a valve seat, a valve in said body selectively engageable with said valve seat, said body having a drainage opening normally closed by said valve, operating means on said body for moving said valve



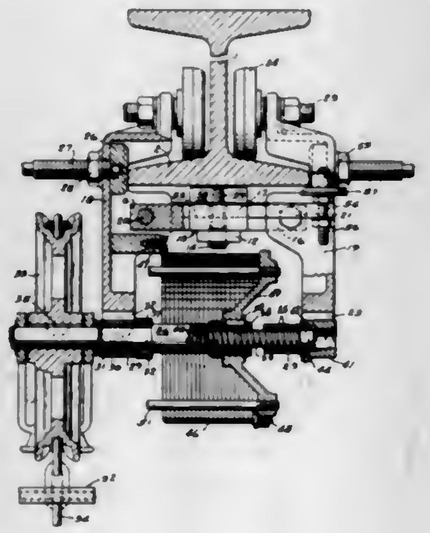
to permit oil to flow by gravity from said crankcase through said drainage opening, means for energizing said operating means from a remote position, means to return said valve to closed position when said operating means is de-energized, and safety switch means applicable to the ignition system of the internal combustion engine for preventing the operation of the same until the drain is closed and oil is in the crankcase.

3,310,134
SELF-LOCKING MONORAIL CLAMP

Howard C. Stevens, Jr., Muskegon, Mich., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Jan. 13, 1965, Ser. No. 425,183

8 Claims. (Cl. 188—43)



1. In a track clamp assembly,
intermediate arm spacing means,
a pair of confronting arms intermediately pivoted to said means at opposed points,
a track riding wheel at one end of each arm,
a clamp shoe on each arm between the respective said wheel and the pivot point,
a non-threaded control shaft rotatable in the other end of one of said arms,
a thrust bearing interposed between said control shaft and said one of said arms,
anti-friction camming means connecting to the other end of the other arm and engaged with said shaft to pivot the arms by reacting against said thrust bearing when the shaft is rotated, and
actuating means connected adjacent said one of said arms to rotate said shaft.

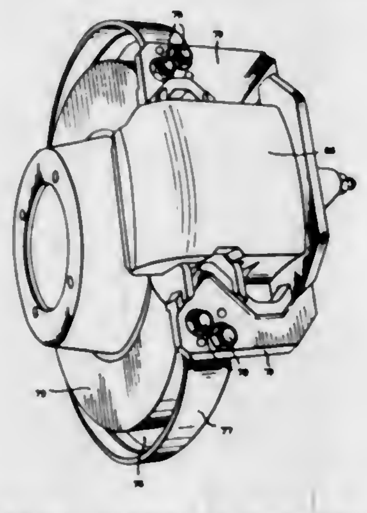
3,310,135
SPOT-TYPE DISC BRAKE

Kenneth John Wells, Castle Bromwich, England assignor to Girling Limited, Tyseley, England, a British company

Original application Nov. 23, 1962, Ser. No. 240,209, now Patent No. 3,260,332, dated July 12, 1966. Divided and this application Jan. 19, 1966, Ser. No. 535,636

Claims priority, application Great Britain, Nov. 23, 1961, 41,880/61; Mar. 21, 1962, 10,789/62; June 30, 1962, 25,189/62

7 Claims. (Cl. 188—73)



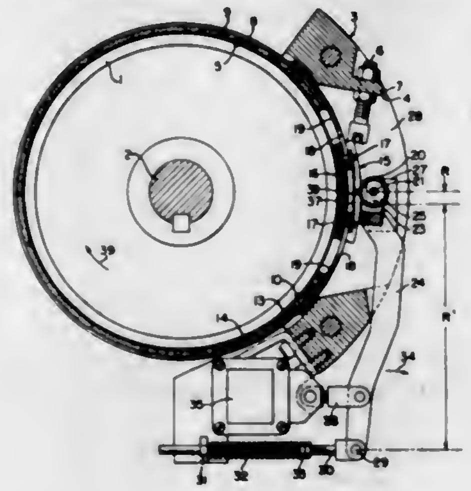
1. A disc brake comprising a rotatable disc, a stationary torque-taking member adjacent said disc, friction pads for engagement with opposite sides of said disc carried by rigid backing plates, guides on said torque-taking member with which said backing plates are in sliding engagement for guiding the friction pads towards and away from the disc, said guides being inclined at such angles that when the brake is applied and the friction pads tend to be carried round with the disc the friction pads are urged by the guides towards the disc, a clamping member which straddles said friction pads and backing plates and is mounted for limited tangential or circumferential movement relative to said torque taking member and for movement in a direction substantially parallel to the axis of the disc and means in said clamping member for urging one of said friction pads into engagement with the disc, the other pad being applied to the disc by the reaction on the clamping member.

3,310,136
WRAP-AROUND BRAKE

Carl E. Bricker, Cuyahoga Falls, and Kenneth P. Hillegass, Copley, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Aug. 25, 1965, Ser. No. 482,469

6 Claims. (Cl. 188—77)



5. In a brake, the combination of
a rotatable brake drum,
a non-rotatable frame means,

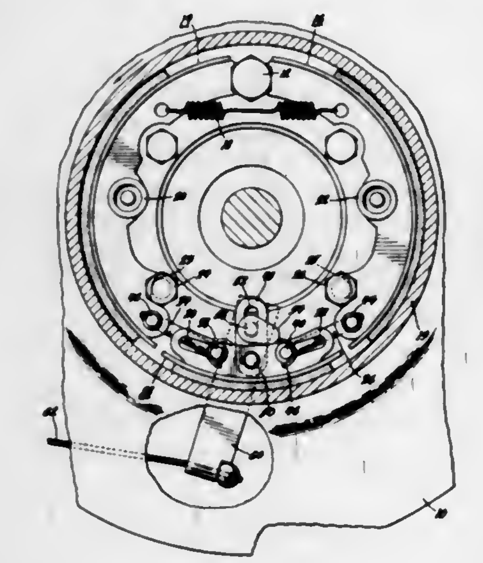
a brake shoe, movably mounted on said frame means for movement from and to the peripheral contour of said brake drum,
non-rotatable brake bands wound in helical convolutions around the outer peripheral surface of said brake drum but out of engagement therewith, each having one end secured to said frame means, each having the other end fastened in limited sliding relationship to said brake shoe,
a lever arm, pivotally secured to said brake shoe, and
power means carried on the frame means and pivotally secured to said lever arm to move said brake shoe into engagement with said brake drum to thereby move the shoe partially with the drum and tighten a brake band around the drum.

3,310,137
FRICTION PARKING BRAKE

John R. Aurelia, Dearborn, and Roland E. Schultz, Utica, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 26, 1965, Ser. No. 474,822

8 Claims. (Cl. 188—78)



1. A vehicle brake mechanism comprising: backing plate means including an anchor pin carried by a fixed portion of a vehicle; first brake shoe means carried by said backing plate means and pivotable on said anchor pin; a rotatable brake drum carried by a vehicle wheel and juxtaposed to said first brake shoe means; second brake shoe means drivably linked to said first brake shoe means and being responsive to a servo action created by said rotating drum to move said first brake shoe means into said rotating drum; and actuating means having a pivot support carried by said backing plate means, said actuating means including guide means at least one portion of which is pivotally carried by said second brake shoe means and another portion is slotted for directionally controlling an input force by said actuator means whereby said second brake shoe means is moved by a servo action generated by contact therebetween and the rotating drum to move in turn said first brake shoe means.

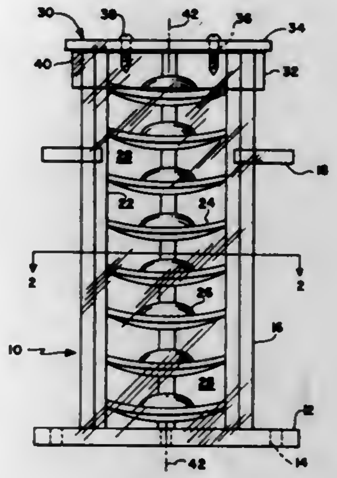
3,310,138
VISCOUS-PENDULUM-DAMPER

Wilmer H. Reed III, Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Feb. 26, 1965, Ser. No. 435,756

17 Claims. (Cl. 188—87)

1. A viscous pendulum damper comprising: a container having a plurality of trays therein; a plurality of slugs supported by said trays; and a liquid in said container covering said trays and slugs with said slugs operable



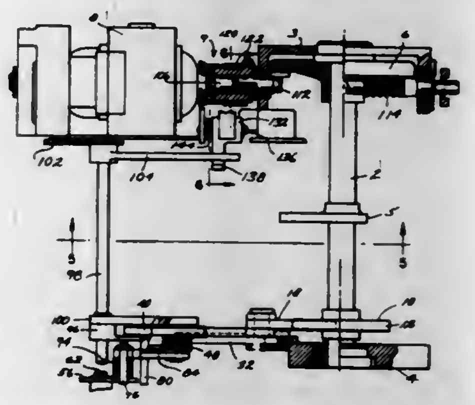
thereagainst to dissipate energy whereby when said container is attached to a vibrating body it damps the vibration thereof.

3,310,139
DRIVE SYSTEM

Charles W. Buckley, Mount Vernon, N.Y., and Ernst Schrempp, Norwalk, Conn., assignors to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware

Filed July 6, 1965, Ser. No. 469,730

20 Claims. (Cl. 192—.02)



1. A drive system comprising a first shaft, means for driving said first shaft in a given direction, a second shaft, means adapted to be driven by said second shaft, and drive means for driving said second shaft from said first shaft, said drive means comprising a driver drum affixed to said first shaft, a driven drum affixed to said second shaft, a friction drive spring coiled about and gripping said drums with sufficient force to transmit the maximum driving torque of said first shaft to said second shaft, a shock absorber spring coiled about said second drum, said shock absorber spring having one end attached to said second drum and a finger at its other end extending outwardly of said driven drum, and means for intercepting said finger to effect stopping of said second shaft.

3,310,140
COMBINATION CLUTCH AND TRANSMISSION SHIFT ASSEMBLY BELLCRANK ARRANGEMENT

Charles R. Olnhausen, Kenosha, Wis., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland

Filed May 21, 1965, Ser. No. 457,730

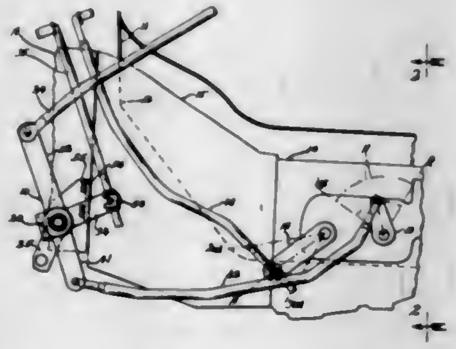
6 Claims. (Cl. 192—3.5)

1. A combination clutch and transmission shift assembly bellcrank arrangement for a vehicle comprising:
(a) a clutch bellcrank having a shaft portion and a pair of spaced legs, the first leg of said pair being adapted to be pivotally connected by suitable link-

age to the clutch pedal and the second leg being adapted to be pivotally connected by suitable linkage to the clutch;

(b) first support means for pivotally and rotatably mounting one end of said shaft portion on the body of the vehicle, said first means being located adjacent said first leg;

(c) second support means for pivotally and rotatably mounting the other end of said shaft portion on the engine generally near the engine clutch, said second means being located adjacent said second leg;



(d) a shift assembly bellcrank having a mounting portion and a pair of spaced arms with the mounting portion being rotatably mounted on said clutch bellcrank, said first arm of said pair being located adjacent said first leg and said second arm being located adjacent said second leg;

(e) a shift lever rod pivotally connected to said first arm and being adapted to be pivotally connected to a transmission shift lever;

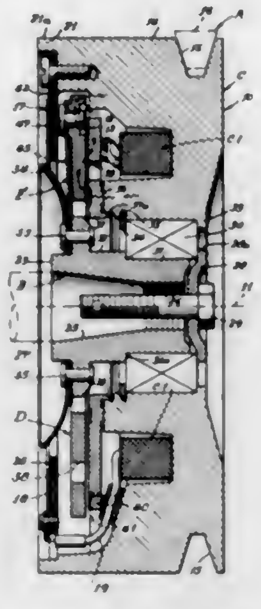
(f) a control lever rod pivotally connected to said second arm and being adapted to be pivotally connected to a control lever on the transmisison, whereby upon movement of the transmission and engine relative to the vehicle body, said clutch bellcrank shaft portion being adapted to pivot about said first and second support means causing proportional movement of said second leg and said second arm without said first leg and said first arm effecting motion of the clutch or the control lever on the transmission to disengage gears.

3,310,141
ELECTROMAGNETIC CLUTCH

Richard L. Smirl, La Grange Park, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Nov. 30, 1964, Ser. No. 414,527
3 Claims. (Cl. 192—84)

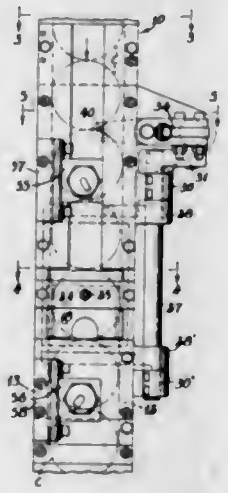
3. An electromagnetic friction device, the combination comprising; a core-ring element of ferro-magnetic material having a pair of spaced annular pole pieces and a conical surface and internally disposed coil means, one of said pole pieces being defined by an annular plate having a plurality of arcuate slots formed therein and a radially inner periphery carrying an annular lip effective to extend about and against said conical surface of said core-ring element; rotative input means drivingly connected to said core-ring element; electromagnetic armature means carrying a pair of radially spaced pole pieces and effective to frictionally contact the pole pieces of said core-ring element when brought together in response to energization of said coil means, said armature means being comprised of an annular ring having a plurality of arcuate slots formed therein, said slots of said armature means being offset relative to said slots of said core-ring plate so that upon frictional contact therebetween, said slots will be non-aligned; rotative output means journalling said core-ring element; and retractor means drivingly interconnecting said output means with said armature means and particularly comprising a thin sheet metal Belleville spring member having a central web drivingly connected to said output means at a radially inner portion thereof and a plurality of outwardly spiralling arms, each having an outer portion drivingly connected at spaced circumferential locations to said armature means.



3,310,142
AUTOMATIC CAP EJECTOR

Carl Hausen, Barrington, and Robert A. Johnson, Park Ridge, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Oct. 22, 1965, Ser. No. 500,586
12 Claims. (Cl. 193—31)



1. Apparatus for conveying closure caps for containers comprising a chute forming a guideway of generally rectangular cross section for accommodating the caps in single file, skirt abutting relation, a cap gauge having an open side facing the bottom of the chute and constructed with a passageway through which the caps in predetermined acceptable condition will pass while unacceptable caps will be stopped in the chute, said chute having a movable bottom section forming a cap discharge gate member which is located opposite the open side of said gauge member, means mounting said gate member for swinging movement so as to open the bottom of the chute for discharge of a cap stopped by said gauge member, a pair of switch forming devices mounted adjacent the leading and trailing sides of the gauge member which are actuated by the presence or absence of caps in the chute at the leading and trailing sides of said cap gauge member, power means connected to said gate member for swinging said gate member between open and closed positions and means responsive to operation of said

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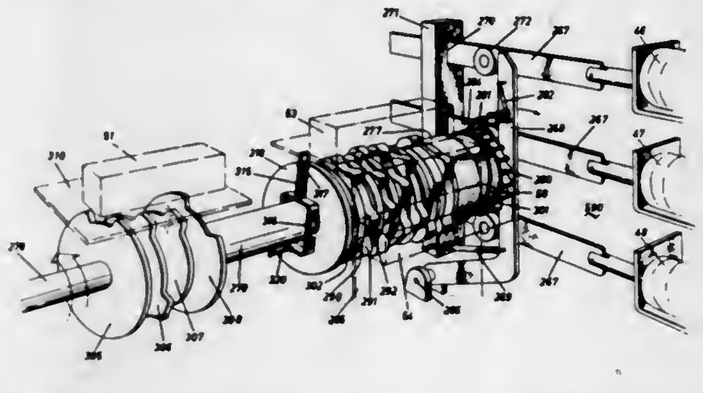
switch forming devices for controlling the operation of said power means so as to automatically discharge unacceptable caps.

3,310,143
VENDING MACHINE ACCUMULATOR

Walter G. Gerhart and Horace H. Smee, Edmonton, Alberta, Canada, assignors to National Vending Research Ltd., Edmonton, Alberta, Canada, a company of Canada

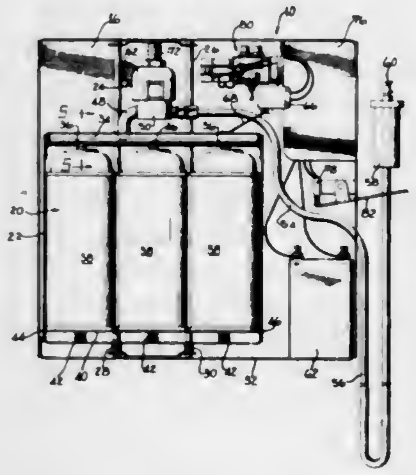
Original application June 7, 1963, Ser. No. 286,367, now Patent No. 3,237,745, dated Mar. 1, 1966. Divided and this application Feb. 28, 1966, Ser. No. 530,462
4 Claims. (Cl. 194—2)



1. A price setting accumulator for use with a vending machine comprising a drum rotatably mounted on its axis; means for rotatably advancing said drum responsive to an electrical signal whereby the angular advance of said drum corresponds to and is proportional to money value received in said vending machine; a pair of discs, having central openings adapted to receive said drum, mounted concentric with said drum to permit said drum to rotate freely therein; means for rotating said discs relative to each other and to said drum; switch means and contacts mounted on each of said discs adapted to be adjusted to set various prices by rotation of said discs relative to each other and to the drum; and means carried by said drum for actuating said switch means upon rotation of said drum.

3,310,144
COIN OPERATED AEROSOL SPRAY DISPENSER

Margaret R. Sandhoff, 2631 Santiago Ave.,
Santa Ana, Calif. 92706
Filed Jan. 10, 1966, Ser. No. 519,667
5 Claims. (Cl. 194—13)

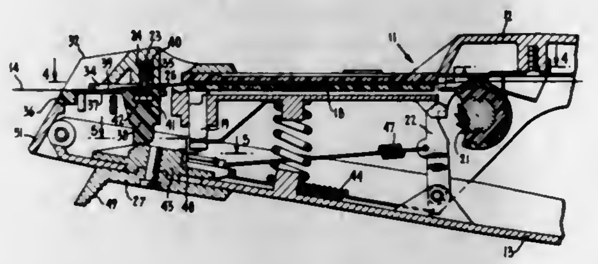


1. An aerosol dispenser, said aerosol dispenser comprising means adapted to discharge an aerosol spray, said discharge means comprising a manifold tube having an inlet nozzle therein, said inlet nozzle being adapted to receive aerosol spray from a vessel containing aerosol spray, said manifold tube being mounted upon a movable frame, said movable frame being urged upward by urging means and being adapted to be urged downward by the weight of aerosol in cans connected to said manifold tube, switch means adjacent said frame, said switch means detecting the position of said frame so as to determine that a charge of aerosol is available for dispensing, a valve connected to said manifold tube, a discharge nozzle connected to said valve, means adapted to control the discharge of aerosol spray, said means adapted to control discharge of aerosol spray including coin operated means so that a proper coin must be inserted in said dispenser so as to actuate said means to control said aerosol spray before said means to control said aerosol spray permits discharge of aerosol spray, said detecting switch being connected to said control means and said control means being connected to said valve so as to control flow of aerosol spray from said manifold tube to said discharge nozzle.

3,310,145
CUTOFF MEANS FOR HAND OPERATED EMBOSSING TOOL

Dane H. Pedersen, Moraga, Calif., assignor to Dymo Industries, Inc., Emeryville, Calif., a corporation of California

Filed Feb. 19, 1964, Ser. No. 345,923
3 Claims. (Cl. 197—6.7)



1. In an embossing tool, a longitudinally extending member having a channel through which a strip to be embossed is adapted to pass, die means operatively carried by said member including die actuating means adapted to selectively emboss the strip, means for advancing a strip longitudinally through said channel, and past said die means, a pair of transversely extending longitudinally spaced blades disposed on one side of said channel, an anvil disposed in opposed relation to both of said blades on the other side of said channel and having an upper generally flat surface extending forwardly of said blades, said anvil having an upper planar step portion opposing the rearmost one of said blades and a lower planar step portion parallel to said upper portion opposing the forward one of said blades, means effecting relative movement between said blades and anvil whereby said rear blade will cut completely through said strip and said forward blade will cut into said strip to a predetermined limited depth so as to provide a tab, and resilient means interposed between said blades to engage said tab upon formation thereof.

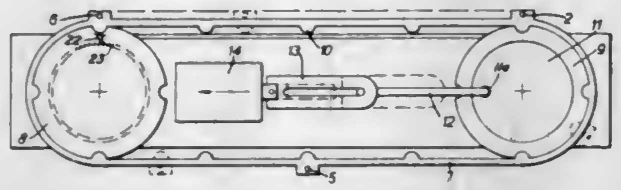
3,310,146
BELT MOUNTED PRINTER HAMMERS MOVABLE BY SHORTEST DISTANCE TO INDEXED POSITION

Albert Leonard Fielder, Galleywood, England, assignor to The Marconi Company Limited, English Electric House, London, England, a British company

Filed Sept. 7, 1965, Ser. No. 485,315
Claims priority, application Great Britain, Sept. 11, 1964, 37,264/64
8 Claims. (Cl. 197—49)

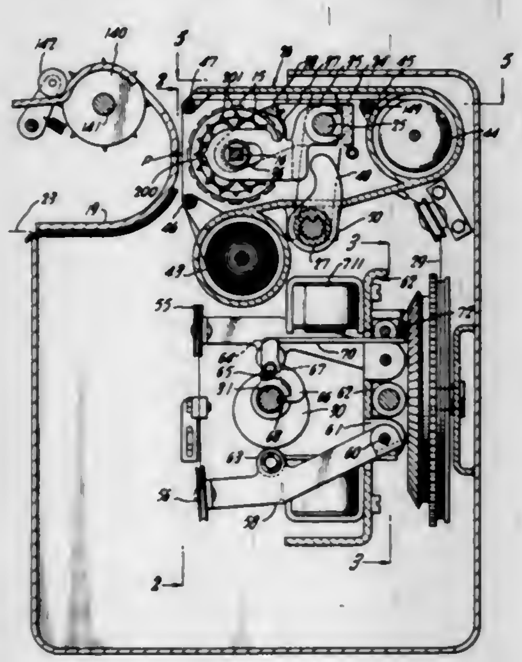
1. A printer of the kind referred to, comprising an endless belt mounted for movement with a portion thereof extending straight along the print line; at least three hammers mounted on said belt and being spaced apart therealong by the length of a print line; means for driving said belt and said hammers in one direction and thereby successively advancing said hammers by one character

space at a time along the print line; and hammer repositioning means operable (1) for reversing the direction of belt drive to return the last hammer which printed to the line start position if, at the end of a printed line of characters, said last printing hammer has progressed less than half way along the print line, and (2) for driving said belt in said one direction to bring the next hammer into the line start position if, at the end of a printed line of characters, said last printing hammer has progressed more than half way along the print line.



3,310,147
WHEEL STRIKING DATA PRINTER

Hugh L. Clary, San Marino, and Fred N. Schwend, Arcadia, Calif., assignors to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed July 12, 1965, Ser. No. 471,255
2 Claims. (Cl. 197—55)



1. A data printer comprising a plurality of axially aligned print wheels, said wheels having type characters therearound,

means comprising a shaft for rotating said wheels to locate selected ones of said type characters at a printing line,

said wheels being independently movable transversely of said shaft,

a first carriage movable along said shaft into different positions,

actuating means comprising an actuator movable by said carriage and adapted to move an aligned one of said wheels transversely of said shaft whereby to imprint a selected type character onto a record medium;

a second carriage for moving said wheels as a unit into different positions along said shaft relative to said actuator,

means for moving said second carriage into different positions relative to said first carriage,

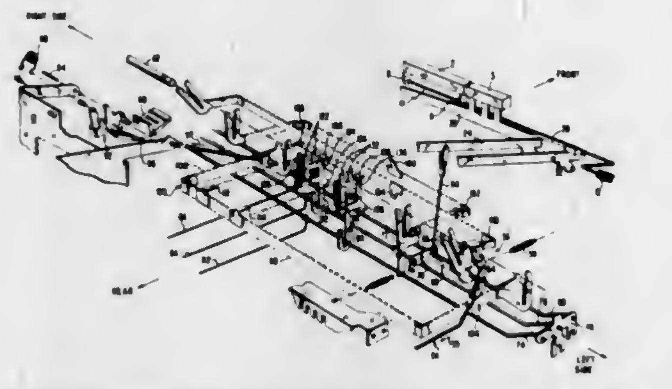
guide means including a second shaft for guiding said first carriage,

means forming an operative connection between said second shaft and said actuator, and

means for rocking said second shaft whereby to operate said actuator.

3,310,148
EXPAND DEVICE FOR PROPORTIONAL ESCAPEMENT TYPEWRITERS

Kenneth A. Lennon, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 26, 1964, Ser. No. 378,301
1 Claim. (Cl. 197—84)



In a proportional escapement typewriter, provided with a variable escapement mechanism and having first and second bails mechanically linked to said escapement mechanism each operative to produce different degrees of escapement, and further provided with first and second keylever mechanisms, an auxiliary expand mechanism to control the spacing effected by said first and second keylever mechanisms comprising:

a first pivotal element having at its free end an extension and a first actuating arm, said first element being mechanically linked to said first and second keylever mechanisms and pivoting in response to the actuation of said first and second keylever mechanisms;

a second pivotal element having its free end in motion-imparting relationship to said first bail, said second pivotal element having a second actuating arm;

interposer means connected to said second pivotal element, said interposer means being positionable in motion-receiving relationship with said extension in response to the actuation of said second keylever mechanism mechanically linked thereto whereby pivotal motion of said first pivotal element imparts pivotal motion to said second pivotal element through said interposer means, said pivotal motion of said second pivotal element being effective to impart motion to said first bail;

a third pivotal element having its free end in motion-imparting relationship to said first bail;

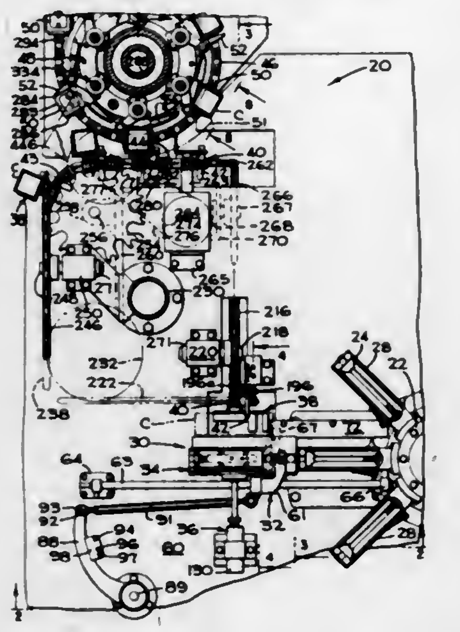
a fourth pivotal element having its free end in motion-imparting relationship to said second bail;

an expand keylever mechanism; and

expand means mechanically linked to said expand keylever mechanism and to said third and fourth pivotal elements and selectively operable by said expand keylever mechanism to position said third and fourth pivotal elements in motion-receiving relationship with said first and second actuating arms, respectively, whereby pivotal motion is imparted to said third and fourth pivotal elements by said first and second actuating arms, respectively, in response to the actuation of said first keylever mechanism and said expand means, and in response to the actuation of said second keylever mechanism key and said expand means, respectively, to thereby impart motion to said first and second bails, respectively.

3,310,149
CARTON TRANSFER APPARATUS

Leslie Vadas, Los Gatos, and Robert W. Drake, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed June 20, 1966, Ser. No. 558,701
10 Claims. (Cl. 198—20)

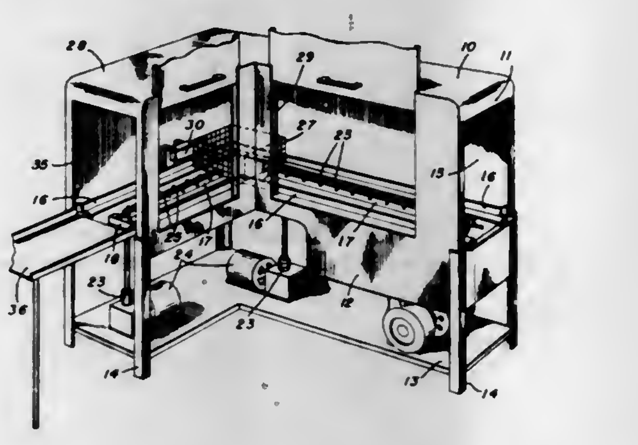


1. A carton transfer apparatus for elongated cartons comprising means for supporting a carton in a horizontal position with one end closed, unloading means for intermittently placing a carton in said support means at an unloading station, transfer conveying means movable along a path between a carton receiving position adjacent said supporting means at the unloading station and a tangential discharge portion, a plurality of carton gripping transfer jaws supported by said transfer conveying means, means for effecting the removal of the carton from said support means and for effecting gripping attachment of the carton in one of said jaws as said one jaw moves through said unloading station, means included in said transfer conveying means for shifting the carton from a horizontal to a vertical position while supported by said one transfer gripping jaw, a transport conveyor movable along an arcuate path which is tangent to said tangential portion of said path, a plurality of spaced carriers secured to said transfer conveyor, a dead plate disposed between one of said carriers and said one jaw at said point of tangency, said one carrier being disposed in vertical alignment with said one jaw and the carton at the point of tangency, drive means for driving said unloading means, said transfer conveying means, and said transport conveyor in timed relation, means for opening said one jaw at the point of tangency to release the carton from said one jaw for acceptance by said one carrier, and means for stabilizing the carton and moving the carton from the point of tangency off the dead plate into the carrier.

3,310,150
DISH WASHING MACHINE

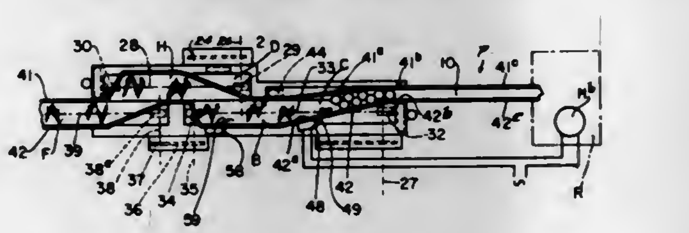
Creston R. Southard, Rte. 7, Gyddie Drive, Winston-Salem, N.C. 27105
Filed Nov. 23, 1964, Ser. No. 412,982
7 Claims. (Cl. 198—24)

1. A dish washing machine for receiving and conveying dish racks having dishes stacked therein along directed paths of travel through a spray cabinet in which nozzles direct streams of water on the dishes comprising: a first dish rack-receiving compartment with a front wall and side walls, said front wall having a dish rack-receiving opening; means for supporting dish racks introduced into said opening for advancement along a directed path of travel; a pawl bar mounted for reciprocation between said dish rack-supporting means; means for reciprocating said pawl bar; a plurality of longitudinally spaced-apart dish-rack-engaging pawls on said pawl bar to engage and advance a dish rack in one direction of pawl bar movement through said first compartment; a second dish rack-receiving compartment connecting with and perpendicular to said first compartment having a rear wall and side walls; means for supporting dish racks introduced into said second compartment for advancement along a directed path of travel; a pawl bar mounted for reciprocation between said dish rack-supporting means; means for reciprocating said pawl bar; a plurality of longitudinally spaced-apart dish rack-engaging pawls on said pawl bar to engage and advance a dish rack in one direction of pawl bar movement through said first compartment; alternating advancing and reciprocating actuating means comprising a pivotally supported bell crank having a rack-engaging member at one end for contacting an advancing dish rack and a pawl-engaging foot at the other end for selectively lifting a pawl, a microswitch disposed to halt reciprocating means in said first compartment when it is contacted by said rack-engaging member and start said means when that member is removed, a pivotally secured angle pawl on said second compartment's pawl bar positioned directly above said bell crank's pawl-engaging foot, said pawl being removed from rack contact while said bell crank's pawl-engaging foot is removed from said pivotally secured pawl and exposed for rack contact when the bell crank's pawl-engaging foot contacts and elevates said pawl, to a rack engaging position.



3,310,151
ARTICLE COMBINER

Sidney T. Carter, Shrewsbury, Mass., assignor to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 327,668, Dec. 3, 1963. This application Apr. 8, 1966, Ser. No. 541,391
8 Claims. (Cl. 198—32)



2. In combination with a motor-driven processing device and a power-driven conveyor which constitutes the floor of a single row delivery path along which articles are advanced to the processing device, article combining apparatus of the kind wherein motor-driven conveyor means constitutes a floor of a width such that articles resting on said floor are free to move transversely while being advanced by said conveyor means, means defining a converging passage of fixed dimensions and having its

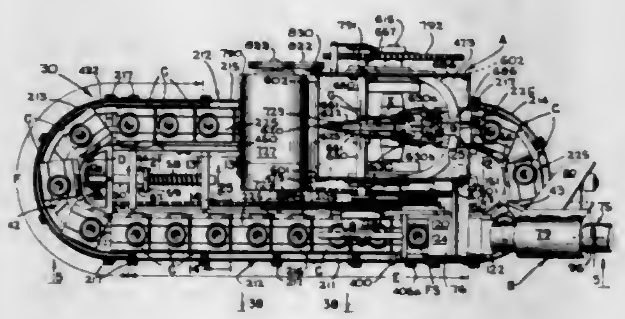
wider end arranged to receive articles from the conveyor means and having its narrower end arranged to deliver articles received from the conveyor means to said single-row delivery path, the width of the converging passage, where it joins the delivery path, being such as to permit only one article at a time to pass, and wherein fixed rigid elements constitute the opposite walls of said converging passage, and wherein articles are advanced through the converging passage solely by said motor-driven conveyor means, means normally operative to deliver articles to said conveyor means at a substantially constant rate and in disorderly array, and means operative to maintain a predetermined antijamming pattern of articles in said converging passage, said means consisting of a detector sensitively responsive to variations in the quantity of articles in the converging passage, and means controlled by said detector operative to stop the flow of articles along said single row delivery path whenever the quantity of articles in the converging passage drops below a predetermined level.

3,310,152
FRUIT HANDLING APPARATUS

David Elford, The Patch, Victoria, Australia, assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Jan. 21, 1965, Ser. No. 426,745

14 Claims. (Cl. 198—33)



1. In a fruit processing machine, a support structure, an endless chain mounted in said structure for movement in a circuitous path in a horizontal plane, a plurality of fruit carriages mounted on said chain for movement along said circuitous path, means defining spaced fruit-receiving and fruit-discharge stations along said path, and means on each carriage for orienting and aligning fruit as it is carried from said receiving station to said discharge station, the circuitous arrangement of said endless chain defining oppositely directed runs and a curved end portion along which the fruit can be manipulated to orient and align it and providing an adequate distance of travel of the fruit while requiring a minimum of floor space.

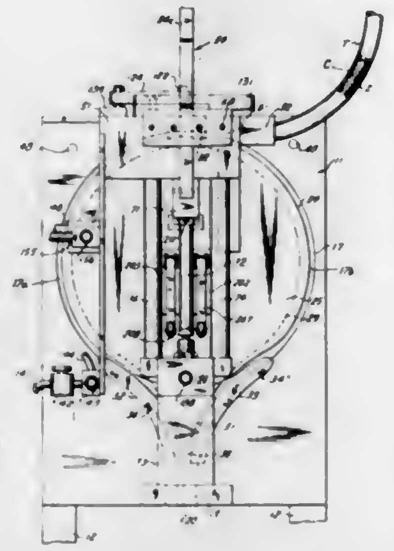
3,310,153
INSERT ORIENTING EQUIPMENT

Robert W. Bosse, Englewood Cliffs, N.J., assignor to Groov-Pin Corporation, Ridgefield, N.J., a corporation of New York

Filed Sept. 8, 1965, Ser. No. 485,694

11 Claims. (Cl. 198—33)

1. Equipment for orienting inserts of the type having a chamfered periphery at one end, said equipment comprising a feeding station, a sensing station and a discharge station, a transfer member to effect movement of an insert from said feeding station past said sensing station to said discharge station, means to reciprocate said transfer member, a discharge outlet, a pair of discharge conduits each in communication with said discharge station and said discharge outlet, said conduits each having an inlet, said inlets being on opposed sides of said discharge station, discharge means at said discharge station to effect movement of the insert at said station into one of said discharge conduits depending upon the orientation of the chamfered periphery of the insert when it is moved past said sensing station, said sensing station comprising a rigid member having a groove extending in a plane parallel to the direction of movement of the insert, said groove having opposed beveled walls and a floor, a movable sensing member protruding outwardly from said floor, the insert being of diameter such that it will engage the sensing member to move the latter only when the insert is oriented with such chamfered periphery moved between said beveled walls a predetermined amount, and means controlled by the movement of said sensing member, to actuate one of the discharge means at said discharge station, whereby the insert will be moved into the associated conduit for successive discharge of said inserts through said discharge outlet with the chamfered peripheries of said inserts having the same orientation.

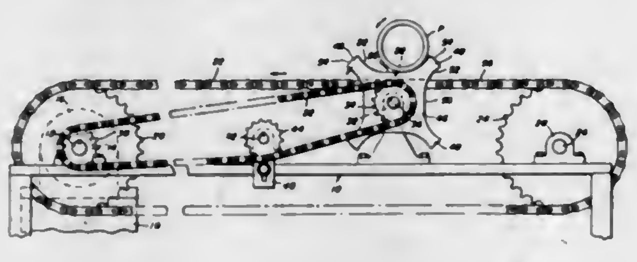


3,310,154
APPARATUS FOR PICKING UP AND ROLLING PIPE LENGTHS WHILE TRAVELING SIDEWISE ON CHAIN CONVEYOR

Herbert J. Peterson, McKeesport, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Sept. 24, 1965, Ser. No. 489,855

3 Claims. (Cl. 198—33)



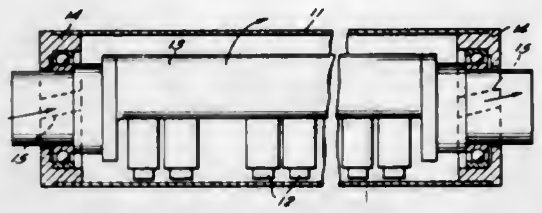
1. In an apparatus for picking up and rotating pipe lengths while traveling sidewise, the combination with spaced, driven conveyor chains adapted to move pipe lengths sidewise without rotation, of spaced driven star-shaped wheels mounted for rotation intermediate the ends of said chains, said wheels having straight edges joining circumferentially spaced radial arms, whereby on rotation of a said wheel a pipe length is sequentially picked up from said chains by one of said arms, rolled on one of said straight edges against the back of the preceding one of said arms and thereby lowered onto said chains, said arms comprising opposed arcuate edges, the arcuate edges of each adjacent arm being tangent to said straight edges.

3,310,155
MAGNETIC CONVEYOR ROLLERS

Fritz Ungerer, Pforzheim, Germany; Irma Ungerer, Friedenstrasse 86, Pforzheim, Germany, heir of said Fritz Ungerer, deceased, assignor to Irma Ungerer, Pforzheim, Germany

Filed Oct. 2, 1964, Ser. No. 400,976

8 Claims. (Cl. 198—41)



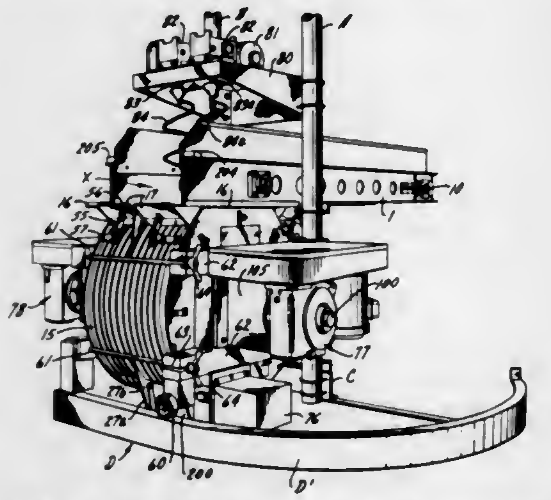
1. A conveyor roller for magnetically attractable articles comprising, in combination, a rotatable roller barrel; carrier means extending longitudinally into the interior of said roller barrel and formed therein with a substantially radially extending cavity and a pair of longitudinally extending cooling ducts in close proximity to and on opposite sides of said cavity, said cooling ducts being adapted to convey a cooling fluid therethrough and having intake and outlet ends respectively provided in said carrier means exteriorly of said roller barrel; and electromagnet means including core means received in the cavity of said carrier means and connected to the latter in good heat transfer relationship therewith, and coil means surrounding said core means and extending into close proximity of said sides of said cavity whereby heat generated by said electromagnet means will be rapidly transferred to the cooling fluid in said ducts.

3,310,156
BI-DIRECTIONAL POWER FEEDING METHOD

Leon J. Nowak, Jr., Park Ridge, Ill., assignor, by mesne assignments, to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware

Original application Mar. 25, 1964, Ser. No. 354,699. Divided and this application Dec. 31, 1964, Ser. No. 435,766

10 Claims. (Cl. 198—62)



1. In the method of forming an even, uniform flow of material which has inherently poor flow characteristics, such as fibrous material, the steps comprising

delivering a supply of the material to a receiving zone,

imparting movement in opposite directions to side by side portions of the material to thereby form streams of material which progress in opposed directions with respect to one another,

each moving stream of material following a fixed path of travel throughout the region of side by side stream movement, and

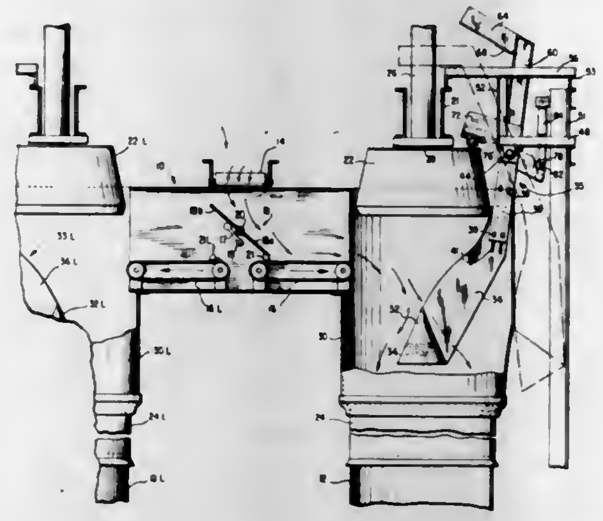
discharging each moving stream of material at a point along its path of travel which is remote from the region of side by side movement of the currents.

3,310,157
DEFLECTOR

Robert C. Clark, Asheville, N.C., assignor to Engineering Associates Incorporated, Asheville, N.C., a corporation of North Carolina

Original application Nov. 1, 1962, Ser. No. 234,956, now Patent No. 3,186,448, dated June 1, 1965. Divided and this application Apr. 2, 1965, Ser. No. 445,166

4 Claims. (Cl. 198—68)



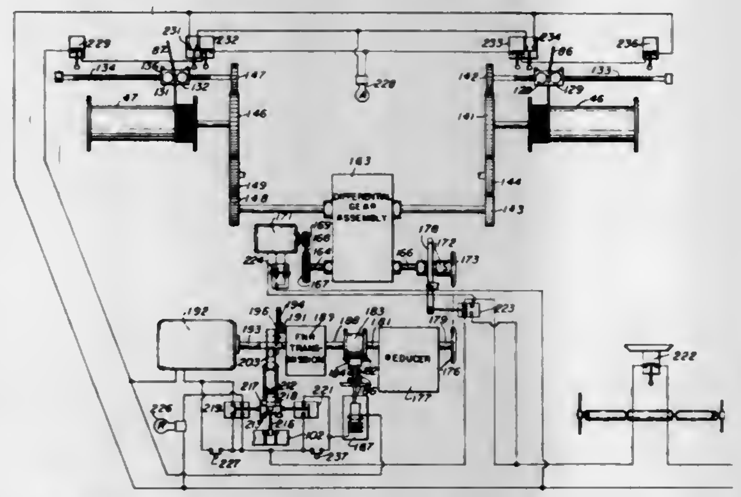
1. A deflector for diverting flow of material from a supply means comprising; a pin member axially supported in a plane at right angles to the path of flow of material, a pair of deflector sections hingedly connected to the pin member, a pair of laterally spaced stop members disposed beneath the pin member on opposite sides of the pin member, each of the stop members being engageable by a deflector section to support the section between the pin member and stop member to divert the flow of material, and an actuating member movable to alternately move one or the other of the deflector sections out of engagement with its associated stop member to an aligned position relative to the other deflector section whereby flow of material is divided into opposite paths when both deflector sections are engaged with their associated stop members and a single path when one of the deflector sections is supported by said actuating member in alignment with the other deflector section.

3,310,158
TENSION EQUALIZER FOR FLEXIBLE STRAND SIDEFRAME CONVEYOR

Donald C. Reilly, Downers Grove, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 24, 1963, Ser. No. 311,123

10 Claims. (Cl. 198—139)

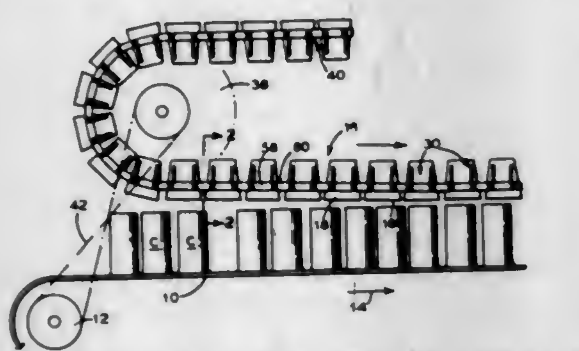


1. In a multi-strand conveyor in which conditions of under tension, operating tension, and over tension exist for intermittent intervals of time in the strands,

a pair of laterally spaced flexible strands forming side frames on which belt supporting rollers are carried,
a pair of rotatable winding drums,
differential means differentially connecting the rotatable winding drums to each other, each drum having a respective one of said strands secured to it,
power means connected to said drums through the differential means and operable to drive said drums in a direction to increase tension on said strands,
control means operable to positively place said power means in a locked condition in which power transmission from the power means to the drums is nondrivingly connected to the differential means, and a winding condition in which the power means is drivingly connected to the differential means, responsive, respectively, to operating tension and under tension in the flexible strand side frames,
said winding drums being differentially rotatable relative to each other to equalize tension between the strands in a system condition in which the power means is non-drivingly connected to the differential means.

3,310,159
APPARATUS FOR PREVENTING THE OVERTURNING OF CONVEYOR-CARRIED OBJECTS

Max Randall, 525 Longview Road,
South Orange, N.J. 07079
Filed July 14, 1965, Ser. No. 471,889
6 Claims. (Cl. 198—162)

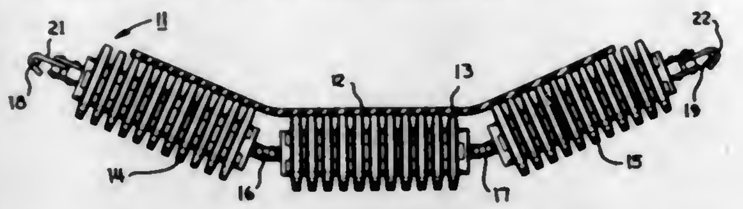


1. In combination, a moving conveyor, and an apparatus for maintaining upright cans being transported on said moving conveyor, said apparatus comprising a plurality of channel-shaped members, each of said plurality of channel-shaped members having a flat bottom wall, endless roller chain means supported above said conveyor and having upper and lower runs, a plurality of bracket means, a different pair of said bracket means connecting respective ones of said plurality of members to said chain means, and slot means in said bracket means cooperable with said chain means for adjustably vertical positioning said bracket means with respect to said chain means, whereby the bottom walls of those members connected to the lower run of said chain means are substantially parallel to the upper surface of the conveyor and in spaced relation to the top surface of the cans, the spacing between the cans and the bottom walls of the plurality of members connected to lower run of the chain means being such that the bottom wall is adapted to abut the upper surface of the cans when they tilt to prevent overturning thereof.

3,310,160
IMPACT ABSORBING ROLLER ASSEMBLY AND ELEMENT THEREFOR

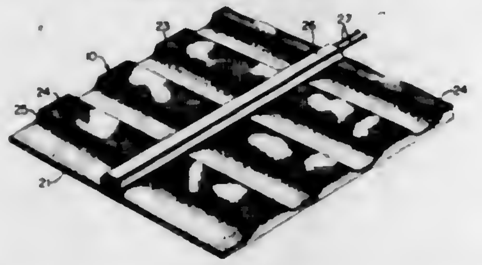
Donald C. Reilly, Downers Grove, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 27, 1965, Ser. No. 451,131
4 Claims. (Cl. 198—192)

1. An impact absorbing element for a belt conveyor roller comprising an annular tire portion having an annular hub portion of lesser diameter, said hub portion having a center bore adapted to fit snugly and telescopically over a rotatable shaft, both of said portions comprising elastomeric materials formed integral with one another, the hub portion being of relatively harder material than the tire portion, the tire portion consisting of relatively more elastic material than the hub portion, the hub portion being formed with axially extending jaw teeth adapted to engage complementary teeth on an adjacent element or retaining ring, and said tire portion having circular cross section outer surface adapted to provide a rolling support for a moving conveyor belt.



3,310,161
TURN CONVEYOR

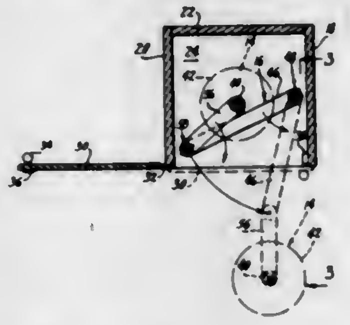
Louis Seelbach Kraft, Jr., Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Mar. 31, 1965, Ser. No. 444,131
7 Claims. (Cl. 198—193)



1. A flexible endless conveyor belt of elastomeric composition comprising a web with a relatively planar top surface and a non-planar bottom surface, said belt having positioned along its longitudinal extent thick sections and thin sections, said thick sections extending transversely across the belt and containing at least one transversely extending relatively rigid reinforcement member therein, said thin sections being interdisposed between said thick sections and extending across the entire width of the belt thus permitting the belt to elongate along one-half while contracting along the corresponding opposite half, at least one relatively inextensible reinforced member positioned in the central portion of said belt and having continuity throughout the entire length of the belt to prevent an overall elongation of the belt as it traverses a laterally curved path.

3,310,162
WIG CASE

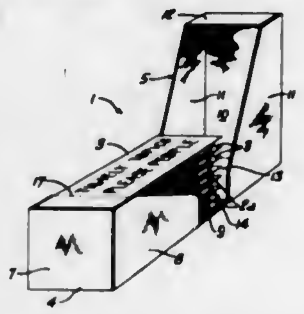
Peter Bayer, 1053 Los Palmas Ave.,
North Sacramento, Calif. 95815
Filed May 31, 1966, Ser. No. 554,041
8 Claims. (Cl. 206—8)



1. A wig case comprising
a receptacle having an openable door;
a wig carrier;
selectively extensible means, secured to the interior of the receptacle and the wig carrier, for selectively moving the wig carrier from the interior of the receptacle to the exterior thereof and from the exterior of the receptacle into the interior thereof.

3,310,163
ADVERTISING DEVICE

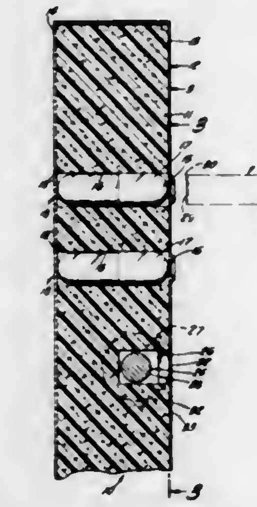
John S. Hickman, 4149 N. Stowell Ave.,
Shorewood, Wis. 53211
Filed Dec. 28, 1964, Ser. No. 421,258
3 Claims. (Cl. 206—20)



1. An advertising device, comprising a container, a series of superimposed layers of removable items disposed within the container with each layer including a plurality of items and a first item of each layer being located along the side edge of each layer, means for removably connecting the items to the container, and a plurality of unitary tear sheets located between adjacent layers of said items with said tear sheets being substantially coextensive with said items, each tear sheet bearing a written question adapted to be progressively exposed as the items in each layer are removed from the container and an edge portion of the next succeeding tear sheet bearing the answer to the question.

3,310,164
PACKAGE

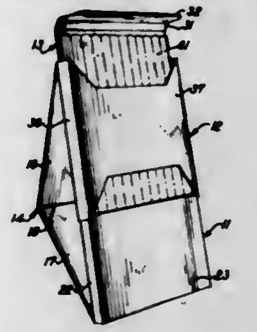
Winifred Sharp Reddall, 2201 Via Alamitos,
Palos Verdes, Calif. 90274
Filed July 7, 1964, Ser. No. 380,861
3 Claims. (Cl. 206—42)



1. An oral contraceptive package comprising: a block of foamed polystyrene of a uniform rectangular cross section, said block having a plurality of identical holes extending therethrough; a sheet fixed relative to each side of said block contiguous thereto in a position covering both ends of each of said holes therethrough, one of said sheets having an embossed edge in registry with said block holes, the other of said sheets having a hinged tab in registry with each of said holes; an oral contraceptive capsule snugly fitted in each of said holes; a key having a shank of a size to fit inside said holes; and means to fix said key to said block, said key shank having a recessed end defined by a sharp edge in the shape of a closed curve the size of the cross section of said holes.

3,310,165
COMBINATION SHIPPING AND DISPLAY BOX

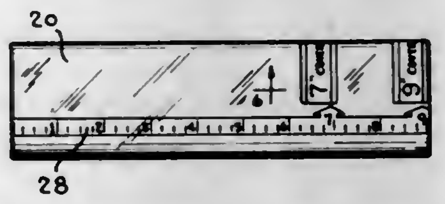
George Reiner, New York, N.Y., assignor to Venus Pen & Pencil Corporation, New York, N.Y., a corporation of New York
Filed Feb. 5, 1964, Ser. No. 342,619
8 Claims. (Cl. 206—45.25)



1. A container comprising a rectangular tubular chamber, a telescopic rectangular tube slidably mounted over said chamber, and a flexible hinge member secured to the top of said tube and the bottom of said chamber, said hinge member being parallel and adjacent to said chamber and said tube at their extended position, said hinge member having two sections which are angularly disposed to one another when said chamber and said sliding member are not in said extended position, said container being formed from a single integral blank of a flexible material.

3,310,166
PREFAB FLEXIBLE BAG FOR ARTICLES OF VARYING LENGTHS

Mortimer C. Mauthe, Fond du Lac, Wis., assignor to Bestt Rollr Inc., Fond du Lac, Wis., a corporation of Wisconsin
Filed Sept. 23, 1965, Ser. No. 489,664
3 Claims. (Cl. 206—45.31)



3. A package comprising,
a tubular cover for a paint roller,
a transparent flexible bag enclosing said cover, said bag having a closed end engaged with one end of said cover, said bag having a closure portion tucked into the other end of said cover, and
visible indicia on said bag adjacent said other end of said cover designating the length of said cover,
said bag being characterized by having another visible indicia to designate another length of cover which said bag is adapted to enclose.

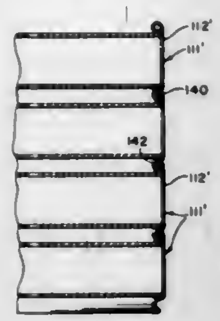
3,310,167
RIBBON DISPENSER

William W. Knox, Mentor-on-the-Lake, Ohio, assignor to Mag-Nif, Inc., Painesville, Ohio, a corporation of Ohio
Filed Feb. 8, 1965, Ser. No. 431,133
7 Claims. (Cl. 206—52)

1. A ribbon dispenser comprising in combination
a continuous strand of ribbon wound in a coiled configuration beginning with a standing end thereof on the outside and continuing toward the center with

ever decreasing overlapping convolutions ending with a running end adjacent the coiling axis,

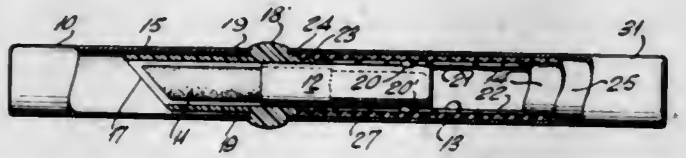
a container having end and sidewalls defining a cylindrical ribbon compartment open through the coiling axis and containing a coil of ribbon and



an end slot in one end wall of the container slightly wider than the thickness of said ribbon strand so as to guide it out from the open center of the ribbon coil while dispensing and insure that the running end loses its coiled configuration once it passes through the slot.

3,310,168
COSMETIC CONTAINER CONSTRUCTION

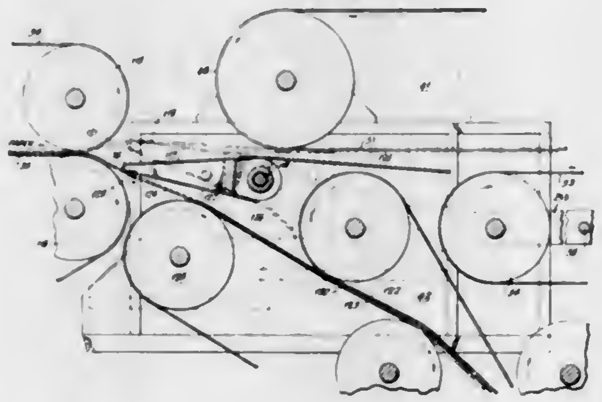
William James Landen, Cheshire, Conn., assignor to The International Silver Company, Meriden, Conn., a corporation of Connecticut
Filed Sept. 16, 1963, Ser. No. 309,259
7 Claims. (Cl. 206—56)



1. A cosmetic container or the like, comprising an inner tubular member of stiffly yieldable plastic material and having a cylindrical bore containuously communicating between an outer applicator end and an inner end to be closed, said applicator end having a circumferentially continuous applicator lip through which cosmetic substance is to be retractably dispensed, a circumferentially extending retaining bead on the outer surface of said inner tubular member at a location intermediate the ends thereof, said inner tubular member having an elongated cam slot extending substantially from a point short of said bead location to said inner end, the material of said inner end being relatively thin and resilient to permit spreading deformation at the open end of said slot, an elongated tubular carrier guided by said bore for reciprocation therein, said carrier being integrally formed with a radially outwardly projecting cam follower received in said slot and including a trip projecting radially beyond said slot to substantially the diameter of said bead, and an outer tubular member or stiffly yieldable plastic material circumferentially continuously overlapping the slotted part of said inner tubular member and rotatably supported by said inner tubular member, the bore of said outer tubular member having near its end adjacent said bead a circumferential recess matching said bead and a recessed helical thread extending substantially from said circumferential recess to substantially the other end of said outer tubular member, the depth of said circumferential recess and of said helical-thread recess being substantially the same, whereby permanent assembly may be completed by first inserting said carrier through the outwardly deformed inner end of said inner tubular member, and by then inserting the slotted end of said inner tubular member into said outer tubular member, the interference between said bead and the bore of said outer tubular member being slight enough to permit local deformation and snap-retention upon axial assembly, the cam follower being permanently received in said helical recess when said bead deforms said outer tubular member.

3,310,169
AUTOMATIC PAPER FINISHING MACHINE

Gilbert Forrester, Falmouth, Maine, assignor to S. D. Warren Company, Boston, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 417,533, Nov. 18, 1964, which is a division of application Ser. No. 95,374, Mar. 13, 1961, now Patent No. 3,216,296, dated Nov. 9, 1965. This application Mar. 4, 1966, Ser. No. 531,747
7 Claims. (Cl. 209—74)



6. The method of inspecting and sorting paper sheets comprising the following steps:

(a) inspecting a moving web of paper for defects and generating a delay accept or reject signal based upon said inspection,
(b) cutting said paper web into sheets,
(c) delivering acceptable sheets over a pivoted reject gate in its lowered position,
(d) gripping the delivered acceptable sheets and conveying them downstream,
(e) raising the reject gate in response to a delayed reject signal before the tail of the gripped acceptable sheet next preceding a defective sheet pases over the swinging end of the reject gate, and
(f) downwardly deflecting the following defective sheets.

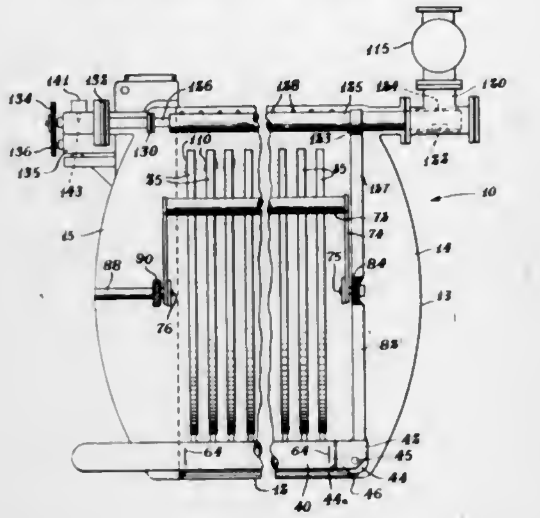
3,310,170
SYLVINITE FLOTATION WITH AMINE COMPOSITION

Charles W. Abernethy and Milton H. Klein, Carlsbad, N. Mex., assignors to American Metal Climax, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed May 18, 1964, Ser. No. 368,405
9 Claims. (Cl. 209—166)

1. A process for effecting the froth flotation of sylvinite ore that comprises comminuting said ore, forming a pulp containing said comminuted ore suspended in a brine saturated with the constituents of the ore and agitating said pulp containing said sylvinite ore in comminuted condition in the presence of a cationic sylvite collector composed of a mixture of 65 percent to 75 percent by weight of an acid addition salt of hydrogenated distilled tallow amine and 35 percent to 25 percent, respectively, of an acid addition salt of distilled cocoa amine, said mixture having an iodine value of less than 12.

3,310,171
APPARATUS AND METHOD FOR PRESSURE-FILTERING

Henry Schmidt, Jr., Hinsdale, and James F. Zievers, La Grange, Ill., assignors to Industrial Filter & Pump Mfg. Co., Cicero, Ill., a corporation of Illinois
Filed June 18, 1964, Ser. No. 376,122
46 Claims. (Cl. 210—81)

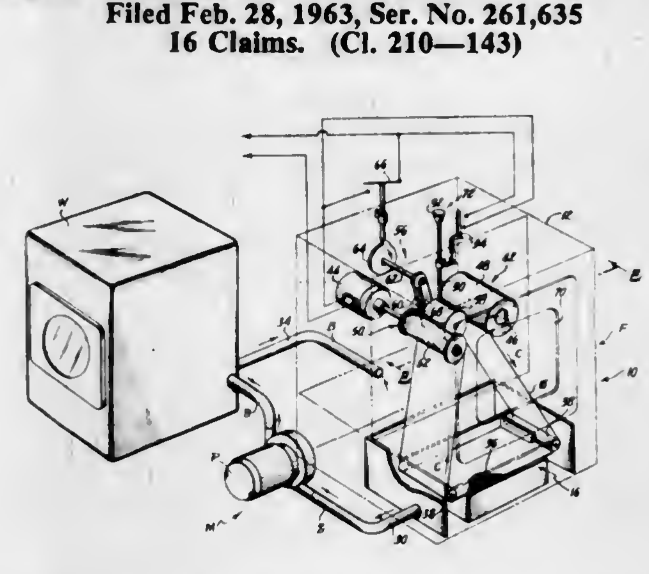


34. A method of removing filter cake from pressure-filter leaves comprising the steps of providing a plurality of jets of wash liquid, impinging the jets on the cake on said leaves while sweeping the jets across the entire surface of the cake, and controlling the quantity of the wash liquid at different points of sweep of the jets to provide different amounts of energy to different portions of the cake.

40. In a pressure-filter having a plurality of filter leaves, an effluent header, means for receiving said filter leaves in effluent communication relationship with said header, pivotable movable means for simultaneously securing said leaves to said receiving means when moved to one position, and means for removing said leaves when said movable means is moved to another position.

3,310,172
APPARATUS FOR FILTERING LIQUID

Daniel E. Beduhn, Manitowoc, Wis., assignor to Manitowoc Engineering Corp., Manitowoc, Wis., a corporation of Wisconsin
Filed Feb. 28, 1963, Ser. No. 261,635
16 Claims. (Cl. 210—143)



1. Apparatus for filtering a liquid, said apparatus comprising

a container for maintaining a quantity of such liquid at a desired level,

means for supporting a supply of filter medium of indefinite length,

means for advancing the filter medium from the supply support through a zone of use,

means for collecting the filter medium following the use thereof,

structure for positioning a portion of the filter medium in submerged relationship to such liquid level,

said structure comprising base and top portions having aligned openings therethrough with the position of the filter medium being disposed intermediate the base and the top portions and covering the openings therethrough,

a control for enabling the filter medium to be advanced along a given course from the supply thereof to the position at the structure and then to the collecting means,

said control comprising

bracket-like elements having elongate openings therein for pivotally mounting the top portion of the structure to the base portion thereof,

an elongate member secured to the top portion of the structure at a location thereon which is intermediate the longitudinally extending centerline thereof and the bracket-like elements,

a linkage comprising

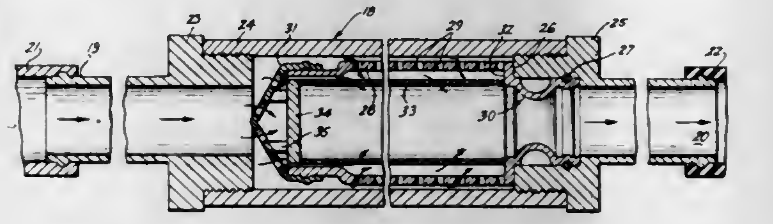
a lever-like part having the member secured thereto adjacent one end portion thereof and an actuator secured adjacent the other end portion,

said lever-like part being pivotally mounted intermediate the end portions thereof to effect movement to the member in a direction that is opposed to the direction of movement of the actuator, and

means for urging such liquid to flow in a path through the portion of the filter medium which is positioned by the structure.

3,310,173
APPARATUS FOR REMOVING SEDIMENT FROM SWIMMING POOLS

Leon Sosower, Teaneck, N.J., assignor to Tri-Men Mfg. Corp., Hoboken, N.J., a corporation of New Jersey
Filed Nov. 4, 1963, Ser. No. 321,200
2 Claims. (Cl. 210—169)

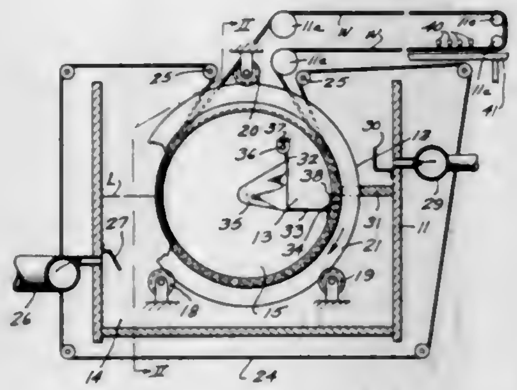


1. In a swimming pool filtration circulating system in which water is continuously sucked from the pool, directed through a main filter, and returned to the pool: an apparatus for removing sediment from the floor of the pool, comprising a readily manipulable conduit connectable to the suction side of the circulating system, a vacuum head at the free end of said conduit, a filtering unit forming part of said conduit and adapted to intercept said sediment, whereby said sediment removal can be carried out periodically without dependence upon said main filter for interception of said sediment, said filtering unit comprising a housing including interengaging but readily separable elements defining an outer casing when joined together, a perforated inner cage within said casing and spaced from the casing wall, and a replaceable filtering cartridge mounted within said housing, said cage comprising a cylindrical body having a relatively large perforated section at one end, a relatively small unperforated section at the other end, an inner shoulder between said sections, a perforated cap removably applicable to the end of said perforated section, and means for

frictionally securing the small section to the outer casing, said cartridge being insertable into said cage through said larger section when the cap is removed therefrom.

3,310,174
WATER FILTRATION APPARATUS

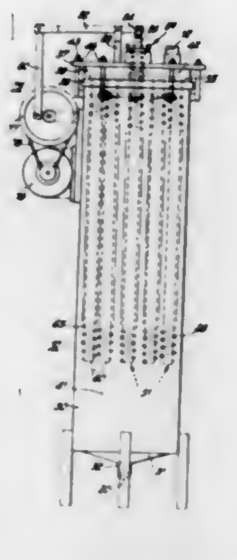
Lloyd Hornbostel, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Apr. 15, 1963, Ser. No. 273,185
1 Claim. (Cl. 210—193)



A filtering mechanism comprising in combination,
a rotatable perforated hollow horizontal support drum,
a continuous closed looped web of nylon cloth wrapping said drum and movable with the drum,
an open container for a liquid to be filtered being positioned so that the wrapped drum is partially submerged in said liquid,
a closing end wall at one end of the drum so that the inside of the drum is separated from the outside of the drum,
the other end of said drum being open,
a seal between the container and the drum at said other end preventing the escape of liquid from the container,
a horizontal supporting shaft secured to said one end of the drum,
spaced supporting bearings engaging a supporting rim at said other end of the drum,
looped sealing lines extending outside of the drum and downwardly into the container engaging the web at the ends of the drum and holding the web thereto,
a precoat chamber on the down-running side of the drum having a lower wall extending in close-running relation to the drum,
a precoat inlet into the precoat chamber having a distributing baffle for providing a continuous supply of precoating material in a carrier fluid to the precoat chamber,
a carrier fluid collecting chamber within the drum opposite the precoat chamber pivotally supported with a lower wall in close-running sealing engagement with the inner wall of the drum and being weighted for urging said lower wall into continuous sealing engagement with the drum,
an extension on said carrier fluid chamber projecting from the open end of the drum for the continual removal of carrier fluid,
inlet means into the container for delivering the liquid to be filtered including a distributing baffle,
a filtrate removal channel beneath the open end of the container for removing filtrate as it flows out of said open end, web guide means supportingly leading the web from the container,
and means removing the precoating layer from the web with filtered materials collected thereon after the web leaves the container and supported by said guide means.

3,310,175
FILTER

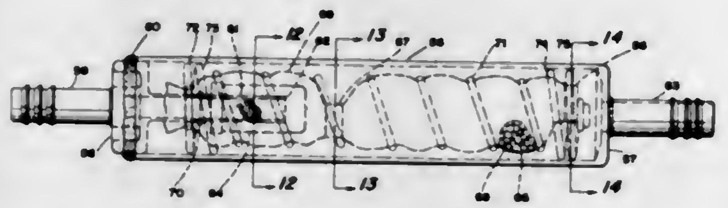
Russell G. McLagan, Milford, Ohio, assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Continuation of application Ser. No. 325,408, Nov. 21, 1963. This application Apr. 22, 1966, Ser. No. 544,628
6 Claims. (Cl. 210—193)



1. In an upflow filtering system, the combination of a hollow casing having an inlet adjacent its lower end and an outlet adjacent its upper end and means for introducing fluid and filter aid medium into said inlet and for removing fluid from said outlet, fixed partition means dividing said casing into upper and lower chambers, a plurality of apertures formed in said partition means, a plurality of pervious elongate tubular filter elements, each of said elements being attached at one end to said partition means in surrounding relation to one of said apertures and extending into said lower chamber, said filter aid medium being deposited on each of said elements, a coil spring disposed in concentric surrounding relation to each of said filter elements and disposed beneath said filter aid medium, said springs having widely spaced convolutions, coupling means connected to one end of each of said springs, and selectively operable drive means engaging said coupling means for simultaneously moving said springs longitudinally of their respective filter elements.

3,310,176
DRIERS FOR REFRIGERATION SYSTEMS

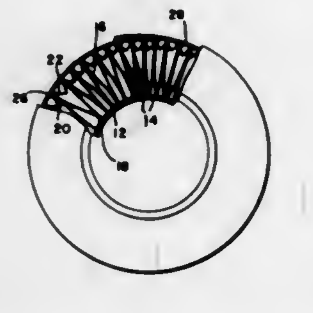
Frank A. Ziherl, Richmond Heights, and Arthur S. Kish, Lyndhurst, Ohio, assignors to Parker-Hannifin Corporation, a corporation of Ohio
Filed Oct. 1, 1963, Ser. No. 313,102
11 Claims. (Cl. 210—266)



1. In a drier of the character described, a tubular member having a fluid inlet and outlet, a bag disposed within said tubular member, said bag having a closed portion containing a desiccant, and an open portion into which the fluid outlet extends, means securing the open portion of said bag to said fluid outlet, and means interposed between the inner wall of the open portion of the bag and said fluid outlet for spacing the open portion of the bag from said fluid outlet.

3,310,177
FILTER WITH PLEAT SPACING MEANS

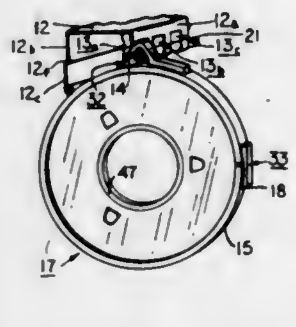
Southwick W. Briggs, Chevy Chase, Md., and William A. Brazerol, Washington, D.C. (both % Stone Filter Co., Inc., 900 Franklin St. NE., Washington, D.C. 20017)
Filed June 2, 1964, Ser. No. 371,900
5 Claims. (Cl. 210—457)



1. A filter comprising a perforated center tube, a permeable paper filter medium having axial pleats defining inner and outer folds, said inner folds engaging said center tube, a perforated cover member surrounding said medium, and a pleated spacer interposed between said cover member and outer folds maintaining said outer folds in spaced relationship, said pleated spacer having an inner fold extending freely between each pair of adjacent pleats of said medium and outer folds adhesively bonded to said cover member.

3,310,178
REEL STORAGE APPARATUS

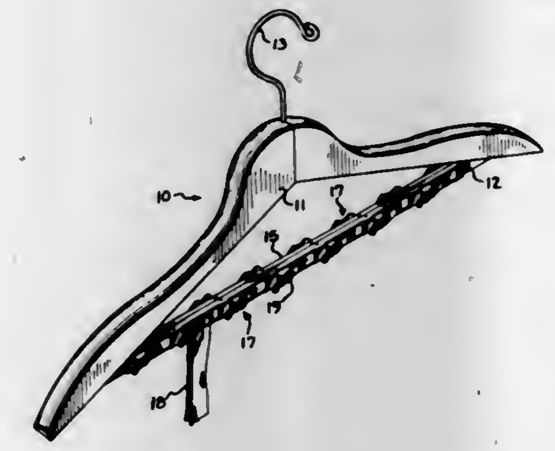
David M. Wright, Shrewsbury, Mass., assignor to Barry Wright Corporation, Watertown, Mass., a corporation of Massachusetts
Filed Feb. 18, 1966, Ser. No. 538,515
31 Claims. (Cl. 211—40)



1. Reel storage apparatus comprising, in combination, at least one reel holder adapted to enclose and support a reel having a central hub and a pair of parallel substantially circular sides fixed with the hub, said holder including an elongated band of stratchable material having flexibility permitting the band to be drawn into and separated from a tight encircling relationship with the reel, said band having means on one side thereof for engaging the peripheries and the inner faces of the circular sides of the reel, a hanger member of non-stretchable material fixed with said band at a predetermined position therealong and projecting outwardly beyond the other side of said band, and means, of non-stretchable material, for releasably securing said band in tight encircling relationship with the reel, a support, and hanger means held by said support, said hanger means including a plurality of horizontally-aligned spaced portions each disposed for a separate separable cooperative hooking engagement by the hanger member of said reel holder.

3,310,179
GARMENT HANGING APPARATUS

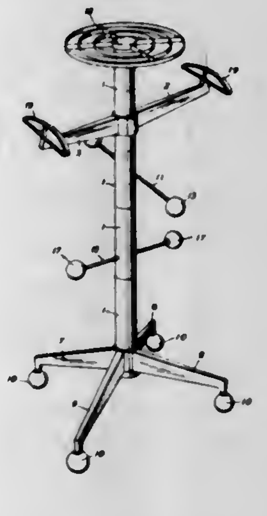
Joseph J. Cappuzzello, 6939 W. 64th Place, Chicago, Ill. 60638
Filed Feb. 4, 1965, Ser. No. 430,393
4 Claims. (Cl. 211—113)



1. A garment hanging apparatus comprising, in combination, a mounting channel having at least one garment engaging member integrally formed thereon, said member being normally spring biased toward said channel and lever means associated with said member for urging the latter away from said channel when hanging or removing a garment.

3,310,180
DEMOUNTABLE CLOTHES-STAND FOR CHILDREN'S CLOTHES

Richard Neagle, Via Arissto 12, Milan, Italy
Filed May 3, 1965, Ser. No. 452,566
3 Claims. (Cl. 211—177)

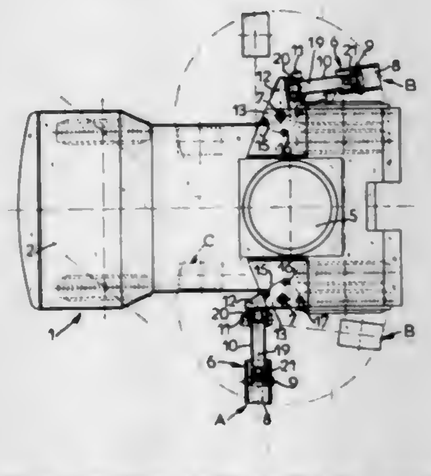


1. A demountable clothes stand particularly for children's clothes, comprising a vertical standard, a supporting base and at least two supporting members extending outwardly in the same plane from the vertical standard, said vertical standard being defined by at least three tubular sections, one of said tubular sections being located between the supporting members and the supporting base, a second tubular section being located below the supporting base and a third tubular section being located above the

supporting members, and the inner ends of the supporting members and supporting base having integral arcuate segments including upwardly and downwardly extending portions cooperable to provide cylindrical components for fitting within adjacent tubular sections for effecting connections between the supporting members, the supporting base and the vertical standard.

3,310,181
STABILIZING DEVICE FOR ROLLING VEHICLES

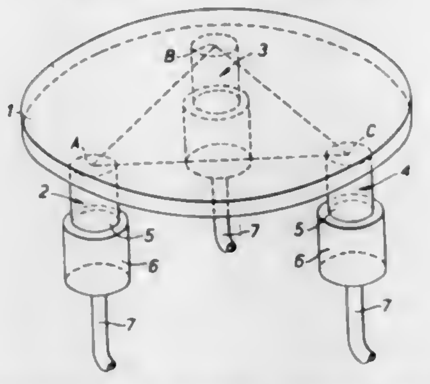
William Daniel Symmank, Lyon, France, assignor to "Yumbo," Genas, France, a corporation of France
Filed Apr. 26, 1965, Ser. No. 450,715
Claims priority, application France, Apr. 25, 1964, 972,380
6 Claims. (Cl. 212—145)



1. In a rolling vehicle with a frame mounted on at least one pair of front wheels and on at least one pair of rear wheels, for carrying a movable load handling and lifting apparatus exerting, when working, tipping and tilting forces upon said vehicle at rest, at least one power-controlled retractable outrigger arrangement for stabilizing said vehicle in a stationary operating condition, comprising at least one overhung bearing means secured to one edge of said frame; an outrigger supporting bracket member pivotally connected to said bearing means so as to be rotatable through an angle up to about 180° about a substantially vertical pivot axis, said bracket member being formed with an upper attachment portion and with a lower attachment portion projecting downwards to a level below the underside of said frame and underlying said upper portion; a prop arm hingedly connected by one end to said lower attachment portion so as to be swingable upwards and downwards about a substantially horizontal pivot axis whereby said arm is swingable vertically between a raised inoperative position and a lowered, downward sloping, operative position, and also swingable horizontally between two nearly symmetrically opposite extreme positions located in vertical planes substantially parallel to said frame edge, said prop arm having a length greater than the distance of said horizontal axis to the ground and having its vertical plane of motion with respect to said bracket member radially spaced from said vertical pivot axis by such a distance that said arm is fully concealable by being folded inwards, beneath and against said frame in its stowed inoperative position; a ground engageable shoe pivoted to the outermost end of said prop arm about a substantially horizontal pin; a pressure fluid operated, reciprocating ram actuator consisting of a cylinder-and-piston assembly having its opposite ends pivoted to said upper attachment portion of said bracket member and to the outermost end of said prop arm, respectively, for raising and lowering the latter and for acting as a bracing strut; and releasable positively locking means for fastening said bracket member in any selected angular position thereof in fixed relation to said frame.

3,310,182
SERVO SYSTEMS AND CONTROL DEVICES THEREFOR

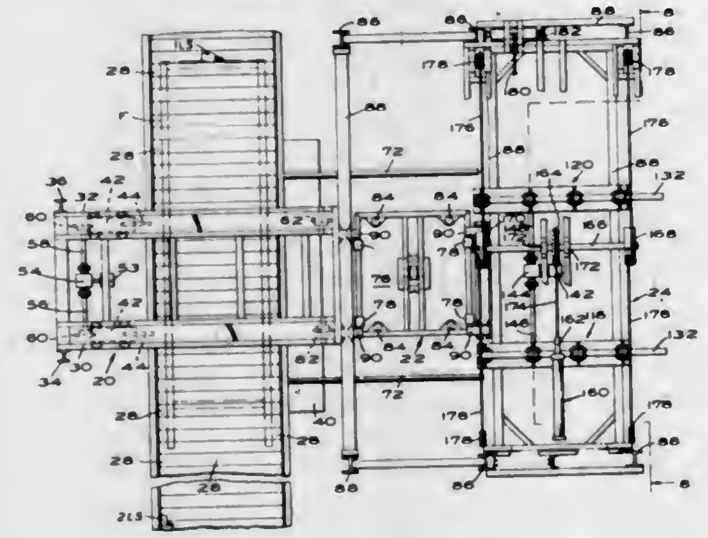
George Orloff, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain
Filed Jan. 12, 1965, Ser. No. 424,951
Claims priority, application Great Britain, Jan. 14, 1964, 1,618/64
2 Claims. (Cl. 214—1)



1. A hydraulic servo system comprising a substantially rigid, substantially plane operating member having freedom to move normal to its plane and to tilt, at least three valve-operating members against which said operating member bears, said valve-operating members being disposed in non-aligned relation to one another so that they are engaged by different parts of the operating member whereby application to the operating member of a single force at different positions on the plane member acting normal to its plane will cause actuating forces to be applied in various degrees to said valve-operating members, the relative magnitudes of said actuating forces being dependent upon the position of application of said single force relative to the positions of said different parts; a source of fluid under pressure, a transducer device adapted to develop desired mechanical force in response to application thereto of fluid under pressure, a valve connected to one of the valve-operating members of said control device and operable to open communication between said source and said transducer device, and means for applying said force to said valve in such a sense as to oppose operation thereof.

3,310,183
AUTOMOBILE FRAME STACKER

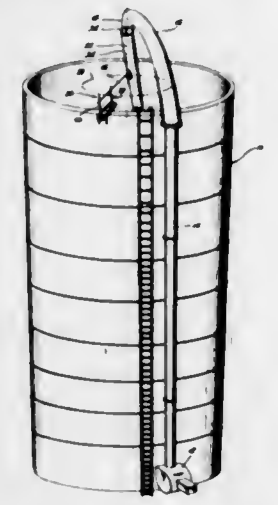
Cyril D. Paquette, Grosse Pointe Park, Mich., assignor to Taylor & Gaskin, Inc., Detroit, Mich., a corporation of Michigan
Filed July 8, 1964, Ser. No. 381,139
3 Claims. (Cl. 214—6)



1. An automobile frame stacking apparatus for use with a conveyor delivering a succession of automobile frames in spaced apart, substantially horizontal positions, comprising, in combination: a conveyor unloader including a support extending transversely across the conveyor spaced thereabove and a frame-engaging pusher depending from said support for reciprocation therealong to transfer frames from the conveyor; frame elevator means including frame-supporting rails disposed in frame-receiving relation with said unloader adjacent the conveyor and a vertically shiftable frame elevator operable to elevate successive frames from said rails to a stack-holding position thereabove; stack-supporting means mounted spaced above said elevator means for receiving and supporting in a stack frames delivered thereto by said elevator including spaced apart dogs each pivotally mounted on a horizontal axis for limited rotational movement and having a substantially horizontal frame-supporting upper surface and an inclined lower surface for contact with a frame being elevated to pivot the dog; stack transfer means for transferring a stack of frames from said stack-supporting means to a stack storage station, said transfer means comprising a pair of vertically shiftable support beams each carrying a generally horizontal elongate ram beam mounted for longitudinal reciprocation on its support from a retracted position to an extended position beneath said stack; motive means coupled to said support beams to shift the same; motive means coupled to said ram beams to reciprocate the same; and control means connected to said conveyor unloader and to said frame elevator and to said stack transfer means operable to withhold operation of said elevator and initiate operation of said transfer means in response to a predetermined accumulation of frames in said stack, and operable to suspend operation of said unloader during operation of said elevator.

3,310,184
SILO DISTRIBUTOR

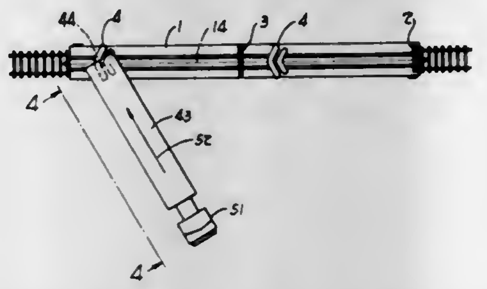
David P. Dauer, Manchester, Mich., assignor of one-half to James C. Hendley and Virginia C. Hendley
Filed June 25, 1965, Ser. No. 466,908
7 Claims. (Cl. 214—17)



1. A silage distributor for use with a silage blower or the like having a discharge pipe formed with an outlet which opens in a generally downwardly direction, comprising a tubular chute, means suspending said chute on said pipe with the upper end of said chute nested over said pipe and communicating with said outlet and with the lower end of said chute being free to swing in a circular path through 360 degrees about a generally vertical axis, and linkage means for swinging said lower end of said chute through a 360 degree circular path about said vertical axis comprising a first generally horizontal link having one end interengaged with said chute, second and third parallel spaced generally horizontal links pivotally connected to said first link at spaced intervals remote from said one end, and means mounting said second and third links for rotation about parallel vertical axes spaced radially from the pivotal connections between said first link and each of said second and third links.

3,310,185
MECHANISM FOR TRANSFER OF CONTAINERS TO RAIL CARS

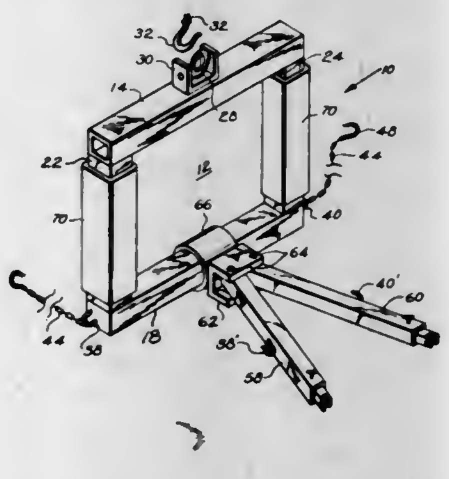
Henry C. Stricker, Jr., Edgerton, and James T. Cribben, Janesville, Wis., assignors to Highway Trailer Industries, Inc., Edgerton, Wis., a corporation of Delaware
Filed June 24, 1964, Ser. No. 377,563
7 Claims. (Cl. 214—38)



1. In container transfer mechanism of the class described, in combination, a rail car, a first bolster extending transversely of the rail car and longitudinally movable therealong, king pin engaging and lock means therefor, said lock means being arranged about centrally of said first bolster, a second transversely extending bolster normally restrained against longitudinal movement on the rail car, king pin engaging and lock means for said second bolster, a container having king pins to connect with the lock means, a bogie removably engaged with the container, movement of said first bolster being effected during positioning movement of the container on to the rail car, the first bolster including oppositely extending pairs of spaced ramps formed to elevate the end of the container during the movement aforesaid, said spacing providing a guide track whereby to guide the king pin at the said end between said ramps and toward the center of said bolster when directed thereto from either side of the rail car aforesaid, said movement effecting disengagement of the container from the bogie.

3,310,186
VEHICLE LIFTING AND TOWING APPARATUS

Edward F. Wegener and Thure H. Wegener, both of S. River Road, Cranbury, N.J. 08512
Filed June 16, 1965, Ser. No. 464,275
10 Claims. (Cl. 214—86)



1. Apparatus for lifting and towing a wreck having a bumper and decorative portions to be protected including

a generally rectangular frame adapted to contact the bumper of the wreck and including top and bottom members and two side members all rigidly interconnected,

coupling means secured to said top member of said frame for coupling said frame and the tow bar to a lifting crane for raising and lowering said frame and apparatus attached thereto, connecting means,

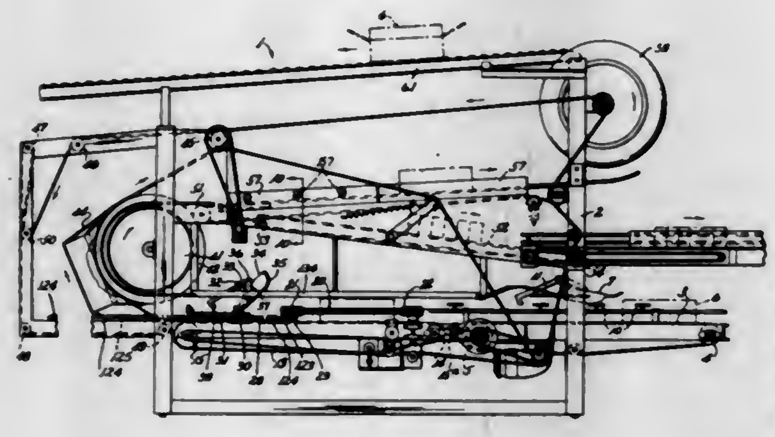
a pair of grab hooks secured to said bottom member and adapted to be connected through the connecting means to the undercarriage of the wreck to be raised and towed without contacting other decorative and fragile portions of the wreck,

said connecting means comprising a flexible chain or cable adapted to be connected taut between each grab hook on said frame and the undercarriage of said wreck with said frame being oriented at a selected angle and elevation with respect to said wreck so that said connecting means, grab hooks and bottom member are located entirely beneath the bumper of the wreck and out of contact with decorative portions of said wreck.

3,310,187
UNCASER

Theodore L. Barker and Luther M. Hamrick, Cuyahoga Falls, Ohio, assignors to Geo. J. Meyer Manufacturing Co., Milwaukee, Wis.

Filed Sept. 14, 1965, Ser. No. 487,219
14 Claims. (Cl. 214—304)



11. An opening and dumping apparatus for rectangular paperboard cases, boxes and the like comprising

conveyor means for receiving cases and moving them in longitudinal alignment along a fixed path,

plow means for opening the side flaps of a case moved through said path by said conveyor means,

means for engaging and opening the trailing flap of a said case,

means associated with said conveyor means for engaging a said case and turning it end for end after said trailing flap is opened,

means for engaging and opening the trailing end flap of the turned case,

a member operatively associated with said last-named means to engage the opened leading end flap of the turned case and retain it open to prevent engagement of such flap by said last-named means,

means for inverting an opened case,

a support plate to receive the inverted opened case and having a discharge edge,

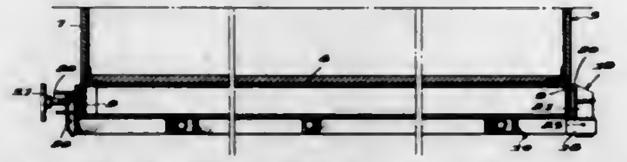
means for receiving the contents of the inverted case positioned adjacent but below the discharge edge of said support plate, and

a plurality of parallel wires secured in position above said last-named means and extending downstream from said discharge edge to receive and support the case nest and the opened end flaps thereon, said wires permitting the contents of a case to drop therethrough.

3,310,188
CONTAINER HANDLING APPARATUS

James W. Dempster, Thomas J. Huey, Jr., and Steven C. Voorhees, Knoxville, Tenn., assignors to Dempster Brothers, Inc., Knoxville, Tenn., a corporation of Tennessee

Filed Nov. 10, 1964, Ser. No. 410,236
9 Claims. (Cl. 214—516)

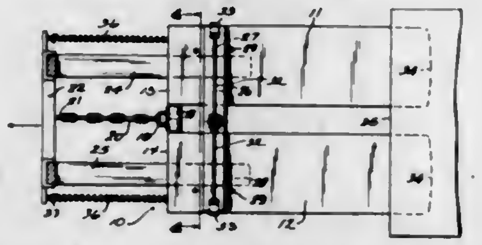


1. A container for use with handling apparatus, comprising a receptacle having a frame structure supporting said receptacle thereon, a hook bar assembly having means for detachable connection with said handling apparatus, said hook bar assembly extending transversely of the frame structure in embracing relation with the frame structure, and means for clamping the hook bar assembly to the frame structure.

3,310,189
ATTACHMENTS FOR LIFT TRUCKS

Tuenis Vander Wal, 1432 W. Madison St., Milwaukee, Wis. 53204

Filed Jan. 4, 1965, Ser. No. 422,906
1 Claim. (Cl. 214—620)

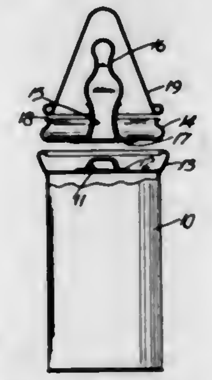


In a fork-lift truck with a plurality of fork elements, a plurality of plates with subjoined channels to receive the fork elements, a common pivotal connection between said plates, sleeve means mounted on the underside of each of said plates, a plurality of parallel disposed resilient means, means attaching one end of said resilient means to said lift truck and the opposite end of said resilient means within said sleeve means, said resilient means being operative to retract said plates from a first position to a second position on and relative to said fork elements.

3,310,190
INFANTS FEEDING DEVICES

Eric Kenneth Hurst, Long Cross, near Chertsey, England, assignor to Lewis Woolf Griptight Limited, Birmingham, England, a British company

Filed Sept. 28, 1965, Ser. No. 490,793
Claims priority, application Great Britain, Oct. 5, 1964, 40,403/64; Feb. 16, 1965, 6,598/65
2 Claims. (Cl. 215—11)

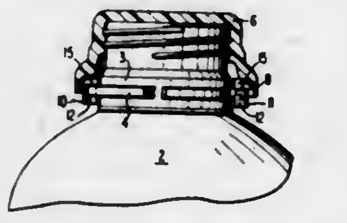


1. A disposable infants feeding device comprising a liquid container having a portion which is provided with an aperture for the escape of liquid, a sealing member covering the aperture before use and removable to expose the aperture, the container having a lip portion, a teat holder detachably engaged with the lip portion of the container, a flanged teat carried by the teat holder and, when the teat and teat holder are fitted to the container, the flange of the teat surrounds the aperture and is trapped between the container and teat holder, there being a detachable cover carried by the teat holder.

3,310,191
SCREW-TYPE CLOSURE

Fred J. A. Kern, Dieburg, and Hans Peter Kunz, Darmstadt-Arheilgen, Germany, assignors to E. Merck A.G., Darmstadt, Germany

Filed Sept. 13, 1965, Ser. No. 486,973
Claims priority, application Germany, Sept. 15, 1964, M 62,428
10 Claims. (Cl. 215—42)



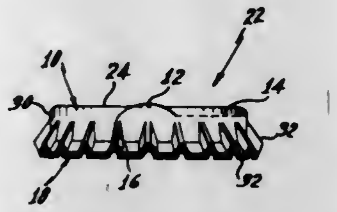
1. In combination with a container having a threaded neck, a tamper-proof closure comprising a closure cap and a safety ring having a first and second section adapted to fit onto the neck of the container, said first section composed of a plurality of upper disconnected ring members adapted to be positioned between the cap and the container neck and each of which is connected to the second section by a plurality of rupturable webs. the area of contact of each of said webs with the first section being larger than the area of contact between said web and the second section, said second section when in operative position is below the upper ring members and the cap is designed to gridle the neck and slide axially thereon, two locking means, a first of said locking means being disposed between the closure cap and first ring section which only permits the cap to be inserted over and onto the neck having a safety ring thereon thereby to close the container, the second of said locking means being disposed between the second ring section and the container neck and acting to inhibit rotation of the second ring section and downward axial movement of the said first ring section, the locking means between the cap and ring being activated after the cap has been inserted over the neck and said first section of the ring to lock the same to the cap and the second ring section to the neck, whereupon a slight movement of the neck of the cap to remove the same will result in rupture of said web and downward axial movement of the second ring section and hence provide a visual indication of any attempt to open the closure.

3,310,192
CLOSURE CAP

Albert J. Edwards, Baldwin, N.Y., and Michael J. Healy, New Haven, Conn., assignors to Micaldon Corp., Baldwin, N.Y., a corporation of New York

Filed Nov. 19, 1964, Ser. No. 414,500
13 Claims. (Cl. 215—46)

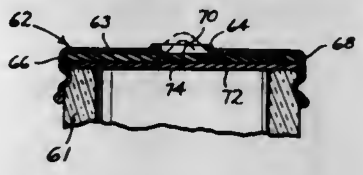
1. A composite unitary cap to be secured about the open neck of a container having a peripheral securing bead, said cap including a plurality of individual and separable like cap elements nested within each other, each individual cap element having a complete top surface that is adapted to cover the open neck of a container and having a flange depending from and circumscribing the full periphery of said surface to extend about the full periphery of the securing bead of the container, said flange of each of said cap elements having one portion thereof separable from another portion thereof, and separation means on each cap element enabling the separation of said one portion from the other portion in response to a manual force applied thereto.



3,310,193
BOTTLE CAP

John W. Macpherson, 1107 S. K St., Tacoma, Wash. 98405

Filed Mar. 22, 1965, Ser. No. 441,528
1 Claim. (Cl. 215—56)



A pressure regulating bottle cap comprising

(a) a top having a central aperture therethrough of from $\frac{1}{8}$ to $\frac{3}{8}$ inch diameter,

(b) means for securing the top to the bottle, and

(c) a resilient diaphragm seated in the cap in sealing relation against the inner surface of the top, the diaphragm being made of rubber having a durometer value of 50–70 and having a thickness of from $\frac{1}{32}$ to $\frac{3}{32}$ inch,

(d) the diaphragm having a central perforation communicating with the aperture, the perforation having a diameter equal to that produced by puncturing of the diaphragm with a sharp instrument having a diameter of 0.010 to 0.100 inch,

(e) the central portion of the diaphragm being distendable through the aperture by gas pressure developed in the bottle to form a bubble projecting outwardly from the cap,

(f) the aperture and perforation being so proportioned relative to each other that the perforation is substantially closed to the passage of gas until the gas pressure has developed sufficiently to project the bubble through the aperture and overcome the resiliency of the diaphragm material in the area of the perforation,

(g) thereby opening the perforation and periodically venting excess gas to the atmosphere while retaining a predetermined level of gas pressure in the bottle.

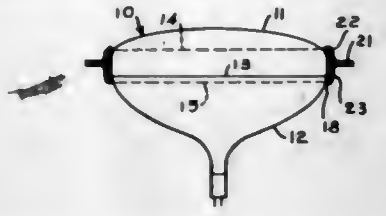
3,310,194
CATHODE RAY TUBE ENVELOPE

Georges M. Bradu and Pierre F. Grosborne, St.-Pierre-les-Nemours, Seine-et-Marne, France, assignors to Societe des Verreries Industrielles Reunies du Loing, Paris, France

Filed Apr. 23, 1962, Ser. No. 189,607
Claims priority, application France, Apr. 28, 1961, 860,243; Aug. 21, 1961, 871,214
3 Claims. (Cl. 220—2.1)

1. In a cathode ray tube comprising a glass envelope composed of a viewing screen portion and a funnel portion of generally conical shape, the improvement that consists in a band encircling the envelope and extending from a plane passing through the viewing screen periph-

ery to a plane adjacent the larger end of the funnel, the encircling band comprising a metal outer shell member having an inner surface spaced from the envelope and a

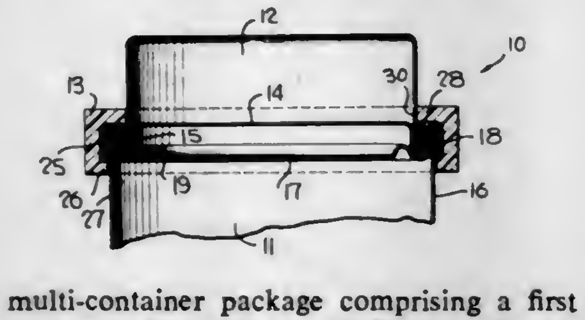


congealed sulphur sealing material filling the space between the envelope and the inner surface of said shell member.

3,310,195
PLASTIC BODY AND CONTAINER ATTACHMENT TO END OF CAN

Edward W. Wagner, Maywood, N.J., and Joseph J. Sennello, Oak Lawn, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Jan. 29, 1964, Ser. No. 340,967
9 Claims. (Cl. 220—23.83)

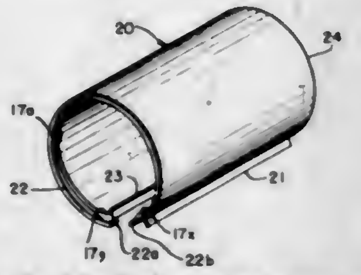


1. A multi-container package comprising a first container and a second container, said first container including a container body having an annular seam projecting from one end along the periphery thereof, said second container being removably connected to said first container by a flexible plastic connector, said connector including an annular wall disposed adjacent to and outwardly from said annular seam, a locking rib formed on said annular wall and protruding inwardly therefrom and disposed for snap engagement with said annular seam to lock said connector to said first container, said second container including an annular seam at one end thereof for supporting said second container on said first container, said connector further including an inwardly directed wall portion disposed in overlying engagement with the annular seams of said first and second containers.

3,310,196
CAN END SEAL

Walter L. Flaherty, Concord, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed July 15, 1964, Ser. No. 382,812
4 Claims. (Cl. 220—67)

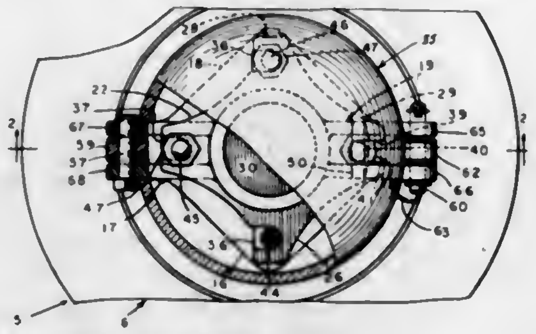


1. A can body blank having a strip of sealing composition disposed lengthwise on each of the opposed marginal edges which are ultimately interfolded with a can lid to form a double seam, the thickness of said strips being greatest at each of their opposed longitudinal end portions.

3,310,197
SAFETY VENT

Clyde H. Folmsbee, Charlevoix, Mich., and Ralph G. Portis, Highland Park, Ill., assignors to Midland Manufacturing Corp., Skokie, Ill., a corporation of Illinois

Filed May 17, 1965, Ser. No. 456,132
5 Claims. (Cl. 220—89)



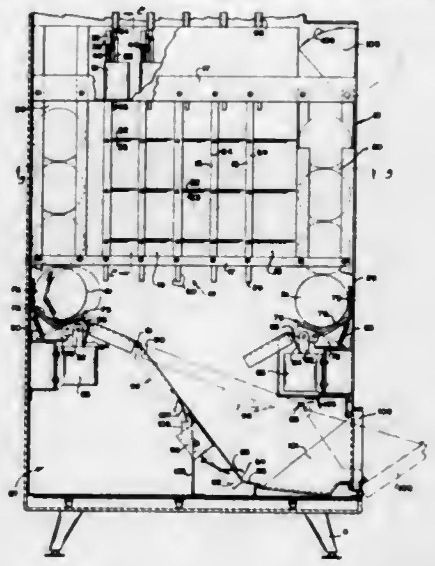
1. A safety vent comprising:
- a base adapted to be secured around an opening in a pressure vessel, said base having a central opening and spaced mounting portions;
- a retainer having a central opening aligned with the central opening in said base and spaced parts aligned generally with said spaced mounting portions, said parts each having a laterally opening recess therein;
- a replaceable frangible member clamped between said base and said retainer and closing said central openings;
- quick-acting securing means on at least all but one of said spaced mounting portions entering said laterally opening recesses in said spaced parts of said retainer said quick-acting securing means including threaded members and nuts thereon;
- a cap over said retainer, said cap pivoted to said base for opening and closing action; and
- means detachably retaining said cap in closed position, whereby said cap readily is opened for inspection of said frangible member, and a ruptured frangible member easily is removed and replaced by loosening said nuts of said quick-acting securing means and displacing said retainer.

3,310,198
ROOM SERVICE APPARATUS FOR DISPENSING ARTICLES AND REGISTERING CHARGES THEREFOR

Dean Regan, Vancouver, British Columbia, and Robert F. Le Brocq, Oakville, Ontario, Canada, assignors to Servade Manufacturing Corporation Limited, Vancouver, British Columbia, Canada

Filed Aug. 9, 1965, Ser. No. 478,278
4 Claims. Cl. 221—7)

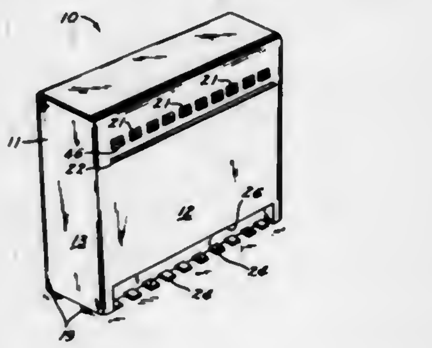
1. Room service apparatus for providing a plurality of dispensable articles comprising a supporting rack, a plurality of vertically extending passages formed in the rack, each passage being associated with one type of article to be dispensed, a plurality of vertically spaced article supporting swingable platforms arranged in each passage for movement between a horizontal article-supporting position and a vertical non-supporting position, an arm extending from each platform, a vertically elongated supporting bar arranged for longitudinal slidable movement adjacent each passage normally engageable with the arms of the platform therein to maintain the latter in their horizontal position, said bar having vertically spaced openings formed therein arranged when the bar is moved in one direction to receive the arms and thereby release the platforms, thereby permitting the latter to swing to their vertical position, said openings being arranged at predetermined longitudinally spaced intervals and correlated to the vertical spacing of the platforms whereby the latter are released in consecutive order from the bottom to the top, a selector switch for each type of artcle to be dispensed, electrically actuated operating means connected to each supporting bar responsive to the operation of a selected one of the switches to move its associated supporting bar in said one direction a predetermined distance for each operation of said one selected switch, said predetermined distance being correlated to the spacing of the openings whereby one platform may be released for each of the consecutive movement of said supporting bar so as to permit the article carried by each platform when released to drop through the passageway, indicating means arranged when actuated to indicate and accumulate the price of each article selected, and means operated by each article when ejected to actuate the indicating means.



3,310,199
ARTICLE DISPENSING UNITS REMOVABLE FROM AN ENCLOSING CASING

Tom J. Roberts and Donald L. Paulson, Des Moines, Iowa, assignors to Ethicon, Inc., a corporation of New Jersey

Filed Mar. 22, 1965, Ser. No. 441,482
2 Claims. Cl. 221—25)

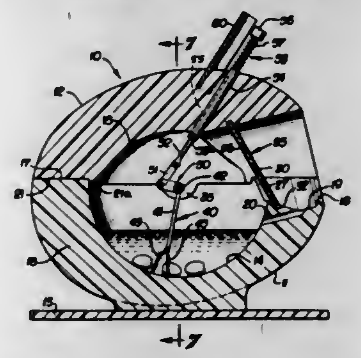


1. A machine for individually dispensing thin elements such as sutures and the like, comprising in combination:
- a housing having a slot formed therein through which the elements may pass;
- a magazine unit containing a means for holding a plurality of the elements retractably inserted into said housing and supported thereby adjacent said slot;
- said holding means including a pair of superimposed, flexible, separately connected strips between which a plurality of the elements are inserted in longitudinally spaced relation;
- said unit including guide means protruded outwardly through said slot for guiding said strips as a unit outwardly of said housing;
- said unit including further upper and lower pairs of rollers for gripping said strips such, upon rotation, to separate said strips and feed the elements successively through said guide means and outwardly of said slot;
- first actuating means including at least a gear mounted on said unit for rotating said rollers;
- second actuating means mounted on said housing, and including a reciprocal rack engageable by said gear upon insertion of said unit into said housing; and
- means for reciprocating said rack in a predetermined manner whereby one element is fed through said slot at a time.

3,310,200
DISPENSING APPARATUS DELIVERING ARTICLES TO RAISED STATIONARY ARTICLE SUPPORT

Burl T. Wood, Lindsay, Calif., assignor to Lindsay Ripe Olive Company, Lindsay, Calif., a corporation of California

Filed June 17, 1965, Ser. No. 464,627
3 Claims. (Cl. 221—192)

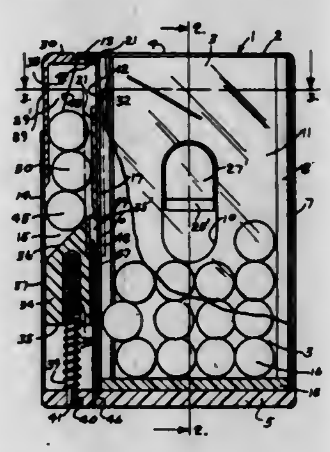


1. A device for individually dispensing solid articles comprising: a closed receptacle formed of walls impervious to liquid and having a passage extending from the interior to the exterior thereof, a shelf contiguous to said passage for reception of an article and accessible from the exterior of the receptacle, a door swingably mounted in said passage, a scoop member shiftably mounted within said receptacle to propel an article from the interior of the receptacle through the passage, past the door, for deposit upon the shelf, means connected with the scoop member for actuating the same, said means being accessible from the exterior of the receptacle for manual operation, said receptacle comprising a bowl with a circular slope from the bottom to the passage, the scoop member comprising a handle pivotally mounted on a horizontal axis, and an outer spoon-like end disposed to traverse the circular slope of the bowl, and a liquid drain channel leading from the shelf into the bowl.

3,310,201
FLAT PACK PILL DISPENSER WITH REMOVABLE MAGAZINE

Joseph S. Guarr, 1617 Mulvane, Topeka, Kans. 66604, and Robert F. Kelley, 6126 Kenwood, Kansas City, Mo. 64110

Filed June 1, 1965, Ser. No. 460,219
6 Claims. Cl. 221—197)



1. A pill dispenser comprising,
(a) a rectangular-shaped housing having a bottom, sides and an open top,

(b) a barrel along one side of said housing having an open top and a closed bottom,

(c) a partition separating the barrel from the housing, said partition having an opening into said barrel near the top of the housing,

(d) a hollow plunger reciprocable in said barrel, said plunger having a closed top,

(e) a piston spaced below said top, a compartment defined in said plunger between said top and piston for receiving said pills in aligned relation therein, said compartment having an opening adjacent said top and capable of being aligned with the opening in the partition,

(f) means engaging the closed bottom of said barrel and said piston to normally urge the plunger to non-pill dispensing position, one wall of said plunger having its lower end beveled, forming a cam surface spaced above said barrel bottom,

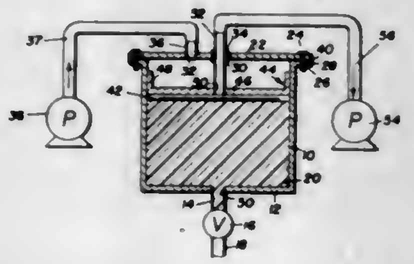
(g) a container for pills receivable in said housing, said container having an open side edge engageable against said partition when inserted in said housing,

(h) a closure member for said open side edge of the container for retaining said pills therein, said container being slidable in and removable from the housing and said closure member being removed from the container as the container slides into the housing, and

(i) a pawl secured in said barrel alongside said piston and having a free end provided with a cam surface opposing the cam surface on said plunger wall adapted to engage said first named cam surface whereby said free end of said pawl upon reciprocation of the plunger toward said closed end of the barrel will move away from the partition and into the path of pills in said compartment so that only one pill will be dispensed upon each reciprocation of said plunger.

3,310,202
METHOD AND APPARATUS FOR EJECTING VISCOUS MATERIAL

George J. Goddard and Larry J. Evans, Malad, Idaho, and Francis M. Alpiser, St. Louis, Mo., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 483,270
9 Claims. (Cl. 222—1)



1. A method of ejecting a viscous material comprising the steps of:

placing said material in a container having at one end thereof an end closure and at least one outlet connected to said end closure;

placing a flexible sheet against the surface of said material facing the other end of said container so as to establish an air-free area of contact between said sheet and said material;

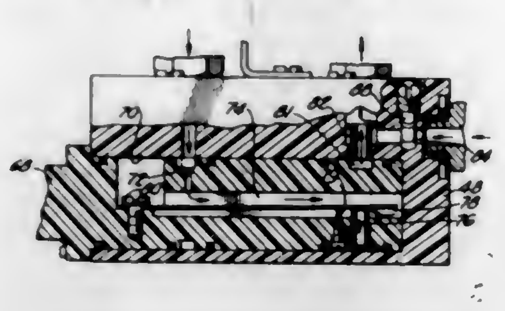
placing a piston within said container adjacent said sheet;

removing air from the space between said piston and said sheet, and;

moving said piston toward said outlet to eject said material therethrough and to subsequently seal said outlet with said sheet.

3,310,203
DRINK-DISPENSING DEVICE

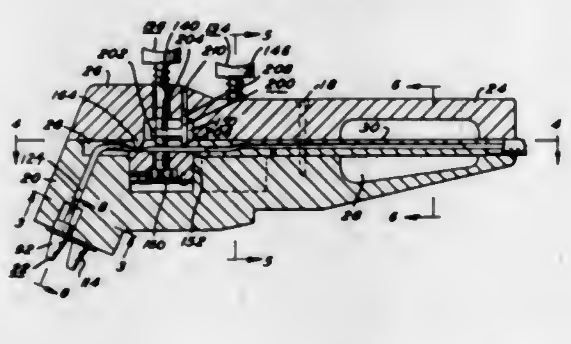
Gerald Patrick McCann, La Canada, Calif., assignor to McCann's Engineering & Mfg. Co., Glendale, Calif., a corporation of California
Filed Oct. 20, 1964, Ser. No. 405,145
5 Claims. (Cl. 222—54)



1. A drink-dispensing device comprising a body having a syrup inlet, a carbonated water inlet and a mixture outlet, means forming a chamber between said inlets, a bimetal blade supported in said chamber, one-half having a greater rate of expansion in response to increased temperature of syrup than the other half, a syrup outlet from said chamber flow through which is controlled by the position of said blade, and means forming a bore within said carbonated water inlet, said bore communicating with said syrup outlet whereby flow from said carbonated water inlet to said mixture outlet draws syrup through said bore.

3,310,204
FLUID DISPENSING MEANS

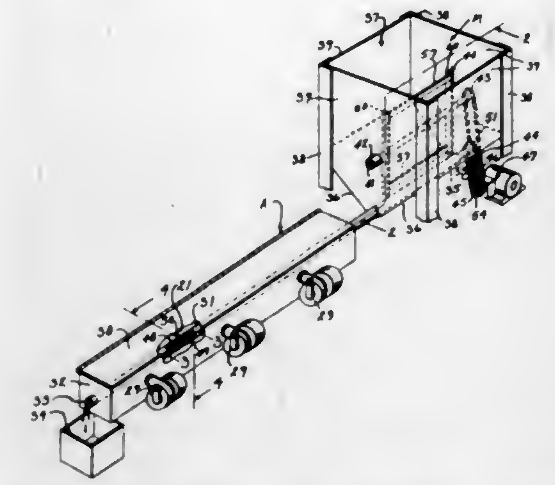
Allan L. Zinman and Lawrence M. Kauffman, both of Philadelphia, Pa., assignors to Prestige International Spray, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed June 8, 1965, Ser. No. 462,182
10 Claims. (Cl. 222—144.5)



1. A fluid dispensing means for controllably dispensing a plurality of fluids including a body provided with a plurality of fluid conducting means, and a plurality of valve means for respectively controlling fluid flow through corresponding ones of said conducting means; said valve means each having opened and closed positions and each being provided with adjusting means for controlling the rate of fluid flow through its corresponding conducting means when its said valve means is in its opened position; said body being provided with a plurality of nozzle elements for respectively dispensing fluid passing through an associated one of said conducting means when its corresponding valve means is in its opened position; the adjusting means of said valve means comprising a push rod having a threaded portion, and a clamping element threadedly engaging the threaded portion of said rod and having a clamping end positionable proximate to and for restricting fluid flow through its corresponding conducting means, the position of said element on said push rod being adjusted by rotation of said push rod for adjusting the rate of fluid flow through said conducting means.

3,310,205
FEED MECHANISM FOR AN APPARATUS FOR OPPOSING OFFSET IN PRINTING

Walter E. Meyer, Port Washington, Wis., assignor to Cra-Vac Corporation, Port Washington, Wis., a corporation of Wisconsin
Filed Mar. 9, 1964, Ser. No. 350,378

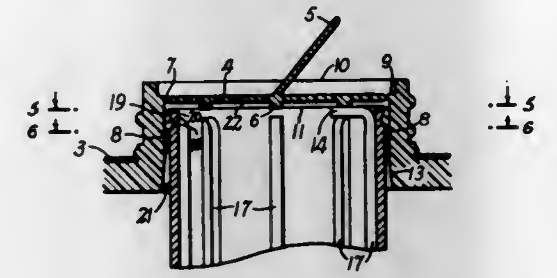


1. A powder dispenser comprising, a substantially rectangular shaped frame of the type adapted to extend transversely above a moving bed of a printing machine carrying freshly printed webs and printed sheets, including an elongated container for powdered material carried by said frame and having a rear, front, bottom and end walls, said bottom wall slanting forwardly and downwardly from said rear wall and terminating in spaced relation with said front wall forming an elongated relatively large discharge opening, a roller mounted for rotation substantially closing said opening and in sealing relationship with the end termination of said bottom wall, an air conduit above and adjacent the forward portion of said roller, means for providing a steady flow of air through said air conduit to impinge upon the outer peripheral surface of said roller, a feed mechanism for supplying a steady and even flow of powdered material to said container including, a longitudinally extending hollow feed tube extending through said container above the bottom wall thereof and having its end terminations projecting beyond the respective end walls of said container, a powdered material supply hopper adjacent one end termination of said feed tube, said respective end of said feed tube being so constructed and arranged as to extend into the said hopper adjacent the bottom portion thereof, a longitudinally extending spiral feed screw received in said tube and extending substantially through the entire length thereof, means providing open communication between said feed tube and said hopper, means within said container for evenly and steadily dispersing said powdered material from said tube into said container, and means for rotating said feed screw to constantly and simultaneously feed material through said tube into said container and out the open end termination of said tube.

3,310,206
PULL-OUT SPOUT ASSEMBLY

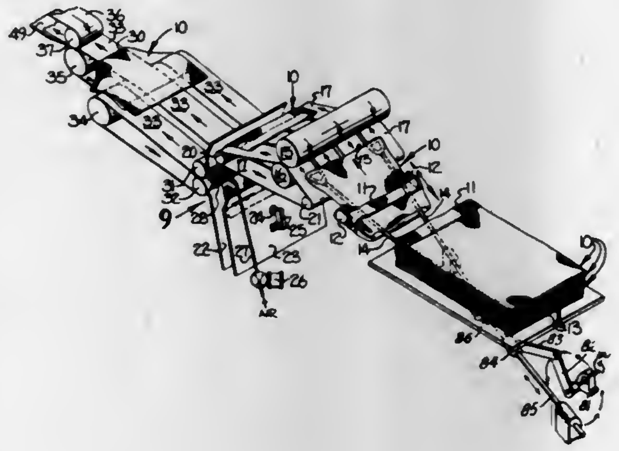
Herrick B. Littlefield, Noroton, Conn., assignor to R. W. Shore Mfg. Co., Inc., Long Island City, N.Y., a corporation of New York
Filed Mar. 8, 1965, Ser. No. 437,967
5 Claims. (Cl. 222—525)

1. A pull-out spout assembly comprising a fitting open at its inner end and adapted to be secured in operative coaxial relation to an opening in a wall of a container for liquids, said fitting including a neck having a plurality of angularly spaced projections extending inwardly from interior surface portions thereof, a tubular pull-out spout open at its inner and outer ends and movable axially in said neck between extended pouring position and initial retracted inoperative position, whereby, when in said initial retracted position, outer end portions of the spout are operatively engaged with said spaced projections and thereby supported within said neck and in spaced relation to the interior surface thereof, said spout being movable axially through the inner open end of the fitting and slidable into said initial retracted position, thereby permitting the fitting and the spout as an assembled unit to be secured in operative relation to said opening in the container wall after the liquid contents have been supplied thereto, said spout including at its outer end a resilient bendable laterally extending flange arranged, when the spout is in initial retracted condition, with portions thereof in operative spout supporting position between the outer end of said neck and said projections and said flange being bendable in a direction to permit passage thereof through the bore of said fixture when moved axially to said initial retracted position therein.



3,310,207
APPARATUS FOR EVERTING AND FOLDING PILLOWCASES, BAGS OR THE LIKE

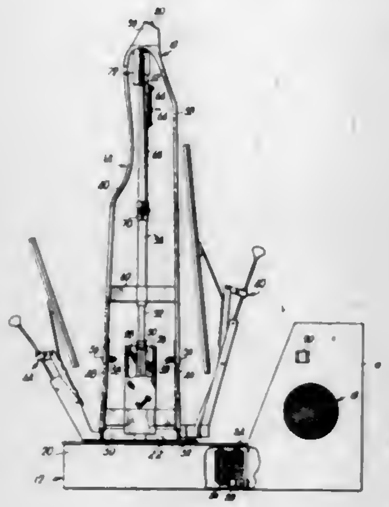
Graves T. Gore, Ware Shoals, S.C., assignor to Riegel Textile Corporation, a corporation of Delaware
Filed Mar. 11, 1965, Ser. No. 438,898
4 Claims. (Cl. 223—39)



1. Apparatus for everting and folding a pillowcase, bag or the like comprising means for everting the pillowcase from the wrong-side-out position to a right-side-out position, first conveyor means operatively associated with said everting means to cooperate therewith for everting the pillowcase and for conveying the everted pillowcase from said everting means, and second conveyor and folding means operatively associated with said first conveyor means for cooperating therewith to form a first fold in the pillowcase and for receiving and conveying the thus folded pillowcase from said first conveyor means for additionally folding the pillowcase a desired number of additional times as the pillowcase is conveyed therefrom.

3,310,208
GARMENT FINISHER

**Lloyd W. Killey, 421 N. Main St.,
Monmouth, Ill. 61462
Filed Oct. 18, 1965, Ser. No. 497,208
5 Claims. (Cl. 223—70)**

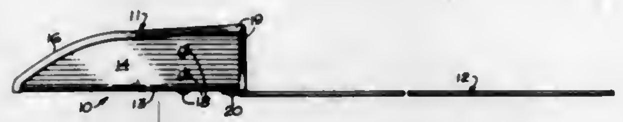


1. In a garment finishing machine, a garment support comprising:
an upright member;
a pair of elongated, rigid arms pivotally coupled to the member intermediate to the ends thereof;
a pair of elongated shoulder support elements;
means pivotally coupling one end of the respective elements to opposite sides of the member for swinging through arcs from respective first positions with the elements extending in general alignment with the longitudinal axis of the member to garment-supporting positions with each element extending outwardly at an angle from said axis, the arms being pivotally coupled to the elements intermediate the ends of the latter and at points on the member spaced longitudinally thereof from the point of coupling of the elements to said member;
a slide carried by the member for manual shifting movement longitudinally therealong; and
a link for each arm respectively, each link being pivotally coupled with the slide and with the corresponding arm between the points of pivotal coupling of the arm to the member and the corresponding element, whereby manual shifting of the slide swings said elements into and out of said garment-supporting position, each element comprising an elongated, tubular first section pivotally coupled to said member, and an elongated second section telescoped into said first section, the latter being provided with a longitudinally extending slot, and pin means extending through the slot and secured to the second section and to the corresponding arm for shifting the second section longitudinally of the first section when the elements are swung through said arcs by said arms.

3,310,209
DEVICE FOR FACILITATING THE PUTTING ON OF STOCKINGS

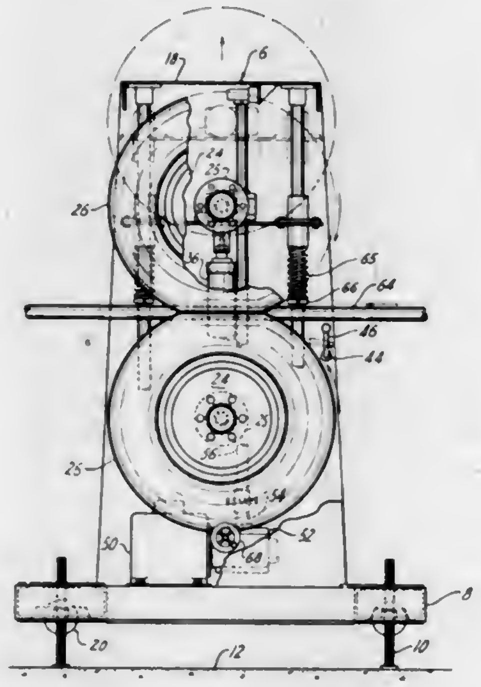
**John Clauss, 15–17 Saddle River Road,
Fair Lawn, N.J. 07410
Filed Sept. 27, 1965, Ser. No. 490,318
5 Claims. (Cl. 223—111)**

1. A device for facilitating the putting on of stockings comprising, in combination, an elongated U-shaped slide member having a bottom portion and opposed side walls upwardly extending from said bottom portion, the front ends of said side walls at one end of said slide member being rounded off to merge with said bottom portion, said slide member having a flexible strap secured to and extending outwardly of the other end of said bottom portion, said slide member having spaced and laterally aligned outwardly extending protrusions formed inwardly of said other end, said outwardly extending protrusions adapted to frictionally retain the open-ended leg portion of a stocking which has been bunched in accordion fashion about said slide member.



3,310,210
PULLING DEVICE

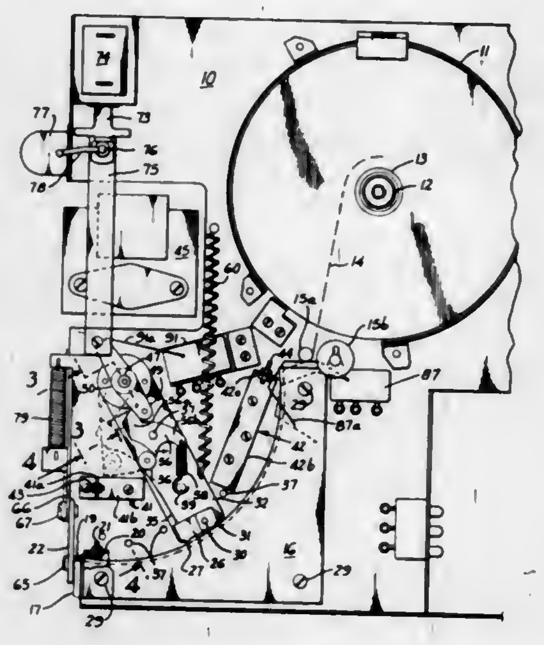
**John C. Reib, P.O. Box 788, Franklin, Pa. 16323
Continuation of abandoned application Ser. No. 327,605, Dec. 3, 1963. This application Mar. 7, 1966, Ser. No. 542,979
6 Claims. (Cl. 226—1)**



1. The method of pulling an elongated object comprising; rotatively driving at least one wheel member of a pair of wheel members supported for rotation about substantially parallel axes with each of said wheel members having radially deformable outer circumferential surfaces and with at least one of said wheel members being bodily moveable simultaneously with the rotation thereof towards and away from the other of said wheel members with said axes being substantially parallel in all relative positions of said wheel members; continuously applying during said driving a force urging at least said one of said wheel members, which is bodily moveable, towards the other of said wheel members; continuously pulling an elongated object between asid wheel members along an axis extending substantially normal to the plane containing said axes while maintaining adjacent portions of each of said circumferential surfaces in a deformed condition by engagement with the object throughout the pulling thereof to provide a large area of engagement with the object; and automatically releasing said force during such pulling and upon the pulling inwardly toward the area of contact between said circumferential surfaces of an undesired object whereby said one of said wheel members, which is bodily moveable, moves bodily away from the other of said wheel members.

3,310,211
STAMP VENDING MACHINE

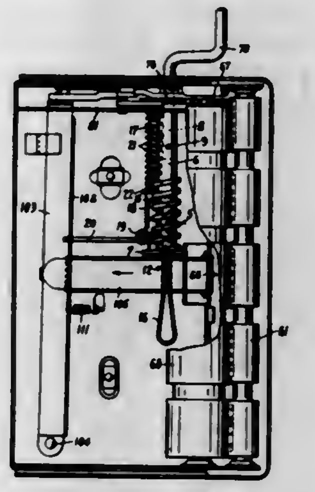
**John L. Surber, 1920 National Bank of Commerce Bldg. 78205; John L. Surber, Jr., 166 Greenhaven 78201; and Edward E. Anderson, 2112 Pleasanton Road 78221, all of San Antonio, Tex.
Filed Oct. 13, 1964, Ser. No. 403,514
6 Claims. (Cl. 226—64)**



1. A stamp vending machine for vending preselected portions of an elongated stamp web having spaced rows of perforations extending laterally thereacross, comprising, a track with a surface for slidably supporting a portion of such stamp web, a plurality of fingers arranged in side-by-side relationship, in a row laterally across a portion of the track, each spaced from the next adjacent finger a distance less than the distance between perforations in the stamp web to be vended and each finger having a width less than the width of a perforation in the web and a web engaging portion shaped to enter each perforation it encounters; means pivotally mounting the fingers for independent pivotal movement of each finger, to allow the web engaging portion of each finger to enter each perforation it encounters and move the web along with it when moving in one direction and to allow each finger to move freely laterally to the extent allowed by adjacent fingers and the mounting means, resilient means operatively associated with each finger to bias the finger independently into engagement with a stamp web and to move the perforation engaging portion thereof into each perforation it encounters, and means for moving the fingers parallel to the track to move a stamp web along the track in one direction, said web supporting track including a plurality of plates having a thickness less than the lateral width of a perforation in a stamp web to be vended, means mounting the plates in the machine in spaced, parallel relationship with one edge surface of each plate positioned parallel to the direction of travel of a stamp web to partially support such stamp web as it is moved along the track by the fingers, said plates being spaced apart a distance at least as great as the lateral width of a perforation and located to support the portion of a stamp web engaged by the fingers to provide uniform support for this portion of a stamp web, to provide openings in the stamp web supporting track into which the perforation engaging portion of a finger can extend when the perforation engaged is between two plates, and to allow debris carried onto the track by the web to fall out of the way between the plates.

3,310,212
VARIABLE SETTING TOWEL DISPENSING MECHANISM

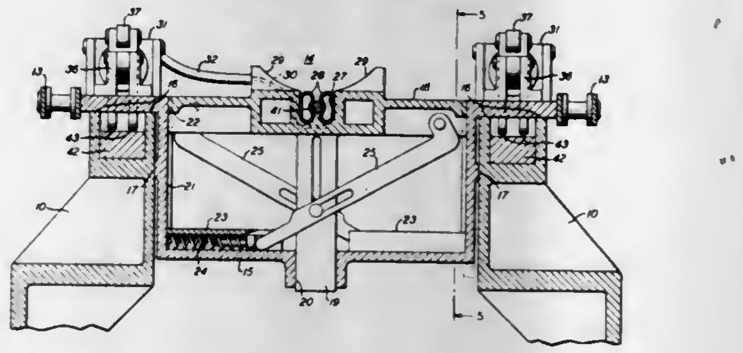
**Gerald Willis Wyant, 4343 Mayfair Ave.,
Montreal, Quebec, Canada
Filed June 11, 1965, Ser. No. 463,225
8 Claims. (Cl. 226—133)**



1. In a web dispenser, a pair of rolls between which a web is fed, drive means for rotating the said rolls, a helix rotated by said drive means, stop means associated with said helix, the said stop means being adjustably located at a predetermined position axially of the helix and rotatable therewith, an arm engageable with the said helix, the said arm being movable along said helix towards said stop means on rotation of the helix by said drive means, the said stop means limiting the travel of the said arm and locking the said helix against further rotation when the said arm makes contact with said stop means, spring biased means holding the said arm in contact with the said helix, means to release the said arm from said helix, and a second spring means biased to return the said arm to its initial position of engagement with the said helix remote from said stop means when the said arm is released from engagement with the said helix and stop means.

3,310,213
CABLE ENGINE

**Ralph W. Gretter, Mountainville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 7, 1965, Ser. No. 446,336
3 Claims. (Cl. 226—172)**

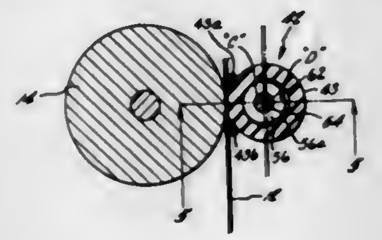


1. An engine for handling cable that includes repeaters, said engine comprising a single continuous track and a single power means for controlling the movement of said track, said track comprising a plurality of depressible cradles interconnected to each other by roller chain, said cradles including a U-shaped channel in their top surfaces for receiving said cable, each wall of said U-shaped channel including an expandable sack, said sack being hydraulically expandable against said cable to grip said cable and hydraulically contractable to release said cable, said track further including a plurality of hydraulic cylin-

ders for hydraulically expanding and contracting said sacks, said cradles being depressible with respect to said roller chain by the weight of a repeater upon said U-shaped channel, said engine further including means for actuating said hydraulic cylinders.

3,310,214
TAPE DRIVE MECHANISM

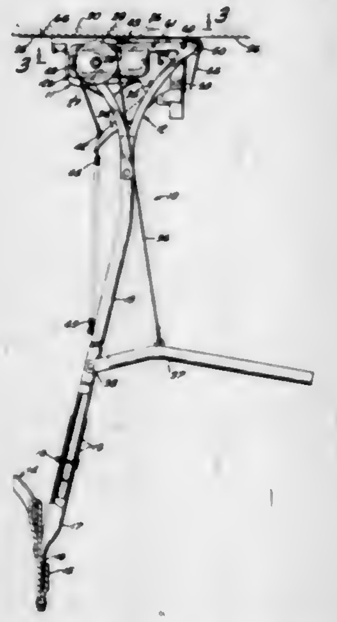
Daniel J. Nesin, Fullerton, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 9, 1964, Ser. No. 350,301
12 Claims. (Cl. 226—181)



1. In apparaus for moving a strip of material the combination comprising:
- a pinch roller for causing a strip of material to engage another roller and be moved thereby, said pinch roller comprising
  - a pair of spaced apart bearings each having an outer rotatable race comprising a mounting surface and
  - an elastic member encircling said mounting surfaces having a surface adjoining and mounted on said mounting surfaces to permit relative movement between adjoining surfaces of said elastic member and said outer races.

3,310,215
OVERHEAD STAPLING MACHINE

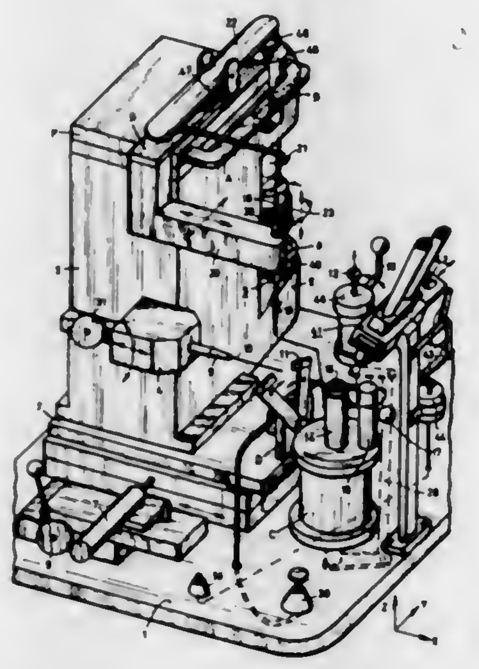
Louis D. Bostick, 16343 Ludlow, Granada Hills, Calif. 91344
Filed Feb. 11, 1964, Ser. No. 343,981
13 Claims. (Cl. 227—111)



1. A stapling tool for use in installing wire against a ceiling by an operator standing on the floor, said tool comprising magazine-fed operator-controlled means for driving a staple upon each actuation thereof, rigid support means attached to said stable driving means and by which the operator can hold the latter means pressed against the ceiling, means at the advance end of said staple driving means to aid in holding the loose end of the wire being installed taut and between the legs of the staple next to be driven, and means including actuator means near the lower end of said rigid support means operable by the operator to control the operation of said staple driving means.

3,310,216
APPARATUS FOR BONDING CONDUCTORS TO SEMICONDUCTOR MEMBERS BY THERMOCOMPRESSION

Hartwig Köllner, Hans Rebstock, Helmut Schädlich, and Dietrich Schloss, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Jan. 2, 1964, Ser. No. 335,323
Claims priority, application Germany, Jan. 2, 1963, S 83,130
21 Claims. (Cl. 228—5)

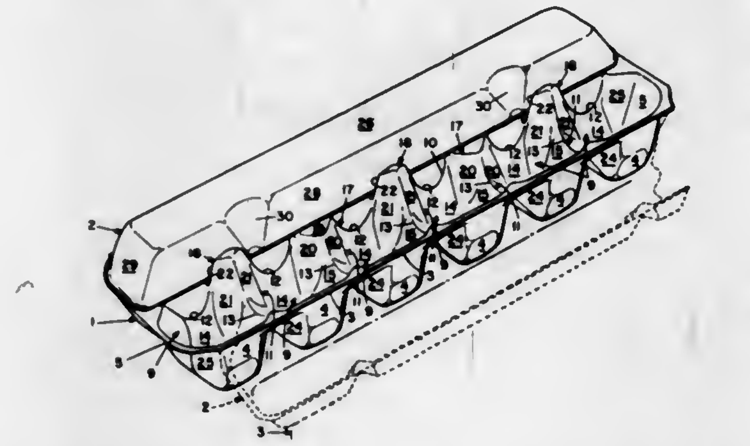


1. An apparatus for contact-bonding conductors to a semiconductor member by thermocompression, comprising heating means for heating to contact-bonding temperature a semiconductor member supported on said heating means; micromanipulator means horizontally displaceable with respect to said heating means; feeding means carried by said micromanipulator means for supplying a conductor to be contact-bonded to the semiconductor member; pressure-applying means for exerting contact-bonding pressure at a contact locality on the conductor and the semiconductor member; guide means carried by said micromanipulator means for guiding said pressure-applying means in a vertical direction, said guide means being located above said feeding means and movable together with said feeding means when said micromanipulator means is horizontally displaced; and auxiliary adjusting means for additionally displacing said pressure-applying means horizontally and for relatively displacing said pressure-applying means and said conductor feeding means in a vertical direction.

3,310,217
PLASTIC EGG CARTONS

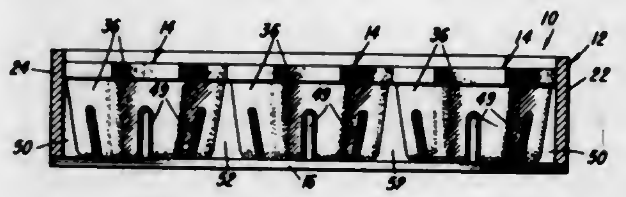
David C. Trimble, Yorklyn, Del., assignor, by mesne assignments, to Hercules Incorporated, New Castle County, Del., a corporation of Delaware
Filed Apr. 8, 1966, Ser. No. 541,200
3 Claims. (Cl. 229—2.5)

1. An egg carton comprising a tray-like base member with an open top in a top plane and having longitudinal side walls and a plurality of partitions dividing the same into a plurality of egg-receiving pockets arranged in two rows longitudinally of the base member, a plurality of posts disposed along the longitudinal center line of the base member and extending above the top plane of said base member, said posts having slots arranged longitudinally of the base member and extending inwardly from the free edges thereof through that portion of said posts disposed above the top plane, and a pair of complemental cover members each of which includes a flat top wall that is disposed substantially in spaced parallel relation to the top plane of the base member when said cover members are closed and overlies substantially one-half of said base member, and substantially planar side walls with substantially straight free edges depending from the longitudinal edges of said top wall, each of said cover members being hinged to said base member along the free edge of one of said side walls and having the other of said side walls disposed in surface-to-surface abutting relation with the corresponding side wall of the other cover member and provided with edge portions that are adapted to be received within said slots when said cover members are closed, said other side wall of one of said cover members having portions displaced out of the plane of the side wall in the direction away from the abutting side wall to provide a plurality of notches with one notch in engagement with one of said posts on one side thereof longitudinally of the base member and another notch in engagement with one of said posts on the opposite side thereof longitudinally of the base member, whereby the engagement of said notches with said posts will prevent relative movement between the respective edge portions of said cover members longitudinally of the base member, said notches extending to the plane of the top wall to define thumb holes to facilitate opening of said cover members.



3,310,218
MOLDED PULP PRODUCE PACKAGE

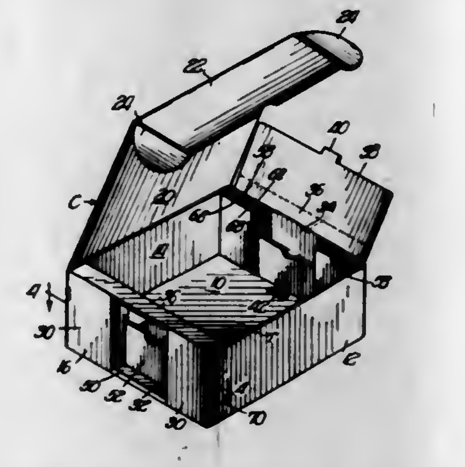
Richard F. Reifers, New Canaan, and Ronald A. Schelmetic, Bridgeport, Conn., assignors to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 11, 1965, Ser. No. 438,912
3 Claims. (Cl. 229—15)



1. In combination, a rectangular container including a bottom wall having pairs of opposed vertical walls connected at adjacent ends and defining a rectangular collar, and a plurality or regular, octagonal baskets of a porous molded pulp material disposed in said rectangular container and engaging inner surface portions of said collar, said baskets having an upper, substantially rigid octagonal frame, wall panels depending angularly from said frame, and disposed inwardly from the outer surface of said octagonal frame, said wall panels being connected to an octagonal bottom wall, said baskets each having a through passage surrounding each basket in said rectangular container and formed by adjacent portions of said container walls and adjacent basket walls, and a vertical passage disposed at alternate wall portions of said baskets and communicating with said through passages, said passages adjacent the inner surface of said rectangular container being triangular and having at least one side equal to the length of one side of an octagonal basket when viewed in plan, and vertical passages surrounded by four baskets being rectangular and having sides equal to the length of one side of said baskets when viewed in plan, adjacent sections of said basket frames terminating in a sharply defined vertical line of demarcation for orienting the baskets in said rectangular container, adjacent edges of said basket wall panels terminating in a common radius for accommodating berries, fruit and the like therein.

3,310,219
HEAVY DUTY CONTAINER WITH INTEGRAL HANDLE

Joseph J. Dlugopolski, Chicago, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed June 2, 1965, Ser. No. 460,638
7 Claims. (Cl. 229—34)

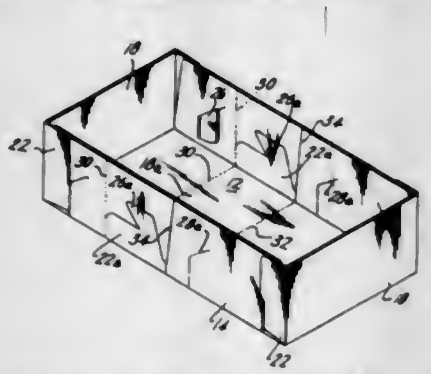


1. A reinforced shipping container formed from a unitary blank of foldable paperboard, comprising:
- (a) a tray having a bottom wall with opposed pairs of front and rear side walls and end walls upstanding therefrom to form a box-like structure open at the top;
- (b) said tray end walls each including:
  - (i) a pair of parallel, inner and outer panels spaced from each other and interconnected at their upper edges by a relatively narrow, elongated top panel hinged at its side edges to the upper edges of said inner and outer panels; said outer panel being hinged at its lower edge to an adjacent end edge of said bottom wall, and said inner panel having interlocking engagement with said bottom wall;
  - (ii) said outer panel having a medial portion cut therefrom to form a pair of strips which are folded and secured against the outer surface of the inner panel and the upper surface of the bottom wall to provide a central recess in the outside of the end wall affording handle means for grasping and lifting the container under a medial portion of said top panel;
  - (iii) a pair of corner posts positioned in the end wall on opposite sides of said central recess to

provide additional rigidity and stacking strength for the container; said corner posts being integrally formed from extensions hinged to the end edges of the tray side walls which have been folded to present multi-sided columns;

(c) a cover formed integrally with the tray for closing said structure; including:
  (i) a top wall hinged at its rear edge to the upper edge of the tray rear side wall;
  (ii) a front panel hinged to and depending from the forward edge of the top wall and disposed to overlie the tray front side wall when the cover is in closed position;
  (iii) a pair of locking flaps hinged to the end edges of the cover front panel and insertable into openings in the front of the end walls of the tray for locking the cover in closed position.

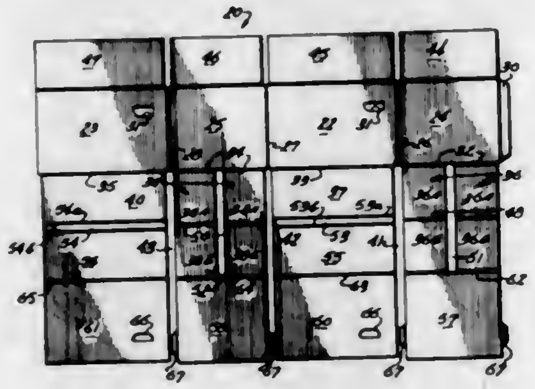
3,310,220
REDUCIBLE CARDBOARD CONTAINERS
Seymour L. Feldman, 1430 Plimpton Ave.,
Bronx, N.Y. 10452
Filed Mar. 25, 1965, Ser. No. 442,602
3 Claims. (Cl. 229—35)



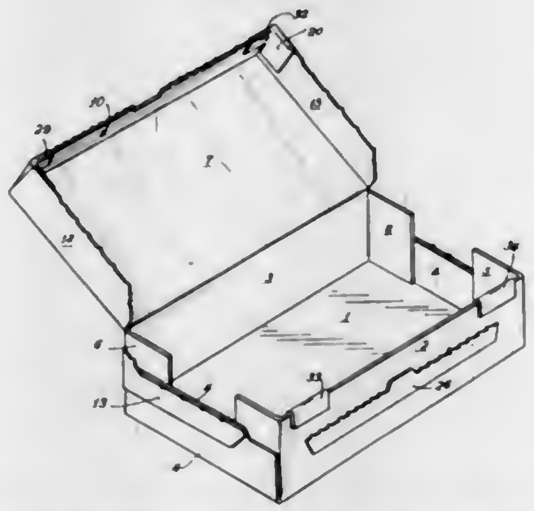
1. A cardboard container comprising at least three wall panels, including a first panel, and a panel connected to each longitudinal edge of said first panel and offset relative thereto, end closure means at each end of said container including a panel extension on at least said first panel offset relative thereto to close the space defined by said three panels, a tearline formed across said three panels in spaced relation to and parallel to an adjacent edge of said first panel, and a foldline formed across said first panel parallel to said tearline and a distance inwardly therefrom equal to the length of said panel extension, said foldline in said first panel continued as an intermittent cutline in each of said connected panels, and cooperating interengaging means between said closure and the portion of each connected panel and said foldline thereof, and between the portion of each said connected panel between said foldline thereof and said intermittent cutline thereof and the portion thereof to the other side of said intermittent cutline, interengaging with one another when said panel extension and the portion of said first panel between said tearline and said foldline are selectively disposed in offset position.

3,310,221
CONTAINER AND BLANK THEREFOR
Jack E. Duncan, Vincennes, Ind., assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 449,672
19 Claims. (Cl. 229—37)

1. A self-locking reinforced container formed of foldable sheet material, comprising a multi-panel bottom, and side and end walls cooperating with one another to delimit said bottom, each wall including inner and outer panels, said outer wall panels being foldably interconnected and said inner panels being independent of one another; said bottom including a pair of lower panels, each lower panel having one edge thereof foldably connected to the lower edge of a side wall outer panel, the opposite edge of each lower panel terminating intermediate said side walls; a pair of intermediate panels overlying said lower panels; each intermediate panel having a first section overlaid by a second section foldably connected thereto, one edge of said first section being foldably connected to the lower edge of an end wall outer panel, the opposite second edge of said first section terminating between said end walls and being foldably connected to the corresponding edge of the overlying second section, the opposite edge of said second section being foldably connected to the lower edge of the inner end wall panel; and a pair of upper panels overlying said intermediate panels and said lower panels, each upper panel having one edge thereof foldably connected to the second edge of the lower panel overlaid thereby, the opposite edge of said upper panel being foldably connected to the lower edge of the inner side wall panel, the folding connections between said upper and lower panels and between the upper and lower panels and their respective side wall panels being of substantially equal extent; each pair of intermediate panel sections being provided with an open end slot in which is disposed end portions of the folding connections between the lower panel and the overlying upper panel.

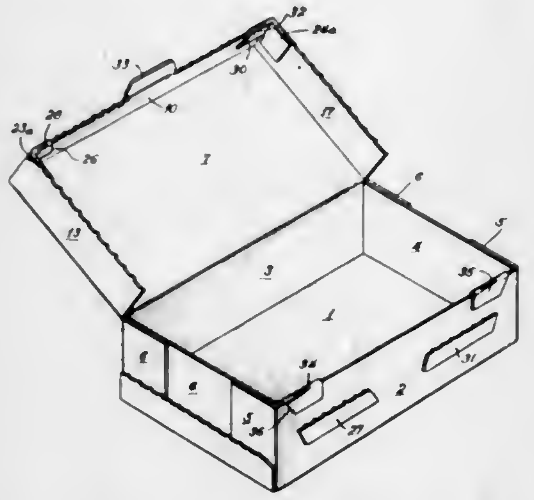


3,310,222
RECLOSEABLE TEAR STRIP CARTON HAVING COVER LOCK
Kenneth T. Buttery, Kalamazoo, Mich., assignor, by mesne assignments, to Brown Company, a corporation of Delaware
Filed Apr. 27, 1965, Ser. No. 451,159
4 Claims. (Cl. 229—51)



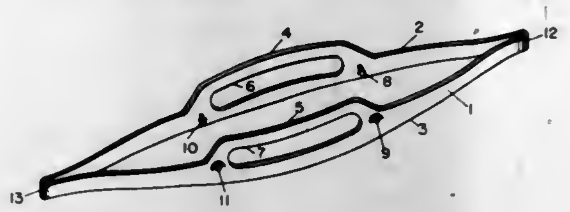
1. A carton formed of an integral blank cut and scored to provide a bottom member, a rear wall member, and a front wall member, and end flaps hingedly connected to said members, a cover hingedly connected to the upper edge of said rear wall member and provided with cover flaps comprising cover end wall panels and a cover front wall panel, said cover end walls panels and front wall panel being provided with detachable means adhesively securing said cover end wall panels to said end flaps and said cover front wall panel to said front wall member, said cover front wall panel being provided at each end with an end flap comprising a glue flap and a retaining flap hingedly connected and folded over and adhesively affixed to said glue flap, a detent flap at each end of said cover front wall hingedly connected to the free edge thereof and hingedly connected at one end to an end of one of said retaining flaps, said detent flaps being adhesively affixed to the inner surface of said cover front wall panel, and said front wall member being provided at each end of the free edge thereof with lock flaps folded over on the outer surface thereof, said detent flaps and said lock flaps being positioned in complementary edge-to-edge engagement when said cover is closed for locking said cover in place, and whereby said carton may be reopened by forcibly lifting said cover to disengage said detent flaps from said lock flaps.

3,310,223
RECLOSEABLE TEAR STRIP CARTON HAVING COVER LOCK
Kenneth T. Buttery, Kalamazoo, Mich., assignor, by mesne assignments, to Brown Company, a corporation of Delaware
Filed Apr. 27, 1965. Ser. No. 451,186
8 Claims. (Cl. 229—51)



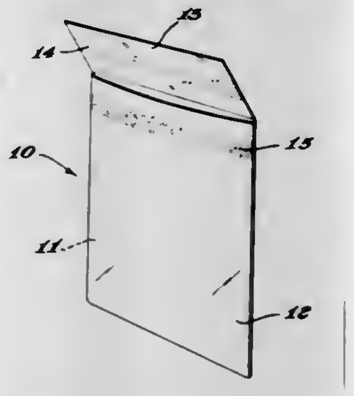
1. A carton formed of an integral blank cut and scored to provide a bottom member, a rear wall member, a front wall member, and end wall flaps attached to said members, a cover hingedly connected to the upper edge of said rear wall member and provided with cover flaps comprising cover end walls and a cover front wall, said cover end walls being provided with detachable means securing said cover end walls to said end flaps and said cover front wall being provided with detachable means securing said cover front wall to said front wall, said cover front wall being provided at each end with an end flap comprising a glue flap and a retaining flap hingedly connected and folded over and glued to said glue flap, a lock flap at each end of said cover front wall hingedly connected to the free edge thereof, each of said lock flaps also being hingedly connected at one end to an end of one of said retaining flaps, whereby said lock flaps are maintained in face-to-face relationship with the inner surface of said cover front wall, said front wall member being provided at each end of the free edge thereof with a lock flap hingedly connected thereto adapted interlockingly to engage and retain the lock flaps of said cover for preventing said cover from opening.

3,310,224
BAG AND CLOSURE MEANS THEREFOR
Leon Ker Laguerre, 10 Rue Lemoine,
Boulogne-sur-Seine, France
Continuation of application Ser. No. 342,493, Feb. 4, 1964. This application Apr. 20, 1966, Ser. No. 544,039
4 Claims. (Cl. 229—54)



1. In a bag having front and back walls formed of a thin-film material the improvement which comprises: unitary closure means attached to the walls of the bag in the plane of said walls at the mouth of the bag and having a total length substantially equal to the perimeter of the bag at its mouth; said closure means being formed of a resilient, elastic, non-brittle material, having a tensile strength substantially greater than that of the walls of said bag; said closure means comprising two generally congruent strips normally overlying each other and having registering finger openings therein to form a carrying handle for said bag; at least one fastener means comprising first and second functionally engaging elements respectively located on facing surfaces of said strips when in register for securing together said strips at a point between their adjoining ends; means joining said two strips at each end comprising an end portion which is integral with both said strips and normally maintaining the adjoining ends of said strips in parallel relationship; said resilience of said material together with said parallel relationship of the corresponding ends of said strips cooperating to maintain said strips normally closely parallel over their length thereby tending to maintain the mouth of said bag closed and automatically bringing said first and second engaging elements into alignment to thereby facilitate their engagement; said joining means together with said flexibility of said strips cooperating to cause said two strips to curve along substantially their entire length when said bag is opened but to curve substantially less near the respective ends of said strips wherefor the resulting forces are distributed substantially along the length of said strips instead of being concentrated at the respective ends thereof.

3,310,225
RESEALABLE CONTAINER CLOSURE FROM SELF-ADHERENT CHLORINATED OLEFIN POLYMER FILMS
Louis D. Hoblit and Harold A. Simms, both of Baton Rouge, La., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Aug. 6, 1965, Ser. No. 477,714
7 Claims. (Cl. 229—62)

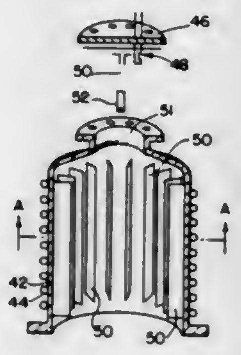


1. Reclosable sealing means for containers comprising: individual inherently flexible, self-adherent film strips each of which is permanently attached to an ex-

ternal surface of said container, said film strips being formed from an essentially linear chlorinated olefin polymer containing from about 25 to about 50 weight percent of chemically combined chlorine, said film strips being positioned on said container so that the container is in a closed condition when the exposed surfaces of said film strips are in overlying contact.

3,310,226
VACUUM DEVICE

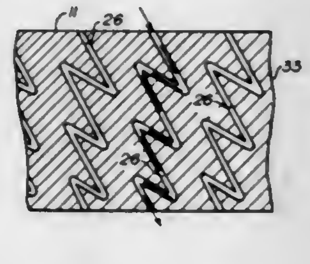
Clifton B. Sibley, Needham, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Feb. 11, 1965, Ser. No. 431,949
9 Claims. Cl. 230—69)



1. A vacuum pump, comprising, in combination, an annular wall, a central anode electrode, at least one electron source for injecting electrons into the space between the wall and central electrode, means for maintaining a positive bias on the central electrode so that the electrons spiral about it, a source of reactive metal in the pump and reactive metal fins secured to the wall and extending radially inwardly toward the central electrode up to ⅓ of the wall diameter, the fin surface area being at least as great as the inner surface area of the wall.

3,310,227
SURGE AND BACKSTREAMING POROUS DIAPHRAGM FILTER FOR VACUUM SYSTEM

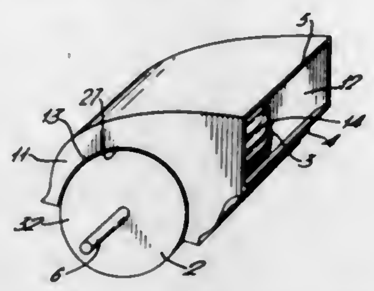
Norman Milleron, Berkeley, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 12, 1965, Ser. No. 447,588
15 Claims. Cl. 230—101)



1. In an evacuation system for removing particles from a chamber, the combination comprising a chamber defining an interior region to be evacuated, a vacuum pump hermetically communicated to said chamber interior to thereby establish a particle flow path therebetween, an opaque porous diaphragm disposed between said chamber and said vacuum pump transverse to the entire particle flow path therebetween, said diaphragm defining pore channels therethrough of a selected diameter at least slightly greater than the largest particle diameter of any of said particles being removed from said chamber, and a path length at least twofold greater than the average diameter of said pores.

3,310,228
FLOW MACHINES

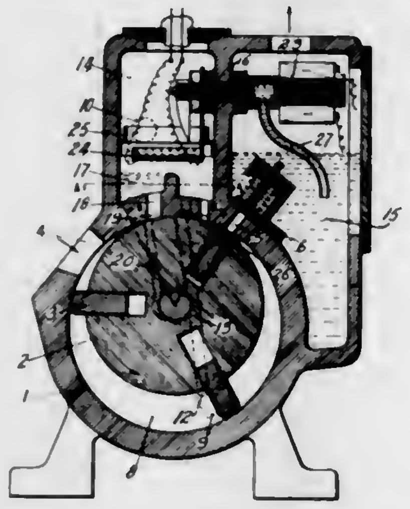
Nikolaus Laing, Hofener Weg 35, Aldingen, near Stuttgart, Germany
Filed Feb. 17, 1966, Ser. No. 528,202
4 Claims. (Cl. 230—125)



1. Machine of the cross-flow type for inducing movement of fluid, comprising a cylindrical bladed rotor, having a series of forwardly curved blades extending longitudinally of the axis between end members and arranged in a ring about the axis, a one piece guide unit cooperating with the rotor and comprising a pair of end walls aligned with the end members of the rotor and having arcuate edges adjacent said end members and extending over a portion only of their circumference and at least one guide wall interconnecting the ends walls and separating a discharge region from an entry region, the rotor and guide wall cooperating on rotation of the rotor to induce a flow of fluid from the entry region through the path of the rotating blades to the interior of the rotor and thence again through the path of the rotating blades to the discharge region; said end walls extending over less than 180° of the periphery of the rotor end members.

3,310,229
ROTARY OIL VACUUM PUMP

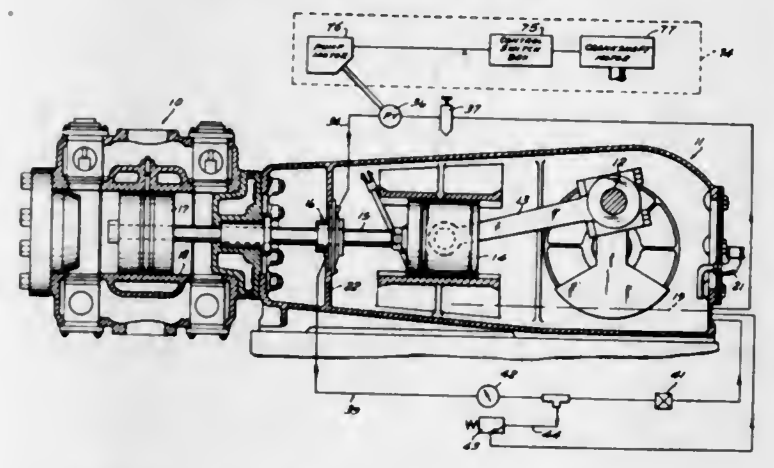
Akira Maehara, 1078 Wadahoncho, Suginami-ku, Tokyo, Japan
Filed Feb. 15, 1965, Ser. No. 432,678
5 Claims. (Cl. 230—152)



1. A rotary oil vacuum pump, which comprises a cylinder, a rotor provided within said cylinder in eccentric relation and in intimate contact therewith, two or more friction-contact blades disposed in said rotor and adapted so that the outer end of each blade butts against the internal wall of said cylinder, suction and discharge holes provided through said cylinder, the space defined by said cylinder, rotor, blades, and covers being intermittently isolated from the suction and discharge holes while the pump is operated, an opening provided in the side cover of the cylinder wall in such a position as will communicate with the above-mentioned isolated space in a successive manner as the blades rotate, an oil refining chamber provided atop the cylinder, a connecting pipe or/and a channel that connects the opening with the oil refining chamber, an oil basin, a suitable orifice adapted to feed the oil from the oil basin to the oil refining chamber as vacuum is created with said chamber during the rotation of the pump, an evaporating pan in the oil refining chamber so that the oil admitted through the orifice may be evaporated in vacuo and the low-boiling distillates condensed in the upper space of the chamber collected in a channel, the low-boiling distillates and distillates being discharged into the cylinder space isolated from the suction hole through said connecting pipe or/and channel, and the refined oil being caused to flow into the friction-moving parts and bearings within the cylinder through suitable oil passageways.

3,310,230
HYDRAULIC GAS SEAL SYSTEM FOR PISTON-TYPE GAS COMPRESSOR

Richard C. Wirth, Franklin, Pa., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 22, 1965, Ser. No. 489,361
7 Claims. (Cl. 230—203)

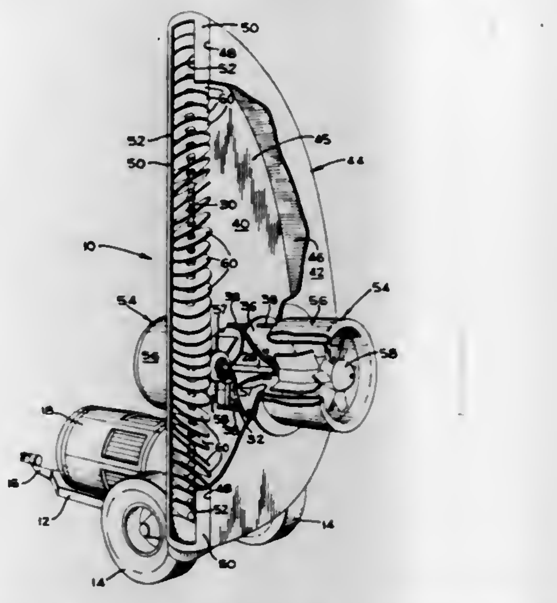


1. A piston-type gas compressor apparatus comprising a crank case section, a compressor head section, a piston reciprocable in the compressor head section having a piston rod extending into the crankcase section, a crank supported in the crankcase section drivingly connected to the piston rod, and a hydraulic gas seal system for sealing the compressor head section against leakage of gas around the piston rod into the crankcase section, the hydraulic gas seal system comprising: a false head mounted transversely of the compressor apparatus partitioning the compressor head section from the crankcase section, a cavity axially of the false head surrounding the piston rod, first sealing means about the piston rod sealing one end of the cavity from the compressor head section, other sealing means about the piston rod sealing an opposite end of the cavity from the crankcase section, a hydraulic sump within the crankcase adjacent the corresponding end of the false head, means for circulating hydraulic fluid from the sump through the cavity around the piston rod and back to the sump, and control means for maintaining the fluid circulating through the cavity at a pressure greater than that of gas in the compressor head section, wherein the first and other sealing means are of soft resilient material and provide together with the hydraulic fluid the sole contact with the piston rod within the false head.

3,310,231
FRUIT HARVESTING MACHINE

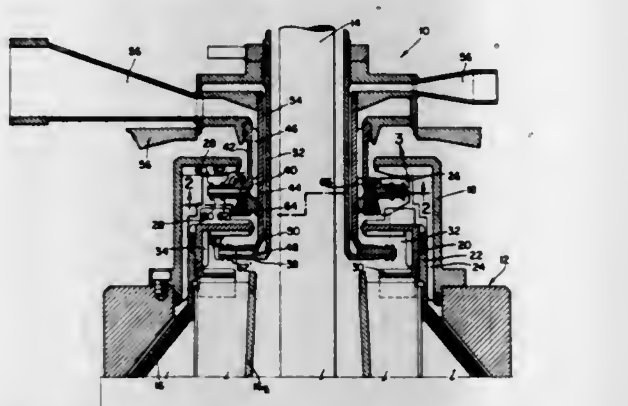
Lee W. Wininger, Carmel, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 8, 1964, Ser. No. 358,319
11 Claims. (Cl. 230—274)

1. In an agricultural machine, means for generating and discharging an air blast, a freely rotatable shaft disposed in said air blast, means for continuously driving said rotatable shaft, and a plurality of spaced air deflector vanes secured to said shaft in oblique relation therewith and in dissimilar phase relation to one another, wherein said air blast is continuously swerved upon discharge by said air deflector vanes rotatable with said freely rotatable shaft.



3,310,232
CENTRIFUGE DISCHARGE MEANS

Leonard Shapiro, Upper Darby, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 17, 1964, Ser. No. 419,086
4 Claims. (Cl. 233—22)



1. A centrifuge having a discharge paring device normally immersed in liquid to be discharged and comprising a circular structure with passages from its periphery to an inward discharge channel, a plurality of spaced annular ribs disposed on a side of the paring device inward from the periphery thereof and concentrically about the centrifuge axis, whereby the ribs serve to reduce disturbance of the liquid-air interface of the liquid in which the device is immersed.

3,310,233
MOMENT-COMPENSATED COMPUTING SCALE

Wei Teh Chow, 2036 Union St., Brooklyn, N.Y. 11212
Filed June 22, 1964, Ser. No. 376,636
11 Claims. (Cl. 235—61)

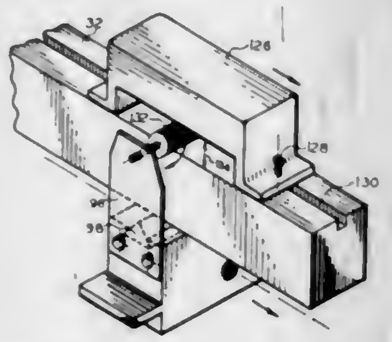
1. A device automatically compensating for the moment produced by the unbalanced weight of a lever when the fulcrum point is moved away from the center of the lever comprising, in combination:

a lever;

a fulcrum movable along the length of said lever;

a moment-compensating member slidably movable along the upper surface of said lever; and means for moving said member along said lever, said means comprising a roller having a shaft which is coupled to move with said fulcrum, said roller rotating along the length of said lever as said fulcrum moves along the lever,

said member comprising a roughly rectangular block having a rectangular excised portion extending substantially the length of the lower section of said block, the height of said excised portion being slightly greater than the diameter of said roller, said block being placed upon said roller so that said roller may move within said excised portion, said block and said excised portion being symmetrical about a transverse plane through the center thereof, said block being placed upon said roller so that the center line of said block is aligned with the center of said lever when the fulcrum point is at the center of said lever,



the weight of said block being calculated from the formula

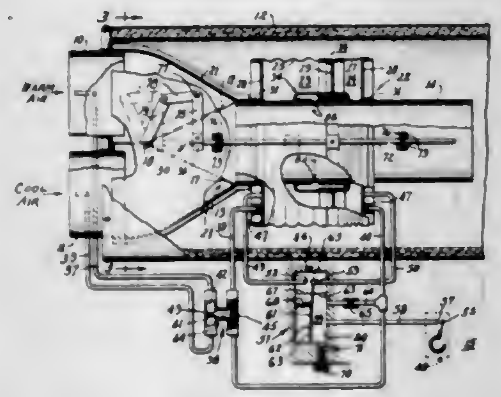
$$W_B = \frac{W_1L_1 - W_2L_2}{l_1'}$$

where W_1 is the weight of the portion of the lever which lies on the left of the fulcrum point, W_2 is the weight of the portion of the lever which lies on the right of the fulcrum point, L_1 is the distance between the fulcrum point and the center of the portion of the lever to the left of the fulcrum point, L_2 is the distance between the fulcrum point and the center of the portion of the lever to the right of the fulcrum point, and l_1' is the distance between the fulcrum point and the center of said block.

3,310,234
AIR MIXING DEVICE

Walter W. Kennedy, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois

Filed June 30, 1965, Ser. No. 468,363
10 Claims. (Cl. 236—13)



1. In an air mixing device, the combination of, an elongated tubular air duct for carrying a flow of air under pressure and having an inlet end, means defining a chamber enclosing said inlet and having separate warm and cool air inlets for the admission of air into opposite side portions of said chamber, a valve disposed in said chamber and movable back and forth therein to increase and decrease the relative amounts of warm and cool air delivered to said duct, first and second axially expansible and contractible bellows telescoped over said duct and disposed in end-to-end relation, means closing the remote ends of said bellows and securing the latter to said duct, an annular disk telescoped loosely over said duct and disposed between said bellows, a member forming a seal between said duct and the inner portion of said disk and supporting the disk for axial floating along the duct, the adjacent ends of said bellows being secured to and sealed around the outer portion of said disk to cooperate with the latter and said duct to define first and second toroidal pressure chambers on opposite sides of the disk, means establishing communication between said air inlets and both of said chambers whereby air from the inlets is admitted into both chambers, each of said pressure chambers having an air outlet, a thermostat having an element movable back and forth with changes in the temperature of the mixed air delivered through said duct, valve means controlled by said thermostat and operable to vary the escape of air through said outlets in accordance with changes in said mixed air temperature thereby to establish between the chambers a pressure differential for moving said disk along said duct, and linkage connecting said disk to said valve and transmitting the motion of the disk to the valve to position the latter in accordance with the position of the disk thereby to vary the relative amounts of warm and cool air admitted into said duct in response to movements of said thermostat element.

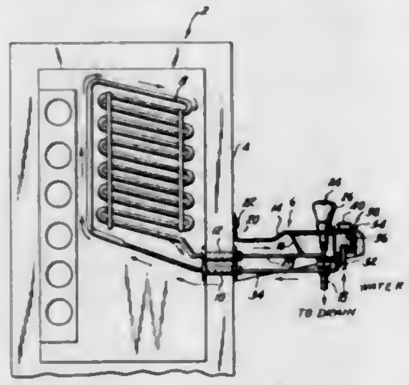
3,310,235
PROCESS AND EQUIPMENTS FOR THE RELEASE OF ACTIVE SUBSTANCES

Hans Zbinden, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed July 20, 1965, Ser. No. 473,525
Claims priority, application Switzerland, Aug. 3, 1964, 10,153/64
7 Claims. (Cl. 239—6)

1. A process for the prolonged and uniform release of a volatile active substance wherein this substance is allowed to issue through a layer of ethylene/vinyl acetate copolymers.

3,310,236
DRINKING FOUNTAIN ARRANGEMENT AND CONTROL VALVE THEREFOR

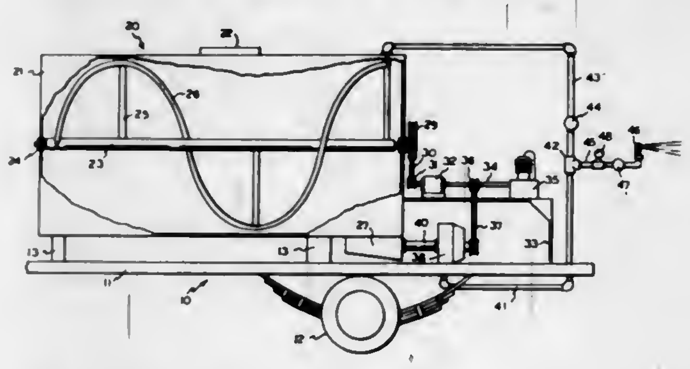
Acton B. Taylor, 621 Cliff Drive,
Newport Beach, Calif. 92660
Original application May 8, 1964, Ser. No. 365,932, now Patent No. 3,279,495, dated Oct. 18, 1966. Divided and this application Oct. 4, 1965, Ser. No. 492,620
9 Claims. (Cl. 239—29)



1. In combination: a liquid cooler including a cooling coil having an inlet and an outlet; a bubbler head connected directly with the outlet of said cooling coil, said cooling coil being arranged in a plane above that of said bubbler head; whereby in the event of coil rupture, at least the liquid in the cooling coil beyond said rupture can drain by gravity through said bubbler head; and a manually operable valve controlling the flow of liquid to said cooling coil and bubbler head, having an inlet connectable to a source of liquid under pressure and having an outlet connected with the inlet of said cooling coil.

3,310,237
RECIRCULATING LIQUID FERTILIZER APPARATUS WITH SPIRAL AGITATION BLADE

Robert L. Welch, Decatur, Ill., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Continuation of application Ser. No. 330,722, Dec. 16, 1963. This application May 12, 1966, Ser. No. 549,731
2 Claims. (Cl. 239—127)

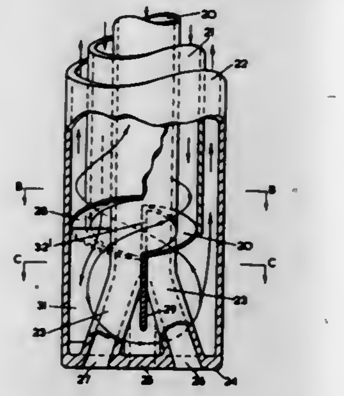


1. A mobile slurry fertilizer spray device comprising a mobile chassis; a horizontally disposed cylindrical slurry tank mounted on said chassis; a sump depending from the bottom of said tank at one end; said sump having an inclined closed bottom; a rotatable spiral blade mounted in said tank; said spiral blade rotating in a direction that will constantly move the slurry toward said one end of the tank having the sump and into said sump, in close proximity to the walls of said tank, and mixing the slurry; a suction conduit connected to said sump and spaced above the bottom of said sump; a centrifugal pump having a suction inlet and a pressure outlet; said suction inlet connected to said suction conduit for withdrawing slurry from said sump; a slurry spray nozzle; conduit means connecting said pressure outlet of said centrifugal pump to said slurry spray nozzle; a bypass line connected at one end to said conduit means and at its other end to said cylindrical slurry tank; an adjustable bypass valve positioned in said bypass line for continuously returning slurry pumped from said tank back to said tank at selectable rates when said mobile slurry fertilizer spray device is in operation; means for adjusting said valve to restrict the bypass flow of slurry fertilizer and provide a selected bypass rate and thereby a determinable pressure at said spray nozzle; a pressure gauge positioned in direct line between said pump and said nozzle and giving a reading corresponding to the slurry pressure going to said nozzle thereby providing the information needed to adjust the bypass valve to obtain a nozzle pressure at which the slurry will be dispensed at the proper rate; and means connecting said spray nozzle to said mobile chassis.

3,310,238
FURNACE LANCES

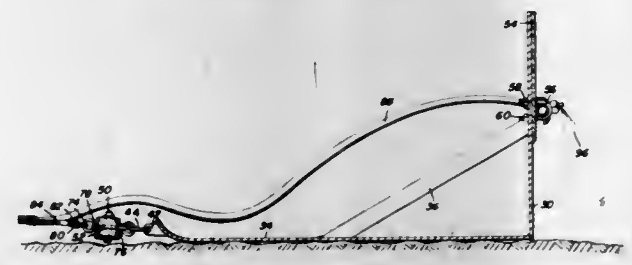
David L. Bryant, Engadine, New South Wales, and Edward T. C. Johnstone, Bondi Beach, near Sydney, New South Wales, Australia, assignors, by mesne assignments, to The British Oxygen Company Limited
Filed June 22, 1965, Ser. No. 465,919
Claims priority, application Australia, June 26, 1964, 46,254/64
10 Claims. (Cl. 239—132.3)

1. A furnace lance comprising a central tube which terminates short of the end of the lance tip, branch tubes extending from the outlet end of the central tube to the lance tip, a partition tube and an outer tube both arranged coaxially of the central tube and defining therewith a cooling fluid inlet duct, a cooling fluid outlet duct, a helical member near the outlet end of the cooling fluid inlet duct adapted to cause cooling fluid circulation around the branch tubes, and a further helical member situated near the inlet end of the cooling fluid outlet duct; one helical member forming a barrier across approximately half of the cooling fluid outlet duct while the other helical member is arranged to form a barrier across approximately half of the cooling fluid inlet duct.



3,310,239
RUNNER SUPPORTED SPRAY BOOM HAVING MOBILE SUPPLY MEANS

Claron E. Hesp, Athena, and Milford D. Ratliff, Weston, Oreg., assignors to Farm Chemicals of Oregon, Inc., a corporation of Oregon
Filed Jan. 27, 1965, Ser. No. 428,309
3 Claims. (Cl. 239—169)



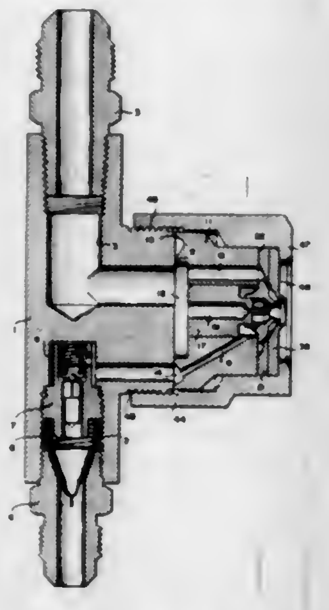
1. A boom type crop sprayer comprising a single elongated boom, a plurality of supports provided longitudinally along said boom, said supports each comprising an elongated runner having a leading end and a following end, said leading end comprising an upwardly turned forward tip, a single vertically extending arm rigidly engaged with and projecting upwardly from the following end, an inclined brace engaged between each runner and the corresponding arm, vertically adjustable means securing said boom to each vertically extending arm, an elongated drawbar paralleling said boom forward of said runners, means engaging the leading end of each runner with said drawbar, a plurality of discharge nozzles mounted on said boom and directed rearward of the runners, and means supplying fluid under pressure to said boom for discharge through said nozzles.

3,310,240
AIR ATOMIZING NOZZLE

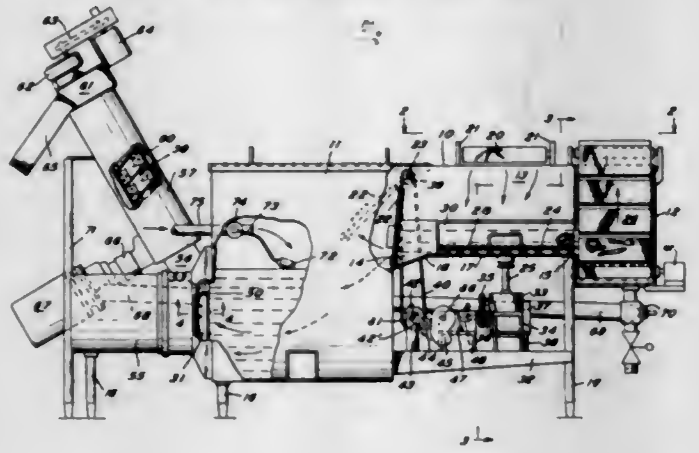
Richard G. Grundman, Grand Rapids, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 7, 1965, Ser. No. 424,037
2 Claims. (Cl. 239—404)

2. An atomizing nozzle comprising an outer sleeve member having a central bore therein, an inner sleeve member positioned within said central bore, said inner sleeve member having an axial flow passage therethrough terminating at one end in a first discharge orifice, an inner nozzle washer abutting the end of said outer sleeve

member and having an axial bore therein receiving said one end of said inner sleeve whereby a first swirl chamber is formed between said inner and outer sleeve members and said inner nozzle washer, means providing interconnecting passages between said outer sleeve member and said first swirl chamber, said inner nozzle washer and said one end of said inner sleeve member providing a second swirl chamber, means providing interconnecting passages between said first swirl chamber and said second swirl chamber, an outer nozzle washer abutting said inner nozzle washer and having an axial discharge orifice therethrough with the outer end of said inner washer terminating axially inwardly of the outer end of said outer washer to provide a third swirl chamber axially outwardly of said second swirl chamber, and means providing additional interconnecting passages between said outer sleeve member and said third swirl chamber.

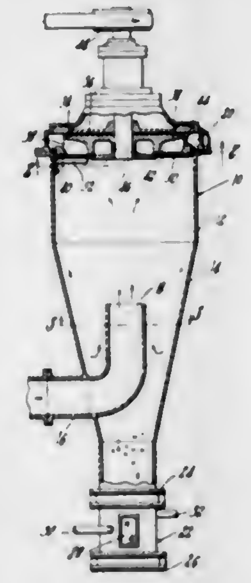


3,310,241
WASTE DISPOSAL UNIT
Kurt Wandel, Downingtown, Pa., assignor to Somat Corporation, Coatesville, Pa., a corporation of Delaware
Filed Oct. 1, 1963, Ser. No. 312,932
13 Claims. (Cl. 241—46)



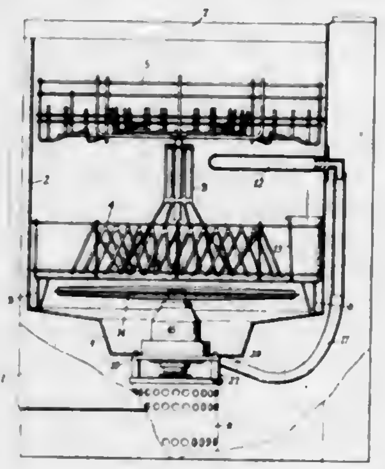
5. A waste disposal unit for refuse containing sinkable articles from dining tables, comprising a casing forming a disintegrating unit at one end, a trough at the other end, and an intermediate tank to receive such refuse, said disintegrating unit including a chamber containing water at a predetermined level and a driven cutter impeller in said water to discharge refuse out of said chamber, said tank having an open side, means mounting said tank to discharge through said side into said chamber above the water level, a disk horizontally mounted in said tank, means for rotating said disk, a normally closed plate valve over said open side, means for opening said valve to flush said tank of refuse upon the attainment of a predetermined level of water in said tank, said tank also having a passage in a side in alignment with said disk and communicating with said trough to deliver articles which have been centrifugally ejected from said disk upon rotation of said disk, means to close said valve after a flushing operation, and means to circulate water through said tank and disintegrating unit in a closed circuit.

3,310,242
FIBER DISINTEGRATING AND CLASSIFYING APPARATUS
Joseph K. Perkins, Amherst, and Edmund C. Chulada, Windham, N.H., assignors to Improved Machinery Inc., Nashua, N.H., a corporation of Maine
Filed Feb. 24, 1964, Ser. No. 346,884
5 Claims. (Cl. 241—92)



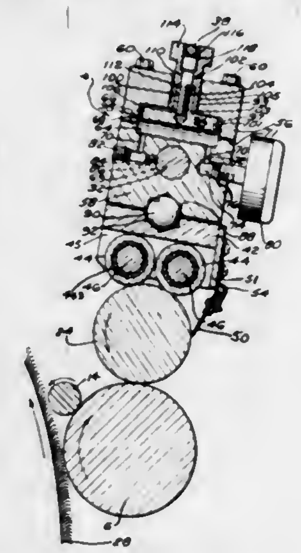
1. Apparatus for disintegrating and classifying fibrous materials in a liquid suspension, comprising:
- a tubular chamber having its axis vertically positioned;
- an accepts discharge port at the upper portion of said chamber;
- a rejects discharge means axially positioned at the lower portion of said chamber;
- an inlet means extending into the lower portion of said chamber and extending upwardly within said chamber along the axis thereof, said inlet means having an upwardly directed, axially positioned inlet opening within said chamber for continuously introducing and directing a stream of said fiber-liquid suspension under pressure toward the upper end of said chamber;
- centrifugal pump means axially positioned within said chamber at the upper portion thereof, for continuously pumping said suspension from said chamber into said accepts discharge port, said pump means having a pump inlet intermediate said inlet means and said accepts discharge port;
- rotatable screen means extending across said pump inlet;
- said rotatable screen means being limited to containing apertures of a predetermined size which can pass liquid and particles of a smaller size while particles of a larger size are rejected and thrown radially outwardly by said screen means;
- drive means for driving said pump means and said screen means; and
- said screen means being spaced from said inlet means sufficiently to create a recirculating type of flow between said screen means and said inlet means whereby particles rejected by the screen means can flow outwardly and downwardly with the lighter particles in said downward flow being recirculated into the stream flowing from said inlet means toward said screen means and the heavier particles flowing downward below the inlet means to the rejects discharge means.

3,310,243
DISHWASHING MACHINE
Thomas W. Duncan and Charles N. Perin, Connersville, Ind., assignors to Design and Manufacturing Corporation, Connersville, Ind., a corporation of Indiana
Filed Jan. 6, 1965, Ser. No. 423,649
10 Claims. (Cl. 241—101)



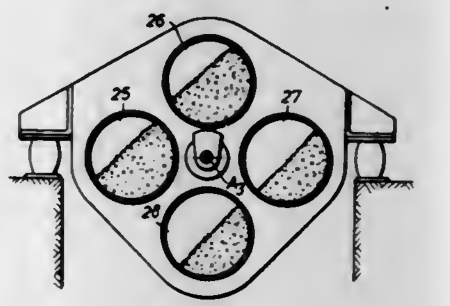
10. In a dishwashing machine a vat having a sump and at least one rack for tableware, a first pump for exhausting water from said sump, a rotating spray arm located beneath said rack, a second pump for supplying water to said rotating spray arm, inlet means for water to said first pump, said inlet means having a restricted cross sectional dimension such that solid materials too large to be exhausted with said water by said first pump cannot enter said first pump, entrance means for said second pump and a macerating means in connection with said entrance means and acting to reduce solid materials in the water in said vat to a size capable of entering said inlet means.

3,310,244
LOAD CELL FOR CRUSHING ROLLS
Oliver H. Ramo, North Abington, Mass., assignor to Abington Textile Machinery Works, North Abington, Mass., a Massachusetts trust
Continuation of application Ser. No. 216,856, Aug. 14, 1962. This application Mar. 18, 1965, Ser. No. 443,770
11 Claims. (Cl. 241—101)



11. A self contained hydraulic pressure transmitting load cell comprising a block having an internal cavity, a top hat-shaped rolling flexible diaphragm separating said cavity into a hydraulic fluid containing chamber and a piston chamber, a pressure gauge, a passage in said block providing communication between said hydraulic fluid chamber and said gauge, said hydraulic fluid chamber being hermetically sealed except for said communication with said gauge and containing hydraulic fluid, a piston within said piston chamber and supported on said diaphragm, a vertical bore extending from the top of said block to said piston chamber, said bore receiving a piston rod attached to said piston for applying a load to said block through said diaphragm and hydraulic fluid, bearing means at the bottom of said block for transmitting said load to a working member, said gauge indicating the magnitude of said load applied to said working member.

3,310,245
GRINDING MILL OF THE SWINGING TYPE WITH A PLURALITY OF GRINDER DRUMS
Hanns Decker, Cologne-Rath, Heinz Jochem Maeder, Cologne-Dellbruck, and Peter Wehren, Cologne-Mulheim, Germany, assignors to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany, a corporation of Germany
Filed July 7, 1964, Ser. No. 380,821
Claims priority, application Germany, July 10, 1963, K 50,177
7 Claims. (Cl. 241—153)

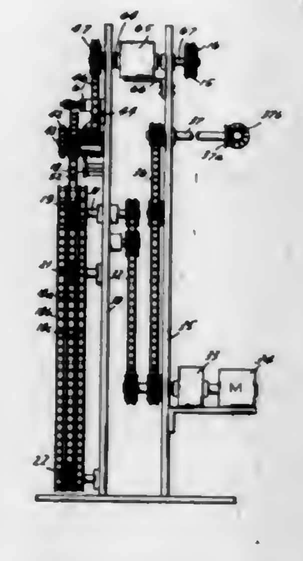


3. A grinding mill of the swinging type comprising a plurality of horizontal grinder drums, a resiliently supported assembly comprising said drums and capable of substantially circular swinging motion about a swing axis in planes transverse to said drums, one of said drums located at the left of said swing axis—when viewing said assembly from the side showing counterclockwise swinging motion—having a content of grinder bodies whose weight is larger than that of the content of another of said drums at the right of said swing axis, and said assembly having due to the difference in weight a gravity axis in a plane which passes substantially through said swing axis and is perpendicular to the geometric connecting line between one and said other drum axes.

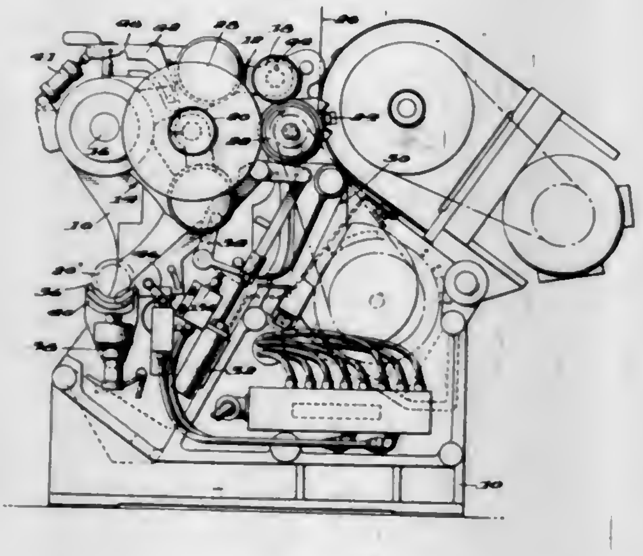
3,310,246
STRAND WINDING MACHINE
William George McClean, Milwaukee, Wis., assignor to McClean-Anderson, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 16, 1963, Ser. No. 330,919
5 Claims. (Cl. 242—2)

1. A filament winding apparatus, comprising an endless flexible drive member, means for driving the endless member in a path of travel, a second flexible drive member connected to said endless member and extending only along a portion of the length of said endless member, an output member located adjacent the path of travel of said endless member and disposed to be intermittently engaged by said second drive member as said endless member moves in its path of travel, a mandrel, means for rotating the mandrel, winding head means for winding

a strand on the mandrel in a generally helical pattern, and means interconnecting the output member and the winding head means whereby engagement of said second drive member with said output member results in movement of said winding head means and disengagement of said second drive member with said output member results in a period of dwell for said winding head means.

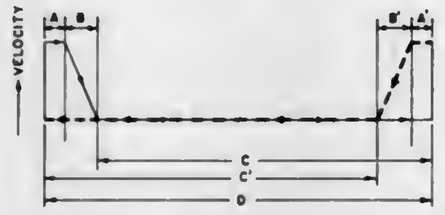


3,310,247
CONTINUOUS YARN WINDUP MECHANISM
Michael Burgin Emery, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,522
6 Claims. Cl. 242—18)



1. In a yarn windup including a drive roll, a pair of rotatable chucks alternately movable into surface driven engagement with the drive roll and a traverse guide through which yarn normally advances over the drive roll to a package support on the driven chuck, a yarn transfer mechanism comprising: an elongated deflector bar provided with a guide adjacent one of its ends; means mounting the bar for swinging movement of said one end to a position adjacent said driven chuck and for sliding movement longitudinally thereof to a location beyond an empty support thereon, each chuck having yarn-snaring and -severing elements at said location; and separate motive means coupled to said bar for sequentially swinging it to said position and sliding it to said location while yarn is still advancing to a full package on the other chuck whereby to deflect, snare and sever said yarn, thereby initiating a new package on said empty support.

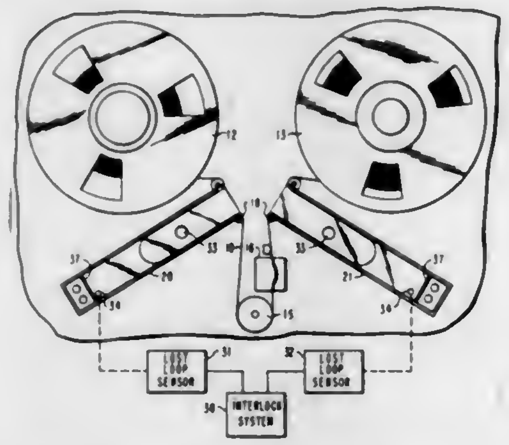
3,310,248
YARN PACKAGE WINDING METHOD
Lambertus Ten Have, Bennekom, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,119
Claims priority, application Netherlands, Sept. 4, 1963, 297,508
1 Claim. (Cl. 242—43)



A method of winding a heavy yarn package on a rotating spool by the use of a traversing yarn guide incorporating a stroke reduction and a stroke displacement therein, said yarn guide laying successive layers of yarn on the spool by means of forward and backward strokes along the length of the spool, comprising the steps of:

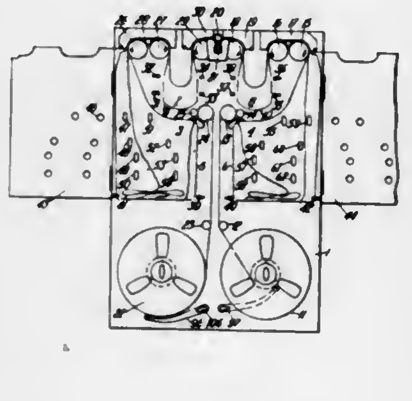
(a) maintaining an initial high velocity of the thread guide at the beginning of each stroke at each end of the collection spool for a distance 4 to 8% of the stroke length;
(b) decreasing the velocity of the guide for a distance of 6 to 10% of the stroke length;
(c) maintaining a decreased constant velocity of the thread guide for the remainder of the stroke length 30 to 60% lower than the constant velocity at the beginning of the forward and backward stroke; and
(d) maintaining the stroke displacement and the stroke reduction less than 10% and 20% of the initial stroke length, respectively.

3,310,249
LOOP FAULT SENSING MEANS FOR WEB TRANSPORT SYSTEMS
Philip S. Bryer, Los Angeles, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 27, 1964, Ser. No. 362,787
12 Claims. (Cl. 242—55.12)



6. In a chamber system for establishing tape loops, a protection arrangement for preventing tape damage including the combination of lost loop sensing means including a single pressure sensitive switch, means defining a relatively large short loop sensing aperture open to atmosphere at one lengthwise position along the chamber, means defining a relatively small long loop sensing aperture at another lengthwise position along the chamber, and means coupled to the chamber for providing a pressure differential across the tape loop, the long loop sensing aperture means being above the pressure differential means and the pressure sensitive switch being coupled to the long loop sensing aperture for sensing pressure deviations thereat whenever the loop rises above the short loop sensing aperture or falls below the long loop sensing aperture.

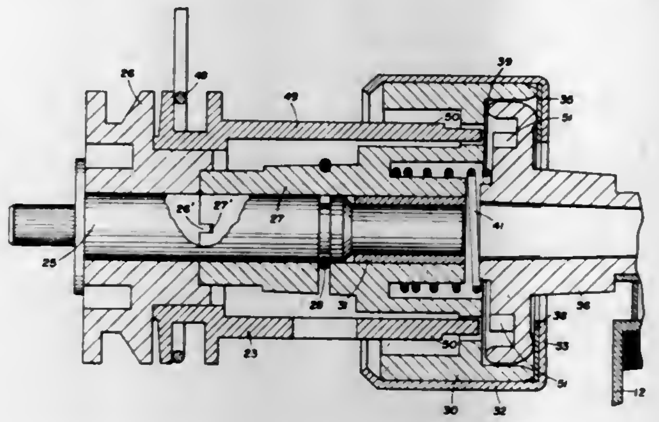
3,310,250
TAPE HANDLING SYSTEM
Franciscus Marcel Michiels, Antwerp, Roger Leon Jean Laureys, Schilde-Antwerpen, and Charles Louis Henri Van Roosbroeck, Willebroek, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 9, 1965, Ser. No. 470,669
Claims priority, application Belgium, July 23, 1964, 64/08425
20 Claims. (Cl. 242—55.12)



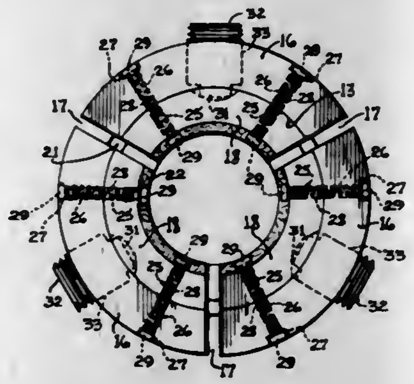
1. A tape handling system comprising:
a processing member;
first tape driving means including first vacuum operated capstan means for moving said tape across said processing member;
second tape driving means including second and third vacuum operated capstan means for imparting to said tape a linear velocity at least equal to the linear velocity imparted to said tape by said first tape driving means;
a single tape loop producing means arranged between said first and second driving means;
a multiple tape loop producing means arranged on the other side of said second driving means; and
control means including first and second pairs of photo-electric cells and associated light sources coupled to said second tape driving means, said pairs of photocells and associated light sources being mounted at two different levels to maintain the length of said single tape loop between two predetermined values.

3,310,251
REEL DRIVE MECHANISM
Robert B. Johnson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 14, 1964, Ser. No. 367,355
7 Claims. (Cl. 242—55.14)

1. A driving mechanism for driving a film reel having a variable mass dependent on the amount of film wound thereon to maintain a constant tension in a film connected to the reel, comprising:
a rotatable driver housing having a pair of spaced driving surfaces therein;
a spindle for supporting the reel in a plane wherein the mass of the reel establishes a moment arm on said spindle; and
a flange on said spindle positioned in said housing to support said spindle on said housing, said flange being positioned between said surfaces to be frictionally engaged by at least one of said surfaces, the moment arm on said spindle tending to tilt said flange toward engagement with both of said surfaces to establish a force of frictional engagement related to the mass of the reel.



3,310,252
EXPANSION CHUCK
Lynn H. Ewing, 2010 2½ Ave., Rock Island, Ill. 61201
Substituted for abandoned application Ser. No. 428,495, Jan. 27, 1965. This application Aug. 22, 1966, Ser. No. 575,923
10 Claims. (Cl. 242—68.2)

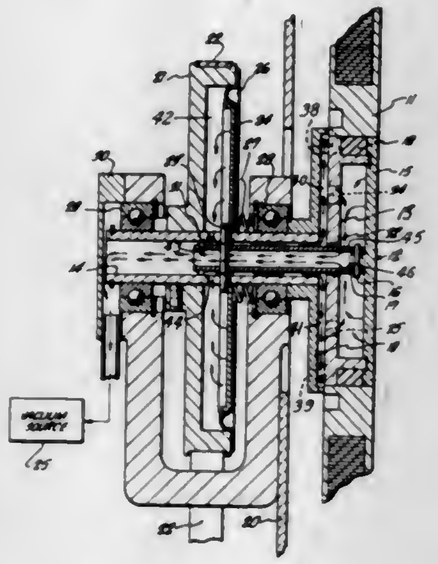


1. A chuck for securing the hollow core of a paper roll onto a rotatable supporting shaft comprising

(a) a cylindrically shaped body journaled upon the rotatable supporting shaft,
(b) said body including an enlarged collar the center bore of which has a diameter greater than the diameter of the supporting shaft,
(c) a hollow elongated sleeve extending laterally from one side of said collar,
(d) said sleeve having an inner diameter of a size that freely receives the supporting shaft and an outer diameter that is freely insertable into the hollow core of the paper roll,
(e) means dividing said collar and a portion of said sleeve into radially expansible sections,
(f) clamping means within the center bore of said collar engageable with the supporting shaft for connecting said chuck to the shaft for rotation therewith,
(g) means for movably connecting said clamping means within the center bore of said collar whereby said clamping means are movable radially about the supporting shaft into and out of clamping engagement therewith, and
(h) means for radially expanding said collar and sleeve sections about the supporting shaft and into binding contact with the hollow core of the paper roll and for moving said clamping means into clamping engagement with the supporting shaft.

3,310,253
PNEUMATICALLY ACTUATED REEL HUB MECHANISM

Harry F. Rayfield, Arcadia, and Harold E. Hass, Temple City, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 21, 1965, Ser. No. 457,772
14 Claims. (Cl. 242—68.3)

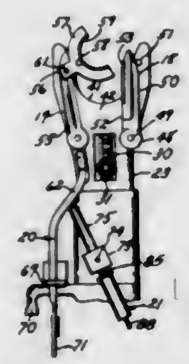


1. A means for locking a reel to a rotatable hub, comprising:

a hub having a first side affixed to a rotatable shaft and an axially movable second side;
a loop of compressible material positioned between the first and second sides;
a reel positioned about the hub;
movement of the second side toward the first side compressing the loop in an axial direction and causing the loop to expand in a radial direction thereby firmly locking the reel to the hub;
the second side affixed to a pneumatically actuated piston; and
pneumatic means for selectively actuating the piston.

3,310,254
BRAKING DEVICE FOR CLOTH LAYING MACHINES

Edward M. Merrill, Sayville, N.Y., assignor to Cutting Room Appliances Corp., a corporation of New York
Filed July 30, 1965, Ser. No. 476,049
4 Claims. (Cl. 242—75.4)

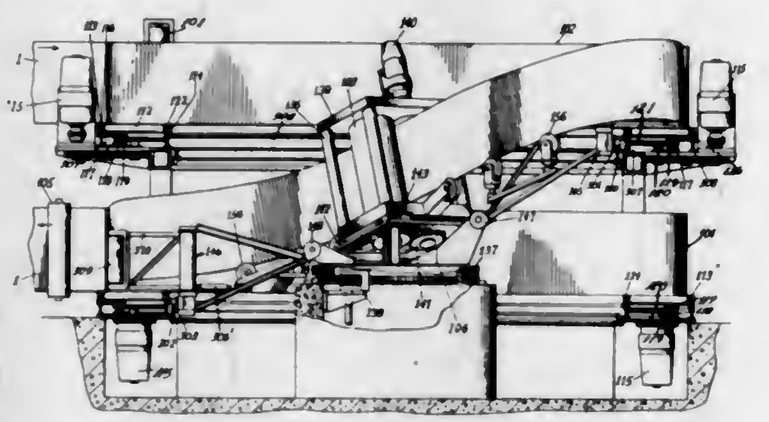


1. In a cloth-laying carriage supporting a cloth supply roll shaft for simultaneous rotation about an axis and translatory movement over the surface of a cloth-laying table, improved means for braking said shaft, comprising:

(a) a generally vertically disposed frame element secured in fixed relation to said carriage, and having an upper end, said upper end including bearing means for supporting one end of said shaft;
(b) a first brake shoe element mounted upon said frame element to contact one side of said supply roll shaft;
(c) a second brake shoe element of arcuate configuration corresponding to the diameter of said shaft, pivotally mounted with respect to said frame element for movement about an axis parallel to the axis of said shaft and normally urged to a raised position, movement of said shaft into contact with said second brake shoe element serving to pivot said second brake shoe element toward said first brake shoe element to wedge said shaft therebetween.

3,310,255
SPIRAL LOOPER

Tadeusz Sendzimir, % T. Sendzimir, Inc., Waterbury, Conn. 06712
Filed Nov. 9, 1964, Ser. No. 409,853
16 Claims. (Cl. 242—78.1)



1. In a spiral looper mechanism, means for forming a moving strip of material into a first spiral coil by adding the said material to the coil to form convolutions thereof, means for forming a second spiral coil from strip material withdrawn from the first spiral coil so that said material so withdrawn forms convolutions of the second spiral coil, means for selectively rotating the said spiral coils at the same and at different speeds, a guide means for conducting the said strip material from the first spiral coil to the second spiral coil, and means for selectively revolving the said guiding means with respect to the said spiral coils, so that the said strip material may be fed into said first spiral coil and withdrawn from said second spiral coil at equal linear speeds, in which event the said guiding means remains stationary, and so that said strip material may be accumulated in the said spiral coils by feeding the said strip into the first spiral coil at a greater linear speed than the speed of withdrawal of the strip material from the second spiral coil, with the revolving of the said guide means in one direction, and so that the strip material may be depleted in the said spiral coils by withdrawing the material from the second spiral coil at a greater linear speed than the speed of feeding the said strip material into the first spiral coil, upon revolving the said guide means in the opposite direction.

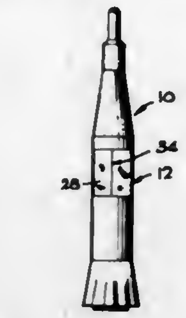
3,310,256
AERODYNAMIC PROTECTION FOR SPACE FLIGHT VEHICLES

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Richard T. Parmley, Cupertino, Calif.
Filed July 27, 1965, Ser. No. 475,299
7 Claims. (Cl. 244—1)

1. A protective covering for a space vehicle that provides insulation and meteoroid protection thereto, said covering comprising:

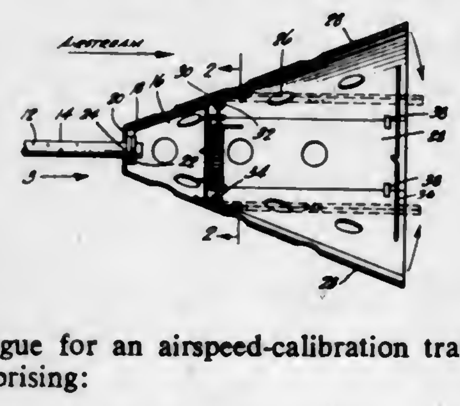
(a) an inflatable bag mounted on the exterior of said vehicle,
(b) means connected to said bag for maintaining the bag at a desired degree of inflation,

(c) a plurality of flexible insulation strips attached at one end thereof to the exterior of said bag, and
(d) a perforated and flexible shielding means mounted to said vehicle around said bag and insulation strips.



3,310,257
DROGUE FOR AIRSPEED-CALIBRATION TRAILING STATIC SOURCE

Eldon N. Price, Omaha, Nebr., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Oct. 1, 1965, Ser. No. 492,094
5 Claims. (Cl. 244—1)

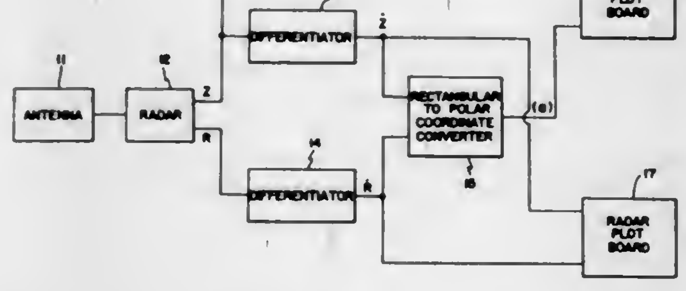


1. A drogue for an airspeed-calibration trailing static source comprising:

a cone,
a conductor tubing,
said cone being attached to the end of said tubing,
said cone having immobile portions and inwardly depressible segments connected therebetween to thereby reduce the frontal area of said cone in passage through space at relatively high speeds,
said depressible segments being urged outwardly to conform to the configuration of said cone to provide a full maximum frontal area of said cone in passage through space at relatively lower speeds.

3,310,258
TECHNIQUE FOR CONTROL OF FREE-FLIGHT ROCKET VEHICLES

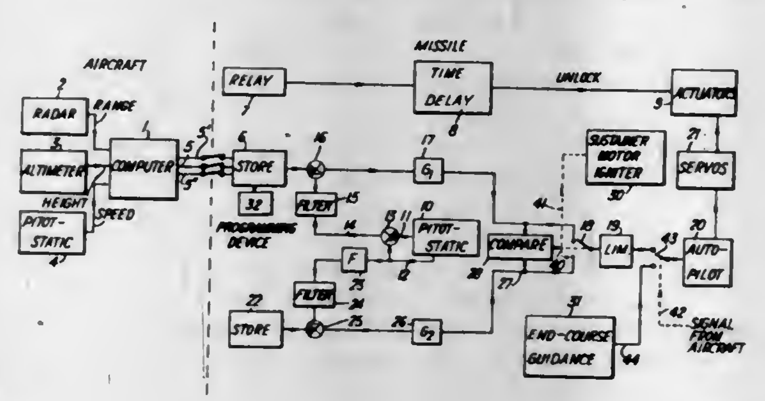
Robert J. Keynton, Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 31, 1964, Ser. No. 393,461
10 Claims. (Cl. 244—3.14)



10. Apparatus for controlling the trajectory of a multistage rocket vehicle comprising: means for generating a first signal proportional to the altitude of said vehicle and a second signal proportional to the flight path angle of said vehicle; a radar plot board connected to receive said first and second signals to display the actual flight path of said vehicle on an altitude versus flight path angle plot; a curve, representing a locus of points at which to ignite the second stage of said vehicle so that the last stage will burn out at the desired altitude, permanently displayed on said radar plot board whereby if the second stage of said vehicle is ignited when said displayed actual flight crosses said curve the last stage of said vehicle will burn out at the desired altitude.

3,310,259
MISSILE GLIDE PATH MAINTAINED CONSTANT BY THE USE OF STATIC AND PITOT-HEAD PRESSURES

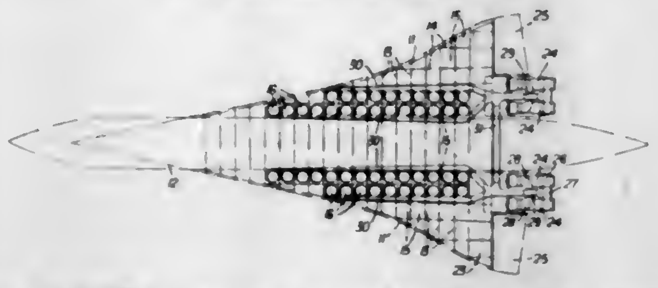
Norman Swift and Douglas Trevor Endean, Bristol, England, assignors to British Aircraft Corporation (Operating) Limited, a British company
Filed May 12, 1964, Ser. No. 366,758
Claims priority, application Great Britain, May 16, 1963, 19,597/63
3 Claims. (Cl. 244—3.15)



1. A missile control system for controlling the descent path of a gliding missile, so as to maintain a predetermined substantially constant glide angle, including control surface actuating means, means for measuring static and Pitot-head pressures, and means operatively connected to said measuring means and said actuating means and responsive to the difference between a given value of dynamic head and the actual dynamic head obtained by subtracting the static pressure from the Pitot-head pressure to operate said actuating means in such a manner as to tend to eliminate the said difference and thereby to restore the descent path to the predetermined glide angle, a first store for receiving at least one given value of dynamic head before launching of the missile, and in which the means responsive to said difference includes a first differencing circuit connected to said measuring means for receiving electrical signals representing the Pitot-head and static pressures, and a second differencing circuit connected to the output of the first differencing circuit and to the first store to receive therefrom a signal representing a stored value of dynamic head, said second differencing circuit having its output connected to said actuating means, a second store for receiving an altitude value representing the minimum altitude for control of the missile by dynamic head, a third differencing circuit connected to the second store and receiving therefrom an input representing the stored altitude signal and connected to said measuring means for receiving therefrom a signal representing the missile altitude, and means connected to said second differencing circuit for switching the control of the flight path adjusting means from the second differencing circuit to the third differencing circuit when the output of the second differencing circuit is less than a given value.

3,310,260
VSTOL AIRCRAFT

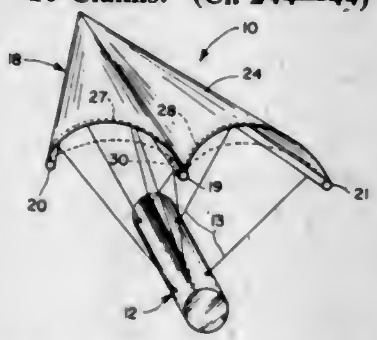
Ian Chichester-Miles, Harpenden, England, assignor to Hawker Siddeley Aviation Limited, London, England
Filed Feb. 1, 1965, Ser. No. 429,252
Claims priority, application Great Britain, Jan. 31, 1964, 4,346/64
14 Claims. (Cl. 244—12)



1. A VSTOL aircraft provided with wings having a plan-form selected from the group comprising narrow delta, compound delta and ogee, at least the inboard portions of said wings being of egg box type construction having a plurality of spaced spars intersecting a plurality of spaced ribs to form a multiplicity of substantially rectangular cell spaces amongst said ribs and spars, said egg box type construction giving the wings their strength without reliance upon upper and lower covering wing skins, and wherein multiple lift fans are mounted each in a respective individual cell space of said inboard wing portions, each said fan thereby having its own clear path for air flow substantially vertically through the wings.

3,310,261
CONTROL FOR FLEXIBLE PARAWING

Francis M. Rogallo and William C. Sleeman, Jr., both of Newport News, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Continuation of application Ser. No. 338,535, Jan. 17, 1964. This application Feb. 9, 1966, Ser. No. 551,815
10 Claims. (Cl. 244—44)



1. A control for an aerodynamic vehicle or the like comprising: a winged vehicle having structural members; flexible wing membrane being secured to said structural members; a tensionable member guided by and conforming substantially to the shape of said flexible membrane and being movable with respect thereto; and means for varying the tension on said tensionable member to alter the shape of said wing membrane and thereby provide a flight control for the vehicle.

3,310,262
SUPERSONIC AIRCRAFT

Augustine W. Robins, Yorktown, Roy V. Harris, Jr., and Harry W. Carlson, Newport News, Francis E. McLean, Hampton, Va., and Wilbur D. Middleton, Bellevue, Wash., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed May 21, 1965, Ser. No. 457,876
8 Claims. (Cl. 244—45)

1. An aircraft having supersonic flight capabilities and comprising:

a fuselage having a fineness ratio suitable for supersonic flight, said fuselage being provided with a positive camber area at the forward end thereof and terminating at the aft end thereof in a right circular conical tip,

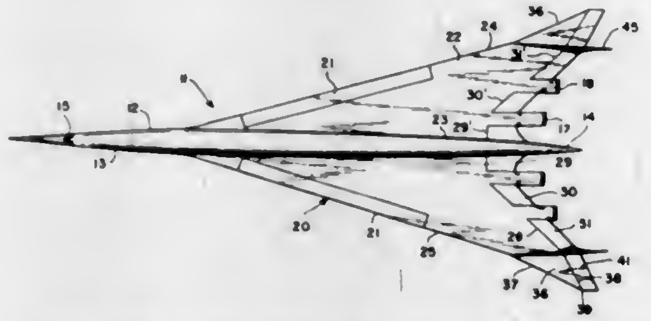
a twisted and cambered wing connected to each side of said fuselage and projecting substantially horizontally and outwardly therefrom,

each said wing including:

(a) a main wing panel having a root, a swept leading edge and a trailing edge,

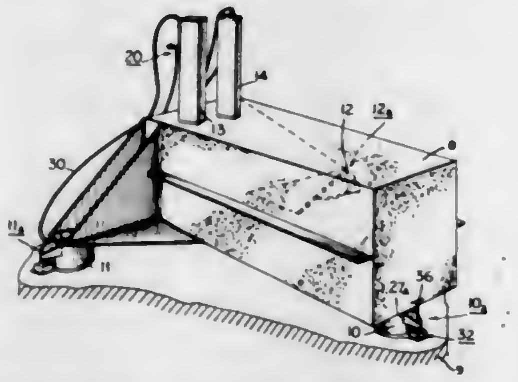
(b) an outboard wing panel integrally secured to said main wing panel and having a swept leading and swept trailing edge forming angular continuations of the leading and trailing edges of said main wing panel so as to provide a notched leading edge and angular trailing edges for the wing, and

(c) a vertical fin integrally secured to said wing along the intersection of said main wing panel and said outboard wing panel with said fin being slightly canted in the aft direction toward the longitudinal center of said fuselage.



3,310,263
GRAVITY-SENSITIVE LEVELLING

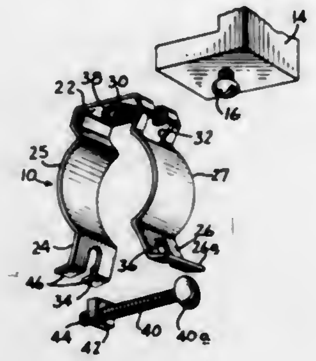
Richard D. Cavanaugh, Medfield, Mass., assignor to Barry Wright Corporation, Watertown, Mass., a corporation of Massachusetts
Filed Mar. 4, 1965, Ser. No. 437,246
19 Claims. (Cl. 248—23)



1. Apparatus for supporting a load on a sub-structure in a predetermined relation to the direction of gravity, comprising a load, a fixed-height mount for supporting said load at a prescribed equilibrium height above the sub-structure at a first point, a first variable-height mount for supporting said load independently of said fixed-height mount above the sub-structure at a second point, a second variable-height mount for supporting said load independently of said fixed-height mount above the sub-structure at a third point, the second and third support points being in a triangular array with the first support point, and control means responsive to gravity mounted in fixed relation to said load actuating said first variable-height mount and said second variable-height mount and preserving said second and third support points of said load in a predetermined relation to the fixed-height support point and to the direction of gravity.

3,310,264
QUICK MOUNTING HANGER FOR PIPE AND CONDUIT

Arthur I. Appleton, Northbrook, Ill.
(1701 Wellington Ave., Chicago, Ill. 60657)
Filed Oct. 13, 1966, Ser. No. 586,423
3 Claims. (Cl. 248—72)



3. In a hanger for sections of pipe, tubing, and the like, having a web and a pair of legs joined thereto for engagement with the section to be supported, the improvement comprising in combination

(1) an aperture through and adjacent the end of one of said legs,

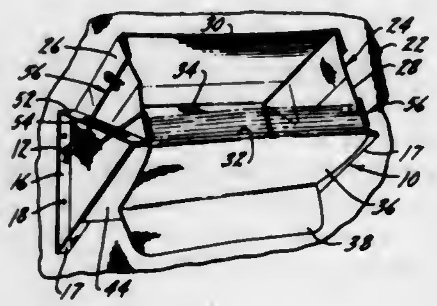
(2) a slot originating at the end of the other one of said legs and running along said leg toward said web, both of said legs being turned outwardly, with the outwardly turned portion of the apertured leg including a terminal portion of the aperture,

(3) a bolt through said aperture, said bolt being staked at one end and having a head on the other end, and

(4) a flat sided nut on said bolt intermediate its ends.

3,310,265
ARTICLE HOLDING MEANS

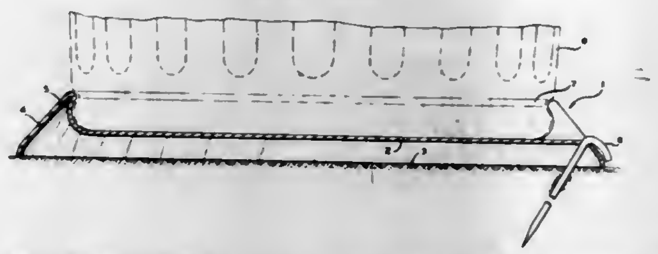
Miles F. Mulloy, 25246 Lloyd Road, Lombard, Ill. 60148
Filed Apr. 19, 1965, Ser. No. 449,030
8 Claims. (Cl. 248—99)



1. A holder assembly for receiving, storing and disposing of waste material, including a holder adapted to be mounted on a supporting structure, inclining means within said holder adapted to hold a disposable container with collapsible walls at an angle so that an open top of the container is disposed toward convenient access by a user, and removable separating means adapted to maintain collapsible walls of the disposable container in separation while mounted in the holder for receipts of waste materials, said container comprising a paper bag with spaced planar side walls and a flap to close the open top, said removable separating means comprising a plurality of clips, each clip having separated side members spaced a predetermined distance to engage opposed substantially aligned portions in a substantially top to bottom engagement.

3,310,266
RECEPTACLE HOLDER

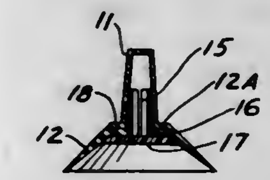
Mark E. Larkin and Robert G. Marrs, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 5, 1966, Ser. No. 518,866
8 Claims. (Cl. 248—154)



1. A holder having a base means spaceable above the level of a supporting surface of a leg means, upstanding holding means carried by at least one of said base means and said leg means and adapted to engage a receptacle around at least a portion of its periphery at least when said receptacle and/or any contents therein have sufficient weight to cause a downward deflection of at least a portion of said base means, said holder comprising a base means having a substantially flat, horizontal, at least partly curvilinear sheet of material whose thickness is substantially less than its diameter, a holding means carried by said base means and defined by a first, elongate, upstanding, hemispherical member whose vertical concave surface faces toward the center of said base means, said first member also being curved in a direction parallel to its axis which is parallel to the upper surface of said base means so that the curvature follows at least a portion of the edge of said base means, the lower edge of said first member being integral with the edge of said base means, the upper edge of said first member terminating in a second elongate, upstanding, hemispherical member of a vertical hemispherical diameter substantially less than the vertical hemispherical diameter of said first member, said second member having its concave surface facing downwardly and away from the center of said base means, said second member also being curved in a direction parallel to its axis which is parallel to the upper surface of said base means so that the curvature follows at least a portion of the edge of said base means, and leg means for holding said base means away from contact with a supporting surface, said leg means being defined by an annular band having one edge integral with the end of said second member which is not integral with said first member, said band extending downwardly from said second member, outwardly from said base means, and terminating with a free edge at a point below the lower surface of said base means, said band following the edge of said base means.

3,310,267
WIG SUPPORT

Sandra Sue Koehler, Detroit, Mich.
(2916 Lindberg Ave., Allen, Pa. 18103)
Filed Aug. 1, 1966, Ser. No. 569,406
1 Claim. (Cl. 248—176)

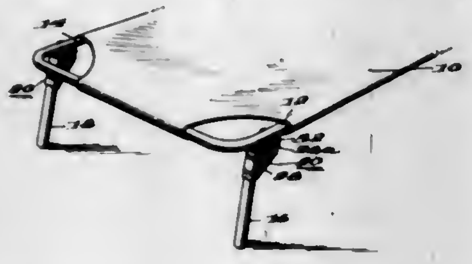


A hair piece support, comprising a head block having an opening in the base thereof, a spindle received in said opening and arranged for rotation therein, and a vacuum cup secured to said spindle, said vacuum cup having a central opening, a split sleeve received in and extending through said opening, a flange on the lower end of said split sleeve and closely positioned against an inside face of said cup, a second sleeve press fitted over said split sleeve and having a flange closely positioned against an exterior face of said cup.

3,310,268

HINGE BRACKETS

Hyman Kramer, 2764 E. 16th St.,
Brooklyn, N.Y. 11218
Filed May 24, 1965, Ser. No. 458,148
5 Claims. (Cl. 248—188)

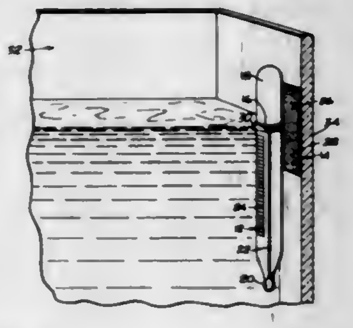


1. A hinge bracket for pivotally connecting tube, rod and like members for relative swinging movement with respect to one another comprising: an elongated body portion having generally U-section and adapted to receive and partially enclose the upper end portion of one said member and side wings extending forwardly-upwardly from said body portion and terminating at their upper ends in ear formations which are spaced apart an amount enabling the reception of the other of said members therebetween; means for fixedly securing said body portion to the upper end portion of said one member and in position such that the relatively top edge portions of each are substantially at the same level; said ear formations having aligned holes for the reception of a pivot pin which is adapted to be passed cross-wise through same and through said other member received therebetween; and said top edge of the body portion of the bracket having an integral, inwardly projecting tab which is adapted to extend over the top edge of said one member to limit vertical extension of said one member when received in the bracket and whose relatively upper surface is shaped to conform to the relatively under surface of said other member received between said ear formations, said ear formations being provided with inward depressions so located along corresponding edges thereof that they move over-center of the aligned holes provided in said formations when said bracket is swung with said one member to a position in which said one and other members are substantially parallel.

3,310,269

BUOYANT BODY HOLDER FOR A TANK

Nicholas Sama, 5591 SW. 76th St., Miami, Fla. 33143
Filed Aug. 3, 1966, Ser. No. 570,028
6 Claims. (Cl. 248—205)



1. In combination:

(a) a buoyant body to be removably affixed in a predetermined position and orientation with respect to the side wall of a tank holding a liquid in which said body is buoyant;

(b) a layer member to overlay a portion of the side wall of the tank; and

(c) means on the layer member to connect said member to the buoyant body such that a portion of the member is above the float line of the buoyant body and a portion of the member is at or below the float line of the buoyant body;

the area of the member to overlay the side wall of the tank above said float line being of an area such that:

(1) when said means connect the member to the buoyant body,

(2) when the member is in an overlaying relation on the tank wall, and

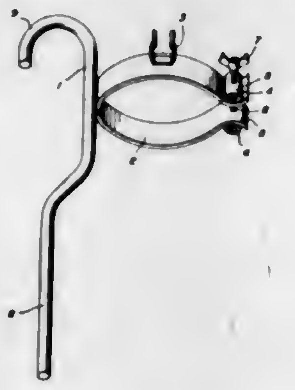
(3) when a thin film of said liquid is captivated between the layer member and the wall surface,

the forces of adhesion caused by a thin film of said liquid captivated between the member and the side wall of the tank will be such that the composite body will be held against lateral movement relative to the tank side wall and the buoyant body will be supported vertically the by the buoyancy of the liquid.

3,310,270

AIR ACETYLENE TANK HOLDER

Joseph Ciancio, 34 N. Iowa Ave.,
Atlantic City, N.J. 08401
Filed Mar. 21, 1966, Ser. No. 543,453
2 Claims. (Cl. 248—210)



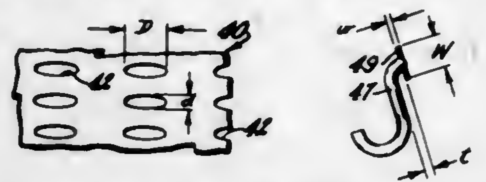
1. A holder for a generally cylindrical container comprising a substantially circular band adapted to encircle the container and having opposed ends recurving upon themselves and constituting, when the holder is seated upon the container, supporting feet for the latter when its axis is in horizontal position, cylindrical bodies seated in said recurving ends, a tension member extending through said ends and said bodies including means for varying the effective length of said member for clamping the band about the container, a rod substantially paralleling the band axis secured to the band approximately in diametrically opposed relation to said ends, said rod at one end defining a hook adapted to receive a horizontal supporting element to support the container with its axis extending generally vertically, said rod at its other end being laterally offset radially outward from the axis of the band to provide manual gripping means for transporting the container.

3,310,271

APERTURED DISPLAY BOARD AND HARDWARE THEREFOR

Leonard H. King, 67 Southgate Road,
Valley Stream, N.Y. 11581
Filed Oct. 15, 1965, Ser. No. 496,398
15 Claims. (Cl. 248—225)

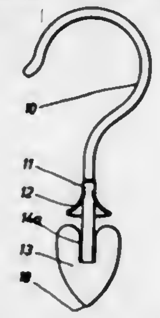
1. An improved apertured board for use with removable, article supporting hooks, said apertured board comprising a plurality of elongated, noncircular apertures having a length dimension greater than a width dimension, the apertures being arrayed in a repetitive pattern, each of the apertures being defined by a pair of spaced, arcuate side walls and a pair of spaced, arcuate end walls, said end walls having a smaller radius of curvature than said side walls, the dimension between said end walls being substantially greater than the dimension between said side walls.



3,310,272

SUSPENSION HOOK

Friedrich Wilhelm Brünger, 10 Hathumarstrasse,
Paderborn, Germany
Filed Jan. 21, 1966, Ser. No. 522,085
Claims priority, application Germany, Jan. 22, 1965,
B 80,229; Feb. 18, 1965, B 80,596
7 Claims. (Cl. 248—339)

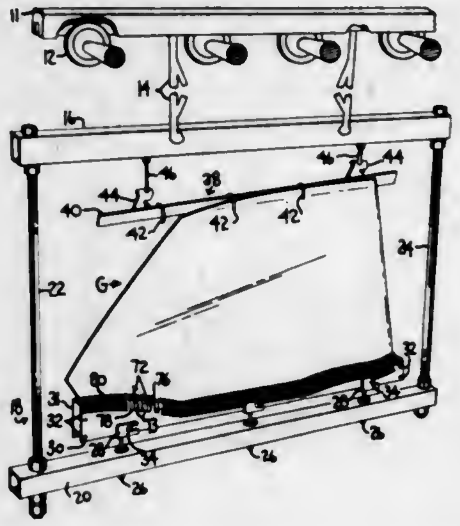


1. In a device for holding an article packaged with a deformable backplate, the combination comprising piercing means, said piercing means being insertable through a deformable backplate to form a slot in such backplate; retention means, said retention means being insertable into such slot to attach said holding device and said deformable backplate; and, suspension means connected to said retention means, said means being used to suspend an article for display and transportation purposes; said retention means lying in a plane parallel to said suspension means when inserted into position in a slot.

3,310,273

SHEET SUPPORT APPARATUS

Samuel L. Seymour, Oakmont, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 28, 1966, Ser. No. 530,435
7 Claims. (Cl. 248—346)

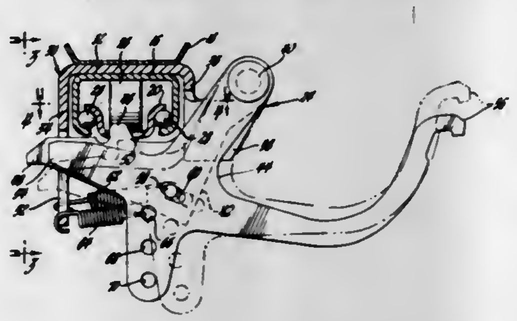


1. Apparatus for supporting a glass sheet along a supported edge thereof comprising thin wire screen mesh in contact with said supported edge and relatively rigid reinforcing means contacting said thin wire screen on the side opposite said glass contacting side of said screen, said relatively rigid reinforcing means comprising a perforated, flatwise disposed metal sheet intersecting the plane occupied by said glass sheet.

3,310,274

MANUAL SEAT ADJUSTER LOCKING DEVICE

Akira Tanaka, Southfield, and Romeo O. Umanos, Livonia, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 9, 1965, Ser. No. 478,261
9 Claims. (Cl. 248—430)

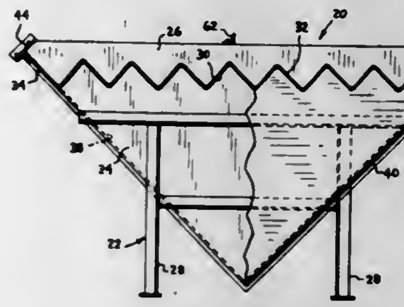


1. In combination, a vehicle body, a seat, a seat adjuster supporting said seat in said body, said seat adjuster including a lower track secured to said vehicle body, an upper track secured to said seat and longitudinally movable relative to said lower track for adjusting said seat fore and aft in said vehicle body, latching means for preventing relative movement of said tracks, said latching means including a plurality of keeper notches formed in one of said tracks, a keeper slot on the other of said tracks, a lock bar pivotally mounted on one of said tracks for pivotal movement into and from engagement with said keeper slot and said keeper notches, spring biasing means for biasing said lock bar toward engagement with said keeper slot and said keeper notches, wedge means for wedging said lock bar in said keeper slot and said keeper notches, and a control means for moving said lock bar into and from engagement with said keeper notches and said keeper slot.

3,310,275

FORM FOR CASTING CONCRETE SUBGRADE STAIR STRUCTURES

William C. Lyons, 186 Damascus Road,
Branford, Conn. 06405
Filed Mar. 8, 1965, Ser. No. 437,847
7 Claims. (Cl. 249—14)



1. A form for casting a concrete subgrade stairwell and flight of stairs as a monolithic structure which comprises:

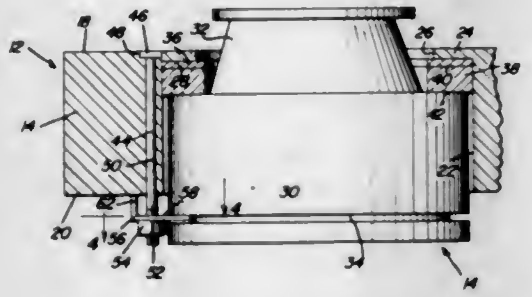
(a) a pair of generally right-triangular inner side panels;

(b) support means for disposing said panels in spaced, vertically inclined planes with their apexes at the bottom and their hypotenuse edges substantially horizontal, the direction of inclination causing said panels to diverge slightly toward said apexes;

- (c) a web plate permanently joined to and extending between said panels at their hypotenuse edges throughout the extent thereof, said plate having a saw-tooth conformation as viewed edgewise to correspond with the desired conformation of the treads and risers of the flight of stairs in the finished casting, and said hypotenuse edges of said inner side panels being similarly formed to mate with said web plate; each of said inner panels having laterally extending flanges permanently joined along their respective right-angularly related edges to form V-troughs on either side of said form, said flanges extending beyond the ends of said inner panels and web and having a filler panel at each of the opposite ends of said form, said filler panels extending between and being permanently joined to the opposed lateral flanges and to the corresponding end of said web plate;
- (d) a pair of generally right-triangular outer side panels adapted to be removably received in and to mate with said lateral flanges on said inner panels in laterally spaced relation to said inner panels, thereby forming right-triangular prismatic voids corresponding to the side walls of the finished casting, the hypotenuse edges of said outer side panels being substantially linear and disposed horizontally above the plane of said web plate a distance sufficient to provide the desired thickness of stair flight in the finished casting;
- (e) and means for temporarily retaining said outer side panels against lateral displacement on said laterally extending flanges when fluid concrete is poured into said form, said retaining means being disengageable from said outer panels to permit the latter to be removed from the form after the concrete has set.

3,310,276
MOLD HOLDER ASSEMBLY FOR MOUNTING IN A MOLDING APPARATUS

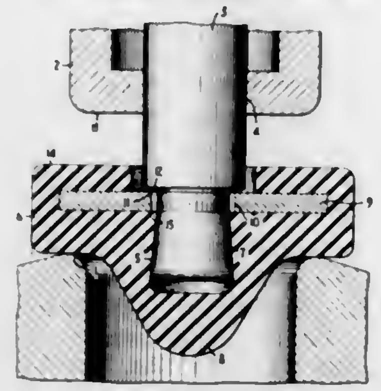
Robert E. Bonney, Carlsbad, N. Mex., assignor of five percent to Tom R. Caviness, five percent to Clifton S. Bailey, and five percent to E. C. Paine
Filed Feb. 25, 1964, Ser. No. 347,192
12 Claims. (Cl. 249—120)



9. A mold holder assembly for mounting in a molding apparatus comprising a block-body having at least one mold-receiving chamber therein opening upwardly from a lower surface of said body, said chamber having a mold-receiving seat therein, a mold, means detachably retaining said mold upon the mold-receiving seat in said chamber, said retaining means being disposed below said body at the bottom surface thereof and being engaged in a recess in a portion of the mold projecting beneath said bottom surface.

3,310,277
VALVE AND VALVE DISC

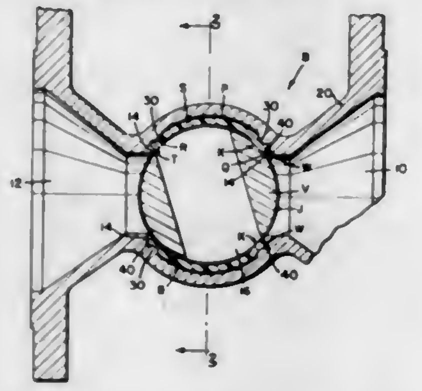
Helmar Trøst Nielsen, Nordborg, and Knud Aage Hansen, Sonderborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed June 3, 1964, Ser. No. 372,153
Claims priority, application Germany, July 6, 1963, D 41,921
7 Claims. (Cl. 251—84)



1. In a valve body having means defining a valve seat, a valve stem extending axially into said valve body, a valve body portion for axially guiding said valve stem, a resilient valve disc mounted in operation on said valve stem and having an annular surface seatable on said seat for closing said valve, said valve stem being mounted in said valve body portion for selective movement axially variably in a direction toward said seat for seating said valve disc on said seat to preclude fluid flow through said valve body and in an opposite direction to unseat said disc to allow fluid flow, said valve stem having at one end in said valve body a coaxial tapered extension extending axially therefrom, said extension having axially extending surfaces diverging radially outwardly away from the longitudinal axis thereof and away from said valve stem, said valve disc having a cavity open at one end for snugly receiving said extension and inner cavity walls defining said cavity converging toward the open end of said cavity, a rigid, metal plate in said valve disc extending radially outwardly from the open end of said cavity and circumferentially of said extension, said plate having a central opening dimensioned to allow said extension to enter said cavity, said plate opening having a transverse dimension smaller than the diameter of said valve stem, said extension comprising a cylindrical, annular portion having a reduced diameter, and said cylindrical portion being disposed at said one end of said valve stem integral therewith.

3,310,278
CIRCULAR VALVING MEMBER

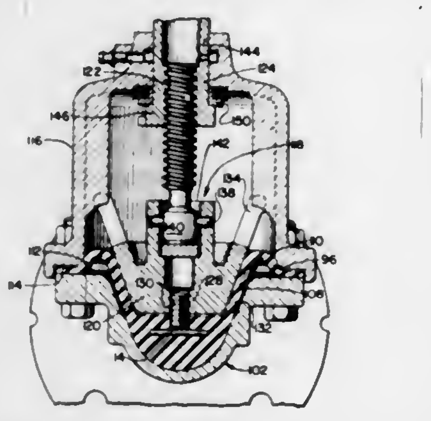
Russell G. Smith, Cincinnati, Ohio, assignor to Continental Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 5, 1964, Ser. No. 409,169
5 Claims. (Cl. 251—317)



1. A valve structure comprising a body-member a circular valving-member and a sealing member, said sealing member formed of a deformable material having a low coefficient of friction and which is substantially resistant to corrosives and solvents, the boby-member including a sleeve-and-valving-member receptive bore, each of said body and valving members having substantially rectangular flow passages, means mounting said valving member for movement relative to the said body member to place the flow passages of said valving member in and out of communication with the flow passages of said body member, the rectangular flow passages of said body member including continuous lips completely surrounding flow passages, the bore of said body including continuous ribs surrounding said continuous lips, said lips and ribs projecting toward and terminating in inwardly facing transversely curved surfaces having substantial width and paralleling the opposing curved surfaces of the valving member with the extent of the inward projection of the lips exceeding that of the ribs, continuous recessed areas surrounding said continuous lips, said recessed areas disposed between and defining the adjacent edges of said lips and ribs, said sealing member received in said body bore with portions thereof overlying said ribs, said sealing member having substantially rectangular passageways therethrough surrounding said lips, the said curved surface of the valving member being in fluid tight sealing engagement with the sealing member at those locations of said ribs which completely surround the flow passages of the body member, said sealing member having a thickness greater than the extent of the inward projection of the lips for precluding contact between the valving member and the said inwardly facing surfaces of the lips, the free peripheral edges of the sealing member adjacent said lips being received in the said recessed areas surrounding said lips for precluding contact between the valving member and the peripheral edges of said sealing member during rotational movement of the valving member in the opening and closing of the valve.

3,310,279
DIAPHRAGM VALVE AND DIAPHRAGM THEREFOR

Henry W. Boteler, East Greenwich, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed May 14, 1964, Ser. No. 367,298
11 Claims. (Cl. 251—331)



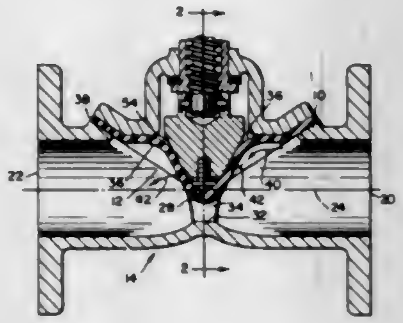
1. The combination of:

- (I) a rigid diaphragm valve body which:
  - (A) has a generally cylindrical side wall which:
    - (1) encloses a flow passageway,
    - (2) has a diaphragm opening which:
      - (a) is located in one side of said side wall,
      - (b) communicates with said flow passageway,
      - (c) has an axis,
  - (B) has an annular flange surface which:
    - (1) surrounds said diaphragm opening,
    - (2) lies in a plane which:
      - (a) is generally flat,
      - (b) is perpendicular to said axis,
  - (C) has a diaphragm seating surface which:
    - (1) is within said passageway,
    - (2) is opposite said diaphragm opening,
    - (3) has a certain shape,
- (II) a deformable diaphragm valve diaphragm which:
  - (A) has an outer portion which:
    - (1) has a second surface engaging said flange surface,
    - (2) has a first surface which:
      - (a) is parallel to said outer portion second surface,
      - (b) is spaced a certain distance from said outer portion second surface,
  - (B) has a central portion which:
    - (1) is located:
      - (a) apart from said outer diaphragm portion,
      - (b) on said axis,
    - (2) has a second surface which in the valve closed position:
      - (a) engages said diaphragm seating surface on said body,
    - (3) has a first surface which:
      - (a) is opposite said central portion second surface,
      - (b) is spaced from said central portion second surface a distance greater than said certain distance,
      - (c) extends in a direction generally radial with respect to said axis,
  - (C) an intermediate portion which:
    - (1) connects said central portion to said outer portion,
    - (2) has a first surface which:
      - (a) joins said central portion first surface at a first juncture,
      - (b) in the closed position of the valve turns abruptly at said first juncture, in a direction generally along said axis,
      - (c) in the closed position of the valve turns abruptly back upon itself at a bend which:
        - (i) is spaced radially outward from said first juncture with respect to said axis,
        - (ii) is spaced radially inward from said body flange surface with respect to said axis,
      - (d) joins said outer portion first surface at a second juncture,
      - (e) in the closed position of the valve turns abruptly at said second juncture into said outer portion first surface,
    - (3) has a second surface which:
      - (a) is opposite said intermediate portion first surface,
      - (b) is parallel to said intermediate portion first surface,
      - (c) joins said central portion and outer portion second surfaces,
  - (D) has a layer of flexible reinforcement material which:
    - (1) is embedded in said central, intermediate and outer portions,
    - (2) extends from said central portion through said intermediate portion and into said outer portion,
    - (3) is substantially closer to said intermediate portion first surface than to said intermediate portion second surface at said first and second junctures,

  (4) is substantially closer to said intermediate portion second surface than to said intermediate portion first surface at said bend,
  (5) in the closed position of the valve changes direction at said bend,
(E) has a rigid elongated connection member which:
  (1) has one portion in said central diaphragm portion,
  (2) has another portion projecting from said central diaphragm portion first surface.

3,310,280
DIAPHRAGM VALVE

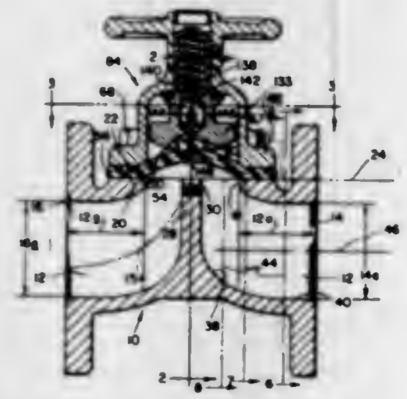
Henry W. Boteler, East Greenwich, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Nov. 16, 1965, Ser. No. 508,041
10 Claims. (Cl. 251—331)



1. A diaphragm valve having:
(I) an elongated hollow body having:
  (A) walls which:
    (1) define valve body sides,
    (2) terminate in opposite valve body ends,
    (3) have interior surfaces defining a flow passage,
  (B) a long dimension measured between said ends,
  (C) a diaphragm opening which:
    (1) is located in one of said valve body sides,
    (2) extends through said walls,
    (3) has a rim which:
      (a) extends around said diaphragm opening,
      (b) has opposite portions lying in a first plane which:
        (i) is parallel to said long dimension,
        (ii) intersects a substantial part of said flow passage,
    (4) has a width dimension measured:
      (a) across said opening,
      (b) between said rim portions,
      (c) at right angles to said long dimension,
  (D) a diaphragm seat which:
    (1) is located:
      (a) on said interior wall surfaces,
      (b) between said valve body ends,
      (c) opposite said diaphragm opening,
    (2) has two separate portions which:
      (a) are sloped steeply with respect to said first plane,
      (b) have their outer ends merging into said diaphragm opening rim portions,
    (3) has a center portion connecting said separate portions,
  (E) an end opening which:
    (1) is located at one of said body ends,
    (2) lies in a second plane at substantially right angles to said long dimension,
    (3) has an area which is at least as great as the area of an imaginary circle having a diameter equal to said diaphragm opening width dimension,
(II) a flexible diaphragm which:
  (A) has an outer portion in contact with said body rim,
  (B) has a center portion which covers said body diaphragm opening,
(III) means for permanently clamping the diaphragm outer portion against said body opening rim up to said diaphragm opening,
(IV) means for moving said diaphragm center portion with respect to said diaphragm seat portions to different positions from fully closed to fully open, said diaphragm center portion,
  (A) when in fully open position forming with said seat portions a flow opening, measured in a plane parallel to said second plane, which is considerably less in area than said end opening area.

3,310,281
DIAPHRAGM VALVE

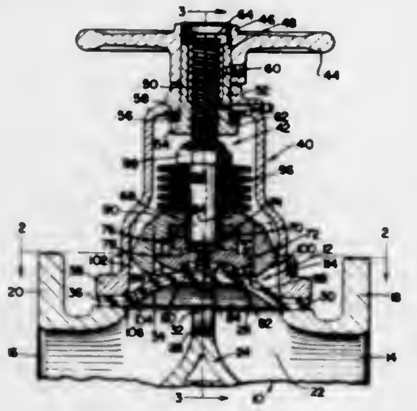
Henry W. Boteler, East Greenwich, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Nov. 16, 1965, Ser. No. 508,128
22 Claims. (Cl. 251—331)



1. A diaphragm valve having:
(I) an elongated hollow body having:
  (A) walls which:
    (1) define valve body sides,
    (2) terminate in opposite valve body ends,
    (3) have interior and exterior surfaces,
  (B) a long dimension measured between said ends,
  (C) a seat which is located:
    (1) on the interior wall surfaces,
    (2) between said valve body ends,
  (D) a diaphragm opening which:
    (1) is located:
      (a) in one of said valve body sides,
      (b) opposite said seat,
    (2) extends through said walls,
    (3) has a width dimension measured:
      (a) at said seat,
      (b) at right angles to said long dimension.
  (E) an end opening which:
    (1) is located at one of said body ends,
    (2) lies in a first plane at substantially right angles to said long dimension,
    (3) has an area at least as great as the area of a circle having a diameter equal to said diaphragm opening width dimension,
(II) a flexible diaphragm which:
  (A) covers said diaphragm opening,
  (B) has an outer portion in permanent contact with said body around said diaphragm opening,
  (C) has a center portion which:
    (1) is bulged,
    (2) is movable into and out of contact with said seat and to different positions from fully closed to fully open,
    (3) when in fully open position, forms with said seat a flow opening measured in a plane parallel to said first plane, which is considerably less in area than said end opening area,
(III) means for clamping said outer diaphragm portion against said body around said diaphragm opening,
(IV) means for moving said diaphragm center portion.

3,310,282
DIAPHRAGM CONTROL VALVES

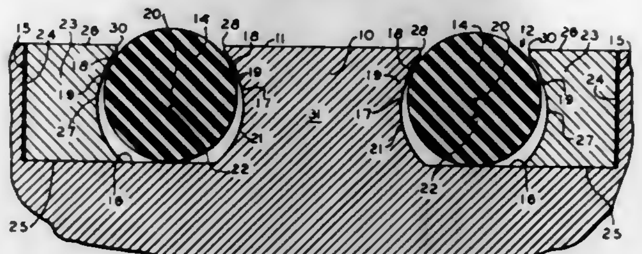
Henry W. Boteler, East Greenwich, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Nov. 15, 1965, Ser. No. 514,428
34 Claims. (Cl. 251—331)



1. A diaphragm value comprising:
(I) a diaphragm,
(II) a seat for said diaphragm,
(III) a compressor which:
  (A) is for moving said diaphragm with respect to said seat,
  (B) has a first part which is movable:
    (1) in one direction toward said seat,
    (2) in the opposite direction away from said seat,
  (C) has a second part which is movable:
    (1) in both said directions,
    (2) with respect to said first compressor part,
(IV) means:
  (A) for holding said second compressor part in a fixed position with respect to said seat,
  (B) for moving said first compressor part in said opposite direction to a predetermined position which:
    (1) is spaced from said seat,
    (2) establishes a flow passage between said diaphragm and said seat,
    while said second compressor part is being held in said fixed position,
  (C) for moving said first compressor part in said opposite direction beyond said predetermined
(V) means responsive to said movement of said first compressor part in said opposite direction beyond said predetermined position:
  (A) for opposing said holding means,
  (B) for moving said second compressor part in said opposite direction from said fixed position,
  (C) for increasing the size of said flow passage.

3,310,283
PRESSURE SEAL GROOVE

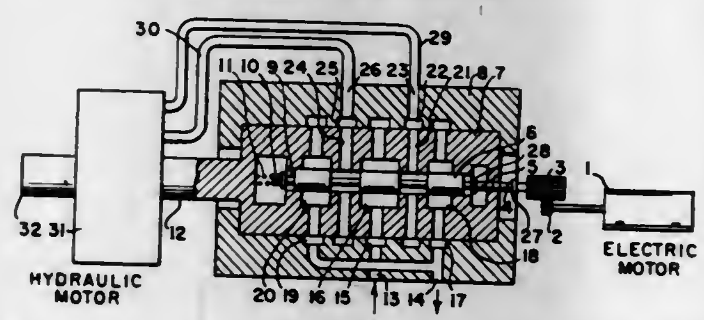
Sydney E. Carlton, 240 W. Hereford, Gladstone, Oreg. 97027
Filed Aug. 23, 1965, Ser. No. 481,572
8 Claims. (Cl. 251—357)



1. In a groove retaining an O-ring seal of stated diameter for sliding sealing position with an opposed surface, the combination of a surface to be sealed, a groove in said surface having a depth of less than the diameter of the O-ring, undercut symmetrical side walls having the upper portion cut on the same curvature and center as the O-ring and the remainder cut on a larger arc with a lower center than the O-ring center leaving a transverse peak at the intersection of said curves, and a groove opening of a width less than the diameter of the O-ring.

3,310,284
HYDRAULIC SYSTEM ROTARY PILOT VALVE

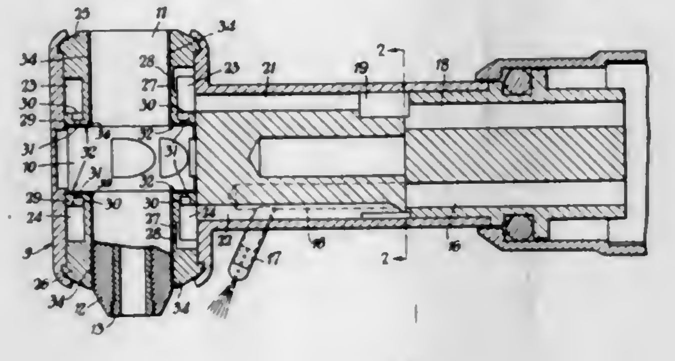
Seiuemon Inaba, Kawasaki-shi, Kohei Ito, Fujisawa-shi, and Ryoko Shirafuji, Tokyo, Japan, assignors to Fujitsu Limited, a corporation of Japan
Filed Aug. 20, 1964, Ser. No. 390,984
5 Claims. (Cl. 253—1)



1. In a hydraulic system a rotary pilot valve, comprising
a rotatably mounted sleeve having an axis and adapted to rotate about its axis;
a rotatably mounted spool coaxially mounted inside said sleeve and adapted to rotate about its axis;
displacing means on said sleeve and on said spool in cooperative engagement for converting rotation of said spool about its axis and for converting rotation of said sleeve about its axis into a displacement of said spool from an initial position in a direction of its axis relative to said sleeve, said displacing means comprising a threaded screw portion on said spool and a threaded nut portion on said sleeve in threaded engagement with said screw portion;
an electric motor;
coupling means coupling said electric motor to said spool for rotating said spool about its axis thereby displacing said spool in a direction of its axis, said coupling means comprising a first gear affixed to and rotating with said electric motor and a second gear affixed to said spool in coupling engagement with said first gear, said second gear having a longer axial dimension than said first gear; and
an hydraulic motor coupled to said sleeve and controlled in operation by the displacement of said spool in a direction of its axis for rotating said sleeve about its axis thereby displacing said spool in the opposite direction of its axis to return the said spool to its initial position.

3,310,285
DENTAL HANDPIECE

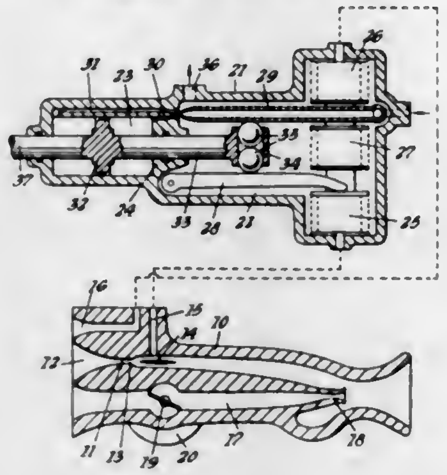
**Percy Hawtin, Preston New Road,
Blackpool, England
Filed Feb. 2, 1966, Ser. No. 533,746
Claims priority, application Great Britain, Nov. 15, 1962,
43,324/62
3 Claims. (Cl. 253—2)**



1. A turbine-driven dental handpiece comprising:
a T-shaped casing, the head thereof being hollow;
upper and lower bearing elements secured in the head of the casing at the longitudinally disposed ends thereof, each bearing element having a smooth internal bearing surface defining a longitudinal bore, each bearing element being substantially impermeable to air and liquid and having a plurality of orifices through which air is supplied to the bore, each bearing element terminating at its inner end in a smooth radial bearing surface, the radial bearing surfaces of the upper and lower bearing elements being longitudinally disposed from each other and defining a rotor-receiving chamber therebetween, each radial bearing surface having a plurality of orifices through which air is supplied to the rotor-receiving chamber and a plurality of equally spaced radial grooves to facilitate passage of air to the rotor-receiving chamber;
a rotor having a pair of longitudinally disposed exteriorly continuously smooth uninterrupted radial bearing surfaces disposed within the rotor-receiving chamber with the radial bearing surfaces being spacedly juxtaposed to the corresponding radial bearing surfaces of the bearing elements and defining therewith rotor bearing spaces, the rotor having upper and lower exteriorly continuously smooth uninterrupted cylindrical spindles axially secured thereto, the exteriorly smooth surface of the spindles being spacedly juxtaposed to the corresponding interior surface of the bore and defining therewith spindle bearing spaces, the gap across each rotor bearing space being approximately .0020 to .0025 inch and the gap across each spindle bearing space being approximately .00042 to .00045 inch;
means for rotatably driving the rotor about its axis;
means for supplying air to the rotor bearing spaces and to the spindle bearing spaces; and
means for commingling a liquid with the air, whereby the rapid rotation of the rotor and spindles causes the commingled liquid and air to substantially separate into two zones of fluid, an outer zone of liquid being collected adjacent the upper and lower bearing elements and an inner zone of air being collected adjacent the rotating rotor and spindles.

3,310,286
CONTROL APPARATUS FOR GAS TURBINE ENGINE VARIABLE AIR INTAKES

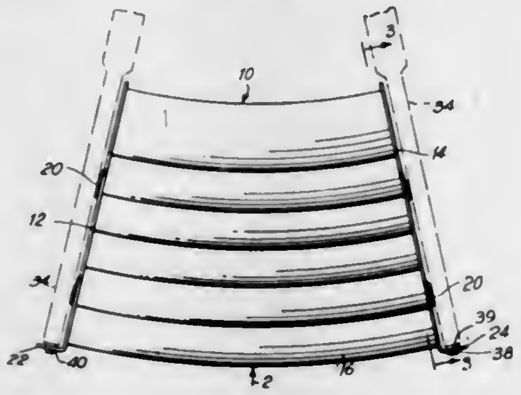
**Richard Joseph Ifield, Beecroft, New South Wales, Australia, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed June 21, 1966, Ser. No. 559,223
4 Claims. (Cl. 253—52)**



1. Control apparatus for a variable air intake of a gas turbine engine comprising a body intended to be disposed in the path of flow of air through said intake, said body having an air flow passage therein incorporating a restriction, a signal producing temperature sensitive element at the downstream side of said restriction in the passage, means in the body for controlling the pressure difference across the restrictor in accordance with the temperature of said element, and means for varying said intake in accordance with changes in said pressure difference across the restrictor.

3,310,287
FLUID TURNING VANE ASSEMBLIES

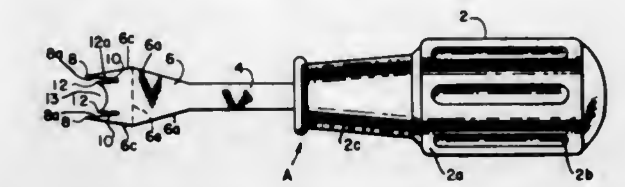
**Elwood L. Clark, Willing Township, and Alan H. Tuttle, Andover, N.Y., assignors to Worthington Corporation, Harrison N.J., a corporation of Delaware
Filed Jan. 28, 1965, Ser. No. 428,688
6 Claims. (Cl. 253—78)**



1. In a fluid machine casing, a fluid duct formed by first and second casing walls, a plurality of spaced ribs extending between said walls across said fluid duct, said ribs each comprising an edge portion, a plurality of fluid turning vane units each of which is positionable between a pair of said spaced ribs, each of said fluid turning vane units comprising a first side plate, a second side plate spaced therefrom to form a fluid passage therebetween, a plurality of spaced fluid turning vanes affixed to and extending between said side plates across said fluid passage, positioning means on said side plates for positioning said unit between a pair of said spaced ribs, and attachment means on said side plates for attaching said unit to said edge portions of said pair of spaced ribs whereby, said turning vane units may be removed from said ribs by the removal of said attachment means from said rib edge portions.

3,310,288
STAPLE REMOVER

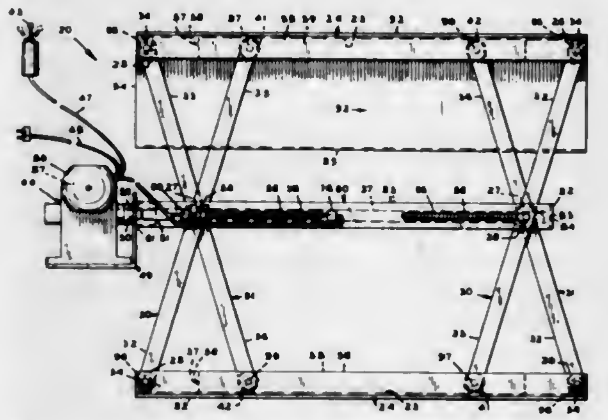
**Johnnie R. Berry, 3414 59th St., Lubbock, Tex. 79413
Filed May 21, 1965, Ser. No. 458,840
8 Claims. (Cl. 254—28)**



1. A tool comprising: wedge means for engaging and partially lifting a staple from a body in which it is embedded; means supported in spaced relation with said wedge means defining a staple receiving recess with said wedge means and cooperating with said wedge means for crimping said staple upon rotation of said tool for releasably engaging said tool with said staple; body means supporting said wedge means and said crimping means and providing structure for a moment arm for said wedge and crimping means whereby an edge of said body means opposite said wedge and crimping means is engageable with said body in which said staple is embedded for lifting said staple free of said body; and means connected with said body means for holding and manipulating said tool.

3,310,289
ELEVATOR FOR AN END OF A BED

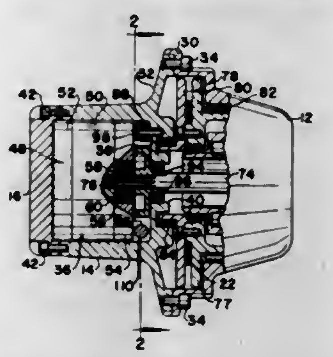
**Wilbur A. Burke, 4901 Reeds Road,
Mission, Kans. 66222
Filed Dec. 13, 1965, Ser. No. 513,918
6 Claims. (Cl. 254—126)**



1. An elevator unit for moving weights with unbalanced distribution on the supporting elongated surfaces of the elevator unit; the elevator unit comprising in combination:
(a) a pair of blocks,
(b) trunnions projecting from one pair of sides of each respective block,
(c) pairs of elongated bars of similar length,
(d) each pair of elongated bars having the mid-length portions thereof pivoted on a respective trunnion,
(e) a pair of elongated plates with opposed faces thereof spaced in parallelism,
(f) lugs,
(g) each lug being projected from each corner portion of each opposed face of said pair of elongated plates,
(h) one end portion of each elongated bar being pivoted to a respective lug,
(i) the opposite end portions of said elongated bars being movable longitudinally along the respective opposed faces of said pair of elongated plates,
(j) and means to move said blocks toward and away from each other to vary the parallel spacing of said opposed faces of said pair of elongated plates by varying the angle of inclination between each pair of said elongated bars.

3,310,290
BRAKING MEANS FOR A ROTARY HOIST

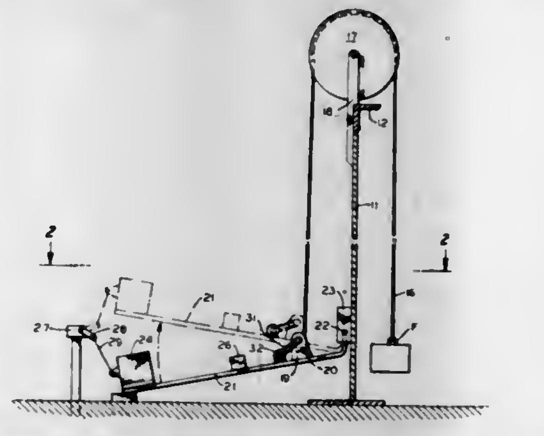
**Lawrence H. Workman, Muskegon, Mich., assignor to Gardner-Denver Company, a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,501
2 Claims. (Cl. 254—168)**



1. A rotary hoist comprising:
housing means having a cavity therein;
a rotary motor disposed in said cavity;
reel means for a flexible load bearing member;
drive means connecting said motor to said reel means;
brake means for said motor and said reel means;
said brake means being disposed in said cavity;
said brake means having a rotary element in brake force transmitting relation with said drive means; and
said rotary element being supported and journaled by said housing means, said housing means includes a transverse wall defining the closed end of said cavity; said wall being provided with an aperture; said rotary element being disposed between said motor and said wall, and said rotary element being supported and journaled in said aperture.

3,310,291
TENSION RESPONSIVE POWER DRIVEN WINCH

**John H. Wiggins, 801–C El Camino Real,
Menlo Park, Calif. 94025
Original application Nov. 10, 1964, Ser. No. 411,675, now Patent No. 3,252,688, dated May 24, 1966. Divided and this application Dec. 20, 1965, Ser. No. 514,909
2 Claims. (Cl. 254—173)**



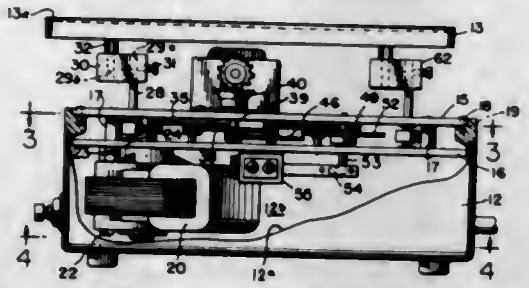
1. A power driven winch and cable and counterweight system whereby a continuous lifting cable tension is applied at a body, said system including a support and a lever pivoted thereon, a winch mounted on said lever at a spaced location from the pivotal axis thereof, said lever and said winch comprising a part of the counterweight of said system, operation of said winch in response to an increase in load serving to move said counterweight upwardly and raise said body, a switch positioned to be opearted by said counterweight and to cut off said power at a predetermined cable tension, and whereby subsequently said counterweight moves downwardly actuated by its own effective weight upon removal of said increased tension, and operates to raise said body a predetermined distance and turn on said power by operating said switch.

3,310,292
SEROLOGICAL TESTING DEVICE

Robert R. Moore, Glenview, Ill., assignor to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois

Continuation of application Ser. No. 351,658, Mar. 13, 1964. This application June 20, 1966, Ser. No. 560,963

9 Claims. (Cl. 259—72)



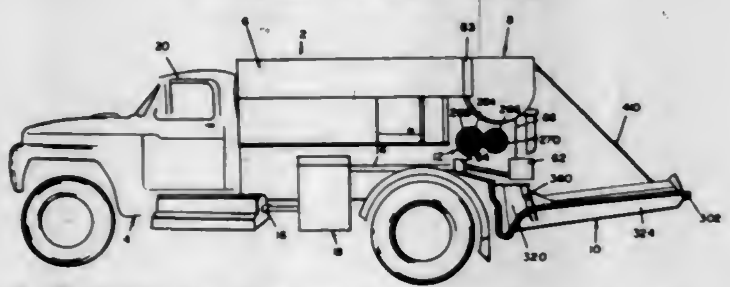
1. In a serological testing device having a base, a motor, and a platform adapted to be oscillated in a horizontal plane by said motor, the combination of gear means driven by said motor comprising a train of constantly intermeshing gears carried by a plurality of supporting shafts, one of said shafts being operatively associated with said platform for oscillating the same, a cut-off switch mounted on said base for interrupting operation of said motor, means provided by another of said shafts for actuating said cut-off switch when said platform has executed a predetermined number of oscillations, and a rotation counter supported by said base and operatively associated with one of said gears for registering the exact number of oscillations of said platform.

3,310,293
CONCRETE MIXING AND DELIVERY SYSTEM

Harold M. Zimmerman, R.D. 1, Ephrata, Pa. 17522

Filed June 26, 1964, Ser. No. 378,133

57 Claims. (Cl. 259—148)



1. A concrete mixing truck comprising a mobile frame having a first and a second tank thereon, partition means in said first tank for dividing the same into separate compartments for storing concrete ingredients, first operable means for feeding ingredients from each of said compartments, including means for adjusting the ratio of the ingredients fed from each compartment, second operable means for feeding an ingredient from said second tank, mixing means including an elongated mixing trough having a mixing element therein, delivery means disposed to receive the ingredients fed from said compartments and second tank and effect their discharge into the mixing means, and means for simultaneously controlling the rate of operation of said first and second feed means.

3,310,294
AGITATOR FOR DUMP BODIES USED IN TRANSPORTING CONCRETE

Harry W. Malm and Dortt M. Clendening, Brown Deer, Wis., assignors to S. and M. Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin

Filed July 30, 1965, Ser. No. 476,038

8 Claims. (Cl. 259—178)

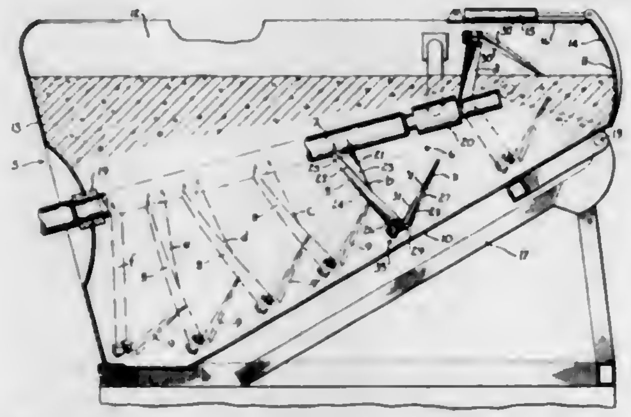
1. An agitator for a vessel having wall portions that define a concave surface which is concentric to an axis, said agitator comprising:

(A) a rotatable shaft in the vessel having its axis substantially coincident with that of said concave surface;

(B) an arm fixed to said shaft and projecting substantially radially therefrom;

(C) an elongated blade member extending from an outer portion of the arm generally lengthwise of the shaft axis, and having a longitudinal edge that is adapted for wiping engagement with said concave surface;

(D) hinge means connecting said outer end portion of the arm with the adjacent end of the blade member to mount the latter on the arm for rotation therewith and for swinging motion relative thereto between a wiping position in which the blade member is extended and its said longitudinal edge is contiguous along its length with said concave surface, and an agitating position in which the free end of the blade member is nearer the shaft axis;



(E) means on the blade member defining a surface that extends lengthwise of its said one longitudinal edge for reacting against material in the vessel upon rotation of the shaft in the direction of said longitudinal edge to urge the blade member to its wiping position;

(F) means on the blade member defining second surface for reacting against material in the vessel upon rotation of the shaft in the opposite direction to urge the blade member toward its mixing position;

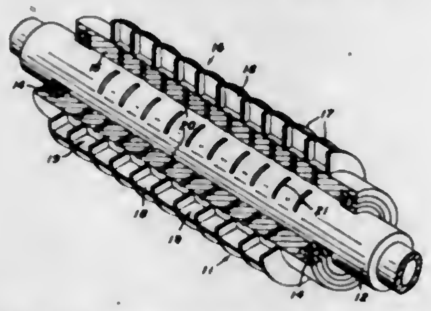
(G) and surface means on the blade member for creating turbulence in material in the vessel in consequence of rotation of the shaft in said opposite direction.

3,310,295
METHOD AND APPARATUS FOR PROGRESSIVELY QUENCHING PLATES

Richard P. Haak, McKeesport, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Apr. 21, 1964, Ser. No. 361,381

4 Claims. (Cl. 266—6)



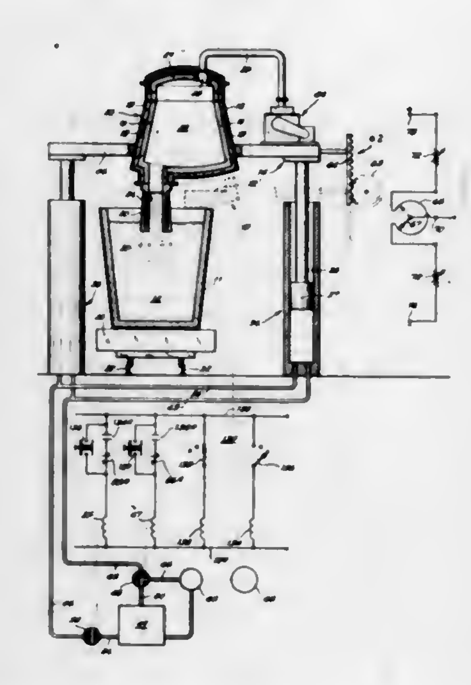
1. Apparatus for quenching metal plate progressively comprising an elongate cylindrical drum, a fixed tubular shaft extending through said drum, spaced bearings on said shaft on which said drum is rotatably mounted for tangential contact with a moving plate, passages extending through the wall of said drum arranged in axially spaced circumferential groups and circumferential slots in said shaft alined with the passages of said groups, respectively.

3,310,296
APPARATUS FOR DEGASSING MOLTEN METAL

Robert J. Taylor, McKees Rocks, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Apr. 23, 1962, Ser. No. 189,397

14 Claims. (Cl. 266—34)



1. Apparatus for degassing molten metal including, a vacuum vessel, a container for said molten metal disposed below said vessel, a molten metal interconnecting passageway extending from said vessel and toward said container so that said molten metal may be conducted to the interior of said vessel from said container, reversible driving means for producing relative movement between said vessel and said container toward and away from each other so that molten metal may be cyclically drawn into and discharged from said vessel, a tracking potentiometer means coupled to said driving means for producing a voltage signal proportional to the distance between said vessel and container, control means in circuit with said potentiometer means and including first and second reference potentiometer means and voltage responsive means operative to render said driving means ineffective to continue relative movement of said vessel and container away from each other when said tracking potentiometer signal has a predetermined relation to said first reference potentiometer signal, said voltage responsive means also being operative to render said driving means ineffective to continue relative movement of said vessel and container toward each other when said tracking potentiometer signal has a predetermined relation to said second reference potentiometer signal.

3,310,297
CONVERTER, ROTATING IN INCLINED POSITION AND CAPABLE OF BEING TIPPED ABOUT A CROSS-AXIS

Alex Alexander and Yasar Karabek, Essen, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany, a corporation of Germany

Filed Aug. 6, 1963, Ser. No. 300,378

Claims priority, application Germany, Sept. 6, 1962, B 68,730

2 Claims. (Cl. 266—36)

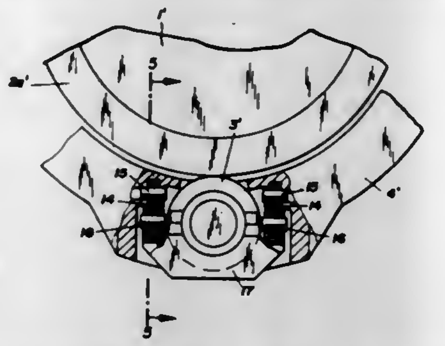
1. A converter rotating in inclined position and capable of being tilted about a cross-axis for top blowing converting comprising

a bearing ring having lateral faces disposed perpendicularly to its rotating axis,

a frame surrounding said bearing ring,

radially disposed supporting rollers mounted in said frame and supporting said bearing ring,

at least three pairs of rollers angularly spaced apart from each other in said frame and guiding said bearing ring along said lateral faces of said bearing ring, and



means for mounting said radially disposed supporting rollers in said frame for axial movement relative to said frame.

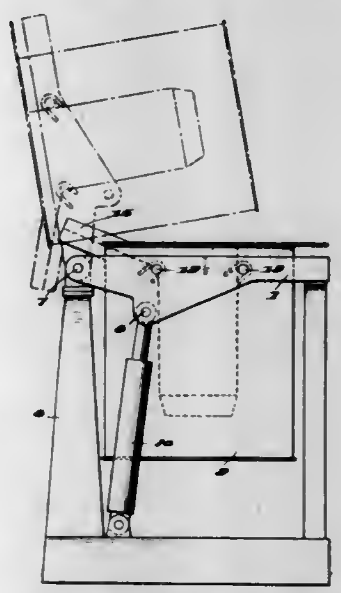
3,310,298
TILTABLE FURNACE MOUNTS

Ernst Huwyler, Baden, and Heinrich Wenzel, Fislisbach, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company

Filed Sept. 25, 1964, Ser. No. 399,272

Claims priority, application Switzerland, Sept. 30, 1963, 11,992/63; Germany, Oct. 4, 1963, A 44,214

2 Claims. (Cl. 266—36)



1. A device for smelting metals, comprising a furnace body and a tiltable frame for supporting said furnace body, and cooperating means on said furnace body and said tiltable frame respectively, for holding the furnace body in the frame during the operation of the furnace, said cooperating means consisting of pins which engage with corresponding open slots which are inclined with respect to the vertical axis of the smelting device, whereby the furnace body when in the vertical position can be lifted freely out of the frame but is restrained when the furnace body is tilted.

3,310,299
SEAT SPRING ATTACHMENT

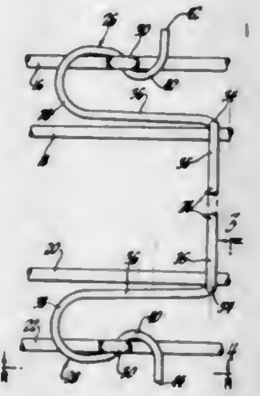
Harold E. Rose, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 8, 1965, Ser. No. 512,379

4 Claims. (Cl. 267—110)

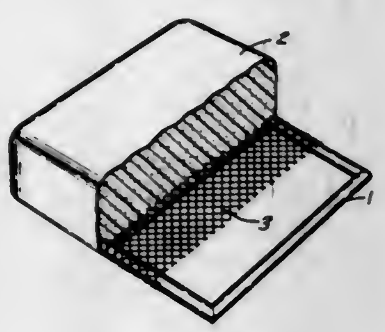
1. In combination in a seat assembly having a generally rectangular frame, a plurality of generally parallelly

formed support wires extending across said frame and having the ends thereof secured to said frame, and means for attaching the end of each of said support wires to said frame for supporting said wires on said frame, said attaching means including a pair of generally parallel rods secured to said frame adjacent one side thereof, the rod adjacent the side of said frame having a plurality of notches formed generally at right angles to the frame for each support wire, each of said notches coacting with an end of a support wire for securing said support wire at properly spaced intervals on said frame, the other rod being substantially straight, said wire end including an offset portion bearing against said straight rod, and a 180° loop having a hook on one arm thereof for looping through said notch and a straight wire portion on the other arm extending between said offset portion and said loop.



3,310,300
LOAD BEARING UNIT

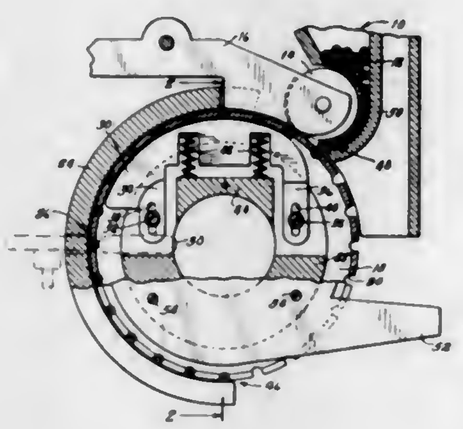
David E. Lawson, 553 McIntyre Lane,
Maumee, Ohio 43537
Filed Feb. 1, 1965, Ser. No. 429,235
6 Claims. (Cl. 267—111)



1. A load bearing unit, comprising a frame, a foam plastic cushion supported on the frame, and flexible reinforcing means embedded within the cushion and bonded to the foam plastic, said reinforcing means including a first series of spaced strands and a second series of spaced strands disposed in lapping relation and at an angle to said first strands, said second strands being free from attachment to the first strands and being freely movable with respect to said first strands, said first and second strands defining a plurality of openings in said reinforcing means and the foam plastic being disposed within said openings, at least one end of each of said first and second strands being free of attachment to said frame, whereby the first and second strands can move relative to each other as a load is applied to the cushion to thereby stretch and distort the foam plastic disposed within said openings.

3,310,301
AUTOMATIC WIREHANDLING DEVICE

Louis A. Netta, North Brunswick, and John M. Cole, Highland Park, N.J., assignors to The Thomas & Betts Company, Incorporated, Elizabeth, N.J., a corporation of New Jersey
Filed Feb. 3, 1964, Ser. No. 341,892
3 Claims. (Cl. 269—14)



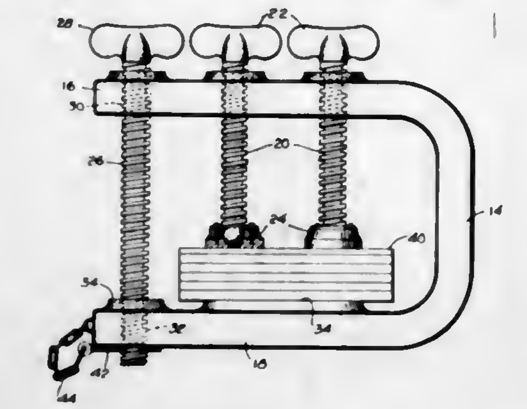
1. In a machine for handling a plurality of wires including a hopper for holding a plurality of wires, rotary feed drum means adjacent said hopper having slots in said drum for carrying individual wires to a terminal attaching position, segregating means for segregating individual wires from said hopper and for positioning said wires into the slots on said drum, support means for rotatably mounting said drum means, and shroud means adjacent said hopper and drum means for wiping individual wires into the desired length of the slots on said drum, the improvement comprising arcuate clamp means, said drum means having an annular space formed in the end threof such that the underside of said wires in said slots are exposed to said clamp means along a portion of said slots at the end thereof, said clamp means having an arcuate upper surface having a length such that a plurality of individual wires may be in contact therewith, said clamp means being slidably mounted for movement toward said shroud on the end of said support means within said annular space below the surface of said drum and positioned adjacent said hopper, said clamp means having means for urging it into engagement with the undersides of said wires in said slots whereby said clamp means and said shroud coact to prevent said wires in said slots to be dragged from said drum means by the weight of the wires in said hopper.

3,310,302
CLAMPING DEVICE

Joseph J. Catalfimo, 22 Dartmouth St.,
Boston, Mass. 02116
Filed May 21, 1964, Ser. No. 369,169
5 Claims. (Cl. 269—154)

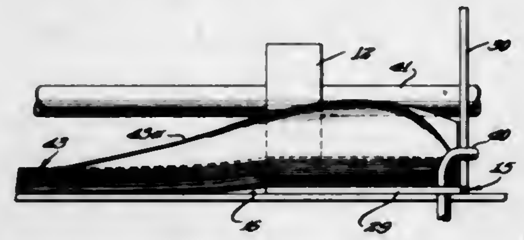
1. A clamping device comprising an integral C-shaped member having a closed end portion and upper and lower parallel legs, a plurality of clamping screws carried by said upper leg for clamping the work against the lower

leg, and a locking screw adjacent the free ends of the legs passing through and threadly engaged with both legs for resisting any tendency of the legs to spread apart under clamping tension.



3,310,303
SHEET FEEDING DEVICE WITH CORNER SEPARATORS

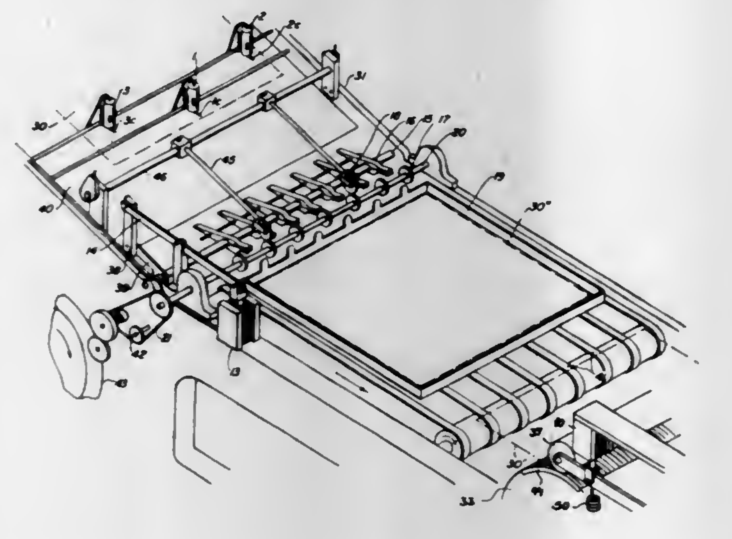
Waldemar M. Schmidt, Niles, Ill., assignor to General Binding Corporation, Northfield, Ill., a corporation of Illinois
Filed July 31, 1964, Ser. No. 386,568
1 Claim. (Cl. 271—21)



In combination in a duplicating apparatus,
a paper feed table for supporting stack of paper sheets,
spaced guide rails having vertically extending walls and being slidably positioned on said table,
a shaft journalled for rotatable movement within said feed table and having opposed-hand threads on each end thereof,
centering base assemblies threadedly secured to the opposed threaded ends of said shaft and being positioned on the outer surface of said table and attached to said guide rails,
means for rotating said shaft whereby to vary the spacing of said centering base assemblies and thereby vary the spacing between said guide rails in accordance with the width of stacked paper,
corner separators formed entirely of round wire stock and having legs pivotally received within each of said centering base assemblies,
said corner separators having arms connected to and extending from said legs upwardly through said guide rails at points spaced slightly inwardly of said vertical walls and within the path of movement of the leading edge of a sheet fed from the stack,
lips formed integrally with and extending from said arms over the corners of the topmost stacked sheet in slightly overhanging relation to the side edges thereof,
said lips also being formed of round wire stock smoothly finished to reduce friction between the said lips and the paper stock,
spring means engageable with each of said separators and providing a light pressure bias thereto
whereby to maintain said lips in light pressure contact with the topmost attached sheet,
a plate pivotally mounted on the under surface of said table and positionable in engagement with each of said separators at points spaced from their respective points of pivotal connection with said centering base assemblies
whereby to permit movement of both of said separators by movement of said plate, and
a spring means interposed between said plate and said table and normally biasing said plate out of engagement with said separators.

3,310,304
SHEET FEED DEFLECTOR AND INTERRUPTER RESPONSIVE TO PHOTOELECTRIC SHEET POSITION SENSING MEANS

Pavel Foias, Gheorghe Enache, and David Bergman, Bucharest, Rumania, assignors to Comitetul de Stat Pentru Cultura si Arta, Bucharest, Rumania, a corporation of Rumania
Filed Feb. 28, 1966, Ser. No. 530,626
5 Claims. (Cl. 271—57)



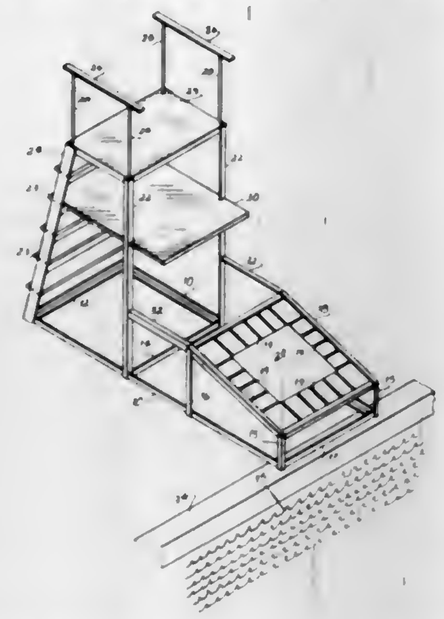
1. In a printing plant having a form-carrying printing cylinder and a co-operating pressure roller for holding a sheet to be printed against the periphery of said cylinder upon rotation of the latter, the combination therewith of guide means forming a path for sheets to be successively fed to said cylinder, photoelectric detector means at said path for sensing the position of said sheets and producing a defect signal in response to an improper positioning thereof, sorting means controlled by said detector means for deflecting improperly positioned sheets from said path in response to said signal, electromagnetic release means controlled by said detector means for temporarily disengaging said pressure roller from said cylinder in response to said signal, said release means being provided with circuit means for maintaining said roller disengaged from said cylinder, independently of said detector means, for at least a major portion of an operating cycle, and timer means coupled with said cylinder for maintaining said sorting means in a sheet-deflecting position for the remainder of an operating cycle during which said signal is emitted by said detector means.

3,310,305
TRAMPOLINE DIVING PLATFORM

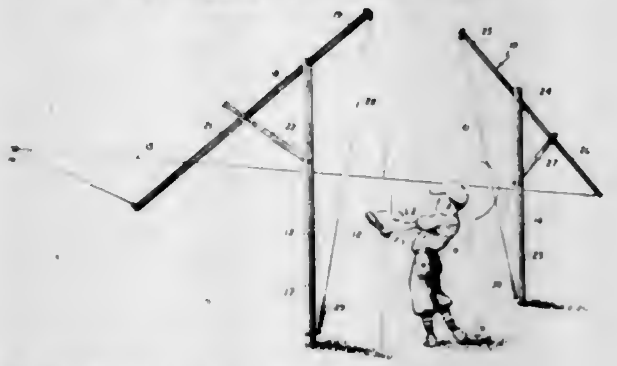
Dwight S. Howe, 5815 Garber Drive NE.,
Atlanta, Ga. 30328
Filed Sept. 2, 1964, Ser. No. 393,856
2 Claims. (Cl. 272—65)

1. A diving device of the character set forth including a portable jump tower, an upper and a lower jump platform mounted on said tower, said lower platform projecting beyond the vertical plane of one edge of said upper platform, a ladder to facilitate access to said platforms

and a downwardly inclined trampoline fixedly supported below said platforms and beyond the vertical plane of the edge of the protruding portion of the said lower portion, said trampoline having its lowermost end disposed remote from said jump tower and its uppermost end disposed adjacent said jump tower.



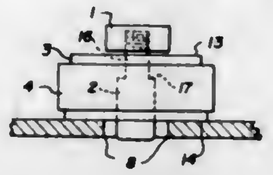
3,310,306
BALL BATTING PRACTICE APPARATUS
Henry J. Burt, W. Main St., Brookfield, Mass. 01506
Filed Jan. 22, 1964, Ser. No. 339,378
6 Claims. (Cl. 273—26)



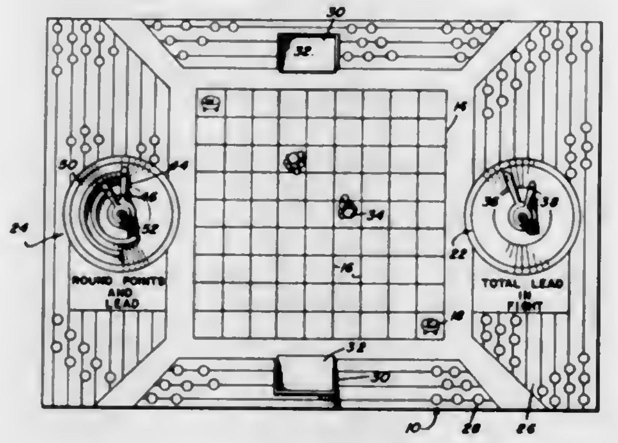
1. A practice apparatus, comprising
(a) two spaced support members located on opposite sides of a striking position and defining a vertical plane,
(b) an elongated elastomer member attached at its ends to the support members,
(c) a ball fixedly mounted on the center portion of the elastomer member with the elastomer member passing through the center of the ball, and
(d) means defining at least a pair of cushioning members lying in the said vertical plane, at least one of said cushioning members lying on each side of the striking position and spaced a substantial distance inwardly from the point of attachment at the end of the elastomer member to the support member, whereby the said elastomer member upon rebound after said ball is struck hits the cushioning members to sweep a limited area at the striking position.

3,310,307
DISC-SHAPED PLAYING PIECE AND GAME BOARD
Norman D. Brown, 1244 W. 9th Ave., Vancouver, British Columbia, Canada
Filed June 4, 1964, Ser. No. 372,510
4 Claims. (Cl. 273—126)

1. In a game, a game board having a surface over which game pieces may be slid, a peripheral retaining wall around the game board, depressions in the playing surface adjacent one end of the board, raised guard pieces on the playing surface between the depressions and the opposite end of the board, game pieces adapted for sliding over the playing surface, each game piece having pin means mounted freely in the game piece to drop in a depression as the game piece passes thereover and secure the game piece in position over the depression, means preventing upward movement of said pin means relative to the body of said game piece to completely separate said pin means from said game piece.

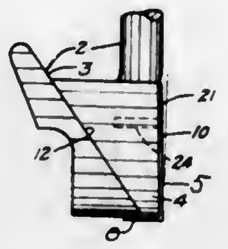


3,310,308
BOXING GAME WITH SCORING DEVICE HAVING AUTOMATIC SCORE DIFFERENCE INDICATOR
William D. Reagan, White Plains, N.Y.
(55 NW. 56th St., Apt. 6, Miami, Fla. 33127)
Filed Feb. 20, 1964, Ser. No. 346,193
3 Claims. (Cl. 273—134)



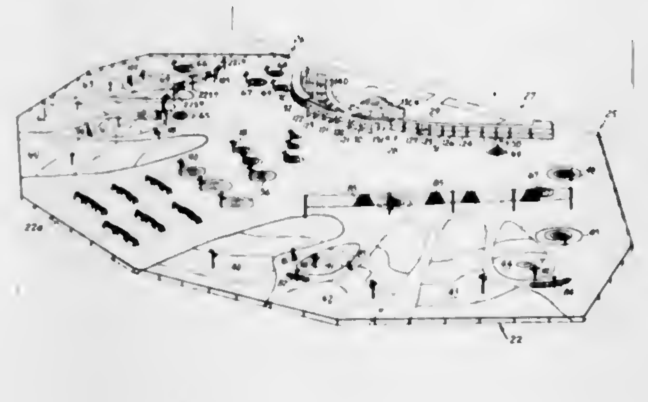
1. A boxing game device comprising a gameboard having a boxing ring delineated thereon and being divided into a plurality of generally square areas delineated by a grid-like pattern of lines, figurines simulating boxers movable in any direction within the boundary of the boxing ring and from one area to another, a pair of sets of cards disposed for access by the individual players for selective drawing with the cards having indicia thereon instructing the players as to the number of said areas the figurines are to be moved when the figurines are at least spaced apart a distance of one of said areas, said cards also including instructive indicia for instructing the players in further action when the figurines are in contacting situations orientated in adjacent ones of said areas, control means for use upon instructions by the cards for indicating resultants of the instructions of the cards when the figurines are in contact situations, and score registering means mounted on said gameboard for keeping the total points for the fight and for registering the points for each player during each round, said score registering means including a pointer for each of the figurines for recording the lead of the individual figurines, said score registering means for each round including a pair of pointers mounted for rotation about the same axis with one pointer being designated for each figurine, each of said pointers including an arcuate extension mounted thereon for registry with each other and having a graduated scale thereon for automatically indicating the point differences between the scores indicated by the pointers.

3,310,309
GOLF CLUB INCLUDING MAGNETIC LOFT CHANGING ATTACHMENT
Thomas J. Moss, 408 Fairway Drive, Litchfield Park, Ariz. 85340
Filed Dec. 30, 1963, Ser. No. 334,115
3 Claims. (Cl. 273—162)



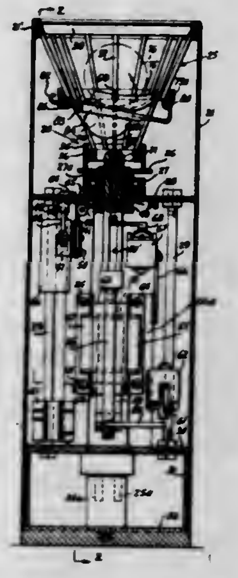
1. An article of manufacture comprising a magnetic golf club head having a low angle striking face inclined upwardly and rearwardly, an attachment consisting of a wedge shaped block having a rear face adapted to be held against said inclined face of the club head, said wedge-shaped block having a vertically extending outer forwardly directed face, a magnet carried at said rear face for removably holding said block onto said inclined striking face of the club head, and hooks on said block engageable with lower portions of said head to prevent upward sliding of said block on said club head face.

3,310,310
GOLFING DRIVING RANGE AND SIMULATED GOLF COURSE
James B. McKee, 3615 Townsend Drive, Dallas, Tex. 75229
Filed Oct. 10, 1963, Ser. No. 315,253
14 Claims. (Cl. 273—176)



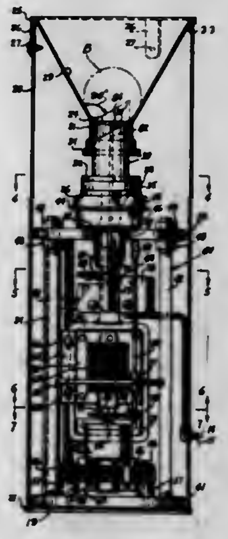
12. A golf course including: a building structure providing a plurality of hitting stalls; a driving range extending forwardly of said hitting stalls, a plurality of troughs spaced from each other and extending across the paths of balls driven from said stalls; a substantially vertical screen extending upwardly adjacent each trough and having a lower end portion extending downwardly thereinto for causing balls driven toward said screens to fall into said troughs, and detector means operatively associated with each of said screens operable by balls driven to said screens and signal means adjacent said screens operatively connected with said detector means and energized by said detector means for providing a signal.

3,310,311
GOLF PUTTING CUP WITH RANDOM-DIRECTION BALL EJECTION MEANS
Maurice E. Peeples, P.O. Box 235, Kingsland, Ga. 31548
Filed Mar. 6, 1964, Ser. No. 349,934
6 Claims. (Cl. 273—179)



1. A golf practice cup comprising an open-topped tubular receptacle, a conical cup having a bottom opening disposed in said receptacle, a cylinder plunger movable into said opening, said plunger having a central bore, a pin rod extending through said bore into said cup, a normally open microswitch in said receptacle having a spring actuated contact arm, the lower end of said pin rod normally resting on said arm, an electric motor in said receptacle, a source of electric current for said motor, turntable means supporting said conical cup, means drivingly connecting said motor to said turntable means, a solenoid means in said receptacle connected to said source through means including said microswitch, a movable core for said solenoid means, a push rod connected to said movable core to move said plunger into said cup, and means permitting the impact of a ball falling into said cup to force said pin rod downwardly, actuate said microswitch means, energize said solenoid means, and move said plunger into said cup, and means responsive to the rotation of said turntable means and cup, and the movements of said plunger, whereby successive balls are ejected at angles which vary in a random manner.

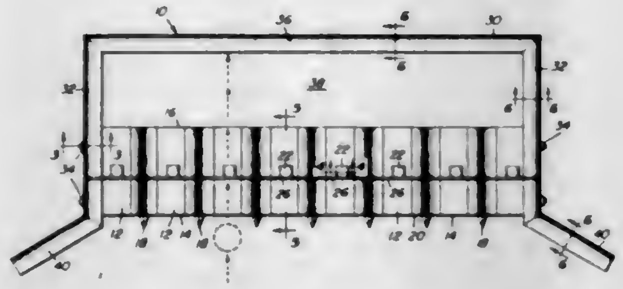
3,310,312
DEVICE FOR RANDOMLY EJECTING ARTICLES
Maurice E. Peeples, P.O. Box 235, Kingsland, Ga. 31548
Filed Apr. 30, 1964, Ser. No. 363,868
15 Claims. (Cl. 273—179)



1. A device for randomly ejecting an article comprising a housing means having an open top, an article sup-

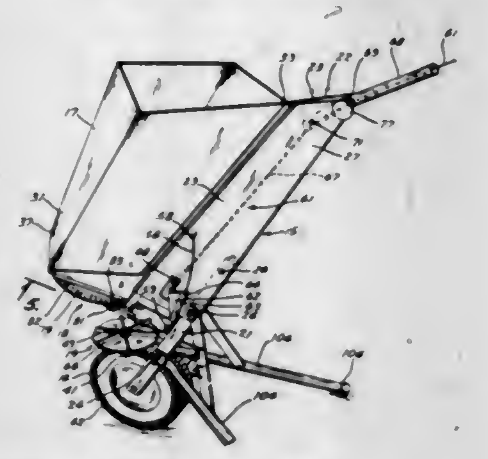
porting means within said housing means adjacent said top, an article ejecting means having an inclined surface for operatively engaging an article received by said article supporting means to eject the same from said housing means, actuating means operatively connected to said article ejecting means for actuating the same, an actuating member of said actuating means being engaged by an article received by said article supporting means to actuate said ejecting means thereby ejecting the article from said housing means, and means for rotating said article ejecting means during actuation thereof whereby the direction of inclination of said surface is varied and articles successively received by said article supporting means are ejected in random radial directions.

3,310,313
GOLF GAME TARGET
John G. Colson, 3800 Boutwell Road,
Lake Worth, Fla. 33460
Filed Dec. 16, 1963, Ser. No. 330,875
4 Claims. (Cl. 273—180)



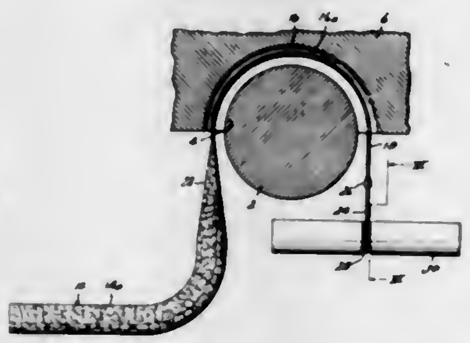
1. A golf game target comprising a plurality of similar axially parallel cylindrical ball passage tubes arranged in side-by-side relationship, a tapered ball guide plate extending forwardly of and intermediate the entrance ends of each pair of adjacent ball passage tubes, and a curvilinear fence, curved complementary to and secured to the endmost of said cylindrical passage tubes, said curvilinear fence extending rearwardly of the rear exists of said ball passage tubes and then transversely thereof providing a ball receiving yard, and fence wings flaring outwardly and forwardly of the plane of the entrance ends of said passage tubes.

3,310,314
LAWN SPREADER
Simon Bylsma and Emil A. Madison, Sac City, Iowa, assignors to Remcor Inc., Sac City, Iowa, a corporation of Iowa
Filed Dec. 3, 1964, Ser. No. 415,598
5 Claims. (Cl. 275—15)



1. A material spreader comprising:
- (a) an upright frame member,
- (b) a traction wheel rotatably supported at the lower end of said frame member,
- (c) a pair of leg members connected at one of the ends thereof to said frame member and relatively diverged rearwardly and downwardly from said frame member to form with said traction wheel a tripod support for holding said spreader in a rest position,
- (d) an upright hopper support including a pair of side members secured to opposite sides of said frame member,
- (e) means securing the lower portions of the rear sections of the side members to the upper portion of said frame member,
- (f) a handle member having an end section positioned between the upper sections of said side members and pivotally connected thereto for pivotal movement of the handle member to an operating position extended upwardly and rearwardly to a storage position extended downwardly and rearwardly between said pair of leg members,
- (g) an upright hopper secured to said support having a bottom wall with a discharge opening therein,
- (h) a spreader disc located below said opening and rotatably supported on said frame member in driven engagement with said traction wheel, and
- (i) a valve mechanism supported on the lower side of said bottom wall for controlling the rate of flow of material from said opening to said spreader disc.

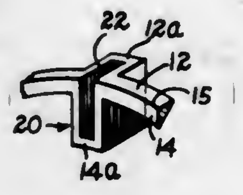
3,310,315
SELF-INSERTING SEAL FOR BEARINGS
Charles E. Best, 1313 S. 36th St.,
Kansas City, Kans. 66106
Filed Jan. 28, 1965, Ser. No. 428,763
3 Claims. (Cl. 277—10)



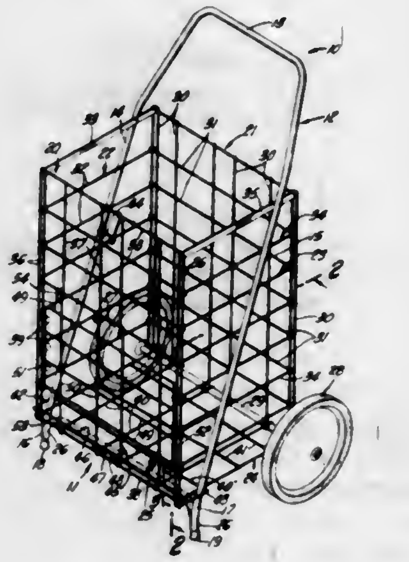
1. A bearing seal structure comprising:
- (a) a cord-like seal of flexible, absorbent material which is soft and yieldable,
- (b) a flexible strand of strong material of smaller diameter than said seal extending throughout the length of said seal to form a core therein, and extending longitudinally from one end of said seal,
- (c) means affixing said flexible strand in said seal at closely spaced intervals therealong whereby to prevent relative longitudinal slippage between said strand and said seal, and
- (d) operating means consisting of a handle member adapted to be attached to the extended free end of said flexible strand.

3,310,316
DYNAMIC SEALS
William H. Smyers, Jr., Dayton, Ohio, assignor to Koehler-Dayton, Inc., a corporation of Ohio
Filed Apr. 6, 1964, Ser. No. 357,374
8 Claims. (Cl. 277—102)

1. A sealing member for maintaining continuous sealing contact between first and second surfaces, extensions of which will intersect, said member comprising an integral loop of material provided with first and second sealing faces having substantially the same angular relation as between said surfaces, each of said sealing faces being formed of surface bands of substantially greater length than the circumferential dimension of said member, said surface bands being arranged to separate from each other at at least one location about said loop and being generally parallel to each other in the remaining portions of said bands about said loop to define continuous bands which can change the effective circumference of the loop by changing of the contour of the bands at said location and wall sections formed in said member interconnecting the separated sections of said sealing faces forming at least one slot in an edge of said loop adapted to face said surfaces whereby said bands form extensible continuous sealing faces for engaging both said surfaces.

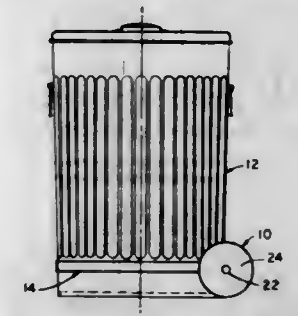


3,310,317
CART
John E. Luff, Yucaipa, Calif., assignor to The Cal-Dak Company, Los Angeles, Calif., a corporation of California
Filed Jan. 11, 1965, Ser. No. 424,553
3 Claims. (Cl. 280—36)



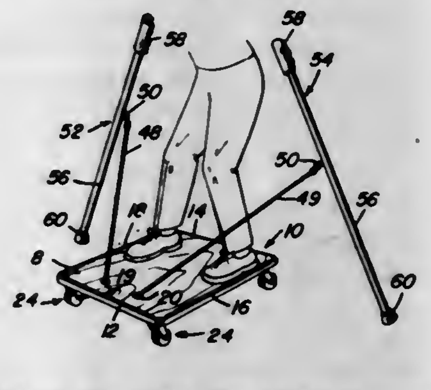
1. In a collapsible shopping cart, the combination comprising: a rectangular wire basket having two side frameworks, a front framework, a rear framework and a bottom framework, said basket being foldable to a collapsed position at the front and rear edges of said bottom framework, said front and bottom frameworks being collapsible toward said rear framework, said front framework having a reticulated construction, an upper portion of said front framework having a lower horizontal wire, a lower portion of said front framework having upper oversize wire loops extending around said upper portion horizontal wire, said lower portion also having downwardly extending wires with forwardly extending projections, said front framework also having a pair of spaced horizontal wires to receive said projections, said rear framework having a horizontal wire to rest beneath said downwardly extending wires forward of said projections thereon, said rear framework horizontal wire being at the same height as the lower horizontal wire of the upper portion of said front framework.

3,310,318
GARBAGE CAN DOLLY
Dave D. Nagel, 7138 Roos, Houston, Tex. 77036
Filed Mar. 3, 1965, Ser. No. 436,862
5 Claims. (Cl. 280—47.13)



1. A dolly for attachment to a cylindrical container to make the container transportable, said dolly comprising:
- a pair of metallic strap members, forming a circle encompassing the base portion of the container, the first of said straps forming an arc of approximately 90 degrees and the second strap forming an arc of approximately 270 degrees, the ends of each strap provided with outturned flanges which are provided with mating apertures;
- a pair of spaced apertures in the first strap member, each one spaced a short distance from the center of the strap;
- an axle, extending through the spaced apertures in the first strap member;
- a pair of container supporting brackets, each bracket having an aperture receiving the axle, an angularly extending portion extending from the axle receiving portion mating with an outturned flange of the first strap member, an aperture in the angularly extending portion mating with the aperture in the outturned flange of the first strap member;
- a container engaging portion approximately normal to the angular extending portion mating with a portion of the first strap member, an upturned flange engaging the bottom of the container;
- a pair of wheels, one attached to each end of the axle;
- a pair of strap tightening means, one telescoped through each set of mating apertures in the container engaging bracket, first strap member and second strap member tightening the strap members tightly about the container.

3,310,319
CASTER-EQUIPPED COASTING BOARD
Max B. Collins, P.O. Box 44, Cochran, Ga. 31014
Filed Apr. 30, 1965, Ser. No. 452,073
5 Claims. (Cl. 280—87.04)

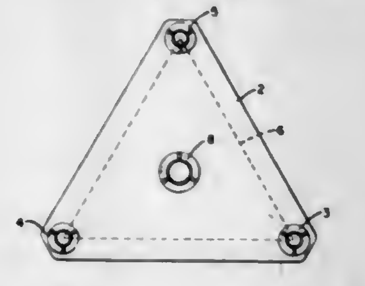


1. A device of the class described comprising a rigid platform having generally flat parallel top and bottom surfaces and having forward and rearward corner portions, a pair of casters swivelly mounted on the underneath side adjacent the forward corner portions, and a complemental pair of casters swivelly mounted on the reaward corner portions, rigid means for selectively and

optionally joining the rearward casters to each other when it is desired to prevent swivelling thereof, additional means connecting the forward casters to each other and serving to swivel the same simultaneously, said last-named means comprising a tie rod having adapter brackets at its ends detachably bolted to axle portions of the respectively associated casters, and a pair of flexible cables passing at end portions through holes provided therefor in said platform and having free end portions connected to longitudinally spaced portions of said tie rod.

3,310,320
SKATE BOARD

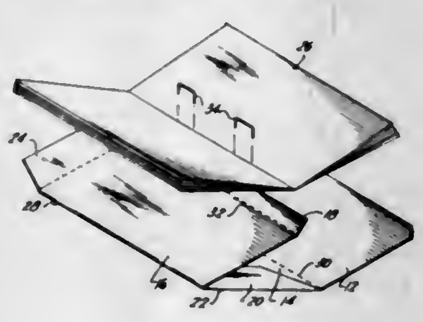
Ellis W. Hanna, 3154 E. Weaver Place, Littleton, Colo. 80120, and Fred N. Eley, 7051 E. 60th, Commerce City, Colo. 80022
Filed Sept. 30, 1965, Ser. No. 506,616
7 Claims. (Cl. 280—87.04)



1. A skate board comprising a platform member, a plurality of outer casters attached to the underside of the platform member and disposed at the apexes of an equilateral triangle configuration on the underside of the platform member, and a center caster attached to the underside of the platform member centrally of the triangular arrangement of the outer casters and extending a greater distance from the platform member than the outer casters.

3,310,321
COVER FOR A BOOKLET

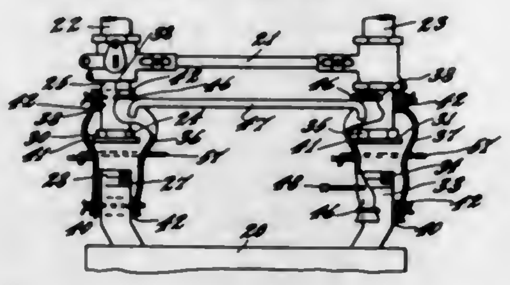
Sheldon Freund, 2911 Barnes Ave., Bronx, N.Y. 10467
Filed June 11, 1965, Ser. No. 463,135
4 Claims. (Cl. 281—31)



1. A booklet, comprising a folio and a cover for said folio, said cover comprising three panels defined from one another by parallel fold lines, an end one of said panels having an extension at its edge parallel to said fold lines, said one end panel and the adjacent center panel being of equal width, said one end panel folded against said adjacent center panel along one of said fold lines with the said extension overlying the third of said panels, said center panel and the overlying end panel folded against said third panel along the fold line defining said center panel from said third panel, with said extension disposed against said third panel and said folio secured to said cover along said last-named fold line between said end panel and said extension; a selected one of said end panels and said center panel having an extension along an edge thereof perpendicular to said fold lines, said extension folded inwardly and secured to the other of said selected panels.

3,310,322
GAS METER CHANGE DEVICE

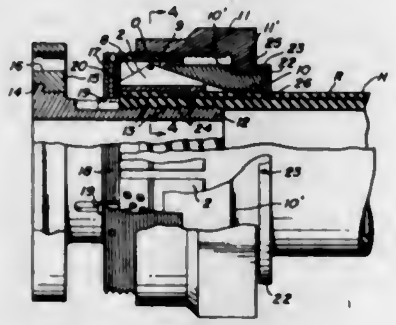
John W. Carroll, 32 College Ave., Swarthmore, Pa. 19081
Filed June 23, 1964, Ser. No. 377,327
7 Claims. (Cl. 285—18)



1. A gas meter changing device having a pair of flexible boots each provided with openings at opposite ends, each being separable along a longitudinal seam, each having sealing means for the longitudinal seam, and each having an annular sealing means at the openings at the opposite ends, a bypass connection from one boot to the other adjoining one end thereof, a purge connection from one of the boots adjoining the opposite end thereof and means for pinching the boots closed intermediate their ends.

3,310,323
HIGH PRESSURE HOSE CONNECTOR

Frederick M. Galloway, Coraopolis, Godfrey J. Rittenhouse, Feasterville, and Robert H. Sinnamon, Huntingdon Valley, Pa., assignors to H. K. Porter Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed Oct. 16, 1964, Ser. No. 404,245
3 Claims. (Cl. 285—249)

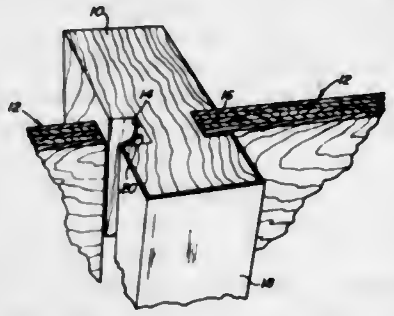


1. A hose and coupling assembly of the character described comprising a hose, a nipple seated in the hose coaxial therewith and engaging its inner wall, a plurality of circumferentially spaced wedge segments having inner surfaces substantially congruent with the outer surface of the hose disposed about its periphery, a plurality of screws extending through each of said segments and into the hose wall through a substantial proportion of the thickness thereof, an internally frusto conical clamping ring surrounding segments, and means cooperative with but independent of the ring for moving it axially relative to the segments to thereby force them radially inward to clamp the hose against the nipple.

3,310,324
PANEL JOINT CONSTRUCTION AND CONNECTOR

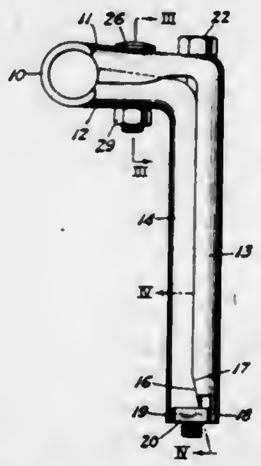
Herbert C. Boden, 9101 NE. 4th Ave., Portland, Oreg. 97211
Filed Oct. 9, 1964, Ser. No. 402,731
4 Claims. (Cl. 287—20.92)

2. A connector joint between a pair of upstanding wall panels and a common panel-supporting column,
said panel-supporting column having a pair of grooves therein one on each of two different sides thereof, each receiving an end portion of one of said panels,
an elongate metal fastener strip, angular in cross section, extending continuously from one grooved side of said column to the other grooved side thereof,
said strip including a first end flange extending into and along one sidewall only of one of said grooves and another end flange extending into and along one sidewall only of the other of said grooves,
each of said end flanges including:
an outer row of integral tangs projecting toward said one sidewall of the associated said groove and inclined in a direction outwardly of said groove so that said tangs penetrate said sidewall upon the initial driving of the associated said panel into said groove and resist removal of said strip from said column,
and an inner row of integral tangs spaced inwardly of said outer row of tangs relative to the bottom of the associated said groove, said second row of tangs projecting in a direction away from said one sidewall and toward the bottom of said associated groove for penetrating said panel and resisting withdrawal of the same upon continued driving of said panel into said groove,
whereby the driving of said panels into said grooves effects first a locking interengagement of said fastener strip with said column and thereafter a locking interengagement of said fastener strip with said panels so as to provide a rigid structural joint.



3,310,325
HANDLE BAR SUPPORT

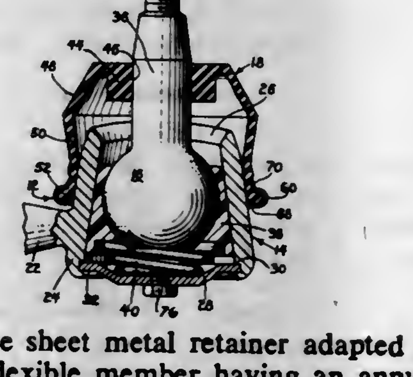
Herbert J. McCauley, 86 Dana Road, Buffalo, N.Y. 14216
Filed July 8, 1965, Ser. No. 470,433
4 Claims. (Cl. 287—54.1)



1. In a handle bar support for velocipedes and the like, a body member comprising a loop formation for engagement about a handle bar and integral extensions from opposite ends of said loop cooperating to form the remainder of said body member, said extensions comprising portions projecting generally radially from said loop and terminal portions extending angularly from said radial portions to form a stem portion offset from said loop, said radial portions comprising interfitting channel formations and said terminal portions being of generally semi-circular cross section with their longitudinal edges substantially in abutment to form a generally cylindrical stem portion, said abutting longitudinal edges including complemental inclined plane formations, and screw means accessible from the end of said stem portion adjacent to said radial portions and operable to move one of said semi-circular portions axially relative to the other whereby said incline plane formations cooperate to expand said stem portion to secure the same within a member to be controlled by said handle bar.

3,310,326
RETAINER

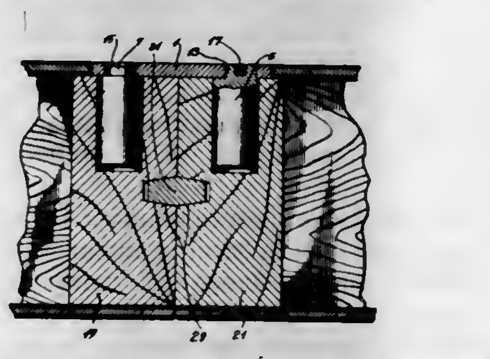
Robert R. Melone, Des Plaines, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 19, 1964, Ser. No. 412,472
4 Claims. (Cl. 287—87)



1. A one piece sheet metal retainer adapted to retain a compressible flexible member having an annular bead at one extremity in association with a predetermined axial location on the outer periphery of a tapered workpiece, said retainer including a continuous annular channel shaped body having a pair of annular edges spaced along the central axis of said retainer with each edge facing radially inwardly towards said axis and said workpiece, a plurality of circumferentially spaced integral resilient teeth about one of said edges initially extending radially inwardly toward said axis, flange means extending integrally from the other edge and along said axis and away from said teeth diametrically opposed pairs of said teeth being diametrally spaced a predetermined distance less than the diametrical size of said predetermined location on said workpiece whereby said teeth are adapted to flex in the direction of said second edge during application to said workpiece an amount less than that necessary to fracture said teeth and yet permit them to be seated and bite into said workpiece at said predetermined location, said teeth further being adapted when flexed to aggressively grip said annular bead within said channel shaped body.

3,310,327
ONE-PIECE JOINT COUPLING

Joseph Rosaire Tremblay, Trans-Canada Road, St. Romuald, Levis County, Quebec, Canada
Filed July 5, 1962, Ser. No. 207,533
3 Claims (Cl. 287—189.36)

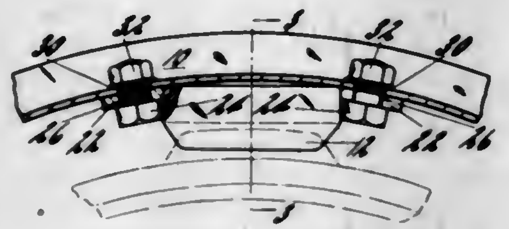


1. In a prefabricated building, a structural joint therefore comprising: two construction elements having ad-

jacent edges facing one another and having each a substantially flat surface, said surfaces being in alignment; said construction elements each having a groove cut-out along said edges; said grooves cooperating with each other to define a recess overlapping said elements, and each element further having a hole therethrough opening into the corresponding groove; a substantially flat plate mounted in said recess having a thickness such that the outer surface thereof is substantially flush with said surfaces of said elements; a first pin secured to said plate substantially normal thereto and received in one of said holes; a second pin having a cylindrical portion rotatably fitting into a circular aperture through said plate and registering into the other of said holes; said second pin having a further portion axially offset from the cylindrical portion; the spacing of said holes in the construction elements being so chosen as to result in movement thereof toward and away from one another when said offset portion is rotated and means on said second pin flush with said surfaces for cooperation with a tool separate from said coupling to cause rotation of said second pin; said plate and said first and second pins forming a one-piece coupler.

3,310,328
CLOSURE MEANS FOR PRESSURE OR VACUUM

Wilfred Fox, Rotherham, England, assignor to Robert Jenkins & Company Limited, Rotherham, England, a company of Great Britain and Northern Ireland
Filed Dec. 15, 1964, Ser. No. 418,488
5 Claims. (Cl. 292—256.6)



1. In a pressure or vacuum vessel, closure securing means comprising a substantially rigid clamping ring; a series of clamps secured non-rigidly to said ring; and flanges formed integrally with said clamps and extending inwardly of the clamping ring, whereby said flanges form pairs of spaced and discontinuous flanges extending inwardly of the clamping ring for respectively engaging and applying a clamping force to remote faces of correspondingly spaced, mating flanges which are formed on a body part and a closure member of the vessel.

3,310,329
PRESSURE VESSEL AND CLOSURE ASSEMBLY THEREFOR

John G. Luker, Stanley, N.C., assignor to Gaston County Dyeing Machine Co., Stanley, N.C., a corporation of North Carolina
Filed Jan. 28, 1966, Ser. No. 532,039
17 Claims. (Cl. 292—256.69)

1. In a closure assembly for an opening in a cylindrical member, such as a pressure vessel or the like, wherein the cylindrical member has an external annular flange of predetermined width bounding the opening therein;

(a) a removable closure member for closing the opening in said cylindrical member and having an external annular flange of corresponding predetermined width opposed to the external annular flange on the cylindrical member,

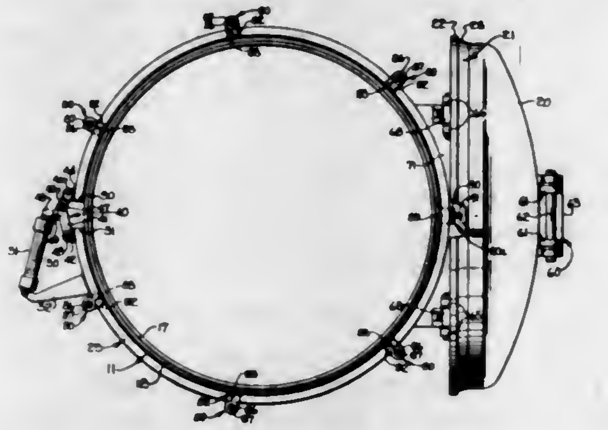
(b) a substantially circular resilient clamping band encircling the opposed external flanges and having a split therein forming spaced band ends, said clamping band having a web portion extending uninterruptedly throughout the clamping band between said band ends and having legs formed integrally with and extending radially inwardly from opposite edge portions of said web portion, the resiliency of said clamping band causing said band to normally occupy and be inherently biased toward a contracted position wherein said legs straddle and are in clamping engagement with the external flanges for clamping the flanges together, said clamping band being adapted to be moved from said contracted position to an expanded circular position wherein said legs are out of straddling relation to the flanges to release said clamping band from said flanges and being of such stiffness as to avoid buckling thereof from circumferential forces along said band when the band is moved from said contracted to expanded position,

(c) retaining means mounted on said cylindrical member and circularly arranged about said external flanges, said retaining means being disposed radially outwardly of said clamping band when said clamping band is in said contracted position and uniformly spaced therefrom a distance slightly greater than the radially inwardly extending length of said legs to permit said legs to move out of straddling relation to the opposed flanges, but a distance substantially less than the expansive capacity of said clamping band, said retaining means including friction reducing means engageable with said clamping band as the same is moved toward the expanded position for facilitating movement of the clamping band into the expanded position, said retaining means comprising a plurality of retainer units positioned in circumferentially spaced relationship about said opposed external flanges, each of said retainer units comprising

(1) a leg fixedly secured at its inner end to the cylindrical member and extending radially outwardly therefrom and supporting said clamping band thereon, and

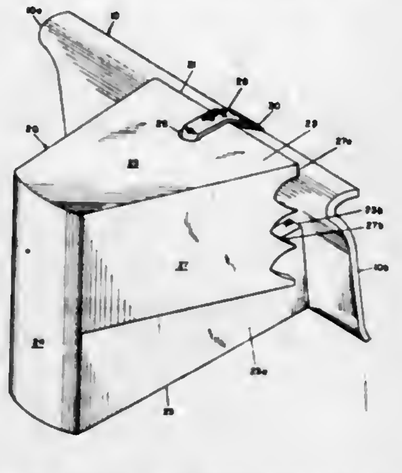
(2) an arm carried by said radially extending leg and extending perpendicularly thereto and transversely of said clamping band, and

(d) actuating means connected to said band ends of said clamping band and operable to increase the space between said band ends to move the clamping band from said normal contracted position to said expanded position, said actuating means with the aid of said stiffness of said clamping band being operable to move said clamping band into engagement with said retaining means and cooperating with said retaining means to position said clamping band in said expanded circular position to obtain complete release of said clamping band from the opposed flanges of said cylindrical member and said closure member.



3,310,330
GUARD FOR VEHICLE BUMPERS

Leo R. Kessler, Madison, Wis.
(1430 Arrowhead Drive, Duluth, Minn. 55811)
Filed Oct. 18, 1965, Ser. No. 497,130
6 Claims. (Cl. 293—67)



1. A bumper attachment for automobiles and the like comprising:

(a) a substantially rigid body member having an upper portion, a lower portion, and a substantially vertically disposed pushing surface,

(b) said upper portion having an attaching surface opposite said pushing surface,

(c) said attaching surface having at least one transverse attaching groove therein for receiving a portion of the bumper of an automobile,

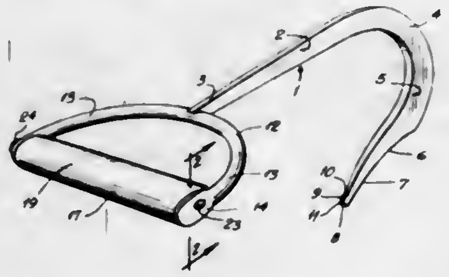
(d) said lower portion having a rear bearing surface spaced longitudinally from said pushing surface for bearing against the bumper of said automobile,

(e) said upper portion being flared outwardly toward said attaching surface whereby said upper portion has substantially greater width than said bearing surface for lateral stability, and

(f) fastening means for extending around the top and bottom edges of the bumper of said automobile for releasably attaching said body member to the bumper of said automobile.

3,310,331
LOG HOOK

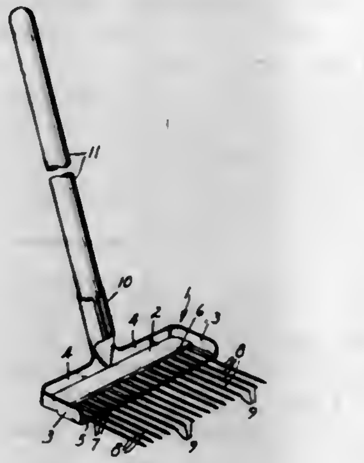
Honoré Michaud, Lamy, Temiscouata County, Quebec, Canada
Filed Apr. 12, 1965, Ser. No. 447,152
3 Claims. (Cl. 294—26)



1. A log hook comprising a first U-shaped element having one leg terminated by a tip and a second U-shaped element secured at its center to the end of the other leg of said first U-shaped element and having its two legs in a plane substantially perpendicular to that of the first U-shaped element, a handle secured to the free ends of the legs of said second U-shaped element and extending between said ends, said tip forming a flat face portion substantially parallel to and protruding from the inside face of the remaining portion of said tip carrying leg, said protruding face defining a step with said internal face, said tip having a flat terminal face making a substantially right angle with said protruding face.

3,310,332
LITTER FORK AND YARN TOOL

Herbert E. Nelson, 5836 Wentworth Ave. S., Minneapolis, Minn. 55419
Filed Oct. 22, 1964, Ser. No. 405,735
1 Claim. (Cl. 294—55.5)



A litter fork and yard tool comprising:

(a) a scoop-like body having a generally flat, normally horizontally disposed bottom wall portion and opposed side and rear wall portions projecting upwardly from opposite side and rear edge portions respectively of said bottom wall portion and providing an open front,

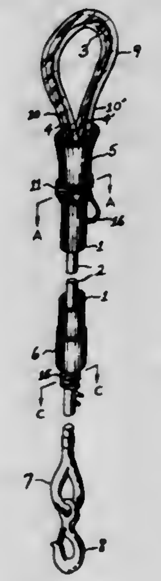
(b) means on said body for attachment to a handle,

(c) said bottom wall portion being formed to provide a downwardly projecting transverse ridge extending the full width of said body in rearwardly spaced generally parallel relation to the open front of said body, and a plurality of corrugations adjacent said open front and defining laterally spaced downwardly opening parallel seats extending from said ridge to said open front of the body,

(d) and a plurality of rigid tines each having a rear end portion secured in a different one of said downwardly opening seats and extending from said ridge forwardly of the open front of said body.

3,310,333
REACH PENDANT FOR ATTACHING EXTERNAL CARGO TO A HOVERING AIRCRAFT

Robert Carey Hutson, Diggs, Va.
(Diggs P.O., Mathews, Va. 23045)
Filed Jan. 4, 1966, Ser. No. 518,700
21 Claims. (Cl. 294—78)

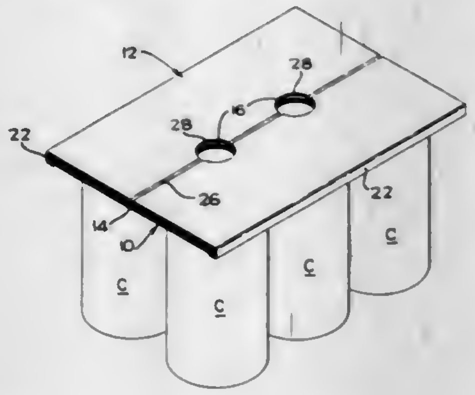


1. A reach pendant for attaching a cargo to a hovering aircraft comprising the combination of an elongated, relatively stiff, non-conducting housing having a longitu-

dinal opening therethrough, an expansion sleeve fitted to one end of said housing, a length of line threaded through said opening in said housing, an eye in one end of said line adjacent said sleeve, a length of resilient, flexible tubing encasing the line defining said eye, whereby the tendency of said tubing to straighten itself urges said eye into an open configuration when said eye is not under tension; at least parts of the converging portions of said eye, and the tubing encasing said converging portions, being disposed within said sleeve; and means for preventing sliding of said housing over said line, whereby said parts of said converging portions of said eye are prevented from sliding out of said sleeve.

3,310,334
CONTAINER CARRIER

Hugh W. Murphy, Saratoga, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed June 7, 1965, Ser. No. 461,770
5 Claims. (Cl. 294—87.28)

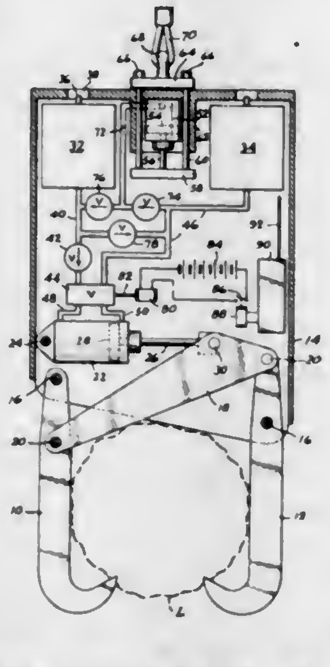


1. A carrier for supporting containers each having a closure end of a diameter larger than the body of the container, comprising a stiff carrier sheet having at least two rows of longitudinally aligned container receiving apertures, said carrier sheet also being provided with at least two finger receiving apertures spaced between said rows and equidistant from the ends of said rows, a flexible cover sheet overlying said carrier sheet and adapted to abut the end closures of the containers supported by the carrier sheet, said cover sheet having at least two finger receiving apertures aligned with the finger receiving apertures of said carrier sheet, said cover sheet being provided with longitudinal side flanges adapted to be secured to said carrier sheet, and said cover sheet also being provided with a longitudinally extending rib abutting the top surface of said carrier sheet between the two rows of longitudinally aligned container receiving apertures.

3,310,335
LOAD LIFTING MECHANISM

Neil E. Shuey, 7206 N. Interstate Ave., Portland, Oreg. 97217
Filed Oct. 13, 1965, Ser. No. 495,544
6 Claims. (Cl. 294—88)

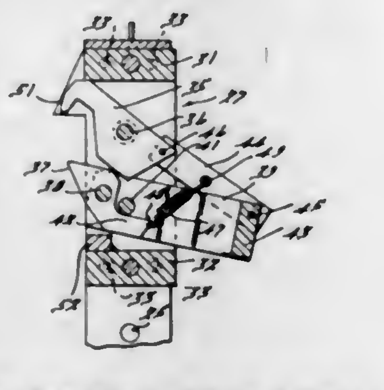
1. Load lifting mechanism, comprising
(a) a housing supporting movable load engaging means,
(b) reversible fluid pressure drive means interconnecting the housing and load engaging means for moving the latter,
(c) a high pressure fluid supply container on the housing,
(d) a lower pressure fluid supply container on the housing,
(e) adjustable valve means connecting the high and lower pressure fluid supply containers to the drive means for operating the latter selectively in said reversible directions,
(f) operator means engaging the adjustable valve means for adjusting the latter,
(g) fluid pressure pump means including a fluid pressure cylinder having therein a piston reciprocative in retracting and pumping directions, the piston having a piston rod extending outwardly through the cylinder,
(h) one of the cylinder and piston rod components of the pump means engaging the housing and the other of said components being movable relative to the housing and adapted for connection to load lifting means,



(i) valve means communicating the lower pressure container with the pumping end of the pump cylinder for passage of fluid only in the direction to said cylinder, and
(j) valve means communicating the pumping end of the pump cylinder with the high pressure container for passage of fluid pressure only in the direction to said container,
(k) the pump means being operable under the weight of a load being lifted to pump fluid under pressure to the high pressure container, and
(l) the lower pressure container being operable upon release of the weight of a load from the load engaging means to move the pump piston in said retracting direction.

3,310,336
BARREL LIFT MECHANISM

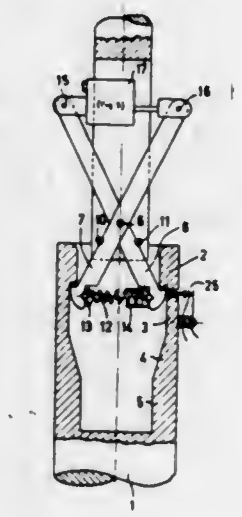
David Robert Chenault, Jackson, Mich., assignor to Union Steel Products Company
Filed Mar. 19, 1965, Ser. No. 441,232
5 Claims. (Cl. 294—90)



1. A mechanism for lifting objects having a flange at the periphery thereof comprising a housing, a first jaw assembly supported for pivotal movement about a first pivot axis by said housing, a second jaw assembly supported for pivotal movement about a second pivot axis by said housing, means biasing said jaw assemblies for pivotal movement in a first direction about said axes to an open position, said first jaw assembly having a gripping portion adapted to engage one side of the flange and being pivoted in a second direction opposite to said first direction under the influence of lifting forces exerted through the flange from its open position to a gripping position, and linkage means connecting said first jaw assembly to said second jaw assembly for pivoting said second jaw assembly from its open to a gripping position upon pivotal movement of said first jaw assembly in said second direction to grip the flange between said jaw assemblies, said linkage means providing for free movement of said gripping portion of said first jaw assembly in a direction opposite to said second direction without accompanying movement of said second jaw assembly upon contact of said gripping portion of said first jaw assembly with a side of the object to be lifted to prevent perforation of the side by said first jaw assembly.

3,310,337
AUTOMATIC COUPLING AND DECOUPLING DEVICE

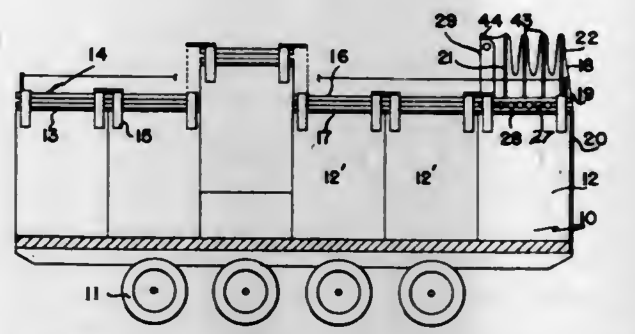
Helmut Riemenschneider, Mol-Donk, Belgium, assignor to European Atomic Energy Community—Euratom, Brussels, Belgium
Filed Jan. 5, 1965, Ser. No. 423,556
Claims priority, application Germany, Mar. 9, 1964, E 26,576
8 Claims. (Cl. 294—97)



1. In an automatic coupling and decoupling device between two elements movable towards and away from each other, in particular between a manipulator and a sample container in a nuclear reactor, wherein the first element has at least two slide surfaces along the direction of movement and the second element has a corresponding number of spring pressed grasping arms which are slidable along the slide surfaces upon relative movement between the two elements and wherein the grasping arms and the slide surfaces have nose-like bulges which interengage in a predetermined first relative position of the elements and thus produce a power coupling in the direction of movement, the improvement consisting in that the slide surfaces each have a further smoothly rising prominence which is engaged upon approach of the elements beyond said first position and in that a damping member is provided to delay unstressing of the spring so that decoupling occurs by raising the grasping arms from the slide surfaces by rapid movement of the elements beyond said first position, whereby the arms pass over the bulge of the slide surfaces before the retarding effect of the damping member is over.

3,310,338
TRUCK TARPAULIN ASSEMBLY

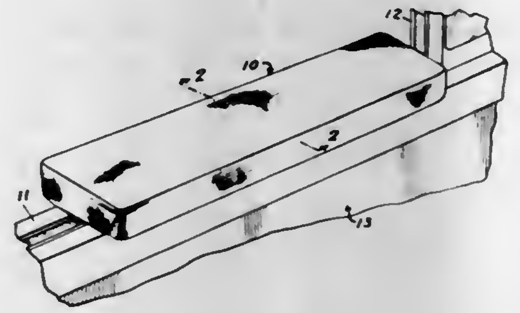
Percy Greenberg, Winnipeg, Manitoba, Canada, assignor to John R. Thomson, Winnipeg, Manitoba, Canada
Filed Aug. 19, 1965, Ser. No. 480,848
11 Claims. (Cl. 296—100)



1. A truck tarpaulin assembly for open trucks, trailers and the like which include a pair of spaced and parallel body sides; comprising in combination a track assembly secured to each body side adjacent the upper edge thereof and parallel therewith, a plurality of tarpaulin hoops overspanning said body sides and means mounting said tarpaulin hoops for rolling movement along said track assemblies, a tarpaulin secured by one end thereof to one end of said truck body and being supported by said tarpaulin hoops, the other end of said tarpaulin being secured to the end tarpaulin hook remote from said one end of said truck body, rack means on each of said track assemblies, and pinion means on each side of said end tarpaulin hoop engageable each with said corresponding rack member, means on said end tarpaulin hoop for rotating said pinion means, and means operatively connecting said tarpaulin to said hoops whereby when said end hoop moves along said track assembly, it extends and retracts said other tarpaulin hoops and said tarpaulin.

3,310,339
ARMREST FOR AUTOMOTIVE VEHICLES

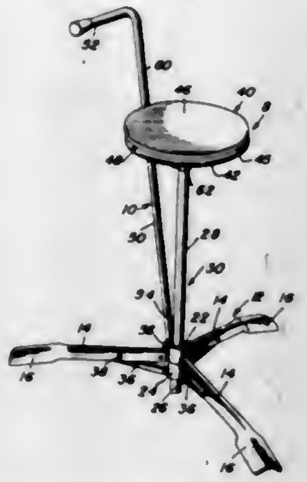
Monte Stanley, 14545 Rosemont, Detroit, Mich. 48223
Filed Feb. 9, 1965, Ser. No. 431,349
3 Claims. (Cl. 296—153)



1. In an armrest for the window opening of an automotive vehicle wherein a window is moved into and out of the opening to close and open the window, the combination comprising
a pad of generally elongated construction,
a magnet mounted on the underside of the pad and extending substantially along the entire length thereof,
said magnet being generally T-shaped in cross section,
said magnet having a downwardly extending lip portion which is adapted to project between the sections of a door which define the channel into which the window moves,
said magnet thereby performing the dual function of holding the pad against the door and preventing lateral motion of the pad by engagement of the lip portion with the sides of the channel.

3,310,340
COMBINED WALKING CANE AND STOOL

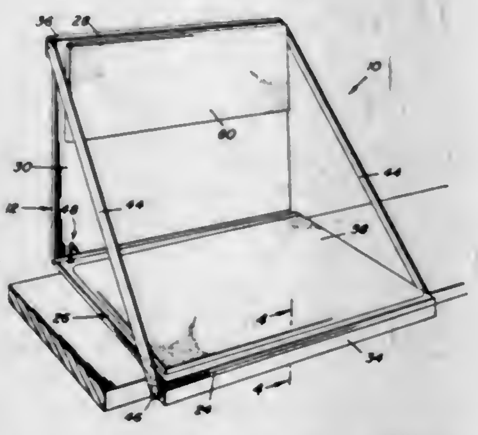
Harry Brewer, 940 7th St., and Olif F. Cutright, 2433 San Marino Road, both of Sidney, Nebr. 69162
Filed Sept. 28, 1965, Ser. No. 490,909
8 Claims. (Cl. 297—16)



1. A portable folding stool comprising: a T-shaped member embodying a standard with a crosshead at an upper end of said standard, a first collar embracing and fixed to a lower end portion of said standard, a second collar slidingly mounted on the standard above the position of said first collar, circumferentially spaced radial folding legs having feet at their outer ends and having their inner ends pivotally joined to said second collar at equidistant circumferentially spaced points, a coordinating stay link for and cooperatively underlying each leg, said links having outer ends pivotally connected with median portions of their respectively cooperable legs and having their inner ends pivotally joined at equidistant circumferentially spaced points to said first collar, a circular seat frame provided with a seat cover, said frame encircling and having diametrically opposite inner peripheral portions pivotally connected to coordinating end portions of said crosshead, and an elongated L-shaped member constituting and providing a stool carrying and walking cane and operatively connected with said stool.

3,310,341
PORTABLE STADIUM SEAT

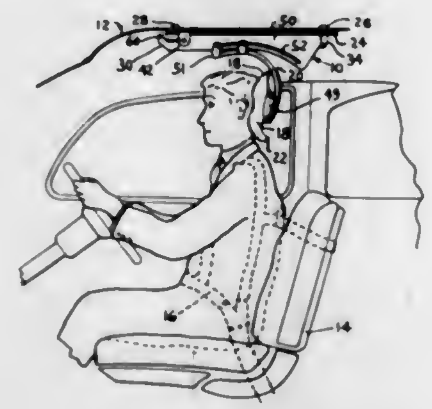
Clyde A. Connell, Tyler, Tex., assignor to James W. Fair, Tyler, Tex.
Filed Aug. 10, 1965, Ser. No. 478,645
7 Claims. (Cl. 297—252)



1. A portable seat comprising an elongated planar member, a flexible area defined in said member between the opposite ends thereof and extending across the width thereof so as to divide said member into two generally equal size pivotally joined panels, said panels constituting a seat panel and a back panel, an elongated rigid bar intimately engaged with each panel along substantially the entire free end thereof, limit means engaged between the bar of the back panel and the bar of the seat panel so as to limit pivotal movement of the panels between a first overlying relationship and a second generally right-angular relationship, the rigid bar engaged with the seat panel end projecting below the bottom of the seat panel along substantially the full length thereof, said seat panel bar including a flat inner edge face orientated at generally a right angle to the bottom of the seat panel so as to define a full length bench abutting face, said member being formed of cardboard and including inner and outer sheet-like layers and at least one intermediate corrugated layer bonded therebetween, the corrugations of the corrugated layer extending lengthwise from one end of the member to the other end thereof, said cardboard member, in said flexible area, having the sheet-like layers compressed together with the corrugated layer therebetween being flattened and intimately conforming to the sheet-like layers, thereby allowing for a pivotal movement of the panels relative to each other, and movably mounted means on said seat for selectively retaining said panels at substantially right angles to each other, said movable retaining means comprising an elongated stem, and an elongated foot integral with said stem at a first end thereof and projecting at substantially a right angle thereto, said foot being rotatably mounted on one of said panels lengthwise thereof with said stem being located adjacent said flexible area, whereby said stem, through a rotation of the foot, is selectively positionable overlying the foot mounting panel or projecting at a substantially right angle thereto for engagement by the other panel so as to restrict movement of the panels toward each other.

3,310,342
ANTI-WHIPLASH DEVICE

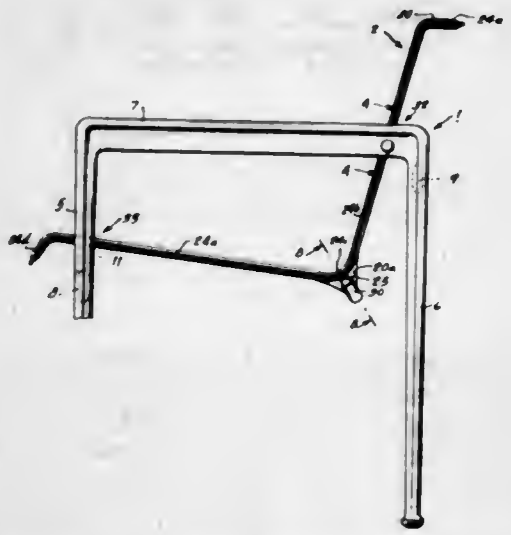
Kazimierz Drelichowski, 66 Prospect St., Union City, Conn. 06770
Filed Jan. 27, 1965, Ser. No. 428,367
8 Claims. (Cl. 297—395)



1. An anti-whiplash device for preventing injury to an occupant of a vehicle upon impact of an external object with said vehicle, comprising in combination with the frame of said vehicle means for positioning the occupant upright in said vehicle, a carriage mounted on the frame of said vehicle for reciprical movement relative thereto along a path substantially parallel to the direction of the impact, a headrest mounted on said carriage and normally disposed directly behind the head of the occupant in order to cradle the head as it is thrust backward during the impact, shock-absorbing means disposed between said carriage and the frame of the vehicle for resiliently resisting movement of said carriage by the backward thrust of the occupant's head, releasable restraining means for preventing said carriage from suddenly rebounding after the impact, and a mounting bracket fixed to the frame of said vehicle for mounting said carriage on said frame, said bracket having guide means along which said carriage is movable in an arc of a circle whose center is located in the vicinity of the neck of the occupant, whereby said headrest follows the natural path of the occupant's head as it is bent backward with respect to his body.

3,310,343
FURNITURE

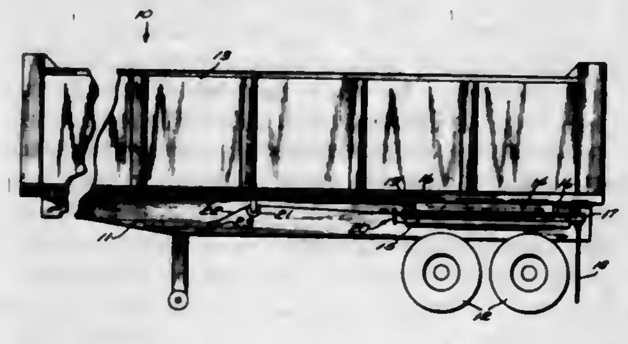
Moses Richard Schultz, Barto, Pa., assignor to Knoll Associates, Inc., New York, N.Y., a corporation of New York
Filed Nov. 8, 1965, Ser. No. 506,823
22 Claims. (Cl. 297—445)



1. An article of furniture comprising:
(a) a body-supporting structure including:
  (1) a pair of elongated, stiffly flexible bands preformed to define the contour of said structure;
  (2) webbing having a pair of elongated pockets, one along each of its longitudinal edges, for receiving an associated one of said bands;
  (3) a spreader bar secured at its opposite ends to said bands to hold said bands in spaced relationship for placing said webbing under lateral tension; and
  (4) said webbing being joined in a locality between said longitudinal edges to said spreader bar for placing said webbing under longitudinal tension, and
(b) a rigid base frame, said body-supporting structure being mounted on said rigid base frame.

3,310,344
VEHICLE MUD FLAP CONSTRUCTION

Menzo Beintum, 6755 W. 91st Place, Oak Lawn, Ill. 60453, and Robert Beintum, 3708 W. 120th Place, Alsip, Ill. 60658
Filed June 16, 1965, Ser. No. 464,479
1 Claim. (Cl. 298—1)



In a dumping vehicle having a frame and a load-carrying bed pivotable from a lowered position to a raised load-dumping position,

a housing rigidly mounted beneath said bed including a first rider portion and a second rider portion transverse thereto,

a rod approximately equal in length to said housing and slidably mounted therein, means rigidly mounted on said housing for guiding the forward end of said rod, a flap pivotally connected to the rearward end of said rod and depending downwardly from said housing along said second rider portion with said bed in its lowered position,

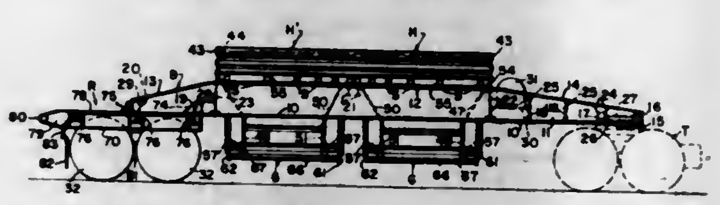
a cable having one end anchored to said frame and another end secured to said rod,

pulley means mounted to said bed and engaging said cable to retract said flap within said housing along the first rider portion as said bed is raised to the load-dumping position,

spring means including a spring with a first end rigidly mounted to said frame and a second end connected to the forward end of said rod, said spring means expanding with the raising of said pivotable bed and contracting with the lowering of said bed onto said frame so as to urge said flap into said depending downward position said housing having means enclosing said spring when the bed is in its lowered position.

3,310,345
TRAILER

Myron A. Rowden, Broomfield, Colo., assignor, by mesne assignments, to Timpte, Inc., Denver, Colo., a corporation of Colorado
Filed Dec. 7, 1964, Ser. No. 416,517
8 Claims. (Cl. 298—35)



8. In a trailer adapted to be pulled behind a tractor or the like:

a pair of longitudinally extending, laterally spaced beams, each having an upright web and upper and lower flanges;

at least four shock absorbers mounted on the upper flanges of each of said beams and spaced at distances apart which increase, both forwardly and rearwardly, from the center of said beams;

load carrying means supported by said shock absorbers, said shock absorbers minimizing transmission of stresses to said load carrying means due to flexing of said beams when said load carrying means is loaded;

a transverse beam extending transversely between said longitudinal beams, both immediately forwardly and immediately rearwardly of said load carrying means; and

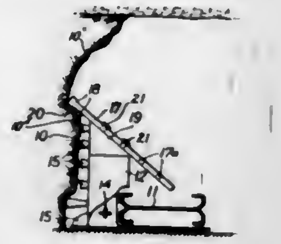
at least one shock absorber mounted on each transverse beam for supporting said load carrying means.

3,310,346
MINING PLANER WITH ADJUSTABLY POSITIONED CUTTING MEANS

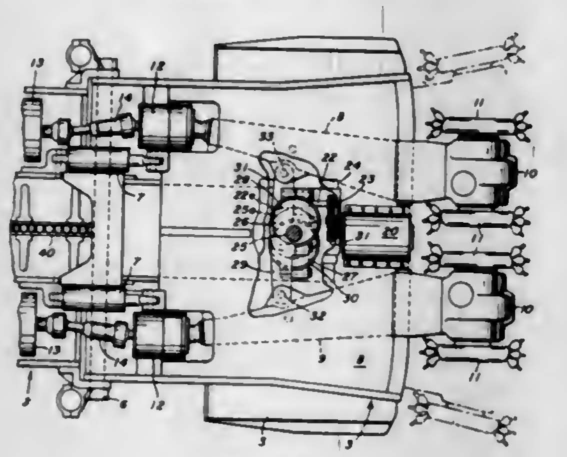
Willy Heyer, Bochum-Gerthe, Germany, assignor to Gewerkschaft Eisenhütte Westfalia, Wethmar, near Lunen, Westphalia, Germany
Filed Nov. 29, 1965, Ser. No. 510,410
Claims priority, application Germany, June 19, 1963, G 37,988; Nov. 27, 1964, G 42,121; Dec. 2, 1964, G 42,157; Dec. 12, 1964, G 42,260
40 Claims. (Cl. 299—34)

1. Mining planer movable longitudinally back and forth along a mine face for the extraction of mineral therefrom, which comprises longitudinally extending lower

level base means, upper level cutting means, and adjustable securing means, said securing means positioning said cutting means adjustably on the upper portion of said base means in a normally outwardly extending direction operatively beyond said base means and substantially transversely lateral to the longitudinal direction of movement of the base means and cutting means for changing the transversely outward disposition of said cutting means with respect to an adjacent mine face to increase the range of transverse operative extractive engagement of said cutting means with the corresponding upper portion of such adjacent mine face above the level of the base means therebelow.



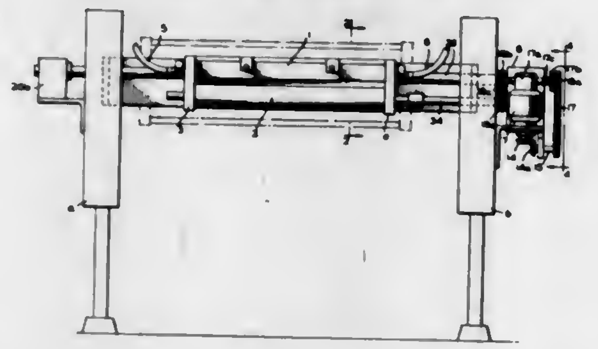
3,310,347
MINING MACHINE HAVING INDEPENDENT MEANS TO ROTATE AND OSCILLATE CUTTERS
Einar M. Arentzen, Charleroi, Pa., assignor to Lee-Norse Company, Charleroi, Pa., a corporation of Delaware
Filed Mar. 8, 1965, Ser. No. 437,824
3 Claims. (Cl. 299—71)



1. In a mining machine of the class described having a supporting chassis and a boom at the front of the chassis arranged to be swung up and down in a vertical arc, the boom having a pair of cutter arms thereon which may be swung back and forth across the boom, one arm being at each side of the longitudinal center of the boom, each arm having a cutter head at the outer end thereof extending beyond the boom, and cutter wheels on each cutter head rotatable by power means, the invention comprising a mechanism for simultaneously moving the cutter arms toward and away from each other and the longitudinal center line of the boom, said mechanism comprising:

a shaft supported on the boom between the two arms and intermediate the ends of the boom,
an eccentric arm-operating means on the shaft,
a pair of links each having one end operatively engaging said eccentric means, one link of said pair extending laterally toward one cutter arm and the other link extending laterally toward the other cutter arm,
the other ends of said links being pivotally connected to the respective cutter arms toward which they extend at a point intermediate the ends of the arms,
and a horizontally-positioned electric motor mounted on the boom operatively connected with said shaft for rotating it, said motor having its top below the level of the top of the cutter wheels and its bottom above the bottom of said cutter wheels, said motor being operative independently of the power means for rotating the cutter wheels and vice versa.

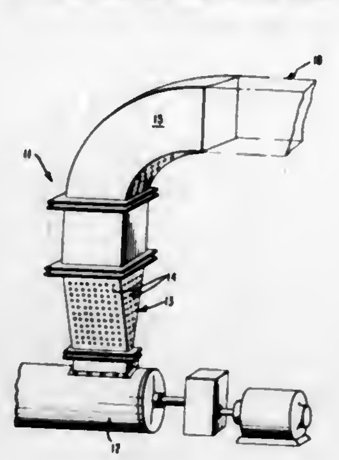
3,310,348
POWDER SPRAY UNITS
Walter Friedl, 8873 N. Port Washington Road, Milwaukee, Wis. 53217
Filed Oct. 18, 1965, Ser. No. 497,003
6 Claims. (Cl. 302—19)



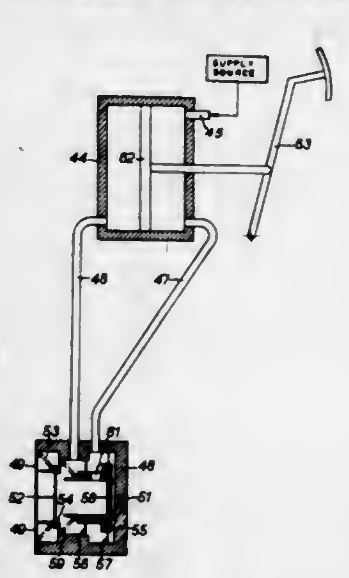
1. In a powder spray unit for applying a powder to a printed sheet traveling from an offset printing press, the combination of supporting means and a receptacle for containing powder, a vertical feed screw enclosed in a housing and positioned in said receptacle for lifting the powder to a predetermined position, a horizontal feed screw contained in a cylindrical housing for receiving the powder from the vertical feed screw and distributing the same throughout the horizontal housing, longitudinal discharge port means in said horizontal feed screw housing for discharging the powder spray downwardly, an elongated roller mounted in said supporting means below said horizontal feed screw and having an adjustable wiper blade engaging the same at one side and being adapted to receive the powder spray discharged from said horizontal housing for transmission to the opposite side of said roller, means for driving said roller, a closed air box positioned above said roller, an air tube extending medially through said closed air box, means for supplying air to said air tube at each end thereof, ports in said air tube for delivering air into said box, a slot at the bottom of said box for projecting air spray therefrom tangentially downward across said roller for dispersing the powder carried by said roller downwardly upon the traveling printed sheet, means for adjusting said box to vary the angle of said projecting air spray, additional means for regulating the thickness of said slot in said box for modifying the discharge of air, and means for driving said feed screws.

3,310,349
ARTICLE AND APPARATUS FOR CONVEYING PARTICULATE MATTER PNEUMATICALLY
Alton Grey Tilley and Robert Milton Wall, Florence, S.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,283
4 Claims. (Cl. 302—59)

1. In apparatus for pneumatically conveying and feeding particulate matter by means of a fluid medium, said apparatus having a conveying section and a feeding section, the improvement comprising: a tapered duct intermediate said conveying section and said feeding section coupling said conveying section to said feeding section, said duct having (1) a reduction in transverse cross-section between said conveying section and said feeding section, (2) perforations, in at least part of its surface, dimension sufficient to prevent the passage of said particulate material, said perforations having an area substantially equal to the reduction in transverse cross-sectional area between said conveying section and said feeding section to vent a substantial portion of the conveying fluid medium for maintaining a substantially uniform velocity of said pneumatically conveyed particulate matter through said coupling duct.

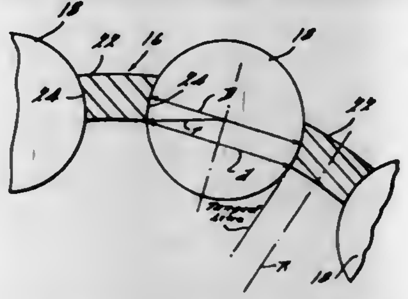


3,310,350
ANTI-SKID DEVICE FOR VEHICLES
Alexander John Wilson, Sutton Coldfield, England, assignor to Girling Limited, Birmingham, England, a British company
Original application Sept. 20, 1963, Ser. No. 310,213. Divided and this application Jan. 11, 1966, Ser. No. 529,599
Claims priority, application Great Britain, Sept. 27, 1962, 36,672/62
5 Claims. (Cl. 303—60)



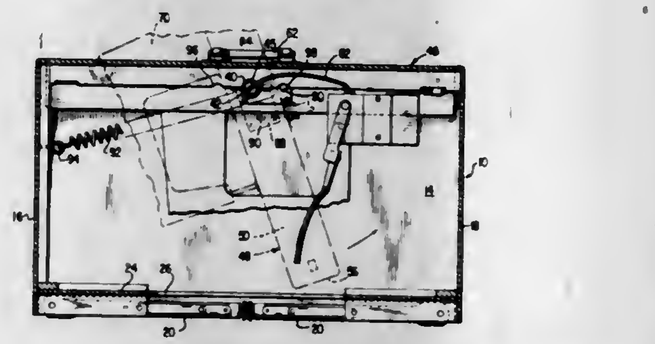
1. A valve for controlling relative fluid pressures in first and second spaces, comprising a housing, first and second spaced control members in the housing, a first valve member connected to said first and second control members, a seating in the housing on the side of said second control member remote from said first control member, means providing communication respectively between said first space and said housing between said control members, and between said second space and said housing between said second control member and said seating, a second valve member engageable by said first valve member to cut off communication between the spaces when the first valve member is moved in response to an actuating fluid pressure, the second valve member then being moved away from the seating to connect the second pressure space to a fluid pressure different from the pressure in the first space, means biassing said second valve member towards said seating, and means normally biassing said first valve member away from said second valve member.

3,310,351
BEARING CONSTRUCTION
Herman A. Ortegren, Grosse Pointe, Mich., assignor to Federal-Mogul Corporation, a corporation of Michigan
Original application Feb. 20, 1962, Ser. No. 174,504, now Patent No. 3,138,849, dated June 30, 1964. Divided and this application Mar. 11, 1964, Ser. No. 355,991
6 Claims. (Cl. 308—217)



1. In a bearing assembly the combination comprising a plurality of roller members, a tubular one-piece bearing retainer member having a plurality of axially extending circumferentially spaced ribs with confronting surfaces on adjacent ones of said ribs defining a plurality of pockets for retaining said roller members, each of said ribs having a radially inwardly depressed portion, each of said surfaces including that portion on said depressed portions having a composite profile the shape of an arc having a radius substantially equal to the radius of said roller members with said arc extending radially inwardly no further than the point of tangency of said arc with a tangent line which is parallel to a radius line of said bearing retainer which bisects that one of said ribs with which said arc is individual and confronting ones of said surfaces together having a cross-sectional profile substantially defining portions of a circle having a diameter substantially equal to the diameter of said roller members and radially extreme resilient edges on confronting ones of said surfaces being linearly spaced a preselected distance less than the diameter of said roller members whereby said roller members can be moved radially into said pockets past said resilient edges and retained therein by said resilient edges.

3,310,352
INVERTABLE TABLE TOP SUPPORT FOR MACHINES
Sylvester J. Birginal, 4609 N. 67th St., Milwaukee, Wis. 53218
Filed Dec. 22, 1964, Ser. No. 420,398
5 Claims. (Cl. 312—30)

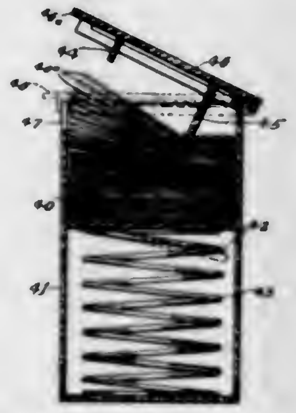


1. A cabinet having a top with an oblong opening therein, a pair of rails affixed beneath the underside of said top adjacent the opposed long edges of the opening, coaxial trunnions on the undersides of said rails midway of the long sides of said opening, there being a space between that long side of one of said rails which lies remote from said opening and the adjacent wall of said cabinet, an invertable machine support disposed in said opening comprising an oblong box of a length and width slightly less, respectively, than the length and width of the opening, said box having elongate opposed side walls,

end walls, a top wall and a bottom wall, means on said bottom wall for mounting a machine thereon, stub shafts pivotally supporting the side walls of said box midway between the ends thereof in said trunnions, an arm extending outwardly from that side wall of the box which lies adjacent said one rail, said arm extending transversely of the last-named rail and having a free end extending beyond that side of the last-named rail which lies remote from said opening, and a tension spring having a fixed end anchored to said cabinet at a point below the axis of said trunnions, said point being in a vertical plane which passes through said space and being spaced from said axis in the longitudinal direction of said opening, the free end of said spring being attached to the free end of said arm.

3,310,353
STORING AND DISPENSING APPARATUS FOR WET WIPE SHEETS

Nat Cordis, deceased, late of Silver Lake, Wis., by Gladys S. Cordis, executor, Chicago, Ill., assignor of two-thirds to Carl F. Jensen and one-third to Gerald T. Doble, both of Crown Industries, Chicago, Ill.
Original application Dec. 5, 1960, Ser. No. 73,874. Divided and this application Nov. 19, 1964, Ser. No. 412,872
2 Claims. (Cl. 312—39)



1. A dispenser adapted to contain and to dispense wet wipe sheets one at a time through a delivery opening at one end thereof, a hinged closure for said delivery opening, a follower plate supporting a plurality of such sheets, spring means acting on said follower plate to urge such plurality of sheets toward said delivery opening, at least one depressor projecting substantially normal from said closure and inwardly thereof thereby retarding the elevation of one portion of said follower plate and permitting another portion of said plate to be urged upwardly by said spring toward said delivery opening thereby exposing the leading edge of sheet to the user whereby it may be grasped above said opening and withdrawn, said depressor engaging the next sheet to be dispensed.

3,310,354
RACK SYSTEM FOR AUTOMATIC DISHWASHER

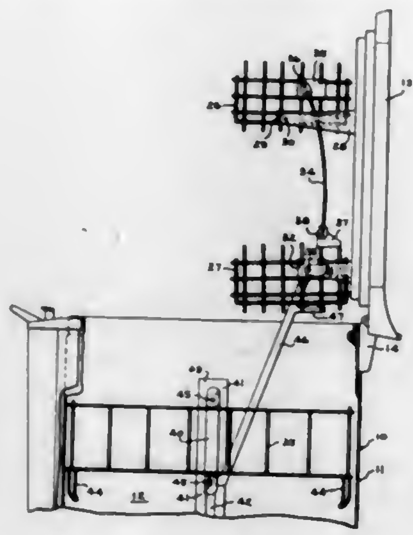
Wesley S. Pattison, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Mar. 26, 1965, Ser. No. 443,007
5 Claims. (Cl. 312—269)

1. In an automatic dishwasher having a cabinet defining therein a wash chamber with an access opening at the top and a closure member for said access opening pivotal about a hinge means from a substantially horizontal closed position to a substantially vertical open position, a rack system comprising:

(a) a pair of rack members pivotally carried by the closure member and positioned within the upper portion of the wash chamber when the closure member is closed,

(b) said pair of rack members being adapted to move up and at least partially out of the wash chamber as the closure member is opened,

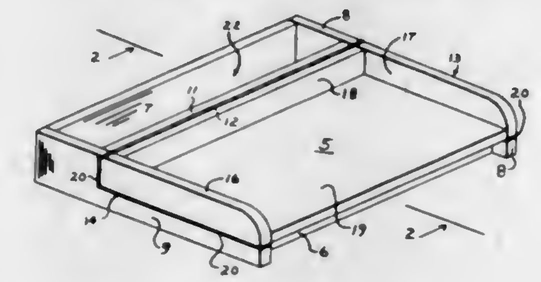
(c) a third rack member positioned within the lower portion of the wash chamber when the closure member is closed, and



(d) means interconnecting one of said pair of rack members and said third rack member whereby said third rack member is moved upwardly within the wash chamber as the closure member is opened.

3,310,355
LITHOGRAPHY ACCESSORY

John F. Blandin, 2817 NW. 9th Terrace, Wilton Manors, Fort Lauderdale, Fla. 33311
Filed May 12, 1965, Ser. No. 455,251
1 Claim. (Cl. 312—281)



A lithography accessory comprising

(a) a first storage compartment,

(b) said first storage compartment comprised of four sides, a bottom, and a movable top,

(c) said movable top being hinged to one of said sides,

(d) a resilient gasket of lightproof material between the top of three of the sides and the movable top,

(e) a resilient gasket between the face of the fourth side and the movable top,

(f) a second storage compartment adjacent said first storage compartment,

(g) said second storage compartment sharing a common side with said first storage compartment,

(h) said movable top being hinged to said common side,

(i) said second storage compartment being open at the top,

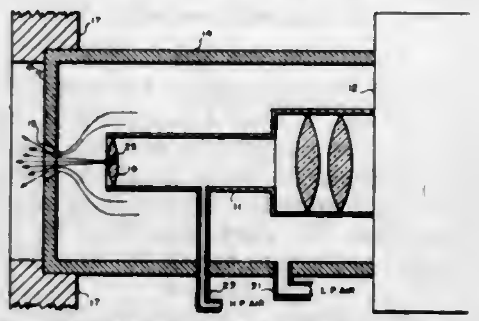
(j) said movable top of said first storage compartment providing a flat surface area,

(k) said movable top extending beyond the side of said first storage compartment directly opposite to the side to which said top is hinged,

(l) the top surface of said extension being in the same horizontal plane as the flat surface of the movable top.

3,310,356
LENS PROTECTIVE DEVICE UTILIZING DUAL AIR STREAMS

Willy Borberg, Briarcliff Manor, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed Feb. 8, 1963, Ser. No. 257,301
1 Claim. (Cl. 350—63)



A protective device for a lens system which in use may be subjected to high temperatures and bombardment by high temperature particles comprising,

an elongated hollow tubular support member having a free end and a fixed end,

a lens element of solid transparent material having at least one spherically curved surface normal to its optical axis,

said lens element having an orifice extending coaxially therethrough relative to said optical axis and being mounted in substantially air-tight relation in and near said free end of said support member,

a protective cover completely disposed about said support member in spaced apart relation, said cover including an aperture having a longitudinal axis, the longitudinal axis of said aperture being colinear with the optical axis of said lens element,

means for admitting air under pressure to the interior of said cover defined by said spaced apart relation to create a flow of fluid along said support member and out said aperture, and

means for admitting air within said hollow tubular support member under a higher pressure than the air being admitted to said cover interior,

said last mentioned means creating a fluid flow through said orifice to provide a fluid curtain extending away from said support member's free end and through said aperture,

said fluid curtain characterized by a velocity gradient decreasing substantially uniformly along radii extending normal to said lens element's optical axis with the highest velocity component being located substantially along said optical axis.

3,310,357
ROTATING REFLECTOR FOR MOUNTING IN THE SPOKES OF A WHEEL

Paul J. Hogan, 609 S. Main St., Naperville, Ill. 60540
Filed Jan. 10, 1963, Ser. No. 250,533
1 Claim. (Cl. 350—99)

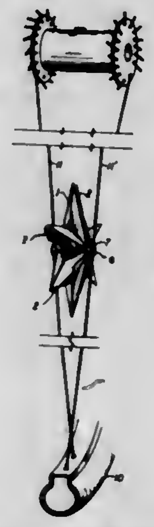
A reflector for mounting between two spokes which are connected to opposite ends of the hub of a bicycle wheel,

said reflector comprising:

an axle having grooves on the ends thereof for mounting it between said two spokes, with its axis parallel to the axis of the wheel, the grooves being offset from the axis of the axle and non-parallel to each other to correspond to the angles of the respective spokes,

a body with a cylindrical opening mounted with the axle through said opening, a plane of symmetry perpendicular to the axis of said opening, a plurality of intersecting light-reflecting surfaces, half of said surfaces lying entirely on one side of said plane and the other half on the other side, with the surfaces on one side converging to one end of said opening and the surfaces on the other side converging to the other end of the opening, the body being star shaped with each point comprising four of said surfaces, two on each side of said plane, with each surface generally triangular,

a plurality of fins, one on each point of the star, with adjacent points having their fins on opposite sides of said plane, with each of the fins lying generally in the same plane as one of the surfaces and forming an extension thereof, and with all of the fins pointing in the same direction with respect to a circle around said opening,

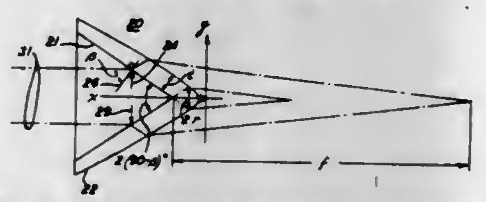


so constructed and arranged that as the bicycle moves the air flow about the fins causes the body to rotate on its axle in a direction counter to the rotation of the wheel,

whereby flashing reflections are obtained from said surfaces.

3,310,358
CONICAL LENS FOCUSING MEANS FOR TM_{0n} MODES

Enrique A. J. Marcatili, Fair Haven, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 1, 1963, Ser. No. 277,267
8 Claims. (Cl. 350—189)



1. Means for focusing electromagnetic wave energy in modes of the circular magnetic family comprising

a low loss dielectric lens having first and second conical surfaces,

said first surface being a right circular cone having a first axis of revolution and having an apex angle equal to $2(90-\beta)$ degrees where β is the Brewster angle of incidence of energy propagating parallel to said axis,

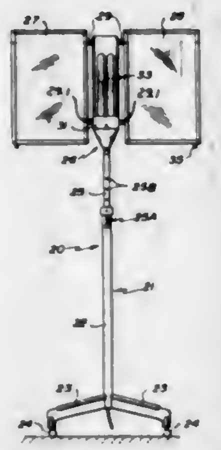
said second surface providing focusing of said energy when incident from said first surface and having a second order tapered configuration in an x, y coordinate system with origin at the apex of the second surface substantially described by

$$y=\frac{x}{n}\left[1+\frac{1+n^2}{2n^2(1-n^2)}\,\frac{x}{f}\right]$$

where n is the index of refraction of the lens material and f is the focal length of the lens, said second surface having a second axis of revolution which coincides with the x axis of said x, y co-ordinate system, the apex of each of said first and second surfaces of revolution pointing in the same direction with respect to incident wave energy.

3,310,359
WING MIRROR ASSEMBLY

Karl H. Linke, 1266 E. 22nd Ave., Vancouver, British Columbia, Canada
Filed Feb. 23, 1966, Ser. No. 529,338
Claims priority, application Great Britain, Mar. 16, 1965, 11,705/65
2 Claims. (Cl. 350—305)

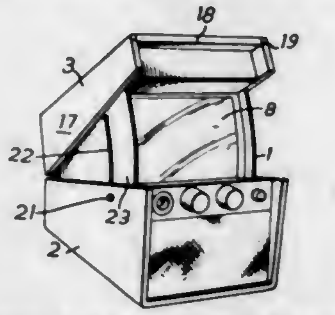


1. A mirror assembly including in combination two wing mirrors mounted to rotate about generally vertical spaced axes, and a light source within a housing intermediate the axes and generally coplanar therewith, to be used in conjunction with a plane mirror, so that an individual between opposed reflecting surfaces of the wing mirrors and the plane mirror may observe a double reflected image of a part of himself illuminated by light from the source being reflected from the part, without rays from the light source impinging either directly or by mirror reflection upon an eye of the individual; the combination comprising

- (a) wing mirrors having frame side members including a channel member to receive side edges of the mirror, which channel includes spring means adapted to bear upon a surface of the mirror securing the mirror within the channel member, a said frame side member being hingedly connected to an adjacent frame side member so that the hinged frame member can swing open to permit the mirror to be withdrawn from the frame, means to lock an end of the hinged frame side member remote from the hinge thereof to an adjacent frame side member,
- (b) the locking means comprising locking hinges connecting edges of the wing mirrors for rotation about the generally vertical spaced axes aforesaid, each looking hinge having an outward extending top element secured to the top mirror frame member and an outward extending lower element secured to an adjacent frame member, the upper and lower elements aforesaid being in spaced vertically aligned relationship, hinge elements secured to the vertically spaced axes which hinge elements are adapted to fit between the spaced upper and lower elements, hinge bolt means passing through the upper and lower elements and the hinge elements so as to provide means by which each wing mirror is rotatable about an axis aforesaid.

3,310,360
CINEMATOGRAPHIC APPARATUS

Brian Claude Jarvis, Stanley George Fitch, and Leonard Henry Howes, Temple Fields Harlow, Essex, England, assignors to Moviecol Sales Limited, Temple Fields, Harlow, Essex, England, a British company
Filed Sept. 22, 1964, Ser. No. 398,181
Claims priority, application Great Britain, Sept. 30, 1963, 38,500/63
15 Claims. (Cl. 352—104)



1. Self-contained apparatus for viewing motion picture film on a translucent screen, of the type comprising a light source, optical means defining an optical axis extending from the light source to the translucent screen, and means for advancing motion picture film from a coil thereof past the optical axis, said apparatus being characterized by the following:

- (A) the apparatus is housed in a box which comprises
  - (1) a base portion that is deeper at its front than at its rear,
  - (2) a lid portion having a top wall and which is deeper at its rear than at its front, and
  - (3) hinge means connecting the lid and base portions at their rear to provide for swinging motion of the lid portion between a lowered position in which the box is closed and a raised operative position in which the front of the lid portion is spaced above the front of the base portion;
- (B) the screen is secured to the lid portion near the front thereof with the top of the screen spaced below the top wall of the lid portion, so that the screen spans the space between the base and lid portions when the lid portion is in its raised position;
- (C) a coil of film is supported in the lid portion, between the top of the screen and the top wall;
- (D) the light source is located behind the coil and is supported by the lid portion;
- (E) said means for advancing film from the coil past the optical axis is mounted in the lid portion, behind the coil; and
- (F) said optical means is mounted in the lid portion.

CHEMICAL

3,310,361
PROCESS FOR THE PRODUCTION OF MULTI-COLORED WOOLEN GOODS

John R. Stewart, Pointe Claire, Quebec, Canada, assignor to Geigy Chemical Company, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 7, 1963, Ser. No. 322,071
14 Claims. (Cl. 8—15)

1. A process for producing multi-colored woolen goods which comprises treating woolen material by boiling in an aqueous solution containing 0.5 to 2% on the weight of wool of a chromate selected from the group consisting of sodium and potassium chromate and bichromate, 0.5 to 1% on the weight of wool of a reducing agent selected from the group consisting of sodium and potassium sulfite and bisulfite and a non-chelating acid giving a pH in the range of between 2 and 6, rinsing the mordanted woolen material, combining the woolen material so treated with untreated woolen material, dyeing the composite in a dye bath containing at least one mordant dye and adding to said dyebath when exhausted 0.1 to 1.5% on the weight of wool of the said chromate.

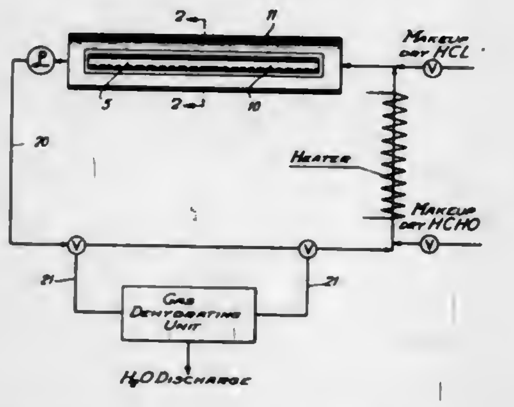
3,310,362
CONCENTRATED BROWN DYE SOLUTION

Norman William Fiess, East Amwell Township, Hunterdon County, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed June 29, 1965, Ser. No. 468,150
5 Claims. (Cl. 8—79)

1. An aqueous dye solution comprising on a weight basis (a) 10–30% of C.I. 21,010, (b) 10–20% of sulfamic acid, and (c) 5–15% of an alkanoic acid of 1–3 carbon atoms.

3,310,363
PROCESS OF REACTING CELLULOSE PAPER OF LOW WATER CONTENT WITH GASEOUS FORMALDEHYDE

James Russell and Willard E. Carlson, New City, N.Y., and Charles H. Mayhood, Jr., Allendale, N.J., assignors to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed May 24, 1963, Ser. No. 282,931
10 Claims. (Cl. 8—116.4)



1. A process for improving the wet rigidity of cellulose paper which comprises contacting said paper with at least 1% by weight formaldehyde gas based on the paper, and from 0.5 to 50% by weight hydrogen chloride gas, based on the weight of the formaldehyde, while maintaining the temperature of the paper at from about 70° C. to 180° C. during a contact time of from about 1 second to 5 minutes at a water content in the paper between about 0.05% and 2% by weight based on the weight of the paper, the conditions of temperature, time and water content being so selected within the defined ranges so that as the temperature increases in the temperature range, the contact time decreases in the time range, and as the water content increases in the water content range, the temperature decreases in the temperature range, thereby insuring the least amount of embrittlement in the dry state consistent with improved wet rigidity.

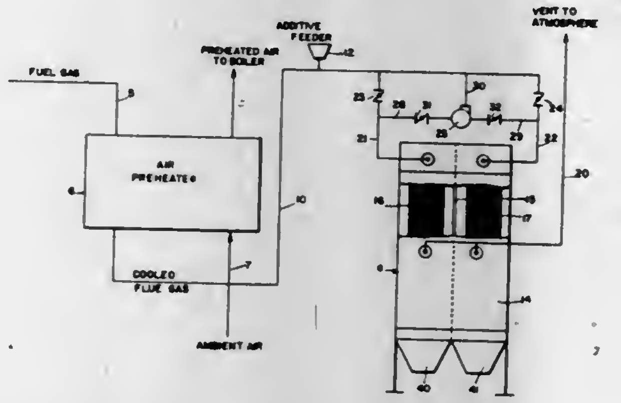
3,310,364
METHOD OF STERILIZING HYGIENIC PAPER WARE

Robertus Cornelis Johannes Maria Rijssenbeek, Nijmegen, Netherlands, assignor to N.V. Papierfabriek Gennep, Gennep, Netherlands, a corporation of the Netherlands
No Drawing. Filed May 19, 1965, Ser. No. 457,159
Claims priority, application Netherlands, Dec. 6, 1961, 272,221
2 Claims. (Cl. 21—2)

1. A method of sterilizing hygienic paper ware comprising preparing moisture absorbent paper material of which at least a part has an enhanced wet strength and includes 0.5–4% by weight based on said part of a partially cured formaldehyde resin distributed therein and adapted for enhancing said wet strength of said paper material, said resin being selected from the group consisting of phenol formaldehyde resins, urea formaldehyde resins and melamine formaldehyde resins, said resin being introduced into the paper pulp during the preparation of the paper material and partially cured to form a resin containing a substantial quantity of $-CH_2OH$ groups capable of releasing free formaldehyde on heating, at temperatures from at least about 60° C., enclosing said paper material in a bacteria impermeable envelope capable of resisting a sterilization temperature to be applied thereto, and dry heating the material in said envelope at a temperature within the range of from 60 to 150° C. for at least 30 minutes and sufficiently long to sterilize the paper material by the action of the formaldehyde vapor which is thereby released.

3,310,365
FLUE GAS PROCESS

Robert H. Dundas, Whittier, and Albert E. Gosselin, Los Angeles, Calif., assignors to Southern California Edison Company, Los Angeles, Calif., a corporation of California
Filed Oct. 30, 1962, Ser. No. 234,177
11 Claims. (Cl. 23—2)



1. In a process for operation of an oil-fired steam generator of the type having an air preheater and utilizing a fuel comprising a sulfur-containing oil, the step comprising passing the hot gaseous products of combustion containing sulfur trioxide through said air preheater in heat-exchange relation with ambient air under conditions such that the CEMT is in the range of between about one hundred and seventy degrees Fahrenheit and one hundred and twenty degrees Fahrenheit and such that an aerosol of hydrated sulfur trioxide is formed which is passed through and out of said air preheater.

4. The process of claim 1, including the steps of entraining a finely divided solid alkaline material into the cooled gases, and passing said gases into contact with a filter surface and building up a permeable filter cake of said material on said surface, whereby sulfur trioxide is separated from said gases on said filter cake in the form of the sulfate salt of said material.

3,310,366
METHOD OF TREATING EXHAUST GASES

Karl Hermann Koepernik, Hannover, Germany, assignor to Kali-Chemie Aktiengesellschaft, Hannover, Germany, a corporation of Germany
No Drawing. Filed Dec. 18, 1962, Ser. No. 245,397
Claims priority, application Germany, Dec. 20, 1961, K 45,482
3 Claims. (Cl. 23—2)

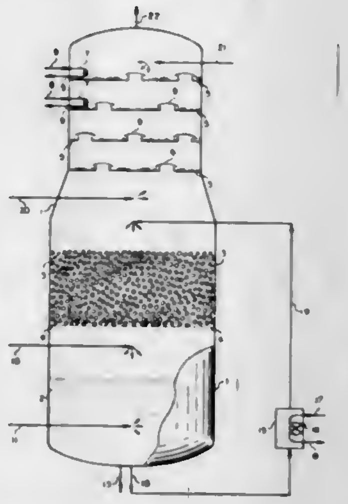
1. In a process of catalytically effecting substantially complete combustion of exhaust gases from internal combustion engines, the step which comprises passing the exhaust gases with the addition of secondary air at the reaction temperature over and through a catalyst bed consisting of extruded catalyst bodies obtained by process steps which consist in

- (a) adding ammonia to an aluminum salt solution to precipitate aluminum hydroxide gel,
- (b) drying said gel,

(c) grinding said dried gel to a particle size smaller than 100μ,
(d) mixing said dried and ground gel with dilute acetic in an amount sufficient to peptize the dried gel and to produce a mixture of a consistency suitable for extrusion,
(e) extruding said mixture to catalyst carrier bodies,
(f) drying said carrier bodies,
(g) calcining said dried carrier bodies at a temperature between about 900° C. and about 1300° C.,
(h) impregnating said calcined carrier bodies with metal compounds catalytically effecting combustion of exhaust gases,
(i) drying the impregnated catalyst bodies, and
(j) calcining the dried bodies at a temperature of at least 800° C.

3,310,367
PROCESS AND APPARATUS FOR THE PRODUCTION OF AMMONIUM CARBONATE

Ivo Mavrovic, New York, N.Y., assignor to Chemical Construction Company, New York, N.Y., a corporation of Delaware
Filed May 22, 1964, Ser. No. 369,511
11 Claims. (Cl. 23—61)



1. Process for the production of ammonium carbonate solution which comprises reacting a feed stream comprising ammonia with a first stream comprising carbon dioxide in an aqueous ammonium carbonate solution, whereby a gas stream containing residual unabsorbed ammonia is produced, withdrawing a first liquid stream of said solution as product ammonium carbonate solution, withdrawing a second liquid stream of said solution, cooling said second liquid stream, scrubbing said gas stream containing residual unabsorbed ammonia with said cooled second liquid stream, whereby a major portion of said residual unabsorbed ammonia is absorbed into said second liquid stream, combining said second liquid stream containing absorbed ammonia with said aqueous ammonium carbonate solution, adding a second stream comprising carbon dioxide to the residual gas stream from said scrubbing step, cooling and refluxing the mixed gas stream, adding sufficient liquid water to the gas stream during said refluxing step to dissolve residual ammonia into the liquid reflux phase as ammonium carbonate, and removing a residual gas stream containing carbon dioxide and free of ammonia from said refluxing step.

9. Apparatus for the production of ammonium carbonate solution by reaction of ammonia and carbon dioxide which comprises a reaction vessel, said vessel having a lower reservoir chamber containing aqueous ammonium carbonate solution, means for gas-liquid contact within said vessel above said reservoir chamber, a gas reflux section within said vessel above said means for gas-liquid contact, said gas reflux section being provided with bubble cap trays and means for gas cooling, means to admit ammonia and a first stream of carbon dioxide into said reservoir chamber, means to withdraw a first stream of product aqueous ammonium carbonate solution from said reservoir chamber, a heat exchanger external to said reaction vessel, means to pass a second stream of aqueous ammonium carbonate solution from said reservoir chamber through said heat exchanger, whereby said second stream of aqueous ammonium carbonate solution is cooled, means to return said cooled aqueous ammonium carbonate solution into said reaction vessel above said means for gas-liquid contact, means to admit a second stream of carbon dioxide into said reaction vessel between said means for gas-liquid contact and said gas reflux section, means to admit liquid water into said gas reflux section, and means above said gas reflux section to remove excess gaseous carbon dioxide free of ammonia.

3,310,368
PRODUCTION OF ZEOLITES AND LITHIUM SALTS

Maurice Archambault, Quebec, Quebec, Canada, assignor to Ministere des Richesses Naturelles, Province de Quebec, Quebec, Quebec, Canada
No Drawing. Filed June 14, 1963, Ser. No. 287,766
Claims priority, application Canada, June 20, 1962, 852,030
7 Claims. (Cl. 23—63)

5. A process for deriving from calcined lithium-bearing aluminosilicate an ion exchanging zeolite and lithium carbonate, comprising, heating said aluminosilicate under agitation with a solution consisting of aqueous sodium carbonate in excess of the stoichiometric amount required by the lithium present in the aluminosilicate under solid-liquid contact conditions at a pressure within the range from atmospheric to about 15 p.s.i.g. and a temperature within a range from about 60° C. to about 125° C. whereby substantially all the starting aluminosilicate is converted into ion exchanging zeolite and lithium carbonate thereby providing a mixture of said ion exchanging zeolite and lithium carbonate.

3,310,369
PROCESS FOR PRODUCING ANHYDROUS AMMONIUM BIFLUORIDE FROM AN AQUEOUS SOLUTION OF AMMONIUM FLUORIDE

John A. Peterson, Niagara Falls, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed May 27, 1964, Ser. No. 370,703
3 Claims. (Cl. 23—88)

1. A process for producing anhydrous ammonium bifluoride which comprises heating an aqueous solution of ammonium fluoride in a dehydration zone at a temperature of from about 150 to 230° centigrade and a pressure from atmospheric to thirty millimeters of mercury, evolving gaseous water vapor, ammonia and hydrogen fluoride from said ammonium fluoride solution by said heating, removing the thus-evolved gases from contact with the ammonium fluoride solution in the dehydration zone, passing the thus-removed gases into a reaction zone, reacting the said gases in the reaction zone at a temperature from about 100 to 140° centigrade to form a fluoride-enriched ammonium bifluoride, condensing the thus-formed fluoride-enriched ammonium bifluoride, separating the thus-condensed fluoride-enriched ammonium bifluoride from unreacted ammonia and water vapor in said reaction zone, passing the unreacted ammonia and water vapor through said reaction zone, recycling the separated, condensed fluoride enriched ammonium bifluoride to the ammonium fluoride solution in the dehydration zone, repeating the process until substantially all the water has been removed from the ammonium fluoride starting material and recovering an ammonium bifluoride product containing less than about 1% moisture.

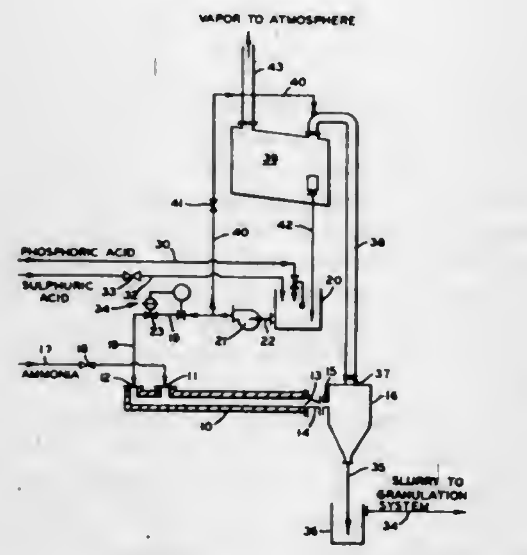
3,310,370
PROCESS FOR REMOVING HEAVY METAL CONTAMINANTS FROM POTASSIUM CHLORIDE SOLUTIONS

Kenneth K. Kendall, Jr., Anaheim, Calif., assignor to United States Borax & Chemical Corp., Los Angeles, Calif., a corporation of Nevada
No Drawing. Filed Dec. 18, 1964, Ser. No. 419,596
6 Claims. (Cl. 23—89)

1. A process for the production of potassium chloride substantially free of chromium, lead and copper impurities which comprises adding an aqueous solution of sodium silicate to a hot potassium chloride solution containing said impurities; maintaining said hot, sodium silicate treated potassium chloride solution at an elevated temperature for a sufficient period of time to form a flocculent precipitate; separating from said solution the flocculent precipitate; and cooling said solution thereby crystallizing substantially chromium, lead and copper impurity-free potassium chloride therefrom.

3,310,371
PRODUCTION OF AMMONIUM PHOSPHATE

William A. Lutz, Weston, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Oct. 30, 1962, Ser. No. 234,160
5 Claims. (Cl. 23—107)



1. A process for producing ammonium phosphate by reacting wet process phosphoric acid with ammonia which comprises, establishing and maintaining a confined reaction zone having means for introducing the materials to be reacted at one end thereof and means for discharging the reacted material at the other end thereof, introducing into said reaction zone aqueous wet process phosphoric acid at least a portion of which has been subjected to partial neutralization with the unreacted ammonia separated from the reaction mixture obtained during the previous reaction of phosphoric acid and ammonia, simultaneously introducing into said reaction zone ammonia, thus forming ammonium phosphate and by-product steam, allowing said steam to create a positive pressure within said reaction zone, utilizing said steam to convey the thus formed ammonium phosphate toward said discharge means, continuously discharging said ammonium phosphate into a separation zone, and wherein the thus formed ammonium phosphate is separated from said steam and unreacted ammonia, and recovering said unreacted ammonia by contacting feed acid with said ammonia prior to introduction into the reaction zone.

3,310,372
PROCESS FOR THE MANUFACTURE OF ALKALINE EARTH METAL PYROPHOSPHATES

Felix Wright, Kirkwood, and Tom Dolan, Des Peres, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Mar. 18, 1963, Ser. No. 266,014
5 Claims. (Cl. 23—108)

1. In a process for the manufacture of an alkaline-earth metal pyrophosphate, wherein a di-alkaline earth metal orthophosphate is heated in a calcining step to molecularly dehydrate substantially all of said orthophosphate, the improvement which comprises heating said di-alkaline earth metal orthophosphate in an atmosphere which contains from about 10% to about 60% by volume of water vapor.

3,310,373
METHOD FOR PRODUCING CRYSTALLINE ALUMINOSILICATES

George C. Johnson, Woodbury, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Apr. 3, 1963, Ser. No. 270,163
5 Claims. (Cl. 23—112)

1. A method for accelerating growth of crystalline aluminosilicates derived from amorphous reactant mixtures containing precursor components of said aluminosilicate which comprises crystallizing said reactant mixture in aqueous suspension under conditions of attrition in a grinding device whereby crystalline particles, as they are formed, are continuously comminuted to a finely divided size less than 5 microns.

3,310,374
PROCESS FOR REMOVING IRON FROM PHOSPHORIC ACID

Bob Posey, Jr., Plaquemine, and Ted E. Varnado, Jr., Baton Rouge, La., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 6, 1962, Ser. No. 242,607
7 Claims. (Cl. 23—165)

1. A method for removing iron from an aqueous phosphoric acid solution containing iron which consists essentially of:
(1) treating said solution with a sufficient amount of an oxidizing agent to convert substantially all the iron present to FeIII;
(2) adding sufficient chloride to provide in the aqueous solution a mole ratio of HCl to FeIII of at least four; and
(3) extracting FeIII from the solution, with an amine extractant consisting essentially of:
  (a) at least one member of the group consisting of water-insoluble organic amines and inorganic salts thereof, said amines having the structure:

$$R_1R_2R_3N$$

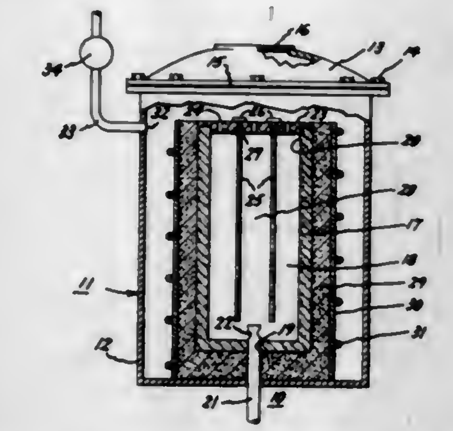
  wherein R_1 is selected from the group consisting of benzyl and C_6–C_{20} alkyl radicals, and R_2 and R_3 are independently selected from the group consisting of H, benzyl, and C_1–C_{20} alkyl radicals, and
  (b) a liquid hydrocarbon solvent containing at least 35 weight percent aromatic hydrocarbons.

3,310,375
METHOD OF FORMING A SHEET

Russell J. Diefendorf, Ballston Spa, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 11, 1964, Ser. No. 366,503
3 Claims. (Cl. 23—191)

1. A method of forming a sheet which comprises providing a body with a plurality of generally parallel pyrolytic boron nitride layers, and with an alternate

layer of material having different properties from pyrolytic boron nitride located between each pair of adjacent pyrolytic boron nitride layers said material being nonreactive with the pyrolytic boron nitride and permitting the penetration of intercalation material in fluid form into the body thereof, contacting said body with intercalation material in fluid form, said intercalation material being selected from the group consisting of an electron acceptor material with high electron affinity and an electron donor material with a low ionization potential, whereby said intercalation material enters said alternate layers decreasing the strength thereof and thereby decreasing the continuity between said pyrolytic boron nitride layers, and separating said boron nitride layers as sheets.

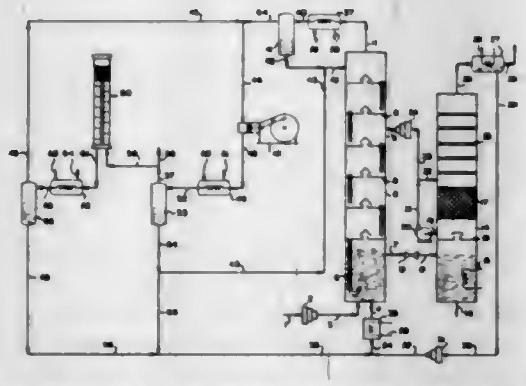


3,310,376

PROCESS FOR COMBINED PRODUCTION OF AMMONIA AND UREA

Lucien H. Cook, Port Washington, and Ivo Mavrovic, New York, N.Y., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 9, 1963, Ser. No. 307,669
11 Claims. (Cl. 23—199)



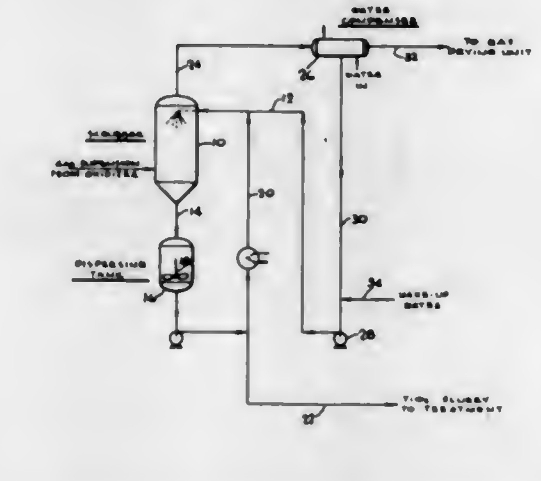
1. In an ammonia synthesis process in which a hydrocarbon is reformed with steam and air to produce a crude reformed gas mixture principally containing hydrogen, nitrogen, carbon monoxide and steam, the carbon monoxide in the crude reformed gas mixture is catalytically reacted with steam to produce further hydrogen and carbon dioxide, thereby forming a final reformed gas mixture principally containing hydrogen, nitrogen and carbon dioxide, the final reformed gas mixture is processed to remove carbon dioxide, the resulting ammonia synthesis gas stream is passed to catalytic ammonia synthesis at elevated pressure, and the ammonia synthesis effluent gas stream is cooled to condense and separate liquid ammonia, the improvement which comprises compressing the final reformed gas mixture containing hydrogen, nitrogen and carbon dioxide to elevated urea and ammonia synthesis pressure, reacting the compressed reformed gas mixture with said liquid ammonia under urea synthesis conditions, whereby carbon dioxide in said final reformed gas mixture is converted to urea in a liquid phase and separated from the residual reformed gas mixture, and passing the residual gas phase comprising hydrogen, nitrogen and ammonia vapor from urea synthesis to ammonia synthesis.

3,310,377

PROCESS FOR TREATING A GASEOUS MIXTURE CONTAINING TITANIUM DIOXIDE

David R. Stern, Fullerton, and Richard M. Gundzik, San Bernardino, Calif., assignors to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

Filed Aug. 13, 1964, Ser. No. 389,423
3 Claims. (Cl. 23—202)



1. In a process for treating a hot mixture of solid titanium dioxide particles in gases including titanium tetrachloride vapor, oxygen, chlorine and hydrogen chloride to recover said titanium dioxide particles therefrom, said hot mixture having a temperature within the range of from about 300° C. to about 1,000° C., the improvements which comprise: continuously contacting said hot mixture with a cooled circulating water dispersion of previously recovered titanium dioxide particles to remove substantially all of said hot titanium dioxide particles from said hot mixture and form a reaction dispersion in which said removed TiO_2 particles are dispersed, continuously recovering a portion of said reaction dispersion in a form such that it is suitable for immediate surface treatment and continuously cooling and adding water to the remainder of said reaction dispersion and circulating it into contact with additional quantities of said hot gaseous mixture; said hot gaseous mixture being provided with sufficient hydrolyzable titanium tetrachloride vapor to continuously form acid-soluble titanium compounds and maintain the pH of the dispersion below about 4.

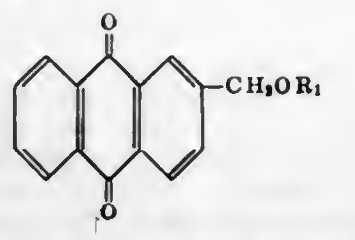
3,310,378

MANUFACTURE OF HYDROGEN PEROXIDE FROM COMPOUNDS WITH AN ANTHRAQUINONE NUCLEUS

André Etienne, Paris, and Georges Izoret, Boulogne, France, assignors to L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude

No Drawing. Filed Dec. 12, 1962, Ser. No. 244,005
Claims priority, application France, Dec. 21, 1961, 882,735, Patent 1,317,258
2 Claims. (Cl. 23—207)

1. A method for the manufacture of hydrogen peroxide through alternate reductions and oxidations of at least one compound having an anthraquinone nucleus, characterized in that the said compound is an ether of 2-hydroxymethyl-anthraquinone and of a non-tertiary alcohol the radical of which cannot be hydrogenated under the conditions of the hydrogenation of the quinone function, said ether having the general formula:



wherein R_1 is a residue of a non-tertiary alcohol and is a member selected from the group consisting of saturated alkyl, haloalkyl, hydroxyalkyl, alkoxyalkyl, dihydroxyalkyl, dialkoxyalkyl, arylalkyl and cycloalkyl radicals.

3,310,379

PROCESS AND APPARATUS FOR THE PRODUCTION OF CARBON BLACK

Fletcher A. Hinson, Aransas Pass, William R. Wright, Rockport, and Kenneth E. Powell, Houston, Tex., assignors to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky

Filed Mar. 7, 1963, Ser. No. 263,663
10 Claims. (Cl. 23—209.4)

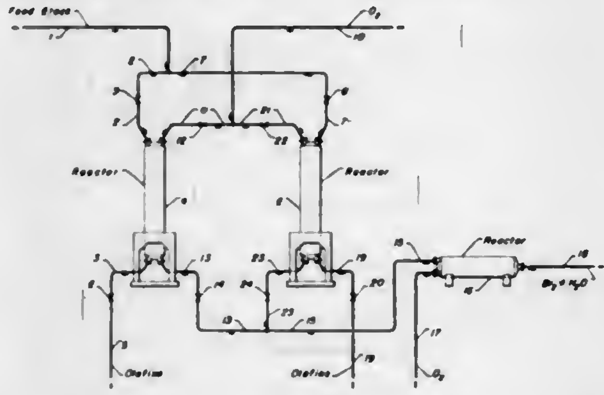
1. In a carbon black process wherein input materials including process air, fuel and feedstock are continuously charged to a combustion zone and converted therein to a hot gaseous effluent containing carbon black in suspension and at least one of said input materials is preheated prior to its entry into the combustion zone by indirect heat exchange with the effluent, the improvement which comprises: maintaining the preheat temperature of said preheated input material at a relatively constant temperature by sensing the temperature of said preheated input material subsequent to preheating but prior to its entry into said combustion zone; and regulating the transfer of heat to said at least one input material in response to the sensed temperature of said preheated input material by varying the rate of flow of effluent to the heat exchange step in response to said sensed temperature.

3,310,380

BROMINE RECOVERY

George R. Lester, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Feb. 13, 1964, Ser. No. 344,731
6 Claims. (Cl. 23—216)



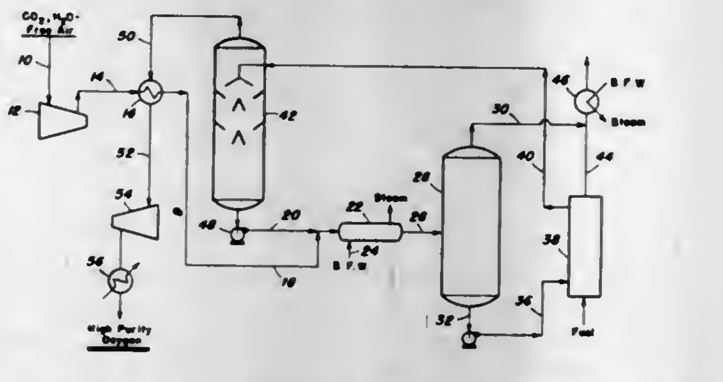
1. In a process for the recovery of bromine by passing a hydrocarbon stream containing combined bromine into a first reactor containing a catalytic-adsorbent composite selected from the group consisting of an oxide of copper and cerium on an oxide of a metal selected from the group consisting of magnesium, calcium and zinc, to dehydrobrominate same to produce unsaturated hydrocarbons and hydrogen bromide, contacting said stream with said composite and sorbing hydrogen bromide on the composite, recovering unsaturated hydrocarbons, and thereafter contacting said composite with an oxygen-containing gas at oxidation conditions to oxidize sorbed hydrogen bromide to bromine and water, the improvement which comprises passing the resultant first reactor effluent comprising bromine, water and unreacted hydrogen bromide into a second reactor, contacting said effluent in admixture with an oxygen-containing gas and at oxidation conditions in the second reactor with a catalytic-inert support composite selected from the group consisting of an oxide of copper and cerium on a substance selected from the group consisting of zirconia, alpha-alumina and theta-alumina and therein directly oxidizing the unreacted hydrogen bromide to bromine, and recovering the resultant elemental bromine.

3,310,381

PROCESS FOR PRODUCING HIGH PURITY OXYGEN BY CHEMICAL MEANS

Salvatore A. Guerrieri, Rowayton, Conn., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed Oct. 20, 1965, Ser. No. 498,221
9 Claims. (Cl. 23—221)



1. Process for continuous production of high purity oxygen comprising:

(a) mixing air, solid barium oxide and liquid barium peroxide in a first zone under conditions controlled to oxidize at least a portion of said barium oxide to barium peroxide;
(b) separating oxygen-depleted air from the mixture of step (a);
(c) passing said mixture to a second zone maintained at conditions controlled to reduce a portion of said barium peroxide to solid barium oxide and oxygen;
(d) continuously withdrawing high purity oxygen from said second zone; and
(e) recycling the mixture of solid barium oxide and liquid barium peroxide remaining after step (d) to step (a).

2. The process as claimed in claim 1, wherein said first zone is maintained at a temperature in the range of about 500° C. to about 720° C. and a pressure within the range of about 1 to about 4 atmospheres, and said second zone is maintained in the range of about 700° C. to about 850° C. and a pressure in the range of 0.1 to about 1 atmosphere.

3,310,382

BIURET REAGENT

George R. Kingsley, 621 Bonhill Road,
Los Angeles, Calif. 90049

No Drawing. Filed Feb. 4, 1963, Ser. No. 256,132
8 Claims. (Cl. 23—230)

8. A process for protein determination comprising adding a solid, substantially dry biuret reagent comprising a soluble copper salt, a basic compound selected from the group consisting of sodium orthophosphate, lithium hydroxide, sodium carbonate and sodium metasilicate; and sodium tartrate to water to form a biuret reagent solution; adding two parts by volume of a protein-con-

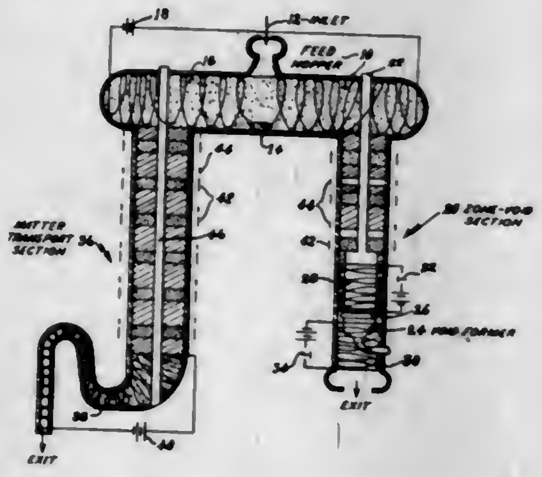
taining solution to four parts by volume of the biuret reagent solution; mixing said protein-containing solution and said biuret reagent; allowing said mixture to stand for a time sufficient for completion of color development; and measuring the intensity of said color.

3,310,383
CONTINUOUS MULTI-STAGE VOID DIFFERENTIAL-DENSITY HYBRID ZONE MELTING APPARATUS

John K. Kennedy, West Roxbury, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed June 1, 1964, Ser. No. 371,858

1 Claim. (Cl. 23—273)



Apparatus for separating the ingredients of a fusible material comprising a substantially horizontal feed hopper, heating means around said hopper for maintaining the material in a molten state, a pair of vertically oriented containers depending from said feed hopper, a void former proximate to the lowermost end of one of said pair of containers, timed heating means around said container adjacent said void former, said other of said pair of containers having an outlet at its portion opposite said feed hopper, said other of said pair of containers and its outlet forming a U-bend, heating means for maintaining the material in said outlet in a molten state, means along each of said containers for causing alternately hot and cold zones within said containers, and means for moving said last-mentioned means along said containers.

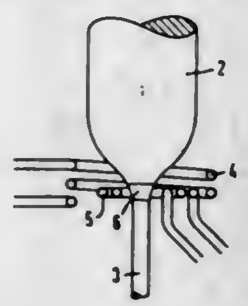
3,310,384
METHOD AND APPARATUS FOR CRUCIBLE-FREE ZONE MELTING

Wolfgang Keller, Pretzfeld, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed May 26, 1965, Ser. No. 458,944

Claims priority, application Germany, June 23, 1964, S 91,655

4 Claims. (Cl. 23—301)



2. Apparatus for crucible-free zone melting a vertically mounted crystalline rod of relatively large diameter joined at one end to a seed crystal of relatively small diameter, comprising a first induction coil surrounding the seed crystal at its junction with the rod and having an inner diameter only slightly larger than the diameter of the seed crystal, said first induction coil being energizable for heating the seed crystal to a temperature at which a melting zone is formed therein and the seed crystal is fused to the rod, and a second induction coil coaxial to and surrounding said first induction coil, said second induction coil having an inner diameter slightly larger than the diameter of the rod and being energizable for applying heat to the melting zone so that it is maintained in molten state.

3,310,385
METHOD OF EXTRACTING URANIUM

Benedict L. Vondra, Jr., Greensburg, Pa., assignor to Nuclear Materials and Equipment Corporation, Apollo, Pa., a corporation of Pennsylvania

No Drawing. Original application Dec. 8, 1961, Ser. No. 158,099, now Patent No. 3,208,816, dated Sept. 28, 1965. Divided and this application Nov. 6, 1964, Ser. No. 409,595

5 Claims. (Cl. 23—339)

1. The method of extracting uranium from a solution which includes uranium in the hexavalent state, the said method being characterized by the steps of adding a beryllium nitrate to said solution to derive NO_3^- ions to convert said uranium to a nitrate complex and extracting said uranium as a nitrate with a liquid of the class consisting of tri-butyl-phosphate and methyl-isobutyl-ketone.

3,310,386
PREPARATION OF PLUTONIUM OXIDE SOL AND CALCINED MICROSPHERES

Milton H. Lloyd, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Sept. 10, 1965, Ser. No. 486,572

5 Claims. (Cl. 23—344)

1. A method for preparing a plutonium oxide sol for nuclear reactor fuel fabrication comprising the steps of:

(a) rapidly precipitating hydrous plutonium oxide from a nitric acid solution containing tetravalent plutonium by neutralization of plutonium nitrate and excess acid with a strong base,
(b) washing the resulting precipitate,
(c) dispersing said precipitate in an aqueous solution containing between 1–4 moles nitric acid per mole of plutonium,
(d) heating the resulting dispersion under agitation at a temperature between 60°–80° C. until a first sol is formed,
(e) evaporating said first sol to dryness,
(f) heating the resulting dried solid at a temperature below 200° C. until the residual nitrate content is 0.4 to 0.1 mole per mole plutonium, and
(g) dispersing the resulting solid in water hereby forming a second, low-nitrate stable sol.

5. Calcined plutonia microspheres having a density of at least 95% theoretical and an average particle diameter between 1–1000 microns.

3,310,387
BRAKE LINING MATERIALS AND ARTICLES MADE THEREFROM

Cord H. Sump, Chatanooga, Tenn., and Sherwood W. McGee, Lisle, Ill., assignors to IIT Research Institute, Chicago, Ill., a corporation of Illinois

Continuation of abandoned application Ser. No. 51,709, Aug. 24, 1960. This application Jan. 4, 1965, Ser. No. 425,109

6 Claims. (Cl. 29—182.5)

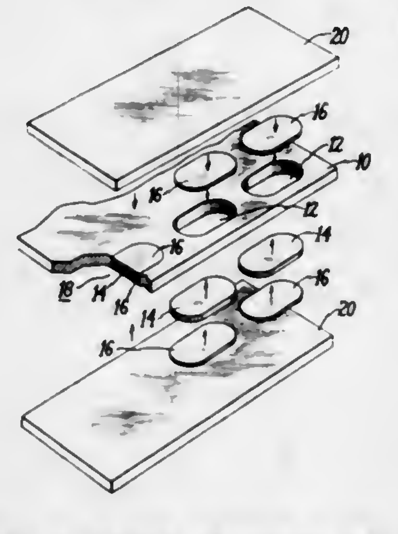
1. A friction material consisting essentially of: a substantially autogenously bonded, randomly oriented, fiber metal support, each fiber of said support being kinked and having a length ranging from 0.002 to 2.0 inches, a mean dimension in cross section of from 0.00025 to 0.01 inch, and a length to mean dimension in cross section ratio of at least 10 to 1, said fiber metal being selected from the group consisting of molybdenum, vanadium, nickel, titanium, iron, tantalum, zirconium, niobium, thorium, cobalt, chromium and tungsten, and alloys and mixtures thereof, said fiber metal support comprising 20% to 80% by volume of said friction material, and a refractory ceramic comprising the balance thereof, said refractory ceramic being bonded to said fiber metal support by a material selected from the group consisting of silicon and ferrosilicon.

3,310,388
METHOD OF JOINING ALUMINUM AND A DISSIMILAR METAL AND JOINT FORMED BY SUCH METHOD

Moreland P. Bennett, Pittsfield, and Harold D. Rainforth, Richmond, Mass., assignors to General Electric Company, a corporation of New York

Filed Dec. 23, 1963, Ser. No. 332,353

8 Claims. (Cl. 29—197)



1. A method of joining aluminum and a dissimilar metal comprising the steps of forming apertures in the aluminum to be joined, then forming a sandwich structure of the aluminum with a silver brazing alloy at least in the apertures of the aluminum and a dissimilar metal above and below the aluminum, heating the sandwich structure until the brazing alloy melts, then cooling to provide a desired low resistance, high mechanical strength bond.

6. A joint between dissimilar metal and aluminum comprising an aluminum member and a pair of dissimilar metal members in bonded relation, said bond comprising a silver brazing alloy bonding said dissimilar metal members through an aperture in said aluminum and an alloy of said silver braze and said aluminum.

3,310,389
SHEETS OF ALUMINUM ALLOY AND METHODS OF MANUFACTURING SAME

William Michael Doyle, Slough, England, assignor to High Duty Alloys Limited

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,830

Claims priority, application Great Britain, Oct. 2, 1963, 38,861/63

14 Claims. (Cl. 29—197.5)

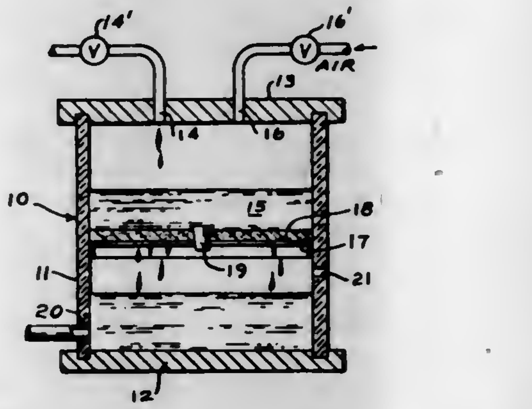
11. Clad aluminium sheet produced by the steps of forming a hot-rolled slab of an alloy consisting essentially of 2.2 to 2.7 percent by weight copper, 1.3 to 1.7 percent by weight magnesium, 0.12 to 0.25 percent by weight silicon, 0.9 to 1.2 percent by weight iron, 0.9 to 1.4 percent by weight nickel, 0.02 to 0.15 percent by weight titanium and the remainder aluminium, and having cladding of material selected from the group consisting of commercially pure aluminium, aluminium containing not substantially less than 0.8 and not substantially more than 1.2 percent by weight of zinc, and a heat-treatable corrosion-resistant aluminium base alloy consisting essentially of 0.4 to 1.4 percent by weight magnesium, 0.2 to 1.3 percent by weight silicon, 0.0 to 1.0 percent by weight manganese, 0.0 to 0.3 percent by weight chromium, about 0.8 to about 1.2 percent by weight zinc and the remainder aluminium, subjecting said slab to a plurality of cold rolling reductions each of which is not substantially less than 12% and not substantially more than 50%, subjecting the cold-rolled sheet to solution heat-treatment for not substantially less than 15 minutes and not substantially more than 50 minutes at a temperature not substantially less than 525° C. and not substantially more than 545° C., and quenching and then artificially ageing the sheet.

3,310,390
ELECTRICALLY CONDUCTIVE ABRASIVE BODIES

Aditya K. Nehru, Washington, D.C., and Nam P. Suh, Pittsburgh, Pa., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Mar. 27, 1962, Ser. No. 182,739

4 Claims. (Cl. 51—295)



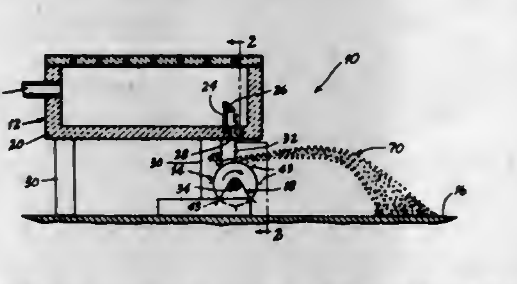
1. An improved electrically conductive grinding wheel comprising, a porous abrasive body portion having low electroconductivity, a first coating of electrically conductive copper material electrolessly deposited on surface portions of interconnected foramina of said porous body portion and extending completely therethrough to form a plurality of continuous electrically conductive paths, and a second coating of electrically conductive nickel material formed on the outer surfaces of said porous body portion to protect the first electrically conductive material from corrosive attack.

3,310,391
METHOD OF AND APPARATUS FOR PRODUCTION OF GLASS BEADS BY USE OF A ROTATING WHEEL

Preston D. Law, St. Louis, Mo., assignor to Flex-O-Lite Manufacturing Corporation, St. Louis, Mo., a corporation of Missouri

Filed Aug. 31, 1962, Ser. No. 220,817

10 Claims. (Cl. 65—21)



1. A process for manufacturing glass beads which comprises dispensing a free falling molten glass stream of

relatively low viscosity upon the periphery of a rapidly rotating wheel, said wheel having radially projecting dispersing elements on its outer periphery, cooling the entire periphery of said wheel to minimize the formation of glass where it contacts said wheel and to further increase the viscosity of the contacting glass, dispersing the increased viscosity molten glass stream into space in a directed path of dispersed droplets by contact with said dispersing elements, permitting said dispersed droplets to be shaped into spherical form by surface tension, cooling said spheres to solidify the same and collecting the spheres.

2. Apparatus for manufacturing glass beads which comprises means for dispensing molten glass of relatively low viscosity in a free falling glass stream, means for dispersing said glass stream into a free space in a directed path of droplets, said dispersing means comprising a rotating wheel member positioned underneath said free falling glass stream, said wheel member being provided with radially projecting dispersing elements on its outer periphery adapted to contact said glass stream and disperse it into said path of droplets to permit the forming spherical glass beads by surface tension, said wheel member having cooling means to minimize formation of glass upon said dispersing elements.

3,310,392
ELECTRICAL CAPACITOR MANUFACTURE
Eugene G. Rhodes, Bradford, Pa., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Mar. 19, 1962, Ser. No. 180,662
7 Claims. (Cl. 65—54)

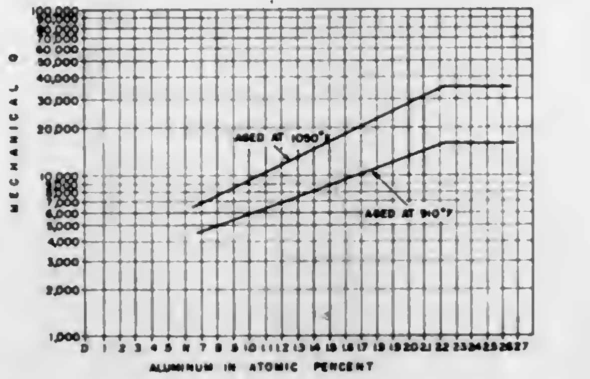
1. The method of manufacturing capacitors comprising forming a capacitor stack consisting of a plurality of thin glass strips separated by thin metallic foils having leads attached thereto disposed within glass covers, heating said stack to a temperature of about the softening point of the glass thereof thereby adhering adjacent components, applying gas pressure to said stack before any entrapped air within said stack transforms into spherical bubbles and maintaining said pressure until said stack is hermetically sealed and said entrapped air is compressed into small substantially spherical bubbles, reducing said temperature to below the softening point of said glass, and thereafter removing said pressure.

3,310,393
METALLURGICAL PROCESS
Leonard L. Cogen, Newark, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 5, 1963, Ser. No. 300,102
1 Claim. (Cl. 75—60)

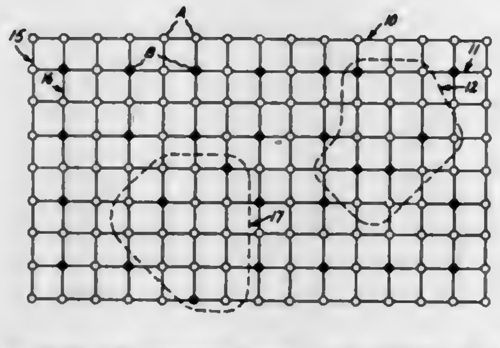
In a method of refining a molten steel bath by reacting oxygen therewith, the step of blowing a stream of oxygen through a lance having a nozzle discharge end composed of an alloy consisting essentially of 0.05% to 0.2% zirconium by weight and the remainder of initially oxygen-free copper.

3,310,394
NICKEL ALLOYS POSSESSING CONTROLLED MECHANICAL Q PROPERTIES
Marvin B. Happ, Hingham, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Sept. 17, 1963, Ser. No. 309,430
5 Claims. (Cl. 75—122)

1. An iron-nickel-chromium-titanium group metal alloy having a predetermined mechanical Q, low internal friction, and low energy transmission loss; said alloy consisting essentially of nickel in amounts ranging from about 35–50 atomic percent, chromium in an effective amount greater than 0 but less than or equal to about 17 atomic percent, titanium in an effective amount greater than 0 but less than or equal to about 17 atomic percent, and a metal material X selected from a group consisting of aluminum, columbium, molybdenum, tantalum, thorium, vanadium or tungsten ranging in precontrolled amounts greater than 3 but less than or equal to about 17 atomic percent where the X metal material forms an Ni_3X precipitate with nickel, and the remainder iron; said Q of said alloy increasing exponentially to about 35,000 with the addition of X in said aforementioned amounts.



3,310,395
SUPERCONDUCTORS CONTAINING A FISSIONABLE METAL OR BORON IMPURITY
Paul S. Swartz and Robert L. Fleischer, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Aug. 27, 1964, Ser. No. 392,542
8 Claims. (Cl. 75—122.5)



1. An article of manufacture comprising a body composed of a superconductive metal alloy of the substitutional type containing a fissionable or boron impurity in amounts not exceeding the solubility limit of the impurity in the alloy, said body having partial disordering of the atomic structure.

4. A process for increasing the superconducting current density of atomically ordered superconductive metal alloy of the substitutional type containing a fissionable or boron impurity in amounts not exceeding the solid solubility limit of the impurity in the alloy, said process comprising subjecting the alloys to a radiation dose of not less than about 1×10^{15} thermal neutrons to effect partial disordering of the atomic structure of the alloys and thereby increase the size of the superconducting current densities.

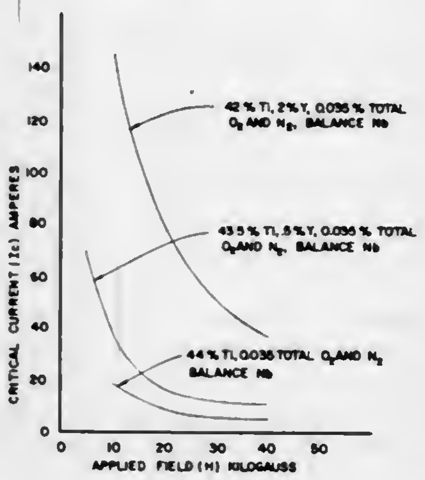
3,310,396
HIGH-TEMPERATURE CORROSION-RESISTANT AUSTENITIC STEEL
Joseph Hochmann, Fraisse, France, assignor to Compagnie des Ateliers et Forges de la Loire (St-Chamond-Firminy-St-Etienne-Jacob-Holtzer), Paris, France
No Drawing. Filed June 10, 1964, Ser. No. 374,177
Claims priority, application France, June 19, 1963, 938,626
5 Claims. (Cl. 75—128)

1. A corrosion-resistant composition of austenitic steel consisting essentially of, by weight, substantially 0.4–0.8% carbon, 18–23% chromium, 7–12% manganese, 2–5% nickel, 0.2–0.5% nitrogen, 0.45–0.80% silicon, and from about 0.1 to about 1.0% niobium, the balance being substantially iron.

3,310,397
METHOD OF INOCULATING MOLTEN CAST IRON
Andrei Andreevich Gorshkov and Mikhail Vasiljevich Voloshchenko, Kiev, U.S.S.R., assignors to Institute Liteinogo Proisvodstva
No Drawing. Filed July 18, 1963, Ser. No. 296,119
2 Claims. (Cl. 75—130)

1. A method for producing spheroidal graphite in cast iron comprising adding 0.1–0.3 percent naphthalene to molten cast iron.

3,310,398
ELECTRICAL MATERIALS AND DEVICES
George D. Kneip, Jr., Houston, Tex., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 14, 1964, Ser. No. 389,686
2 Claims. (Cl. 75—134)



1. A superconducting alloy comprising, by weight, from about 30 to about 60% titanium, about 2.0% yttrium, oxygen and nitrogen being present, the sum total of which ranging between about 0.01 and about 0.10%, and the balance niobium.

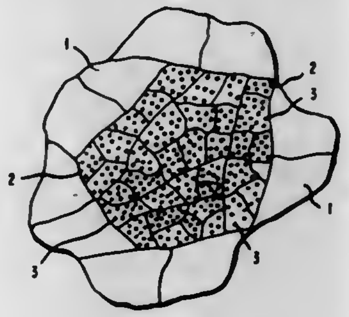
3,310,399
ALLOYS FOR USE AT HIGH TEMPERATURES
James French Baldwin, 78 Forest Ave., Locust Valley, N.Y. 11560
No Drawing. Filed July 10, 1964, Ser. No. 381,932
9 Claims. (Cl. 75—171)

1. A corrosion resistant nickel-base alloy for use at relatively high temperatures consisting essentially of the following elements in the weight percent ranges set forth:

	Percent
Chromium	5–12
Molybdenum	3–8
Tantalum	2.3–10
Cobalt	5–15.5
Titanium	0–7
Aluminum	0–8
Carbon	0–0.25
Boron	0–0.05
Zirconium	0–1.0

the balance of the alloy being essentially nickel, the total of the molybdenum and tantalum being from 5% to 14% and the total of the aluminum and titanium being from 5% to 8.8%.

3,310,400
PROCESS OF MAKING METAL POWDER COMPOSITIONS WHEREIN SOME METAL GRAINS CONTAIN DISPERSED REFRACTORY METAL OXIDE PARTICLES
Guy B. Alexander, Sherwood F. West, and Paul C. Yates, all of Brandywine Hundred, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Original application Jan. 31, 1962, Ser. No. 170,093, now Patent No. 3,218,135, dated Nov. 16, 1965. Divided and this application June 22, 1964, Ser. No. 382,432
5 Claims. (Cl. 75—206)



1. In a process for making powder metal compositions in which there are grains of metal containing dispersed refractory oxide submicron particles bonded to other grains of metal containing no dispersed particles, the steps comprising (1) preparing a dispersion, in a metal, of submicron particles of a refractory metal oxide having a free energy of formation at 1000° C. more than 60 kilocalories per gram atom of oxygen, said dispersion being in the form of a powder and the powder particles comprising metal grains (A), in each of which is dispersed a plurality of the refractory metal oxide particles, (2) mixing this powder with a molten compound (C) of a metal (B) having an oxide with a free energy of formation at 27° C. below 105 kilocalories per gram atom of oxygen, said compound having a melting point below 60% of the melting point of the metal or grains (A), both melting points being in degrees absolute, and the molten compound being at a temperature at least 50° C. below the sintering temperature of grains (A), (3) reducing compound (C) to metal (B) with the reduction being continued until the oxygen content of the product in excess of that present in the refractory oxide particles, is less than about 0.5% by weight, and (4) sintering the product at an elevated temperature below the lower of the melting points of metal (B) and the metal of grains (A) until it has a surface area of less than 10 square meters per gram.

3,310,401
ELECTROPHOTOGRAPHIC MEMBER AND PROCESS UTILIZING POLYARYLMETHANE DYE INTERMEDIATES
Harold Grey Greig, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
No Drawing. Filed Aug. 28, 1963, Ser. No. 305,206
20 Claims. (Cl. 96—1.5)

1. A recording element for electrostatic printing comprising:

a layer comprising a non-halogenated resinous material and at least a trace amount of a mixture of compatible non-volatile halogenated organic compounds;

at least one substantially colorless polyarylmethane dye intermediate dissolved in said layer;

said dye intermediate upon exposure to actinic radiation being reactive with said mixture of compounds to form a dye; and,

said layer having a substantially uniform geometric pattern of discrete areas the centers of which contain little or no amounts of said dye, and which contain increasing amounts of said dye outward from the centers thereof,

said layer having a resistivity in darkness of at least 10^9 ohm-centimeters and at least portions of said discrete areas having a resistivity, when irradiated, of at least two orders of magnitude less than said resistivity in darkness.

13. A method of reproducing a continuous tone image on an insulating layer comprising an organic resinous material having dissolved therein at least one substantially colorless dye intermediate which is reactive upon exposure to actinic radiation with at least a portion of the material in said layer to form a dye and to impart photoconductive properties to said layer, said method comprising:

exposing said layer to an actinic radiation pattern composed of discrete light and dark areas in a geometric pattern to form said dye in said layer in conformity with said pattern;

electrophotographically producing an electrostatic latent image on said layer in conformity with an original graphic image; and

developing said latent image into a visible reproduction of said original graphic image.

3,310,402

PHOTOGRAPHIC COLOUR MATERIAL

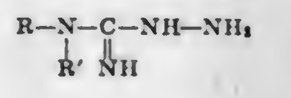
Jan Jaeken, Hove, and Hugo Vital Van Goethem, Berchem-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a Belgian company

No Drawing. Filed May 6, 1963, Ser. No. 278,453

Claims priority, application Great Britain, May 4, 1962, 17,249/62

12 Claims. (Cl. 96—9)

1. A method of forming a colour corrected photographic colour image in a photographic element comprising at least one silver halide emulsion layer and a naphthol colour coupler, for cyan which on development by reaction with the oxidation product of an aromatic primary amino developing agent forms a primary cyan dye image, which absorbs a major proportion of light in one region of the visible spectrum, and undesirably absorbs a minor proportion of light in at least one other reigon of the visible spectrum, which method comprises treating said photographic element, after image-wise exposure and colour development, with an oxidizing solution in the presence of a 3-amino-guanidine compound corresponding to the following general formula:



$$R-\underset{R'}{\underset{|}{N}}-\underset{NH}{\underset{\|}{C}}-NH-NH_2$$

wherein:

R is a member selected from the group consisting of hydrogen, an alkyl radical, an aralkyl radical, an aryl radical and a heterocyclic radical, and

R' is a member selected from the group consisting of hydrogen and an acyl radical,

said method comprising treating said photographic element, after image-wise exposure and colour development, with an oxidizing solution, whereby the colour coupler remaining undeveloped after said colour development reacts with said mask-forming compound to form a secondary dye image absorbing light in at least one such other region of the spectrum and having a gradation opposite to that of the primary dye image but transmitting substantially all of that light absorbed in major proportion by said primary dye image.

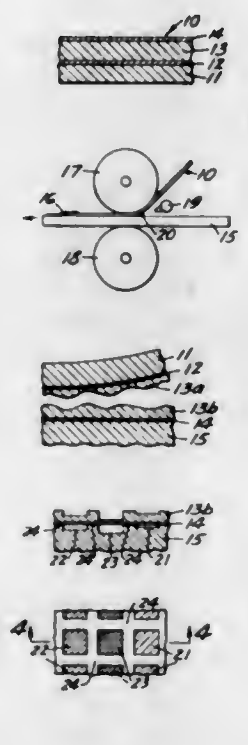
3,310,403

PROCESS OF MAKING AN INTAGLIO PLATE USING AN IMAGE TRANSFER FILM

Thomas T. Bryan, White Bear, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Dec. 26, 1962, Ser. No. 247,054

4 Claims. (Cl. 96—28)



1. A process for preparing an intaglio printing plate from which to print reproductions of a graphic original, said process comprising, in order, the steps of:

A. exposing to a light-image of said original and to a screen pattern light-image a photosensitive transfer sheet consisting essentially of, in order,

(1) a thin flexible emulsion-receptive base,

(2) a firm non-sticky photosensitive layer having a thickness of about .020–.030 mm. and including, in proportions indicated,

(a) photographic gelatin—450 grams,

(b) silver halide—about one-third to three gram moles,

(c) polyalcohol conditioner—about 45 to 90 grams,

(d) coloring agents to provide a color density of 0.5–2.0 at 5000 A., of 0.5–2.5 at 4200 A., and a gray density of 0.5–2.0 and

(3) a water-permeable colloid adhesive surface layer about 0.002–.003 mm. in thickness;

B. developing the latent silver image with a tanning developer to tan and insolubilize the gelatin in the light-struck areas;

C. bringing the sheet essentially to equilibrium with an aqueous conditioner solution containing one part of water-soluble polyalcohol conditioner in from about 3 to about 40 parts of water and at a pH of between about 3 and about 9, and drying the sheet;

D. moistening the dried coated surface of the sheet to a strongly adherent condition and adhering the said surface to the smooth polished surface of the metal printing plate;

E. warming said plate and attached sheet to soften the untanned inner strata of the imaged layer, and stripably removing said emulsion-receptive base to leave on said metal plate a tanned gelatin resist pattern; and

F. chemically etching said plate through said resist pattern.

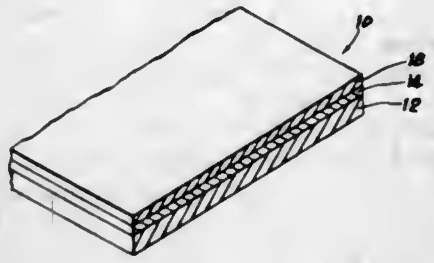
3,310,404

OFFSET MASTER PREPARATION AND ELEMENTS

Frederick O. Bach, Elmhurst, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois

Filed Feb. 18, 1963, Ser. No. 258,997

19 Claims. (Cl. 96—33)



1. The method of producing an imaged offset master from an original which defines infra-red absorbing and heat generating image areas comprising the steps of positioning the original in surface contact with a negative sheet which is substantially transparent to ultra-violet and infra-red radiations and which has a substantially hydrophilic surface with a water removable coating containing a substance which is converted into a water repellent portion in response to heat, exposing the original to radiations rich in infra-red whereby the heat pattern generated in said image areas in response to the radiation of the original converts portions of the negative coating corresponding to said image areas to the water repellent phase, washing the exposed negative with an aqueous medium to remove the coating from the non-imaged portions of the negative and expose the underlying substantially hydrophilic surface, treating the negative with an aqueous system containing a barrier to ultra-violet whereby said ultra-violet barrier substance is retained by the substantially hydrophilic non-imaged portions of the negative and repelled by the water repellent imaged portions of the negative, bringing the developed negative into face to face relationship with the offset surface of an offset plate having a coating containing a material which is converted to an ink receptive, water repellent imaging material responsive to exposure to ultra-violet, directing radiations rich in ultra-violet onto the developed negative whereby the ultra-violet blocking agent in the non-imaged portions of the negative prevents passage of sufficient amounts of ultra-violet therethrough for reaction of corresponding portions of the coating on the offset plate while sufficient of the ultra-violet radiation pass through the imaged portions of the negative for reaction to convert the corresponding portions of the coating on the offset plate to a water repellent, ink receptive image corresponding to the original.

3,310,405

SPOT PREVENTION IN LIGHT-SENSITIVE SILVER HALIDE EMULSION LAYERS

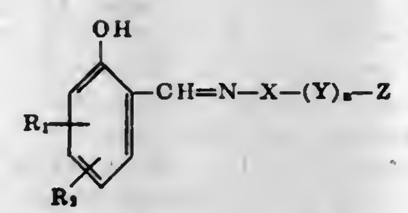
Wolfgang Müller-Bardorff, Cologne, Hans Ulrich, Leverkusen, and Karl-Heinz Heckelmann, Cologne-Flittard, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 26, 1963, Ser. No. 297,964

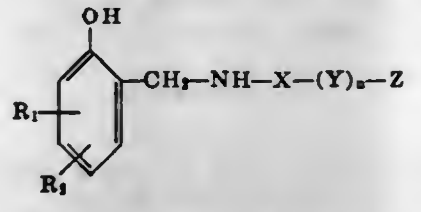
8 Claims. (Cl. 96—94)

2. A photographic material comprising in superimposed relationship a support and at least one hydrophilic colloid layer, one such layer being a light-sensitive silver halide emulsion layer, at least one of said layers containing a compound having a formula selected from the group consisting of:

(I)



(II)



wherein R_1 and R_2 each represents a member selected from the group consisting of a hydrogen atom, a halogen atom, an alkyl group having 1 to 5 carbon atoms, an alkoxy group having 1 to 5 carbon atoms in the alkyl group having 1 to 5 carbon atoms in the alkyl group and a hydroxy group;

X represents a member selected from the group consisting of a bivalent aliphatic hydrocarbon group having 1 to 5 carbon atoms, a bivalent aliphatic hydrocarbon group having 1 to 5 carbon atoms, which is substituted by a carboxylic acid group or a salt thereof, a bivalent aromatic radical which may be substituted by the aforementioned substituents R_1 and R_2, especially bivalent aromatic hydrocarbon radicals of the benzene series which are substituted by a hydroxy group;

Y represents an oxygen atom;

Z represents a member selected from the group consisting of a carboxylic acid group, a sulfonic acid group and a salt of one of said groups;

n represents 0 or 1, said compound being present in such quantities that the formation in said silver halide emulsion layer of spots possibly arising from metallic particles is substantially inhibited.

3,310,406

FOOD SPREAD

David P. Webster, 206 E. Maple Road, Linthicum, Md. 21090

No Drawing. Filed Apr. 21, 1964, Ser. No. 361,595

16 Claims. (Cl. 99—1)

15. The process of preparing a food product comprising: mixing at least 15% by weight of protein with a metal salt in the amount of 1%–4%, based on the amount of protein, in the presence of 5%–30% corn syrup, 5%–30% vegetable oil containing polyunsaturated fats, and 2.5%–70% water, heating the mixture to a temperature of 140° to 190° F., and at that temperature forming a metal protein complex.

3,310,407

FERMENTATION PROCESSES FOR THE PRODUCTION OF BEER

Michael George Royston, Crawley, Sussex, England, assignor to The A.P.V. Company Limited, Crawley, Sussex, England

Filed July 10, 1964, Ser. No. 381,760

4 Claims. (Cl. 99—31)

1. A process of continuous fermentation in the production of beer comprising introducing an unfermented liquid containing dissolved sugar to one end, and uniformly over the cross-sectional area, of an elongated yeast-containing treatment zone having a high slenderness ratio, said treatment zone including flow controlling baffle means for inhibiting back flow of the liquid, constraining

the liquid to flow upwardly and generally unidirectionally from said one end of the treatment zone to the other end, maintaining in and along the treatment zone a high concentration phase of suspended yeast extending across the cross-sectional area of said zone and through which the liquid moving through the treatment zone passes, any general re-circulation of the liquid along its flow path being inhibited by said baffle means, and the sugar concentration in the liquid being allowed to decline progressively and continuously as the liquid passes through the treatment zone while undergoing fermentation.

3,310,408
MONOGLYCERIDE EMULSIFIER AND METHOD OF MAKING SAME

Francis Frederick Hansen, 224 E. Poplar St., Walla Walla, Wash. 99362
No Drawing. Filed Oct. 14, 1965, Ser. No. 496,171
5 Claims. (Cl. 99—118)

1. The method of preparing a stable emulsion of monoglyceride and water which comprises

(a) heating to about 200° F. a distilled monoglyceride of fat-forming fatty acid, which monoglyceride is normally a solid at room temperature,

(b) separately heating to about 200° F. water, the weight of which is not less than the weight of the monoglyceride or substantially greater,

(c) separately heating to about 200° F. a volume of water in which is dissolved fruit pectin,

(d) combining the water first named and the monoglyceride by introducing the monoglyceride into the water and beating the resulting gel into a creamy mass,

(e) then adding the pectin solution rapidly while the beating continues, and

(f) continuing the beating until the mixture has cooled to a level approximately 100° F., the solution of water and pectin being sufficient that the weight of the pectin calculated as a dry powder is in the range of 0.25% to 2.5% of the weight of the total water in the mix.

3,310,409
PRODUCTION OF FLAVOR-ENHANCED APPLE AND PRUNE CONCENTRATES

Ellis M. Byer, Albany, Oreg., and Alfred A. Lang, Winter Haven, Fla., assignors of one-third to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Jan. 13, 1964, Ser. No. 342,843
The portion of the term of the patent subsequent to Jan. 21, 1981, has been disclaimed
8 Claims. (Cl. 99—205)

1. Process of separating and recovering from a juice selected from the group consisting of apple and prune a specific fraction of volatile constituents whose boiling points are below and above that of water, comprising separating the juice into a major concentrated juice portion and a minor volatile portion which contains said volatile flavor-producing constituents and non-condensable gaseous constituents by subjecting the juice to a high vacuum concentration operation at a temperature less than 140° F., condensing a major proportion of the volatile flavor-producing constitutents as a first two-phase oily-watery mixture and evacuating uncondensed volatile constituents and non-condensable gases as a minor proportion of the volatile portion, discarding said minor proportion of the volatile portion, and thereafter distilling a flavorful and aromatic mixture of said high and low boiling constituents from the resulting two-phase oily-watery mixture at a temperature of 50°–100° F. and an absolute pressure of less than 1½" of mercury by causing a thin film of said two-phase oily-watery mixture to travel along a heat exchange surface and condensing a minor subfraction of said mixture, a major portion of said minor subfraction being a watery-phase and a minor portion of said subfraction being an oily-phase.

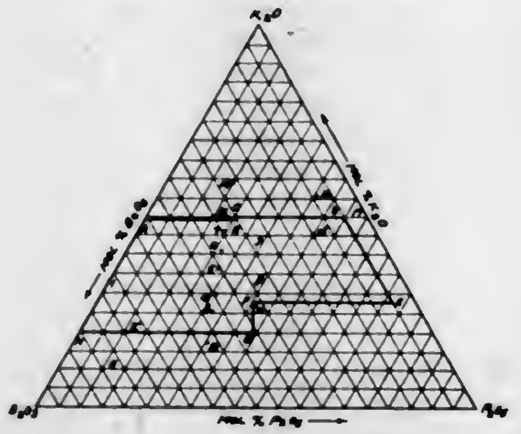
3,310,410
PROCESS FOR FORTIFYING FRUIT JUICE

Alfred A. Lang, Winter Haven, Fla., and Ellis M. Byer, Albany, Oreg., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Jan. 13, 1964, Ser. No. 342,844
The portion of the term of the patent subsequent to Jan. 21, 1981, has been disclaimed
8 Claims. (Cl. 99—205)

1. Process of fortifying a fruit juice with a specific fraction of volatile constituents whose boiling points are above and below that of water comprising separating the juice at a temperature below about 140° F. under subatmospheric pressures in a closed system into a major concentrated juice portion and a minor volatile portion which contains said volatile flavor-producing constituents and substantially all of the oxygen, protecting said concentrated juice portion from the ingress of oxygen, condensing a major proportion of the volatile flavor-producing constituents as a first two-phase oily-watery mixture at a moderately, reduced temperature and discarding the minor proportion of the volatile portion which contains the uncondensed volatile constituents and substantially all of the oxygen, subjecting the resulting two-phase oily-watery mixture to a later concentration operation under subatmospheric pressures and at moderate temperatures to collect a mixture of said high and low boiling constituents, and combining a portion of nitrogen-stripped cut-back juice and said latter mixture with the juice concentrate from which said minor volatile portion has previously been removed in a closed system such that the final oxygen content of the combined product does not exceed 0.20 ml. per 100 gms. of the product at 42° Brix.

3,310,411
INORGANIC-BONDED RECONSTITUTED MICA SHEET

Willem Vedder, Albany, and Richard J. Ketterer, Burnt Hills, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 30, 1963, Ser. No. 254,908
9 Claims. (Cl. 106—39)



1. Inorganic-bonded reconstituted mica sheet having substantial moisture resistance, comprising a reconstituted mica sheet of comminuted natural mica particles and a cured inorganic oxide binder, said mica sheet being impregnated by said cured binder with said mica particles and binder constituting a system substantially indispersible in water, said binder consisting of relative mol percentages of B_2O_3, K_2O and P_2O_5 lying within the area defined approximately in the accompanying ternary diagram of the single figure of the drawing by the solid lines AB, BC, CD, DE, EF, FG, GH and HA.

2. Inorganic-bonded reconstituted mica sheet comprising a reconstituted mica sheet of comminuted mica particles and a cured inorganic oxide binder, said mica sheet being impregnated by said cured binder with said mica particles and binder constituting a system substantially indispersible in water, said binder consisting of relative mol percentages of B_2O_3 and K_2O defined by the solid line HA in the accompanying ternary diagram of the single figure of the drawing.

3. A method of preparing an inorganic-bonded reconstituted mica sheet which comprises providing a reconstituted mica sheet of comminuted mica particles, impregnating said sheet with a binder of oxides consisting of relative mol percentages B_2O_3, K_2O and P_2O_5 lying within the area defined approximately in the accompanying ternary diagram of the single figure of the drawing by the solid lines AB, BC, CD, DE, EF, FG, GH and HA, drying said impregnated sheet to a water content of less than one percent, remoistening said sheet to a water content of from about one percent to ten percent, hot pressing said sheet at temperatures substantially below the baking temperautre, and baking said sheet at a critical temperature of about 560° C.

3,310,412
HIGH-MELTING GLASS FIBERS AND METHOD

Carl Ernst Hofstadt, Munich, Obermenzing, Paul F. Ludwig, Dreieichenhain, and Rudolf Fahn, Moosburg, Germany, assignors to A.G. Sudschemie, Munich, Germany, a corporation of Germany
No Drawing. Filed Nov. 12, 1964, Ser. No. 411,677
Claims priority, application Germany, June 12, 1964, S 91,506
12 Claims. (Cl. 106—50)

1. Glass fibers resistant to high temperature, acid and alkali comprising melt basis about 55–73% SiO_2, 14–26% Al_2O_3, 4–12% Fe_2O_3, up to about 16% of a material selected from the group consisting of calcium oxide, magnesium oxide, and mixtures thereof, and alkali metal oxide in amount of less than about 3%.

3,310,413
ALUMINOSILICATE GLASS

Roy V. Harrington, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed Jan. 17, 1963, Ser. No. 252,046
5 Claims. (Cl. 106—54)

1. A glass consisting essentially of the following calculated oxide composition, in weight percent,

	Percent
SiO_2	53.5 to 59.5
Al_2O_3	13.0 to 16.5
B_2O_3	4.0 to 9.0
CaO	8.5 to 15.0
MgO	0.0 to 5.0
BaO	5.5 to 11.5

the ratio of MgO to BaO being less than about .75, the ratio of CaO to the total of MgO and BaO being between about 0.6 and 2.0, the total of the SiO_2, Al_2O_3 and B_2O_3 being between 74 and 82%, the coefficient of linear thermal expansion of the glass being between 44×10^{-7} and 50×10^{-7} per ° C. between 0° and 300° C., the softening point being greater than 850° C., the liquidus temperature being below 1125° C. and the viscosity at the liquidus temperature being greater than about 30,000 poises.

3,310,414
BASIC REFRACTORY

Allen M. Alper, Corning, and Robert N. McNally, Horseheads, N.Y., assignors to Corhart Refractories Company, Louisville, Ky., a corporation of Delaware
No Drawing. Filed Feb. 8, 1965, Ser. No. 431,168
5 Claims. (Cl. 106—58)

1. A fused refractory material having interlocking crystals and consisting of, analytically by weight, 65 to 90% MgO, 5 to 20% MnO_2, 5 to 20% FeO, less than 2% CaO, less than 2% SiO_2, less than 1% Al_2O_3, less than 0.5% P_2O_5 and the sum of $SiO_2+Al_2O_3+P_2O_5$ being less than 3%.

3,310,415
REFRACTORY MATERIAL

Robert A. Paul and Otto L. Forchheimer, York, Pa., assignors to The J. E. Baker Company, York, Pa., a corporation of Pennsylvania
No Drawing. Filed May 13, 1965, Ser. No. 455,649
9 Claims. (Cl. 106—58)

1. A granular refractory material which may be handled and stored without segregation and which forms a high density refractory after burn-in consisting essentially of aggregates each aggregate having a density of at least 2.4 grams per cubic centimeter and said aggregates further consisting essentially of from about 6 to 10 percent by weight of a bituminous temporary binder having a minimum softening point range of about 80° C. and a plurality of refractory particles selected from the class consisting of dead burned magnesite, dead burned dolomite and dead burned calcite, said particles having the following ranges:

Smaller Than—	Larger Than—	Percent Range
½ inch	¼ inch	2–11
¼ inch	⅛ inch	15–35
⅛ inch	10 mesh	6–10
10 mesh	20 mesh	5–20
20 mesh	50 mesh	5–20
50 mesh	100 mesh	5–20
100 mesh	200 mesh	5–15
200 mesh	325 mesh	2–12
325 mesh		2–10

3,310,416
AQUEOUS DISPERSIONS

Luzius Schibler, Riehen, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Feb. 11, 1964, Ser. No. 343,946
Claims priority, application Switzerland, May 3, 1963, 2,500/63
4 Claims. (Cl. 106—285)

1. An aqueous dispersion of at least one water-insoluble substance the latter being dispersed by means of an effective amount of, as a dispersant, at least one member selected from the group consisting of (a) water-soluble, curable ethers of methylolmelamines, of which up to 5 methylol groups are etherified with monohydric alcohols having from 4 to 7 carbon atoms and at least one methylol group is etherified with polyethyleneglycols of a molecular weight from 600 to 20,000, and (b) water-soluble, curable ethers of methylolureas, of which up to 3 methylol groups are etherified with monohydric alcohols having from 4 to 7 carbon atoms and at least one methylol group is etherified with polyethyleneglycols of a molecular weight from 600 to 20,000.

3,310,417
SILICON-CONTAINING WATER REPELLENT COMPOSITIONS

Robert W. Lerner and Amos R. Anderson, Adrian, and Charles G. Neuroth, Blissfield, Mich., assignors to Stauffer Chemical Company
No Drawing. Filed Oct. 22, 1964, Ser. No. 405,820
9 Claims. (Cl. 106—287)

1. A composition of matter consisting essentially of the product of the reaction of (a) from 1 to 3 parts of an alkyltrimethoxysilane having up to 6 carbon atoms in the alkyl group, (b) from 3 to 1 parts of a tetraalkylorthosilicate having up to 2 carbon atoms in each alkyl group. and (c) water in an amount ranging from about 0.4 to about 100 times the combined volume of (a) and (b).

3. A composition of matter comprising a storage-stable mixture of from 1 to 3 parts of an alkyltrimethoxysilane having up to 6 carbon atoms in the alkyl group, with from 3 to 1 parts of a tetraalkylorthosilicate having up to 2 carbon atoms in each alkyl group.

3,310,418
FLUORESCENT LAMP COATING

Arnold I. Friedman, South Euclid, and David H. Beaumont, Lyndhurst, Ohio, assignors to General Electric Company, a corporation of New York
No Drawing. Filed Oct. 31, 1963, Ser. No. 320,506
8 Claims. (Cl. 117—33.5)

1. A fluorescent coating on a transparent base, said coating comprising powdered phosphor particles mixed with separate finely divided particles of calcium pyrophosphate as an adhesive.

3,310,419
PROCESS FOR TREATING CELLULOSIC MATERIAL WITH FLAMEPROOFING COMPOSITION

George M. Wagner, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Apr. 16, 1963, Ser. No. 273,272
7 Claims. (Cl. 117—62.2)

1. A process for preparing flame-retardant cellulosic materials which comprises impregnating a cellulosic material with a polymerizable composition consisting essentially of a tetrakis(α-hydroxyorgano)phosphonium halide, a water-soluble cyclic copolymerizable nitrogen-containing compound, a copolymerizable compound which is a carbamic acid derivative, and an alkaline inorganic stabilizer, heating the thus-impregnated material at a temperature and for a period of time sufficient to partially polymerize the polymerizable composition only to the extent that it is substantially insoluble in ammonia-containing solutions, and thereafter, contacting the material containing the thus-partially polymerized composition with ammonia, in an amount and for a period of time sufficient to substantially completely cure the composition and render it substantially completely water-insoluble.

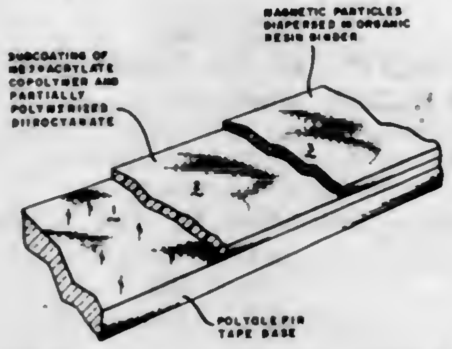
3,310,420
PROCESS FOR FLAMEPROOFING CELLULOSIC TEXTILE MATERIAL

George M. Wagner, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Oct. 5, 1965, Ser. No. 493,253
7 Claims. (Cl. 117—62.2)

1. A process for preparing flame-retardant cellulosic materials which comprises impregnating a cellulosic material with a polymerizable composition consisting essentially of a tetrakis (α-hydroxyorgano)phosphonium halide, a water-soluble cyclic copolymerizable nitrogen-containing compound selected from the group consisting of triazines and dimethylol cyclic alkylene ureas, a copolymerizable compound which is a carbamic acid derivative, and an acid releasing polymerization catalyst, heating the thus-impregnated material at a temperature and for a period of time sufficient to partially polymerize the polymerizable composition only to the extent that it is substantially insoluble in ammonia-containing solutions, and thereafter, contacting the material containing the thus-partially polymerized composition with an ammonia-containing solution, in an amount and for a period of time sufficient to substantially cure the composition and render it substantially water insoluble.

3,310,421
MAGNETIC RECORDING MEDIUM WITH POLYOLEFIN BASE AND A SUBCOATING THEREON

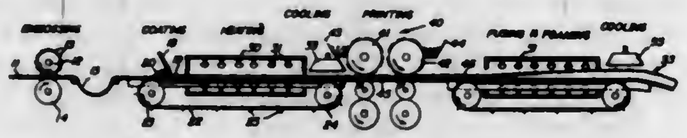
Dervin L. Flowers, Redwood City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Sept. 13, 1963, Ser. No. 308,692
2 Claims. (Cl. 117—76)


SUBCOATING OF METHACRYLATE COPOLYMER AND PARTIALLY POLYMERIZED DIISOCYANATE
MAGNETIC PARTICLES DISPERSED IN ORGANIC RESIN BINDER
1
2
2
POLYOLEFIN TAPE BASE

1. A magnetic recording medium comprising a polyolefin tape base having a first coating directly on the tape base and a second coating over the first coating wherein said first coating consists essentially of copolymer of a lower alkyl 2-hydroxy methacrylate and an ester selected from methacrylate esters and acrylate esters wherein the copolymer contains from 5 to 35 weight percent of the hydroxy compound, reacted with a diisocyanate prepolymer, the ratio of the copolymer and the prepolymer being from about 1:3 to about 1:25 and said second coating being a dispersion of finely divided magnetic particles dispersed in an organic resin binder.

3,310,422
SMOOTH WEAR-RESISTANT RESILIENT FLOOR COVERING AND METHOD OF MAKING SAME

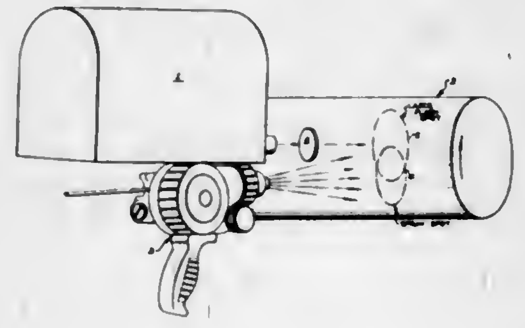
Robert K. Petry, Mountain Lakes, N.J., assignor to Congoleum-Nairn Inc., Kearny, New Jersey, a corporation of New York
Filed July 16, 1965, Ser. No. 482,013
The portion of the term of the patent subsequent to Mar. 8, 1983, has been disclaimed and dedicated to the Public
8 Claims. (Cl. 117—76)



1. A method of producing a resilient decorative surface covering having a smooth, continuous resinous upper layer of uniform thickness substantially free of any cellular structure bonded to a resilient foam layer which comprises applying a uniform first coating of a thermoplastic vinyl resinous composition containing an effective amount of a decomposable blowing agent to a smooth surface of a fibrous felt backing sheet having a thickness of at least 0.010 inch, heating to gel said first coating without decomposing the blowing agent, applying a uniform second coating of a thermoplastic vinyl resinous composition of at least 0.003 inch in thickness to cover said first coating, said second coating having a fusion temperature not lower than the fusion temperature of said first coating and having a tensile strength of at least one pound per square inch at the decomposition temperature of said blowing agent and said blowing agent decomposes at a temperature above the fusion temperature of the second coating composition, heating said first and second coatings to fuse the resin composition in the second coating, then continuing the heating to decompose the blowing agent and fuse said first coating, and thereafter cooling the surface covering thus produced.

3,310,423
FLAME SPRAYING EMPLOYING LASER HEATING

Herbert S. Ingham, Jr., Northport, N.Y., assignor to Metco, Inc., Westbury, N.Y.
Filed Aug. 27, 1963, Ser. No. 304,896
18 Claims. (Cl. 117—93)



1. In the flame spray process in which heat softened particles of a heat-fusible flame spray material are sprayed onto a surface to be coated, the improvement which comprises heating the depositing particles with an instantaneous burst of energy to a temperature above the softening temperature of said surface.

3,310,424
METHOD FOR PROVIDING AN INSULATING FILM ON A SUBSTRATE

Gottfried K. Wehner, Minneapolis, and William N. Mayer, White Bear Lake, Minn., assignors, by mesne assignments, to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed May 14, 1963, Ser. No. 280,393
4 Claims. (Cl. 117—106)

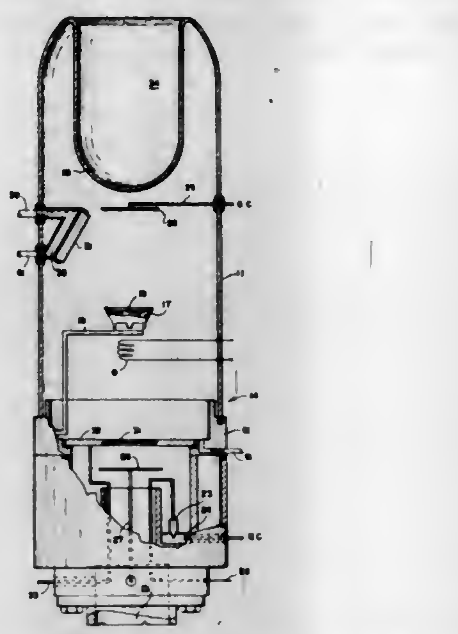
1. A process of coating a substrate with a solid film which comprises the steps of:

placing a crucible of liquid silicone in a chamber containing a substrate to be coated;

evacuating the chamber;

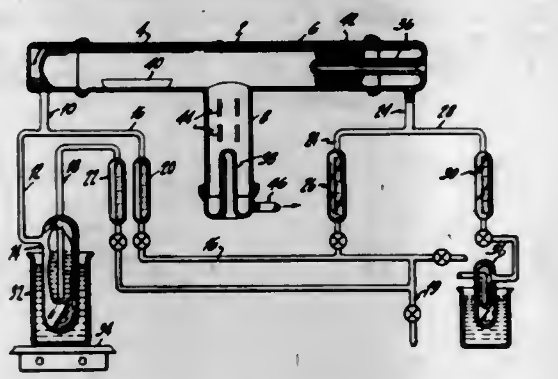
introducing into the chamber a gas taken from the group consisting of helium, neon, argon, krypton, xenon and hydrogen; and

generating a discharge plasma in said gas adjacent to said substrate to vaporize the liquid silicone and to coat the substrate with a layer of the vaporized liquid silicone, said plasma being effective to provide electrons, ions and ultra-violate light for polymerizing said layer to form said solid film.



3,310,425
METHOD OF DEPOSITING EPITAXIAL LAYERS OF GALLIUM ARSENIDE

Norman Goldsmith, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 28, 1963, Ser. No. 291,488
1 Claim. (Cl. 117—106)



An open tube method of growing an epitaxial layer of gallium arsenide comprising

(a) passing a stream of hydrogen containing vaporized gallium trichloride over molten gallium which is at a temperature of 750° C.–850° C. to form a lower halide of gallium,

(b) vaporizing arsenic at 400° C.–450° C. in another stream of hydrogen,

(c) combining said streams at a temperature of about 800° C., and

(d) passing the combined streams over a substrate of single crystal gallium arsenide being maintained at a temperature of about 600° C.–750° C.,

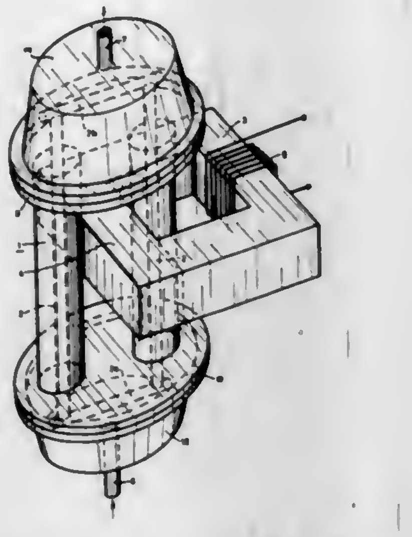
(e) to thereby grow on the substrate an epitaxial layer of gallium arsenide.

3,310,426
METHOD AND APPARATUS FOR PRODUCING SEMICONDUCTOR MATERIAL

Heinz Henker and Theodor Rummel, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Oct. 2, 1963, Ser. No. 313,298
9 Claims. (Cl. 117—107.2)

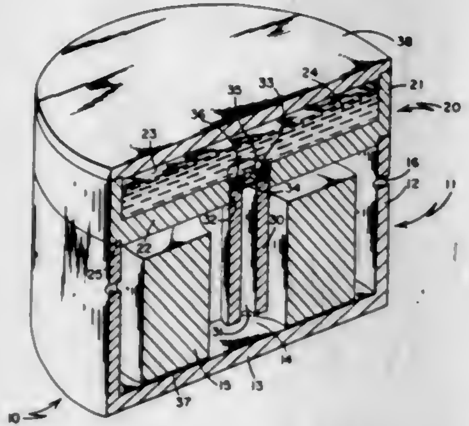
1. The method of precipitating hyperpure semiconductor material by thermally dissociating a gaseous com-

pound thereof with the aid of a heated carrier body of semiconductor material, which comprises including the semiconducting carrier body serially in a loop circuit closed upon itself about a transformer-core leg, subjecting the carrier body to an atmosphere of a gaseous semiconductor compound, inducing by transformer action a voltage in the loop circuit, and heating the carrier body by the resulting secondary loop current to the dissociation temperature required for precipitating semiconductor material upon the carrier body.



3,310,427
METHOD AND APPARATUS FOR INFILTRATING POROUS BODIES

Richard F. Cheney, Leslie P. Clare, and Donald G. Cooper, Towanda, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Jan. 29, 1963, Ser. No. 254,725
9 Claims. (Cl. 117—113)



1. The method of infiltrating a porous body with an infiltrating material having a lower melting point than the material of said body including the steps of

superimposing a quantity of infiltrating material in a zone immediately adjacent and above the porous body to be infiltrated,

said zone being separated from the porous body by means including an interposed fusible gate,

heating simultaneously the porous body and the infiltrating material to a temperature above the melting point of the infiltrating material and below the melting point of the body while maintaining said gate at a temperature below the melting point of the gate, and

raising the temperature of the gate above the melting point of the gate whereby the gate melts, permitting the molten infiltrating material to flow into contact with the heated porous body and to be drawn into the porous body.

3,310,428
COMPOSITE WITH LINEAR, RANDOM ACID HALIDE COPOLYMER COATING

Daniel Edwin Maloney, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 29, 1963, Ser. No. 254,592
8 Claims. (Cl. 117—118)

1. A composite comprising a shaped polymeric substrate containing basic groups selected from the class consisting of groups having the formula —COH, $—CNH_2$, and —C—NH—C— and a coating on said substrate of a substantially linear random polymer having a melt index of 0.1 to 1000 g./10 min. containing at least 50 mole percent of an α-olefin having the general formula

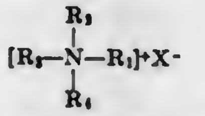
$$CH_2{=}CHR$$

wherein R is selected from the class consisting of hydrogen and hydrocarbon radical of 1 to 8 carbon atoms, and from 0.1 to 20 mole percent of an α,β-ethylenically unsaturated carboxylic acid halide of 3 to 8 carbon atoms, said random polymer being produced by halogenation of the corresponding acid polymer and any other units in the polymer being inert towards acid halide groups, in which at least 0.1 mole percent of the monomer of the coating polymer is reacted with the substrate through the acid halide group to form linkages selected from the class consisting of ester and amide linkages.

3,310,429
METHOD OF REPELLING WATER FROM A TRANSPARENT MEMBER

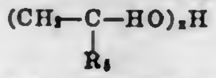
Keith Gunnar, Bellevue, Wash., and Robert S. Hansen, Ames, Iowa, assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
No Drawing. Filed Mar. 28, 1966, Ser. No. 537,666
12 Claims. (Cl. 117—124)

1. A method of effecting an optically clear coating of a water-repellent substance on a surface of a transparent member, comprising subjecting such surface to an application of a solution which includes a solvent and a solute selected from the group represented by the general formula:



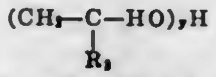
$$\left[R_2-\overset{\overset{\textstyle R_3}{|}}{\underset{\underset{\textstyle R_4}{|}}{N}}-R_1\right]^+X^-$$

wherein R_1 represents an aliphatic radical of from 12 to 22 carbon atoms, inclusive; R_2 represents a radical of the class consisting of methyl and aliphatic radicals, the latter comprising 12 to 22 carbon atoms, inclusive; R_3 represents a radical of the class consisting of methyl and



$$(CH_2-\underset{\underset{\textstyle R_5}{|}}{C}-HO)_xH$$

radicals; R_4 represents a radical of the class consisting of methyl and



$$(CH_2-\underset{\underset{\textstyle R_5}{|}}{C}-HO)_yH$$

radicals; *x* and *y* each represents a certain number, the sum of which is 2 to 15, inclusive; R_5 represents a radical consisting of the class of H and methyl radicals; X represents an anion; and thereafter impinging said surface with water droplets.

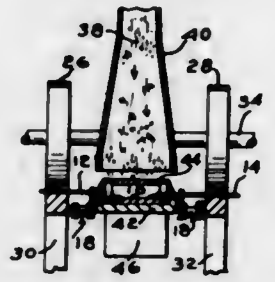
3,310,430
ELECTROLESS COPPER PLATING

Frederick W. Schneble, Jr., Oyster Bay, Rudolph J. Zeblisky, Roslyn Heights, John F. McCormack, Hauppauge, and John Duff Williamson, Miller Place, N.Y., assignors, by mesne assignments, to Day Company, N.V., a Curacao corporation
No Drawing. Filed June 30, 1965, Ser. No. 468,577
8 Claims. (Cl. 117—130)

3. A new article of manufacture comprising a copper plating on a base, said copper plating consisting essentially of bright, ductile, electroless copper characterized by high ductility of at least more than 1.5 bends and containing a hydrogen inclusion retarding agent for said copper wherein said hydrogen inclusion retarding agent is a member selected from the group consisting of a water soluble cyanide compound, vanadium, molybdenum, niobium, tungsten, rhenium, arsenic, antimony, bismuth, rare earths of the actinium series, and rare earths of the lanthanum series, and mixtures of the foregoing.

3,310,431
METHOD AND APPARATUS FOR COATING ELECTRICAL COMPONENTS

Guenter H. Loose, Bradford, Pa., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 21, 1962, Ser. No. 246,390
9 Claims. (Cl. 117—201)



1. The method of coating an electrical component with synthetic resinous material comprising the steps of

(a) providing a supply of synthetic resinous material in the form of pulverulent granules,

(b) heating said component to a temperature of at least the melting temperature of said material,

(c) spinning said component about its longitudinal axis,

(d) applying said granules to the heated surface of said component,

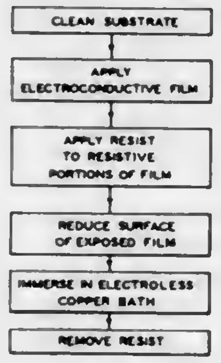
said granules melting when coming in contact with the heated surface of said component, adhering thereto, and forming a continuous coalesced coating thereon,

(e) compacting the coalesced resinous material, and thereafter

(f) curing said resinous material.

3,310,432
METHOD FOR APPLYING ELECTRICAL CONDUCTORS ON A SMOOTH VITREOUS SURFACE AND ARTICLE

Edward M. Griest, Painted Post, N.Y., and Paul R. Theobald, Raleigh, N.C., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed July 11, 1963, Ser. No. 294,353
18 Claims. (Cl. 117—212)


CLEAN SUBSTRATE
APPLY ELECTROCONDUCTIVE FILM
APPLY RESIST TO RESISTIVE PORTIONS OF FILM
REDUCE SURFACE OF EXPOSED FILM
IMMERSE IN ELECTROLESS COPPER BATH
REMOVE RESIST

1. The method of applying a metallic coating to the surface of a dielectric substrate comprising

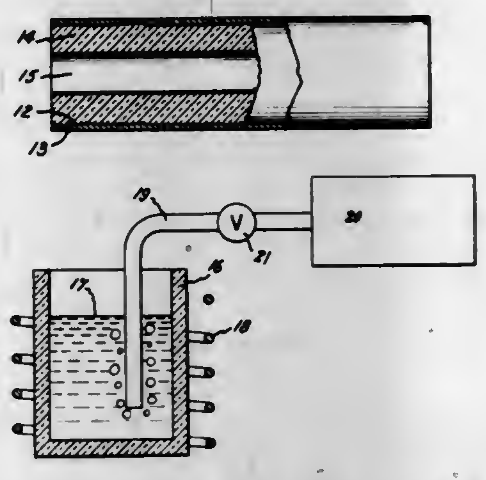
(a) forming an adherent film of metallic oxide on the surface of said substrate,

(b) reducing an exterior portion of said film to form a metallic layer on the remaining portion of said film, and thereafter

(c) depositing an adherent metallic coating on said metallic layer.

3,310,433
CERAMIC ARTICLE COATED WITH SILVER CONTAINING OXYGEN AND METHOD OF MAKING SAME

William E. Tragert, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 18, 1963, Ser. No. 309,716
1 Claim. (Cl. 117—213)



A method of forming an electrical conductor which comprises providing a ceramic member, roughening the exterior surface of the member, and applying molten silver saturated with oxygen to the roughened exterior surface of said member whereby a thin silver layer with dissolved oxygen therein is formed thereon.

3,310,434
METHOD OF CATALYZING POROUS ELECTRODES

Karl V. Kordesch, Lakewood, Ohio, assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed May 6, 1963, Ser. No. 278,394
10 Claims. (Cl. 117—227)

1. A method of catalyzing a porous electrode having a wetproofing agent deposited thereon, which method comprises applying to a surface of said electrode a catalyzing solution containing a salt of a noble metal catalyst and a solvent for said wetproofing agent so that said catalyzing solution penetrates through said wetproofing agent to the electrode material, and then decomposing said salt to deposit said noble metal catalyst on said electrode.

3,310,435
PROCESS FOR CONTINUOUS PICKLING OF STEEL STRIP AND REGENERATION OF THE CONTACT ACID

Melville W. Robinson, Jr., Beaver, Pa., Clarence Steelman, Jr., Wintersville, Ohio, and Enoch Perkins, Jr., Pittsburgh, Pa., assignors to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1963, Ser. No. 324,479
10 Claims. (Cl. 134—3)

1. A continuous process for pickling ferrous metal strip and for regeneration of the used pickling liquor, comprising the steps of

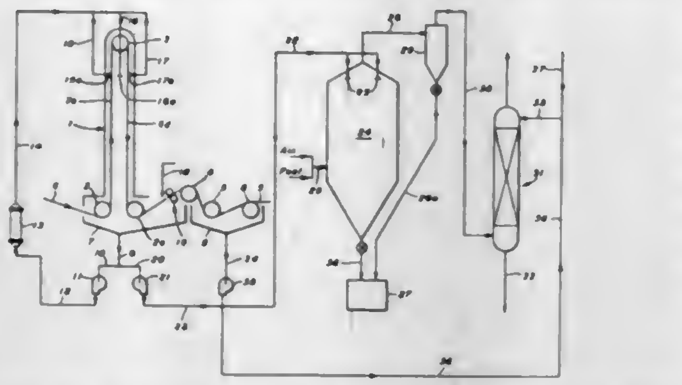
(a) providing an initial bath of pickling solution of 20% by weight of hydrochloric acid and water,

(b) continuously applying said solution to a ferrous metal strip moving through said bath,

(c) continuously withdrawing a portion of the used solution from said bath during passage of the strip therethrough,

(d) confining and heating the withdrawn used solution to vaporize the water and acid therein and to convert the ferrous chloride therein to hydrochloric acid vapor and solid iron oxide,

(e) continuously collecting the vaporized hydrochloric acid and water from the heating step and condens-

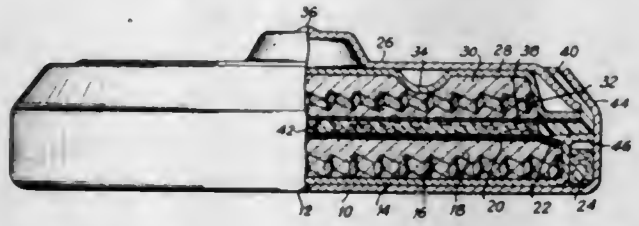


ing the hydrochloric acid vapor by contact with water in amounts to provide a regenerated hydrochloric acid solution of substantially the original content of HCl,

(f) and returning the regenerated solution to said bath.

3,310,436
RECHARGEABLE CELL AND METHOD OF MAKING A DEPOLARIZING ELECTRODE THEREFOR

Robert E. Ralston, Spring Valley, and Yung Ling Ko, Tarrytown, N.Y., and Glee W. Stackhouse, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 443,849
10 Claims. (Cl. 136—6)



1. An electric current producing cell comprising an anode, an electrolyte, and a cathode depolarizer composed essentially of a reducible oxygen yielding compound of mercury and palladium.

3,310,437
CYLINDRICAL RECHARGEABLE BATTERY HAVING EXPANDED METAL GRID WITH BOND JOINTS BEING BENT FLATWISE

Robert L. Davee, Avon, and Demetrios V. Louzos, Rocky River, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Nov. 29, 1962, Ser. No. 240,800
2 Claims. (Cl. 136—13)

1. In a cylindrical rechargeable battery having an alkaline electrolyte at least two elongated electrodes of opposite polarity, at least one of said electrodes comprising a powdered mass of active material embedded within a conductive carrier grid, and an elongated electrically insulating separator extending between and separating said electrodes, said electrodes and separator being rolled to form a cylindrical assembly; the improvement in combination therewith being a means by which said electrode is maintained flexible and pliable while at the same time maintaining a strong cohesive bond between said powdered mass of active material and said carrier grid, said improvement in combination therewith comprising a carrier grid of expanded metal characterized by having a structure which physically bonds said powdered mass of active material within said carrier grid, said carrier grid comprising a network of metal strands interconnected at bond joints and so arranged as to define a plurality of open pockets within which said powdered mass of active material is firmly embedded, said carrier grid traversing the cross section of said electrode from one surface to the other so that edge portions of said bond joints are disposed at said surfaces, said bond joints being bent in a substantially flatwise manner along the plane of said electrode surfaces to thereby physically bond said powdered mass of active material within the open pockets of said carrier grid.

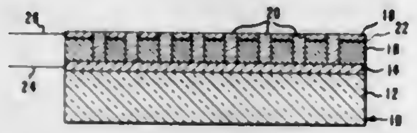
3,310,438
DISPERSION STRENGTHENED LEAD BATTERY GRIDS

Henry R. Huffman and David John Ivor Evans, both of Edmonton, Alberta, Canada, assignors, by mesne assignments, to St. Joseph Lead Company, New York, N.Y., a corporation of New York, and Tsumeb Corporation Limited, Tsumeb, South-West Africa, a corporation of South-West Africa
Filed Feb. 17, 1966, Ser. No. 536,507
3 Claims. (Cl. 136—36)

1. A storage battery grid consisting essentially of a dispersion strengthened lead alloy, said alloy consisting essentially of a lead matrix containing from about 0.75 to about 15%, by weight, lead oxide, calculated as PbO, in the form of discrete particles of a size below about 3 microns dispersed substantially uniformly through said lead matrix.

3,310,439
PHOTOVOLTAIC CELL WITH WAVE GUIDE

John S. Seney, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 14, 1961, Ser. No. 152,317
5 Claims. (Cl. 136—89)

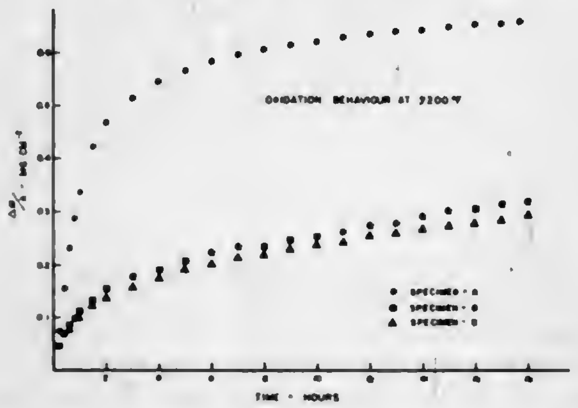


1. A photoelectric conversion device adapted for exposure to incident radiant energy, said device comprising:
- a non-conductive base having a substantially smooth surface;
- a plurality of spaced crystals fixed to said surface,
  - said crystals being passive to said incident radiant energy;
- a body of semi-conductor material fixed to said surface in surrounding relationship to said crystals,
  - said body including adjacent N and P layers separated by a rectifying barrier,
  - said crystals being exposed to said radiant energy and consisting of a material differing chemically from said semi-conductor material; and
- a pair of conductors connected electrically to said N and P layers, respectively.

2. In a photoelectric conversion device including adjacent N and P semi-conductor layers which are separated by a rectifying barrier and adapted for connection to electrical conductors,
- a plurality of spaced dimensioned crystals embedded in and extending through said layers,
  - said crystals being passive to incident radiant energy and having a width dimension equal to a particular wave length of said incident radiant energy,
- said layers and said crystals having a depth equal to or greater than said wave length.

3,310,440
HEAT TREATMENT OF NICKEL BASE ALLOYS

Barry J. Piearcey, Cheshire, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 21, 1964, Ser. No. 405,410
5 Claims. (Cl. 148—13)



1. The method of heat treating a nickel-base alloy to improve its stress rupture life at temperatures in excess of 1200° F. which comprises subjecting a nickel-base alloy having essentially the following composition, excluding incidental impurities:

	Percent
Chromium	8 to 10
Cobalt	9 to 11
Tungsten	11.5 to 13.5
Aluminum	4.7 to 5.25
Titanium	1.75 to 2.25
Columbium	0.75 to 1.25
Boron	0.01 to 0.02
Carbon	0.12 to 0.17
Zirconium	0.03 to 0.08

(but not more than 5 times the boron content), and the balance of the alloy consisting of nickel, and heat-treating such alloy by heating the alloy for a period of one to four hours at a temperature of about 2000° F., cooling the alloy in gas, heating the alloy to a temperature of from 2200° F. to 2260° F. for several hours, cooling the alloy in gas, reheating the alloy to a temperature in the range of from 1550° to 1650° F. for a period of one to three days, and again cooling the alloy in gas.

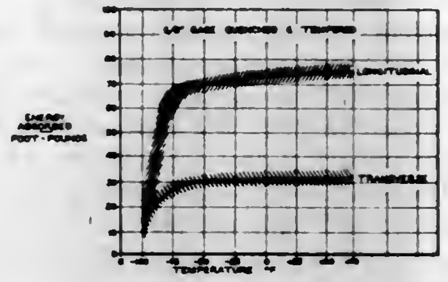
3,310,441
STEEL

Louis I. Mandich, Kennett Square, Pa., assignor to Lukens Steel Company, Coatesville, Pa., a corporation of Pennsylvania
Filed July 20, 1966, Ser. No. 569,553
23 Claims. (Cl. 148—36)

1. A high strength steel plate containing iron, incidental impurities and about:

Element:	Percentage by weight
Carbon	0.08 to 0.25
Manganese	0.70 to 1.35
Phosphorus	up to 0.035
Sulphur	up to 0.040
Silicon	0.10 to 0.35
Aluminum	minimum 0.015
Copper	0.01 to 0.47
Nickel	0.05 to 0.35
Chromium	0.05 to 0.25
Molybdenum	0.01 to 0.15

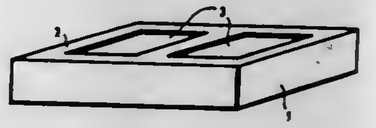
said steel plate being in a heat-treated condition and characterized by a yield point in excess of about 50,000



p.s.i., a tensile strength in excess of about 70,000 p.s.i., and a minimum Charpy V-Notch impact strength at −75° F. of 15 foot-pounds.

3,310,442
METHOD OF PRODUCING SEMICONDUCTORS BY DIFFUSION

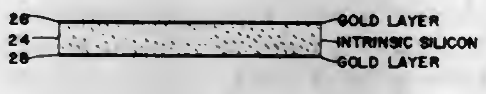
Günter Winstel and Franz Wassermann, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany
Filed Oct. 16, 1964, Ser. No. 405,332
14 Claims. (Cl. 148—187)



1. A method for producing semiconductor components having limited regions of respectively different conductances produced by diffusing doping material into silicon dioxide coated semiconductor crystals, which comprises depositing upon selected portions of the dioxide coating, a stoichiometric quantity of at least one addition material reactionable with the dioxide coating to form a gaseous compound at a temperature less than the diffusion temperature, heating said crystal to permit said addition substance to react with said dioxide coating, and thereafter diffusing through the resulting openings of said coating a doping material into the crystals at the diffusion temperature.

3,310,443
METHOD OF FORMING THIN WINDOW DRIFTED SILICON CHARGED PARTICLE DETECTOR

Theodore E. Fessler, Berea, Albert B. Smith, Cleveland, and John Samuel Vincent, Parma, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 6, 1963, Ser. No. 307,269
2 Claims. (Cl. 148—188)



1. The method of producing a thick junction radiation detector comprising evaporatively depositing a thin coating of aluminum to one side of a p-type silicon body; painting a suspension of lithium and oil to the opposite side of said p-type silicon body; heating said p-type silicon body in a nitrogen atmosphere at 450° C. to diffuse the lithium into the p-type silicon body and form an n-type

region; applying heat and an electric field at 250 volts and 15 milliamperes to initiate drifting of the lithium in the silicon body; maintaining the amperage and voltage at the constant rates of 15 milliamperes and 250 volts for a time proportional to the cube of the thickness of the silicon body to complete drifting to form a thick depletion region; lapping the opposed sides of the silicon body to the depth of at least .005" to form an intrinsic silicon body; etching the lapped sides of the intrinsic siilcon body to remove surface imperfections; depositing a thin gold coating to the etched sides of the intrinsic silicon to provide reactive contacts; and applying electrical contacts to the gold coating by layering a spot of epoxy cement and silver paint thereto.

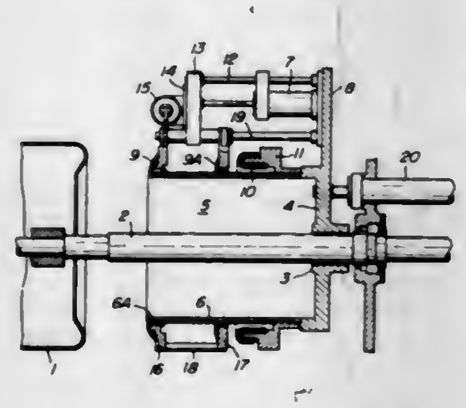
3,310,444
MONOPROPELLANT COMPRISING A DIFLUORAMINOALKANE AND FUMING NITRIC ACID

Jack R. Gould, Monsey, and Edward M. Butler, Yonkers, N.Y., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 9, 1962, Ser. No. 186,269
8 Claims. (Cl. 149—74)

1. A storable high energy homogeneous liquid monopropellant composition characterized by low impact sensitivity consisting essentially of a substantially non-high explosive organic monopropellant wherein the said monopropellant is a difluoraminoalkane having at least one —NF_2 group the length of the alkane chain being from 1 to 10 carbon atoms plus a supplementary oxidizing agent consisting essentially of a fuming nitric acid of low water content, the oxidizing agent being sufficient to permit the carbon of the monopropellant to be converted into essentially gaseous oxides of carbon during combustion.

3,310,445
APPARATUS FOR BUILDING TIRES

Takashi Nakane, Tokyo, and Takashi Kobayashi, Hiratsuka-shi, Japan, assignors to The Yokohama Rubber Company, Limited, Tokyo, Japan, a corporation of Japan
Filed June 26, 1963, Ser. No. 290,786
Claims priority, application Japan, June 28, 1962, 37/26,543
8 Claims. (Cl. 156—131)



1. For use with a tire building drum, bead and finishing application apparatus comprising a supplemental drum coaxially aligned with said drum and adapted to support at least two bead elements and a finishing ring element thereon all in spaced relation relative to one another, control means to bring said bead elements individually and one at a time and then said finishing ring element sequentially to the end of the supplemental drum adjacent the tire building drum, drum displacement means to displace the supplemental drum axially towards said tire building drum, and application means to apply each element individually when it is at said end of the supplemental drum to the tire building drum.

3,310,446
METHOD OF MAKING A WATER SOLUBLE PROTEIN CONTAINER

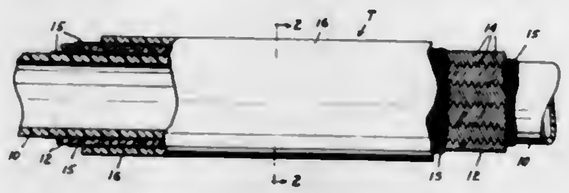
Louis E. Georgevits, Leominster, Mass., assignor to The Borden Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed June 30, 1961, Ser. No. 120,901
2 Claims. (Cl. 156—198)

1. The process of making a container which comprises:

(1) casting a dispersion comprising a water dispersible protein in natural unhardened condition selected from the group consisting of casein and the proteins isolated from the meal of soybeans, peanuts and corn, a water soluble pH establishing agent selected from the group consisting of alkalies and acids in amount to establish the pH of the dispersion at a level outside the isoelectric range for the selected protein, and a water soluble polyhydric alcohol serving as a promoter of heat sealing and being in the proportion of 50–200 parts by weight for about 100 parts of the protein into film form;
(2) drying the film;
(3) shaping the film into a container; and
(4) heat sealing the container on at least one edge thereof at a temperature of softening of the protein in contact with the promoter of heat sealing but below the temperature of substantial decomposition of the protein therein.

3,310,447
COMPOSITE TUBING METHOD OF MANUFACTURE

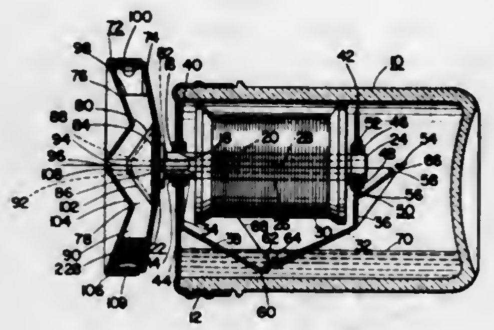
Richard A. Matthews, Chagrin Falls, Ohio, assignor to Samuel Moore and Company, Mantua, Ohio, a corporation of Ohio
Original application Aug. 30, 1962, Ser. No. 220,531, now Patent No. 3,116,760, dated Jan. 7, 1964. Divided and this application Apr. 24, 1963, Ser. No. 275,443
5 Claims. (Cl. 156—244)



1. In a method of producing a high strength composite tubing product having good flexibility and crimp resistance characteristics, and wherein the tubing comprises a relatively thin-walled inner tube of elastomeric polyurethane material, at least one layer of fibrous material disposed about said inner tube and forming a reinforcing member, an elastomeric polyurethane adhesive bonding said reinforcing member to said inner tube, and an outer sheath of elastomeric polyurethane material covering said reinforcing member and being bonded to the latter and said inner tube by said adhesive material, the steps including extruding the inner tube of elastomeric polyurethane material, applying a liquid layer of said elastomeric polyurethane adhesive at a viscosity of between about 1000 to 100,000 centipoises and at a temperature between about 70° F. up to 225° F. to said inner tube, heating the adhesive coated inner tube at a temperature between about 125° F. to 250° F. for a time sufficient to give said adhesive a gelled condition, applying said reinforcing member to the adhesive coated inner tube while substantially in the said gelled condition so as to incapsulate said reinforcing member without substantial penetration of the fibers to permit relative movement thereof, and then extruding said outer sheath over the adhesive incapsulated reinforcing member prior to complete setting of said adhesive, and while the latter is substantially in said gelled condition.

3,310,448
APPARATUS FOR ADHESIVELY SECURING SEED ONTO A STRING

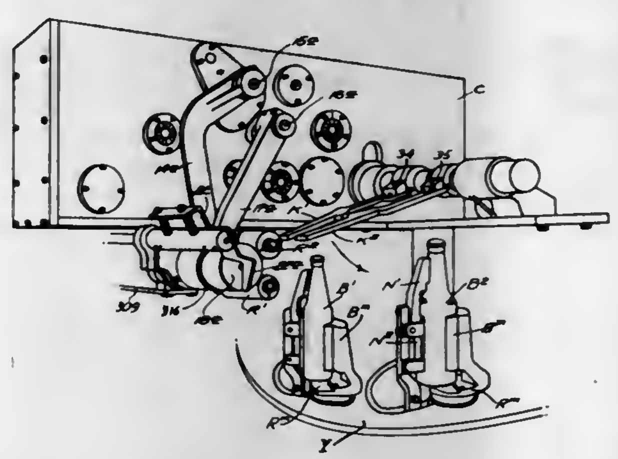
Myron D. Tupper, Fort Wayne, Ind.
(4606 SE. 100th Ave., Portland, Oreg. 97266)
Filed Aug. 26, 1964, Ser. No. 392,176
16 Claims. (Cl. 156—349)



1. An apparatus for adhesively securing seeds onto a string comprising a wide-mouth container having a closure adapted to form a liquid-tight seal with the mouth of said container for closing the same, said closure having a first opening therein, a shaft rotatably supported in said opening and having a first end exteriorly of said container and a second end interiorly of said container, said shaft having a coaxial first passageway extending therethrough and communicating with both of said shaft ends, a spool coaxially positioned on said shaft intermediate said closure and said second end within said container, said spool being secured to said shaft, said spool being rotatable with said shaft, a yoke formed of strip metal having opposite ends formed into generally a U shape to define a pair of upright portions and an interconnecting central portion, said yoke having two second openings positioned adjacent said opposite ends, respectively, said yoke being secured to said closure with said upright portions being positioned on said shaft contigous to said closure and intermediate said closure and said spool and intermediate said spool and said second end, respectively, said first and second openings being in registry, said yoke being suspended from said closure and depending from said shaft, said shaft being rotatable independently of said yoke and said closure, a grommet secured in said first opening and one of said second openings of said closure and said yoke, respectively, said central yoke portion being bent laterally at a medial position away from said spool, said medial position being contiguous to said container, a first-string-guiding aperture formed in said central yoke portion adjacent said medial position, a support having a second string-guiding aperture formed therein, said support being secured to said yoke adjacent said second shaft end having a portion contiguous with said container, said second aperture being positioned in relation with said first aperture and said first passageway to guide the dispensing of string from said spool and through said passageway with said string contacting only said yoke and said apertures, a rotary seed applicator having generally cylindrical base member and a cover, said base member being secured to said shaft and having a side wall and a bottom with a first coaxial opening therein, and said cover including a flange removably fitting over said side wall and enclosing said applicator thereby forming an applicating chamber, said applicator being secured to said first shaft end exteriorly of said container, said applicator being rotatable with said shaft, said cover having a second opening therein in registry with said first opening and said second passageway whereby adhesive may be placed within said container and string can be dispensed from said spool, wet with adhesive in said container, and drawn through said aperture and said first passageway into said applicating chamber, whereby seeds contained therein are continuously and adhesively secured to said string thereby providing a string having seeds adhered thereon.

3,310,449
LABELING MACHINE WITH YIELDABLE DRIVE MEANS FOR PICKER AND EMERGENCY STOP

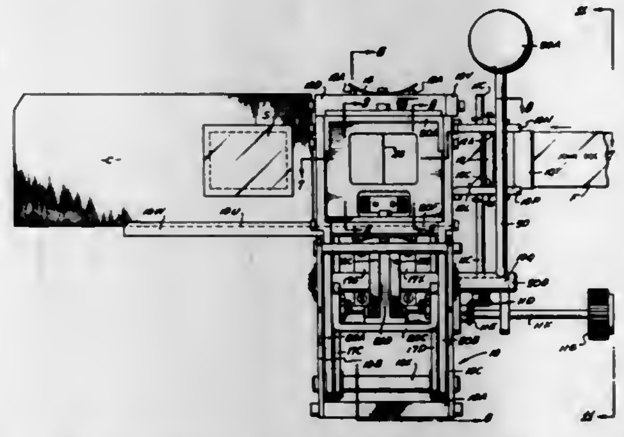
Sidney T. Carter, Shrewsbury, Mass., assignor to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin
Original application May 20, 1963, Ser. No. 281,624. Divided and this application Oct. 21, 1965, Ser. No. 499,762
7 Claims. (Cl. 156—365)



1. In combination, in a labeling machine, a magazine for labels, a picker, and means normally operative to move the picker cycle-after-cycle between the magazine and a label delivery point, characterized in that the means for moving the picker comprises a power-driven element, and a yieldable device which normally constrains the picker, during each cycle of operation, to advance toward the label delivery point but which yields, if the picker encounter an obstruction in moving toward the label delivery point, to allow the picker to stop before any part of the machine suffers injury.

3,310,450
FILM MOUNTER

Francis A. Dedona, Sherman Oaks, and James W. Lucas, Los Angeles, Calif., assignors to The Scionics Corporation, Canoga Park, Calif., a corporation of California
Filed Apr. 8, 1963, Ser. No. 271,401
17 Claims. (Cl. 156—514)

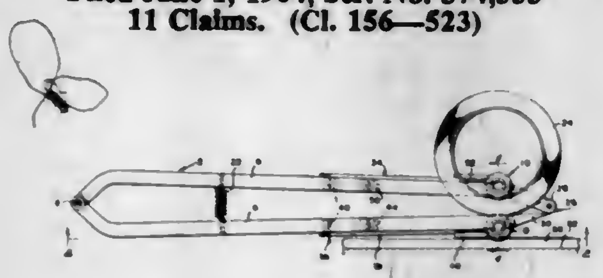


1. In a film mounter of the character described, a support, film-feed means on said support for feeding a film web, a pair of spaced film guides on said support through which said feed means threads a section of film with said section being supported by said feed means as a cantilever

in said guides, and a pair of spaced cutting elements movably mounted on said support and cooperating with edges of said film guide to sever said film, one of said cutting elements serving to trim the forward edge of the film and the other one of said cutting elements serving to sever said section from said web, said cutting elements being on a frame member, film guide means extending in the direction of film travel between said film guides for assuring film movement from one of said film guides to and through the other of said film guides, means movably mounting said film guide means on said support, means for moving said frame member, said frame member when moved by the last-mentioned means serving to move said guide means out of the path of movement of said frame member.

3,310,451
APPARATUS FOR DISPENSING AND APPLYING PRESSURE SENSITIVE TAPE

Daniel W. Hartley, 304 Mosstree Road, and John E. Day, Sr., 400 Arant St., both of North Charleston, S.C. 29406
Filed June 1, 1964, Ser. No. 374,555
11 Claims. (Cl. 156—523)



1. A tape applicator for dispensing pressure sensitive tape from a hollow cylindrical tape supply roll, comprising

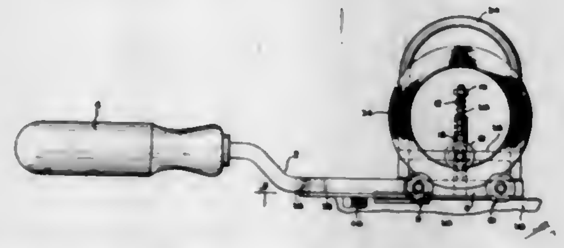
handle means including a pair of rigid legs mutually connected at one end to permit movement of the free ends of said legs toward and away from each other;

a pair of parallel rollers on one side of said handle means, said rollers being normal to and rotatably connected with the free extremities of said legs, respecitvely, and

means biasing the free ends of said legs toward each other, whereby when said rollers are arranged in engagement with the inner and outer peripheries of said supply roll, the tape may be withdrawn from the supply roll and guideed back upon the periphery of the outer roller for pressing application upon a fixed surface.

3,310,452
PORTABLE TAPE APPLICATOR

Daniel W. Hartley, 304 Mosstree Road, and John E. Day, Sr., 400 Arant St., both of North Charleston, S.C. 29406
Filed June 1, 1964, Ser. No. 374,556
9 Claims. (Cl. 156—523)



1. Apparatus for dispensing and applying pressure sensitive tape from a hollow cylindrical supply roll, comprising

handle means including at one end a horizontal rigid bar portion;

a pair of horizontal parallel outer rollers on one side of and rotatably connected with said bar portion, said outer rollers being normal to and longitudinally spaced with respect to said bar portion;

an inner roller parallel with, intermediate and generally above said outer rollers;

means connecting said inner roller with said handle means for vertical parallel movement relative to said outer rollers; and

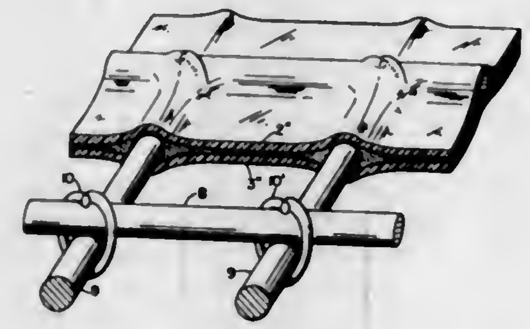
spring means biasing said inner roller downwardly toward said outer rollers, whereby when the inner and outer rollers are placed in engagement with the inner and outer peripheries of said tape supply roll, said inner roller maintains said supply roll in peripheral engagement with the outer rollers.

ERRATUM

For Class 161—18 see:
Patent No. 3,310,130

3,310,453
TEAR RESISTANT MATERIAL

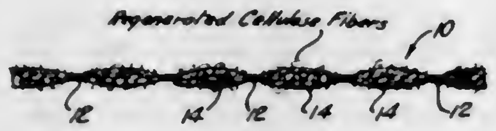
Risto P. Lappala, Houston, Tex., and John M. Diehl, Madison, Wis., assignors to Bjorksten Research Laboratories, Inc., Madison, Wis., a corporation of Illinois
Filed Dec. 5, 1960, Ser. No. 73,912
11 Claims. (Cl. 161—49)



1. A tear resistant material comprising a non-woven grid comprising at least two sets of cross-laid, elongated metal strands which intersect, a single lamina of elongatable, non-porous, flexible, foldable synthetic resin contiguous and coextensive with the strands of said grid, said strands provided with encircling metal fastening means at the intersections thereof which hold said members together yet do not unduly restrict the sliding of said strands with respect to each other and do not unduly restrict the sliding of said fastening means with respect to said strands and do not unduly restrict the free-varying of the angles of intersection of said strands.

3,310,454
ABSORBENT PADS

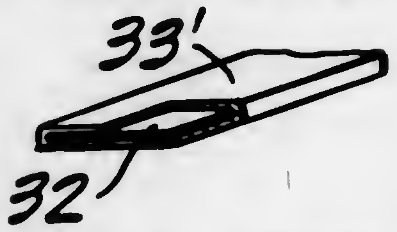
Patrick A. Florio, Short Hills, N.J., and Henry G. Schirmer, Spartanburg, S.C., assignors to Johnson & Johnson, a corporation of New Jersey
Filed Nov. 29, 1962, Ser. No. 240,878
10 Claims. (Cl. 161—123)



1. An absorbent pad comprising a nonwoven bat of regenerated cellulose fibers, said pad having relatively narrow areas of compressed fibers and intermediate said narrow areas relatively wide areas of uncompressed fibers, the fibers in said compressed areas being bonded together and having a finish of polyoxyethylene sorbitol, said polyoxyethylene sorbitol having a dendro number of from about 6 to about 30.

3,310,455
MAT OF RIBBON SHAPED MINERAL FIBERS HAVING A REFLECTIVE COATING

William P. Warthen, Spartanburg, S.C., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Application Mar. 17, 1961, Ser. No. 96,568, which is a division of application Ser. No. 683,278, Sept. 11, 1957, now Patent No. 3,010,146. Divided and this application Dec. 24, 1964, Ser. No. 421,015
7 Claims. (Cl. 161—170)



3. An article of manufacture comprising an attenuated filament of glass of rectangular cross section of a width of approximately eight to twelve times its thickness, and a coating of reflective material surrounding and bonded to the filament.

3,310,456
COMPOSITE ACRYLONITRILE FIBER DYEABLE WITH BOTH ACID AND BASIC DYESTUFFS AND METHOD OF MANUFACTURE

Yoshimasa Fujita and Keitaro Shimoda, Saidaiji, Okayama Prefecture, Japan, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Nov. 21, 1963, Ser. No. 325,490
Claims priority, application Japan, Dec. 5, 1962, 37/54,676
6 Claims. (Cl. 161—177)

1. A multi-component fiber comprising a first acrylonitrile polymer component containing at least 8 milliequivalents of basic dye receptive groups per kilogram of polymer combined in the acrylonitrile polymer and a second acrylonitrile polymer component containing at least 100 milliequivalents of acid dye receptive groups per kilogram of polymer combined in the acrylonitrile polymer, the ratio of acid dye receptive groups in the second component to basic dye receptive groups in the first component being between 8:1 and 14:1; said two components existing in separate zones intimately adhered to each other throughout the length of said fiber with a portion of each of said zones defining a portion of the surface of said fiber.

3,310,457
GLASS-REINFORCED EPOXIDE RESIN LAMINATE AND METHOD OF MAKING SAME

John W. Trebilcock, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 29, 1962, Ser. No. 241,028
3 Claims. (Cl. 161—185)

2. A glass-reinforced epoxide resin laminate having outstandingly high wet strength comprising: glass-reinforcing elements treated with a Werner complex of chromium and an acid selected from the group consisting of gallic acid and tannic acid, the ratio of the chromium atoms to acido groups being 1:1 or less, the complex having a basicity of less than 50%, and an epoxide resin containing a curing agent, said treated glass-reinforcing elements impregnated with said epoxide resin.

3,310,458
TRANSPARENT LAMINATES AND METHOD FOR PRODUCING SAME

Paul T. Mattimoe and John J. Hofmann, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 14, 1963, Ser. No. 265,038
13 Claims. (Cl. 161—248)

11. A transparent laminate, comprising a sheet of a stretched resin consisting essentially of polymethylmethacrylate, a layer composed of a mixture of hydrolyzed titanate-silicate esters adhered to one surface of said stretched resin sheet, a vinyl butyral resin interlayer bonded on one side to the free surface of said hydrolyzed titanate-silicate ester layer, and a sheet of a synthetic resin material bonded to the other side of said vinyl butyral interlayer.

3,310,459
METHOD OF FORMING A LATEX IMPREGNATED CELLULOSIC WATER-LAID WEB FOR USE AS A SURGICAL DRAPE

James L. Guthrie, Ashton, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed July 20, 1964, Ser. No. 383,903
7 Claims. (Cl. 162—12)

1. The method of making a surgical drape which comprises

(a) beating a pulp suspension of cellulosic fibers for 2 to 30 minutes to a Canadian Standard Freeness of 400–600 ml.,
(b) mercerizing said pulp suspension in an aqueous solution of sodium hydroxide of from 2 to 20 weight percent concentration at a temperature of from 0 to 50° C.,
(c) separating the mercerized pulp from the mercerizing solution to obtain a suspension containing approximately 10 to 50 percent by weight of the pulp,
(d) swelling the pulp in a liquid selected from the group consisting of hot water at 60 to 100° centigrade and dilute acid of from 1 to 40 weight percent at 0 to 40° centigrade for five minutes to one hour to obtain a final pH of 5–7,
(e) washing the pulp in cold water,
(f) beating said washed pulp for 2 to 30 minutes to a Canadian Standard Freeness of 650–800 ml.,
(g) forming the treated pulp into a web,
(h) and then impregnating said web with a latex material.

3,310,460
SIZING COMPOSITION OF STARCH AND A REACTION PRODUCT OF AN ISOCYANATE WITH AN ALKYLENE IMINE AND PROCESS OF SIZING PAPER THEREWITH

Albert Goldstein, New Shrewsbury, and John W. Brook, East Brunswick, N.J., assignors to Chemirad Corporation, East Brunswick, N.J., a corporation of Delaware
No Drawing. Filed Dec. 31, 1963, Ser. No. 341,156
6 Claims. (Cl. 162—164)

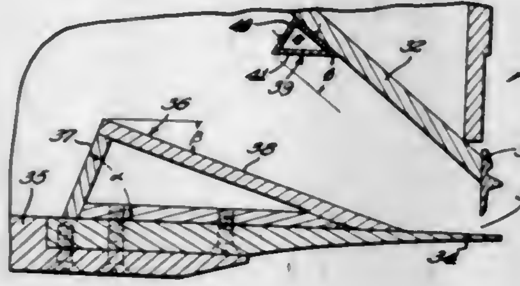
1. A composition for sizing cellulosic sheet material comprising an aqueous dispersion having

(a) from approximately 2 to 20 percent of the reaction product of a long chain aliphatic isocyanate with between 10 and 20 carbon atoms in the aliphatic chain and an alkylene imine selected from the class consisting of ethylene imine, 1,2-propylene imine, and 1,2-butylene imine, and
(b) about 4 percent of a starch.

4. A process for sizing cellulosic fibrous material comprising adding to an aqueous cellulosic fiber dispersion an aqueous dispersion having about 2 to 20 percent of the reaction product of an aliphatic isocyanate with from 10 to 20 carbon atoms in its aliphatic chain and an alkylene imine selected from the class consisting of ethylene imine, 1,2-propylene imine, and 1,2-butylene imine

and about 4 percent of a starch; and forming cellulosic sheet material from the thus treated dispersion.

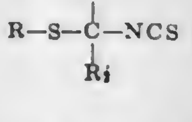
3,310,461
HEADBOX FOR A PAPERMAKING MACHINE
Fred R. Erbach, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Apr. 20, 1964, Ser. No. 360,846
2 Claims. (Cl. 162—344)



1. A paper machine stock headbox for discharging stock on a travelling forming surface comprising,
- a closed headbox chamber with a planar floor and a downwardly inclined forward wall leading toward a slice opening,
- a lower projection on the floor ahead of the slice opening extending into the flow stream absorbing energy of the stock flow and deflecting the stream upwardly to be intercepted by the flow stream moving toward the opening,
- and an upper projection on the forward wall positioned downstream of the lower projection and being smaller than said lower projection.

3,310,462
METHOD FOR CONTROLLING SOIL FUNGI WITH ISOTHIOCYANATES
John C. Watts, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 25, 1963, Ser. No. 290,314
4 Claims. (Cl. 167—22)

1. A method for controlling soil fungi comprising applying to soil a fungicidal amount of a compound of the formula:

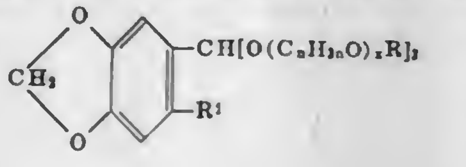


$$R-S-\overset{R_1}{\overset{|}{\underset{\underset{R_2}{|}}{C}}}-NCS$$

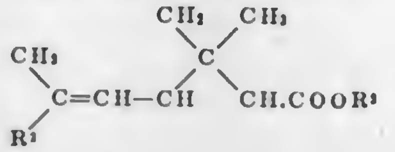
wherein
- R is selected from the group consisting of allyl and alkyl of less than 4 carbon atoms;
- R_1 is selected from the group consisting of hydrogen and methyl; and
- R_2 is selected from the group consisting of hydrogen and alkyl of less than 4 carbon atoms.

3,310,463
INSECTICIDAL MATERIALS
Leslie Owen Hopkins and Donald Roderick Maciver, both of Nakuru, Kenya, assignors to The Pyrethrum Board of Kenya, Nakuru, Kenya, a body corporate of Kenya
No Drawing. Filed July 11, 1966, Ser. No. 564,022
Claims priority, application Great Britain, June 9, 1964, 23,950/64
18 Claims. (Cl. 167—24)

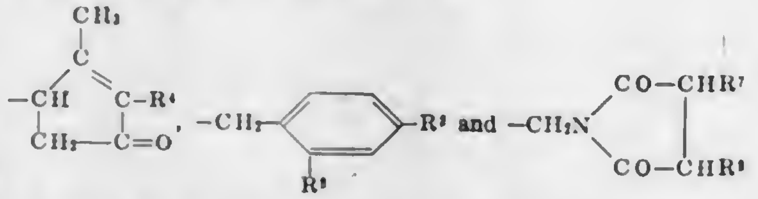
1. An insecticidal composition comprising from 99 to 1% by weight of a piperonyl acetal having the formula



in which R is an alkyl group having 1 to 6 carbon atoms, R^1 is selected from the group consisting of H, alkyl and alkenyl having not more than 6 carbon atoms, *n* is an integer which is greater than 1 but less than 4 and *x* is a positive integer which is less than 4, and from 1 to 99% by weight of an insecticidal ester of a cyclopropane monocarboxylic acid which ester has the formula



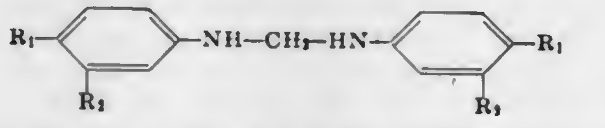
in which R^2 is selected from the group consisting of methyl and methoxycarbonyl and R^3 is selected from the group having one of the formulae



in which R^4 is an aliphatic ethylenically unsaturated hydrocarbon group having less than 8 carbon atoms or furfuryl, each of R^5 and R^6 is a lower alkyl group and each of R^7 and R^8 is a hydrogen atom or the two groups together with the carbon atoms to which they are attached form a benzene ring.

3,310,464
PROCESS FOR CONTROLLING NEMATODES WITH N,N'-DI (TETRA-SUBSTITUTED PHENYL) DIAMINOMETHANES
Alfred Margot, Basel, Switzerland, assignor J. R. Geigy A.G., Basel, Switzerland
No Drawing. Filed May 23, 1963, Ser. No. 282,557
Claims priority, application Switzerland, June 6, 1962, 6,836/62
3 Claims. (Cl. 167—30)

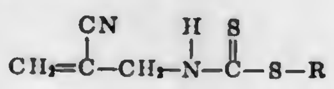
1. A process for controlling plant-parasitic nematodes which comprises introducing into at least the surface layer of a soil serving for the cultivation of plants and infested with nematodes, a composition consisting essentially of a compound of the formula


(I)

wherein each of R_1 and R_2, independently, represents a member selected from the group consisting of alkyl with from 1 to 4 carbon atoms, chloro-lower alkyl, bromo-lower alkyl, fluoro-lower alkyl, chlorine, fluorine and bromine, in an amount sufficient to control plant-parasitic nematodes, and an agricultural carrier.

3,310,465
2-CYANOALLYL ESTERS OF DITHIOCARBAMIC ACID AS SOIL FUNGICIDES
Mason M. Turner, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 7, 1964, Ser. No. 388,272
3 Claims. (Cl. 167—30)

1. A method of controlling soil fungi which comprises applying to the soil an effective fungicidal quantity of a compound having the formula:



$$CH_2=\overset{CN}{\overset{|}{C}}-CH_2-\overset{H}{\overset{|}{N}}-\overset{S}{\overset{\|}{C}}-S-R$$

wherein R represents a member of the group consisting of unsubstituted aryl of 6–14 carbon atoms and aryl of 6–14 carbon atoms substituted by at least one substituent selected from the group consisting of middle halogen, alkyl of 1–5 carbon atoms, alkoxy of 1–5 carbon atoms, hydroxy, nitro and amino (—NH_2).

3,310,466
METHOD AND COMPOSITION FOR CREATING AEROSOL DISPERSIONS
John W. Hession, Jr., New Canaan, Conn., assignor of one-third to George D. Besler, New York, N.Y., and one-third to Mark A. Hession, Darien, Conn.
Original application Sept. 10, 1963, Ser. No. 307,870, now Patent No. 3,200,535, dated Aug. 17, 1965. Divided and this application Oct. 28, 1964, Ser. No. 407,155
12 Claims. (Cl. 167—39)

4. The method of producing an aerosol dispersion containing a heat sensitive insecticide comprising the steps of:
- (A) containing a petroleum distillate fraction under pressure,
  - (1) the distillate being in solution with a heat sensitive insecticide,
- (B) quickly heating the solution while contained under pressure to a temperature
  - (1) above the vaporization point of the lower boiling portion of the solution at atmospheric pressure,
  - (2) but below the vaporization point of the higher boiling portion of the solution at atmospheric pressure,
  - (3) the pressure being great enough to maintain the heated solution substantially as a liquid, and then
- (C) forcing the heated solution to the atmosphere through an orifice,

whereby the lower boiling portion of the solution vaporizes with explosive force to atomize the higher boiling portion of the solution into an aerosol dispersion.

3,310,467
STABILIZED METHYLCARBAMATE INSECTICIDES
Sherman F. Kramer and Jack K. Dale, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed June 29, 1964, Ser. No. 379,008
10 Claims. (Cl. 167—42)

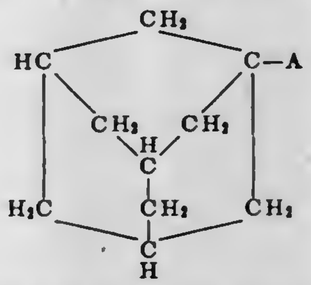
5. The method of controlling pestiferous insects which comprises contacting live, pestiferous insects with an insecticidally effective amount of stabilized 6-chloro-3,4-xylyl methylcarbamate insecticide in a composition comprising at least 50% free-flowing, hydrophobic starch and from about 0.25% to about 10% of the 6-chloro-3,4-xylyl methylcarbamate.

3,310,468
ANTIFUNGAL ANTIBIOTIC RUTAMYCIN AND PROCESS FOR THE PRODUCTION THEREOF
Robert Q. Thompson, Greenwood, and James M. McGuire, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
Filed Oct. 29, 1962, Ser. No. 233,707
3 Claims. (Cl. 167—65)

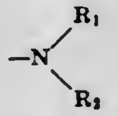
1. A method of producing rutamycin which comprises cultivating a rutamycin-producing strain of *Streptomyces rutgersensis* ATCC 14876 in a culture medium containing assimilable sources of carbohydrate, nitrogen, and inorganic salts under submerged aerobic conditions until a substantial amount of rutamycin is produced by said organism in said culture medium.

3,310,469
PHARMACEUTICAL COMPOSITIONS AND METHODS UTILIZING 1-AMINOADAMANTANE AND ITS DERIVATIVES
Marvin Paulshock and John C. Watts, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 5, 1966, Ser. No. 547,752
30 Claims. (Cl. 167—65)

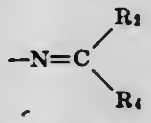
1. A composition comprising a compound selected from the group consisting of those of the formula



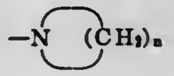
where A is selected from the group consisting of

(1)


where R_1 is selected from the group consisting of hydrogen; alkyl of 1 through 4 carbons; mono-substituted alkyl of 1 through 4 carbons wherein the substituent is selected from the group consisting of hydroxy, alkoxy of 1 through 3 carbons, amino, alkylamino of 1 through 2 carbons, dialkylamino where each alkyl has 1 through 2 carbons, and hydroxyalkoxyalkyl where the alkoxy portion has from 1 through 3 carbons and the alkyl portion has from 1 through 4 carbons; alkenyl of 3 through 6 carbons having at least one methylene group between the nitrogen of the group —NR_1R_2 and the first unsaturation of said alkenyl group; alkynyl of 3 through 6 carbons having at least one methylene group between the nitrogen of the group —NR_1R_2 and the first unsaturation of said alkynyl group; and R_2 is selected from the group consisting of hydrogen; alkyl of 1 through 4 carbons; mono-substituted alkyl of 1 through 4 carbons wherein the substituent is selected from the group consisting of chlorine, hydroxy, alkoxy of 1 through 3 carbons, amino, alkylamino of 1 through 2 carbons, dialkylamino where each alkyl has 1 through 2 carbons, and hydroxyalkyloxyalkyl where the alkoxy portion has from 1 through 3 carbons and the alkyl portion has from 1 through 4 carbons; alkenyl of 3 through 6 carbons having at least one methylene group between the nitrogen of the group —NR_1R_2 and the first unsaturation of said alkenyl group; alkynyl of 3 through 6 carbons having at least one methylene group between the nitrogen of the group —NR_1R_2 and the first unsaturation of said alkynyl group; formyl; chlorine; bromine; carboxymethyl; methoxycarbonylmethyl; and ethoxycarbonylmethyl; with —NR_1R_2 having a total of 12 carbons maximum;

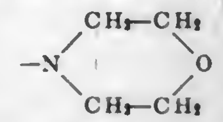
(2)


where R_3 is selected from the group consisting of hydrogen; alkyl of 1 through 4 carbons; and phenyl; and R_4 is selected from the group consisting of hydrogen and alkyl of 1 through 4 carbons;

(3)


where *n* is a positive whole number of 2 through 6;

(4)



and the pharmaceutically-acceptable salts of said compounds

and from 25 to 90% of a non-toxic pharmaceutical carrier for said compound.

3,310,470

ANDROSTANE-1α,3α,17β-TRIOL AND FATTY ACID ESTERS THEREOF

Paul-Eberhard Schulze and Alfred Popper, Berlin, Germany, assignors to Schering Aktiengesellschaft, Berlin, Germany

No Drawing. Filed Oct. 19, 1964, Ser. No. 404,925

Claims priority, application Germany, Nov. 9, 1963, Sch 34,139

12 Claims. (Cl. 167—74)

1. Androstane - 1α,3α,17β - triol and esters thereof of fatty acids containing 2–11 carbon atoms.

11. The method of treating with anabolically active healing agents comprising contacting the body with a compound selected from the group consisting of:

Androstane-1α,3α,17β-triol,
Androstane-1α,3α,17β-triol-3α,17β-diacetate,
Androstane-1α,3α,17β-triol-17β-acetate,
Androstane-1α,3α,17β-triol-1α,3α,17β-triacetate,
Androstane-1α,3α,17β-triol-1α,3α-dicaproate - 17β - acetate,
Androstane-1α,3α,17β-triol-17β-caproate,
Androstane-1α,3α,17β-triol-1α-acetate,
Androstane-1α,3α,17β-triol - 1,17 - diacetate, and mixtures thereof.

3,310,471

PLACENTAL LACTOGENIC FACTOR PROCESS

Alan J. Parcells, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed May 13, 1965, Ser. No. 455,612

1 Claim. (Cl. 167—74)

The method of purifying human placental lactogenic factor which comprises applying to diethylaminoethyl cellulose an aqueous solution of human placental lactogen of pH about 8 to 10, washing with an aqueous buffer of this pH range, having an ionic strength of about 0.02, and removing the human placental lactogen from the diethylaminoethyl cellulose with an aqueous buffer having a sodium chloride molarity of about 0.1 to 2.0 and a pH of about 8 to 10.

3,310,472

SEA SHELL PERFUME DIFFUSER

Hermann J. Kohl, New York, N.Y., assignor to Norda Essential Oil and Chemical Co., Inc., New York, N.Y., a corporation of New York

No Drawing. Filed May 20, 1963, Ser. No. 281,741

3 Claims. (Cl. 167—94)

1. A a perfume diffuser, a seal shell which comprises an outer layer of conchyolin and is impregnated with a perfume oil.

3,310,473

SPECTRAL SHIFT REACTOR CONTROL

Warren E. Winsche, Bellport, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 21, 1966, Ser. No. 522,333

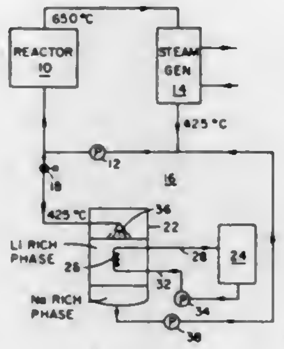
2 Claims. (Cl. 176—20)

1. A spectral shift control for a liquid metal cooled fast neutron reactor comprising:

(a) means for pumping liquid sodium containing lithium in solution through said reactor;

(b) means for by-passing a portion of said sodium outside of said reactor;

(c) equilibrator means for selectively increasing and decreasing the amount of lithium in solution in the bypassed portion of sodium to effect a desired change in reactor reactivity; and



(d) means for recombining the bypassed portion of sodium with the sodium mainstream prior to entering said reactor;

(e) said equilibrator means including means for maintaining separate lithium rich and sodium rich phases of sodium-lithium mixtures by regulating the temperature within said equilibrator means, the latter temperature determining the particular compositions of the lithium rich and sodium rich mixtures.

3,310,474

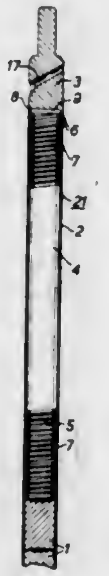
NUCLEAR REACTOR FUEL ELEMENTS

Alan Charles Anthony Saunders, Ribbleton, Preston, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed May 27, 1965, Ser. No. 459,336

Claims priority, application Great Britain, July 23, 1964, 29,708/64

3 Claims. (Cl. 176—76)



1. A nuclear reactor fuel element comprising a tubular sheath,

end closures for said sheath,

a stack of fuel members contained within said sheath,

a helical coil spring bearing at one end against the sheath short of the adjacent end closure and at the other end against one of the fuel members for consolidating said stack of fuel members in one end of said sheath.

3,310,475

METHOD FOR PRODUCING L-ASPARTIC ACID

Saburo Yamatodani, Minoo, Atsushi Kakinuma, Osaka, and Tuneo Kanamaru, Nishinomiya, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,649

Claims priority, application Japan, Feb. 24, 1964, 39/9,967

8 Claims. (Cl. 195—30)

1. A method for producing L-aspartic acid, which comprises incubating Pseudomonas A–12 (ATCC 15915) in a culture medium containing maleic acid as the sole carbon source and allowing thus obtained culture broth to react with ammonium fumarate in aqueous solution, the initial concentration of the substrate in terms of fumaric acid being about between 15% and 30% (weight/volume) relative to the whole reaction mixture.

3,310,476

PROCESS FOR PREPARING A CELLULOLYTIC ENZYME FROM *TRAMETES SUAVEOLENS*

William D. Yerkes, Jr., Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

No Drawing. Filed Oct. 2, 1964, Ser. No. 401,240

4 Claims. (Cl. 195—66)

1. The process of producing a cellulolytic enzyme which comprises the step of growing *Trametes suaveolens* on a culture substrate which includes as a carbohydrate source finely divided wood and also a protein and mineral element source, and separating out the cellulolytic enzyme.

3,310,477

METHOD OF ISOLATING A DESULFOVIBRIO FOR USE IN REMOVING SULFATES FROM BRINE

Charles R. Wilke, El Cerrito, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 27, 1964, Ser. No. 414,481

2 Claims. (Cl. 195—96)

1. A method of isolating a bacterial strain of the genus desulfovibrio for use in removing sulfates from brine solutions, the steps comprising adding a saline growth medium to a natural sample from a salty environment which contains said bacteria strain whereby growth of a culture of the salt tolerant bacteria strains in said sample is induced, adding an inhibitor to said culture which depresses motility of bacteria, said inhibitor being of a type which affects the motility of desulfovibrio less strongly than that of other salt tolerant bacteria strains, disposing said culture containing said inhibitor adjacent a body of sterile culture medium, and separating a portion of said sterile culture medium from the remainder thereof after a period of time, said separated portion being remote from the juncture of said sterile culture medium with the original culture whereby the separated portion contains only the relatively more motile desulfovibrio bacteria.

3,310,478

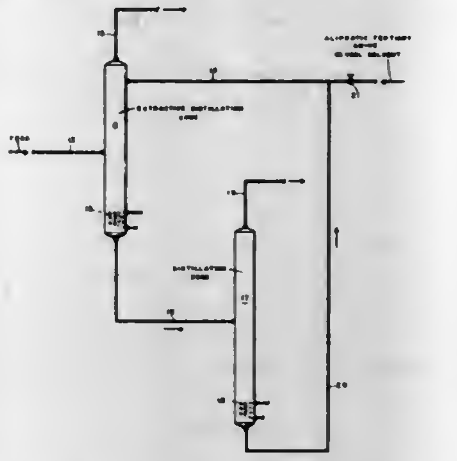
SEPARATION OF ALICYCLIC KETONES AND ALCOHOLS BY EXTRACTIVE DISTILLATION WITH A GLYCOL

Emanuel M. Amir, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Filed July 10, 1964, Ser. No. 381,668

7 Claims. (Cl. 203—6)

1. A method for separating a C_5 to C_{12} alicyclic ketone from its corresponding alicyclic alcohol which comprises contacting a mixture of said alicyclic ketone and alcohol in an extraction zone under extractive distillation conditions with a glycol and an aliphatic tertiary amine to form an overhead fraction and a bottoms fraction, and recovering said alicyclic ketone as said overhead fraction.



3,310,479

ELECTROLYTIC RECORDING MEDIA

Amnon Goldstein, Forest Hills, and Allan R. McGreevy, Elmhurst, N.Y., assignors to Fairchild Camera & Instrument Corporation, Syosset, N.Y., a corporation of New York

No Drawing. Filed Feb. 6, 1963, Ser. No. 256,543

9 Claims. (Cl. 204—2)

1. For use in electrolytic facsimile recording, a wet web comprising a porous sheet impregnated with an electrolytically conducting aqueous solution containing at least 1% by weight of a phenolic marking compound together with from about 1% to about 10% by weight based on the anhydrous salt of a tetraborate sensitizer.

3,310,480

CHROMIUM ELECTROPLATING

Henry Brown, Huntington Woods, Mich., assignor to The Udylite Corporation, Warren, Mich., a corporation of Delaware

No Drawing. Filed Apr. 25, 1966, Ser. No. 522,361

10 Claims. (Cl. 204—51)

1. An aqueous acidic hexavalent chromium bath for the electrodeposition of bright chromium plate which contains dissolved therein about 0.5 gram/liter to 10 grams/liter of a bath soluble fluorocarbon phosphonic acid.

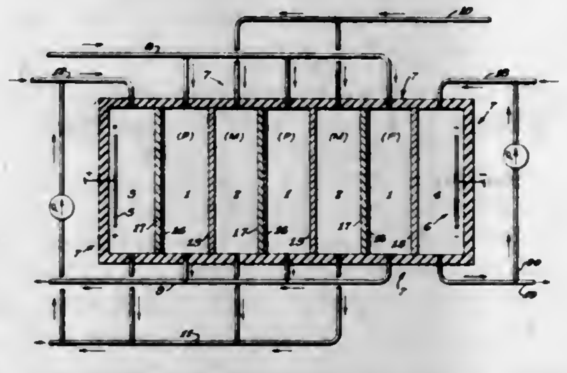
3,310,481

REMOVAL OF RESIDUAL MONOMERIC SULFONATES FROM POLYMERIZATES THEREOF

Richard A. Mock and William N. Vanderkool, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Sent. 10, 1962, Ser. No. 222,408

5 Claims. (Cl. 204—180)

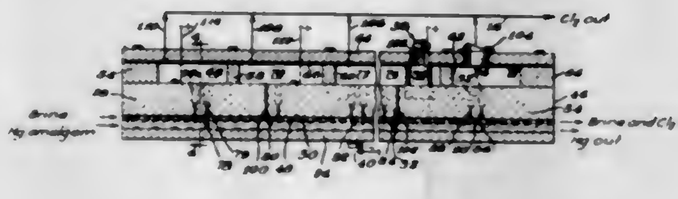


1. A method which comprises passing an aqueous dispersion of a polyvinyl organic sulfonate containing residual amounts of vinyl organic sulfonate through the puri-

fication chamber of at least one electrodialysis cell, said purification chamber having one wall of a cation permselective membrane and another wall of an anion permselective membrane inwardly shielded on the purification chamber side with an ion permeable non-ionic membrane, each of said walls being in contact with adjacent but electrically separate volume of an aqueous electrolyte, the electrolyte in contact with the cation permselective membrane being in electrical communication with a cathode and the aqueous electrolyte in contact with the anion permselective membrane being in electrical communication with an anode and, while passing the dispersion through the purification chamber, impressing a direct current unidirectionally through the electrodialysis cell, whereby monomer is removed from the aqueous polymerizate.

3,310,482
ELECTROLYTIC CELL AND ANODE ASSEMBLY THEREFOR

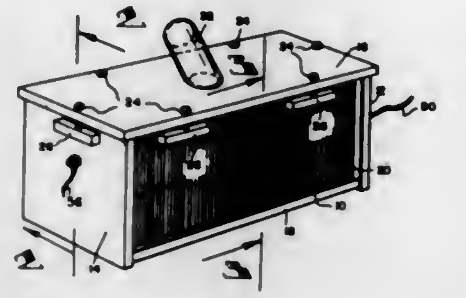
Charles K. Bon, Richard E. Carr, and Marshall P. Neipert, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Sept. 10, 1962, Ser. No. 222,409
5 Claims. (Cl. 204—219)



1. A high velocity type flowing cathode electrolytic cell having an input end and an output end and including a composite anode structure, a cathode, means for maintaining said anode structure and cathode in predetermined spaced apart relationship, means for feeding electrolyte into the input end of said cell, and means for removing electrolyte from the output end of said cell, said cathode having a generally planar surface facing said anode structure, said anode structure having a graphite block which has a surface facing said cathode, a top member, said top member being spaced from said graphite block, side and end members, said side and end members joining said graphite and top generally along the periphery of said graphite block to thereby define a compartment between said top member and said graphite block, said graphite block having an array of transversely disposed pairs of slots which extend completely across its surface which faces said cathode communications means extending between each pair of slots and said compartment, said pairs of slots of said array being spaced apart between 5 and 12 inches, the spacing between slots of a pair of slots being between 1 and 3 inches, the width of said slots being between $\frac{1}{8}$ inch and $\frac{3}{16}$ inch, and means for withdrawing gas from said compartment.

3,310,483
MULTICELL OXYHYDROGEN GENERATOR

William A. Rhodes, 4421 N. 13th Place, Phoenix, Ariz. 85014
Filed Nov. 22, 1963, Ser. No. 325,689
1 Claim. (Cl. 204—268)



In a multicell oxygen and hydrogen generator the combination of: a tank adapted to contain electrolyte and of electrical insulating material; said tank having side and bottom walls provided with parallel, spaced slots; a plurality of parallel electrolizing plates disposed in said slots and loosely contained therein forming compartments therebetween the edges of said plates extending into said slot portions a sufficient distance whereby electrolysis acting at approximately 45 degrees to the edges of said slots intersect said plates inwardly of the edges thereof, thereby electrolizing through said plates and preventing short-circuiting through the electrolyte around the edges of said plates; an electrode adjacent each of the opposite end walls of said tank adapted to communicate with electrolyte adjacent said plates and adapted to conduct direct current to act in series with said plates and electrolyte in the compartments therebetween; a cover sealed to the upper portion of said tank and having an outlet for a mixture of hydrogen and oxygen gases; upper edges of said plates spaced substantially below said cover forming a gas collecting chamber above said plates whereby tilting of said tank may cause electrolyte therein to pass above upper edges of said plates and equalize the volume of fluid in said compartments throughout said tank, communication between said compartments being limited to said gas collecting chamber.

3,310,484
THERMAL CRACKING IN AN OXYGEN FREE ATMOSPHERE

Ralph Burgess Mason, Denham Springs, and Glen Porter Hamner, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed May 20, 1965, Ser. No. 457,466
10 Claims. (Cl. 208—125)

1. A noncatalytic, liquid-phase process for converting heavy high boiling residua having a relatively high content of sulfur and metals to lower boiling gas oils having reduced sulfur and metals content consisting essentially of the steps of

(A) heating an intimate blend of said residua and 0.5:1 to 5:1 volumes of an aromatic solvent boiling in the range of 150–800° F. at a temperature in the range of 650–900° F. and a residence time of 0.1 to 6 hours and

(B) separating a low sulfur, low metals gas oil fraction from the reaction mixture,

said steps (A) and (B) being carried out in an essentially oxygen-free atmosphere.

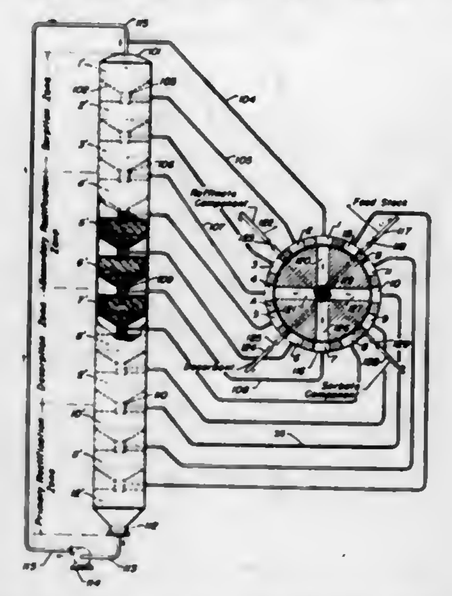
3,310,485
HYDROGENATION OF OLEFINIC GASOLINE

Paul G. Bercik, Glenshaw, and Alfred M. Henke, Springdale, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed May 4, 1964, Ser. No. 364,762
10 Claims. (Cl. 208—143)

1. A process for hydrogenating a gasoline containing olefinic components which comprises contacting the gasoline with hydrogen in the presence of a hydrocracking catalyst under hydrogenating conditions of pressure, space velocity and hydrogen feed rate and at an initial temperature above about 500° F., maintaining the temperature above 500° F. until the catalyst has been contacted by at least 500 volumes of gasoline per volume of catalyst, then reducing the temperature to below about 460° F. while continuing the hydrogenation.

3,310,486
SEPARATION PROCESS FOR THE RECOVERY OF HIGH PURITY COMPONENTS OF HYDROCARBON MIXTURES

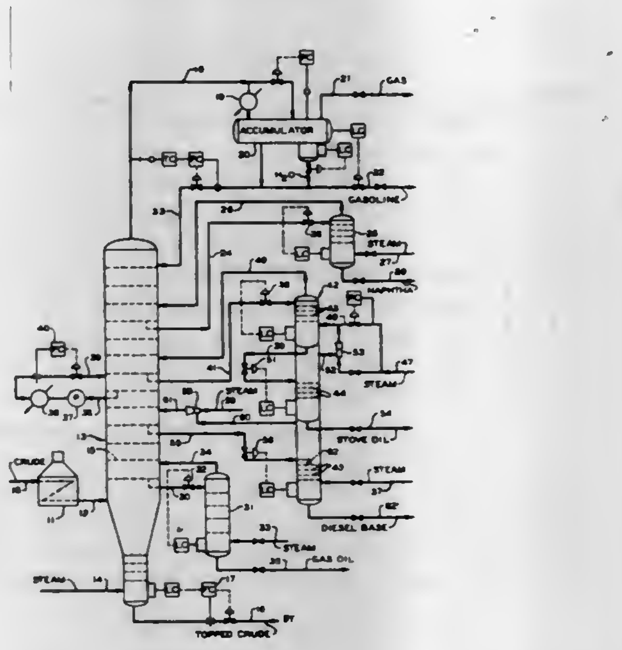
Donald B. Broughton, Evanston, and Charles S. Brearley, Lake Forest, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,481
20 Claims. (Cl. 208—310)



1. An improvement in a continuous flow separation process for resolving a mixture of hydrocarbons comprising at least two types: (1) a sorbate component selected from the group consisting of unsaturated and normal hydrocarbons and (2) a raffinate component selected from the group consisting of saturated hydrocarbons, branched-chain hydrocarbons and cyclic hydrocarbons, wherein it is desired to maximize the sorbate component purity, which process comprises contacting said mixture with a mass of solid particles of sorbent capable of selectively retaining said sorbate component of said mixture to form a spent sorbent and of rejecting the raffinate component which thereupon occupies the void spaces between adjacent particles of sorbent, removing raffinate component from the mass of sorbent at a point relatively downstream from the point of initially contacting said mixture with said sorbent, refluxing a secondary reflux portion of said raffinate into a mass of sorbent downstream from the point of withdrawing raffinate component, contacting said spent sorbent at a point relatively downstream from the point of removing raffinate at desorption conditions with a desorbent having a boiling point which differs from the boiling point of said sorbate component to thereby displace sorbate hydrocarbon from the spent sorbent, withdrawing sorbate component from the mass of sorbent at a point relatively downstream from the point of charging said desorbent, refluxing a primary reflux portion of the sorbate into the mass of sorbent downstream from the point of withdrawing sorbate component, maintaining a continuously circulating fluid stream flowing through the mass of sorbent, and shifting the points of introducing and withdrawing said streams relative to said mass of sorbent particles in a downstream direction while maintaining the same order of continuity and the same spatial relationship between said points, the improvement in said process which comprises maintaining the flow of primary reflux at a volume rate of flow sufficient to provide a volume of reflux fluid of from greater than 100 to about 140 percent of the volume of void spaces between the particles of sorbent in the next adjacent downstream bed of sorbent, while simultaneously maintaining the flow of secondary reflux at a volume rate of flow sufficient to provide a volume of fluid of from about 80 to less than 100 percent of the volume of void spaces between the particles of sorbent in the next adjacent downstream bed of sorbent.

3,310,487
FRACTIONATION SYSTEM

Frank E. Johnson and Mack F. Potts, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 23, 1964, Ser. No. 405,973
8 Claims. (Cl. 208—355)



1. A method of fractionation comprising introducing a suitable feed into a fractionator to produce, inter alia, intermediate distillates, removing at least one of said intermediate distillates from said fractionator, passing said intermediate distillate to a combined stripper-dehydrator zone divided into an upper section, an intermediate section, and a lower section, contacting said distillate with a stripping medium in said first section of said stripper-dehydrator to produce an overhead product, returning said overhead product to said fractionator, subjecting a bottoms product removed from said first section to reduced pressure stripping in said intermediate section to produce a second overhead product, combining said second overhead product with the stripping medium utilized to produce said first overhead, recovering stripped liquid from said second section as product, passing a second intermediate distillate from said fractionation to said lower section and therein subjecting same to stripping, returning stripped overhead to said fractionation, and recovering a second stripped product from the base of said lower section.

3,310,488
METHOD OF DESALINIZING WATER

Sidney Loeb and Serop Manjikian, both of Los Angeles, Calif., assignors to The Regents of the University of California, Berkeley, Calif., a corporation of California
No Drawing. Filed Mar. 5 1964, Ser. No. 349,756
10 Claims. (Cl. 210—22)

1. A method of recovering water having low salt concentration from water having a high salt concentration, comprising:

(a) dissolving a film-forming cellulosic derivative in a volatile carrier solution adapted to permit the structural organization of a permeable membrane from said cellulosic derivative by evaporation of said carrier solution;
(b) casting the resulting product solution to form a thin layer of product solution;
(c) evaporating a portion of said carrier solution for a predetermined period of time to form a membrane;
(d) immersing the cast membrane in water to remove said carrier solution;
(e) heating the cast membrane in water;

(f) applying under pressure to one side of the resulting membrane an aqueous solution having a high salt concentration; and

(g) adding a small concentration of water-soluble cationic surfactant to said aqueous solution, and

(h) recovering water having low salt concentration from the other side of said membrane.

3,310,489
LUBRICANT COMPOSITION

Robert H. Davis, Pitman, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Mar. 20, 1964, Ser. No. 353,612
4 Claims. (Cl. 252—32.5)

1. A lubricant composition containing a minor amount sufficient to inhibit corrosion of the reaction product of triethanolamine and an ester selected from the group consisting of mono-esters having the formula

$$R{-}O{-}(CH_2CH_2O)_n{-}P{=}O(OH)_2,$$

and di-esters having the formula

$$[R{-}O{-}(CH_2CH_2O)_n]_2{=}P{=}OOH$$

wherein R is a hydrocarbon group having at least 9 aliphatic carbon atoms and *n* is an integer from about 3 to about 30, the proportions of triethanolamine and ester being such that a neutral product is produced.

3,310,490
CALCIUM ACETATE LUBRICANT

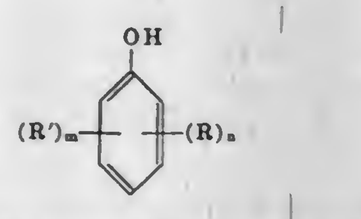
James Nixon, Elizabeth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed June 18, 1965, Ser. No. 465,168
4 Claims. (Cl. 252—40.7)

1. A clear and filterable, substantially neutral, fluid lubricant comprising a major amount of mineral lubricating oil and the reaction product of lime, 1 to 7 wt. percent acetic acid, .2 to 5 wt. percent of C_7 to C_{30} fatty acid, 0.5 to 5.0 wt. percent of a material selected from the group consisting of polyisobutenyl succinic anhydride having a polyisobutenyl group of 600 to 4000 mol. wt., P_2S_5 treated polyisobutylene of 700 to 3000 mol. wt., and mixtures thereof; about .2 to 5 wt. percent of phenol alkylated with one to two C_5 to C_{20} alkyl groups, and about .2 to 5.0 wt. percent of an alkanolamine containing 2 to 3 carbon atoms in the alkanol group.

3,310,491
LUBRICATING OILS

Neville Murray Jones, Blackwood, and Robert James Stephenson, Cwmbran, England, assignors to Monsanto Chemicals Limited, London, England, a British company
No Drawing. Filed Jan. 13, 1966, Ser. No. 520,363
Claims priority, application Great Britain, Jan. 14, 1965, 1,650/65; Mar. 11, 1965, 10,422/65
14 Claims. (Cl. 252—46.6)

1. A composition comprising (A) a phosphosulfurized terpene and (B) an aralkyl phenol represented by the structure



wherein R is selected from the group consisting of aralkyl and substituted aralkyl, R′ is selected from the group consisting of alkyl and substituted alkyl, *n* is a whole number having a value from 1 to 5, *m* is a whole number having a value from 0 to 4, provided that the sum of *n*+*m* is from 1 to 5 and provided that when R′ is ortho to the phenolic hydroxyl group that R′ is selected from the group consisting of primary and secondary alkyl and primary and secondary substituted alkyl, the ratio of (A) to (B) being from 200:1 to 1:200.

12. A composition comprising a major amount of a lubricating oil and from 0.10% to 20% weight percent of a composition of claim 1.

3,310,492
OILS FOR TWO-CYCLE ENGINES CONTAINING BASIC AMINO-CONTAINING DETERGENTS AND ARYL HALIDES

George J. Benoit, Jr., San Anselmo, Calif., assignor to Chevron Research Company, a corporation of Delaware
No Drawing. Filed Sept. 8, 1964, Ser. No. 395,032
9 Claims. (Cl. 252—51.5)

1. A 2-cycle engine lubricating oil composition comprising:

a major proportion of an oil of lubricating viscosity,

from about 0.5 to about 10 weight percent of a lubricating oil detergent having at least one free amino group and being the reaction product of a hydrocarbon polyamine of from 2 to 6 amino groups and a hydrocarbon carboxylic acid of from 1 to 2 carboxyl groups and of from 150 to 1500 equivalent weight, reacted at a temperature in the range of 200° to 500° F.,

and from about 0.1 to 5 weight percent of an aryl halide of from 6 to 10 carbon atoms, wherein the halogen of said halide is of atomic number 17 to 35.

3,310,493
HALOGEN DOPED Bi_2Te_3-Bi_2Se_3-As_2Se_3 THERMOELECTRIC COMPOSITION

Joachim Rupprecht, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed May 2, 1963, Ser. No. 277,616
Claims priority, application Germany, June 29, 1962, S 80,142
4 Claims. (Cl. 252—62.3)

1. A thermoelectric semiconductor member of n-type conductance consisting of an alloy of the system Bi_2Te_3-Bi_2Se_3-As_2Se_3 in a percentile molecular composition within the range from 2.0 mole percent Bi_2Se_3, 2.0 mole percent As_2Se_3 and 96 mole percent Bi_2Te_3 to 15.0 mole percent Bi_2Se_3, 5.0 mole percent As_2Se_3 and 80 mole percent Bi_2Te_3, said member being doped for thermoelectric effectivity with 0.01 to 0.1% by weight of substance from the group consisting of halogens and copper bromide.

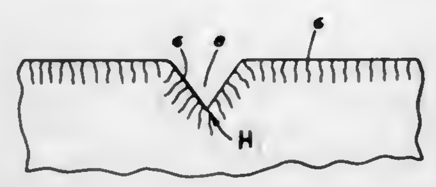
3,310,494
ICE MELTING COMPOSITION AND METHOD

Francis R. Sproule, Northville, and Leslie R. Bacon, Wyandotte, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed Apr. 16, 1964, Ser. No. 360,442
7 Claims. (Cl. 252—70)

6. The process of melting ice which comprises contacting said ice with an ice melting composition, soluble in meltwater produced by action of said composition on ice, consisting essentially of solid particles of a material selected from the group consisting of sodium chloride, calcium chloride, and mixtures thereof, and said solid particles having their surfaces at least partially coated with a surfactant selected from the group consisting of anionic and oxyalkylene nonionic surfactants.

3,310,495
PROCESS FOR POLISHING GLASS

Masaharu Masuda, Amagasaki, Hideo Kita, Tukaguchi, Amagasaki, Yoshio Okada, Nishinomiya, and Ryuzo Fujita, Amagasaki, Japan, assignors to Nippon Sheet Glass Co., Ltd., Osaka, Japan
Filed July 9, 1965, Ser. No. 473,904
Claims priority, application Japan, Sept. 9, 1961, 36/33,032
3 Claims. (Cl. 252—79.1)



1. The process of polishing irregular pit and peak-containing plate glass surfaces which comprises the steps of:

(1) locating said glass plate beneath and in wiping and rubbing engagement with a wiping tool having a flat working surface parallel to said glass surface;

(2) flooding the surface of the glass with an aqueous solution consisting essentially of a salt which is a member selected from the group consisting of potassium fluoride, ammonium fluoride, ammonium bifluoride, potassium bifluoride, in the total proportion between 15 and 40% by weight, hydrofluoric acid in the proportion between 0 and 16% by weight, said solution containing the constituents of hydrofluoric acid, acidic hydrogen and fluoride ion, in the molar ratio H/F between 0.5 and 0.7, and an organic solvent which is a member selected from the group consisting of methanol in the proportion between 0 and 20% by weight, ethanol in the proportion between 0 and 10% by weight, acetone in the proportion between 0 and 10% by weight, isopropyl alcohol in the proportion between 0 and 10% by weight, methyl ethyl ketone in the proportion between 0 and 5% by weight, and mixtures of methanol, ethanol, isopropyl, alcohol, acetone, methyl ethyl ketone, in the total proportion between 3 and 20% by weight, the remainder being water, to cause said solution to react chemically with the surface of said glass whereby a continuous layer of water-insoluble reaction products is deposited over the surface of the glass and pits thereon;

(3) simultaneously moving both said plate and said wiping tool to remove said layer of reaction products from the surface of the glass, while leaving the surface of said pits undisturbed; and

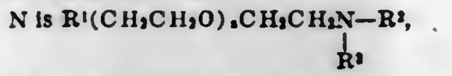
(4) repeating said two consecutive steps of flooding the glass with the polishing solution and rubbing with the wiping tool until the level of the glass surface is lowered to the level of the bottom of said pits and the peaks are removed and a finished surface is obtained.

3,310,496
ALKALI STABLE AND SOLUBLE SURFACTANTS

Richard C. Mansfield, Cherry Hill, N.J., and Jean Dupre, Levittown, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Mar. 12, 1965, Ser. No. 439,428
17 Claims. (Cl. 252—137)

1. An alkali-stable and soluble surfactant composition consisting essentially of a blend of about 65 to 95 percent of a component M with about 35 to 5 percent of a component N, where

M is a surface-active composition, which contains upwards of 85% primary phosphate esters, of the class consisting of the condensation product, and the salts of said product, of the reaction of $R(CH_2CH_2O)_xH$ and polyphosphoric acid,



N is $R^1(CH_2CH_2O)_zCH_2CH_2\underset{\displaystyle R^3}{\underset{|}{N}}{-}R^2$,

R and R^1 are members of the class consisting of alkoxy groups having from 10 to 15 C atoms in the alkyl portion thereof, and alkylphenoxy groups having 4 to 10 C atoms in the alkyl portion thereof,

R^2 and R^3 are members of the class consisting of H and small alkyl groups whose entire carbon atoms (R^2+R^3) total between 1 and 7, inclusive,

x is a number in the range of from about 5 to about 25, and

z is a number in the range of from about 4 to about 25; the said phosphate ester, M, being prepared by reacting from about 0.6 mol to about 2.0 mols of polyphosphoric acid with each mol of said condensation product; and the said polyphosphoric acid being a mixture of phosphoric acids with a phosphoric acid anhydride content corresponding to about 73 to 85 percent expressed as P_2O_5.

12. A cleaning composition consisting essentially of a mixture of about 88 to 99 percent by weight of an alkali metal salt from the class consisting of caustic soda, sodium metasilicate, soda ash, trisodium phosphate, sodium tripolyphosphate, sodium orthosilicate, tetrasodium pyrophosphate and tetrapotassium pyrophosphate, and about 1 to 12 percent by weight of the surfactant of claim 1.

3,310,497
EMBRITTLEMENT-FREE PICKLING OF FERROUS METAL

Robert M. Hudson, Churchill Borough, and Kermit J. Riedy, King of Prussia, Pa., assignors to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed Feb. 23, 1965, Ser. No. 434,681
4 Claims. (Cl. 252—146)

1. A solution for embrittlement-free pickling of ferrous metal consisting essentially of an aqueous solution of sulfuric acid and 2-butene-1,4-diol, the concentration of said alcohol being sufficient to inhibit dissolution of the ferrous metal and to reduce hydrogen absorption therein.

3,310,498
NOVEL DETERGENT COMPOSITIONS

Edwin B. Michaels, Stamford, and Clayton A. Wetmore, Norwalk, Conn., assignors to Stamford Chemical Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed July 26, 1963, Ser. No. 297,953
6 Claims. (Cl. 252—152)

1. A polar solvent compatible detergene composition consisting essentially of:

(a) 1 part by weight of an alkali metal oil-soluble mahogany sulfonate having an average molecular weight of at least 425, and

(b) from 0.5 part to 1.5 part of a poly lower alkanol amine salt of a higher alkyl aryl sulfonic acid, said amine salt being formed by reacting said poly lower alkanol amine with said higher alkyl aryl sulfonic acid in the presence of said mahogany sulfonate, and the mixture being substantially neutralized to a pH of from about 6.5 to 9.5.

3,310,499
NOVEL DETERGENT COMPOSITIONS

Edwin B. Michaels, Stamford, and Clayton A. Wetmore, Norwalk, Conn., assignors to Stamford Chemical Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed July 26, 1963, Ser. No. 297,974
10 Claims. (Cl. 252—152)

1. A non-polar solvent compatible detergent composition consisting essentially of:

(a) 1 part by weight of a salt of an oil-soluble mahogany sulfonate having a molecular weight of at least about 425, said salt being selected from the group consisting of alkali metal, alkaline earth metal and mixtures thereof, and

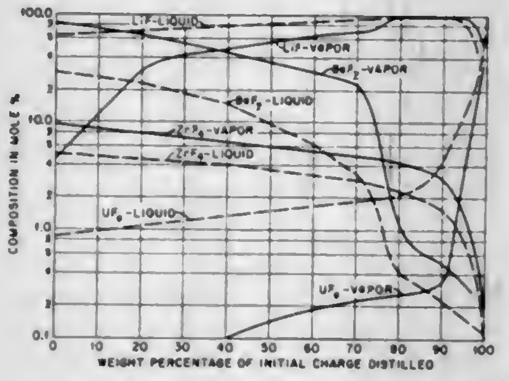
(b) from 0.5 part to 1.5 parts of monohydroxy lower alkyl amine salt of a higher alkyl aryl sulfonic acid, said amine salt being formed by reacting said monohydroxy lower alkyl amine with said higher alkyl aryl sulfonic acid in the presence of said mahogany sulfonate, and said mixture being substantially neutralized to a pH of from about 6.5 to 9.5.

3,310,500
DISTILLATION METHOD FOR REPROCESSING MOLTEN SALT REACTOR FUELS

Minton J. Kelly, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 29, 1965, Ser. No. 510,477

5 Claims. (Cl. 252—301.1)



1. A method for reprocessing spent molten salt reactor fuels containing fission products therein comprising vacuum distilling at a system pressure less than 100 microns Hg said molten salt to thereby effect a separation of said salt from said fission products.

3,310,501
PREPARATION OF ELONGATED NEEDLE-LIKE DIAMOND HAVING ELECTRICALLY CONDUCTIVE PROPERTIES

Kenneth A. Darrow, Sprakers, and Edwin H. Hull, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,788

1 Claim. (Cl. 252—502)

In a diamond growing process wherein carbonaceous material and a catalyst are simultaneously subjected to high pressures and high temperatures in a reaction vessel to convert said carbonaceous material to diamond with said reaction vessel and contents thereof being held at operating pressure and a temperature slightly below the melting temperature of said catalyst at said operating pressure for a period of time and then heated to raise the temperature of the contents of said reaction vessel above the melting temperature of the catalyst, the improvement comprising:

(a) placing a significant amount of boron material only in the end region of the reaction vessel,
  (1) said boron material being a substance from which boron atoms are released under operating pressure and temperature conditions, and
(b) increasing in small increments the pressure applied to said reaction vessel throughout the heating of the contents of said reaction vessel above the melting temperature of the catalyst in order to at least offset pressure losses within said reaction vessel,

whereby the diamond-making reaction is conducted and needle-like diamonds having electrically conducting properties are produced.

3,310,502
SEMICONDUCTOR COMPOSITION WITH NEGATIVE RESISTANCE CHARACTERISTICS AT EXTREME LOW TEMPERATURES

Kiichi Komatsubara and Hirokazu Kurono, both of Tokyo, Japan, assignors to Hitachi, Ltd., Tokyo, Japan

Filed June 29, 1965, Ser. No. 472,388

Claims priority, application Japan, Mar. 24, 1962, 37/11,820

5 Claims. (Cl. 252—512)

1. A semiconductor having negative resistance characteristics at extremely low temperatures of 77° K. and below, which consists essentially of a semiconductor material selected from the group consisting of germanium and silicon doped with a heavy metal selected from the group consisting of copper, silver, gold, iron, cobalt, nickel, zinc and magnesium in the amount of 5×10^{13} atoms/cc. to 7×10^{15} atoms/cc., said doping thereby forming a deep level in said semiconductor, shallow acceptor impurities selected from the group consisting of indium, boron, aluminum and gallium and shallow donor impurities selected from the group consisting of phosphorus, antimony and arsenic, said shallow acceptor and donor impurities being present in mutually compensating amounts of about 50 to 90% with respect to each other and the total concentration of said impurities being from about 10^{14} atoms/cc. to 10^{16} atoms/cc.

3,310,503
FLAME-RETARDING CURABLE MIXTURES

René Huwyler, Birsfelden, Rudolf Aenishaenslin, Reinach, Basel-Land, and Daniel Porret, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed July 9, 1962, Ser. No. 208,588

Claims priority, application Switzerland, July 24, 1961, 8,715/61

8 Claims. (Cl. 260—2)

1. A process for the preparation of a hardened epoxy resin product which comprises contacting a composition consisting essentially of (I) a component selected from the group consisting of (1) a mixture of (a) a 1,2-epoxy compound having a 1,2-epoxy equivalency greater than one and (b) a member selected from the class consisting of dialkyl phosphite and dialkenyl phosphite and (2) the reaction product obtained by heating at 100–200° C. (a) a 1,2-epoxy compound having a 1,2-epoxy equivalency greater than one and (b) a member selected from the class consisting of dialkyl phosphite and dialkenyl phosphite and (II) a 1,2-epoxy compound free from phosphorous having a 1,2-epoxy equivalency greater than one; component (I) being present in an amount of at least 25% by weight calculated on the total weight of 1,2-epoxy compound present and component (II) being present in an amount from 0–75% by weight calculated on the total amount of 1,2-epoxy compound present with (III) a curing agent for epoxy 1,2-epoxy compounds having a 1,2-epoxy equivalency greater than one.

3,310,504
HYDROXYL-ENDED COPOLYMERS OF AN EPIHALOHYDRIN

Edwin J. Vandenberg, Foulk Woods, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed June 2, 1965, Ser. No. 460,832

12 Claims. (Cl. 260—2)

1. A low molecular weight copolymer of an epihalohydrin and at least one comonomer selected from the group consisting of an alkylene oxide, an oxetane and a tetrahydrofurane, said copolymer being characterized by having a number average molecular weight between about 500 and about 10,000 and by having predominately double hydroxyl-ended polymer chains.

3,310,505
PRODUCTION OF THERMOPLASTIC MATERIALS

Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 11, 1963, Ser. No. 264,294

5 Claims. (Cl. 260—2.5)

1. A process for producing thermoplastic material comprising:

(a) forming a mixture in a blending zone consisting of powdered polyethylene and powdered polymethylmethacrylate;
(b) heating said mixture to a temperature within the range of about 250–350° F.;
(c) extruding said heated mixture to form a pressed sheet, said pressed sheet having a thickness of 0.3 to 0.9 mm., in which the polyethylene is oriented in the direction of flow;
(d) cutting said pressed sheet into segments;
(e) remolding said segments into a sliced molded sheet so as to provide a plastic sheet in which the polyethylene is nonoriented;
(f) placing said sheet in a solvent selective to said polymethylmethacrylate to leach out said polymethylmethacrylate.

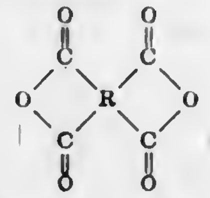
3,310,506
CELLULAR POLYIMIDE PRODUCT

Leonard Edward Amborski and William Paul Weisenberger, Buffalo, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,066

18 Claims. (Cl. 260—2.5)

1. A process which comprises mixing at least one diamine with at least one tetracarboxylic acid dianhydride having the structural formula



wherein R is a tetravalent radical containing at least 2 carbon atoms, no more than 2 carbonyl groups of said dianhydride attached to any one carbon atom of said tetravalent radical, in a solvent for at least one of said diamine and said dianhydride under conditions to form a solution containing at least one polyamide-acid; introducing bubbles into said solution to form a shapeable polymeric composition having said bubbles dispersed uniformly therein; shaping said composition into a shaped cellular article; and heating said composition above 50° C. for a time sufficient to form polyimide from said polyamide-acid.

3,310,507
FOAMED EPOXY RESINS

James W. Shepherd, Gibsonia, Pa., assignor to Callery Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,663

5 Claims. (Cl. 260—2.5)

1. That method of making a foamed epoxy resin material which comprises mixing at about room temperature a liquid polyepoxide reactant selected from the class consisting of a dicycloalkane oxide carboxylate, limonene dioxide, dicyclopentadiene dioxide, vinyl cyclohexene dioxide, and mixtures thereof and from 0 to about 30% of a resin selected from the class consisting of polyepoxides of polyolefins, glycidyl ethers of polyhydric phenols and polyhydric alcohols, epoxylated novolacs, epoxidized fatty oils and mixtures thereof with a curing agent comprising about 5 to 25 parts of a lower trialkoxyboroxine per 100 parts of polyepoxide reactant mixture and 0.1 to 10 weight percent based on the lower trialkoxyboroxine of a boron trifluoride-amine complex, said amine selected from the class consisting of primary lower alkyl amines, tertiary lower alkanol amines, piperidine, urea, and hexamethylene tetramine.

3,310,508
MIXTURE FOR IMPROVING THE CHEMICO-PHYSICAL PROPERTIES OF BLENDS CONSISTING OF NATURAL RUBBER AND 1:4-CIS-POLYBUTADIENE

Hrischikesch C. Roy, Grafelfing, near Munich, Germany, assignor to Metzeler Gummiwerke Aktiengesellschaft, Munich, Germany

No Drawing. Filed July 18, 1963, Ser. No. 296,097

1 Claim. (Cl. 260—5)

Mixture for improving the chemico-physical properties of blends comprising natural rubber and 1:4-cis-polybutadiene having 1 to 98% cis-content characterized by a vulcanisation system comprising p:p′-dibenzoylquinonedioxime and 4:4′-dithiomorpholine and at most 1.5 parts of elementary sulphur, to which system mercaptobenzothiazol, tetramethylthiouramide sulphide and dibenzolthiazyldisulphide have been added as accelerators and also mercaptobenzimidazol as metal inhibitors and aging resistors.

3,310,509
REFORMED DYEABLE POLYOLEFIN COMPOSITION CONTAINING (1) A POLYOLEFIN CONTAINING TRANSITION METAL, (2) ORGANIC TIN COMPOUNDS AND (3) OPTIONALLY AN ALKYLPHENOL TYPE ANTIOXIDANT

Osamu Fukumoto and Masayoshi Kubo, Ohtsu-shi, and Hiroshi Hatakeyama, Kyoto, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan

No Drawing. Filed June 2, 1964, Ser. No. 372,090

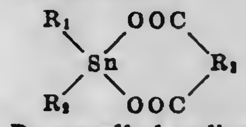
Claims priority, application Japan, June 7, 1963, 38/29,266; June 21, 1963, 38/31,143; Feb. 5, 1964, 39/5,712; Feb. 24, 1964, 39/9,250

15 Claims. (Cl. 260—23)

1. A reformed dyeable polymer of mono alpha olefin comprising substantially a mixture of

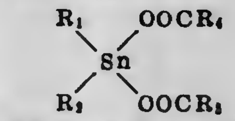
(1) a polyolefin containing as a dye bonding medium a compound selected from the group consisting of the aliphatic, alicyclic and aromatic monocarboxylates, dicarboxylates, oxycarboxylates, aminocarboxylates, and the beta-diketone, beta-diketone, beta-oxyketone and beta-ketonic acid ester complexes of copper, silver, zinc, cadmium, iron, cobalt and nickel in an amount of 0.02 to 2% in terms of the metallic constituent, based on the weight of said polymer of mono alpha olefin, and
(2) 0.002–2 percent by weight, based on said polyolefin of one member of the organic tin compounds represented by the formulas

(a)



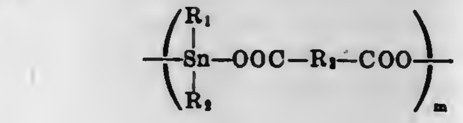
wherein R_1 and R_2 are alkyl radicals of 1 to 8 carbon atoms and R_3 is a member selected from the group consisting of alkylene, alkenylene and phenylene,

(b)



wherein R_1 and R_2 have the meaning hereinabove given and —OOCR$_4$ and —OOCR$_5$ are members selected from the group consisting of the saturated and unsaturated aliphatic mono- and dicarboxylic acid residues and the half ester residues of said dicarboxylic acids,

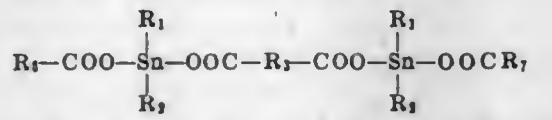
(c)



$$\left(-\underset{R_2}{\underset{|}{\overset{R_1}{\overset{|}{\mathrm{Sn}}}}}-OOC-R_3-COO-\right)_m$$

wherein R_1, R_2 and R_3 have the meanings hereinabove given and *m* is an integer of at least 2,

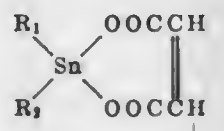
(d)



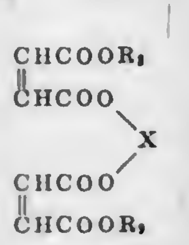
$$R_6{-}COO{-}\overset{R_1}{\underset{R_2}{Sn}}{-}OOC{-}R_3{-}COO{-}\overset{R_1}{\underset{R_2}{Sn}}{-}OOCR_7$$

wherein R_1, R_2 and R_3 have the meanings hereinabove given and R_6 and R_7 are alkyl radicals of 1 to 18 carbon atoms, and

(e) a reaction product of the compounds having the formulas



and



wherein R_1 and R_2 have the meaning hereinabove defined, R_8 and R_9 are alkyl radicals of 4–18 carbon atoms and X is an alkylene radical of 2 to 4 carbon atoms.

3,310,510

POLYOLEFINS STABILIZED WITH THE COMBINATION OF A NICKEL SALT OF A CARBOXYLIC ACID AND A PHENOLIC ANTIOXIDANT

David S. Breslow, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed July 30, 1964, Ser. No. 386,441

6 Claims. (Cl. 260—23)

1. A polyolefin selected from the group consisting of polyethylene and a stereoregular polymer of a mono-α-olefin having at least 3 carbon atoms containing as a light stabilizer therefor, based on the weight of the polyolefin, from about 0.1 to about 5% of a nickel salt of a hydrocarbon carboxylic acid containing 2 to 22 carbon atoms and from about 0.1 to about 5% of a phenolic antioxidant selected from the group consisting of trialkylphenols, aralkyl dialkyl substituted phenols, dialkylhydroxybenzyl substituted phenols, poly(alkylphenol) substituted hydrocarbons, hydroxyphenyl polyalkylchromans, adducts of an alkylphenol and a cyclic terpene, thiobis(alkylphenol)s, and hydroxyphenoxy substituted triazines.

3,310,511

HYDRAULIC CEMENT-EPOXY RESIN COMPOSITIONS

Donald G. Reinert, Emmaus, Pa., assignor to The Electric Storage Battery Company, a corporation of New Jersey

Filed Dec. 31, 1962, Ser. No. 248,743

5 Claims. (Cl. 260—29.2)

1. A hydraulic cement-epoxy resin composition comprising hydraulic cement, an epoxy resin which is liquid at room temperature and which can be cured at room temperature, and a non-acidic curing agent for said epoxy resin, said epoxy resin being incorporated into the composition in the form of an aqueous emulsion consisting essentially of water, said epoxy resin and an emulsifier therefor, with said epoxy resin plus curing agent amounting to from about 20 to about 60% by weight of the total amount of binder present in the composition, said binder consisting essentially of hydraulic cement plus epoxy resin and curing agent.

3,310,512

WATER DISPERSIBLE RESINS COMPRISING POLYALKYLENE GLYCOL, DICARBOXYLIC ACID AND POLYHYDRIC ALCOHOL

Gerald M. Curtice, Savage, Minn., assignor to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Aug. 4, 1965, Ser. No. 477,322

13 Claims. (Cl. 260—29.4)

1. The process of producing a water dispersible polyester resin which comprises esterifying a mixture consisting essentially of:

(a) an acid selected from the group consisting of isophthalic and terephthalic acids,

(b) a non-oxidizing saturated aliphatic dicarboxylic acid containing from 4 to 18 carbon atoms,

(c) a polyalkylene glycol selected from the group consisting of polyethylene glycols and polypropylene glycols having a molecular weight between 600 and 6000,

(d) at least one saturated polyhydric alcohol containing from 2 to 16 carbon atoms and at least three hydroxy groups, a total of 0.95 to 1.8 moles of polyols being present per mole of dicarboxylic acid,

and continuing esterification until polyester having an acid number of less than 30 is obtained.

3,310,513

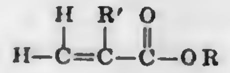
COATING COMPOSITIONS COMPRISING POLYMERS OF ACRYLIC ESTERS

Walter P. Barie, Jr., Pittsburgh, and Norman W. Franke, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Aug. 13, 1962, Ser. No. 216,660

6 Claims. (Cl. 260—29.6)

1. A liquid coating composition comprising an inert volatile carrier which boils at a temperature between about 35° and about 160° C. at atmospheric pressure, and between 10 and 90 weight percent of said coating composition of a polymer of an ester monomer having the general formula:



$$H{-}\overset{H}{C}{=}\overset{R'}{C}{-}\overset{O}{\overset{\|}{C}}{-}OR$$

where R′ is selected from the group consisting of hydrogen and CH_3; R is a saturated alkyl radical derived from a primary alcohol having between 10 and 16 carbon atoms, and where at least one-half of said R radicals have a branched-chain structure, said polymer having a molecular weight of between 2,000 and 400,000 and a brittle point between −20° C. and −50° C.

2. A liquid coating composition comprising an inert volatile carrier which boils at a temperature between about 35° and about 160° C. at atmospheric pressure and between 10 and 90 weight percent of said coating composition of a polymer of an ester monomer, said polymer having a weight average molecular weight of between 2000 and 400,000 and a brittle point of between −20° and −50° C., said ester monomer comprising the reaction product of an unsaturated organic acid selected from the group consisting of acrylic and methacrylic acid and at least one alcohol having between 10 and 16 carbon atoms, and said alcohol comprising the reaction product of the hydroformylation and hydrogenation of olefins having between 9 and 15 carbon atoms per molecule, wherein at least 17 weight percent of said olefins have a branched chain structure.

3,310,514

VINYLIDENE CHLORIDE COPOLYMER LATICES AND PRODUCTS PRODUCED THEREFROM

Alex Trofimow, Brookline, and Elizabeth C. Dearborn, Boston, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Mar. 9, 1964, Ser. No. 350,542

4 Claims. (Cl. 260—29.6)

1. A film-forming composition comprising an aqueous dispersion of a copolymer of vinylidene chloride, methacrylonitrile, methyl acrylate, and methyl methacrylate wherein said vinylidene chloride is present at a level of 80 to 94 weight percent and said methacrylonitrile is present at a level of 1 to 5 weight percent.

3,310,515

PREPARATION OF LATICES FROM ORGANIC SOLVENT SOLUTIONS OF ELASTOMERS

Walter M. Halper, San Pedro, and Fred Dudley Moss, Long Beach, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Jan. 11, 1963, Ser. No. 250,866

4 Claims. (Cl. 260—29.7)

1. In the process for the preparation of an elastomer latex, wherein a cement of the elastomer in a C_{4-6} hydrocarbon solvent, said cement having a temperature of about 25–70° C., is emulsified with 0.5–2 parts by volume, per part of cement of an aqueous solution of potassium soaps of carboxylic acids whereby a cement in water emulsion is formed, and thereafter vaporizing and removing the hydrocarbon solvent to form the latex, the improvement comprising maintaining an average temperature of the emulsion components during emulsification of 35–60° C., substantially none of the cement solvent being vaporized during emulsification and converting the emulsion to a foam by vaporizing the hydrocarbon solvent to create gaseous bubbles thereof throughout the emulsion, collapsing the foam to form a liquified hydrocarbon phase and a latex phase and separating the liquified hydrocarbon phase from the latex phase.

3,310,516

ALCOHOL ADDITION SUBSEQUENT TO EMULSIFICATION

Gerardus E. La Heij and Jacques A. Waterman, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,507

Claims priority, application Netherlands, Feb. 5, 1963, 288,571

6 Claims. (Cl. 260—29.7)

1. In the process for preparing a latex wherein 1 volume of a solution of a polymer of the group consisting of poly(alphaolefins), conjugated diene homopolymers, copolymers of conjugated dienes with monovinyl aromatic compounds, and hydrogenated polymers of the foregoing in a hydrocarbon solvent is emulsified by intense agitation with 0.5–5 volumes of an aqueous phase comprising water and an emulsifying amount of an emulsifying agent, solvent is removed therefrom and latex is recovered, the improvement consisting essentially of adding to the emulsion, subsequent to emulsification, 10 to 70% by volume as the sole water-miscible modifier based on the aqueous phase, of an aliphatic alcohol having 2–4 carbon atoms per molecule and having a water solubility of at least 20 grams per 100 cc. H_2O at 30° C.

3,310,517

COMPOSITION AND BINDER THEREFOR

Luke W. Corbett, Mountainside, and William J. Sparks, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Sept. 20, 1965, Ser. No. 488,642

13 Claims. (Cl. 260—30.6)

1. An improved fuel resistant resinous composition suitable for use as a binder in highly fuel resistant paving compositions consisting essentially of a homogeneous blend of:

(a) 60 to 80 wt. percent of a resin blend comprising

  (1) 30 to 40 wt. percent of a copolymer of 80 to less than 90 parts by weight of styrene and more than 10 and up to 20 parts by weight of acrylonitrile,

  (2) 60 to 70 wt. percent of an alkylation polymer of 2 to 9 parts by weight of dicyclopentadiene or cyclopentadiene per part by weight of a C_7 to C_{10} mono-nuclear aromatic compound having at least one alkyl substitutent,

(b) 20 to 40 wt. percent of a plasticizer selected from the group consisting of aryl and alkylaryl phosphates having 12 to 36 carbon atoms and alkyl phthalates having from 4 to 36 carbon atoms in the alkyl groups and,

wherein said homogeneous blend has a softening point between about 30° to 80° C.

3,310,518

PROCESS FOR PREPARING POLYMER SOLUTIONS

Daniel Edwin Maloney, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 27, 1964, Ser. No. 355,479

6 Claims. (Cl. 260—33.6)

1. A process for the preparation of solutions of polymers selected from the class consisting of ethylene/acrylic acid copolymers, ethylene/methacrylic acid copolymers, ethylene/itaconic acid copolymers, ethylene/methyl hydrogen maleate copolymers, ethylene/maleic acid copolymers, ethylene/acrylic acid/methyl methacrylate copolymers, ethylene/methacrylic acid/ethyl acrylate copolymers, ethylene/itaconic acid/methyl methacrylate copolymers, ethylene/methyl hydrogen maleate/ethyl acrylate copolymers, ethylene/methacrylic acid/vinyl acetate copolymers, ethylene/acrylic acid/vinyl alcohol copolymers, ethylene/propylene/acrylic acid copolymers, ethylene/styrene/acrylic acid copolymers, ethylene/methacrylic acid/acrylonitrile copolymers, ethylene/fumaric acid/vinyl methyl ether copolymers, ethylene/vinyl chloride/acrylic acid copolymers, ethylene/vinylidene chloride/acrylic acid copolymers, ethylene/vinyl fluoride/methacrylic acid copolymers, ethylene/methacrylic acid/acrylic acid copolymers, ethylene/methacrylic acid/maleic anhydride copolymers, ethylene/chlorotrifluoroethylene/methacrylic acid copolymers, polyethylene/acrylic acid graft copolymers, polyethylene/methacrylic acid graft copolymers, polymerized ethylene/propylene acrylic acid graft copolymers, polymerized ethylene/butene-1 methacrylic acid graft copolymers, polymerized ethylene/vinyl acetate methacrylic acid graft copolymers, polypropylene/acrylic acid graft copolymers, polypropylene/methacrylic acid graft copolymers, polybutene/acrylic acid graft copolymers, poly-3-methylbutene/acrylic acid graft copolymers and polyethylene/acrylic acid/ethyl acrylate graft copolymers, in which the alpha olefin units are present to the extent of at least 50 mol percent based on the total mols of units polymerized to form the polymer, and the acid monomer unit is present in the copolymer to the extent of 0.1 mol percent to 25 mol percent having a melt index within the range of 0.1 to 2000 g./10 min., which have been halogenated with a member selected from the class consisting of chlorine, fluorine and bromine, by the conversion of the acid groups to acid halide groups to the extent that the halogen groups form at least 0.2% by weight of the polymer, which comprises contacting said polymer with a solvent having 1 to 12 carbon atoms selected from the class consisting of hydrocarbons and chlorinated hydrocarbons in the presence of an acidic compound selected from the class consisting of hy-

drochloric acid, hydrogen chloride gas, phosphorus pentachloride, phosphorus oxychloride, phosphorus trichloride, acetyl chloride, propionyl chloride, octanoyl chloride, thionyl chloride, p-toluene sulfonyl chloride, benzene sulfonyl chloride, methane sulfonic acid, ethane sulfonic acid, p-toluene sulfonic acid, ortho-phosphoric acid, ortho-phosphorous acid, hydrogen fluoride, hydrogen bromide, sulfurous acid, phosphorous acid, perchloric acid, and mixtures thereof.

3,310,519
NON-FLAMMABLE VINYLIDENE CHLORIDE POLYMER SOLUTIONS

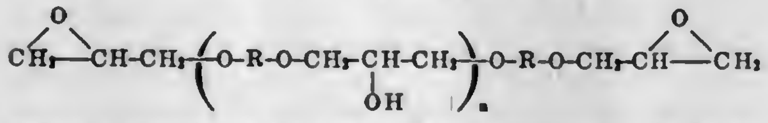
Harold G. Hahn, Midland, and Norman A. Lefevre, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Oct. 3, 1962, Ser. No. 228,786
10 Claims. (Cl. 260—33.8)

1. A solution of a crystallizable copolymer, said copolymer being substantially uniform in composition wherein the polymer molecules have substantially uniformly copolymerized therein vinylidene chloride and comprising (a) between 81 and 86 percent by weight vinylidene chloride, and (b) complementarily between 19 and 14 percent by weight vinyl chloride; in a solvent selected from the group consisting of trichloroethylene, and perchloroethylene.

3,310,520
BERYLLIUM OXIDE-ORGANIC RESIN COMPOSITION

Roland T. Girard, Scotia, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
No Drawing. Filed May 24, 1961, Ser. No. 112,178
6 Claims. (Cl. 260—37)

1. A mixture comprising 100 parts liquid polyepoxide which is the reaction product of an epihalogenohydrin with a dihydric phenol having the general structure



$$\overbrace{CH_2—CH}^{O}-CH_2-\left(O-R-O-CH_2-\underset{OH}{CH}-CH_2\right)_n-O-R-O-CH_2-\overbrace{CH—CH_2}^{O}$$

where R represents the divalent hydrocarbon radical of the dihydric phenol, and *n* is an integer from 0 to about 7, with an effective amount of a curing agent and from about 1 to 300 parts powdered calcined beryllium oxide based on the weight of the polyepoxide.

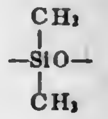
3,310,521
ORGANOPOLYSILOXANE COMPOSITIONS

Burton B. White, Schenectady, N.Y., and Roger D. Jesse, Roselle, Ill., assignors to General Electric Company, a corporation of New York
No Drawing. Filed May 13, 1963, Ser. No. 280,080
1 Claim. (Cl. 260—37)

A mouthpiece consisting of a flexible silicone rubber liner containing the composition consisting essentially of
(1) 100 parts of a curable organopolysiloxane polymer having a viscosity of at least 100,000 centipoises at 25° of the formula

$$(R)_aSiO_{(4-a)/2}$$

(2) 25 parts to 300 parts of the flowable resilient product of reaction at a temperature between 60° C. to 250° C. of a mixture comprising,
  (a) 100 parts of a polyorganosiloxane consisting essentially of chemically combined units having the formula



$$-\underset{CH_3}{\overset{CH_3}{Si}}O-$$

  (b) 1 to 20 parts of a boron-oxygen-compound selected from the class consisting of a boron oxide and an organoborate, and
  (c) 0.05 to 5 parts of ferric chloride,
(3) 5 to 50 parts of a silica filler, and
(4) 1 to 12 parts of a peroxide curing catalyst, where R is a member selected from the class consisting of monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals, and cyanoalkyl radicals, and *a* is equal to from 1.95 to 2.01, inclusive.

3,310,522
CROSS-LINKING PROCESS OF POLYVINYL CHLORIDE

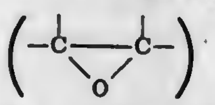
Sakae Takahashi, Kanagawa-ku, Yokohama, Hiroshi Nishimura, Kohoku-ku, Yokohama, and Mitsuo Inui, Nishi-ku, Yokohama, Japan, assignors to The Furukawa Electric Company Limited, Tokyo, Japan, a corporation of Japan
No Drawing. Filed July 16, 1962, Ser. No. 210,180
Claims priority, application Japan, July 19, 1961, 36/25,979
3 Claims. (Cl. 260—41)

1. In a process for cross-linking polyvinyl chloride the improvement which comprises adding to a polymer selected from the group consisting of homopolymer and copolymers of vinyl chloride, a mixture consisting essentially of between about 10 to 40 parts by weight of at least one metal oxide selected from the group consisting of zinc, lead, antimony, calcium, iron, cadmium, barium and magnesium oxides and 0.5 to 5.0 parts by weight of 2-mercapto-imidazoline, both based on 100 parts by weight of said member, and vulcanizing said mixture at a temperature above 130° C. for at least approximately 30 minutes in order to complete the vulcanization.

3,310,523
CROSSLINKED POLYMERS AND PREPARATION OF SAME

Leandros P. Lenas, Elizabeth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Apr. 30, 1963, Ser. No. 277,005
17 Claims. (Cl. 260—41)

1. A method of crosslinking a hydrocarbon polymer selected from the group consisting of substantially saturated C_2–C_6 alpha olefinic homopolymers, substantially saturated C_2–C_6 alpha olefinic copolymers and terpolymers prepared from C_2–C_6 alpha olefins and a C_8–C_{10} cyclic monomer which comprises mixing said polymer with (a) a crosslinking compound comprising an epoxidized polyolefin containing at least one oxirane group:



$$\left(-\overset{|}{C}\underbrace{—}_{O}\overset{|}{C}-\right)$$

and (b) a free radical generating compound, and heating said mixture until crosslinkages are formed in the polymer.

3,310,524
SUBSTITUTED PHENOLS

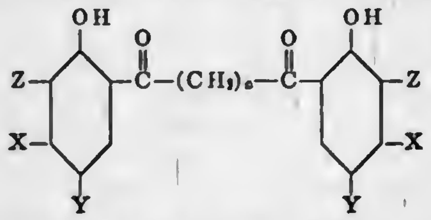
Ronald James Hurlock, Graham Howard Rayner, and Gerald Scott, all of Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Apr. 23, 1962, Ser. No. 189,271
Claims priority, application Great Britain, Apr. 26, 1961, 15,095/61
2 Claims. (Cl. 260—45.8)

1. A substance selected from the group consisting of rubbery homopolymers of diolefins and copolymers of diolefins with ethylenically unsaturated compounds containing a stabilizing amount of a member selected from the group consisting of 2-(2-benzthiazylthiomethyl)-6-tert butyl-4-methyl phenol and 2:6-bis-(2-benzthiazylthiomethyl)-4-methyl phenol.

3,310,525
ULTRAVIOLET LIGHT STABILIZED POLYESTER AND POLYOLEFIN COMPOSITIONS

Gerald R. Lappin and John W. Tamblyn, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Apr. 22, 1966, Ser. No. 544,412
9 Claims. (Cl. 260—45.95)

1. A plastic composition of polymeric material selected from the group consisting of normally solid, α-olefin resins of α-monoolefins containing from 2 to 10 carbon atoms and normally solid polyester resins prepared from polyhydric alcohols and polybasic carboxylic acids and at an ultraviolet light stabilizing concentration an α,ω-bis (2-hydroxybenzoyl)alkane having the formula:



wherein *n* is an integer in a range of from 2 to 8, and X, Y and Z are independently selected from the group consisting of hydrogen, C_1–C_4 alkoxy and C_1–C_4 alkyl radicals.

3,310,526
CYCLOPOLYSILOXANES

Christian R. Sporck, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 18, 1961, Ser. No. 160,263
3 Claims. (Cl. 260—46.5)

1. An organopolysiloxane consisting essentially of recurring structural units having the formula:

$$-(C_6H_5)_2SiO-\left[(C_6H_5)_2SiO\right]_n-(C_6H_5)_2SiO-(C_6H_5)[(C_6H_5)_3SiO]SiO-$$

where *n* is a whole number equal to from 0 to 1, inclusive, said organopolysiloxane having a molecular weight of at least about 10,000.

3,310,527
PROCESS FOR CURING POLYEPOXIDES AND RESULTING PRODUCTS

William De Acetis, Berkeley, and Herbert A. Newey, Lafayette, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 31, 1963, Ser. No. 284,322
13 Claims. (Cl. 260—47)

1. A process for curing and resinifying a polyepoxide having more than one vic-epoxy group which comprises mixing and reacting the polyepoxide with a polymercaptan having from 3 to 5 mercapto-substituted side chains of the formula —RSH wherein R is a member of the group consisting of hydrocarbon radicals, thiahydrocarbon radicals and oxahydrocarbon radicals, each of said members containing from 1 to 10 carbon atoms attached to carbon atoms of one or more aromatic hydrocarbon rings.

3,310,528
NEW EPOXIDE RESINS, PROCESSES FOR THEIR PRODUCTION AND HARDENABLE COMPOSITIONS CONTAINING SUCH EPOXIDE RESINS

Edward William Garnish, Saffron Walden, England, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed July 9, 1963, Ser. No. 293,832
Claims priority, application Great Britain, July 12, 1962, 26,891/62
8 Claims. (Cl. 260—47)

7. Epoxide resins produced by
(a) reacting epichlorohydrin with at least one aromatic amine, free from any carboxyl group and free from any phenolic hydroxyl group, which contains, per molecule, at least two hydrogen atoms attached directly to nitrogen, and at least one phenol containing at least two phenolic hydroxyl groups per molecule, at a temperature within the range 20° C. to 150° C., the epichlorohydrin being in molar excess, calculated on the combined amounts of aromatic amine and phenol,
(b) distilling off unreacted epichlorohydrin from the reaction product, and
(c) dehydrochlorinating the reaction product by treatment with alkali at a temperature within the range 20° C. to 150° C., the quantity of alkali being at least equivalent to the amount of amine used.

3,310,529
PROCESS OF HARDENING EPOXIDE RESIN AND PRODUCT PRODUCED

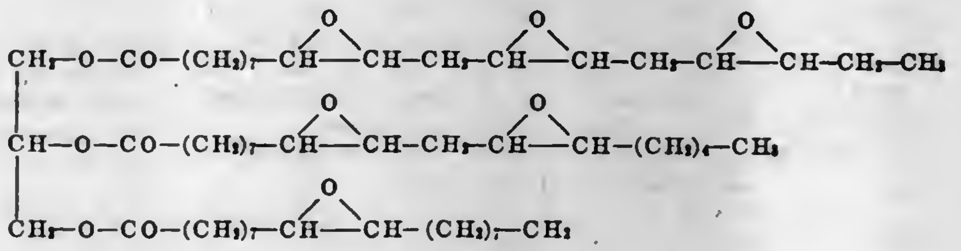
Markus Marti, Zurich, and Manfred Hoppe, Chur, Grisons, Switzerland, assignors to Inventa A.-G. für Forschung und Patentverwertung, Lucerne, Switzerland
No Drawing. Filed Nov. 7, 1963, Ser. No. 322,012
Claims priority, application Switzerland, Nov. 7, 1962, 13,034/62
2 Claims. (Cl. 260—47)

1. A process for hardening an epoxide resin containing more than one 1,2-epoxide groups per molecule, which comprises mixing with said resin as a hardening agent an effective amount of a condensation reaction product produced by reacting at a temperature between 100 to 300° C., 1 mol of biuret with at least 2 mols of a polyamine of the class consisting of phenylene diamine, diethylene triamine and triethylenetetramine.

3,310,530
SEQUESTERING ION EXCHANGE RESINS

Le Roy A. White, Root Road, Somers, Conn. 06071
No Drawing. Filed Apr. 3, 1964, Ser. No. 357,287
6 Claims. (Cl. 260—47)

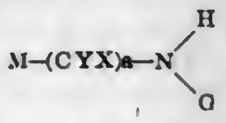
1. A chelating resin comprising the reaction product of:
(A) a polymer containing a plurality of epoxy groupings selected from the group consisting of 4,4'-isopropylidenediphenol based epoxides, epoxidized polybutadiene, epoxidized vinyl cyclohexene, epoxidized divinyl benzene, phenol-formaldehyde based epoxides, epoxidized resorcinol-formaldehyde, 1-vinyl phenoxy-2,3-epoxy propane polymers, glycidyl methacrylate polymers, epoxidized natural oil having the formula



$$\begin{array}{l} CH_2-O-CO-(CH_2)_7-\overbrace{CH—CH}^{O}-CH_2-\overbrace{CH—CH}^{O}-CH_2-\overbrace{CH—CH}^{O}-CH_2-CH_3 \\ | \\ CH-O-CO-(CH_2)_7-\overbrace{CH—CH}^{O}-CH_2-\overbrace{CH—CH}^{O}-(CH_2)_4-CH_3 \\ | \\ CH_2-O-CO-(CH_2)_7-\overbrace{CH—CH}^{O}-(CH_2)_7-CH_3 \end{array}$$

limonene dioxide, 3,4 - epoxy - 6 - methyl-cyclohexyl methyl 3,4-epoxy-6-methyl cyclohexane carboxylate, dicyclopentadiene dioxide, and 1,2 - epoxy - 4 - vinyl cyclohexane; and

(B) a sequestering agent having the general formula:

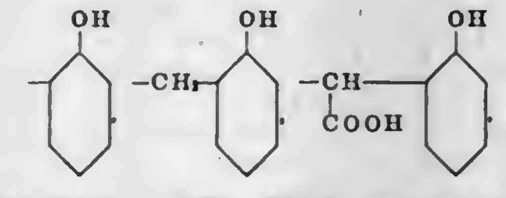


$$\mathrm{M{-}(CYX)_a{-}N}\genfrac{}{}{0pt}{}{\diagup\,\mathrm{H}}{\diagdown\,\mathrm{G}}$$

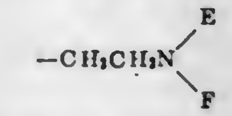
wherein —G is selected from the group consisting of

$$-H,\ -(CH_2)_pCOOH,\ -CH(COOH)_2$$

$$-CH_2CH_2OH,\ -CH_2CH_2-O-CH_2CH_2OH,$$

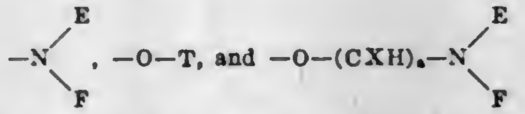


$-(CH_2)_pSO_3H$, $-(CH_2)_pPO_3H_2$, and not to exceed one unit per sequestering agent molecule of



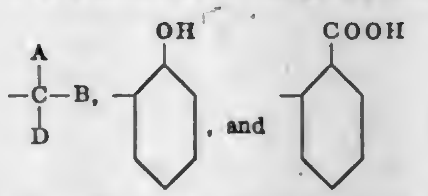
$$-\mathrm{CH_2CH_2N}\genfrac{}{}{0pt}{}{\diagup\,\mathrm{E}}{\diagdown\,\mathrm{F}}$$

wherein *p* is an integer of from 0–2 inclusive; wherein —X is selected from the group consisting of —H and $-(CH_2)_6COOH$; wherein —Y is selected from the group consisting of —H, —COOH, and —OH; wherein *a* is an integer of from 1 to 3 inclusive; wherein —M is selected from the group consisting of



$$-\mathrm{N}\genfrac{}{}{0pt}{}{\diagup\,\mathrm{E}}{\diagdown\,\mathrm{F}},\ -\mathrm{O}-\mathrm{T},\ \text{and}\ -\mathrm{O}-(\mathrm{CXH})_a-\mathrm{N}\genfrac{}{}{0pt}{}{\diagup\,\mathrm{E}}{\diagdown\,\mathrm{F}}$$

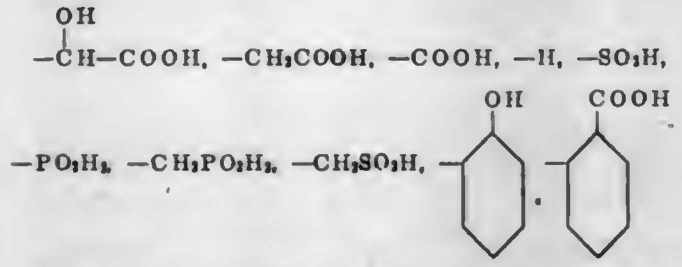
wherein —T is selected from the group consisting of



$$-\overset{\mathrm{A}}{\underset{\mathrm{D}}{\mathrm{C}}}-\mathrm{B},$$

, and

wherein —A, —B, and —D are selected from the group consisting of



$$-\overset{\mathrm{OH}}{\mathrm{C}}\mathrm{H}-\mathrm{COOH},\ -\mathrm{CH_2COOH},\ -\mathrm{COOH},\ -\mathrm{H},\ -\mathrm{SO_3H},$$

$$-\mathrm{PO_3H_2},\ -\mathrm{CH_2PO_3H_2},\ -\mathrm{CH_2SO_3H},$$

and not to exceed one unit per sequestering agent molecule of $-(CHY)_a-O-T$; and wherein —E and —F are the same as —G; said sequestering agent being linked through at least one of said epoxy groupings at an amine position of said agent to form said ion exchange chelating resin.

3,310,531

PROCESS FOR POLYMERIZING UNSATURATED ALDEHYDES AND RESULTING PRODUCTS

Elliott E. Ryder, Jr., Alameda, and Ronald K. June, Pleasant Hill, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 17, 1964, Ser. No. 338,287

13 Claims. (Cl. 260—67)

1. A process for preparing polymers of alpha,beta-ethylenically unsaturated monoaldehydes containing up to 8 carbon atoms recoverable as a finely divided substantially dry powder which comprises effecting polymerization of the aldehyde in a mixture of water and a lower aliphatic ketone containing a total of not more than 8 carbon atoms using a redox catalyst system.

3,310,532

METHOD FOR PREPARATION OF MODIFIED POLYESTERS HAVING FIBER- AND FILM-FORMING PROPERTIES

Seiji Kazama and Takeo Shima, Yamaguchi-ken, Japan, assignors to Teikoku Jinzo Kenshi Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed May 8, 1962, Ser. No. 193,308

Claims priority, application Japan, May 10, 1961, 36/15,807

2 Claims. (Cl. 260—75)

1. Method for preparation of modified polyesters by a two-step process comprising a first step wherein terephthalic acid and its lower aliphatic esters are reacted with ethylene glycol to form bis-(β-hydroxyethyl)-terephthalate and its oligomers, and a second step wherein the reaction product of the first step is heated to form polyethylene terephthalate, the improvement characterized in that, after the first reaction step and while the intrinsic viscosity (η) of the reaction product is less than 0.3 as measured in ortho-chlorophenol at 35° C., an additive selected from the group consisting of alkali hydrogen sulfates, sulfonic acids, having no ester-forming functional groups in their molecules other than sulfonic groups and acid-reactive sulfates is added to the reaction system whereby the softening point of the polymer is obtained within the range of 210 to 250° C., said alkali hydrogen sulfates and said sulfonic acids being added in an amount of 0.01 to 0.1 mol percent, and said acid-reactive sulfates being added in an amount of 0.1 to 1.0 mol percent based on said acid component.

3,310,533

PREPARING POLYURETHANES

Wilbur R. McElroy, Hillside, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Jan. 2, 1962, Ser. No. 163,863

9 Claims. (Cl. 260—77.5)

1. In the preparation of a thermoplastic polyurethane, the steps comprising reacting an organic polyisocyanate and an organic compound containing at least two active hydrogen containing groups as determined by the Zerewitinoff method, said groups being reactive with an isocyanate group, in amounts such that the NCO to active hydrogen ratio is in the range of about 0.7 to 1.3, interrupting the reaction when the reaction mixture has become viscous enough to make conventional mixing difficult by cooling the reaction mixture to room temperature to obtain a solid, reducing the resulting solid to particles, continuing the reaction in the solid particulate state by heating the particles at an elevated temperature but below the flow point of the said particles, and recovering the resulting thermoplastic particles.

3,310,534

NYLON COMPOSITION HAVING ENHANCED DYEABILITY

Edmond P. Brignac, Pensacola, and Robert T. Wright, Pensacola Beach, Fla., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Sept. 12, 1963, Ser. No. 308,340

2 Claims. (Cl. 260—78)

1. Polyhexamethylene adipamide having incorporated therein about 0.2–2.0 weight percent N-(2-aminoethyl) piperazine and about 3.0–20 weight percent 6-aminocaproic acid.

3,310,535

ACRYLONITRILE TETRAPOLYMERS, PROCESS FOR PREPARING SAME AND FIBERS THEREOF

Corrado Mazzolini and Sergio Lo Monaco, Mestre, Italy, assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 24, 1963, Ser. No. 300,402

8 Claims. (Cl. 260—78.5)

1. New linear tetrapolymer compositions having high flame resistance and improved receptivity for basic and dispersed dyes comprising:

(a) from 62 to 94 percent acrylonitrile
(b) from 5 to 25 percent vinylidene chloride
(c) from 1 to 10 percent of at least one other vinyl monomer having a side group of greater stearic hindrance than the cyanide group, and
(d) from 0.1 to 3 percent of at least one different alkenyl monomer having at least one free acid function.

3,310,536

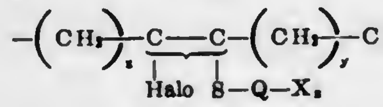
OIL SOLUBLE POLYMERS

William A. Hewett, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 10, 1962, Ser. No. 243,647

5 Claims. (Cl. 260—79.5)

1. As a new product useful as a lubricating oil additive a mineral oil-soluble high molecular weight polymer containing a plurality of C_8–C_{20} alkyl groups and



$$-\left(\mathrm{CH_2}\right)_x-\underset{\text{Halo}}{\mathrm{C}}-\underset{\mathrm{S-Q-X}_z}{\mathrm{C}}-\left(\mathrm{CH_2}\right)_y-\mathrm{CH_3}$$

groups attached to different carbons of a linear hydrocarbon chain where Q is an aryl, X is a polar group selected from the group consisting of halogen, amino, nitro and sulfo groups, and *x* and *y* are integers of at least 1, and *z* is a number from 0 to 2, the molecular weight of the polymer ranging from 10,000 to 500,000 as determined by the light scattering technique.

3,310,537

HYDROCARBON POLYMERS CONTAINING ETHYLENE, A HIGHER ALPHA-OLEFIN AND AT LEAST TWO NON-CONJUGATED DIENES

Giulio Natta, Giorgio Mazzanti, Alberto Valvassori, Guido Sartori, and Nazareno Cameli, all of Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,852

Claims priority, application Italy, Apr. 27, 1962, 8,364/62

10 Claims. (Cl. 260—79.5)

1. Vulcanizable, substantially linear, amorphous copolymers having a molecular weight above 20,000 consisting essentially of:

(1) ethylene, in an amount from at least 5% to not more by 75% by mols,
(2) a higher alpha-olefin selected from the group consisting of propylene and butene-1, in an amount from at least 5% to not more than 95% by mols, and,
(3) at least two additional monomers obtained from the dimerization of butadiene in an amount from about 0.1 to 20% by mols, selected from the group consisting of cyclooctadiene-1,5,4-vinyl cyclohexene-1, and divinyl cyclobutane,

said copolymers consisting essentially of unsaturated macromolecules having randomly distributed copolymerized units of each of the starting monomers.

3,310,538

THIOTRITHIAZYL COMPOUNDS AS VULCANIZING AGENTS

Jerry Richard Albin, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 31, 1964, Ser. No. 386,751

5 Claims. (Cl. 260—79.5)

1. In a process of curing a normally-solid, chain-saturated α-olefin hydrocarbon copolymer having side-chain ethylenic unsaturation which comprises subjecting said copolymer to curing conditions in the presence of a vulcanizing agent and a sulfur-cure accelerator compound; the improvement wherein said vulcanizing agent is a thiotrithiazyl compound of the furmula $(NS)_3S-X$, where X is selected from the group consisting of —Cl, —Br and —SCN.

3,310,539

IMIDAZOLIDINE-2-THIONE DERIVATIVES

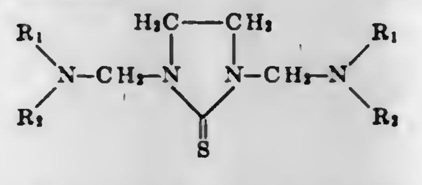
Lucien Convert, Thiais, and Raymond Fabre, Vincennes, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed Oct. 29, 1964, Ser. No. 407,886

Claims priority, application France, July 17, 1964, 982,101

12 Claims. (Cl. 260—79.5)

11. A vulcanizable mix comprising a chloroprene polymer and, as vulcanization accelerator, at least one compound of the formula:



where R_1 and R_2 taken separately are each selected from the class consisting of alkyl and cycloalkyl and R_2 may also represent a hydrogen atom, and taken together with the adjacent nitrogen may represent a heterocyclic radical.

3,310,540

WATER-SOLUBLE POLYMERS

James C. Fang, Springfield, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 2, 1962, Ser. No. 214,192

2 Claims. (Cl. 260—79.7)

1. The iodide of methylethylsulfonium ethyl methacrylate polymer.

3,310,541

METHOD OF IMPROVING THE COLOR OF RUBBER

Wilhelm Breuers, Gerhard Kuth, Ernst-Gunther Bock, and Woldemar Tilk, Recklinghausen, Germany, assignors to Bunawerke Hüls Gesellschaft mit beschränkter Haftung, Recklinghausen, Germany

No Drawing. Filed June 11, 1962, Ser. No. 201,736

Claims priority, application Germany, June 15, 1961, B 62,918

12 Claims. (Cl. 260—82.1)

1. A method of improving the color of a polymer of 1,3-butadiene contaminated by ferric or ferrous compounds, said polymer being produced by polymerization and subsequent coagulation of the resultant latex, which method comprises adding to said latex at least one reducing agent having a redox potential sufficient to convert ferric compounds to ferrous compounds, said addition of reducing agent being conducted during a period between shortly prior to the termination of the polymerization reaction until the time that the latex is coagulated, said period being one wherein substantially no polymerization takes place.

3,310,542
PROCESS FOR PREPARING POLYMERS OF DIHYDROPYRAN

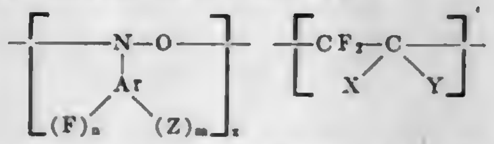
Raymond J. Ehrig, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Aug. 19, 1964, Ser. No. 390,733
3 Claims. (Cl. 260—88.3)

1. A process for polymerizing dihydropyran which comprises contacting dihydropyran under substantially anhydrous conditions with 0.01 to 10.0% by weight of the dihydropyran of the reaction product of antimony pentachloride and triphenylmethyl chloride, said reaction product being formed from substantially equimolar proportions of antimony pentachloride and triphenylmethyl chloride, at a temperature of about −78° C. to 60° C. to form a polymer of dihydropyran.

3,310,543
COPOLYMERS OF POLYFLUOROARYLNITROSO COMPOUNDS AND FLUORINATED OLEFINS

Robert Neville Haszeldine, Windyridge, Lyme Road, Disley, England; John Michael Birchall, 22 Lorna Road, Cheadle Hulme, England; and John Herbert Umfreville, 36 Skaife Road, Sale, England
No Drawing. Filed Dec. 6, 1963, Ser. No. 328,486
Claims priority, application Great Britain, Dec. 17, 1962, 47,547/62
10 Claims. (Cl. 260—92.1)

1. Copolymers having the structure



where Ar is an aryl radical selected from the group of phenyl and naphthyl, Z is selected from the group consisting of hydrogen, chlorine, methyl and perfluoromethyl, $(m+n+1)$ represent an integer corresponding to the valence of Ar, n is an integer of at least 3, X is selected from the group consisting of fluorine, chlorine and hydrogen, and Y is selected from the group consisting of fluorine, chlorinne, hydrogen, polyfluoroalkyl and polyfluoroaryl, and x is an integer from one to two.

3,310,544
ARRESTING CHLOROPRENE POLYMERIZATION

Charles E. Aho, Louisville, Ky., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 12, 1963, Ser. No. 301,637
5 Claims. (Cl. 260—92.3)

1. In the process for polymerizing chloroprene in an alkaline emulsion in the presence of sulfur and an organic or inorganic peroxy compound catalyst and adding a plasticizer to the emulsion containing the polymerized chloroprene, the improvement which comprises incorporating in said emulsion, upon obtaining the desired degree of polymerization, about 0.01 to 0.10% by weight of the chloroprene of 4,4'-thiobis-(6-tertiary butyl orthocresol).

3,310,545
PROCESS FOR CURING POLYCHLOROPRENE

Richard Oscar Becker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 11, 1963, Ser. No. 308,067
5 Claims. (Cl. 260—92.3)

1. A process comprising curing by heating chloroprene polymer in the presence of from 2 to 20 parts by weight of zinc oxide per 100 parts by weight of said polymer and hard burnt lime and obtaining as a result thereof chloroprene polymer vulcanizate having improved heat resistance.

3,310,546
CURABLE CHLOROPRENE POLYMER COMPOSITION AND METHOD OF CURING SAME

Richard Oscar Becker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 11, 1963, Ser. No. 308,070
6 Claims. (Cl. 260—92.3)

1. Chloroprene polymer containing as curing agents 2 to 20 parts of zinc oxide and 4 to 20 parts of a calcium salt of a carboxylic acid selected from the group consisting of aliphatic carboxylic acids containing 10 to 30 carbon atoms, decahydronapthalene carboxylic acids, resin acids, and mixtures of said acids, both said parts being by weight per 100 parts by weight of said polymer.

3,310,547
CATALYSTS OF TRANSITION METAL BOROHYDRIDE COMPLEXES

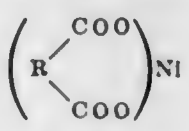
Stanley B. Mirviss, Westfield, Herbert W. Dougherty, Jr., Cranford, and Ralph W. Looney, East Orange, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed June 7, 1961, Ser. No. 115,315
14 Claims. (Cl. 260—93.7)

1. A method of polymerizing an alpha olefin which comprises contacting the alpha olefin with a catalyst of a titanium borohydride complex, said borohydride complexed with hexamethylphosphoramide.

3,310,548
DYEABLE POLYOLEFINS

Gabriel Karoly, Elizabeth, and Allen Noshay, East Brunswick, N.J., and Albin F. Turbak, Danville, Ill., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Nov. 29, 1963, Ser. No. 327,096
6 Claims. (Cl. 260—93.7)

1. A dyeable composition of matter consisting of a polymer of a hydrocarbon alpha olefin blended with a nickel dicarboxylate of the formula:



where R is selected from the class consisting of substituted and unsubstituted alkyl, aryl and aralkyl groups.

3,310,549
NITRO CONTAINING AZOXY COMPOUNDS

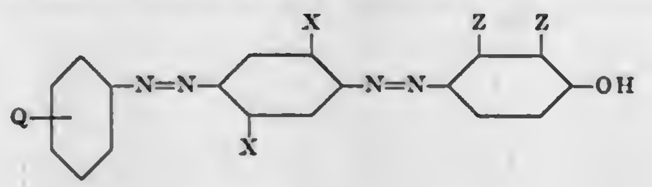
Anton J. Havlik, La Crescenta, Calif., and Gustave B. Linden, Short Hills, N.J., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
No Drawing. Filed July 10, 1964, Ser. No. 382,439
10 Claims. (Cl. 260—143)

1. The compound 2-(2-nitrophenylazoxy-2-nitropropane.

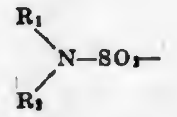
3,310,550
WATER-INSOLUBLE DISAZO DYES

Hans Wilhelm Liechti, Oberwil, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Oct. 30, 1963, Ser. No. 319,977
Claims priority, application Switzerland, Jan. 30, 1961, 1,069/61; Dec. 11, 1961, 14,356/61
6 Claims. (Cl. 260—152)

1. Disazo dyestuffs which correspond to the formula



in which Q represents a member selected from the group consisting of lower alkylsulfonyl, chloromethylsulfonyl, phenylsulfonyl, phenylmethylsulfonyl, phenoxysulfonyl and a sulfonamide of the formula

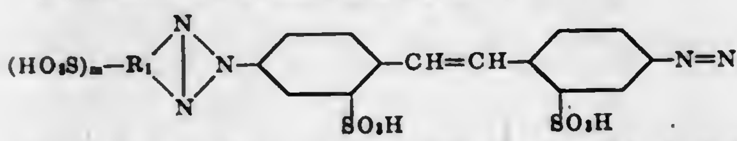


in which R_1 is lower alkyl and R_2 represents a member selected from the group consisting of cyclohexyl and phenyl, and in which R_1 and R_2 may form together with the nitrogen atom heterocyclic nuclei which are members selected from the group consisting of pyrrolidide, piperidide and morpholide and the one X represents a member selected from the group consisting of a hydrogen atom, a chlorine atom, a lower alkyl and a lower alkoxy group, and the other X represents a member selected from the group consisting of lower alkyl and lower alkoxy, one Z is a hydrogen atom and the other Z represents a member selected from the group consisting of a hydrogen atom, a chlorine atom, lower alkyl and lower alkoxy wherein the residue Q is bound in meta-position or para-position with respect to the azo linkage.

3,310,551
AZOSTILBENE DYESTUFFS

John H. McLeod, Tonawanda, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Apr. 29, 1963, Ser. No. 276,178
11 Claims. (Cl. 260—157)

1. A monoazo dyestuff of the general formula

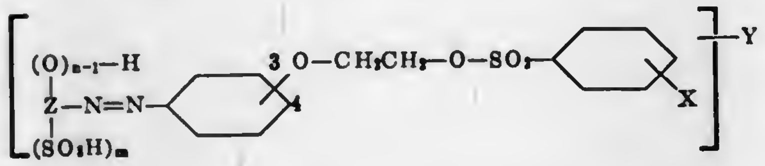


wherein R_1 and R_2 are 1,2-naphthylene radicals, A is an unsulfonated radical of the benzene series, the nitrogens attached to A being in para-position to each other, n and m are integers selected from the group consisting of 1 and 2, at least one of n and m being 2 and wherein R_1, R_2 and A may be further substituted by lower alkyl, lower alkoxy or chlorine substituents.

3,310,552
WATER-SOLUBLE MONOAZO DYESTUFFS

Hans Ischer, Basel, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Filed Feb. 3, 1964, Ser. No. 342,239
Claims priority, application Switzerland, Oct. 25, 1957, 51,963/57; Dec. 11, 1957, 53,627/57
4 Claims. (Cl. 260—200)

1. Water soluble mono-azo-dyestuff of the formula



wherein

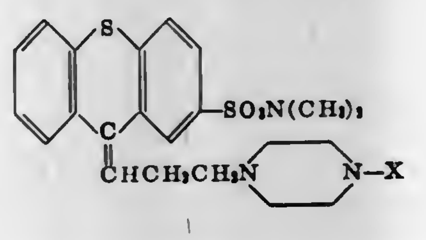
X is a member selected from the group consisting of H, methyl and Cl,
Z is the naphthalene nucleus,
Y is a member selected from the group consisting of carboxy, sulfonamido, amino, lower monoalkylamino, di(lower) alkylamino, methylsulfonyl and lower alkanoylamino,
n is one of the integers 1 and 2, and
m is one of the integers 1, 2 and 3,

the group—OH, when present, being in ortho-position to the —N=N— group, and the —O—CH_2CH_2—O— group being in one of the positions 3 and 4.

3,310,553
ALKYLATED THIOXANTHENESULFONAMIDES

Barry M. Bloom, Lyme, and James F. Muren, Niantic, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 26, 1963, Ser. No. 276,081
5 Claims. (Cl. 260—240)

1. A compound of the formula

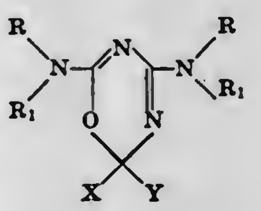


wherein X is selected from the group consisting of methyl, 2-hydroxyethyl, 3-hydroxypropyl, dimethylsulfonamido and methylsulfonyl.

3,310,554
2H-1,3,5-OXADIAZINES

Robert A. Braun, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 31, 1965, Ser. No. 444,438
5 Claims. (Cl. 260—244)

1. A compound of the formula



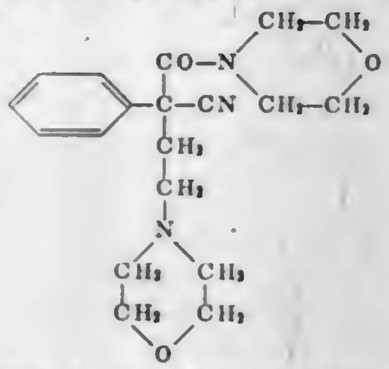
where
R and R_1 are selected from the group consisting of hydrogen; alkyl of 1 through 5 carbon atoms; alkyl of 1 through 5 carbon atoms substituted with a radical selected from the group consisting of cyano, nitro, alkoxy of 1 through 5 carbon atoms, chlorine and fluorine; alkenyl of 2 through 5 carbon atoms; cycloalkyl of 4 through 7 carbon atoms; and phenyl; with the proviso that R and R_1 can be joined together by an alkylene bridge of 2 through 7 carbon atoms; and
X and Y are selected from the group consisting of perchloroalkyl radicals, perfluoroalkyl radicals, and mixed perchloro-perfluoroalkyl radicals, all of 1 through 5 carbon atoms.

3,310,555

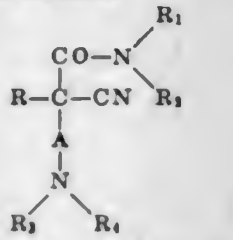
2-PHENYL AND CYCLOHEXYL-2-CYANO-2-TERTIARY AMINO LOWER ALKYL-ACETAMIDES

Marcel Pesson, Paris, France, assignor to Societe Anonyme dite: Laboratoire Roger Bellon, a French company
No Drawing. Filed Sept. 11, 1963, Ser. No. 308,090
Claims priority, application Great Britain, Sept. 17, 1962, 35,375/62
10 Claims. (Cl. 260—246)

3. A compound of the formula



8. A compound selected from the group consisting of a cyano acetamide of the formula



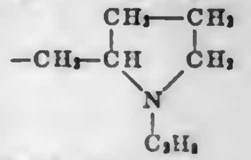
wherein

R is a member selected from the group consisting of phenyl, halogeno phenyl, phenyl lower alkyl, and cyclohexyl;

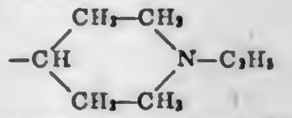
R_1 and R_2 are members selected from the group consisting of lower alkyl and R_1 and R_2, together with the nitrogen atom to which they are attached, form the piperidine, morpholine, and pyrrolidine ring;

R_3 and R_4 are members selected from the group consisting of lower alkyl and R_3 and R_4, together with the nitrogen atom to which they are attached, form the piperidine, morpholine, and pyrrolidine ring; and

A is a member selected from the group consisting of alkylene having two and three carbon atoms and A, together with R_3 and the nitrogen atom to which R_3 and R_4 are attached, forms a member selected from the group consisting of the group of the formula



and the group of the formula



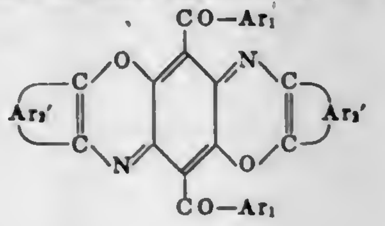
and their pharmaceutically acceptable acid addition salts.

3,310,556

DIOXAZINE PIGMENTS

Jost von der Crone and André Pugin, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland
No Drawing. Filed Feb. 2, 1965, Ser. No. 429,927
Claims priority, application Switzerland, Feb. 7, 1964, 1,484/64
12 Claims. (Cl. 260—246)

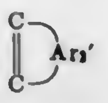
1. A triphenodioxazine pigment of the formula



wherein

both Ar_1 are identical members selected from the group consisting of: phenyl, fluorophenyl, chlorophenyl, bromophenyl, lower alkyl-phenyl, lower alkoxy-phenyl, diphenyl, phenoxyphenyl and halogenophenoxyphenyl wherein halogeno represents halogen of one of the atomic numbers 17 and 35,

and both groupings



are identical members selected from the class consisting of:

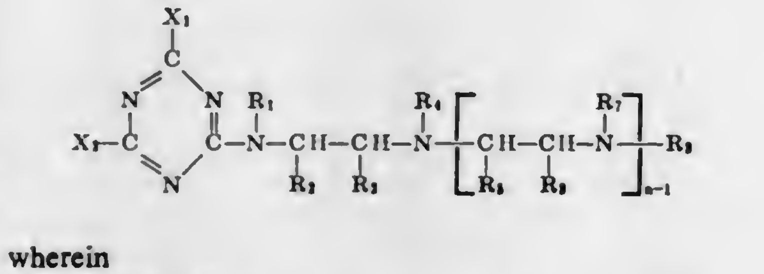
- (a) o-phenylene,
- (b) o-phenylene substituted with the following: lower alkyl, lower alkoxy, hydroxy-lower alkoxy, phenyl, halogenophenyl, lower alkoxyphenyl, aminophenyl, cyanophenyl, benzoylaminophenyl, halogenobenzoylaminophenyl, lower alkyl-benzoylaminophenyl, nitrobenzoylaminophenyl, lower alkoxy-benzoylaminophenyl, benzyloxy, halogenobenzyloxy, lower alkyl-benzyloxy, phenoxy, halogenophenoxy, lower alkylphenoxy, lower alkoxy phenoxy, phenylthio, lower alkylphenylthio, fluoro, nitro, trifluoromethyl, amino, carbamyl, sulfamyl, N-mono-lower alkyl-carbamyl, N-mono-lower alkyl-sulfamyl, N-phenyl-carbamyl, N-phenyl-sulfamyl, N-(lower alkylphenyl)-sulfamyl, N-(halogenophenyl)-sulfamyl, N-(lower alkoxy-phenyl)-sulfamyl, N-(lower alkylphenyl)-carbamyl, N-(halogenophenyl)-carbamyl, N-(lower alkoxyphenyl)-carbamyl, lower alkoxy-carbonyl, lower alkylsulfonyl, phenylsulfonyl, benzoyl, halogenobenzoyl, lower alkylbenzoyl, lower alkoxy-benzoyl, lower alkanoylamino, benzoylamino, halogeno-benzoylamino, lower alkyl-benzoylamino, lower alkoxy-benzoylamino, 4,6-diphenyl-1,3,5-triazinyl - (2) - amino and lower alkoxy-carbonylamino,
- (c) naphthylene-(1,2),
- (d) benzofuryl-(3,4) and
- (e) benzodioxinyl-(3,4).

3,310,557

SUBSTITUTED AMINO-1,3,5-TRIAZINES

Alois Kleemann, Basel, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed May 28, 1965, Ser. No. 459,936
Claims priority, application Switzerland, June 2, 1964, 7,188/64; May 3, 1965, 6,130/65
9 Claims. (Cl. 260—249.6)

1. A compound of the formula



wherein

n represents 1 or 2,

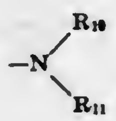
each of R_1, R_2, R_3, R_5 and R_6, taken independently, is a number selected from the group consisting of hydrogen and lower alkyl,

each of R_4 and R_7 taken independently is a member selected from the group consisting of hydrogen, lower alkyl and phenyl-lower alkyl,

each of the pairs R_1 and R_4 taken together and R_4 and R_7 taken together represents an α,β-alkylene group of from 2 to 8 carbon atoms, and each of the pairs R_2 and R_3 taken together and R_5 and R_6 taken together represents an α,δ-n-butylene radical,

R_8 represents a member selected from the group consisting of phenyl-lower alkyl, lower alkyl-phenyl-lower alkyl, halogeno-phenyl-lower alkyl, phenyl, halogenophenyl, lower alkyl-phenyl, trifluoromethyl - phenyl, phenoxy-phenyl, phenylthio-phenyl, naphthyl and cyclohexyl,

each of X_1 and X_2 represents a member selected from the group consisting of chlorine, bromine, a radical R_9, a radical —O—R_9, a radical —S—R_9 and a radical



wherein

R_9 is a member selected from the group consisting of lower alkyl, cyclohexyl, benzyl, lower alkyl-benzyl, phenyl, lower-alkyl phenyl, lower alkoxy-lower-alkyl.

R_{10} is a member selected from the group consisting of hydrogen and lower alkyl, and

R_{11} is a member selected from the group consisting of hydrogen, lower alkyl and lower alkanoyl.

3,310,558

MELAMINE RECOVERY

Adriaan P. Oele, Gerardus J. J. M. Taks, and Simon Dingemans, Geleen, and Jan Damme, Beek, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
Filed Mar. 7, 1963, Ser. No. 263,485
Claims priority, application Netherlands, Mar. 8, 1962, 275,724; Nov. 28, 1962, 286,072
6 Claims. (Cl. 260—249.7)

1. In a process for recovering melamine from a hot melamine containing gaseous mixture which in addition to melamine contains mainly ammonia and carbon dioxide, in which process the gaseous mixture is cooled by direct contact with water in a cooling zone and the melamine separates from the gaseous mixture and is discharged from the cooling zone, the improvement comprising the steps of:

using as the gaseous mixture one consisting essentially of melamine, ammonia and carbon dioxide;

first cooling the hot gaseous mixture by passing the gaseous mixture into a first cooling zone, the inner surface of which is cooled in concurrent relation to the gaseous mixture with a coolant consisting essentially of cooling water which is substantially saturated with ammonia and carbon dioxide whereby said gaseous mixture is cooled by the evaporation of water from the coolant and a large portion of the melamine is condensed and separates from the gaseous mixture;

then passing the coolant into a second cooling zone and passing the precooled gaseous mixture through the second cooling zone in countercurrent relation to the coolant while directly contacting the precooled gaseous mixture with the coolant, cooling of the gaseous mixture being effected by contact with a virtually constant amount of water, predominantly by evaporation of this water, whereby the condensation and separation of melamine from the gaseous mixture is completed;

discharging the separated melamine from the first cooling zone and separately discharging the remainder of the gaseous mixture including evaporated water;

and supplying additional cooling water to the coolant in an amount equivalent to the amount of water removed from the coolant by the evaporation of water and entrainment with the melamine and gaseous mixture discharged from the cooling zones whereby the amount of cooling water in the coolant is maintained substantially constant and the gaseous mixture discharged from the cooling zones contains at least 90% of the amount of the ammonia originally present in the gaseous mixture fed to the cooling zones.

3,310,559

PROCESS FOR THE CATALYTIC PRODUCTION OF MELAMINE FROM GASEOUS CYANIC ACID

Ferdinand Weinrotter, Linz, Walter Muller, Leonding, near Linz, Alfred Schmidt, Walter Bohler, and Johann Schweighofer, Linz, Austria, assignors to Osterreichische Stickstoffwerke Aktiengesellschaft, Linz, Austria
No Drawing. Filed Mar. 26, 1964, Ser. No. 355,064
Claims priority, application Austria, Apr. 4, 1963, A 2,704/63
8 Claims. (Cl. 260—249.7)

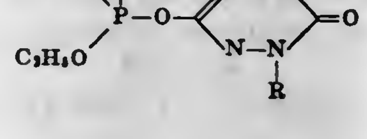
1. In a process for the synthesis of melamine which comprises passing a mixture of gaseous cyanic acid and ammonia gas through a catalyst for such synthesis, the improvements according to which the said mixture contains not more than 20% by volume of cyanic acid, the flow rate of the input gas mixture is not in excess of 15 normal liters per square centimeter of catalyst per hour, and the input gas temperature is between 280° and 350° C.

3,310,560

THIOPHOSPHORIC ACID ESTERS

Rupert Schönbeck, Leonding, near Linz, Engelbert Kloimstein, Eferding, and Walther Beck and Alfred Diskus, Linz, Austria, assignors to Osterreichische Stickstoffwerke Aktiengesellschaft, Linz, Austria
No Drawing. Filed Mar. 22, 1966, Ser. No. 536,308
Claims priority, application Austria, Mar. 25, 1965, A 2,705/65
10 Claims. (Cl. 260—250)

1. A thiophosphoric acid ester having the formula



(I)

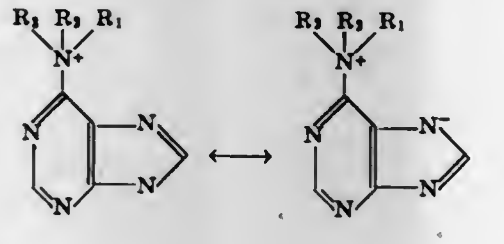
in which R is a member selected from the group consisting of hydroxy-ethyl, cyano-ethyl, lower alkoxy-carbonyl-methyl, lower alkoxy-carbonyl-ethyl, di-lower alkyl-carbamyl-methyl and di-lower alkyl-carbamyl-ethyl radicals.

3,310,561

6-AMMONIOPURINIDES

Alfred R. Bader, Milwaukee, Wis., assignor to Aldrich Chemical Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
No Drawing. Filed Aug. 5, 1965, Ser. No. 477,585
5 Claims. (Cl. 260—252)

1. A compound of the formula



where R_1, R_2 and R_3 are each selected from the group consisting of lower alkyl, lower alkenyl and lower cycloalkyl.

3,310,562

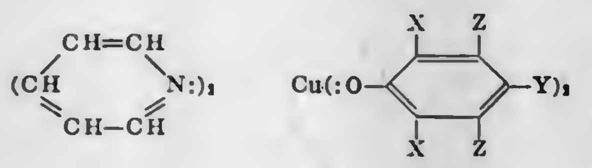
PYRIDINE-CUPRIC COMPLEXES WITH HALOPHENOLS

Harry S. Blanchard, Schenectady, and Herman L. Finkbeiner, Ballston Lake, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Original application Dec. 31, 1962, Ser. No. 248,228, now Patent No. 3,256,243, dated June 14, 1966. Divided and this application Sept. 2, 1965, Ser. No. 510,415

8 Claims. (Cl. 260—270)

1. A crystalline cupric complex having the empirical formula



where X is a halogen selected from the group consisting of fluorine and chlorine and, in addition, bromine when Y and each Z are bromine, Y is a halogen selected from the group consisting of chlorine, bromine and iodine, and Z is a monovalent substituent selected from the group consisting of hydrogen, fluorine and chlorine and, in addition, bromine when Y and each X are bromine.

3,310,563

VAT DYESTUFFS OF THE ANTHRAQUINONE SERIES AND PROCESS FOR PREPARING THEM

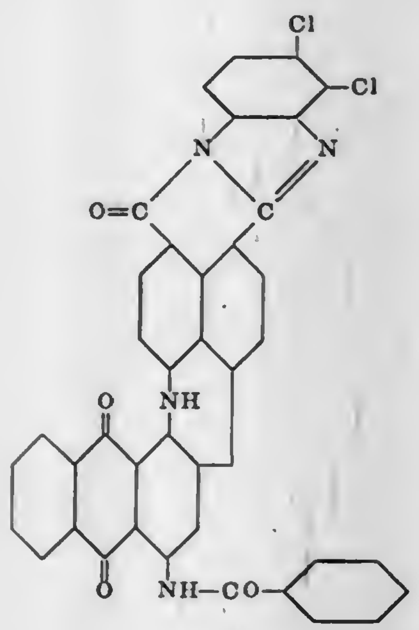
Heinrich Sieber and Otto Fuchs, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 16, 1963, Ser. No. 273,285

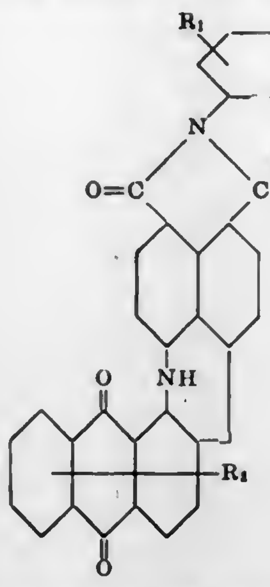
Claims priority, application Germany, Apr. 21, 1962, F 36,625

3 Claims. (Cl. 260—274)

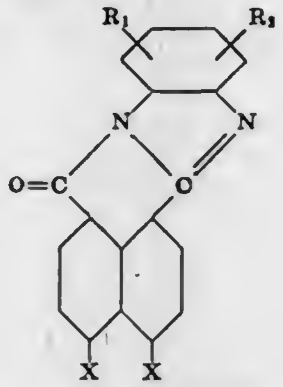
1. A dyestuff of the formula



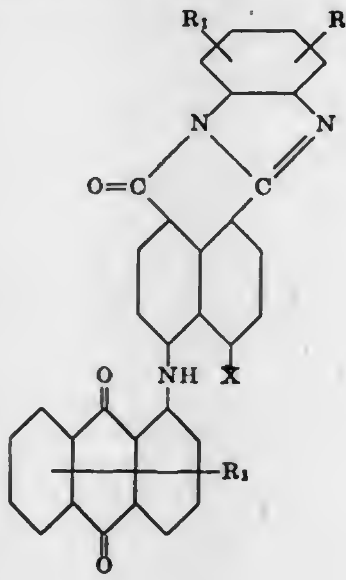
3. A process for making a dyestuff of the formula



in which R_1 represents a member selected from the group consisting of a hydrogen atom, a chlorine atom, a lower alkyl group and a lower alkoxy group, R_2 represents a member selected from the group consisting of a hydrogen atom and a chlorine atom, and R_1 and R_2 together represent the group —CH═CH—CH═CH— with the proviso that R_1 and R_2 are linked in ortho-position, with respect to one another, to the phenylene radical, and R_3 represents a member selected from the group consisting of a hydrogen atom, a lower alkoxy group and a benzoylamino group, which comprises condensing 4′,5′-dihalo-1′,8′-naphthoylene-arylimidazole of the formula



in which R_1 and R_2 have the meanings given above and X represents a member selected from the group consisting of chlorine and bromine atoms with an amino-anthraquinone selected from the group consisting of 1-amino-anthraquinone, a 1-amino-benzoylaminoanthranquinone and a lower alkoxy-substituted 1-amino-anthraquinone in a polar organic solvent in the presence of an acid-binding agent at a temperature between 150° and 200° C., and heating the intermediate thereby obtained of the formula



wherein R_1, R_2 and X have the meanings defined above and R_3 represents a member selected from the group consisting of a hydrogen atom, a benzoylamino group and a lower alkoxy group in an acid amide selected from the group consisting of acetamide, N-methylacetamide, pyrrolidone, N-methylpyrrolidone, benzamide and phosphoric acid-tris-dimethylamide in the presence of an acid binding agent and a high boiling organic solvent at a temperature between 150° and 270° C.

3,310,564

NOVEL 4-ALKOXY NAPHTHALIMIDES

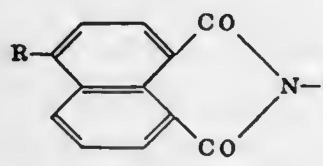
Toshiyasu Kasai, 3070 Midorigaoka, Meguro-ku, Tokyo, Japan

No Drawing. Filed Jan. 18, 1962, Ser. No. 167,183

Claims priority, application Japan, Jan. 21, 1961, 36/1,946; Jan. 26, 1961, 36/2,405, 36/2,406; Feb. 12, 1961, 36/4,782

13 Claims. (Cl. 260—281)

1. The compound of the formula



wherein R is a lower alkoxy group and R′ is a member selected from the group consisting of hydrogen, lower alkyl, cyclohexyl, and monocyclic aryl.

3,310,565

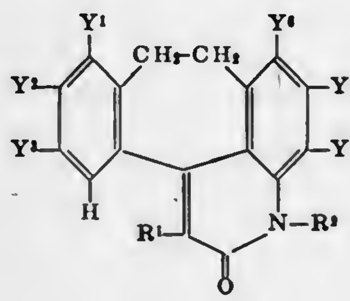
DIBENZOAZABICYCLOALKANES

Eugene Galantay, Morristown, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Filed June 3, 1966, Ser. No. 555,933

24 Claims. (Cl. 260—288)

4. A compound of the formula



wherein

- R^1 is a member selected from the group consisting of a hydrogen atom and lower alkyl;
- R^2 is a member selected from the group consisting of lower alkyl, ar(lower)alkyl, —CH_2—CH_2—B and —CH_2—CH_2—CH_2—B;
- B is a member selected from the group consisting of primary amino, mono(lower)alkylamino, di(lower) alkylamino, lower alkyleneimino, morpholino, thiomorpholino, piperazino, N-(N′-lower alkyl)-piperazino and N-(N′-lower alkanol)-piperazino; and
- each of Y^1, Y^2, Y^3, Y^4, Y^5 and Y^6 is a member selected from the group consisting of a hydrogen atom, lower alkoxy, a halogen atom and trifluoromethyl, no two trifluoromethyl groups being ortho to each other.

6. The compound of claim 4 which is 3-dimethylaminoethyl - 2,3,7,8 - tetrahydrodibenzo[f][j,k]cyclohepta[c] pyridin-2-one.

3,310,566

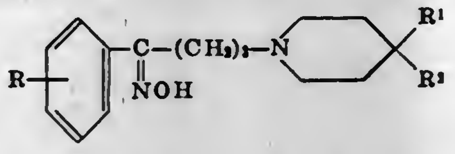
SUBSTITUTED 4-PIPERIDINO-BUTYROPHENONE OXIMES

Meier E. Freed, Philadelphia, Pa., and Leonard M. Rice, Minneapolis, Minn., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 18, 1963, Ser. No. 324,230

4 Claims. (Cl. 260—293)

1. A compound of the formula:



and pharmaceutically acceptable acid addition salts thereof wherein R is selected from the group consisting of halogen, lower alkoxy and lower alkyl; R^1 and R^2 are lower alkyl groups and when taken together form a ring having from 5 to 6 carbon atoms.

3,310,567

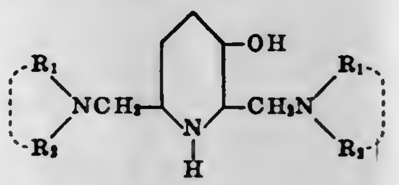
2,6-BIS(AMINOALKYL)-3-PIPERIDINOLS

John H. Biel, Milwaukee, and Charles E. Aiman, New Berlin, Wis., assignors to Aldrich Chemical Co., Inc., Milwaukee, Wis., a corporation of Wisconsin

No Drawing. Filed Jan. 3, 1964, Ser. No. 335,686

6 Claims. (Cl. 260—294.7)

1. A compound selected from the group consisting of (a) compounds of the formula



where R_1 and R_2 are each selected from the group consisting of lower alkyl, lower cycloalkyl, phenyl-lower alkyl, phenyl and, together with each other and the nitrogen atom, a heterocyclic ring selected from the group consisting of piperidino, morpholino, piperazino, pyrrolidino, homopiperidino and 1,2,3,4-tetrahydroisoquinoline, and (b) acid addition salts thereof.

2. 2,6-bis(dimethylaminomethyl)-3-piperidinol.

3,310,568

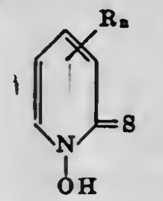
PROCESS FOR PREPARING ESTERS OF PYRIDINE THIONES

Clayton O. Obenland, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Feb. 11, 1964, Ser. No. 343,960

5 Claims. (Cl. 260—294.8)

1. A process for the preparation of an ester which comprises (A) neutralizing an aqueous slurry of a compound of the formula:



wherein R is selected from the group consisting of hydrogen, alkyl of not more than 5 carbon atoms, alkoxy of not more than 5 carbon atoms, and a halogen selected from the group consisting of chlorine, bromine and iodine,, and *n* is an integer no higher than four, with sodium hydroxide until the pH of the resulting solution is in the range of about 6.5 to 7 whereby the sodium salt of the said compound is formed and (B) reacting the said sodium salt in aqueous solution with from about 3 to about

10 moles of an anhydride of a fatty acid selected from the group consisting of acetic, n-propionic, isopropionic, n-butyric, isobutyric, acrylic, crotonic and sorbic acid.

3,310,569

CRYSTALLINE DOUBLE SALT OF LEAD NITROAMINOTETRAZOLE AND LEAD STYPHNATE

Edward A. Staba, Higganum, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Apr. 9, 1962, Ser. No. 185,851

1 Claim. (Cl. 260—299)

A crystalline double salt of lead nitroaminotetrazole and lead styphnate.

3,310,570

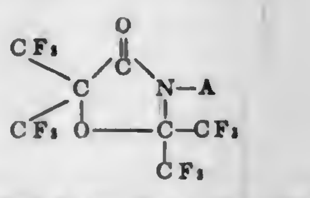
TRIFLUOROMETHYL-SUBSTITUTED 4-OXAZOLIDONES AND THEIR PREPARATION

William J. Middleton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 26, 1965, Ser. No. 435,734

9 Claims. (Cl. 260—299)

1. A 4-oxazolidone of the formula



wherein A is selected from the group consisting of hydrogen, quaternary ammonium, metals of Groups I–A, I–B, II–A and II–B of the Periodic Table, and alkyl and cycloalkyl of up to 10 carbons.

8. The process of preparing an alkali metal salt of 2,2,5,5 - tetrakis(trifluoromethyl) - 4 - oxazolidone which comprises reacting hexafluoroacetone with an alkali metal cyanide in a hexafluoroacetone: cyanide mole ratio of at least 2:1 at a temperature in the range −80° to 200° C.

3,310,571

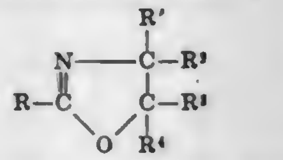
METHOD OF PREPARING OXAZOLINES

Rogers F. Lambert, Radford, Va., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

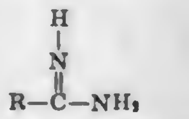
No Drawing. Filed Aug. 29, 1966, Ser. No. 575,561

13 Claims. (Cl. 260—307)

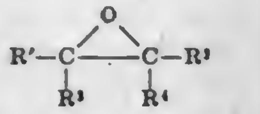
1. A process for preparing 5 membered heterocyclic products included within the formula:



comprising the steps of contacting an amidine reactant of the formula:



with an epoxide reactant of the formula:



wherein R is selected from the group consisting of saturated unsubstituted aliphatics with up to 5 carbon atoms, perfluoro-substituted aliphatics with up to 3 carbon atoms, and unsubstituted phenyl, and R', R^2, R^3 and R^4 are selected from the group consisting of hydrogen, saturated unsubstituted aliphatics with up to 2 carbon atoms, unsubstituted phenyl, and nitro-substituted phenyl, until the heterocyclic product of the formula described above is formed, and isolating the product contained therein.

3,310,572

PRODUCTION OF TRIOXANE

Heinrich Delle and Hans-Joachim Mann, Mainz (Rhine), Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,151

Claims priority, application Germany, Jan. 18, 1963, D 40,718

3 Claims. (Cl. 260—340)

1. A process for the production of trioxane from aqueous formaldehyde concentrates in the presence of an acid catalyst which comprises stirring a mixture of: (1) an aqueous formaldehyde concentrate containing 60 to 80% by weight of formaldehyde, (2) 5 to 15% by weight of concentrated sulfuric acid based on the formaldehyde content of such formaldehyde concentrate and (3) paraffin oil as an oily component which is inert with respect to formaldehyde and also is stable at temperatures over 100° C. in an acid medium, to form an emulsion, heating such emulsion to a reaction temperature of 95 to 150° C. and distilling off the crude trioxane formed from the emulsion.

3,310,573

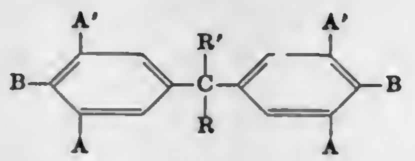
DIARYL FLUORO COMPOUNDS

David Gordon Coe, Mendenhall, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 17, 1963, Ser. No. 288,539

4 Claims. (Cl. 260—346.3)

1. A compound of the formula



wherein R and R' have the formula CCl_mF_{3-m}, *m* is 0 or 1, said A is selected from the group consisting of H, Cl, Br, NO_2, COOH and NH_2; said A' is selected from the group consisting of H, Cl and Br; and, said B is selected from the group consisting of CH_3, COOH, NH_2, $NHCH_3$, NHC_2H_5 and NHC_2H_4CN, with the proviso that when said A is NH_2, said B is selected from the group consisting of NH_2, CH_3 and COOH, and, with the proviso that when said A is selected from the group consisting of H, Cl, Br, NO_2 and COOH, said B is selected from the group consisting of NH_2, COOH, NHC_3, NHC_2H_5 and NHC_2H_4CN.

3,310,574

METHOD OF PRODUCING TRIALKYLINDIUM

Enno Todt and Hans Hauschildt, both of Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

No Drawing. Filed Dec. 26, 1961, Ser. No. 162,212

Claims priority, application Germany, Dec. 23, 1960, S 71,800

10 Claims. (Cl. 260—429)

1. The method of producing trialkylindium which comprises reacting chips of indium and magnesium with an alkyl halide in ether solution and separating the resulting trialkylindium.

3,310,575

METAL DERIVATIVES OF DIALKYLHYDROXYPHENYLALKYLPHOSPHONIC ACIDS AND PHOSPHONIC ACID HALF-ESTERS

John D. Spivack, Spring Valley, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,065

26 Claims. (Cl. 260—429)

1. A compound of the formula:

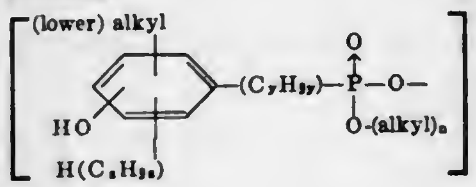
$$[P]_mM_x[G]_p$$

wherein

M comprises a metal having an available valence of from 1 to 4;

G is an anion having an available valence of from 1 to 3; and

P is of the formula:



and wherein

z has a value of from 0 to 6,
y has a value of from 1 to 4,
n has a value of from 0 to 1,
m has a value of from 1 to 3,
x has a value of from 1 to 2, and
p has a value of from 0 to 3,

n, *m*, *p* and *x* being so selected as to satisfy the expression

$$\frac{(2-n)m}{x}+\frac{(r)p}{x}=\text{available valence of M}$$

wherein *r* is the valence of anion G and has a value of from 1 to 3.

3,310,576

HYDROFORMYLATION CATALYST AND PROCESS RELATING THERETO

Joseph Kern Mertzweiller and Horace Marion Tenney, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,258

8 Claims. (Cl. 260—439)

1. The method for the preparation of a hydroformylation which comprises reacting a carbonyl of cobalt with a stoichiometric excess of a conjugated aliphatic diolefin having 4 to 6 carbon atoms at temperatures of about 100–350° F., under synthesis gas pressure of about 500–3000 p.s.i.g., wherein the molar ratio of synthesis gas to diolefin is at least 5/1, and the partial pressure ratio of hydrogen to carbon monoxide in the synthesis gas ranges from 5/1 to 10/1, thereby converting substantially all of the cobalt carbonyl to the diolefin adduct of the cobalt hydrocarbonyl, and reacting the diolefin adduct with at least a stoichiometric amount of a biphyllic ligand having the generic formula:

$$[(R_ZA)_X\text{—}X\text{—}R_Y]$$

wherein X is phosphorous, R is selected from the group consisting of hydrogen atoms and alkyl groups having 1 to 6 carbon atoms, A is oxygen,, *x* has a value of 0 to 3, *y* has a value of 3−*x* and *z* has a value from 1 to 2.

3,310,577

TERTIARY FERROCENYLPHENYLPHOSPHINES

Gilbert P. Sollott, Plymouth Meeting, Pa., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed July 16, 1963, Ser. No. 295,564

5 Claims. (Cl. 260—439)

1. An improved method for the preparation of tertiary phenylphosphines of ferrocene comprising reacting ferrocene with a compound selected from the group consisting of phenylphosphonous dichloride and diphenylphosphinous chloride in the presence of anhydrous aluminum chloride.

3,310,578

SUBSTITUTED SILANES

Ben A. Bluestein, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 20, 1963, Ser. No. 332,243

14 Claims. (Cl. 260—448.8)

1. A silane having the formula,

$$[Cl_3CC(CH_3)_2O]_a(R)_bSi(X)_{4-a-b}$$

where R is a member selected from the class consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, X is a member selected from the class consisting of hydrolyzable groups and hydroxyl groups, *a* has a value of from 1 to 2, inclusive, *b* has a value of from 0 to 3, inclusive, and the sum of *a* plus *b* is equal to from 1 to 4, inclusive.

3,310,579

COLCHICEINAMIDE COMPOUNDS AND PROCESS OF PREPARATION

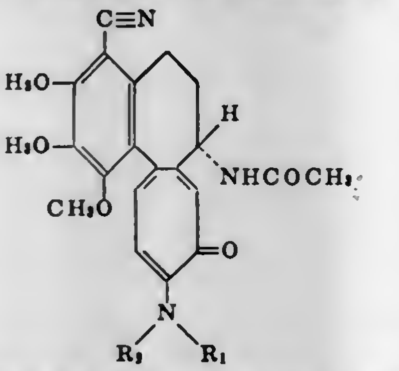
Arturo Bladé, Paris, and Georges Muller, Nogent-sur-Marne, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,665

Claims priority, application France, May 7, 1963, 933,955

4 Claims. (Cl. 260—465)

1. A cyanated derivative of colchiceinamide of the formula selected from the group consisting of



wherein R_1 is selected from the group consisting of hydrogen, alkyl having from 1 to 8 carbon atoms, phenyl and phenylalkyl having 6 to 8 carbon atoms, and R_2 is selected from the group consisting of alkyl having from 1 to 8 carbon atoms, phenyl and phenylalkyl having 6 to 8 carbon atoms.

3,310,580

COLCHICINIC DERIVATIVES AND PROCESS OF PREPARATION

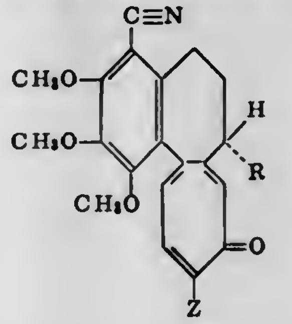
Arturo Bladé, Paris, and Georges Muller, Nogent-sur-Marne, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,682

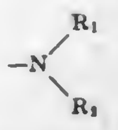
Claims priority, application France, Oct. 30, 1962, 913,881; Jan. 30, 1963, 923,184, Patent 2,418

9 Claims. (Cl. 260—465)

1. A 1-cyano colchicinic derivative of the formula

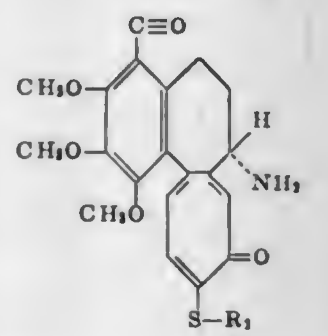


wherein R is selected from the group consisting of hydrogen and



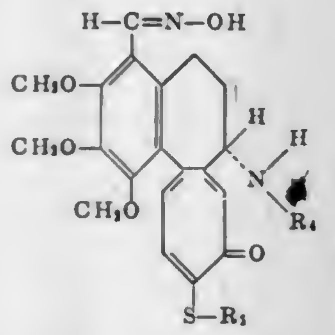
R_1 is selected from the group consisting of hydrogen and alkyl having from 1 to 3 carbon atoms, R_2 is selected from the group consisting of hydrogen and the acyl of an organic carboxylic acid having from 1 to 24 carbon atoms selected from the group consisting of alkanoyl, alkenoyl, alkynoyl, hydroxyalkanoyl, phenylcarbonyl and naphthalylcarbonyl, and Z is selected from the group consisting of —O-alkyl having from 1 to 2 carbon atoms and —S-alkyl having from 1 to 2 carbon atoms.

8. A process for the production of a 1-cyano-N-desacyl-colchicinic derivative of the formula



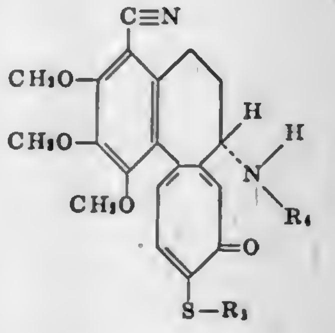
wherein R_5 represents alkyl having from 1 to 2 carbon atoms, which comprises the steps of

(a) reacting a compound of the formula



wherein R_4 represents the acyl of an organic carboxylic acid having from 1 to 24 carbon atoms selected from the group consisting of alkanoyl, alkenoyl, alkynoyl, hydroxy-alkanoyl, phenylcarbonyl and naphthalylcarbonyl, and R_5 has the above-assigned meaning, with acetic acid anhydride at the reflux temperature,

(b) subjecting the resulting compound of the formula

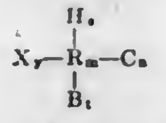


wherein R_4 and R_5 have the above-assigned meanings, to the action of concentrated hydrochloric acid in the presence of a lower alkanol, and

(c) recovering said 1-cyano-N-desacyl-colchicinic derivative.

3,310,581
OXIDATION OF ALKYL-SUBSTITUTED AROMATIC COMPOUNDS
Joseph R. Mares, Chamber of Commerce Bldg., Houston, Tex. 77002
No Drawing. Filed Mar. 2, 1964, Ser. No. 348,789
9 Claims. (Cl. 260—524)

1. The method of oxidizing an alkyl group attached to an aromatic nucleus which comprises heating an aromatic compound represented by the formula



$$X_y-\overset{H_z}{\underset{B_t}{R_m}}-C_n$$

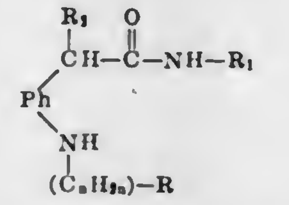
where

R is an aromatic hydrocarbon nucleus,
m is 6, 10, 12 and the number of carbon atoms in said aromatic nucleus,
C is an alkyl group having 1 to 3 carbon atoms,
n is 1 to 3, *x* is chlorine,
y is zero to $m-(n+t+z)$,
t is zero to 2,
H is hydrogen,
B is carboxyl (COOH),
z is $m-(2+n+t+y)$ to $m-(n+t+y)$,

in the presence of an aqueous solution containing at least one salt of a nitrogen oxide acid and an anion selected from the group consisting of alkali metals, ammonium, alkaline earth metals, and polyvalent metals having two stages of oxidation of Groups I*b*, II*b*, III*b*, V*a*, VI*a*, VI*b* having atomic number of 34 and 52, and VIII of the Periodic Table of Elements, the temperature of said heating being in the range of about 275° C. and less than the critical temperature of said aqueous solution.

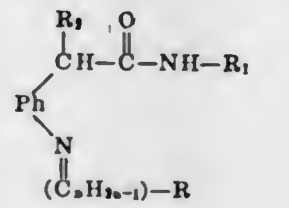
3,310,582
2-AMINOPHENYL-ACETAMIDES
George de Stevens, Summit, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 26, 1963, Ser. No. 326,254
14 Claims. (Cl. 260—559)

1. A member selected from the group consisting of a compound of the formula



in which Ph is a member selected from the group consisting of (lower alkyl)$_m$-1,2,-phenylene, (lower alkoxy)$_m$-1,2-phenylene, (lower alkenyloxy)$_m$-1,2-phenylene, (lower alkylenedioxy)-1,2-phenylene, (halogeno)$_m$-1,2-phenylene, (nitro)$_m$-1,2-phenylene and (trifluoromethyl)$_m$-1,2-phenylene in which *m* stands for one of the integers 1 and 2, R is a member selected from the group consisting of phenyl, (lower alkyl)$_p$-phenyl, (lower alkoxy)$_p$-phenyl, (halogeno)$_p$-phenyl, naphthyl and pyridyl in which *p* as well as *n* stands for one of the integers 1, 2, and 3, R_1 is a member selected from the group consisting of lower alkyl and phenyl, and R_2 stands for a member selected from the group consisting of hydrogen and lower alkyl, and acid addition salts thereof.

8. A member selected from the group consisting of a compound of the formula



in which Ph is a member selected from the group consisting of (lower alkyl)$_m$-1,2-phenylene, (lower alkoxy)$_m$-1,2-phenylene, (lower alkenyloxy)$_m$-1,2-phenylene, (lower alkylenedioxy)-1,2-phenylene, (halogeno)$_m$-1,2-phenylene, (nitro)$_m$-1,2-phenylene and (trifluoromethyl)$_m$-1,2-phenylene in which *m* stands for one of the integers 1 and 2, R is a member selected from the group consisting of phenyl, (lower alkyl)$_p$-phenyl, (lower alkoxy)$_p$-phenyl, (halogeno)$_p$-phenyl, naphthyl and pyridyl in which *p* as well as *n* stands for one of the integers 1, 2, and 3, R_1 is a member selected from the group consisting of lower alkyl and phenyl, and R_2 stands for a member selected from the group consisting of hydrogen and lower alkyl, and acid addition salts thereof.

3,310,583
MANUFACTURE OF AMINO PHENYL ETHERS
Edward H. de Butts, Cumberland, Md., and John T. Hays, Llangollen Estates, Del., assignors to Hercules Incorporated, a corporation of Delaware
Original application Mar. 28, 1960, Ser. No. 17,896, now Patent No. 3,214,473, dated Oct. 26, 1965. Divided and this application Jan. 15, 1965, Ser. No. 425,882
13 Claims. (Cl. 260—575)

1. A process for the manufacture of a p-aminophenyl ether which comprises admixing an alkaline reacting material with a p-nitrosophenyl ether in amount sufficient to condense said ether to form the corresponding diether of p,p′-dihydroxyazoxybenzene, and hydrogenating the diether so produced to form the corresponding p-aminophenyl ether as product of the process.

3,310,584
PREPARATION OF 2,3-DICHLOROTETRAFLUORO-2-CYCLOPENTEN-1-ONE
Robert J. Du Bois and Benjamin Veldhuis, both of Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed June 5, 1964, Ser. No. 373,110
6 Claims. (Cl. 260—586)

1. A process for the preparation of 2,3-dichlorotetrafluoro-2-cyclopenten-1-one which comprises reacting in admixture, 1,2-dichlorohexafluorocyclopentene with sulfur trioxide in the presence of a pentavalent antimony halide catalyst and maintaining the admixture for a sufficient length of time to form 2,3-dichlorotetrafluoro-2-cyclopenten-1-one in the reaction medium.

3,310,585
PRODUCTION OF 2,3-DICHLOROTETRAFLUORO-2-CYCLOPENTEN-1-ONE
Robert J. Du Bois and Benjamin Veldhuis, both of Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed June 5, 1964, Ser. No. 373,111
5 Claims. (Cl. 260—586)

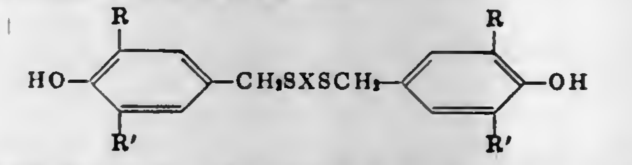
1. A process for the preparation of 2,3-dichlorotetrafluoro-2-cyclopenten-1-one which comprises reacting in admixture 1,2-dichlorohexafluorocyclopentene with sulfur trioxide in the presence of a boron compound catalyst selected from the group consisting of trimethoxyboroxine, borax, sodium and potassium fluoborates, methylborate, boric oxide, boric bromide, boric iodide, boric carbide, boric chloride, boric fluoride, boric hydride, boric nitride, boric silicide and boric sulfide in an amount of at least 0.1% by weight and maintaining the admixture for a sufficient length of time to form 1,2-dichlorotetrafluorocyclopentenone-3 in the reaction medium.

3,310,586
PROCESS OF MAKING 3,4-DIHYDRO-1(2H)-NAPHTHALENONES
Allan S. Hay, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Feb. 14, 1963, Ser. No. 258,615
10 Claims. (Cl. 260—590)

1. The process of making an 3,4-dihydro-1(2H)-naphthalenone which comprises reacting oxygen with a 1,2,3,4-tetrahydronaphthalene selected from the group consisting of 1,2,3,4-tetrahydronaphthalene and 1,2,3,4-tetrahydronaphthalenes having two α-methylene groups and from one to two methyl groups as the sole substituents, in a homogeneous liquid phase containing no more than 5% by weight water, and having dissolved therein an alkaryl hydrocarbon whose alkyl substituents have from 1 to 8 carbon atoms, at least one of said alkyl groups having an α-hydrogen, and a catalyst consisting essentially of a cobalt bromide carboxylate, wherein the carboxylate moiety of the catalyst is the carboxylate moiety of a carboxylic acid selected from the group consisting of (a) saturated aliphatic carboxylic acids having up to 18 carbon atoms, wherein the substituents on the carbon atoms on the carboxylate moiety are selected from the group consisting of hydrogen, hydroxyl, bromine, alkoxy, hydrocarbon carboxy acyl, and alkoxycarbonyl, (b) benzene carboxylic acids, wherein the substituents on the benzene ring are selected from the group consisting of hydrogen, alkyl, halogen, alkoxycarbonyl, alkylthio, alkylsulfinyl and arylsulfonyl, and (c) naphthalene carboxylic acids, the ratio of bromine to cobalt present in the liquid phase being in the range of 0.008 to 1.9 atoms of bromine per atom of cobalt, and the rate of oxygen being admitted to the reaction mixture being fast enough to cause the reaction mixture to be heated by the reaction of the 1,2,3,4-tetrahydronaphthalene with oxygen.

3,310,587
BIS (3,5-SUBSTITUTED-4-HYDROXYBENZYLTHIO) COMPOUNDS AND METHOD OF MAKING SAME
Francis X. O'Shea, Wolcott, Conn., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 1, 1963, Ser. No. 299,197
22 Claims. (Cl. 260—609)

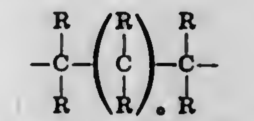
1. A chemical of the formula



in which R and R′ are selected from the group consisting of alkyl, cycloalkyl and aralkyl groups having up to 12 carbon atoms and X is a diradical having from 2 to 18 carbon atoms, the said diradical X being selected from

(a) polymethylene diradicals of the formula —$(CH_2)_n$— wherein *n* is a whole number from 2 to 12;

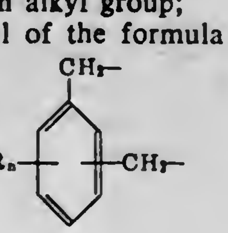
(b) branched chain polyalkylene diradicals of the formula:



$$-\overset{R}{\underset{R}{C}}-\left(\overset{R}{\underset{R}{C}}\right)_n-\overset{R}{\underset{R}{C}}-$$

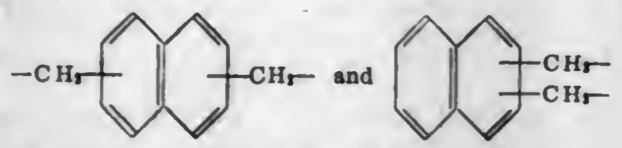
wherein *n* is a whole number from 0 to 9 and the R groups are hydrogen or alkyl and at least one of the R groups is an alkyl group;

(c) aralkyl diradical of the formula:

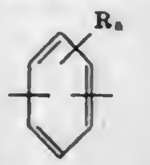


wherein R is an alkyl group of 1 to 4 carbon atoms and *n* is a whole number from 0 to 4;

(d) aralkyl diradicals of the formulae:

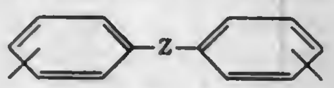


(e) aromatic diradicals of the formula:



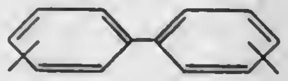
wherein R is an alkyl radical and *n* is a whole number from 0 to 4;

(f) aromatic diradicals of the formula:

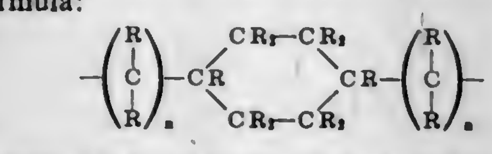


wherein Z is —O— or —S—;

(g) aromatic diradical of the formula

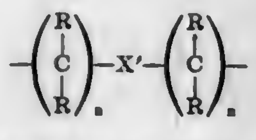


(h) cyclic hydrocarbon containing diradicals of the formula:



wherein R is hydrogen or an alkyl group and *n* is a whole number from 0 to 6;

(i) aliphatic diradicals containing hetero atoms of the formula:



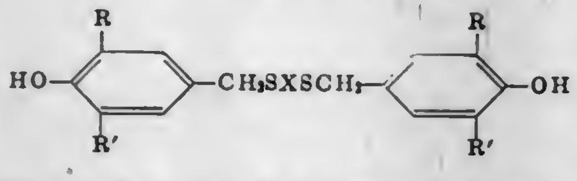
$-\left(\begin{matrix}R\\|\\C\\|\\R\end{matrix}\right)_n-X'-\left(\begin{matrix}R\\|\\C\\|\\R\end{matrix}\right)_n-$

wherein R is hydrogen or alkyl, *n* is a whole number from 1 to 6 and X′ is —O— or —S—; and

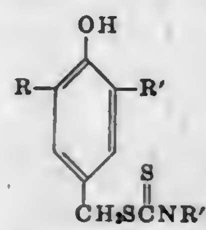
(j) diradicals of the formulae:

$$-CH_2CH_2OCH_2CH_2OCH_2CH_2- \text{ and }$$
$$-CH_2CH_2OCH_2OCH_2CH_2-.$$

16. A method of making a chemical of the formula



in which R and R′ are selected from the group consisting of alkyl, cycloalkyl and aralkyl groups having up to 12 carbon atoms and X is a diradical having from 2 to 18 carbon atoms comprising heating two molar equivalents of a phenolic intermediate compound of the formula



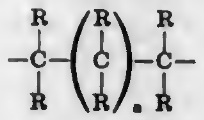
in which R and R′ are as previously defined and R″ is a lower alkyl group with two molar equivalents of an alkali metal hydroxide and one molar equivalent of a dimercaptan of the formula

HSXSH

in which X is as previously defined, at a temperature from room temperature to 100° C., the said diradical X being selected from

(a) polymethylene diradicals of the formula —$(CH_2)_n$— wherein *n* is a whole number from 2 to 12;

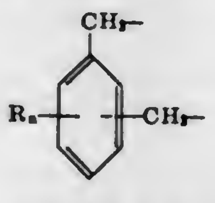
(b) branched chain polyalkylene diradicals of the formula:



$\begin{matrix}R\\|\\-C-\\|\\R\end{matrix}\left(\begin{matrix}R\\|\\C\\|\\R\end{matrix}\right)_n\begin{matrix}R\\|\\-C-\\|\\R\end{matrix}$

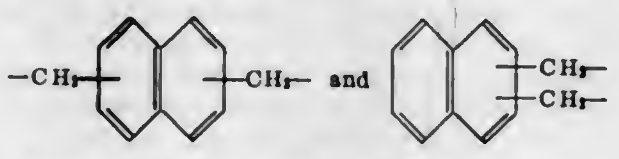
wherein *n* is a whole number from 0 to 9 and the R groups are hydrogen or alkyl and at least one of the R groups is an alkyl group;

(c) aralkyl diradical of the formula:

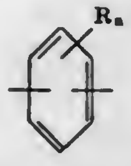


wherein R is an alkyl group of 1 to 4 carbon atoms and *n* is a whole number from 0 to 4;

(d) aralkyl diradicals of the formulae:

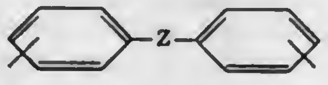


(e) aromatic diradicals of the formula:



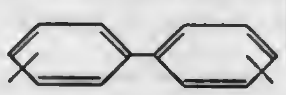
wherein R is an alkyl radical and *n* is a whole number from 0 to 4;

(f) aromatic diradicals of the formula:

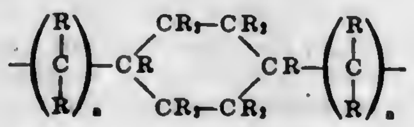


wherein Z is —O— or —S—;

(g) aromatic diradical of the formula

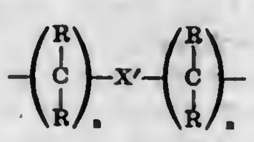


(h) cyclic hydrocarbon containing diradicals of the formula:



wherein R is hydrogen or an alkyl group and *n* is a whole number from 0 to 6;

(i) aliphatic diradicals containing hetero atoms of the formula:



$-\left(\begin{matrix}R\\|\\C\\|\\R\end{matrix}\right)_n-X'-\left(\begin{matrix}R\\|\\C\\|\\R\end{matrix}\right)_n-$

wherein R is hydrogen or alkyl, *n* is a whole number from 1 to 6 and X′ is —O— or —S—; and

(j) diradicals of the formulae:

$$-CH_2CH_2OCH_2CH_2OCH_2CH_2- \text{ and }$$
$$-CH_2CH_2OCH_2OCH_2CH_2-.$$

3,310,588
PROCESS FOR THE PREPARATION OF ORGANIC PEROXIDES

Cornelis U. Kloosterman and Bouwe H. Torn Broers, Deventer, Netherlands, assignors to Koninklijke Industrieele Maatschappij vorheen Noury & van der Lande N.V., Deventer, Netherlands, a corporation of the Netherlands

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,190

Claims priority, application Netherlands, Mar. 16, 1962, 276,081

4 Claims. (Cl. 260—610)

1. In a process for the preparation of organic peroxides which comprises reacting an alcohol with a hydroperoxide in the presence of an acid-reacting catalyst and eliminating the water formed during the reaction, the improvement comprising employing anhydrous oxalic acid both as a catalyst and as a dehydrating agent in a quantity sufficient to take up the water already present in the starting reaction components and the amount of water theoretically formed during the reaction, as oxalic acid dihydrate, and mechanically removing the hydrated oxalic acid.

3,310,589
DIBROMODIFLUOROMETHANE ADDITION TO OLEFINES

Arthur Donald Ketley, Olney, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Jan. 29, 1964, Ser. No. 341,091

10 Claims. (Cl. 260—648)

1. The process of reacting a mono-olefin with dibromodifluoromethane in the presence of a Zn/Cu couple in an inert solvent to add the groups bromodifluoromethyl- and bromo- respectively onto the olefinic carbon atoms of the mono-olefin.

3,310,590
HEPTAALKYLCYCLOHEXADIENES AND PROCESS OF PREPARATION

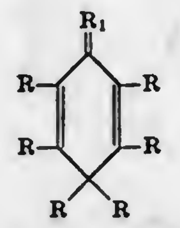
George Suld, Springfield, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Nov. 22, 1963, Ser. No. 325,755

10 Claims. (Cl. 260—666)

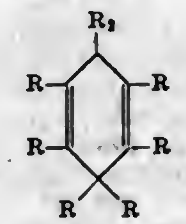
1. Method which comprises contacting a substituted cyclohexadiene having a structure

(I)



wherein R is selected from the group consisting of methyl and ethyl and R_1 is selected from the group consisting of methylene and ethylidene with hydrogen in the presence of a hydrogenation catalyst, at a temperature of 10° to 200° C., at a hydrogen pressure of 0 to 300 p.s.i.g., and recovering as a hydrogenation product a compound having a structure

(II)



wherein R is as in I and R_2 is selected from the group consisting of methyl and ethyl.

3,310,591
OLIGOMERS OF CONJUGATED DIENES

Ernest A. Zuech and Roy A. Gray, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 10, 1964, Ser. No. 417,475

7 Claims. (Cl. 260—666)

3. A process for dimerization of a conjugated diene selected from the group consisting of 1,3-butadiene, isoprene and piperylene which comprises contacting same with a catalyst system consisting essentially of the reduction product obtained by mixing (a) a nickel compound selected from the group consisting of nickel bromide, nickel acetate, nickel propionate and nickel acetylacetonate, (b) a triaryl phosphite selected from the group consisting of triphenylphosphite, tri-p-tolyl phosphite, tri-alpha-naphthyl phosphite, tri-2,4,6-trimethylphenyl phosphite and tri-o-tolyl phosphite containing from 5 to 10 percent by weight of diaryl phosphite selected from the group consisting of diphenylphosphite, di-alpha-naphthyl phosphite, di-p-tolyl phosphite, di-3-ethylphenyl phosphite, and phenyl-p-tolyl phosphite, (c) a reducing agent selected from the group consisting of sodium hydride, lithium hydride, potassium hydride, cesium hydride, rubidium hydride, lithium aluminum hydride, lithium borohydride and sodium borohydride, and (d) a catalyst forming diluent selected from the group consisting of tetrahydrofuran, diglyme, triglyme and dioxane.

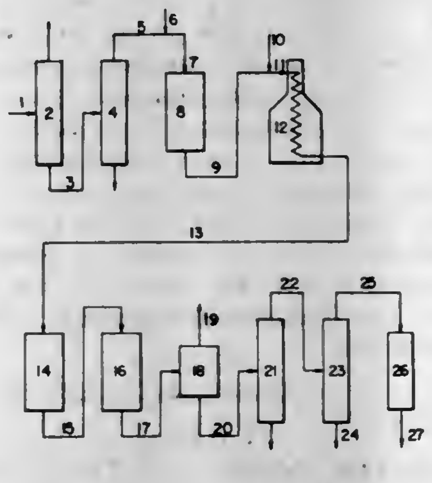
3,310,592
PROCESS FOR PRODUCING HIGH PURITY BENZENE

Junichi Fukuda, Yasuo Suzuki, Munetaka Ikebe, and Mitsuo Sagara, all of Yokkaichi-shi, Mie-ken, Japan, assignors to Mitsubishi Petrochemical Co., Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan

Filed Apr. 19, 1965, Ser. No. 449,252

Claims priority, application Japan, Apr. 23, 1964, 39/22,643

9 Claims. (Cl. 260—672)



1. A process for producing high purity benzene which comprises:

(a) as first process step, contacting the 60–200° C. fraction of cracked oils, which are the by-product in the production of gaseous olefins by steam cracking petroleum hydrocarbons, with hydrogen in a molar proportion of cracked oil fraction:hydrogen of 1:0.2 to 2.00 at a temperature from ambient temperature to 250° C. and a pressure of at least 10 kg./cm.² in the presence of hydrogenation catalyst, to convert the diolefins contained in said fraction to mono-olefins and/or paraffin hydrocarbons;

(b) as second process step, contacting the oil obtained in step (a) with hydrogen in a molar proportion of oil:hydrogen of 1:2 to 10 at a temperature of 500°

to 800° C. and a pressure of at least 10 kg./cm.^{2} in the absence of solid dealkylation catalyst, to hydrocrack mono-olefins and/or paraffin hydrocarbons as well as to dealkylate alkyl-substituted aromatic hydrocarbons contained in said last-named oil, and

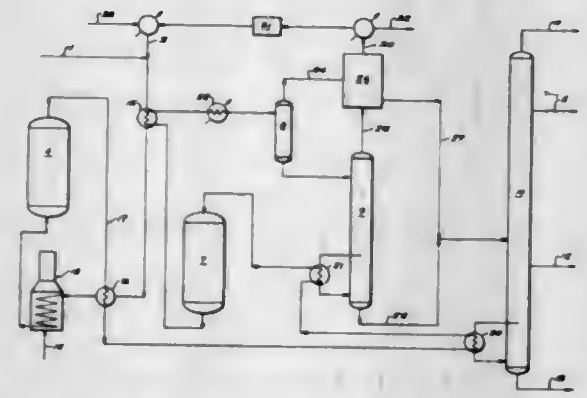
(c) as third process step, heating the resultant product of the second step of 150° to 200° C. in the presence of hydrodesulfuration catalyst to decompose and remove sulfur compounds contained in said product, and

(d) thereafter separating benzene from the resultant liquid product of the third step.

3,310,593
METHOD FOR IMPROVING THE QUALITY OF DEALKYLATED AROMATIC COMPOUNDS

Elwood E. Nelson, Gibsonia, Rodney E. Peterson, Oakmont, and Eldon M. Sutphin, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed June 23, 1965, Ser. No. 466,255
7 Claims. (Cl. 260—672)



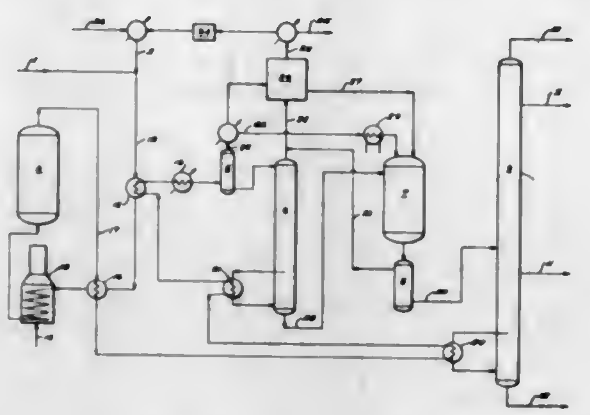
1. A process for the production of hyperpure dealkylated aromatic compounds which comprises heating a composition selected from the group consisting of an alkyl aromatic compound and a mixture of alkyl aromatic compounds and about a 1.5 to 20 molar excess of hydrogen to a temperature and pressure between about 1000° to 1800° F. and 100 to 1000 p.s.i.g. for about one to 600 seconds; subjecting the effluent mixture which is substantially free of organic sulfur compounds to a temperature and pressure between about 150° to 600° F. and 100 to 1000 p.s.i.g. in the presence of a solid particulate material selected from the group consisting of metals, metal oxides and sulfided metals of Group VI (left column) and VIII of the Periodic Table, and mixtures thereof, distended on a non-acidic suport; and separating the treating effluent mixture into fractions of hyperpure dealkylated aromatic compounds.

3,310,594
METHOD FOR IMPROVING THE QUALITY OF AROMATIC COMPOUNDS

Rodney E. Peterson, Oakmont, and Eldon M. Sutphin, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed June 23, 1965, Ser. No. 466,256
10 Claims. (Cl. 260—672)

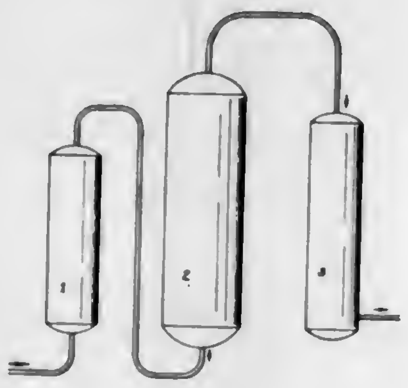
1. A process for improving the quality of dealkylated aromatic compounds which comprises heating a composition selected from the group consisting of an alkyl aromatic compound and a mixture of alkyl aromatic compounds and about a 1.5 to 20 molar excess of hydrogen to a temperature and pressure between about 1000° to 1800° F. and 100 to 1000 p.s.i.g. for about one to 600 seconds, separating the gases from the liquid effluent, subjecting the substantially sulfur-free liquid effluent to a temperature and pressure between about 150° to 600° F. and 100 to 1000 p.s.i.g. in the presence of about 10 to 1000 s.c.f. of hydrogen per barrel of liquid effluent and a solid particulate material selected from the group consisting of metals, metal oxides and sulfided metals of Group VI (left column) and Group VIII of the Periodic Table, and mixtures thereof, distended on a non-acidic support, and separating the treated effluent into fractions of hyperpure dealkylated aromatic compounds.



3,310,595
PROCESS FOR DEODORISING LIQUEFIED HYDROCARBONS, PARTICULARLY COMMERCIAL BUTANE

Georges Molinet, Billere, Basses-Pyrenees, France, assignor to Societe anonyme dite: Societe Nationale des Petroles d'Aquitaine, Paris, France, a French company

Filed Aug. 26, 1963, Ser. No. 304,385
Claims priority, application France, Aug. 28, 1962, 907,935
12 Claims. (Cl. 260—676)



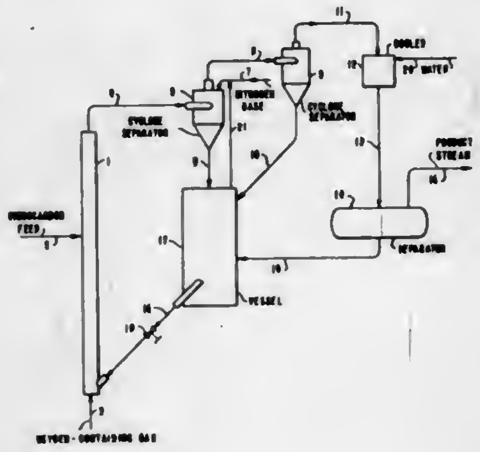
1. A process for deodorising a liquefied hydrocarbon having from 1 to 5 carbon atoms, and containing a very small amount of sulfur compounds, which comprises contacting said liquefied hydrocarbon at ambient temperatures with an adsorbent material superactivated by impregnation with a compound selected from the group consisting of a soluble compound of a metal selected from the group consisting of platinum, silver and nickel.

3,310,596
USE OF AMMONIA FOR IODINE RECOVERY IN IODINATIVE DEHYDROGENATION PROCESS

Ralph W. King, London, England, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,676
Claims priority, application Netherlands, Feb. 25, 1963, 289,388
5 Claims. (Cl. 260—680)

1. In a process for the conversion of a first hydrocarbon to at least a second hydrocarbon having a higher carbon-to-hydrogen ratio wherein (a) the first hydrocarbon and iodine are reacted in intimate contact with a finely divided fluidized metal compound hydrogen iodide acceptor in a dehydrogenation zone at a temperature in excess of 300° C. whereby the second hydrocarbon is formed and (b) iodine is continuously regenerated from formed metal iodide, the improvement comprising:

(a) injecting an excess of a gaseous nitrogenous base into the reactor product stream while maintaining the temperature in excess of 300° C., thereby converting entrained iodine to hydrogen iodide;



(b) quenching the gaseous stream with water to a temperature below 150° C. thereby converting the hydrogen iodide with nitrogenous base to the iodide of the nitrogenous base;

(c) separating the iodide of the nitrogenous base from the reactor product stream as an aqueous solution in water;

(d) contacting the iodide solution with hot finely divided metal iodide/oxide thereby liberating iodine for further dehydrogenation; and

(e) recycling the iodine to the dehydrogenation zone.

3,310,597
CATALYTIC CRACKING

Anthony George Goble and Alan Richard Thornhill, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

Filed June 13, 1962, Ser. No. 202,277
Claims priority, application Great Britain, June 22, 1961, 22,624/61
5 Claims. (Cl. 260—683)

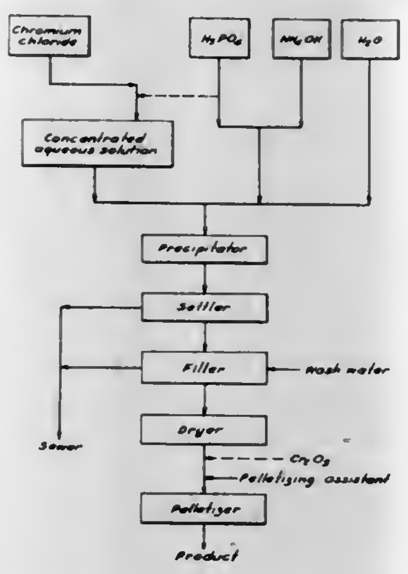
1. A process comprising contacting a normally liquid hydrocarbon feedstock, which is a petroleum distillate boiling in the range C_4–450° C., at an elevated temperature in the range of 450–800° C., with a catalyst consisting essentially of alumina, in a major proportion, and combined fluorine in an amount of 0.1 to 15% by weight of the catalyst, the amount of fluorine per unit of catalyst surface area being 0.25×10^{-4} to 2.0×10^{-4} g./sq. meter; and, recovering a product containing normally gaseous olefins, the propylene:ethylene weight ratio in the product being greater than unity.

3,310,598
DOUBLE-BOND ISOMERIZATION OF OLEFINS USING CHROMIUM PHOSPHATE CATALYST

Charles R. Noddings, Midland, and Ronald G. Gates, Breckenridge, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Jan. 6, 1964, Ser. No. 335,929
2 Claims. (Cl. 260—683.2)

1. The method which comprises isomerizing an α-alkene hydrocarbon having at least 4 carbon atoms by passing the hydrocarbon at a temperature between 100° and 300° C. in contact with a catalyst composed of a chromium phosphate material consisting essentially of phosphate radicals chemically combined with chromium, which metal phosphate material is preparable by mixing a solution of soluble salt of chromium with a solution of a soluble ortho-phosphate and precipitating said chromium phosphate material from the mixture at a pH of between about 3.5 and 8.0.



3,310,599
CATALYTIC DEHYDROGENATION OF PARAFFINIC HYDROCARBONS

Vladimir Haensel, Hinsdale, and James Hoekstra, Evergreen Park, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Feb. 14, 1966, Ser. No. 527,089
8 Claims. (Cl. 260—683.3)

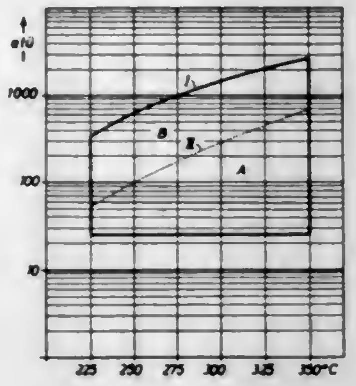
1. A process for dehydrogenating a paraffinic hydrocarbon which comprises contacting said paraffinic hydrocarbon with a catalytic composite of alumina, from about 0.01% to about 1.5% by weight of lithium, from about 0.05% to about 5% by weight of a Group VIII noble metal component and a metallic component selected from the group consisting of tellurium, selenium and compounds thereof, and at dehydrogenation conditions including a temperature within the range of from about 400° C. to about 700° C., the second-mentioned metallic component being in sufficient amount to inhibit the cracking and isomerizing activity of said Group VIII component at said conditions.

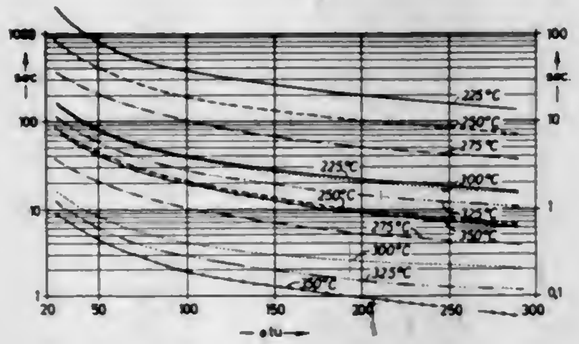
3,310,600
PROCESS FOR THE CONTINUOUS POLYMERIZATION OF ETHYLENE TO FORM PREDOMINANTLY STRAIGHT-CHAIN ALPHA-OLEFINIC POLYMERS HAVING FROM 4 TO 20 CARBON ATOMS

Karl Ziegler, Kaiser-Wilhelm-Platz 1, Mulheim (Ruhr), Germany, and Kurt Zosel, Oberhausen, and Roland Streck, Essen-Steele, Germany; said Zosel and said Streck assignors to said Ziegler

Filed Nov. 14, 1961, Ser. No. 152,298
Claims priority, application Germany, Nov. 19, 1960, Z 83,671
1 Claim. (Cl. 260—683.15)

A process for the continuous production of predominantly straight-chain alpha-olefin polymers having from 4 to 20 carbon atoms, which comprises contacting ethylene with alminum triethyl as catalyst in a reaction zone having a heat removing surface of at least 1 sq. cm. per ml. of capacity at a temperature of from 250 to 350° C., a pressure in excess of 25 atmospheres, and with a contact time varying between 0.1 sec. to 20 min., the said pressure and temperature being determined by reference to the graph of FIG. 1 in dependence on the polymeric products to be produced and using contact times in conjunction





with said temperatures and pressures determined from the graph of FIG. 2 as a function of the amount of catalyst used based on ethylene throughput.

3,310,601
CURING POLYEPOXIDES WITH A MIXTURE OF DIFUNCTIONAL AND POLYFUNCTIONAL MERCAPTANS

William De Acetis, Berkeley, and Herbert A. Newey, Lafayette, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 20, 1963, Ser. No. 289,433
12 Claims. (Cl. 260—831)

1. A process for curing and resinifying polyepoxides having more than one vic-epoxy group to convert them to hard insoluble infusible products which comprises mixing and reacting the polyepoxide with a curing agent comprising a mixture of a viscous liquid to solid polymercaptan possessing more than 2 —SH groups, and from 1% to 50% by weight of the curing agent of a fluid liquid polymercaptan containing 2 —SH groups selected from the group consisting of dimercapto-substituted alkanols containing up to 8 carbon atoms, dimercapto-substituted alkanes containing up to 8 carbon atoms, bis(mercaptoethyl)sulfide, bis(2-mercaptoethyl)ether, mercaptoacetic acid ester of ethylene glycol, ethylcyclohexyl dimercaptan, 1 - mercapto-4-(mercaptobutyl)cyclohexane, 1,4 - dimercaptocyclohexane, 1,6-dimercapto-2-hydroxycyclohexane, and di(mercaptoethyl)maleate, the polymercaptans in the curing agent and the polyepoxide being combined in a chemical equivalent ratio varying from 0.8:1.5 to 1.5:8, as used herein equivalent amount means that amount needed to furnish one —SH group per epoxy group.

3,310,602
CURING EPOXIDE RESINS WITH AROMATIC AMINE-ALDEHYDE COORDINATION COMPLEXES

Peter Herbert Richard Bryan Lemon, Chandlers Ford, Hants, and Francis John Peskett, Southampton, England, assignors to The Borden Company, a corporation of New Jersey

No Drawing. Filed July 26, 1962, Ser. No. 212,704
2 Claims. (Cl. 260—834)

1. A resin composition that is stable at room temperatures, and relatively slowly curable at temperatures within the range 60°–200° C., the composition comprising:

- (1) an amine curable epoxide resin having gram epoxy equivalency of at least 1.5 for 100 grams of said resin; and,
- (2) a coordination complex in proportion of between about 30–150 parts by weight for 100 parts of said resin, said complex being:
  - (a) a water-soluble inorganic salt of a metal selected from the group consisting of titanium, chromium, vanadium, manganese, iron, cobalt, nickel, copper, zinc and cadmium and the anionic portion of said ionorganic salt being selected from the group consisting of halides, nitrates, and sulfates; with,
  - (b) condensation products of aromatic amines having at least two primary amine groups per molecule with aldehydes selected from the group consisting of formaldehyde, acetaldehyde, and furfuraldehyde.

3,310,603
ADHESIVE COMPOSED OF POLYEPOXIDE AND A CHLOROPRENE COPOLYMER WITH 5 TO 25% ACRYLONITRILE

Douglas Jerome Kelly, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 13, 1963, Ser. No. 308,652
7 Claims. (Cl. 260—837)

1. A high-tack, pressure-sensitive adhesive composition consisting essentially of a homogeneous mixture of (I) a plastic sol copolymer of chloroprene containing from about 5 to 25 weight percent acrylonitrile units, and (II) an epoxy resin compound containing at least two epoxy groups per molecule, the amount of epoxy resin compound ranging from about 5 to 95 weight percent of said mitxure, said epoxy resin selected from the group consisting of (*a*) polyglycidyl ethers of polyhydric phenols and alcohols, and (*b*) epoxidized long-chain fatty acid esters having 15 to 22 carbons.

3,310,604
POLYURETHANES HAVING DISPERSED THEREIN HIGH AND LOW MOLECULAR WEIGHT POLYOLEFINS

Samuel Steingiser, Gert F. Baumann, and Clarence Louis Gable, Bridgeville, Pa., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed May 4, 1964, Ser. No. 364,829
17 Claims. (Cl. 260—859)

1. As a new composition of matter, a polyurethane polymer having dispersed substantially uniformly therein, a high molecular weight polyolefin and a low molecular weight polyolefin selected from the group consisting of polyethylene, polypropylene and mixtures thereof, said weight of from about 100,000 to 500,000 and said low molecular weight polyolefin having a molecular weight of from about 1,000 to 4,000, the total quantity of said high and said low molecular weight polyolefins being from about 0.2 to 5% of the polyurethane, a mixture of said high and said low molecular weight polyolefins within the said ratio having a melt index of at least about 115.

3,310,605
TWO STEP GRAFTING USING TRAPPER RADICAL SYSTEM

Nelson S. Marans, Silver Spring, and Forrest A. Wessells, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,726
8 Claims. (Cl. 260—877)

1. A method for producing a surface grafted polymeric structure having a homogeneously grafted polymer therein which comprises irradiating in the absence of O_2 a

polymeric substrate with high energy ionizing irradiation to produce initial activated grafting sites therein, contacting said substrate during the life of said initial activated sites with a homogeneously grafting monomer to produce a homogeneous graft throughout said substrate, exposing said grafted polymer to oxygen in the absence of irradiation to establish peroxidic grafting sites therein, and contacting said polymer with a different surface grafting monomer to produce a graft restricted to the surface of said substrate.

3,310,606
THERMOSETTING PERFLUORINATED DIVINYL ETHER RESINS

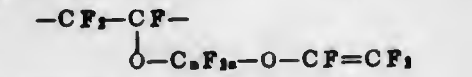
Charles Gerhard Fritz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 28, 1963, Ser. No. 305,220
21 Claims. (Cl. 260—884)

1. A thermosetting fluorocarbon addition polymer of a divinyl ether having the formula

$$CF_2=CF—O—C_nF_{2n}—O—CF=CF_2$$

where *n* is a number from 2 to 24, selected from the class consisting of homopolymers of said divinyl ethers, copolymers of said divinyl ethers with each other and copolymers of said divinyl ethers with comonomers selected from the class consisting of perfluoroalkyl perfluorovinyl ethers, perfluorovinyl perfluoroalkoxy polyethers and perfluoroolefins, said thermosetting fluorocarbon containing units having the structure



$$\begin{array}{l}-CF_2-CF-\\ \qquad\;\; |\\ \qquad\;\; O-C_nF_{2n}-O-CF=CF_2\end{array}$$

where *n* is a number from 2 to 24.

3,310,607
BACTERIOSTATIC ACRYLONITRILE POLYMERS

Fred J. Lowes, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 26, 1962, Ser. No. 182,621
9 Claims. (Cl. 260—895)

1. Composition of matter, the essential constituents of which are a fiber-forming acrylonitrile polymer which contains in the polymer molecule at least about 85 weight percent of acrylonitrile, the balance being another monoethylenically unsaturated monomeric material that is copolymerizable with acrylonitrile having dispersed therein; (1) at least about 1 weight percent based on the weight of said fiber-forming polymer of polyvinylpyrrolidone; and (2) at least about 0.5 weight percent based on the weight of said fiber-forming polymer of allyl 2,4,5-trichlorophenyl ether.

3,310,608
POLYOXYMETHYLENE COMPOSITIONS CONTAINING ETHYLENE/VINYL ESTER COPOLYMERS

Kanji Matsubayashi, Kenichi Tanabe, and Osamu Fukushima, Kurashiki, Japan, assignors to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan

No Drawing. Filed May 29, 1962, Ser. No. 198,480
Claims priority, application Japan, June 10, 1961, 36/20,580
11 Claims. (Cl. 260—897)

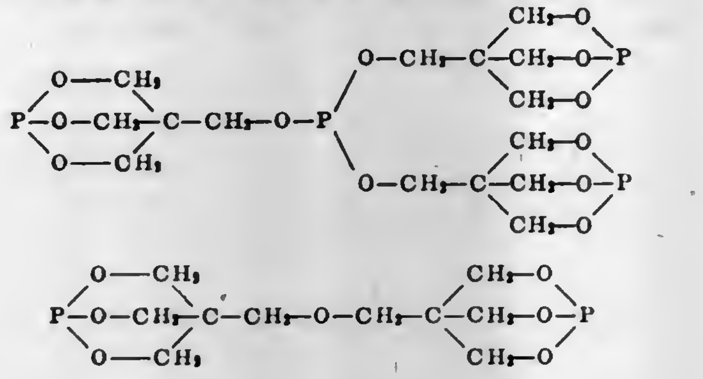
6. A composition of matter of improved transparency consisting essentially of (1) high molecular weight polyoxymethylene having a molecular weight of at least 10,000 and (2) 2 to 90% of a polymer having a melting point below 250° C. selected from the group consisting of ethylene vinyl acetate copolymers, the saponification products thereof, and formalized saponification products thereof.

3,310,609
PENTAERYTHRITOL PHOSPHITES

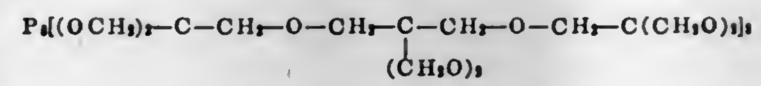
Charles F. Baranauckas and Irving Gordon, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed July 16, 1963, Ser. No. 295,503
7 Claims. (Cl. 260—927)

1. A compound of the formula



or



$$\begin{array}{l}P_8[(OCH_2)_3-C-CH_2-O-CH_2-C-CH_2-O-CH_2-C(CH_2O)_3]_3\\ \qquad\qquad\qquad\qquad\qquad\qquad\quad |\\ \qquad\qquad\qquad\qquad\qquad\quad\;\; (CH_2O)_2\end{array}$$

3,310,610
FLUOROTOLUENE-DITHIOL-PHOSPHORODITHIOATE

Donald W. Stoutamire, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 18, 1964, Ser. No. 368,363
1 Claim. (Cl. 260—930)

4-fluorotoluene-alpha,alpha - dithiol bis(O,O - dimethyl phosphorodithioate).

3,310,611
METHOD OF PRODUCING AN ARTIFICIAL GRAPHITE BODY

Roy W. Zocher, Lawrenceburg, Tenn., assignor, by mesne assignments, to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio

No Drawing. Filed July 15, 1964, Ser. No. 382,958
4 Claims. (Cl. 264—.5)

1. A method of producing an artificial graphite body comprising the steps of:

- (1) diluting a pre-polymerized furfuryl alcohol, having less than 1% free monomer, with a quantity less than 50 weight percent of hydrocarbon solvent having a boiling point less than 46° C. at —28" of mercury;
- (2) mixing the solvent diluted, pre-polymerized furfuryl alcohol with fine graphite and carbon flours, at least 90% of which pass a .248 mm. opening screen;
- (3) vacuum distilling the solvent from the solvent diluted mixture at a temperature less than 46° C. at —28" of mercury;
- (4) extruding the mixture through a die to impart the desired shape;
- (5) heating the extruded shape to carbonize and graphitize the mixture into an artificial graphite body.

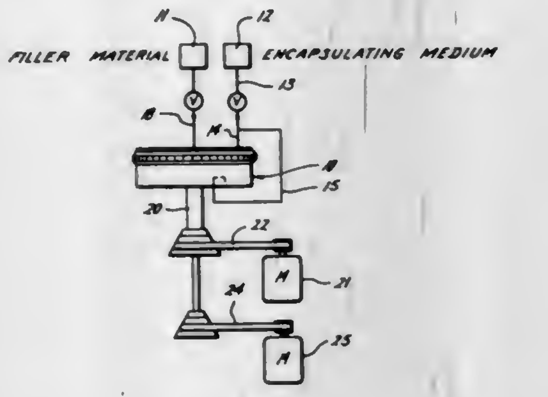
3,310,612
ENCAPSULATING METHOD AND APPARATUS

George R. Somerville, Jr., San Antonio, Tex., assignor to Southwest Research Institute, San Antonio, Tex.

Filed Mar. 29, 1965, Ser. No. 443,192
10 Claims. (Cl. 264—4)

1. In apparatus for centrifugally encapsulating a filler material in an encapsulating medium, including a head rotatable about a vertical axis and having at least one orifice extending through the outer wall thereof, means for supplying an encapsulating medium to the head for

forming successive films thereof across the inner end of the orifice during rotation of the head, means for delivering a filler material to the inner surface of the films, and means for rotating the head at such speed as to cause the filler material to be encapsulated in said film and the capsule to be severed and slung from the outer end of the orifice; the improvement comprising the disposal of the axis of said orifice at an angle extending downwardly and outwardly from the inner to the outer end thereof.



10. In a method of centrifugally encapsulating a filler material in an encapsulating medium, the steps of supplying the encapsulating medium to a head which is rotatable about a vertical axis and has at least one orifice extending through its outer wall downwardly and outwardly from the inner to the outer end thereof, so as to form successive films of the medium across the inner ends of the orifice during such rotation, delivering the filler material to the inner surface of the film, and rotating the head at a speed to cause the resultant of the vectors due to the centrifugal and gravitational forces on the capsule to extend in substantial alignment with the axis of the orifice.

3,310,613
METHOD FOR RESTORATION OF FURNITURE

Herbert John Lundberg, 175 Van Nostrand Ave.,
Jersey City, N.J. 07305
No Drawing. Filed Oct. 28, 1963, Ser. No. 319,597
12 Claims. (Cl. 264—36)

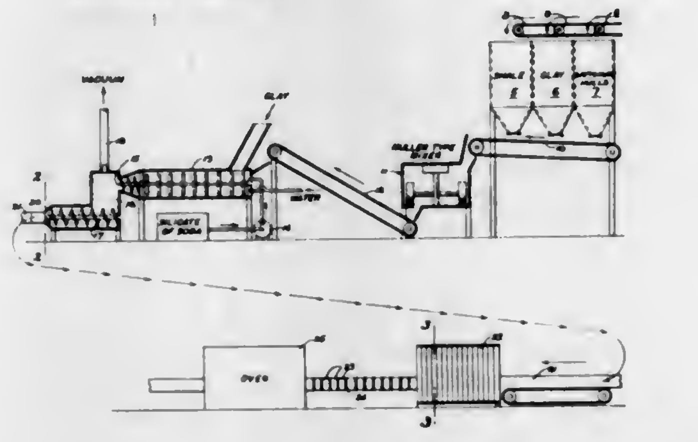
1. A method for restoring furniture of the type wherein cushioning or padding material is enclosed by a porous fabric, comprising inserting a small diameter, readily penetratable enclosed conduit through the fabric enclosing the cushioning or padding of a used, out-of-shape article of furniture of the type aforesaid and into a cavity therewithin, the conduit communicating at its end portion opposite the end of insertion with a container containing under pressure therein a composition comprising a liquid rubber latex and a propellant, the composition being confined in the container under the pressure of the propellant, releasing the composition from the container through the conduit whereby the composition is propelled therethrough by the propellant and introduced into the cavity wherein it immediately foams, the fabric returning to its original position due to the foam and serving as a mold therefor, and curing the latex foam in situ in the furniture article.

3,310,614
METHOD FOR MAKING BURNED CLAY BUILDING PRODUCTS

William E. Burkett, Martinez, Calif., and Paul Batchelder, Westport, Conn., assignors to Pacific Vegetable Oil Corporation, San Francisco, Calif., a corporation of California
Filed May 18, 1964, Ser. No. 368,282
7 Claims. (Cl. 264—44)

1. A method for making lightweight burned clay products by the stiff-mud extrusion process having substantially uniformly distributed and regularly oriented flat flake-like voids, comprising the steps of:

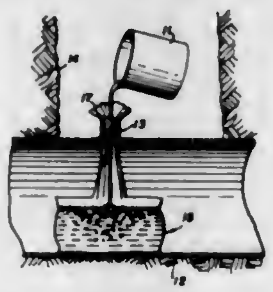
(a) mixing together thoroughly ten parts by volume of solids consisting essentially of
  (1) six to eight parts by volume of mineral chosen from the group consisting of brick-making clay, brick-making shale, and mixtures thereof, and
  (2) four to two parts by volume of flakes of seed hulls chosen from the group consisting of sunflower seed hulls and safflower seed hulls and mixtures thereof,



(b) mixing with said solids from about 15% to 25% by weight thereof of water to make a stiff mud,
(c) extruding said stiff mud into a columnar shape having approximately the cross section of the clay products to be made, said extrusion serving to align said flakes in a regular attitude pattern,
(d) cutting said column at intervals to form shaped blocks, and
(e) drying and firing said blocks, thereby driving off the water and burning said hull flakes so that their space is replaced with flat flake-like voids.

3,310,615
METHOD FOR PLUGGING PIPE

Richard B. Bender, P.O. Box 11302,
Fort Worth, Tex. 76109
Filed Apr. 30, 1964, Ser. No. 363,763
4 Claims. (Cl. 264—45)

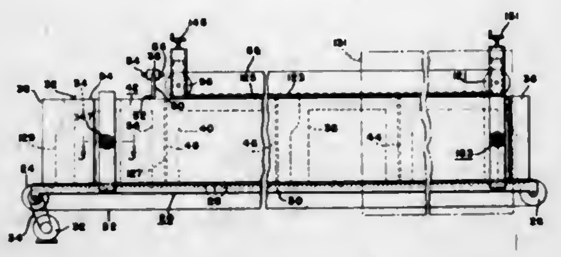


1. The method of plugging a pipe comprising the steps of placing an expendable open top container therein, and pouring a liquid foamable resin mixture into said container so that said container will initially confine said mixture while in the liquid state, said mixture being of sufficient quantity that the resulting foam overflows said container and fills a transverse section of said pipe.

3,310,616
METHOD OF INSULATING A SERIES OF RECTANGULAR REFRIGERATOR CABINETS

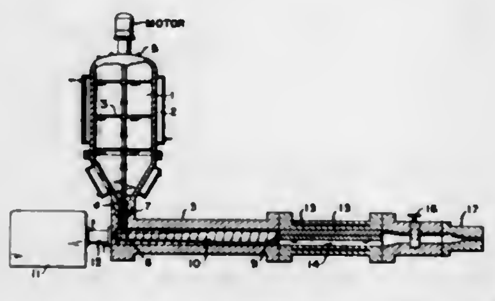
Charles R. Beary, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 6, 1964, Ser. No. 414,487
8 Claims. (Cl. 264—45)

1. The method of insulating a series of rectangular refrigerator cabinets having flat top and side substantially impervious outer walls and rear outer walls and inner walls spaced within the outer walls and rear outer walls and inner walls spaced within the outer walls to provide an insulation space therebetween which includes placing the cabinets upon a conveyor with the rear outer wall uppermost and with the tops of each pair of cabinets facing and closely adjacent each and the bottom of each of the pairs facing and closely adjacent the bottoms of the adjacent pairs, introducing foam-forming insulation materials into the insulation space between the inner and outer walls for foaming and expansion therein, moving the cabinets in the aforesaid arrangement upon the conveyor, and applying endless belts to the side outer walls of the refrigerator cabinets as the cabinets move upon the conveyor until the foaming of the insulation materials is completed.



3,310,617
PROCESS FOR PREPARING UNIFORM MELT DISPERSION OF BLOWING AGENT AND POLYMER AND ITS USE IN MAKING FOAMED PRODUCTS

Justin C. Dygert, Walnut Creek, and Arthur L. Fricke, San Lorenzo, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 19, 1963, Ser. No. 289,114
13 Claims. (Cl. 264—53)

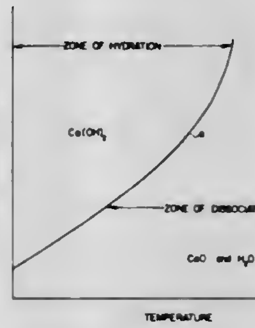


1. A process for preparing a uniform melt dispersion of a thermoplastic polymer material and a compound which acts as blowing agent by volatilization from said melt dispersion, which melt dispersion can be used to form a foamed product having controlled cell size and size distribution, which comprises

(1) mixing in a confined mixing zone a mass comprising essentially finely divided solid particles of said thermoplastic polymer with said blowing agent introduced into said mixing zone in vapor phase, said mixing taking place under conditions including a temperature substantially below the melt temperature of said polymer, said conditions being selected to cause said blowing agent in contact with the surfaces of said polymer particles to be deposited thereon and retained in condensed state;
(2) continuing said mixing for a sufficient length of time to result in a substantially uniform distribution of said blowing agent in condensed state in said mass of particulate polymer;
(3) applying inert gas pressure on said mixed mass of particulate polymer and blowing agent, sufficient to prevent escape of the blowing agent in the subsequent melting step; and
(4) thereafter transferring said mixed mass under said inert gas pressure to a separate melting zone and heating said mass therein to a temperature above the melting point of said polymer, under sufficient pressure and agitation to continuously maintain the blowing agent in condensed state in intimate contact with the polymer.

3,310,618
METHOD OF MANUFACTURING BASIC REFRACTORIES

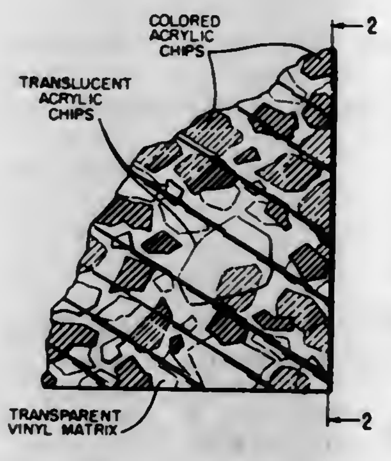
Samuel Rusoff, Tiffin, Ohio, assignor to Basic Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed June 28, 1965, Ser. No. 480,235
5 Claims. (Cl. 264—63)



1. A method of preparing refractory articles comprising admixing basic refractory particles containing free lime with a distillable, water-free organic binder nonsusceptible to pyrolytic decomposition selected from the group consisting of waxes, naphthalenes, chlorinated naphthalenes, and anthracenes, shaping such admixture, heating said shaped admixture at a rate sufficient to raise the temperature from about room temperature to about 2600° F. to 3200° F. in about 4 to about 6 hours to distill said organic binder from said admixture and to provide a vapor barrier against hydration within said shaped refractory, and subsequently further heating said shaped refractory to form a ceramic bond among the refractory particles.

3,310,619
VINYL-ACRYLIC FLOOR COVERING AND PROCESS

David K. Slosberg, Yardley, Pa., assignor to American Biltrite Rubber Co., Inc., Chelsea, Mass., a corporation of Delaware
Filed June 6, 1963, Ser. No. 285,984
2 Claims. (Cl. 264—77)



1. The process of making vinyl-acrylic floor or wall covering sheet comprising the steps of
preparing a dry blend of polyvinyl chloride;

preparing chips of methyl methacrylate resin, the resin being cast from a syrup having the following composition:

	Percent
Benzoyl peroxide (catalyst)	0.02–0.1
Cross-linking agent	0.25–10
Methacrylate monomer	Balance

and the cast resin being thereafter comminuted to form chips;

mixing the dry blend and the chips, the dry blend being in such quantity that when fused it forms a matrix for the chips;

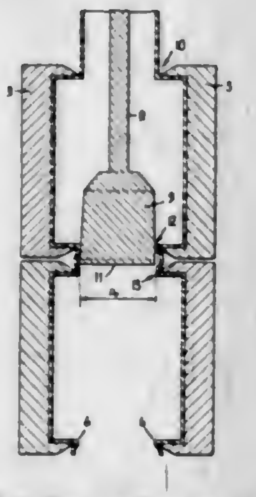
heating and pressing the mixture of dry blend and chips at a temperature of approximately 350° F. and a pressure of approximately 1000 pounds per square inch in a pressing means having a smooth surface which is presented to one side of the mixture, thereby to form a smooth-sided sheet of fused vinyl resin with said chips embedded therein, the chips being deformed by the pressing means into a shape other than their original shape;

removing the fused sheet from the pressing means after it has cooled to below the softening temperature of the fused vinyl resin; and

thereafter subjecting the fused sheet to a temperature within the range of 195°–250° F. to cause the vinyl resin to soften and to permit the chips to recover at least partially their original shapes.

3,310,620
PROCESS FOR THE MANUFACTURE OF HOLLOW ARTICLES

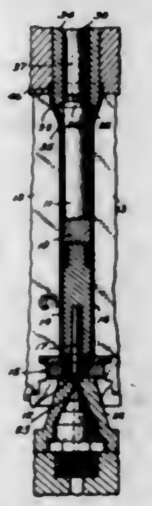
Nério Martelli, Bologna, Italy, and Edouard Colinet, Uccle-Brussels, Belgium, assignors to Solvay & Cie, Brussels, Belgium, a Belgian company
Filed June 9, 1964, Ser. No. 373,624
Claims priority, application Belgium, June 13, 1963, 507,409
8 Claims. (Cl. 264—90)



1. In a process for the continuous manufacture of hollow articles of a plastic material comprising shaping a hollow tube of said plastic material, while in a plastic state, between two groups of complementary half-molds which constitute mold assemblies and are movable with the tube in a longitudinal direction of advance, the molds of each of said groups being serially arranged and each of said molds having a bevelled edge, the improvement comprising fixedly arranging a frustoconical element in the interior of said tube at a portion of said tube at which said tube has been shaped into said hollow articles and is still in a sufficiently plastic state to be readily sheared, said portion being located between two successive ones of said mold assemblies, and shearing said tube between said bevelled edges and said frustoconical element at said portion while advancing said assemblies.

3,310,621
METHOD FOR MAKING PLASTIC TUBES

Emery I. Valyi, Bronx, N.Y., assignor to Wheeling Stamping Company, a corporation of West Virginia
Filed July 24, 1964, Ser. No. 384,942
5 Claims. (Cl. 264—97)



1. The method of forming a hollow article of organic plastic material having a shaped end, in a parison die around a blow core having a free end extending into said parison die and in a blow mold spaced from said parison die and having a cavity conforming to the hollow article to be formed, which comprises molding around said blow core in said parison die a parison having a shaped end while confining said end in a confining member extending beyond the free end of said blow core, said member being supported by and separable from said die, withdrawing the blow core with the parison thereon and with said confining member retained by the shaped end of the parison while the parison is supported by the blow core, from the parison die into said blow mold, supporting the confining member in said blow mold, blowing the parison to conform to the blow mold cavity while retaining the confining member in place on said shaped end, removing the confining member from said blow mold and from said shaped end after blowing, returning the confining member to the parison die and retaining the same in said die for the next molding cycle.

ELECTRICAL

3,310,622
KEY SWITCHING FOR ELECTRIC ORGAN

John R. Brand, Northridge, Bradley J. Plunkett, Van Nuys, and James Beverly, Pacoima, Calif., assignors, by mesne assignments, to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware
Filed June 21, 1963, Ser. No. 289,595
12 Claims. (Cl. 84—1.13)

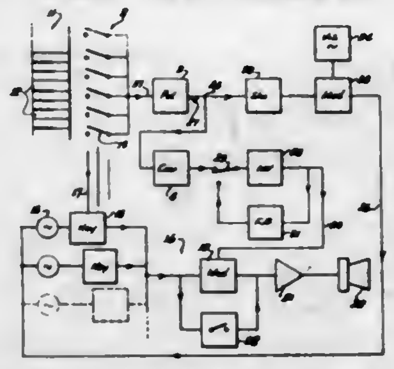
3. In an electrical musical instrument having a keyboard including a plurality of keys, a corresponding plurality of single contact switches actuated by the respective keys, a plurality of electric tone signal sources, an output circuit including an electro acoustic transducer for translating tone signals from said sources into audible signals, the combination of:

means responsive to each actuation of a switch for delivering a single electric pulse;

one shot multi-vibrator means for delivering a modulating pulse in response to actuation by said single electric pulse;

modulating means in said output circuit for amplitude modulating said tone signals in response to said modulating pulse delivered by said multi-vibrator means; and

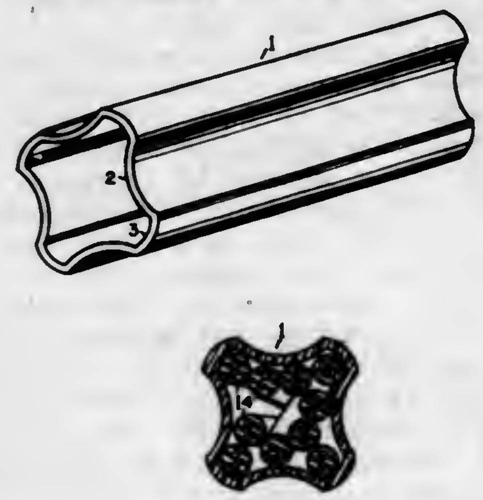
means responsive to said actuation of a said switch for applying tone signals to said output circuit for as long as the key corresponding to a tone is in actuated position,



whereby upon each actuation of a key, irrespective of the position of any other key, a percussive, amplitude-modulating pulse is applied to said modulating means, thereby to pass a percussive burst of tone to said transducer.

3,310,623
EXTENSION CORD STORAGE MEANS

Marion E. Vaughan, Los Angeles, Calif.
(205 N. Segovia Ave., San Gabriel, Calif. 91775)
Filed June 30, 1965, Ser. No. 468,510
4 Claims. (Cl. 174—135)



1. A device for storing an electrical extension cord comprising;

a hollow tube,

said tube having a substantially uniform cross-section throughout its length,

said cross-section being substantially square, but having concave sides and rounded corners;

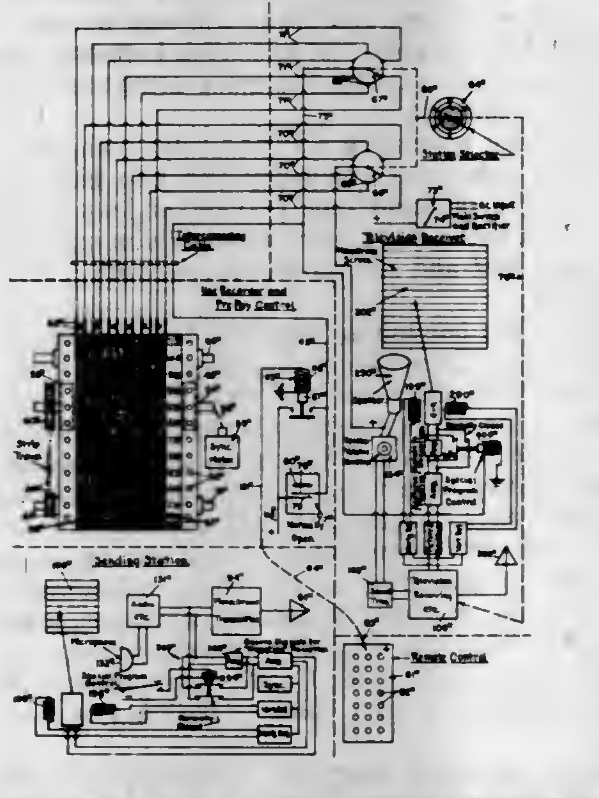
whereby convolutions of a short extension cord are restrained within said tube by said concave sides,

while a great number of convolutions of a long extension cord are additionally retained within all of said rounded corners.

3,310,624
SUBSCRIPTION TELEVISION SYSTEM USING PHASE INVERTED VIDEO SIGNALS

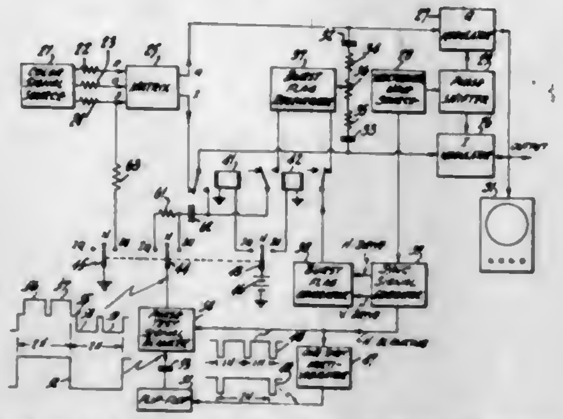
Thomas A. Banning, Jr., 5500–5520 S. Shore Drive, Apt. 1408, Chicago, Ill. 60637
Filed Aug. 8, 1963, Ser. No. 300,946
6 Claims. (Cl. 178—5.1)

1. In a prepay or subscription television system, the combination of a sending station including television camera means constituted to scan an object to be televised, and constituted to emit video signals of said object translatable for production of either an inferior aesthetic quality fully intelligible raster or a superior aesthetic quality fully intelligible raster, selectively under manual control of the receiver operator, said video signal emitting means including means to produce signals corresponding in strength and phase intensity to the brightness of elemental areas of said object successively viewed by the signal producing means according to a pre-determined spatial and time pattern, said sending station including means to emit signals which correspond in spatial and time pattern to said so produced signals and including connections between the signal producing means and the signal emitting means, said connections including phase intensity inverting means having a first defined phase intensity non-inverting position and a second defined phase intensity inverting position, together with a receiver having means to receive the signals emitted by the signal emitting means, and also having a picture screen and means to produce on said screen a raster comprising illumination of an elemental area, means to cause said illuminated area producing means to produce the illumination of successive elemental areas of the raster according to the spatial and time pattern the same as the spatial and time pattern viewing of the elemental areas of the object viewed by the signal producing means of the camera; means in the receiver to control the illuminated area producing means to control the brightness of the illumination of the elemental area, and connections between the means which receives the signals emitted by the signal emitting means of the sending station, and the elemental area brightness control means of the receiver, said connections including phase intensity inverting means having a first defined phase intensity non-inverting position constituted to produce the raster from the inverted phase intensity of the received inverted signals emitted by the sending station without re-inversion of said video signals, and with production of an inferior aesthetic quality fully intelligible translation of said signals, and a second defined phase intensity inverting position constituted to produce the raster from the inverted phase intensity of the received inverted signals emitted by the sending station with re-inversion of said video signals, and production of a superior aesthetic quality fully intelligible translation of said signals, together with manual control means to select either the first defined position or the second defined position of said phase intensity inverting means.



3,310,625
COLOR TELEVISION PHASE TEST APPARATUS

Lucas J. Bazin, Stratford, and Robert A. Dischert and David M. Taylor, Burlington, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 10, 1965, Ser. No. 438,696
15 Claims. (Cl. 178—5.4)

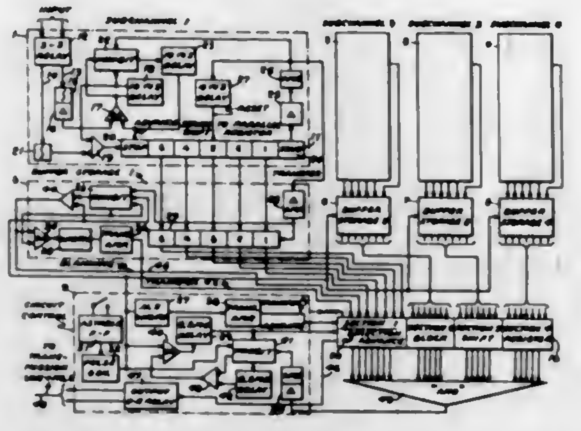


1. Apparatus for checking the nominal quadrature phase relationship of two chrominance subcarrier wave components in a color television system, comprising:
  means for producing a first wave component having said subcarrier frequency and also having, in different time periods, first and second opposite phases and each phase of said first wave component having the same amplitude;
  means for producing a second wave component having said subcarrier frequency and also having, in each of said different time periods, at least one test segment with a third phase nominally in quadrature with said first and second phases and with a fixed amplitude;
  means for combining said first and second wave components to produce, in said different time periods, different composite test wave portions; and
  means for simultaneously displaying said different composite test wave portions on an oscilloscope,
  the relative amplitudes of a segment of said composite test wave occurring in said different test wave portions and corresponding to said one test segment being an indication of the phase relationship of said two chrominance subcarrier wave components.

9. Apparatus for checking the relationship of the subcarrier wave burst to the I and Q chrominance subcarrier wave components in a color television system, comprising:
  means normally operative in response to said I and Q chrominance subcarrier wave components for producing a first wave having said subcarrier frequency and also having, during each of two different time periods, a first segment of fixed phase and amplitude, said fixed phase normally not being in quadrature wtih said subcarrier wave burst;
  means for modifying said first wave to effect a quadrature phase relationship between said first wave segment and a properly phased subcarrier wave burst;
  means for producing a second wave having said subcarrier frequency and also having opposite subcarrier wave burst phases during said two different time periods;
  means for combining said first and second waves to produce a test wave having, during each of said two different time periods, a second segment; and
  means for displaying said test wave on an oscilloscope, the relative amplitudes, displayed during two said different time periods, of the test wave segment corresponding to said one segment of said first wave being an indication of the phase relationship of the subcarrier wave burst to the I and Q chrominance subcarrier wave components.

3,310,626
TIME SHARED TELEGRAPH TRANSMISSION SYSTEM INCLUDING SEQUENCE TRANSMISSION WITH REDUCTION OF START AND STOP SIGNALS

Francis T. Cassidy, Jr., Brooklyn, N.Y., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Feb. 28, 1963, Ser. No. 261,676
15 Claims. (Cl. 178—50)

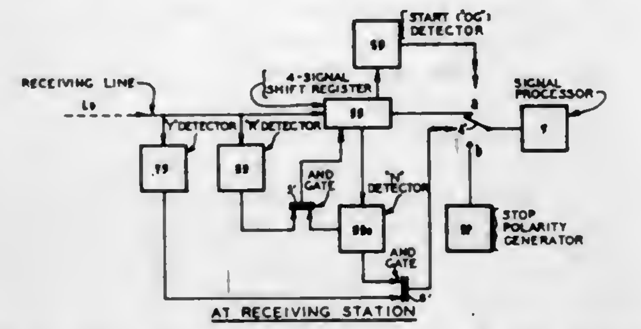


1. A telegraph channel divider system comprising:
(A) a transmitting station,
(B) a receiving station, and
(C) a transmission line between said transmitting and receiving stations, said transmitting station comprising:
  (a) separate means for receiving telegraph signals from a plurality of subchannels, said signals being of the type in which each character comprises a "start" unit, a plurality of intelligence units, and a "stop" unit,
  (b) storage means including a shift register, and means for simultaneously transferring information from all input channels to the shift register in parallel for arranging the intelligence units in a sequence of characters with one character received from each subchannel,
  (c) means for inserting a "start" signal at the beginning of said sequence, and
  (d) means for transmitting said sequence of signals preceded by said inserted "start" signal from said storage means over said transmission line; said receiving station comprising:
    (a) storage means for storing the sequence of signals received from said transmission line,
    (b) means responsive to the receipt of the complete sequence of signals for producing a transfer signal,
    (c) a plurality of output means, there being one for each subchannel, and
    (d) means responsive to said transfer signal for delivering each group of intelligence signals representing a character sequentially to the respective output means preceded by a "start" signal.

3,310,627
TELECOMMUNICATION SYSTEM FOR PRODUCING SERVICE SIGNALS

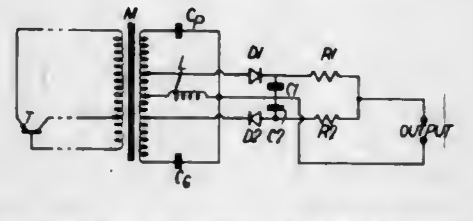
Herman da Silva, Voorburg, Netherlands, assignor to De Staat der Nederlanden, ten deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands
Filed June 17, 1963, Ser. No. 288,328
Claims priority, application Netherlands, June 29, 1962, 280,405
12 Claims. (Cl. 178—113)

1. In a telecommunication system for transmitting and receiving traffic code signals between two stations, in which all of the signals in said code are already employed for traffic, the improvement comprising the method of producing at least one special service signal of an infrequently used combination of said traffic signals, comprising the steps of:
(A) selecting a specific infrequently used combination of said traffic signals for indicating end-of-message,
(B) selecting two different additional signals to be sent immediately after said specific combination signal to discriminate said combination from traffic signals, and to recognize said combination as an end-of-message service signal, respectively,
(C) transmitting said selected combination of signals immediately followed by one of said different additional signals, and
(D) detecting said selected transmitted signals at the receiving station for correspondingly controlling said receiving station.



3,310,628
CONDENSER MICROPHONES

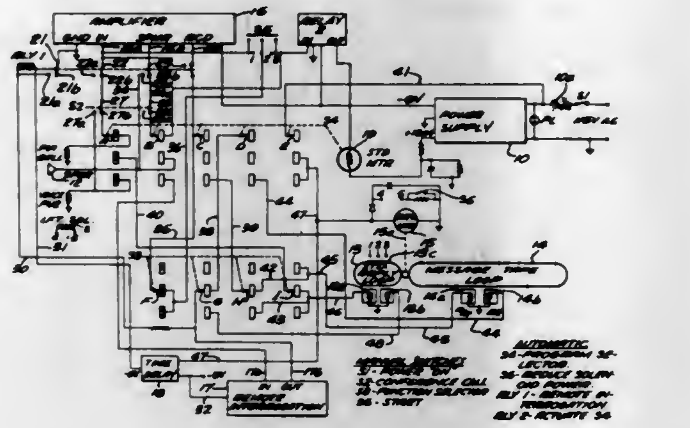
William D. Cragg and Ernest R. Cockbain, London, England, assignors to International Standard Electric Company, New York, N.Y., a corporation of Delaware
Filed July 26, 1963, Ser. No. 297,841
Claims priority, application Great Britain, July 27, 1962, 28,977/62
3 Claims. (Cl. 179—1)



1. An electro-static microphone arrangement comprising:
  a first transducing element principally responsive to pressure-gradient to produce a first signal;
  a second transducing element principally responsive to pressure to produce a second signal; and
  means to combine said first and second signals to produce an output signal including:
  an oscillator providing a carrier signal;
  a bridge, said first and second transducing elements each forming one arm of said bridge;
  a transformer, including a primary and a secondary winding, said secondary including a center tap dividing said secondary into two equal parts, said parts serving as the outer two arms of said bridge, said tranformer coupling said carrier signal to said bridge, an inductor connected between said center tap of said secondary winding and the junction of said transducing elements, a voltage appearing across said inductor whenever the pressure acting upon said transducing elements varies;
  two rectifying diodes; and
  means coupling said voltage across said inductor to said diodes including a portion of both arms of said secondary winding.

3,310,629
TELEPHONE ANSWERING APPARATUS

Yujiro Yamamoto, Edwin S. Hamberg, and Dwight M. Muranaka, Santa Ana, and Lindy T. Ikegami, Anaheim, Calif., assignors to Y2 Associates, Inc., a corporation of California
Filed Oct. 15, 1962, Ser. No. 230,637
2 Claims. (Cl. 179—6)



1. In a telephone answering apparatus adapted for recording a standard answer to be played in response to each incoming call, for then recording each incoming call, and for selectively playing back the recorded incoming calls at a subsequent time for the user of the telephone instrument, the combination comprising:
  a first circulating memory having a capacity adequate for recording the standard answer thereon;
  second circulating memory for recording incoming calls thereon, and having a capacity which is greater than the capacity of said first circulating memory;
  drive means for driving both of said circulating memories in synchronism;
  means responsive to the reception of an incoming call for initiating the operation of said drive means;
  means cooperable with said first circulating memory for transmitting said standard answer to the telephone instrument;
  an amplifier;
  a marker carried by said first circulating memory for generating a timing signal upon the conclusion of transmission of said standard answer, and upon the conclusion of subsequent complete circulations of said first circulating memory;
  means for connecting the output of said amplifier to its input in response to the recognition of said marker, whereby the oscillation of said amplifier produces said timing signal;
  and circuit means coupled to said second circulating memory and to said drive means, and responsive to the first occurrence of said timing signal for causing the incoming call to be recorded on said second circulating memory, and to the second occurrence of said timing signal for inactivating said drive means.

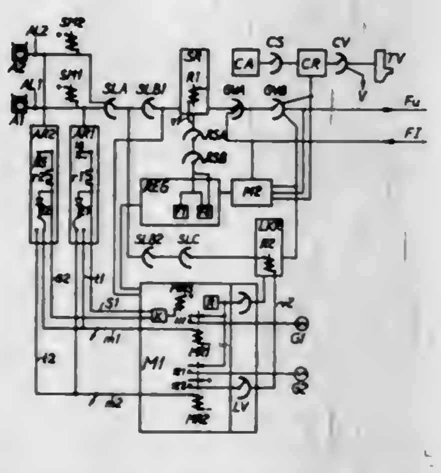
3,310,630
CIRCUIT ARRANGEMENT FOR AUTOMATIC TELEPHONE SYSTEMS WITH DIFFERENT KINDS OF TELEPHONE COMMUNICATIONS

Lennart Uno Ölander, Hagersten, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Nov. 20, 1963, Ser. No. 325,098
Claims priority, application Sweden, Dec. 7, 1962, 13,227/62
4 Claims. (Cl. 179—8)

1. In an automatic telephone exchange which includes a plurality of terminals, at least some of said terminals being subscriber terminals, one of which being a calling

subscriber terminal which calls another subscriber terminal, each of the subscriber terminals including a subscriber's line and a subscriber's line equipment, and links for carrying calls between the subscriber terminals, call-switching equipment comprising:

(a) selector means connected to the links for establishing connections between subscriber terminals;
(b) marker means for activating said selector means to establish specific connections between a pair of subscriber terminals;
(c) register means connected to the links for controlling said marker means to establish specific connections in accordance with calling signals from the calling subscriber terminal in the links;



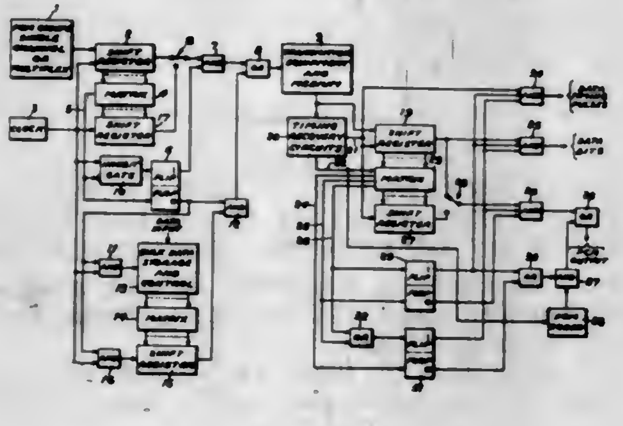
(d) at least some of the subscriber's line equipments each comprising a marking circuit;
(e) said marker means further including relay means for testing the state of the marking circuit of the associated called subscriber terminal;
(f) means in said marker means under control of said relay means for sending a return control signal to the register means which controlled the routing of the call to the called subscriber terminal; and
(g) return control signal receiving means in said register means receiving said return control signals for controlling said marker means to establish a connection between the calling subscriber terminal and a terminal other than the called subscriber terminal.

3,310,631
COMMUNICATION SYSTEM FOR THE SELECTIVE TRANSMISSION OF SPEECH AND DATA

Warren G. Brown, River Vale, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed June 3, 1963, Ser. No. 285,011

19 Claims. (Cl. 179—15)



1. A communication system comprising:

a source of code groups representing the amplitude of at least one source of a first type of intelligence;

a source of code characters representing a second type of intelligence;

first means coupled to said source of code groups to detect at least one code group representing a given amplitude of the intelligence of said one source;

second means coupled to said source of code characters, said source of code groups and said first means to substitute said code characters for said one code group when detected;

third means coupled to said second means for transmission of the resultant integrated pulse train; and

fourth means coupled to said third means for separation of said code groups and said code characters from said integrated pulse train;

said fourth means including:

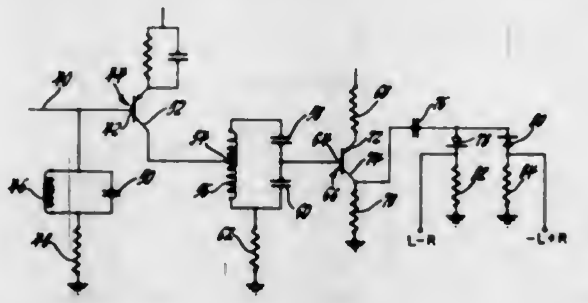
fifth means to detect the condition of all the bits of both said code groups and said code characters to control said separation.

3,310,632
FM STEREO MULTIPLEX DOUBLING CIRCUIT

John R. Snead, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 23, 1963, Ser. No. 304,198

1 Claim. (Cl. 179—15)



A signal amplifying and detecting system for detecting a plurality of separate signals for use in stereo reproduction from a single carrier transmission wave having a first modulated signal in one portion of the frequency spectrum, a second modulated signal including sideband modulation in a portion of the frequency spectrum spaced from the first leaving a frequency gap and a pilot signal in said gap for providing a sideband reference wave comprising a first amplifying stage consisting of a first transistor having an input circuit and an output circuit, a signal input system connected to said first transistor input circuit and having said single carrier transmission wave thereon, a parallel high impedance tuned circuit connected between the signal input system and ground tuned to the pilot signal frequency to amplify the same over other frequencies in the incoming wave, a tapped impedance coil, said transistor output circuit being connected to said tap on said coil, a pair of condensers in series connected in parallel across said impedance, a resistance connected from a point intermediate said impedance and one of said condensers to ground across which a signal including all of the amplified frequencies is developed, said impedance and condensers acting as a frequency doubler to double the pilot signal frequency and develop it across one of the condensers and reinject it in said sidebands, a further output line connected between the two condensers, a second amplifying transistor having an input circuit on which all the amplified modulated signals appear and an output circuit, said second transistor input circuit being connected to the further output line from the first transistor, and detecting means to develop rectified output signals to mix with others for stereo output connected to the output circuit for the second amplifying means.

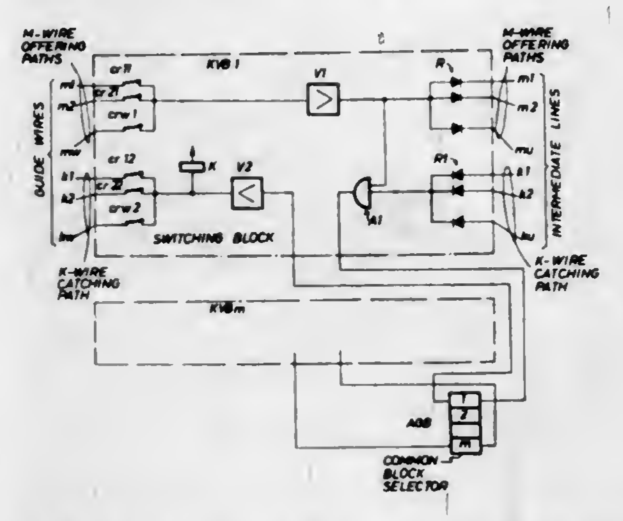
3,310,633
ARRANGEMENT FOR SELECTING TRANSMISSION PATHS IN MULTI-STAGE SWITCHING GRIDS

Hilmar Schonemeyer, Ditzingen, Wurttemberg, Germany, assignor to International Standard Electric Corporation, a corporation of Delaware

Filed Aug. 6, 1963, Ser. No. 300,237

Claims priority, application Germany, Aug. 23, 1962, St 19,627

8 Claims. (Cl. 179—18)



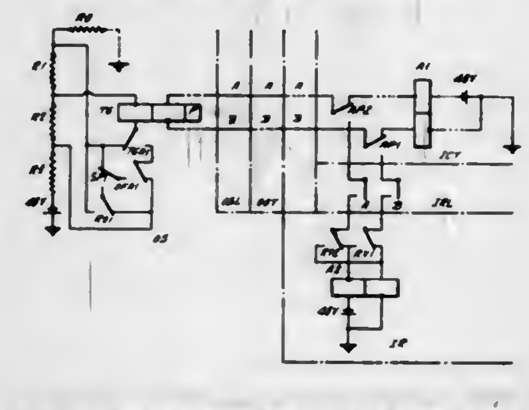
1. A guide wire switching system comprising a plurality of cascaded switching stages, each stage including a number of switching blocks incorporating switching points, means comprising a plurality of guide wires for controlling the operation of the switching points in said system, means responsive to an application of an offering signal to said guide wires on one side of said system for transmitting a fan-out of signals over a plurality of said guide wires and through said switching points toward the opposite side of said system, means for receiving a catching signal on a guide wire on the opposite side of said system, selecting means including AND function circuits responsive to the simultaneous presence of a fan-out signal and the catching signal at a switching point for selecting a path through the associated switching block, said selecting means including means whereby said catching signal is returned over parallel paths via said guide wires, and said selecting means including means at each of said stages for selecting a single one of the switching blocks in that stage to return the catching signal to the next preceding stage.

3,310,634
SUPERVISORY SIGNAL RECEIVING CIRCUIT

Tatsuki Watanabe and Toshio Ando, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Oct. 2, 1963, Ser. No. 313,350

2 Claims. (Cl. 179—18)



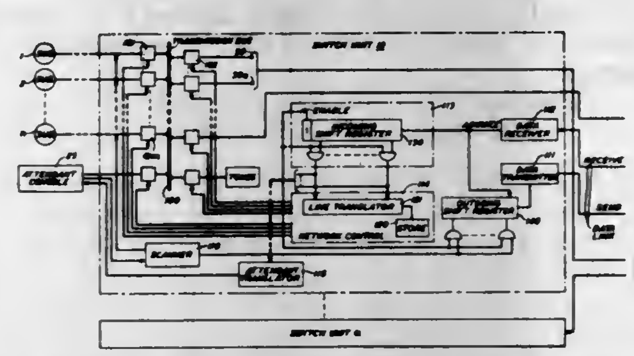
1. In a telephone supervisory signal receiving circuit for distinguishing changes in condition at a distant office, the indicia of which is a change in line polarity; a polarized relay having a biasing and an operating winding, the latter of which is in series with said line; potential means coupled to the biasing winding of said polarized relay for the biasing thereof; means under control of said polarized relay for indicating a change in polarity of said line; and means coupled to said potential means and responsive to said indicating means for reversing the biasing potential on said polarized relay.

3,310,635
DATA EXCHANGE IN A COMMON CONTROL COMMUNICATION SYSTEM

Frank S. Vigliante, Piscataway Township, Middlesex County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 27, 1963, Ser. No. 326,435

14 Claims. (Cl. 179—26)



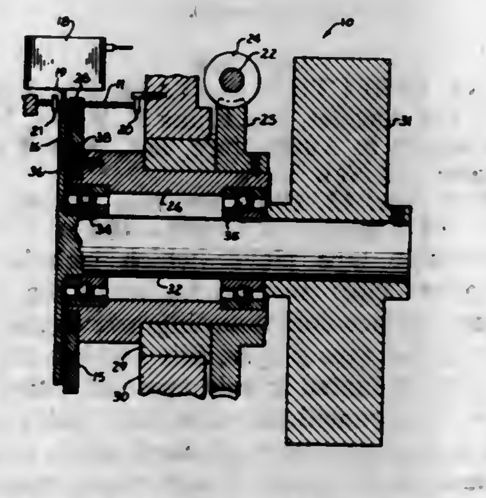
1. In a telephone system, a control unit, a plurality of switch units remote from said control unit, each of said switch units terminating a plurality of lines and comprising means responsive to a change in the condition of a terminated line for producing a multibit message defining the new condition, means for transmitting one bit of a multibit control message from said control unit simultaneously to each of said switch units, means in each of said switch units responsive to receipt of said control message bit for transmitting a bit of said condition message to said control unit, and timing means operative upon elapse of sufficient time for transmission of a message bit to and from the switch unit most remote from said control unit for storing in said control unit the condition message bits transmitted from each switch unit.

3,310,636
FILM STABILIZER MECHANISM FOR PROJECTORS, CAMERAS, AND PRINTERS

Ellis W. D'Arcy, P.O. Box 1130 C,
Ogden Dunes, Ind. 46401

Filed Feb. 7, 1961, Ser. No. 87,647

3 Claims. (Cl. 179—100.2)



1. A film driven stabilizer mechanism for projectors, cameras and printers operable with film having a series of sprocket apertures adjacent one lateral edge thereof

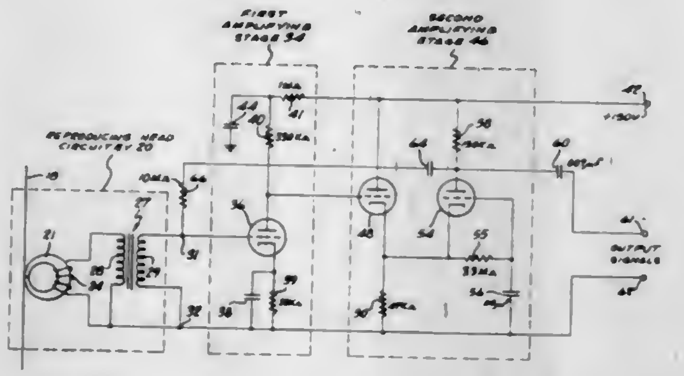
and a magnetic sound track between said apertures and said one lateral edge, said mechanism comprising, in combination, a magnetic sound head, a film drive sprocket adjacent said sound head and adapted to move the film past said head, a first film drum rotatably disposed in relatively close laterally spaced relation with one side of said drive sprocket, a second film drum rotatably disposed in relatively close laterally spaced relation with the other side of said drive sprocket, means for positively maintaining a running clearance between each said drum and said sprocket, one of said drums being inertia-loaded, the other of said drums having a portion disposed in underlying relation with the sound track as the film passes said sound head.

3,310,637

MAGNETIC REPRODUCE HEAD USING NEGATIVE FEEDBACK TO OBTAIN MAXIMUM MID-BAND RESPONSE

Erling P. Skov, San Mateo, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Sept. 4, 1962, Ser. No. 221,217
3 Claims. (Cl. 179—100.2)


FIRST AMPLIFYING STAGE 34
SECOND AMPLIFYING STAGE 46
REPRODUCING HEAD CIRCUITRY 20
OUTPUT SIGNALS
+150V

2. An audio system for reproducing magnetically stored signals with low noise and low distortion comprising:
- means for sensing the magnetically stored signals, the sensing means being made to resonate at a selected point within the frequency band of the magnetically stored signals, and having a relatively high figure of merit;
- a first terminal directly coupled to the sensing means;
- low noise amplifier means having phase stability coupled to the first terminal for providing amplified signals; and
- feedback means for returning a substantial part of the amplified signals to the first terminal as negative feedback signals, said feedback means including low frequency feedback release means and high frequency feedback bypass means.

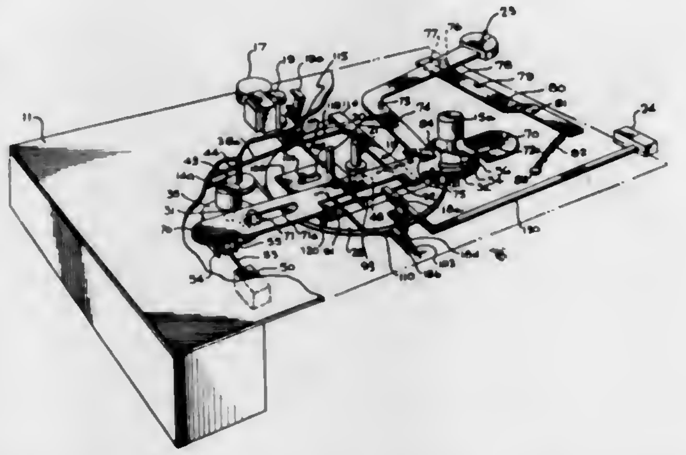
3,310,638

DUAL DIRECTIONAL TAPE PLAYER

Val Burton, Los Angeles, and Frank E. Ropes, Van Nuys, Calif., assignors to Autolecture, Inc., New York, N.Y., a corporation of New York

Filed Apr. 12, 1963, Ser. No. 272,800
14 Claims. (Cl. 179—100.2)

1. A reversible tape player which includes: a tape deck having an upper surface for mounting tape reels and an under surface for mounting a reversing slide for the control of said tape player; first and second tape reel shafts rotatably mounted in said tape deck; first and second tape reels mounted on said first and second reel shafts; first and second tape playback heads mounted on said tape deck in the path of tape transported between said first and second reels; a reversing slide slidably mounted on the underside of said tape deck to be slidably transported to a first reel driving position, a second reel driving position, a shut-off position; means for shifting said reversing slide selectively to any one of its three positions; first and second clutch means for driving said first and second reel shafts; reversible motor and drive mechanism means for driving at least one of said clutch means; clutch operating means carried on said reversing slide for engaging said first clutch means when said slide is in said first reel drive position and for engaging said second clutch means when said reversing slide is in the second reel drive position; amplifier means for converting signals from either of said first and second playback heads to audible signals; a reversing switch controlled by said reversing slide for controlling an electric motor drive means; said electric motor drive means driving said shaft drive mechanism reversibly in first or second direction; reversible electric relay means to drive said tape in one direction and simultaneously connecting one of said playback heads to said amplifier means; and relay operating means on said reversing slide for selectively operating said reversing switch in said first or second directions, when said slide is shifted to said first or second positions.

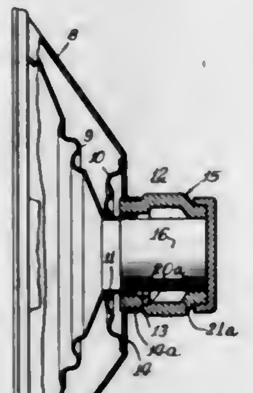


3,310,639

LOUD SPEAKER MAGNETIC ASSEMBLY AND POT

David M. Collins, Hinsdale, Ill., assignor to York Tool and Manufacturing Co., Bellwood, Ill., a corporation of Illinois

Filed Jan. 23, 1964, Ser. No. 339,804
8 Claims. (Cl. 179—120)



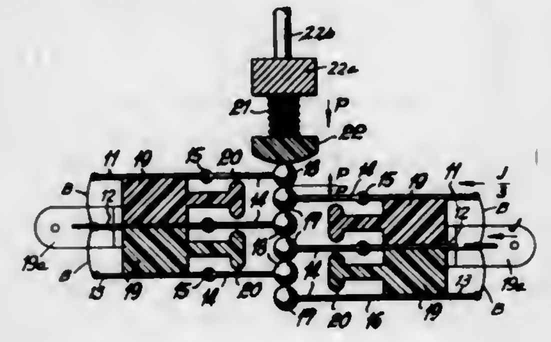
6. As a new article of manufacture, a holder for a speaker pot, said holder comprising upper and lower collars defining coaxial openings and having an intervening body portion off-set radially outward relative to said collars, said holder being split in the direction of the axis of said openings and the portions of said holder being free from each other at said split.

3,310,640

HIGH CURRENT-CARRYING CAPACITY SWITCHING DEVICES REQUIRING SMALL CONTACT PRESSURES

Alexander Bleibtreu, Regensburg, Germany, assignor to Maschinenfabrik Reinhausen Gebruder Scheubeck KG, Regensburg, Germany

Filed Oct. 4, 1965, Ser. No. 492,499
Claims priority, application Germany, Nov. 11, 1964, M 63,075
10 Claims. (Cl. 200—1)



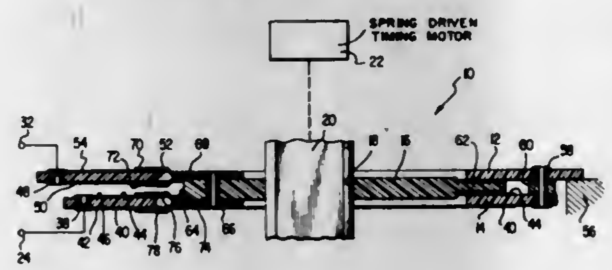
1. A switching device including:
(a) a plurality of superimposed physically engaging contacts forming a straight column of contacts including even contacts and odd contacts;
(b) a first plurality of parallel conductors, each of said first plurality of conductors being conductively connected to and supporting adjacent one end thereof one of said even contacts;
(c) a second plurality of parallel conductors, each of said second plurality of conductors being conductively connected to and supporting adjacent one end thereof one of said odd contacts, each of said second plurality of conductors being displaced relative to each of said first plurality of conductors in a direction longitudinally of said column of contacts;
(d) pivot means for said even contacts and pivot means for said odd contacts to allow relative movement of said even contacts and of said odd contacts in a direction substantially longitudinally of said column of contacts;
(e) a pair of conductor integrating means including a first conductor integrating means integrating said first plurality of conductors into a first structural assembly unit and a second conductor integrating means integrating said second plurality of conductors into a second structural assembly unit, said first assembly unit and said second assembly unit being movable relative to each other in a direction substantially transversally of said column of contacts;
(f) a common contact-pressure-establishing spring means arranged adjacent one of the ends of said column of contacts normally establishing contact pressure between all of the constituent contacts of said column of contacts, said spring means having a line of action coextensive with said straight line;
(g) means for rendering said spring means substantially ineffective to reduce said contact pressure normally established by said spring means between the constituent contacts of said column of contacts; and
(h) abutment means arranged adjacent the other end of said column of contacts remote from said spring means to normally receive the force exerted by said common spring means transmitted through said plurality of contacts to said abutment means, said abutment means being integral and jointly movable with one of said pair of conductor integrating means.

3,310,641

ROTARY SWITCH WITH IMPROVED CONTACT ELEMENT STRUCTURE

Ralph G. Eshleman, Lancaster, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Nov. 2, 1964, Ser. No. 407,998
10 Claims. (Cl. 200—11)



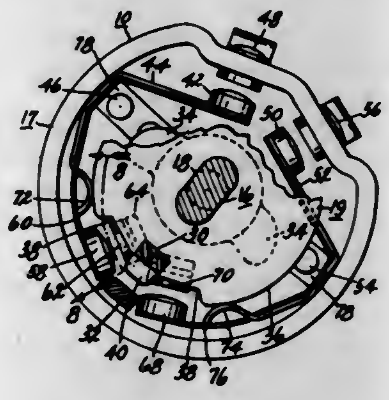
3. A switch comprising a pair of flat annular discs, a rotor, said discs being mounted in spaced parallel relation and coaxial with the rotational axis of said rotor, one of said discs including a continuous conductive means on both sides, the other of said discs including discontinuous conductive means on both sides, and electrically conductive means carried by said rotor resiliently engaging both sides of each of said discs.

3,310,642

TAIL GATE ELECTRIC WINDOW AND GATE SWITCH

Robert G. Zeller, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 30, 1964, Ser. No. 363,853
4 Claims. (Cl. 200—44)

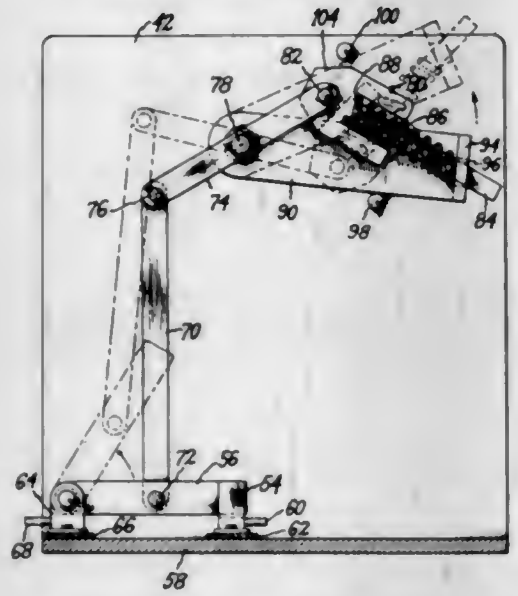


1. An electrical switch comprising: a switch body; actuator means extending through a wall of said switch body and adapted for rotation therein; cam means having at least two operative levels carried by said actuator means; fixed contact means carried by said switch body in a fixed relationship with respect to said cam means; and movable contact means carried by said switch body and each including a plurality of resilient extensions and contacts carried thereby disposed in opposition to each of said fixed contact means, several of said movable contact means including resilient extending members engaging one of said cam levels and several other movable contact means to move said several other contact means out of engagement with several of said opposed fixed contact means while said actuator means is in a selected condition of operation.

3,310,643

TWO POSITION SNAP ACTION POSITIVE INDICATION SWITCH

William F. Dripps, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed June 28, 1965, Ser. No. 467,648
1 Claim. (Cl. 200—67)



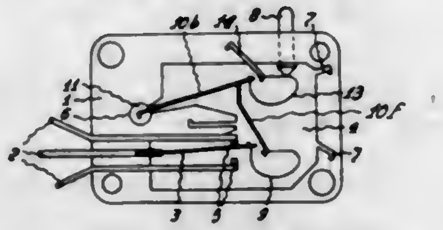
A two position, snap action switch comprising:
(A) a mounting member,
(B) an actuating member rotatably mounted in said mounting member,
(C) a fixed contact mounted on said mounting member,
(D) a movable contact pivotally mounted on said mounting member and movable into and out of engagement with said fixed contact,
(E) an operating arm fixedly mounted on said actuating member,
  (1) said operating arm being movable to either of two positions,
(F) stop means mounted on said mounting member for limiting movement of said operating arm to said two positions,
(G) a crank arm pivotally mounted at substantially its midpoint on said mounting member,
(H) a spring guide member,
  (1) one end of said spring guide pivotally connected to one end of said crank arm,
  (2) the other end of said spring guide slidably positioned in a portion of said operating arm,
  (3) portions on said spring guide member contacting said stop means on operation of the switch,
(I) a spring mounted on said spring guide,
  (1) said spring contained between said spring guide and said portion of said operating arm,
(J) a link member having one end pivotally connected to the other end of said crank arm,
  (1) the other end of said link member pivotally connected to said movable contact,

whereby movement of said actuating member moves said operating arm from one position toward its other position compressing said spring between said spring guide and said operating arm, and on further movement of said operating arm to said other position said portions of said spring guide member contact said stop means and apply a positive force to said link member to move said movable contact, said stop means being effective to move said crank arm and said spring guide means to release said compressed spring pivoting said crank arm about said actuating member causing said link member to move said movable contact with a snap action into or out of engagement with said fixed contact.

3,310,644

SNAP-ACTION ELECTRICAL SWITCH

Gunther Kittel, Ebnat-Kappel, Switzerland, assignor to Alex Neher AG Metallwaren- & Werkzeugfabrik, Ebnat-Kappel, Switzerland, a Swiss firm
Filed Nov. 22, 1965, Ser. No. 508,939
3 Claims. (Cl. 200—67)

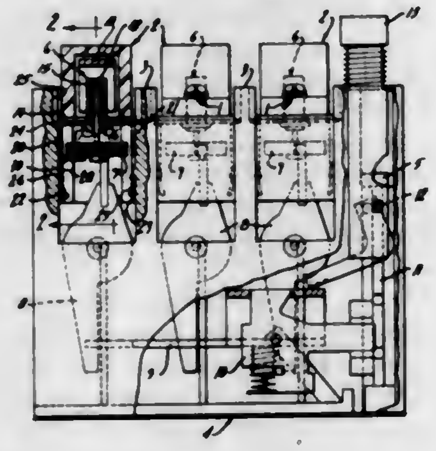


1. In an electrical switch having a housing containing spaced apart fixed contacts and a metal contact blade movable in said housing between said fixed contacts to selectively engage the latter; the combination of an impact-controlling leaf spring having a curved section and a straight section extending chordally in relation to said curved section to define first and second termini of said leaf spring at free ends of said curved section and said straight section, respectively, one of said termini of the leaf spring being articulately connected to said movable contact blade, and actuating means including a lever arm pivotally mounted in said housing and articulately connected to the other of said termini of the leaf spring to move said contact blade through said leaf spring in response to rocking of said lever arm and a press button mounted in said housing and operable from the exterior of the latter to rock said lever arm.

3,310,645

SOLDER POT SWITCH CONTROL

Walter Landow, East Cleveland, Ohio, assignor, by mesne assignments, to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Oct. 7, 1965, Ser. No. 493,738
3 Claims. (Cl. 200—124)

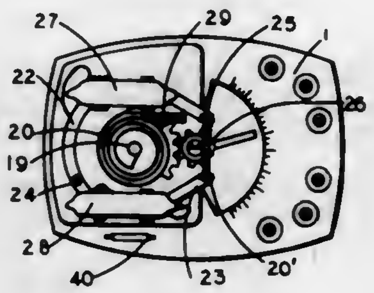


1. In a control assembly,
a control element,
a housing having a pair of spaced parallel walls defining a chamber open at opposite ends, each of said walls including an inwardly projecting locking protrusion on the inner wall surface, and
a generally U-shaped support clip disposed in the chamber and having resilient side arms normally spaced outwardly in accordance with the spacing of the walls and resiliently engaging the parallel walls, said side arms having opening means complementing said locking protrusions and interengaging said protrusions to releasably lock the support clip within the housing, said side arms having the outer free ends terminating adjacent an open end of the chamber for access thereto and having means intermediate the length of one of said side arms extending inwardly for supporting the control element.

3,310,646

THERMAL SWITCH DEVICE WITH ADJUSTING BOLT MEANS FOR THE ARMS OF THE U-SHAPED HINGE ASSEMBLY

Ray C. Edwards, 396 Ski Trail,
Smoke Rise, N.J. 07405
Filed Nov. 13, 1964, Ser. No. 410,997
4 Claims. (Cl. 200—138)

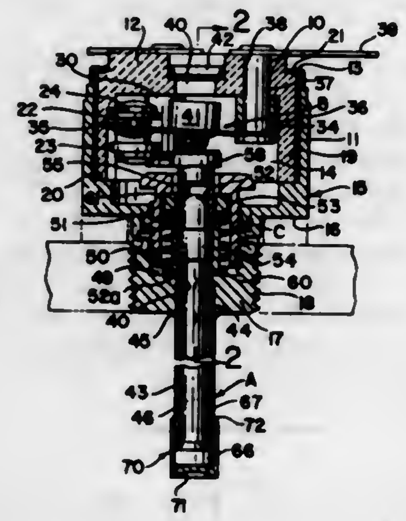


1. In a dual thermostat, a substantially U-shaped hinge assembly comprising a pair of pivotally connected arms, a heating control electrical circuit opening and closing switch carried by one of said arms and operated by movement of the arm, a cooling control electrical circuit opening and closing switch carried by the other arm of said U-shaped hinge assembly and operated by movement of the arm, means operated by variations in the ambient temperature to move said hinge assembly to move said switches into and out of electrical circuit opening or closing positions, an adjusting screw and nut assembly interconnecting the two arms of said U-shaped hinge assembly and operating independently of the pivoted connection of the arms for changing the differential between the heating and cooling range of operation of the switches.

3,310,647

TEMPERATURE SENSING PROBE WITH MEANS FOR MAINTAINING THE TUBULAR ELEMENT IN ENGAGEMENT WITH A CERAMIC ROD MEMBER

Donald E. Place, Mansfield, Ohio, assignor to Therm-O-Disc, Incorporated, Mansfield, Ohio, a corporation of Ohio
Filed Mar. 22, 1965, Ser. No. 441,716
5 Claims. (Cl. 200—137)

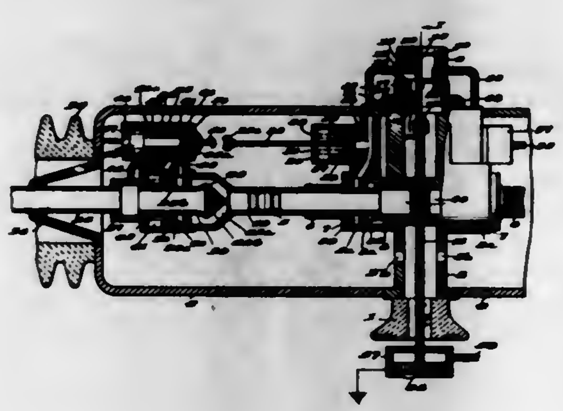


1. A temperature sensing probe comprising a metallic tubular member having a relatively high coefficient of thermal expansion, a one piece ceramic rod member having an end portion with a diameter greater than the internal diameter of said tubular member mounted within said tubular member, means for securing the said end portion of the said rod member in engagement with the end surface of the tubular member comprising a cylindrical cap member enclosing the said end portion of greater diameter of the rod member and the end of said tubular member, said cap member secured to the exterior wall of the tubular member at a point spaced from the end thereof.

3,310,648

GAS BLAST CIRCUIT BREAKER WITH NOZZLE FORMED CONTACTS AND CONTROL FOR ASSOCIATED GAS OUTLET VALVES

Paul Baltensperger, Wurenlos, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed Aug. 13, 1964, Ser. No. 389,345
Claims priority, application Switzerland, Sept. 20, 1963, 11,609/63
7 Claims. (Cl. 200—148)



1. In an electrical circuit breaker of the gas blast type, the combination comprising a casing forming therein an interruption chamber which is gas-pressurized and at a high potential, a pair of nozzle type contact members located in said interruption chamber, a normally closed outlet valve individual to and which serves when opened to place the interior of each said nozzle contact member in communication with the open air exteriorly of said casing, first actuating means at earth potential for actuating one of said contact members to effect its disengagement from the other contact member and to simultaneously open said outlet valve correlated to said actuated contact member, and said second actuating means for operating the other outlet valve correlated to said other contact member to its open position upon disengagement of said contact members, said second actuating means including a driving member of insulating material and a member driven thereby whose movement controls opening and closing of said other outlet valve, said driving and driven members being located in said interruption chamber and being normally maintained in spaced relation to thereby establish a gas-pressurized insulating gap therebetween, and means controlling movement of said driving member by operation of said first actuating means to effect a brief driving engagement as between said driving and driven members thereby to effect a brief opening of said other outlet valve.

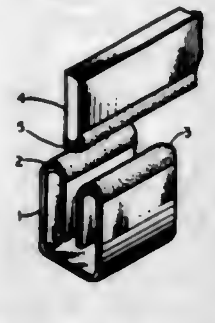
3,310,649

ELECTRICAL SWITCH WITH ELECTROSTATIC PREVENTION OF ARC FORMATION

Henry Greber, 225 W. 80th St., Apt. 8–D,
New York, N.Y. 10024
Filed Oct. 21, 1964, Ser. No. 405,370
2 Claims. (Cl. 200—166)

1. An electrical switching means, comprising stationary and movable contacts, with said contacts covered, on their sides nearest each other in their disconnected posi-

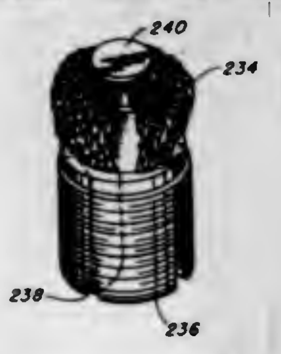
tion, with a deposit of insulating material containing electrets, which forms an electrostatic field surrounding



them, thus preventing the formation of an arc between said stationary and movable contacts.

3,310,650
ELECTRICAL CONTACT INCLUDING RESILIENTLY INTERLOCKED WIRE MESH MEMBER

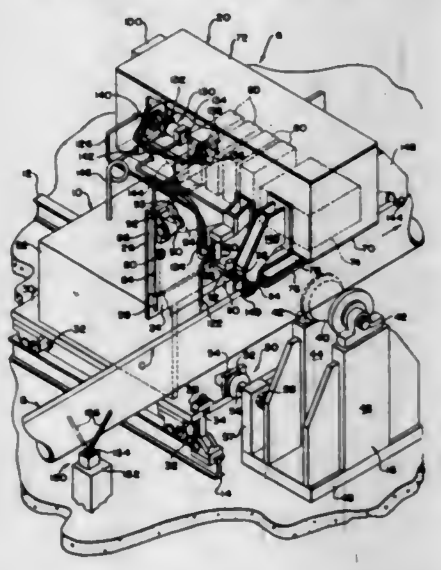
Edward R. Fairbanks, Silver Spring, and Donald E. Reed, Kensington, Md., and John L. Toth, Falls Church, Va., assignors to Space Components Inc., Washington, D.C., a corporation of the District of Columbia
Filed Aug. 2, 1965, Ser. No. 476,336
8 Claims. (Cl. 200—166)



1. An electrical contact including; a solid metallic supporting member, and a resiliently interlocked wire mesh member secured to and extending away from said supporting member.

3,310,651
INDUCTION HEATING APPARATUS FOR A LONGITUDINALLY MOVING WORKPIECE

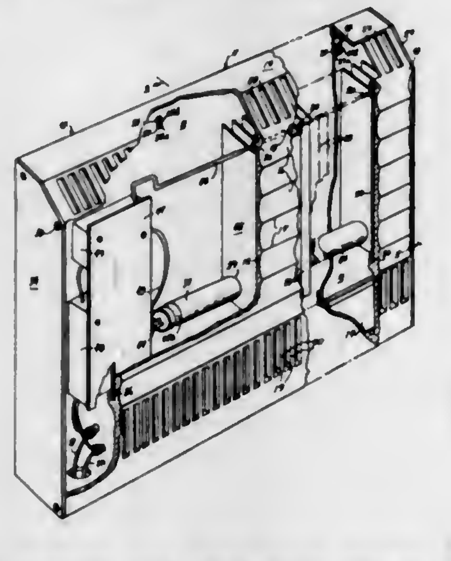
Albert E. Hala, Cleveland, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed May 11, 1964, Ser. No. 366,526
6 Claims. (Cl. 219—8.5)



2. An apparatus for heating the longitudinal seam of a welded pipe moving along a generally longitudinal path, said apparatus comprising a frame member pivoted on an axis spaced from and generally parallel to said longitudinal path, an inductor extending from said frame member toward said pipe and above said seam, a power supply for energizing said inductor to heat said pipe adjacent said seam, means for maintaining a preselected spacing between said inductor and said pipe, said means including a roller mounted on said frame and adapted to contact said pipe in the vicinity of said seam.

3,310,652
HEATING APPARATUS

Herald J. Williams, Jr., Edina, Minn., assignor to Federal Hydronics, Inc., Midland Park, N.J., a corporation of Minnesota
Filed Mar. 6, 1964, Ser. No. 349,917
5 Claims. (Cl. 219—365)

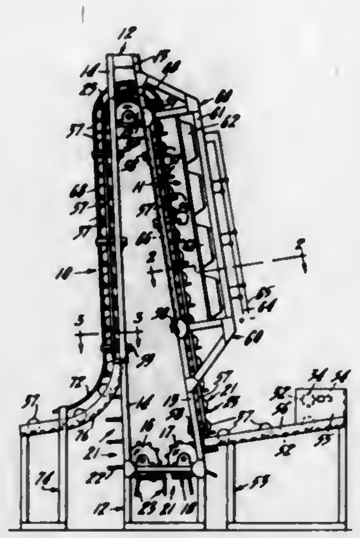


1. A space heating unit applicable against a building wall,
- comprising an elongate housing to be mounted substantially horizontally along the building wall, said housing having an open interior and air inlet and outlet ports permitting convection currents to pass therethrough, said housing having an upright front wall to face the space to be heated and to radiate heat therefrom, a plurality of upright fins within the housing and lying transversely of said front wall and in confronting and spaced relation with each other, said fins having upper and lower portions and also having upright front portions in heat conducting engagement with said front wall,
- heating means applying heat to the lower portions of said fins,
- said fins having aligned apertures in the upper portions thereof,
- a temperature sensing probe extending through the aligned apertures in said fins and engaging said fins in heat conducting relation, and said probe being exposed to the air between said fins,
- and means connected with said heating means and responding to a high limit temperature sensed by the probe to reduce the heat applied by said heating means, whereby to limit the temperature of said fins and front wall of the housing.

3,310,653
APPARATUS FOR TREATING FIBRE CONTAINER BODIES

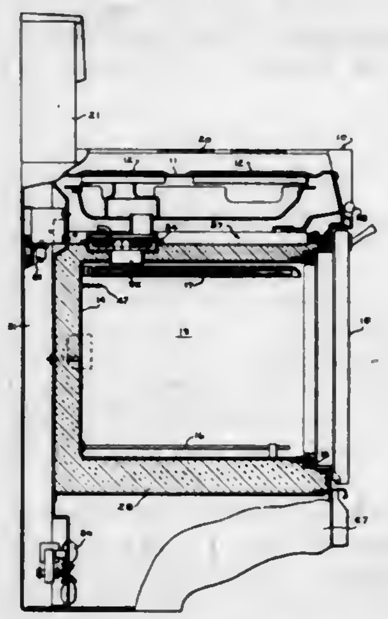
Donald Paul Crockett, Flossmoor, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 12, 1963, Ser. No. 322,655
3 Claims. (Cl. 219—388)

1. Apparatus for heating fibre container bodies having a plurality of plies which are joined together by a water-based adhesive to a temperature which is below the boiling point of water but sufficiently high to effect an even distribution of the water throughout the plies comprising; a conveyor, said conveyor including a pair of chains and rod-like members extending outwardly from said chains and spaced apart on each chain a distance considerably greater than the diameter of said bodies, means to drive said conveyor, radiant heating means disposed only along one side of and generally parallel to said conveyor, a reflecting surface positioned on the other side of said conveyor and generally parallel to said conveyor and said radiant heating means, said reflector surface having outwardly convex corrugations extending perpendicularly to the direction in which said conveyor is driven, and means to feed said bodies to said conveyor and place said bodies upon said rod-like members in a position parallel to said corrugations.



3,310,654
THERMOSTATIC CONTROL SYSTEM WITH ANTICIPATION

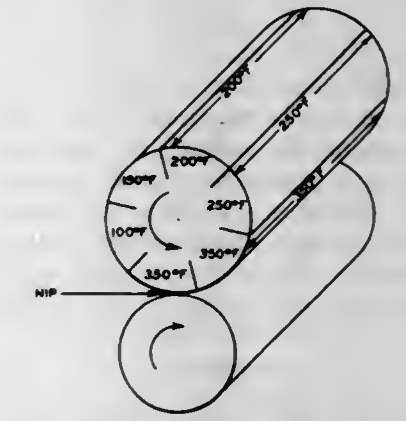
Henry J. Helt, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed May 25, 1964, Ser. No. 369,719
8 Claims. (Cl. 219—393)



1. An electrical thermostatic control system for controlling the temperature of a body having electrical resistance heating elements in a power circuit that is adapted to be connected to a relatively high voltage source for supplying a variable amount of heat to said body, and selector switch means for establishing various power circuits for the heating elements; the invention comprising a thermostatic control assembly that is adapted to be fed from a low voltage source for controlling the energization of the power circuit to obtain predetermined temperature levels of the body, said assembly including a temperature sensing means, a temperature responding means and an output relay means that has switch contacts that are connected in the power circuit, said sensing means being a variable resistor having a high temperature coefficient of resistance and adapted to be in heat transfer relationship with the body, said responding means including a self-interrupting thermal relay with a pair of electrical contacts connected in series with a winding of the output relay means, the said thermal relay having a first heater winding connected in series with the sensing means for modifying the output voltage in accordance with the sensed temperature of the body, the thermal relay means having a second heater winding connected across the low voltage source for compensating for supply voltage variations, a potentiometer connected in series with the said sensing resistor and the said first heater winding for setting the temperature level of the assembly, and an external resistor connected at one end between the sensing resistor and the potentiometer and as its other end to the output relay whereby when the thermal relay contacts are open the external resistor is connected in parallel with the sensing resistor and thus increases the current flow through the first heater winding thereby increasing the force tending to close the thermal relay contacts, while when the thermal relay contacts are closed the external resistor is connected in parallel across the said potentiometer and the first heater winding so that the voltage drop across the first heater winding decreases and the current through said winding decreases thereby increasing the force tending to open the thermal relay contacts, the said external resistor thus serving as a two-way acting anticipator to reduce the amplitude of temperature of the said body at a predetermined temperature level.

3,310,655
CALENDER ROLL HAVING CONTROLLABLY HEATED SURFACE

Nathaniel E. Hager, Jr., Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Feb. 23, 1966, Ser. No. 529,511
4 Claims. (Cl. 219—470)



1. A calender roll adapted for rapid heating and cooling of predetermined zones over the outer surfaces thereof during a single revolution of the roll comprising in combination
- (a) a metallic foil electrical resistance heater in serpentine shape adapted to supply heat uniformly to the area to be heated,
- (b) a heat sink coextensive in area with said heater having a thermal conductivity of at least about 300 B.t.u.-inch/hr.-ft.^{2}-° F. positioned in the interior of the roll,

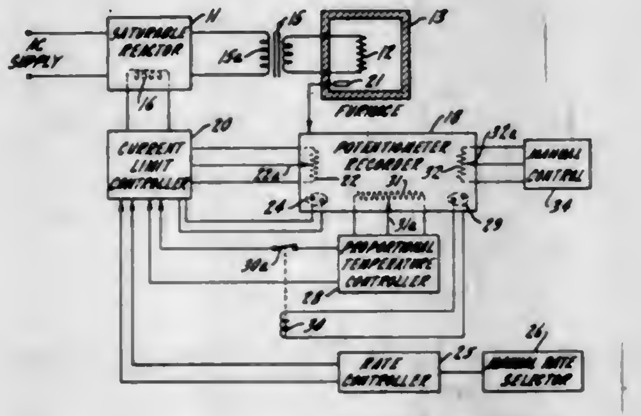
(c) 0.0001–0.05 inch of thickness of thermal insulation coextensive in area with said heater and said heat sink having a maximum thermal conductivity of about 2 B.t.u.-inch/hr.-ft.^{2}-° F. positioned between and in contact with said heater and said heat sink,

(d) a thin outer facing material having the curved configuration of said calender roll surrounding and electrically insulated from said serpentine foil heater, and

(e) commutator means for sequentially passing electrical current through different portions of said serpentine heater to cause limited zones only of the surface of the calender roll to be heated along the axial length of the calender roll surface in response to rotation of said calender roll, whereby different temperature zones are established on the surface of the calender roll.

3,310,656
CONDITION CONTROLLING APPARATUS, PARTICULARLY FOR CONTROLLING TEMPERATURES

Hugh R. Sproul, Rockton, Ill., assignor to Ipsen Industries, Inc., Rockford, Ill., a corporation of Illinois
Filed July 12, 1963, Ser. No. 294,504
22 Claims. (Cl. 219—503)

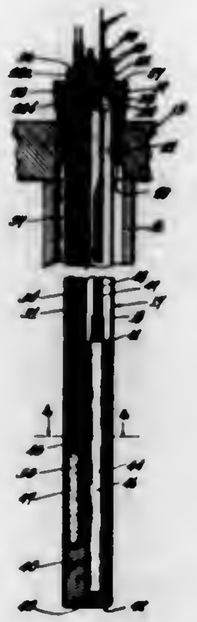


1. In a system for supplying energy from a source to an energy utilization device which changes a variable condition, the utilization device being characterized by a decrease in its energy-consuming ability as the value of said condition increases, the combination comprising, means for creating a signal which varies in accordance with the instantaneous value of said condition, control means interposed between said source and said utilization device for presenting a variable opposition to the transfer of energy from the former to the latter, and means responsive to said signal for causing the opposition presented by said control means to vary inversely with changes in the value of the controlled condition, so that the rate of energy transfer from the source to the device remains substantially constant as the values of the controlled condition and the energy-consuming ability of the utilization device change.

3,310,657
ELECTRIC IMMERSION HEATER ASSEMBLY

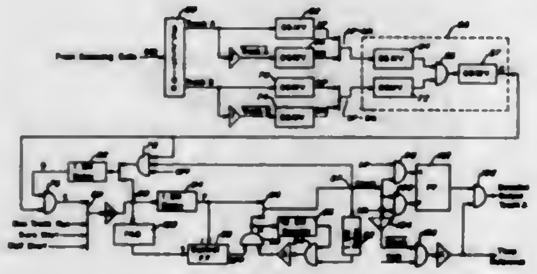
Ralph Santoro, Jr., Pittsburgh, Pa., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa.
Filed June 1, 1964, Ser. No. 371,307
3 Claims. (Cl. 219—523)

1. A heater assembly, comprising an elongated metal tube adapted to be inserted into a container to heat the contents thereof, an elongated metal slug within said tube, said slug having side-by-side longitudinally extending recesses, an electric heating element within one of said recesses and a temperature responsive device within the other recess, said element and device having terminals for the purpose of placing them in electric circuit with a source of electrical energy, said slug being coextensive with at least the active heating portion of the heating element and the active thermal responsive portion of said temperature responsive device, said slug having an outer surface in closely fitting engagement with the inner surface of said tube, and means on at least one of the inner surface of the tube and the outer surface of said slug for providing limited heat transfer engagement between the slug and tube in that area of the slug which is transversely aligned with transversely aligned active portions of said heating element and temperature responsive device to insure that heat transferred from said heating element through said slug to said tube is not materially in excess of the heat transferred from said heating element through said slug to said temperature device.



3,310,658
RELEVANT DATA READOUT APPARATUS

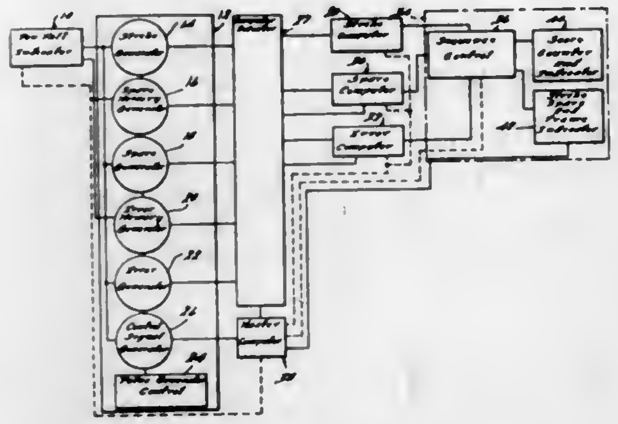
Damond V. Ryer, Cambridge, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed July 8, 1963, Ser. No. 293,351
30 Claims. (Cl. 235—61.11)



13. Apparatus for reading complementary pairs of input pulses representing binary digital information out of a storage medium with timing pulses generated directly from said input pulses in clock synchronism at binary digit intervals, comprising means responsive to transitions in said storage medium for deriving said input pulses, means for initiating said timing pulses in clock synchronism, means responsive to said timing pulses for providing output pulses delayed an integral number of bit intervals; means responsive to the joint occurrence of an input pulse with an output pulse to generate the next timing pulse; and means for detecting absence of any of said timing pulses and responsively substituting a prescribed number of clock pulses therefor.

3,310,659
BOWLING SCORE COMPUTER

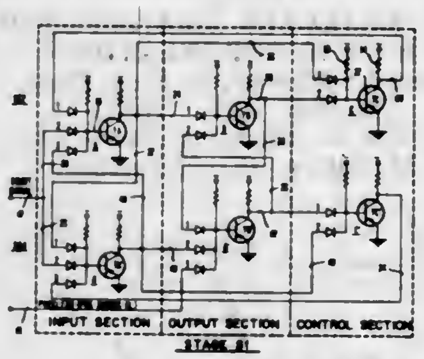
George Apostle and De Wayne P. Carlson, both of 257 W. Webster Ave., Muskegon, Mich. 49440, and Patrick J. Pollard, 732 Elmsford Drive, Clawson, Mich. 48017
Filed Nov. 17, 1961, Ser. No. 153,173
26 Claims. (Cl. 235—92)



23. A system for automatically tabulating bowling information comprising: pin-fall indicating means for providing a signal having a magnitude in accordance with the number of pins knocked down during the course of one frame and after each ball bowled in that frame, totalizing circuit means for providing a per frame indication of the bowling score and for recording and retaining said indication for each frame responsively to an output signal whereby the score accumulated in each frame will be preserved and can be obtained and means responsive to said signal from said pin-fall indicating means for providing said output signal to said totalizing circuit means after each ball bowled.

3,310,660
ASYNCHRONOUS COUNTING DEVICES

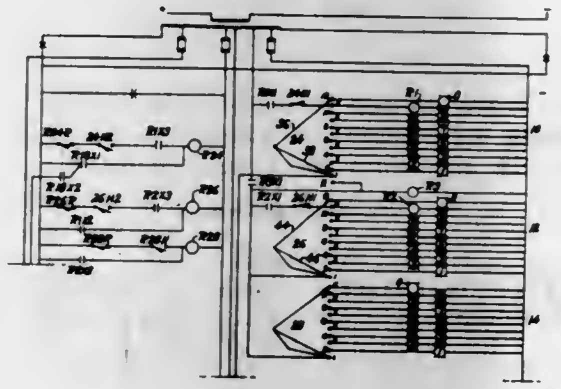
George R. Cogar, Doylestown, Pa., assignor to Sperry Rand Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 23, 1963, Ser. No. 275,000
9 Claims. (Cl. 235—92)



1. An asynchronous counting device capable of counting according to a modulo three number system comprising: a first, a second and a third substage, each substage arranged to register a distinct one of the numbers of said modulo three number system, each of said first, second and third substages further comprising an input section adapted to receive count pulses, an output section for providing an output signal in accordance with the count pulses received by said input section and a control section; three first means, each connecting the control section of a single substage to the input section of the same substage, to permit said control stage to control the receipt of count pulses by said input section, a plurality of second means, each connecting the input and output sections of a single substage to the control section of the same substage to actuate said control section in response to the condition of said input and output sections at the termination of a count pulse; three third means, each interconnecting the input section of a single substage to the output section of the same substage; and a plurality of fourth means interconnecting said input and output sections of all three of said substages to permit the receipt of said counting pulses by said substages in a predetermined sequence.

3,310,661
COUNTING DEVICES

Roland E. Bonnette, Hamilton, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed May 16, 1963, Ser. No. 280,790
2 Claims. (Cl. 235—92)



1. In combination, a work handling transporter, racks for supporting work pieces, a detecting means for identifying the rack as it passes a given point along the transporter, and a counting device for recording and displaying the number of racks passing the detecting means, said counting device comprising a pair of stepping switches used alternatively for a given time period, each switch energized during its time period by the detecting means, a display means electrically connected to each of the switches and thus displaying on a read out unit the number of racks passing and sensed by the detecting unit, means directing the detected count to the first stepping switch during a first counting period and to the second stepping switch at the expiration of the first counting period, the first stepping switch retaining the count accumulated thereon, displaying the count for a predetermined time on the read out unit and then returning to a home position and means for returning the count to the first stepping switch and displaying the accumulated count on the second stepping switch at the end of the second counting period.

3,310,662
METHOD AND APPARATUS FOR RECORDING TRAFFIC AND/OR DRIVER BEHAVIOR

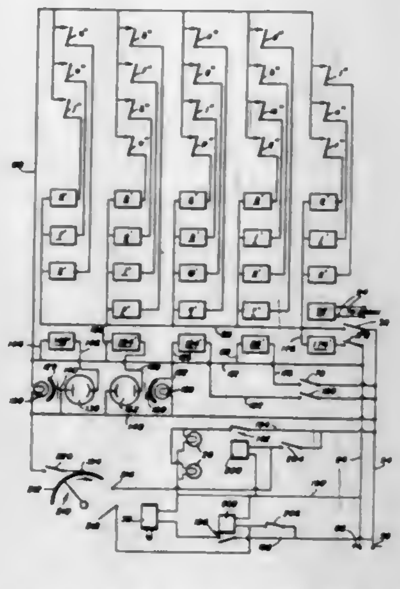
Bruce D. Greenshields, 1025 Arbordale, Ann Arbor, Mich. 48103
Continuation of application Ser. No. 153,346, Nov. 20, 1961. This application May 5, 1964, Ser. No. 365,863
14 Claims. (Cl. 235—92)

1. A method of recording, simultaneously, driver actions, vehicle motions and the environmental traffic and highway events comprising the steps of:

traveling a route along which information relative to traffic behavior is desired;

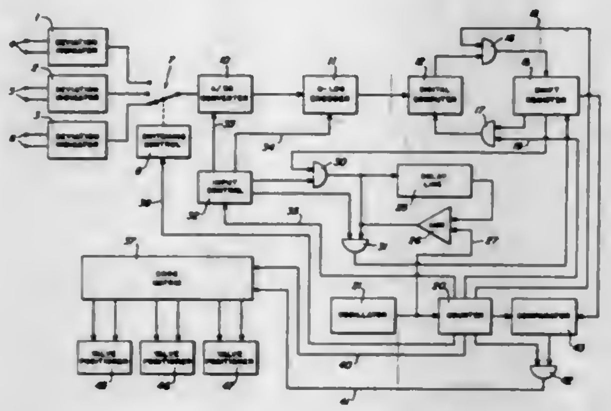
registering the accumulative total of unit changes in direction and speed of travel;

registering the respective accumulative totals of direction and speed control reversals;
registering the accumulative total of time units of travel progress;



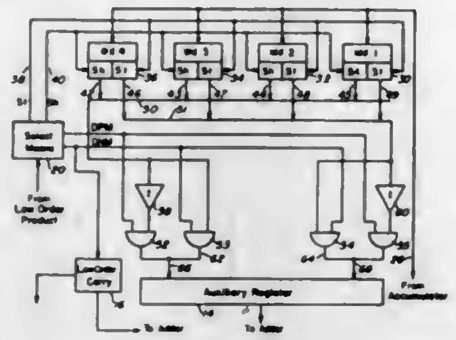
timing the duration of travel over the route;
measuring the distance of travel; and
periodically recording said registered totals.

3,310,663
LOGARITHMIC DIGITAL PROCESS CONTROLLER
Geert H. Bouman, Glenside, Pa., assignor to Honeywell Inc., a corporation of Delaware
Filed May 21, 1963, Ser. No. 282,078
3 Claims. (Cl. 235—151.1)



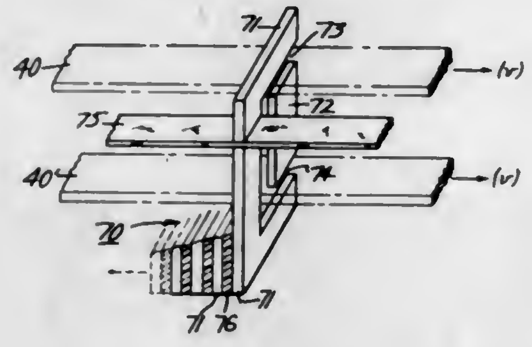
1. A process controller comprising a plurality of input signal means arranged to be connected to respective signal sources representative of monitored process variables, said input signal means including error means each operative to provide an indication of a deviation of a corresponding variable from a setpoint, switching means operative to sequentially select said indication from each of said error means, analog to digital converting means operative to convert each selected indication to a digital signal, encoding means operative to encode each digital signal to a digital representation of an approximate logarithm thereof, digital computer means responsive to an output signal from said encoding means and operative to compute a control signal for each monitored variable and means for distributing said control signal for each variable to a process control operative to affect the corresponding monitored variable, said last mentioned means including a memory means operative to store said control signal for each variable, and readout means operative to sequentially affect each process control in response to a respective stored control signal to reduce said deviation.

3,310,664
SELECTIVE SIGNALING APPARATUS FOR INFORMATION HANDLING DEVICE
Robert E. Broadbridge, Needham, Mass., assignor to Honeywell Inc., a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,970
9 Claims. (Cl. 235—159)



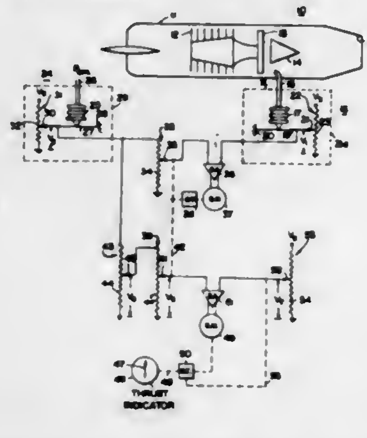
1. An electronic calculator comprising: a memory, means for temporarily storing a first multiple digit operand multiples generating and storing means for generating selective multiples of said multi-digit operand and for storing said selective multiples in said memory, means for temporarily storing a second multi-digit operand, means for successively processing the digits of said second multi-digit operand, each of said digits of said second multi-digit operand including a plurality of information bits, selection means for selecting a specific one of said previously generated and stored selective multiples, said selection means further comprising a plurality of logic gates, means connecting adjacent ones of said plurality of information bit positions of said second multi-digit operand to particular ones of said logic gates, means indicating the generation of particular ones of said selective multiples in a previous operating cycle, means for combining the output of said last named means with a signal representing a particular one of said plurality of information bit positions of said second multi-digit operand as inputs to one of said logic gates, and additional logic means connected to said multiples generating and storing means and actuated by an output from one of said logic gates to effect the transfer of a signal representation of a selected one of said previously generated and stored selective multiples in any one of a plurality of digital representations.

3,310,665
MAGNETIC DETECTOR MEANS FOR PLURAL SIGNAL CORRELATOR
Howard Schimmel, 64 Seely Place, Scarsdale, N.Y. 10583
Filed Oct. 22, 1965, Ser. No. 505,604
22 Claims. (Cl. 235—181)



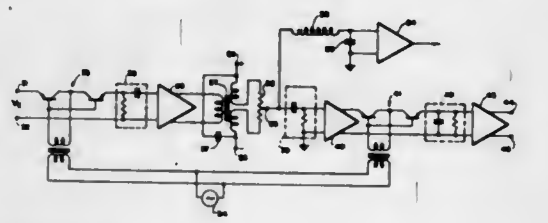
1. In a system for correlating a plurality of signals received over an interval of time, with means for recording the signals on individual magnetic recording tracks: magnetic detector means comprising a body of magnetic material with a section for each of said tracks for producing magnetic flux variations in said body in proportion to magnetic recordings on the tracks as moved past the respective sections, and a magneto-sensitive member positioned in a gap portion of said body and responsive to the absolute magnitude of the net of the flux variations therethrough resultant from passage of said recorded tracks, said member producing an output signal that corresponds to the instantaneous integral of the product of the received signals.

3,310,666
APPARATUS FOR CALCULATING THE THRUST OF A JET ENGINE
Norval P. Millar, Danvers, and Malcolm E. Douglass, Wenham, Mass., assignors to General Electric Company, a corporation of New York
Filed Oct. 16, 1961, Ser. No. 145,219
4 Claims. (Cl. 235—193)



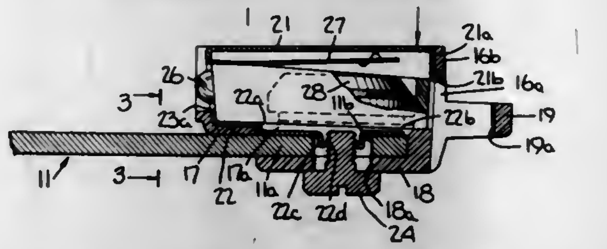
1. A thrustmeter for indicating the gross thrust of a jet engine having primary and secondary nozzles comprising a first pressure transducer responsive to both primary nozzle total pressure and secondary nozzle total pressure and producing a weighted average nozzle pressure signal variable in accordance with the weighted average of said primary and secondary total nozzle pressures, a second pressure transducer responsive to ambient pressure and producing an ambient pressure signal variable in accordance with said ambient pressure, means combining said weighted average nozzle pressure and said ambient pressure signals to produce a pressure ratio signal variable in accordance with a function of the ratio of said weighted average nozzle pressure and ambient pressure signals, means multiplying said pressure ratio and ambient pressure signals to produce a resultant signal indicative of gross thrust, and indicating means responsive to said resultant signal for indicating gross thrust of said jet engine.

3,310,667
RECORDER MULTIPLIER
Franklin F. Offner, Deerfield, Ill., assignor to Beckman Instruments, Inc., a corporation of California
Filed June 25, 1963, Ser. No. 290,365
15 Claims. (Cl. 235—194)



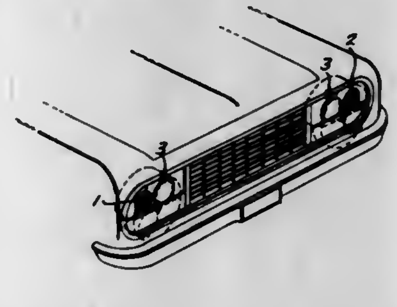
1. In combination:
a servo recorder having a linear transducer and a recording element movable as a linear function of a first input signal;
sensing means comprising said linear transducer connected to said movable element for sensing the position of said element;
means for modulating a high frequency signal as a function of a second input signal;
means for applying said modulated high frequency signal to said transducer; and
means connected to said transducer for transmitting said high frequency signal in direct linear proportion to the position of said movable element.

3,310,668
MINIATURE FLASHLIGHT WITH KEY ATTACHMENT
Sidney Schwartz, New York, N.Y., assignor to Bantam-Lite, Inc., New York, N.Y., a corporation of New York
Filed Oct. 20, 1964, Ser. No. 405,119
5 Claims. (Cl. 240—6.4)



1. A miniature flashlight of the character described comprising a casing formed with an interior chamber and having an open top wall, a partially open opposite bottom wall and a front wall having an aperture communicating with said chamber and being located beneath said open top wall, a tab having an opening therein, said tab being attached to the casing adjacent the rear thereof to extend in spaced parallel relation to the bottom wall overlying said bottom wall partial opening, said bottom wall and tab forming a slot to receive a handle of a key therein with a key handle opening in registered alignment with said tab opening, a battery, electric light bulb and switch for closing a circuit from the battery to the bulb disposed in said interior chamber, the bulb being aligned with said front wall aperture to project a light beam along the length of a key positioned in said slot, said switch being located for finger pressure actuation through said open top wall, a spring closure for said top wall opening adapted to be inwardly deflected for engaging and closing said switch, a plate located within said interior chamber extending across said bottom wall partial opening and being formed with a female threaded portion aligning with said tab and key handle openings, and a removable screw extending through said tab and key handle openings and engaging said female threaded portion to secure said key handle in said slot.

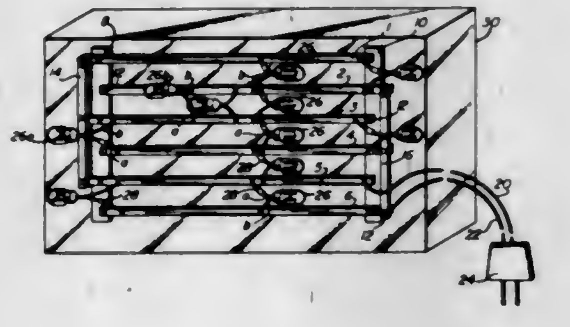
3,310,669
HEADLIGHT SYSTEM FOR AUTOMOBILES
Curtis C. Dils, Rte. 6, Box 331F, Olympia, Wash. 98501
Filed Oct. 29, 1964, Ser. No. 407,389
4 Claims. (Cl. 240—7.1)



1. An automotive lighting system for reducing headlight glare in the eyes of oncoming drivers comprising the combination of
a motor vehicle,

two light sources mounted adjacent each other on one side of the front of said motor vehicle,
obturator means for each light source, and
means moving said obturator means in front of each light source to cut off light rays successively first from one source and then the other,
whereby light rays are being emitted from one source when the other is cut off, and vice versa to prevent the presence of a single continuous light source producing an uninterrupted glare.

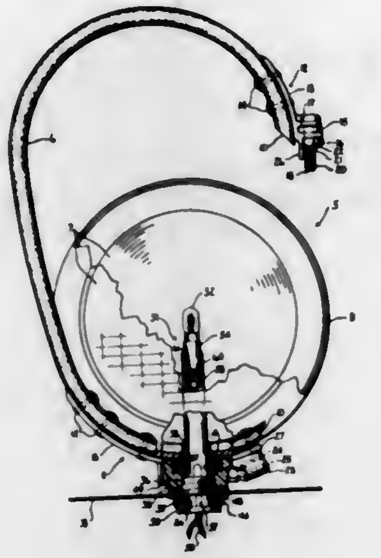
3,310,670
SEALED ILLUMINATOR
Ronald W. Sheppard, Box 363, Lake Mohawk, Sparta, N.J. 07871
Filed Mar. 26, 1962, Ser. No. 182,570
5 Claims. (Cl. 240—11.2)



5. An illuminator comprising a supporting housing having a translucent face portion, an assembly of lamps and two groups including electrical conductors carried by said housing, each of said groups having a common elongated terminal to which a portion of each conductor of such group is electrically connected, said elongated terminals of the respective groups of conductors being spaced apart in one direction, the conductors of each group being substantially equispaced from each other and from adjacent conductors of the other group in a direction substantially normal to the spacing direction between said elongated terminals, all of said conductors being arranged with their longitudinal axes substantially parallel to each other and in substantially the same plane, and each lamp being electrically connected between a conductor of one group and an adjacent conductor of the other group and being mounted in a position relative to other elements of said assembly to transmit light unobstructed laterally in at least one direction through said translucent face portion of said housing.

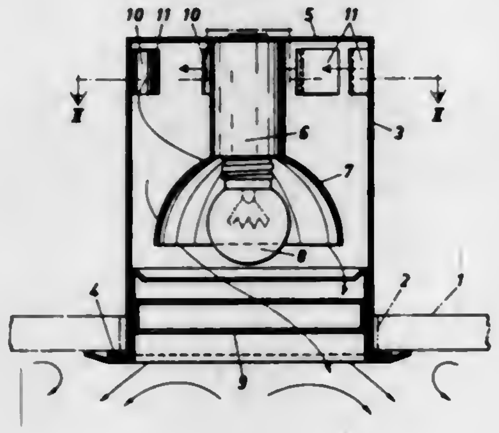
3,310,671
LIGHT FIXTURE FOR FLASHER UNITS
Ewing D. Nunn, Mequon, Wis., assignor to Flo-Tronics, Inc., doing business as Northern Signal Co., Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 4, 1965, Ser. No. 437,171
8 Claims. (Cl. 240—11.2)

1. A light fixture adapted for mounting on one side of a supporting wall, and of the type comprising a pair of coaxial spaced apart discs, and a cylindrical rim encircling the discs and coacting therewith to provide a drum-shaped enclosure for a light source, at least one of said discs being a lens through which light can pass, said fixture being characterized by the following:
(A) that said rim comprises an annulus of tough weather-proof elastic material, having a radial hole therethrough;
(B) a plastic mounting shoe shaped to conform to the exterior of the rim and secured thereto over said hole;
(C) a boss integral with said shoe and projecting from the exterior thereof, said boss having a bore therethrough coaxial with said hole, and having a noncircular counterbore opening toward the rim;
(D) and a bushing received in said bore, said bushing having a head nonrotatably received in said counterbore and contiguous to the exterior of the rim, and



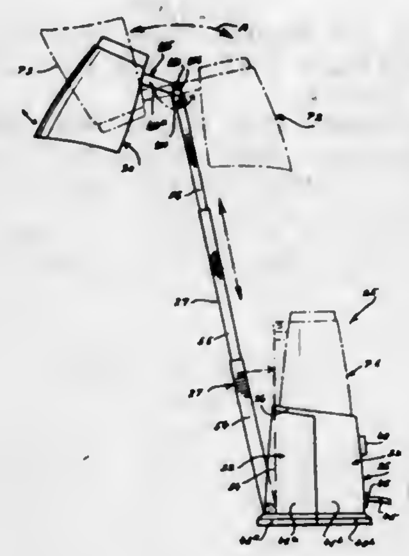
said bushing having an externally threaded end portion extending beyond the outer end of said boss so as to project through a hole in a supporting wall upon which the fixture is mounted for the reception of a nut by which the head of the bushing can be drawn down against the bottom of the counterbore to clamp the boss between said wall and the head of the bushing.

3,310,672
COMBINED LIGHTING FIXTURE AND FRESH AIR INTAKE
Claes Göran Birger Bursell, 10 Violgatan, Goteborg, Sweden
Filed Sept. 28, 1964, Ser. No. 399,642
Claims priority, application Sweden, Oct. 19, 1963, 11,513/63
3 Claims. (Cl. 240—78)



1. A combined electric lighting fixture, and fresh air intake for installation through an opening in a ceiling above which air under pressure is supplied comprising a casing capable of being positioned through said ceiling opening and having an open end for facing below the ceiling, said casing having air intake slots spaced equidistantly along the circumference of said casing, air deflectors carried by said casing on the interior thereof for setting the air entering said slots into a whirling motion and an electric lighting means connected to said casing and positioned inside the same.

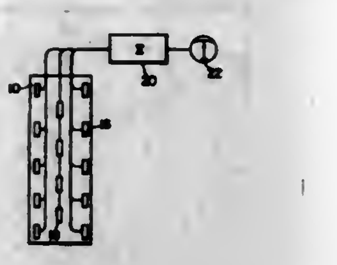
3,310,673
COLLAPSIBLE LAMP
Milton Fletcher, Congers, N.Y. 10920
Filed Nov. 12, 1964, Ser. No. 410,387
8 Claims. (Cl. 240—81)



1. A portable collapsible lamp, comprising a closed, box-like base having a closed top, an arm assembly including a plurality of telescoped square tubular sections, pivot means at one end of the base pivotally engaging a lowermost one of said sections, a swivel fitting at the upper end of an uppermost one of said sections, coupling means engaged by said swivel fitting for rotating on the axis of the arm assembly, a lamp head pivotally attached to said coupling means and turnable on a horizontal axis thereon, a plurality of tubes coaxial with said tubular sections and telescopically engaged, a rod extending from one of said tubes and fixed in the uppermost one of said sections, means insulating the tubes from the tubular sections, power supply wires in said base, one of said wires being connected to the lowermost one of the tubular sections, another one of said wires being connected to the tubes, said lamp head including an outer tapered lamp shade, a tubular reflector in said shade, a socket for supporting a lamp bulb supported in said shade and supporting said reflector, and other wires connecting the rod and uppermost tubular section to said socket for applying electric current to said lamp bulb.

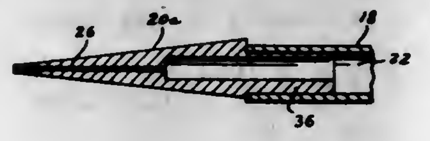
3,310,674
LOCAL AND AVERAGE FLUID DENSITY MEASURING SYSTEM
Donald C. Brunton, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Oct. 20, 1961, Ser. No. 146,643
3 Claims. (Cl. 250—43.5)

1. In a tank containing a cryogenic fluid subject to density variations from one location to another within the volume thereof, a plurality of density probes immersed in said fluid with one probe at each of said locations, each probe comprising a source of beta radiation, a solid-state radiation detector, and means for mounting said detector within the volume of said fluid and substantially surrounded thereby, said mounting means including means for maintaining a spacing between said detector and said source which is within the penetration range in said fluid of beta radiation from said source whereby said detector is adapted to provide an output signal indicative of the local density of said fluid at a respective location, summing circuit means for combining said output signals from said plurality of detectors to produce an aggregate signal



indicative of the average value of said local density indications and means utilizing said aggregate signal for indicating the average density of said fluid in said tank.

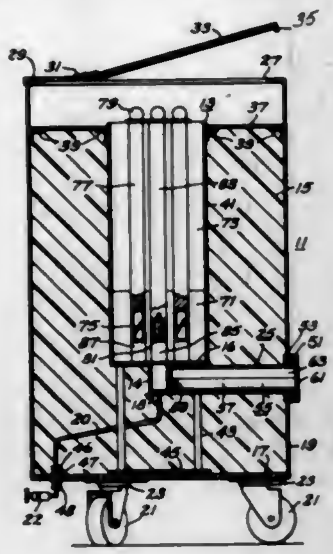
3,310,675
ADJUSTABLE OFFSET COLLIMATOR FOR USE ON X-RAY POWDER CAMERAS
Robert L. Prickett, 2855 Durnbaugh Road, Dayton, Ohio 45432, and Khodabakhsh S. Mazdiyasni, Dayton, Ohio (2218 Upper-Bellbrook Road, Xenia, Ohio 45385)
Filed July 7, 1964, Ser. No. 380,959
3 Claims. (Cl. 250—105)



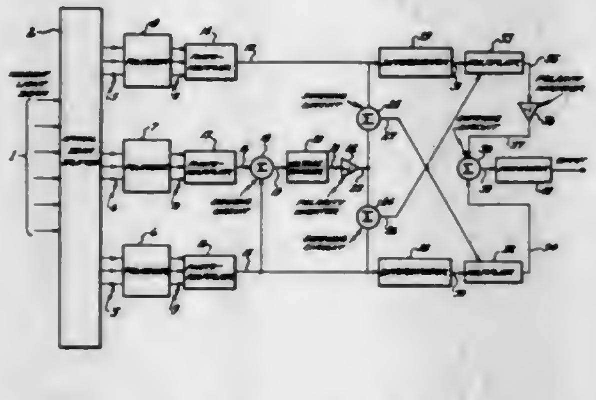
1. An offset collimator for use on X-ray powder cameras and comprising: a collimator barrel having an elongated tube containing a major diameter bore open at one end and closed at the other end, the closed end having a bore of minor diameter therethrough and coaxial with the major diameter bore; and a collimator tip extending from and movably joined to the open end of said collimator barrel and containing an axial bore parallel to and of a diameter smaller than the bore of minor diameter in said collimator barrel and laterally adjustable in relation to the bore of minor diameter in said collimator barrel to be in a displacement range of completely within to partially without the bore of minor diameter in said collimator barrel.

3,310,676
NEUTRON IRRADIATING APPARATUS HAVING A PLURALITY OF AXIAL SHIELDED PASSAGES FOR INTERCHANGING SOURCES AND TARGET MATERIALS
Servin A. Haram, Jr., Monroeville, Pa., assignor to Nuclear Material and Equipment Corporation, Apollo, Pa., a corporation of Pennsylvania
Filed Aug. 20, 1963, Ser. No. 303,241
1 Claim. (Cl. 250—108)

Apparatus for the study and investigation of neutron phenomena including a generally cylindrical shell of material for reducing the energy of neutron flux, a generally cylindrical core of neutron-moderating material removably disposed in said shell, said core having a plurality of axial passages, said passages being separated from each other by said neutron-moderating material, and means for removably disposing in said passages neutron sources and material to be acted upon by the neutrons from said source, the said spaces in which the said sources and the said last-named material respectively are inserted being selectably interchangeable, and the thickness of said shell being such as to absorb substantially the neutrons from said sources to preclude injury to personnel using said apparatus.

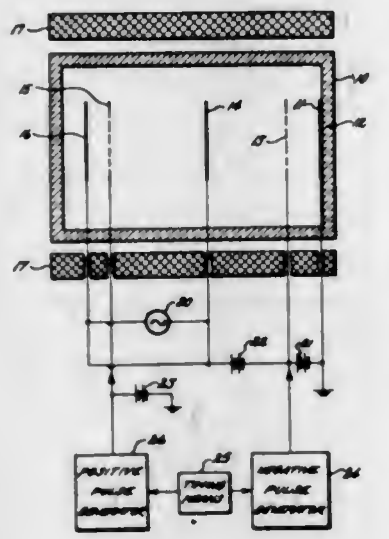


3,310,677
OPTICAL POLARIZATION DEMODULATOR SYSTEM
John N. Pierce, Lexington, Mass., and David W. Lipke, West Hyattsville, Md., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 4, 1964, Ser. No. 387,532
3 Claims. (Cl. 250—199)



1. A system for demodulating light modulated by variation of the plane of polarization thereof comprising means to split said modulated light into three light beams, a first polarizer passing one of said three light beams, said first polarizer having an axis of maximum transmission at a preselected angle θ with respect to the horizontal, a second polarizer passing the second of said three light beams, said second polarizer being at an angle θ plus 90° with respect to said horizontal, a third polarizer passing the third of said light beams, said third polarizer having an axis of maximum transmission at a preselected angle ϕ with respect to said horizontal, first, second and third photomultipliers converting said first, second and third light beams passed by said first, second and third polarizers to first, second and third representative electrical signals, respectively, first means to sum said first and second electrical signals to provide a first summed signal, means to divide said first summed signal, means to invert the polarity of said divided signal, second means to sum said first electrical signal and said inverted signal to provide a second summed signal, third means to sum said third electrical signal and said inverted signal to provide a third summed signal, first and second means to differentiate said first and third electrical signals, respectively, a first multiplier receiving said first differentiated signal and said third summed signal to provide a first product signal, a second multiplier receiving said second differentiated signal and said second summed signal to provide a second product signal, means to invert the polarity of said second product signal, fourth means to sum said first product signal and said inverted second product signal to provide a fourth summed signal and means to integrate said fourth summed signal to provide a demodulated output signal.

3,310,678
METHOD OF PRODUCING ELECTRON MULTIPLICATION UTILIZING AN AMPLIFICATION CYCLE
John C. Kylander, Fort Wayne, Ind., and William J. Soule, Brookline, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed June 5, 1964, Ser. No. 373,141
1 Claim. (Cl. 250—207)



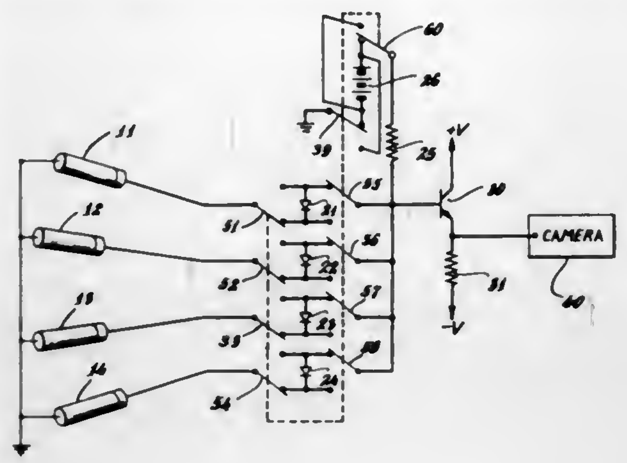
A method for amplifying electron current resulting from light incident upon a photoemissive surface comprising channeling the current provided by light incident upon a photoemissive surface to a first secondary emitter to provide secondary emission therefrom, directing said secondary emission from said first emitter upon a second secondary emitter to further provide secondary emission therefrom, re-directing said secondary emission from said second emitter back to said first emitter, alternating said directing and re-directing for a preselected period of time in accordance with the requisite amplification of current, thus providing an amplification cycle and switching said current from said photoemissive surface off and on at predetermined times so that no current is emitted from said photoemissive surface during said amplification cycle.

3,310,679
MAXIMUM OR MINIMUM BRIGHTNESS RESPONSIVE EXPOSURE CONTROL CIRCUIT
Richard C. Babish, Wilton, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Mar. 27, 1964, Ser. No. 355,399
4 Claims. (Cl. 250—209)

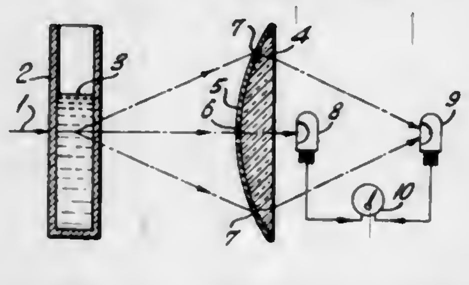
1. Apparatus for use with an electrically operated camera exposure control mechanism comprising:

- a plurality of photocells for individually viewing different portions of a viewing area and developing electrical signals representative of the intensity of light at said different portions, and

- polarity sensitive means for automatically selecting that electrical signal representative of the portions of the viewing area having an extreme value of light intensity and means for reversing the polarity of said polarity sensitive means.



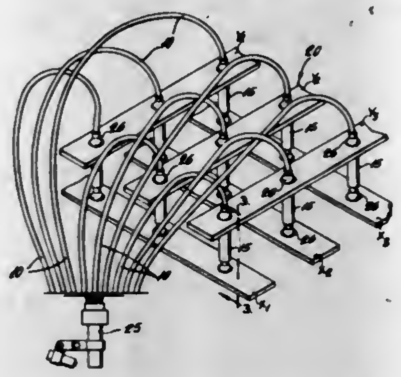
3,310,680
PHOTOSENSITIVE CONCENTRATION MEASURING APPARATUS FOR COLLOIDAL SOLUTIONS
Toshitsune Hasegawa, 12 Tsukiwaka-cho, Ashiya-shi, Hyogo-ken, Japan
Filed Mar. 6, 1964, Ser. No. 350,068
1 Claim. (Cl. 250—218)



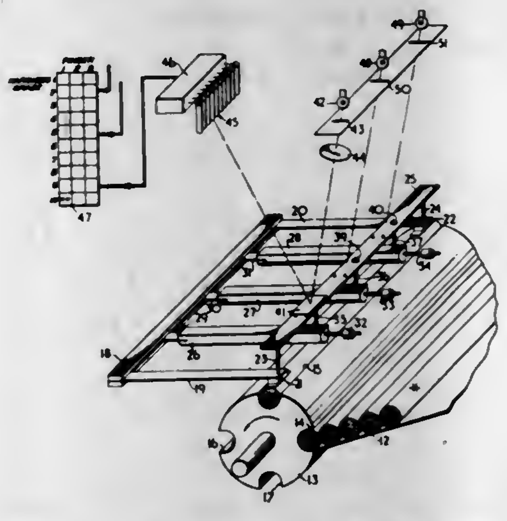
Colloidal solution concentration measuring apparatus comprising a light ray source for producing a thin ray beam, a transparent sample tank being provided in the traveling path of said beam and containing a colloidal solution, a ray shielding layer being provided to the rear of said sample tank and having a small hole in the traveling path of said beam and a slit concentrically surrounding said small hole, a focusing lens provided to the rear of said sample tank, a first light sensitive element provided to the rear of the small hole of said ray shielding layer, a second light sensitive element provided at a position at which said lens images said colloidal solution, and a ratio meter connected with said light sensitive elements and indicating the ratio of the output signals produced by said first and second light sensitive elements.

3,310,681
OPTICAL FILAMENTARY PHOTOCELL DEVICE HAVING SPACED ELECTRICAL CONDUCTORS ARRANGED IN A MATRIX
Charles W. Hargens III, Philadelphia, Pa., assignor to The Franklin Institute, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 10, 1963, Ser. No. 271,949
3 Claims. (Cl. 250—227)

1. An optical filament photocell device, comprising in combination, a plurality of optical filaments each of dimensions to produce internal total reflection to thereby conduct light along its length and collected together closely at one end to scan material, each of said filaments having an integral light responsive optical-electrical photocell adjacent its other end, said photocell including a photoconductive material applied to the filament so that it is energized by light within the filament and spaced electrical conductors along the filament conductively connected to said photoconductive material and providing electrode, and a matrix comprising a plurality of coordinate conductive elements in two groups, one of the electrical conductors of each said photocell being connected to one of the coordinate conductive elements of said matrix of one group and the other conductor of the same photocell being connected to one of the coordinate conductive elements of the other group.



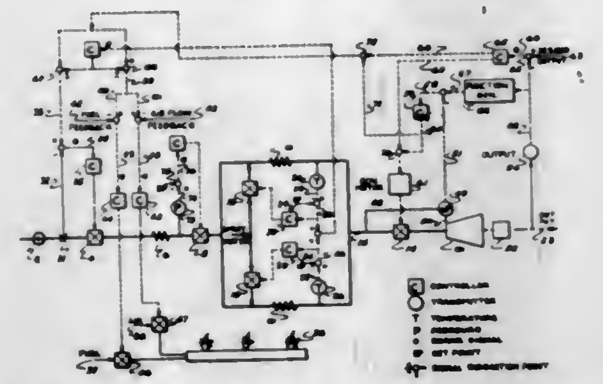
3,310,682
HARDNESS MEASURER USING TILTABLE MIRRORS
John Potts, Belfast, Northern Ireland, and William J. Henry, Elizabeth, South Australia, Australia, assignors to Short Brothers & Harland Limited and Gallaher Limited, both of Belfast, Northern Ireland
Filed May 20, 1963, Ser. No. 281,451
Claims priority, application Great Britain, May 21, 1962, 19,556/62
12 Claims. (Cl. 250—230)



1. Hardness testing apparatus including light projecting means for projecting a beam of light, a first deflectable member for resiliently engaging a first part of an article to be tested, a second deflectable member for resiliently engaging a second part of said article, means to apply a predetermined load to said second deflectable member to tend to compress said second part of said article, light reflecting surface means for reflecting said projected light beam, means interconnecting said light reflecting surface means and said first and second deflectable members to effect a pivotal movement of the light reflecting surface means in response to a differential change in the angular positions of said deflectable members as a result of compression of said second part of the article by the second deflectable member to cause a deflection in said light beam reflected from the light reflecting surface means, and light responsive means receiving said light beam reflected from said light reflecting surface means for providing a measurement of said deflection of the light beam.

3,310,683
STEAM GENERATOR AND TURBINE CONTROL SYSTEM

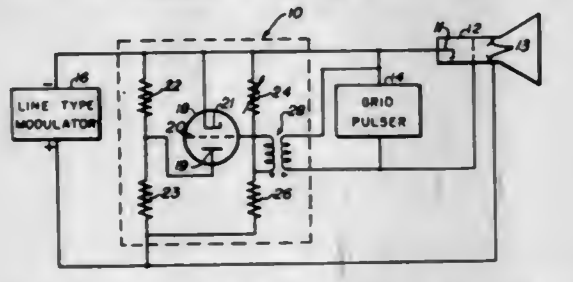
Richard D. Hottenstine, Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Sept. 3, 1964, Ser. No. 394,291
5 Claims. (Cl. 290—2)



1. A method of operating a vapor generator-turbo electric generator combination including a turbine throttle valve comprising regulating the turbine throttle valve to maintain a preselected pressure drop across said valve while regulating input to the vapor generator for electric generation; correcting transient electric generation error by overridingly regulating the turbine throttle valve and simultaneously correcting the vapor generator input; and subsequently adjusting the throttle valve to maintain a preselected pressure drop across said valve while regulating the vapor generator input for electric generation.

3,310,684
LOAD LEVELER FOR PULSE MODULATOR

Roger H. Miller, Mountain View, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 29, 1963, Ser. No. 276,670
3 Claims. (Cl. 307—39)



1. In a line-type modulating system, the combination of:

(a) a tube means loading device having first and second current conducting electrodes for conducting up to a full load current and a control electrode for control of the load current therebetween, said device being normally maintained in a nonconducting state;

(b) a line-type modulator having first and second output terminals connected respectively to the first and second current conducting electrodes of said tube means for application of a modulator pulse thereto;

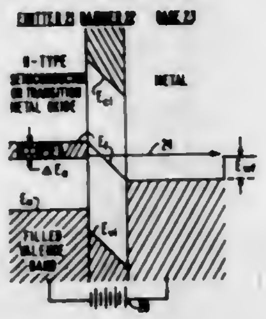
(c) a load leveler connected between the output terminals of said line-type modulator, said load leveler being arranged to conduct a current at least equal to the full load current of said loading device upon application of a modulator pulse thereacross, said load leveler including a control input;

(d) a pulser having first and second output terminals connected respectively to the first electrode and control electrode of said tube means loading device for application of a control pulse thereto, which control pulse is timed to occur within the duration time of the modulator pulse, said loading device being triggered thereby to conduct a load current; and

(e) means connecting the output terminals of said pulser to the input means of said load leveler for application of the control pulse thereto simultaneously with application of the control pulse to said loading device, said load leveler being responsive to the control pulse to conduct less than full load current by an amount substantially equal to the load current in said loading device, so that the voltage across said loading device is maintained constant.

3,310,685
NARROW BAND EMITTER DEVICES

Frederick W. Schmidlin, Portuguese Bend, Calif., assignor, by mesne assignments, to GTC Corporation, a corporation of Texas
Filed May 3, 1963, Ser. No. 277,891
19 Claims. (Cl. 307—88.5)



1. An electrical apparatus comprising a thin dielectric film, a first member bonded to one side of said film, and a second member bonded to the other side of said film, said first member being of a material having a narrow conductive energy band located above a substantially wider forbidden energy gap, said second member being a thin film of metallic material having a thickness in the order of the mean free path of an electron therein and having an external work function preventing the escape of electrons from the lower unoccupied energy levels, a source of operating voltage for establishing an operating potential between said first and second members across said thin dielectric film, and said dielectric film having a thickness permitting appreciable quantum mechanical tunneling of electrons from said first member through the dielectric film into said second member only when the amplitude of an operating potential establishes the potential of the occupied energy levels of the narrow conductive energy band of said first member substantially at or above the potential level of the work function of said second member.

3,310,686
FLIP FLIP CIRCUITS UTILIZING SET-RESET DOMINATE TECHNIQUES

Le Roy F. Valentine, Arlington, Mass., assignor to Radio Corporation of America, a corporation of Delaware
Filed June 14, 1963, Ser. No. 288,007
5 Claims. (Cl. 307—88.5)

1. A logic circuit comprising the combination of,

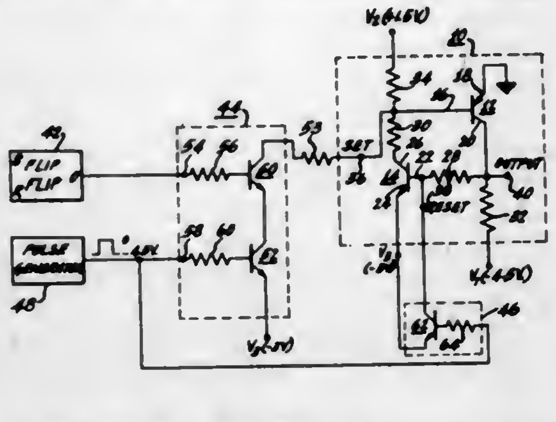
a bistable flip flip including a pair of cross-coupled transistors of opposite conductivity type and exhibiting a conducting stable state and a nonconducting stable state,

means providing a dominant input terminal and a nondominant input terminal for said bistable flip flip so that an input signal applied to said dominant input terminal causes said flip flip to operate in one stable state and an input signal applied to said nondominant terminal causes said flip flip to operate in the other stable state,

a coincidence gate coupled to said dominant terminal,

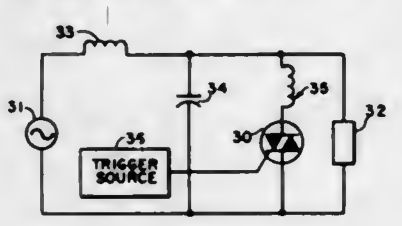
means for applying a binary input signal to said gate, and

means for applying a second input signal both to said nondominant terminal and to said gate simultaneously with the application of said binary input signal to said gate, to cause said bistable flip flip to operate in one of said stable states when said binary signal is at one binary level and is gated to said dominant terminal and to operate in the other of said stable states when said binary signal is at the other binary level and blocked by said gate.



3,310,687
POWER CONTROL CIRCUITS UTILIZING A BI-DIRECTIONAL SEMICONDUCTOR

E. Keith Howell, Skaneateles, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 7, 1964, Ser. No. 343,298
12 Claims. (Cl. 307—88.5)



1. A circuit for supplying power to a load from an alternating current source comprising: a controlled bilateral semiconductor having an input terminal, an output terminal and a gate terminal, said input and output terminals normally exhibiting a high impedance therebetween and presenting a low impedance therebetween in response to a triggering signal; a triggering signal means coupled with said gate terminal of said controlled bilateral semiconductor; an energy storage element; a first and a second inductive reactor; first circuit means connecting said first inductive reactor, said energy storage element, and said alternating current source in a first closed, tuned oscillatory circuit loop; second circuit means connecting the input and output terminals of said controlled bilateral semiconductor; at least a portion of said second inductive reactor, and the load in a second closed, tuned oscillatory circuit loop; and means coupling said second closed, tuned oscillatory circuit loop with at least said energy storage element of said first closed, tuned oscillatory circuit loop so that the power supplied to the load is determined by the relationship between the time of occurrence of the triggering signals and the phase of the current from the alternating current source.

3,310,688
ELECTRICAL CIRCUITS

Harry Ditkofsky, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 7, 1964, Ser. No. 365,681
8 Claims. (Cl. 307—88.5)

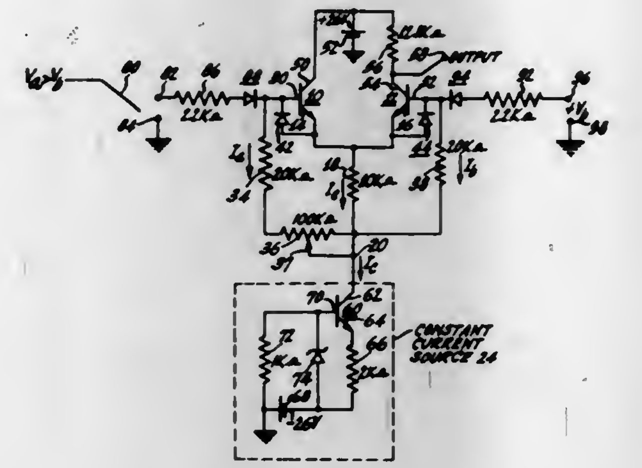
2. The combination comprising:

a pair of transistors each having collector, base and emitter electrodes;

means including the series combination of a resistance element and a source of substantially constant current connected, between the emitter and collector electrodes of each of said transistor devices;

resistance means connected between the base electrodes of the pair of transistors;

means connecting a point on said resistance means to a point on said series combination between the resistance element and the current source;



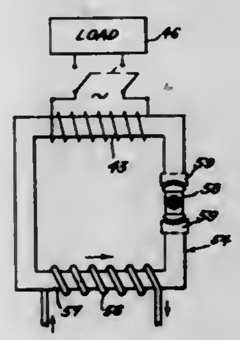
first and second unidirectional conducting devices each being connected between the base and emitter electrodes of a different one of said transistors, each unidirectional conducting device being poled to conduct current in the same direction, relative to the emitter electrode of the associated transistor, as the direction of current flow through said resistance element;

first and second input terminals; and

coupling means connected between each of said input terminals and the base electrode of a different one of said amplifying devices.

3,310,689
PRODUCTION OF ELECTRICAL ENERGY

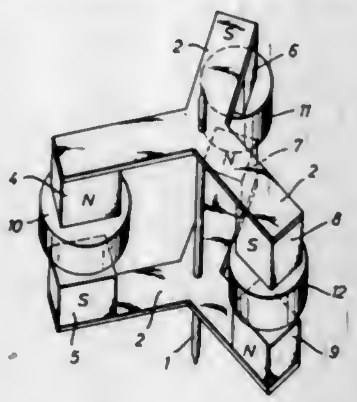
Ferdinand Heinmets, 31 Elm St., Wellesley Hills, Mass. 02181
Filed Nov. 1, 1963, Ser. No. 320,656
12 Claims. (Cl. 310—4)



1. A device for producing electrical energy comprising a magnetic member, a nonconductive tubular coil wound around said magnetic member, a metallic coil spaced from said tubular coil and wound around said magnetic member, a fluid containing a net charge per unit volume flowing through said tubular coil, and means for producing a variable magnetic flux in said magnetic member, whereby said variable magnetic flux in said magnetic member induces a variable electric potential in said metallic coil.

3,310,690
PERMANENT MAGNET RESONATOR

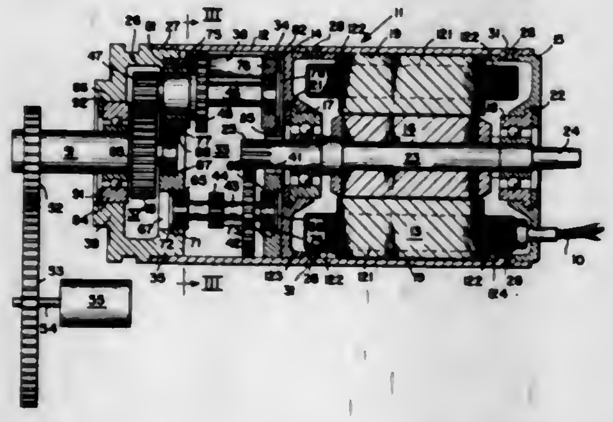
Robert Walter Reich, Merzhauserstr. 143,
Freiburg im Breisgau, Germany
Filed July 30, 1964, Ser. No. 386,236
Claims priority, application Germany, Oct. 9, 1963,
R 36,324
1 Claim. (Cl. 310—36)



In an impelling and pulse control system for electronic clocks comprising a rotary pendulum, three coils disposed around the axis of said pendulum consisting of a single driving coil positioned at the extreme end of the arc of rotation of said pendulum and two exciting coils positioned so as to be alternately energized by said pendulum and thereby correspondingly controlling said driving coil, the improvement comprising an arrangement in which the two exciting coils are positioned at 120° on either side of the driving coil and in which pairs of permanent magnets are provided on said pendulum extending above and below said coils in such a manner that at the extreme end of the arc of rotation of said pendulum the polarities of the magnets above the driving and exciting coils are north and south, respectively, and the polarities of the magnets below the driving and exciting coils are south and north, respectively, whereby the magnet flow through the two exciting coils is equalized but opposite in direction to the flow through the driving coil.

3,310,691
MINIATURE MOTOR ASSEMBLY

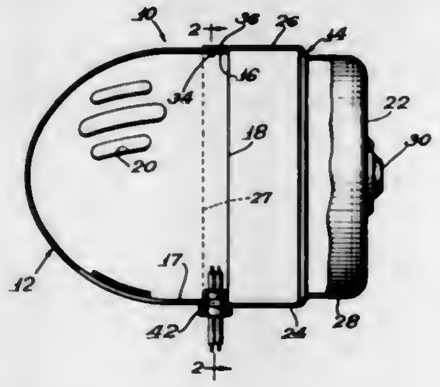
Harry W. Wilkinson, Philadelphia, Pa., assignor to Litton Precision Products Inc., Clifton Heights, Pa., a corporation of Delaware
Division of application Ser. No. 60,733, Oct. 5, 1960, now Patent No. 3,241,397, dated Mar. 22, 1966. Continuation of application Ser. No. 450,830, Apr. 26, 1965. This application Aug. 5, 1966, Ser. No. 570,670
5 Claims. (Cl. 310—42)



1. A miniature precision electric motor comprising a tubular hollow outer case, a stator having a stack of laminations positioned inside said case, a pair of thin bearing plates interchangeable with one another and having outer peripheral flanges engaging the inner surface of the case over an extensive surface area to rigidly and precisely retain the plates in given alignment with each other and with the case, said peripheral flanges extending to and bearing against the opposite ends of said lamination stack, said bearing plates each having centralized openings and inner flanges about said openings, a pair of bearings interchangeable with one another and supported by said bearing plates within said openings, said bearings having inner and outer races, locking means for substantially immovably fastening said outer races to said bearing plates, a rotor supported by the inner races of said bearings, and fastening means for rigidly attaching the peripheral flanges of said bearing plates to the inner surface of said case, said fastening means comprising dimples formed in one of said case and flange and positioning holes formed in the other of said case and flanges and in registry with said dimples, whereby the element of said motor are properly positioned relative to each other.

3,310,692
MOTOR HOUSING ASSEMBLY USING STRAIN RELIEF AS FASTENER

Frank P. Rodwick, St. Louis, Mo., assignor to Knapp-Monarch Company, St. Louis, Mo., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,476
3 Claims. (Cl. 310—71)



1. An improved motor housing comprising a first mating part, a second mating part in telescoping relationship with said first mating part, said mating parts together forming a chamber for receiving a motor, a first aperture in said first mating part, a second aperture in said second mating part, said apertures being substantially co-extensive, each of said apertures having restricted entrances which extend through the outer edges of each of said mating parts, and a strain relief member mounted about an electrical cord, said strain relief passing through both said apertures to thereby maintain said first and second mating parts together.

3,310,693
MAGNETIC COUPLING

Samuel Aronoff, Los Angeles, Calif., assignor to Gray & Huleguard, Inc., Santa Monica, Calif., a corporation of California
Filed Feb. 4, 1964, Ser. No. 342,376
5 Claims. (Cl. 310—104)

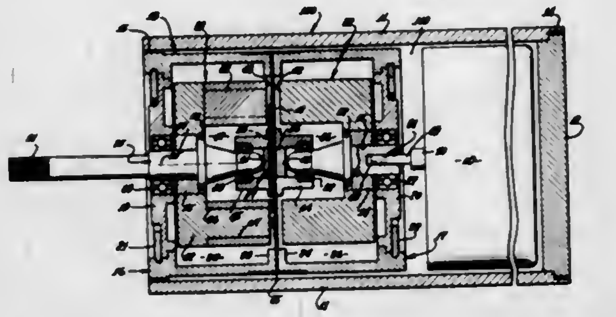
1. In a coupling assembly

first means including a hermetically sealed chamber including partition structure peripherally supported to deflect along a central axis generally normal to the plane of the partition in response to differential pressure changes as respects fluid pressure exertion at the inner and outer sides of the partition,

second means for effecting transmission of rotary drive from the interior of said chamber at the inner side of said partition to the outside of the chamber at the outer side of the partition and in different deflection positions of the partition,

a pair of independently rotatable magnetically attracting units in said second means movable together endwise along said axis at opposite sides of the partition and in response to said deflection thereof,

said units being supported to rotate in sufficiently closely approaching relation to opposite faces of the partition that one unit rotates in response to rotation of the other while braking contact of said units with the partition structure is prevented in said different deflection positions,

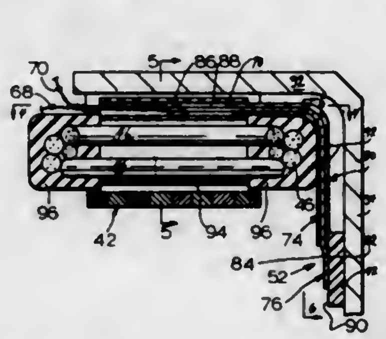


said magnetically attracting units being generally cup-shaped and having multiple magnetic poles spaced about said axis and projecting toward the partition structure, and

concentric conductor rings in said driven unit located inwardly and outwardly of said poles and conductive material joining said rings and extending in the spaces between said poles.

3,310,694
TORQUER COMMUTATOR

Samuel C. Hanna, Saddle Brook, Herbert Binder, New Monmouth, and William D. Johnson, Franklin Lakes, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,426
2 Claims. (Cl. 310—154)



2. A D.-C. torquer, comprising a stator of permeable material having an inner cylindrical wall and an outer cylindrical wall interconnected by a washer-shaped end wall,

a bearing surrounding said inner cylindrical wall with the inner race thereof fixed to the wall,

a plurality of permanent bar magnets circumferentially spaced about and projecting from said outer cylindrical wall with their poles aligned radially,

a rotatable housing of permeable material having an inner cylindrical wall and an outer cylindrical wall interconnected by a washer-shaped end wall, the inner cylindrical wall of said housing being fitted about and secured to the outer race of said bearing with the outer cylindrical wall of the housing extending about and radially spaced from the exposed poles of said magnets,

a laminated armature ring with radial teeth separated by slots surrounding the exposed poles of said magnets to define an air gap thereabout and being secured within said outer cylindrical wall of the housing for rotation therewith,

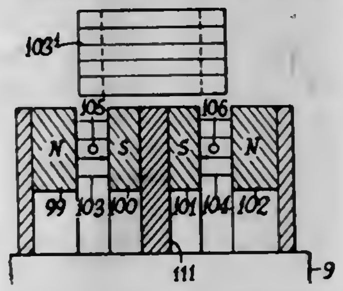
a plurality of coils wound on said teeth and circumferentially disposed on said armature ring having connections disposed in said slots and having radially aligned axes, and

commutator means for controlling the direction of current flow through said coils in response to the position of the coils relative to the magnets,

said commutator means including a washer-shaped insulating board encircling the inner cylindrical wall of said rotatable housing between said magnets and said washer-shaped end wall of said rotatable housing, and including a plurality of L-shaped metal commutator bars having radial legs bonded to said insulating board and having axially-parallel legs extending into said slots and connecting to said coil connections disposed within said slots.

3,310,695
ALTERNATING CURRENT GENERATOR

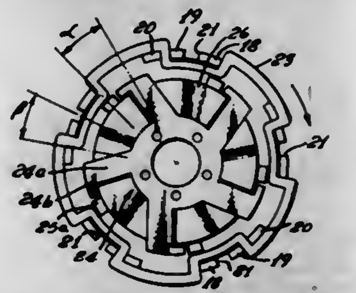
William Kober, Rolling Hills, Calif., assignor to The Garrett Corporation, Los Angeles, Calif.
Filed June 20, 1966, Ser. No. 563,624
4 Claims. (Cl. 310—156)



1. A dynamoelectric machine having an axis of rotation and comprising several field producing structures each including flux producing means magnetized in the direction of said axis to provide axially directed north and south poles, said structures being grouped in axially separated pairs with the north and south poles of one structure axially opposed to the south and north poles, respectively, of the other structure of each pair thereof, thereby providing axially directed flux paths between said opposed poles, an armature winding comprising multiple conductor turns each turn having portions positioned in oppositely directed flux paths between opposed poles of two of said field pairs and encircling portions extending between said two field pairs, and means mounting said armature winding and said field structures for relative rotation about said axis, said two pairs of structures being magnetically substantially independent and linked by said winding which is common thereto.

3,310,696
LOW-SPEED SYNCHRONOUS ELECTRIC MOTORS

Jean Jullien-Davin, Valence, France, assignor to Crouzet, Valence, France, a French company
Filed Jan. 28, 1964, Ser. No. 340,754
3 Claims. (Cl. 310—164)

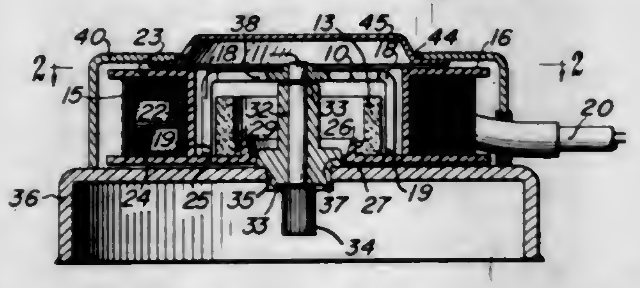


1. In a low-speed synchronous electric motor having a stator formed of a radial magnetizable stator element and an annular magnetizable stator element which is separated from said radial stator element by an annular

space, an excitation coil disposed between said two stator elements, a corrugated phase displacement ring for the said annular element, a shaft which is coaxial with said stator elements and a rotor fixed on said shaft and engaged within said annular space; said annular stator element comprising peripheral uniformly spaced sets of three teeth, the teeth of each set being separated from each other, so as to form individual pole-pieces, by two slots which are parallel to the said shaft and in one of which, according to the desired direction of rotation of the rotor, is engaged a radial portion of a corrugation of said ring whose corrugations are equal in number to the number of sets of teeth and which pass alternately on one side and on the other of said sets of teeth, said radial stator element comprising a first magnetizable star-shaped member having a number of arms which is equal to the number of sets of teeth, a second magnetizable star-shaped member which has the same number of arms as said first star-shaped member, which is contiguous with and coaxial with said first star-shaped member, which is disposed externally with respect to the coil and which is reversible in upside down relation to the other star-shaped member, and a phase-shift ring intercalated between the arms of the two star-shaped members and having transverse corrugations in each of which is fitted one of the star-member arms, the relative angular positions of said phase-shift ring and of said two star members being a function of the desired direction of rotation of the rotor.

3,310,697
SELF-STARTING SYNCHRONOUS MOTOR

Melvin A. Lace, Prospect Heights, Ill., assignor to Oak Electro/Netics Corp., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 411,986
13 Claims. (Cl. 310—164)

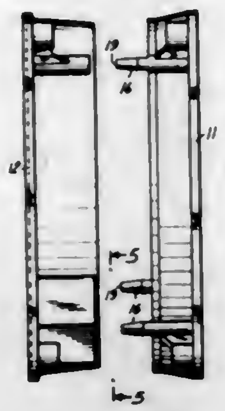


1. A self-starting synchronous motor comprising: a winding for producing an alternating magnetic field, encircling a bobbin disposed about a central axis, said bobbin having a cylindrical aperture; an annular permanent magnet stator within said aperture and spaced about said central axis, said stator having a periphery which is composed of adjacent sections of opposite magnetic polarity; a U-shaped rotor disposed to rotate about said central axis, said rotor being composed of a central portion extending generally perpendicular to said axis with salient poles projecting therefrom generally parallel to said axis, said salient poles having free ends which are interposed between said bobbin and said annular stator, and means including said salient poles for completing a low reluctance path for said alternating magnetic field.

3,310,698
MACHINE FRAME FOR AN ELECTRIC MOTOR

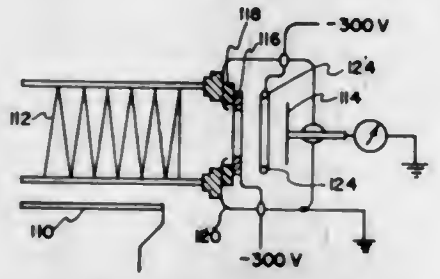
Alfred Krell, North Bellmore, N.Y., assignor to IMC Magnetics Corp., Westbury, N.Y., a corporation of New York
Filed Feb. 11, 1964, Ser. No. 344,087
6 Claims. (Cl. 310—258)

1. A framework for supporting an electric motor located at the center of the framework comprising two independent sections joined to form the complete framework, and means for permanently fastening said sections together, said means including pins integral with one of said sections and spaced around said motor, said pins projecting toward the other of said sections, and said other section having holes accommodating said pins, said holes being spaced around said motor in such location as to receive said pins, the free ends of said pins being enlarged to prevent the removal of said pins from said holes and hence to prevent separation of said sections.



3,310,699
ULTRAHIGH VACUUM GAUGE HAVING TWO COLLECTOR ELECTRODES

Franklin L. Torney, Jr., South Weymouth, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Oct. 16, 1964, Ser. No. 404,212
1 Claim. (Cl. 313—7)



An improved ultra high vacuum gauge comprising in combination means for ionizing molecules of the gas whose pressure is to be measured, a first collector electrode for collecting ions, means for suppressing secondary emission from the first collector electrode, means for shielding the suppressing means from radiation from the ionizing means, and a second collector means interposed between said first collector and said suppressor and biassed negatively with respect to said first collector, said second collector arranged to selectively collect ions and reduce ion flow to said first collector.

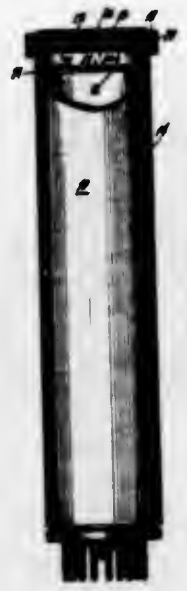
3,310,700
PHOTOCONDUCTIVE DEVICE INCORPORATING STABILIZING LAYERS ON THE FACE OF THE SELENIUM LAYER

Joseph Dresner, Princeton, and Hubert Peter David Lanyon, Trenton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed May 28, 1964, Ser. No. 370,876
10 Claims. (Cl. 313—65)

10. A target for a photoconductive pickup tube comprising:

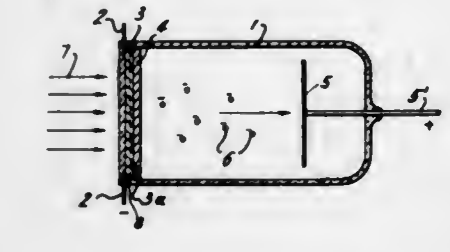
(a) a light transparent substrate,
(b) a flat light transparent signal electrode on said substrate,
(c) a first light transparent stabilizing film on said signal electrode having a thinness of from about 6 to about 30 Angstroms,

(d) a vitreous layer containing selenium and having one flat surface mechanically engaging said first stabilizing film, and
(e) a second stabilizing film mechanically engaging the opposite flat surface of said layer,
(f) said second stabilizing film having a relatively low order of lateral conductance to prevent any substantially lateral transmission of an electrical charge thereon, and
(g) said second stabilizing film being made of a material selected from the group consisting of germanium and germanium oxide, antimony tri-sulfide and antimony tri-oxide.



3,310,701
PHOTOCATHODE FOR PHOTOEMISSIVE CELLS

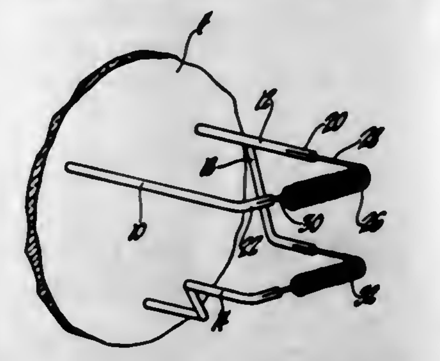
Walter Heimann, Wiesbaden-Dotzheim, Germany, assignor to Forschungslaboratorium Prof. Dr. Ing. Walter Heimann, Wiesbaden-Dotzheim, Germany
Filed Dec. 24, 1962, Ser. No. 247,481
Claims priority, application Germany, Dec. 22, 1961, F 35,638
17 Claims. (Cl. 313—94)



1. A photocathode for photoemissive cells, comprising, in combination, a first layer of semiconductor material; and at least one second layer of semiconductor material superimposed on said first layer, at least one of said layers of semiconductor material containing a pn-junction having photovoltaic effect, and at least one other one of said layers of semiconductor material having photoemissive effect upon being irradiated with luminous energy, the conductivity types and carrier concentrations of said semiconductor materials of said layers, respectively, being so chosen in relation to each other that the polarity of the E.M.F. appearing at the blocking region existing between said first and second layers upon absorption of said luminous energy is such as to be opposite to that of the photoelectric work function of said layer having photoemissive effect.

3,310,702
VEHICLE HEADLAMP WITH IMPROVED FILAMENT MOUNTING STRUCTURE

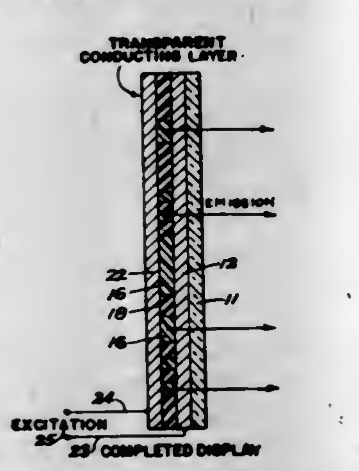
Robert N. Faige, R.R. 2, Box 305, Anderson, Ind. 46011
Filed June 14, 1965, Ser. No. 463,608
3 Claims. (Cl. 313—113)



1. A vehicle headlamp comprising; an envelope having a reflector and a lens, an electrical lead wire in said envelope having an end portion extending parallel to the optical axis of the lamp, an electrical lead wire in said envelope having an end portion extending transversely to the optical axis of the lamp, and a filament having a coil with a leg extending from one end thereof at an angle to the axis of said coil and secured to the end portion of said first-mentioned lead wire and with a leg extending parallel to the axis of said coil and secured to the end portion of said second-mentioned lead wire the axis of said coil extending transversely to the optical axis of said headlamp adjacent the focal point thereof.

3,310,703
ELECTROLUMINESCENT DEVICE AND PHOTO-RESIST METHOD FOR MAKING THE SAME

William Brooks, 1042 Inverness,
Sunnyvale, Calif. 94087
Filed Oct. 7, 1964, Ser. No. 402,104
6 Claims. (Cl. 313—108)



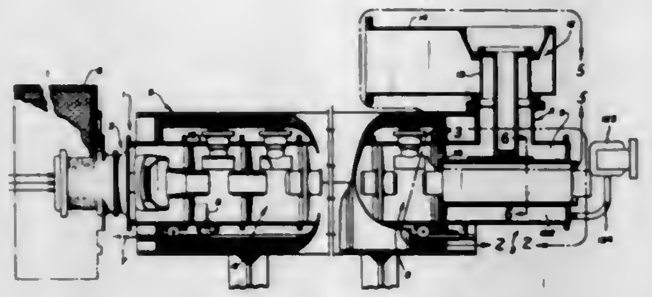
4. An electroluminescent device of the type in which a field-responsive phosphor is interposed between two electrically conductive layers, at least one of which transmits light, characterized by said phosphor being contained in an exposed and developed photosensitive resin to provide an image in which said phosphor is dispersed.

3,310,704
OUTPUT COUPLING CIRCUIT FOR MICROWAVE TUBE APPARATUS

Robert S. Symons, Los Altos, and Armand Staprans, Mountain View, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Original application Aug. 6, 1959, Ser. No. 832,402, now Patent No. 3,169,206, dated Feb. 9, 1965. Divided and this application Aug. 29, 1962, Ser. No. 220,325
4 Claims. (Cl. 315—5.39)

1. A high frequency tube apparatus including; means for producing and directing a beam of charged particles

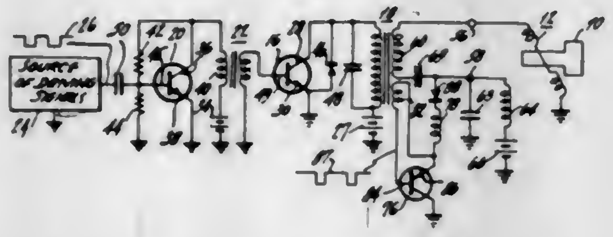
over a predetermined path longitudinally of the tube; means for collecting the beam at the terminating end of the beam path; means forming a wave supporting structure disposed along said beam path for producing successive electromagnetic interaction with the beam and for extracting high frequency wave energy from said beam for propagation to a suitable load; a vacuum tight envelope enclosing the beam path; said means for extracting wave energy from said beam for propagation to a suitable land including, a hollow tubular waveguide, said waveguide having a portion of its length directed substantially longitudinally of the beam path, said waveguide defined by two mutually opposed longitudinally directed wide side walls interconnected by two longitudinally directed narrow side walls, said wide side walls being arcuate and being wrapped partially around said collector means, whereby the transverse dimension of the tube apparatus including said wave energy extraction means and collector means is minimized.



3,310,705
LINEARITY CORRECTION CIRCUIT

Burnard E. Nicholson, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 3, 1964, Ser. No. 357,027
4 Claims. (Cl. 315—27)

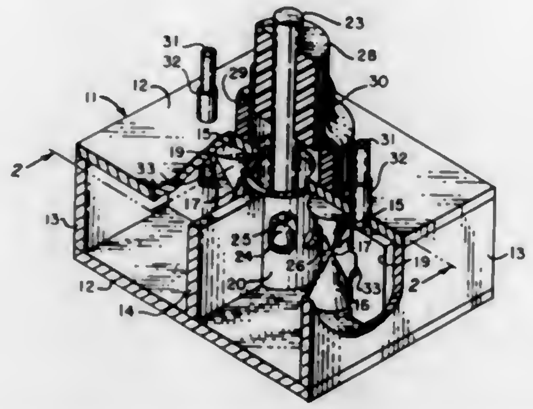


1. A deflection circuit arrangement comprising:
an electron beam deflection winding;
circuit means coupled to said winding for causing a cyclical deflection current of sawtooth waveform to flow in said winding; and
a linearity correction circuit coupled to said winding for providing a linearity correcting voltage at said winding during a trace interval T_T, of a deflection cycle,
said correction circuit including a first electrical element having reactance of one sign for cumulatively storing electrical energy and thereby generating a linearity correction voltage,
means including a source of direct current operating potential for coupling electrical energy to said first element during a trace interval of the deflection cycle,
means for coupling a correction voltage from said first element to said deflection winding; and
circuit means including a second electrical element having reactance of opposite sign to the reactance of said first element to resonate with said first element and a switching means arranged to recirculate energy in said first element during a retrace interval, T_R, of the deflection cycle.

3,310,706
MICROWAVE SWITCH TUBE

James D. Woermbke, Ellicott City, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Feb. 6, 1964, Ser. No. 343,167
9 Claims. (Cl. 315—39)

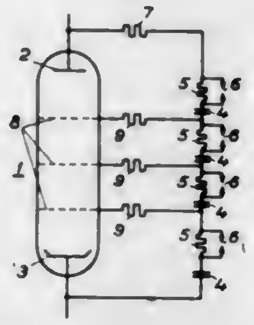


4. A microwave switching device comprising: a section of waveguide filled with an ionizable gas; a resonant structure mounted in said section; said resonant structure including a pair of inductive elements mounted on opposite sides of said section, and a pair of spaced capacitive electrodes mounted between said inductive elements defining a discharge gap; one said inductive element being a sleeve having an opening in the wall thereof adjacent said discharge gap; and keep-alive electrode means mounted in said sleeve for generating free electrons.

3,310,707
OVER VOLTAGE PROTECTION MEANS FOR HIGH VOLTAGE MERCURY ARC RECTIFIERS

Carl Ingvar Roksjö, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

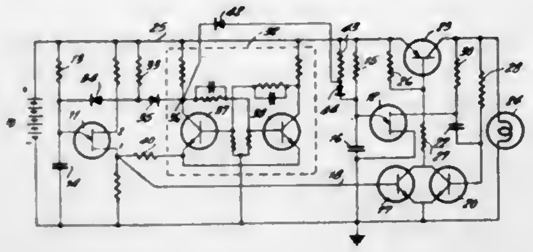
Filed Apr. 20, 1964, Ser. No. 361,191
Claims priority, application Sweden, May 16, 1963, 5,412/63
4 Claims. (Cl. 315—123)



1. In an operating circuit network for a mercury arc rectifier, having a plurality of electrodes defining at least anode and cathode, an individual over-voltage protection means directly connected across at least two of said plurality of electrodes; said individual over-voltage protecting means comprising: a capacitor and a first damping resistor connected in series circuit; and spark gap means connected directly across said first damping resistor; said spark gap means being responsive to a predetermined level of over-voltage to effect spark-over thereby shunting said first damping resistor; said predetermined level of over-voltage exceeding voltage levels applied to said mercury arc rectifier by said operating circuit network during normal operation thereof.

3,310,708
LAMP CONTROL CIRCUIT

Robert L. Seidler, 6 Plymouth Road,
Summit, N.J. 07901
Filed Sept. 16, 1964, Ser. No. 396,838
11 Claims. (Cl. 315—225)

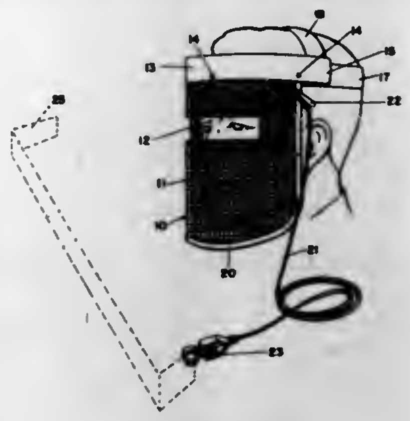


1. A flasher circuit for supplying controlled electrical current pulses to a lamp comprising, a source of direct current power, a first unijunction transistor relaxation oscillator circuit which includes an emitter electrode connected to a first time constant circuit bridged across the source of power, a lamp for producing light flashes, a power transistor including emitter, collector, and base electrodes for applying current pulses to the lamp, said power transistor having its emitter-collector electrodes connected in series between the lamp and said source of power, a transistor amplifier having an output circuit coupled to the base of the power transistor and having a boot-strap circuit for maintaining the power transistor in either a conductive or a non-conductive condition, circuit coupling means between the first unijunction transistor and an input circuit in said transistor amplifier for applying a control pulse thereto and making the collector emitter electrode circuit of the power transistor conductive whenever the first unijunction transistor is fired; a bistable multi-vibrator circuit coupled to the first unijunction transistor, said multi-vibrator circuit including two transistors, each having an emitter, a collector, and a base electrode, said unijunction transistor coupled to the emitter so that conductance is transferred from one transistor to the other whenever the unijunction transistor fires, and circuit means coupled between one of said collectors and the time constant circuit of the first unijunction transistor for changing the frequency of oscillation each time the multi-vibrator conductance is transferred; a second unijuncion transistor relaxation oscillator circuit which includes an emitter electrode connected to a second time constant circuit bridged across the source of power and a base 2 electrode coupled to the collector electrode of the power transistor for starting the generation of a pulse in the second oscillator circuit when the power transistor is made conductive, and capacity coupling means between the second unijunction oscillator and the transistor amplifier for applying a pulse thereto for making the collector-emitter electrode circuit of the power transistor non-conductive when the second unijunction transistor fires.

3,310,709
SHIELD FOR ELECTROSTATIC PAINTING

Wayne Phillips, 3642 Sterrettania Road, Erie, Pa. 16506
Filed Mar. 24, 1965, Ser. No. 442,455
4 Claims. (Cl. 317—2)

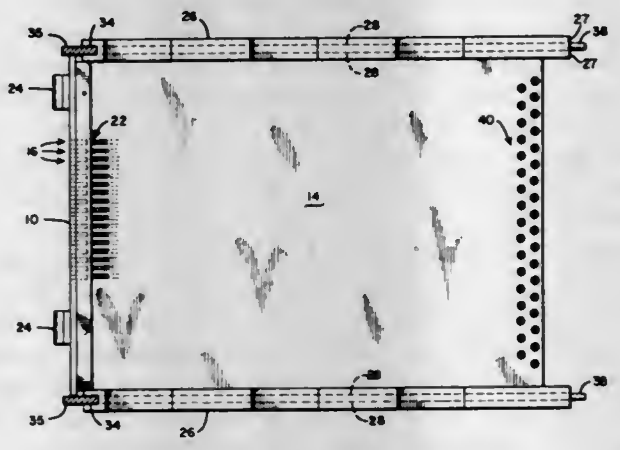
1. In combination, a shield made of electrical conductive material and a source of particles electrically charged to a given polarity,
said shield having means thereon to support it over the body of a person,
openings in said shield to allow a person to see therethrough,
and an elongated electrical conductor means attached to said shield,
said elongated electrical conductor means having a connection means on the distal end of said elongated electrical conductor means for attaching said elongated electrical conductor means electrically connected to a device at the electrical potential of said particles.



3,310,710
ELECTRICAL CIRCUIT PACKAGING ASSEMBLY

Ordean C. Joachim, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 13, 1965, Ser. No. 447,690
15 Claims. (Cl. 317—100)

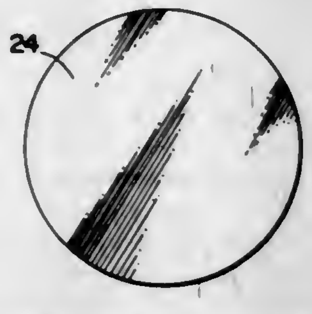


1. In a computer cabinet containing a plurality of electrical circuitry packaging assemblies, the assembly comprising in combination:
(a) a plurality of adjacently disposed elongated spacer members, each including front and rear portions, and first and second sides, said rear portion including an elongated slot for receiving a first terminal edge of a printed circuit card, adjacent ones of said spacer members being in contact along their respective first and second sides;
(b) adjacent ones of said spacer members each containing at least one test access area along said front portion, said access area extending transverse to said first and second sides in contact, and containing an open portion communicating with said elongated slot for permitting electrical contact between a test probe means to be projected through said open portion and said terminal edge on the printed circuit card;
(c) puller lugs integral with each of said spacer members for permitting attachment of a puller means to movably maintain said card; and
(d) card guide means including a plurality of parallelly arranged discontinuous card guide members having upper and lower slotted sides, said guide members comprising a plurality of guide segments slotted on said upper and lower sides, said guide segments in

combination forming a grill-like pattern having adjacent ones of said segments integrally joined, and each of said guide members adapted for receiving one of a plurality of card edges in associated ones of said slots.

3,310,711
VERTICALLY AND HORIZONTALLY INTEGRATED MICROCIRCUITRY

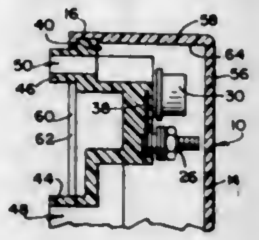
James B. Hangstefer, Beverly, Mass., assignor to Solid State Products Inc., Salem, Mass., a corporation of Massachusetts
Original application Mar. 23, 1962, Ser. No. 181,951, now Patent No. 3,256,587, dated June 21, 1966. Divided and this application Sept. 7, 1965, Ser. No. 485,468
4 Claims. (Cl. 317—101)



1. Integrated microcircuitry comprising a rigid substrate in the form of a thin wafer of silicon having a plurality of asymmetrically-conductive elements therein each having different conduction regions each of which is nested within a larger region of the opposite conduction characteristics and each of which is exposed to the surface on one side of the substrate, an electrically-insulating substrate of vitreous material integral with the rigid substrate on said side thereof and having discrete openings therethrough each communicating with a different one of said regions, discrete electrical metal contacts deposited in said openings and each integrally bonded with a different one of said regions, a thin patterned layer of tantalum atop the vitreous insulating substrate and contacts integrally therewith, said patterned layer forming predetermined circuit connections with said contacts and having at least one elongated tortuous path forming a resistive element along the insulating substrate, and a discontinuous patterned layer of gold atop and integral with predetermined portions of the patterned layer of tantalum forming low-resistance connections and terminal contacts.

3,310,712
COMMUNICATIONS CIRCUIT PROTECTOR

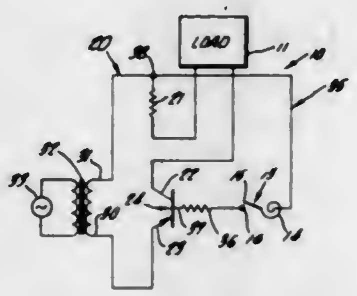
Alvin F. Paddock, Roselle, Ill., assignor to Cook Electric Company, Morton Grove, Ill., a corporation of Delaware
Filed June 16, 1965, Ser. No. 464,445
13 Claims. (Cl. 317—120)



13. In a communications circuit protector the combination comprising:
an insulative base having a plurality of electrical elements including at least two communications circuit terminal pair means, ground terminal means, mounting means for over-voltage protectors, and mounting means for current overload fuses;
internal conductors disposed entirely within said base and interconnecting said electrical elements;
said base having a spaced pair of elongated mounting studs projecting therefrom with correspondingly elongated apertures therethrough, said elongated studs being disposed at right angles to one another;
said base having a rear portion with a notch for a grommet adjacent to one of said terminal pair means and a front portion adjacent another of said terminal pair means having an upstanding wall with a further notch for further grommet;
a grommet mounted in each said notch and slidably removable therefrom;
unitary rigid plastic cover means removably secured to and enclosing said base, said cover means having portions engaging each said grommet to retain each said grommet in each said notch;
said unitary cover means having opposing cantilevered stiffly resilient side walls closely engaging said base and transverse stiffening means integral with said side walls;
and covert latching means retaining said cover means to said base;
said latching means including internally projecting detent means on said side walls and mating detent catch means on said base;
said stiffly resilient side walls detachably maintaining said detent means and said catch means in operative engagement.

3,310,713
TEMPERATURE CONTROL SYSTEM

William W. Chambers, Anaheim, and Wesley V. De Forest, Long Beach, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Jan. 13, 1964, Ser. No. 337,324
5 Claims. (Cl. 317—132)

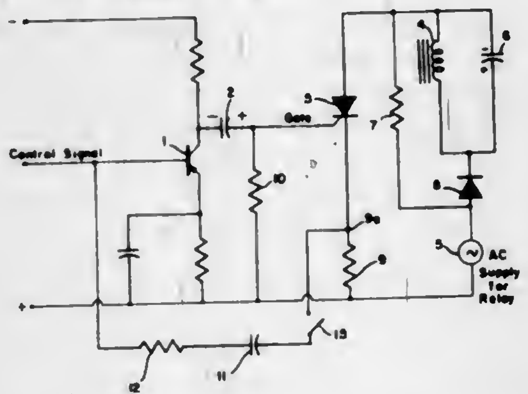


1. A temperature control system for controlling the flow of current through a relay coil including, in combination,
a semiconductor amplifying device having a current-emissive electrode, a current-receiving electrode, and a control electrode for current passing between said current-emissive and current receiving electrodes;
means for providing a flow of current through said relay coil when current flows at the control electrode of said amplifier device, said means connecting (i) said relay coil in series circuit with the current-emissive and the current-receiving electrodes of said amplifying device, and (ii) said series circuit to a source of alternating current power;
a temperature sensitive bimetallic switch;
means for providing a flow of current at the control electrode of said amplifying device when said bimetallic switch is closed so that the semiconductor amplifying device is biased to a current conductive state on one-half of each A.C. cycle, said means comprising a resistor connected in series circuit with said bimetallic switch, said series circuit being connected between said control electrode and one terminal of said source of alternating current; and

means in circuit with the current-emissive electrode of said amplifying device for compensating for the effect of current leakage in the semiconductor device so that there is insufficient current flow through said relay coil to maintain said relay in its actuated condition when said bimetallic switch is open, said means applying a reverse bias to said control electrode for reducing said leakage current.

3,310,714
SILICON CONTROLLED RECTIFIER RELAY DRIVER WITH FEEDBACK

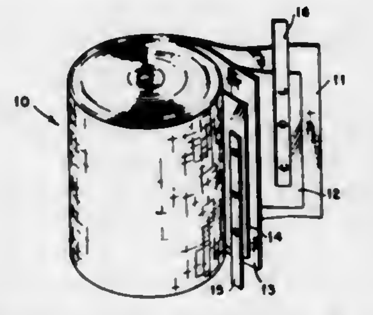
Arnold J. Gargani, Norristown, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 7, 1963, Ser. No. 322,140
8 Claims. (Cl. 317—148.5)



1. A relay driver comprising
a semiconductive device having anode, cathode and control electrodes,
said relay having a coil connected in series circuit relationship with said anode and said cathode and with an A.C. source of supply,
a first capacitor having one terminal connected to said control electrode,
means for applying to the other terminal of said capacitor a control signal having a variable amplitude level which triggers said semiconductive device when said level is above a predetermined threshold,
an impedance element in series with said cathode for developing a feedback voltage when said semiconductive device is triggered, and
means for applying said feedback voltage to said capacitor with a polarity which aids said control signal in triggering said semiconductive device so that the threshold level is decreased after said threeshold is initially exceeded.

3,310,715
ELECTROLYTIC CAPACITOR COMPRISING ANILINE BORATE ELECTROLYTE

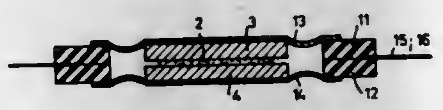
Harold D. Shepherd, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Aug. 20, 1964, Ser. No. 390,908
10 Claims. (Cl. 317—230)



1. An electrolytic capacitor comprising oppositely disposed and spaced electrodes, at least one of said electrodes composed of a film-forming metal having a dielectric film formed on the surface thereof, a porous insulative spacer disposed between and separating said electrodes, and an electrolyte impregnating said spacer consisting of 1.0 to 17.0% aniline, 5.0 to 25.0% boric acid and 58.0 to 94.0% ethylene glycol, said electrolyte having an operating voltage of about 500 volts and a surge voltage of about 575 volts.

3,310,716
CONNECTING DEVICE FOR CONSOLIDATING THE HOUSING OF A SEMICONDUCTOR DEVICE

Reimer Emeis, Ebermannstadt, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Siemensstadt and Erlangen, Germany, a corporation of Germany
Filed June 12, 1964, Ser. No. 374,800
Claims priority, application Germany, June 15, 1963, S 85,696
6 Claims. (Cl. 317—234)



1. An encapsulated semiconductor device, comprising a disc-shaped semiconductor p-n junction member having alloy-bonded electrodes on its two flat sides, respective bracing plates face-to-face bonded to said electrodes and consisting of conductive material whose thermal expansion substantially corresponds to that of said member, a housing having two ring-shaped insulators of determined diameters coaxially surrounding said member, two conducting cover plates of which each has its rim portion joined and sealed to one of said respective insulators on the side remote from said other insulator and in coaxial relation thereto, said semiconductor member being located between said two cover plates with said bracing plates in glidable engagement with said respective cover plates, said cover plates having protuberance means for limiting lateral displacement of said member, and connector means joining said two ring-shaped insulators with each other, said connector means comprising a pair of ring-shaped metal plates having diameters greater than the diameters of said ring-shaped insulators and joined face to face to each other in their areas beyond said ring-shaped insulators, one of said pair of ring-shaped metal plates being affixed to one of said ring-shaped insulators on the side adjacent the other of said ring-shaped insulators and the other of said pair of ring-shaped metal plates being affixed to the other of said ring-shaped insulators on the side adjacent said one of said ring-shaped insulators.

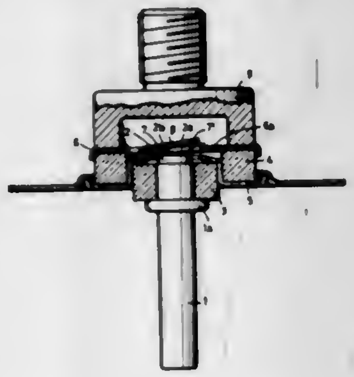
3,310,717
ENCAPSULATED SEMICONDUCTOR DEVICE WITH MINIMIZED COUPLING CAPACITANCE

Hans Hargasser and Kornelius Noss, both of Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed May 22, 1964, Ser. No. 369,489
Claims priority, application Germany, May 27, 1963, S 85,392, S 85,393
16 Claims. (Cl. 317—235)

1. An encapsulated semiconductor device, comprising
a transistor device having a semiconductor body having two substantially planar spaced opposite sides, a collector electrode on one side of said semiconductor body and emitter and base electrodes on the opposite side of said semiconductor body;
an axially elongated substantially cylindrical conductor rod having an axis and an end face to which said semiconductor body is affixed with said collector electrode;

two substantially ring-shaped and mutually insulated conductor members coaxially positioned around said conductor rod and insulated from said conductor rod, said ring-shaped conductor members being respectively conductively connected with said two other electrodes, one of said ring-shaped conductor members being closer to said transistor device than the other of said ring-shaped conductor members and thereby functioning as a shield between said transistor device and the other of said ring-shaped conductor members;

a housing structure tightly joined with said conductor rod and said ring-shaped conductor members and enclosing said transistor device, said housing structure having a lower part, and said housing structure, said ring-shaped conductor members and said transistor device being rotationally symmetrical with respect to the axis of said conductor rod;

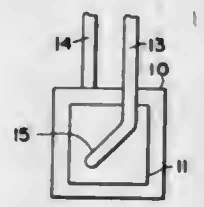


a first substantially ring-shaped electrical insulator of determined diameters coaxially positioned around said conductor rod at the lower part of said housing structure and adjacent to and beneath one of said ring-shaped conductor members; and

a second substantially ring-shaped electrical insulator of diameters larger than said determined diameters coaxially positioned around said conductor rod and part of said first ring-shaped insulator and adjacent to and beneath the other of said ring-shaped conductor members, said one of said ring-shaped conductor members being positioned between said first and second ring-shaped insulators.

3,310,718
IMPEDANCE ELEMENT WITH ALLOY CONNECTOR

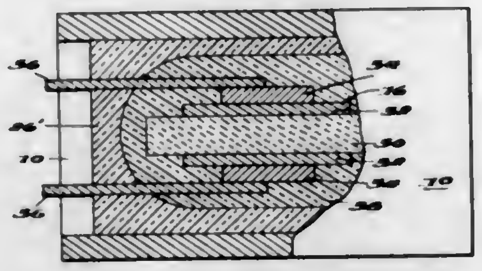
David A. Lupfer, Metuchen, N.J., assignor to Nytronics, Inc., Phillipsburg, N.J., a corporation of New Jersey
Filed Apr. 7, 1964, Ser. No. 358,017
7 Claims. (Cl. 317—258)



1. A miniaturized impedance component comprising a non-metallic member, an electrically conductive element electrically associated with said non-metallic member, and a lead connector coupled to said electrically conductive element formed of a wrought silver-palladium alloy containing up to about 20% by weight of palladium and the balance consisting essentially of silver.

3,310,719
ENCAPSULATED ELECTRICAL COMPONENT

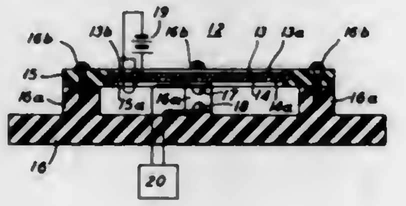
John Seymour Seney, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 1, 1966, Ser. No. 530,817
3 Claims. (Cl. 317—258)



1. An improved heat and acceleration stabilized encapsulated electrical capacitance element, said element comprising spaced metallic capacitor plates separated by a dielectric composition and electrical lead connections operatively associated with said plates, said element having a glazed, air tight coating of devitrified glass material, said coating in turn being surrounded by a unitary dense homogeneous mass of the same material, said mass of material having shrinkage characteristics during its transition from liquid to solidified conditions, said plates and composition being under a uniform compressive force as a consequence of their encapsulation in said mass, the characteristics of said material and level of the compressive force so controlled that the encapsulated plates and composition are acted upon by said material to oppose relative movement due to acceleration forces exerted on said element or thermal expansion under the effects of elevated temperatures.

3,310,720
POLARIZATION PROCESS FOR CERAMICS

James C. King, Center Valley, and Neal C. Thomas, Allentown, Pa., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 3, 1964, Ser. No. 335,692
6 Claims. (Cl. 317—262)



1. A method for polarizing a ceramic body of a ferroelectric material which comprises applying to said body a unidirectional electrical field, sufficient to pole said body, as a pulse ranging from a few microseconds to approximately 250 milliseconds duration.

3,310,721
STABILIZED AUTOMATIC PILOT FOR HIGH SPEED FLIGHT

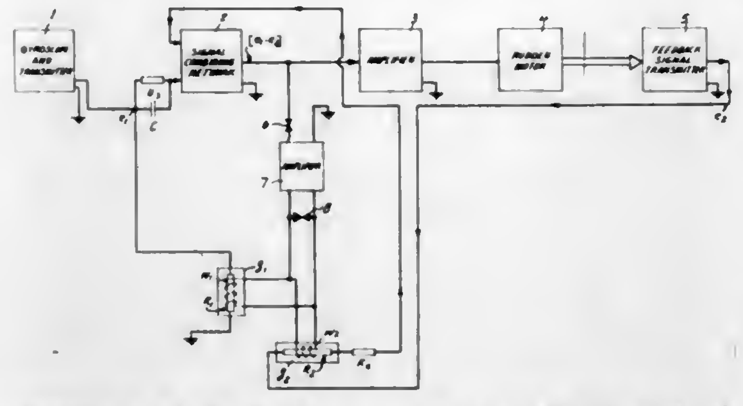
Waldemar Möller, Uberlingen (Bodensee), Germany, assignor to Bodenseewerk Perkin-Elmer & Co. G.m.b.H., Uberlingen (Bodensee), Germany
Filed Oct. 22, 1963, Ser. No. 318,018
8 Claims. (Cl. 318—18)

1. In an aircraft having a control surface and a motor coupled to the surface for adjustment of the position of said surface, an automatic pilot comprising:

means for generating a signal e_1 indicative of a positional error of the aircraft and related thereto by a coefficient c_0,

means for generating a signal e_2 indicative of the movement of the motor, and related thereto by a coefficient k_0,

signal combining means for combining the signals e_1 and e_2, said signals having a ratio of coefficients c_0/k_0,

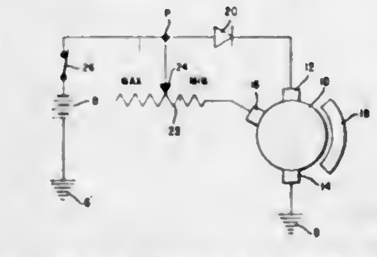


means for adjusting the motor at a rate indicative of the resultant combination of the signals, said motor having a maximum allowable rate of adjustment for maintaining stable automatic pilot operation, and

means for varying the ratio c_0/k_0 before said maximum allowable rate of the adjustment of the motor has been attained.

3,310,722
DIRECT CURRENT MOTOR SPEED CONTROL WITH DIODE

William Diello, Syracuse, N.Y., assignor to Eltra Corporation, Brooklyn, N.Y., a corporation of New York
Filed Aug. 21, 1964, Ser. No. 391,154
6 Claims. (Cl. 318—361)



1. In a D.C. motor having a magnetic field circuit and an armature cooperating therewith provided with a commutator, a pair of main brushes contacting the commutator at approximately the neutral axis for operating the motor at a relatively low speed, a third brush contacting the commutator at a position between the first two brushes, a diode in circuit with a first of said main brushes, polarized to allow electric current to flow toward said brush, and a variable resistance in circuit with the third brush, the diode and the first of said main brushes, whereby the speed of the motor may be increased by reducing the effective turns of the armature.

3,310,723
HIGH VOLTAGE POWER SUPPLY FOR PHOTOGRAPHIC FLASH APPARATUS

Ronald G. Schmidt, Denver, Colo., and Samuel Nissim, Malibu, Calif., assignors to Honeywell Inc., a corporation of Delaware
Filed Oct. 18, 1963, Ser. No. 317,177
9 Claims. (Cl. 320—1)

5. Electric power supply apparatus, comprising;

an oscillating transistor having a pair of input electrodes and a pair of output electrodes,

a saturable transformer having a primary winding and a first and second secondary winding,

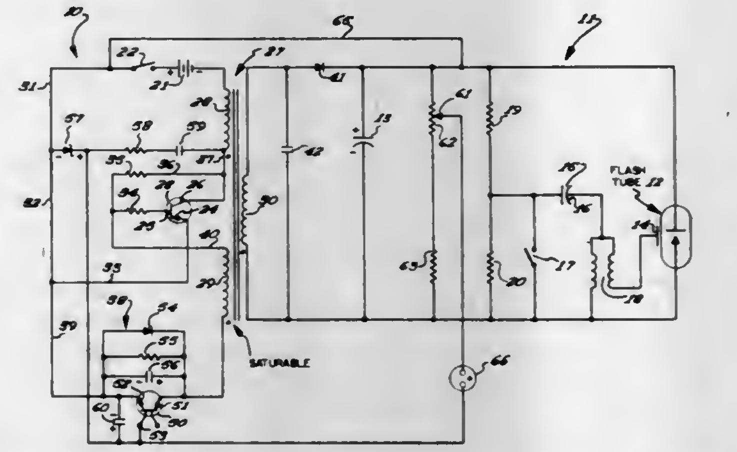
biasing means for said oscillating transistor connected to the input electrodes thereof to establish a class A operating condition for said oscillating transistor,

output means including the output electrodes of said oscillating transistor connected in circuit with the primary winding of said transformer,

a control transistor having a pair of input electrodes and a pair of output electrodes, impedance means connected to shunt the output electrodes of said control transistor,

feedback means including the input electrodes of said oscillating transistor connected in circuit with said first secondary winding and with the output electrodes of said control transistor, said output means and said feedback means establishing an oscillator operating as a class A oscillator when said control transistor is non-conductive and operating as a relaxation oscillator saturating said transformer when said control transistor is conductive,

a series circuit including a zener diode and impedance means connected to said primary winding and effective to establish a voltage across said zener diode in response to oscillation of said oscillating transistor,



circuit means connecting said zener diode to the input electrodes of said control transistor in a manner to render said control transistor conductive in response to oscillation to thereby establish relaxation oscillation,

rectification circuit means connecting a high voltage capacitor to said second secondary winding to charge the same upon the establishment of said relaxation oscillation,

a normally non-conductive neon tube,

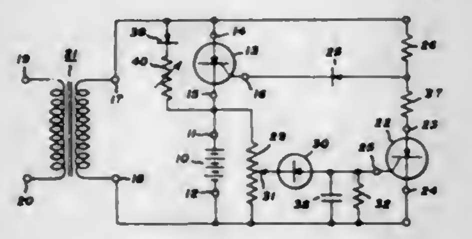
and cutoff circuit means interconnecting said neon tube between the input electrodes of said control transistor and said capacitor, said neon tube being rendered conductive upon the establishment of a predetermined voltage at said capacitor to thereby switch said control transistor to said non-conductive state and reestablish class A oscillation, said neon tube subsequently becoming non-conductive upon a decay in voltage at said capacitor, whereupon said control transistor is again conductive to reinstitute relaxation oscillation and recharging of said capacitor.

3,310,724
BATTERY CHARGING REGULATORS

Denis R. Grafham, Auburn, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 27, 1964, Ser. No. 362,889
7 Claims. (Cl. 320—39)

1. In a voltage level sensitive circuit for monitoring the voltage level of a voltage source, a pair of input terminals for connection to a source of pulsating voltage, first and second series circuit branches connected in parallel with each other and each connected between said pair of input terminals whereby the source of pulsating voltage is applied across each said series circuit branches, first and second solid state switch means each having

anode, cathode and gate terminals, said gate terminals provided to determine conduction between anode and cathode terminals of said switch means, said switch means supporting conduction for applied voltage which is positive at anode terminal, relative to cathode terminal and blocking current flow for applied voltage of the opposite polarity, said first series branch including said anode and cathode terminals of said solid state first switch means and resistance means, said second series circuit including said anode and cathode terminals of second switch means and a pair of monitoring terminals for connection to a unidirectional voltage source, a circuit connection between the said gate terminal of said second switch means and said first series circuit branch thereby providing a circuit path between the anode and gate terminals of said second switch means which includes at least a part of the resistance means of said first series circuit branch whereby said second switch means is gate fired by a source voltage pulse, said second switch means being selectively controlled by said first switch means and a voltage comparator circuit connected between said monitoring terminals and between gate and cathode terminals of said first switch means which handles only a reference current whereby said first switch means is rendered conductive upon initiation of a source voltage pulse of proper polarity for conduction when the voltage applied at said monitoring terminals is above a predetermined level so that conduction of said second switch means is prevented when said first switch means conducts before the source voltage pulse has risen far enough to gate fire said second switch means.



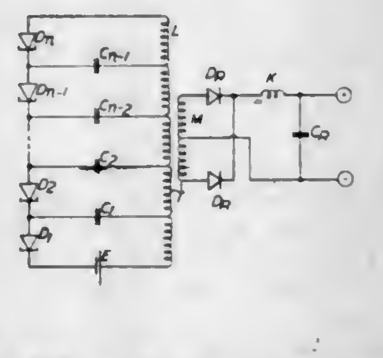
3,310,725
TUNNEL DIODE D.C. TO D.C. CONVERTERS

Robert Walter Alister Scarr and Malcolm Richdale McCann, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 16, 1963, Ser. No. 330,876

Claims priority, application Great Britain, Dec. 21, 1962, 48,323/62

5 Claims. (Cl. 321—2)



1. A D.C. to D.C. converter circuit comprising:

a series combination of a source of unidirectional voltage, a chain of series connected tunnel diodes, and an inductor which is divided by tapping points into sections of substantially equal inductance;

a capacitor coupling each tapping point to an associated junction between pairs of tunnel diodes in the chain; and

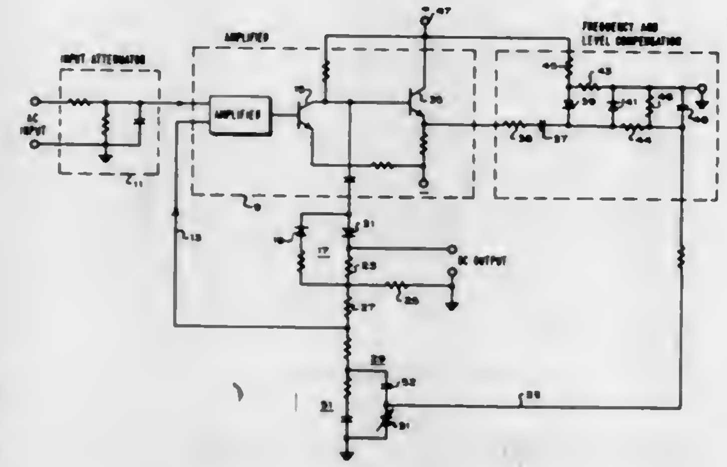
a rectifier circuit coupled to said inductor, whereby an alternating voltage generator across said inductor is applied to said rectifier circuit for deriving a unidirectional current.

3,310,726
SIGNAL CONVERTERS

Rex L. James, Loveland, Colo., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Aug. 19, 1964, Ser. No. 390,673

2 Claims. (Cl. 321—8)



1. A circuit for converting an applied A.C. signal to a D.C. signal of related amplitude, the circuit comprising:

an amplifier having an input and an output;

a pair of diodes, each connected to the output of said amplifier to conduct alternate half cycles of signal appearing at said output;

means connected to the input of said amplifier for applying thereto the combination of the applied A.C. signal and a feedback signal related to the half cycles of signal conducted alternately by said diodes;

a circuit including a signal variable impedance element connected to receive said feedback signal for altering the amplitude thereof in response to a control signal applied to said element;

circuit means connected to the output of said amplifier for producing a control signal having an amplitude related to the frequency and amplitude of signal at the output of said amplifier; and

a conductive connection between said circuit means and said element for applying said control signal thereto.

3,310,727
D.C. TO D.C. VOLTAGE CONVERTER WITH UNDERVOLTAGE-RESPONSIVE, MODE SELECTOR MEANS

John B. Flannery, Chelmsford, Mass., assignor to Ovitron Corporation, Newburgh, N.Y., a corporation of Delaware

Filed Sept. 26, 1963, Ser. No. 311,844

5 Claims. (Cl. 321—14)

1. A power supply conversion system comprising

a pair of input terminals for receiving a D.C. input potential having a given value,

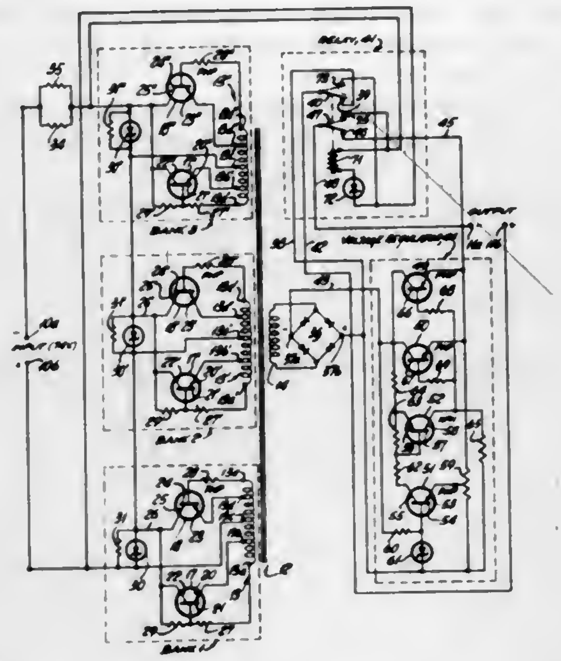
a transformer,

a semiconductor switching circuit including a plurality of transistors connected to said input treminals for delivering a pulsating current to the primary winding of said transformer, whereby an A.C. potential is induced in the secondary winding of said transformer,

means connected to said transformer secondary for rectifying said A.C. potential,

voltage regulator means connected to said rectifier means for maintaining the level of said rectified potential within predetermined limits,

a pair of output terminals,



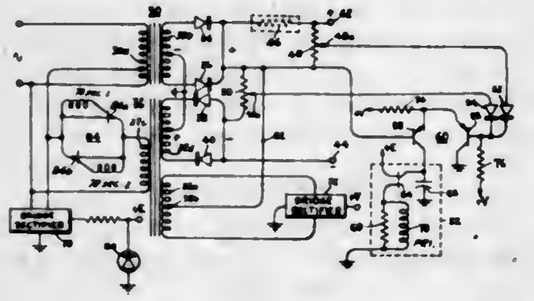
and mode selector means connected to said output terminals, to said regulator means and to said input terminals, said mode selector means being operable to connect said output terminals to the output from said regulator when said input potential is at approximately said given value, and to connect said output terminals directly to said input terminals when the input potential drops to a predetermined value below said given value.

3,310,728
REGULATED A.C.-D.C. CONVERTER SYSTEM

Stuart P. Jackson, Columbus, Ohio, assignor to Solidstate Controls, Inc., a corporation of Ohio

Filed July 11, 1962, Ser. No. 209,064

4 Claims. (Cl. 321—18)



1. A D.C. supply comprising a first transformer having a primary and a secondary winding, a center tap on each of said windings, a control transformer having a primary winding and two center tapped secondary windings, a first pair of unidirectional devices having cathode electrodes commonly connected, means for connecting said first pair of unidirectional devices across said secondary of said first transformer, a second pair of unidirectional devices having anode elements commonly connected, means for connecting said second pair of unidirectional devices across one of said secondaries of said second transformer, said common connections defining a pair of output terminals, means connecting centertaps of said first transformer secondary and said one of said control transformer secondaries, a pair of potentiometers serially connected across said output terminals and having adjustable taps, biasing circuit means connected across said potentiometer taps for altering the average current through said second pair of unilateral devices, a plurality of varying nonlinear voltage-current sources connected to said biasing circuit means and means for varying one or more of said voltage current sources whereby an upward shift in load current across said last named means reduces the available average current through said D.C. supply.

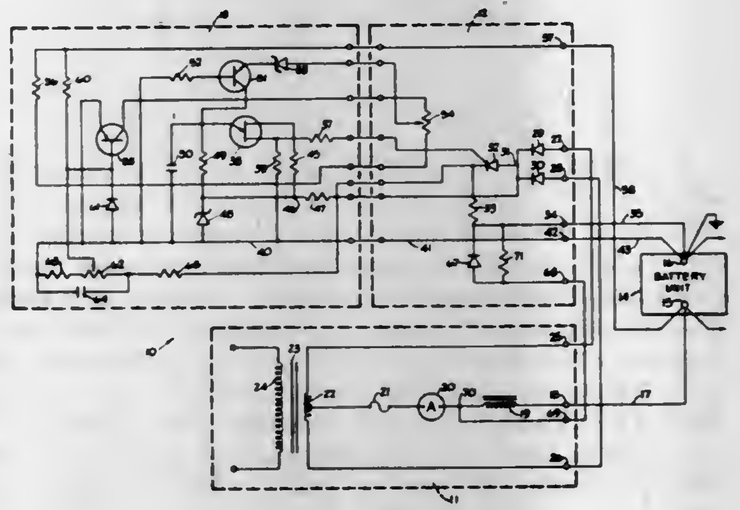
3,310,729
RECTIFIER CIRCUIT

Thomas Henry Burgess, Little Rock, Ark., and Maurits P. Kesnar, Granite City, Ill., assignors to Fan-Tron Corporation, Little Rock, Ark., a corporation of Arkansas

Filed Jan. 4, 1963, Ser. No. 266,769

(Filed under Rule 47(a) and 35 U.S.C. 116)

3 Claims. (Cl. 321—18)



1. In a rectifier circuit,

positive and negative output terminals, a silicon controlled rectifier having an anode, a cathode and a gate electrode,

means connecting said cathode to said positive output terminal,

a choke having one end thereof connected to said negative output terminal, coupling means for connecting the other end of said choke and said anode to a source of alternating current,

a unijunction transistor having an emitter electrode and first and second base electrodes,

first and second circuit points,

a zener diode connected between said first and second circuit points,

means connecting said first circuit point to said cathode,

means including a first resistor connecting said second circuit point to said anode to develop constant amplitude voltage pulses across said zener diode,

means respectively connecting said first and second base electrodes to said first and second circuit points,

a capacitor connected between said first circuit point and said emitter,

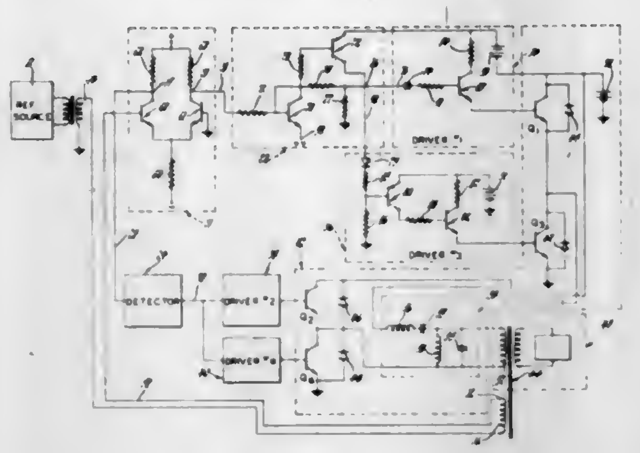
a second resistor connected between said emitter and said second circuit point to charge said capacitor and to cause periodic triggering of said unijunction transistor,

means in circuit with one of said base electrodes for applying triggering pulses from said unijunction transistor to said gate electrode to render said silicon controlled rectifier conductive, and a resistor electrically connecting said first circuit point to said other end of said choke to provide a current path for said silicon controlled rectifier during initial conduction thereof until the forward impedance of said choke is reduced by forward magnetizing current.

3,310,730
CIRCUIT FOR APPROXIMATING A DESIRED WAVEFORM ACROSS A LOAD

David E. Ruch, Playa del Rey, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 19, 1963, Ser. No. 288,951
2 Claims. (Cl. 321—18)



1. Apparatus for approximating a desired waveform across a load comprising a load circuit, a source of direct voltage, an H-configuration output stage comprising first and third transistors having the output electrodes thereof connected in series across the source, second and fourth transistors having the output electrodes thereof connected in series across the source, the load circuit having opposite ends thereof connected to the junctions of the first and third, and second and fourth transistors, respectively, first and second driver circuits respectively connected to the input electrodes of the first and second transistors and responsive to trigger signals to render the first and second transistors fully conductive, said first and second driver circuits including means biasing the first and second transistors normally non-conductive, third and fourth driver circuits respectively connected to the input electrodes of the third and fourth transistors and responsive to trigger signals to render the third and fourth transistors non-conductive, said third and fourth driver circuits including means biasing the third and fourth transistors normally fully conductive, first detector means for producing a first trigger signal in response to a first error signal, means connecting the first trigger signal to the first and third driver circuits, second detector means for producing a second trigger signal in response to a second error signal, means connecting the second trigger signal to the second and fourth driver circuits, a differential amplifier having complementary outputs for producing said first and second error signals in response to signals of respectively opposite polarity, the complementary outputs being connected to the first and second detector means respectively, and comparison means for comparing the signal developed across the load circuit with a desired waveform and producing output signals of opposite polarity indicating the substantially instantaneous difference between the load signal and said waveform, means connecting the output signals to said differential amplifier.

3,310,731
VOLTAGE REFERENCE CIRCUIT

Arthur Ostroff, Woodland Hills, Calif., and Michael D'Agostino, Philadelphia, Pa., assignors to Radio Corporation of America, a corporation of Delaware

Filed Jan. 29, 1963, Ser. No. 254,772
6 Claims. (Cl. 323—4)

3. An electrical circuit comprising in combination:

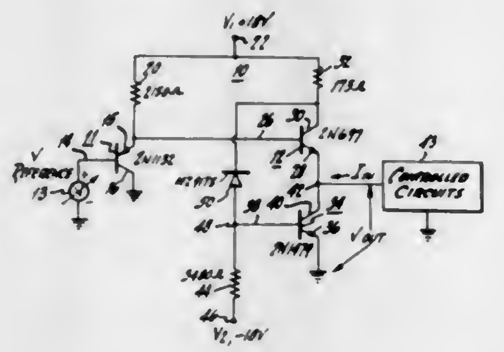
a pair of transistors of the same conductivity type with each having base, emitter, and collector electrodes, means for serially connecting together the emitter-to-collector current paths of said transistors so that one transistor functions as an emitter follower and the other functions as a load thereon,

a source of energizing potential having opposite polarity terminals,

first and second resistors coupled from the collector and base electrodes, respectively, of said emitter follower transistor to one terminal of said source of energizing potential,

a third resistor coupled from the base electrode of said load transistor to the other terminal of said source of energizing potential,

means including said source of energizing potential for forward biasing the base electrodes of said pair of transistors with respect to the emitter electrodes thereof, and



means for transmitting potential changes on said collector electrode of said emitter follower transistor to said base electrode of said load transistor including a Zener diode coupled from the collector electrode of said emitter follower transistor to the base electrode of said load transistor,

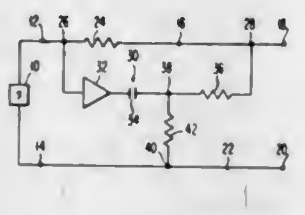
said Zener diode being poled to conduct in a reverse direction from said collector to said base electrode to maintain a substantially constant voltage difference therebetween,

whereby current input variations to the collector electrode of said load transistor which tend to cause the collector voltage of said load transistor to vary cause current and voltage variations at the collector electrode of said emitter follower transistor which variations are coupled through said Zener diode to vary the base current of said load transistor in a direction to maintain the voltage at the collector electrode thereof substantially constant.

3,310,732
PHASE DIFFERENTIAL COMPENSATION CIRCUIT

Frank J. Sordello, San Jose, and George J. Thaler, Carmel, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 11, 1964, Ser. No. 417,671
6 Claims. (Cl. 323—101)



1. Apparatus for compensating for phase differentials present in electrical signals comprising in combination:

generating means for generating signals having a plurality of frequency components;

amplifying means directly coupled, and responsive, to said generating means for amplifying only high frequency, alternating current components present in said signals; and

means responsive to said generating means for passing all other frequency components present in said signals,

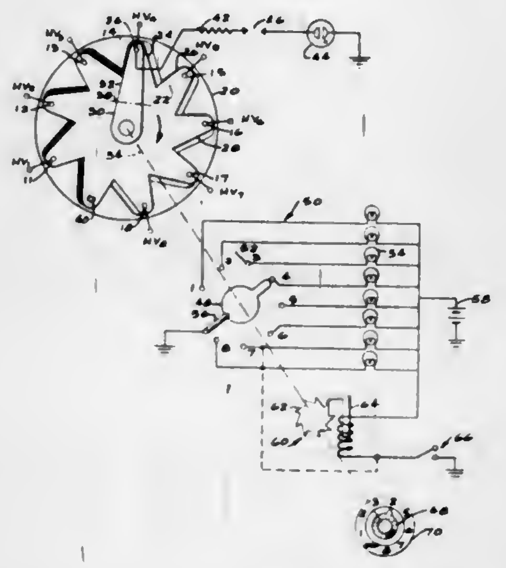
said last-recited means passing said last-recited frequency components in a substantially non-attenuated manner, and

said last-recited means being wired in electrical parallel with said amplifying means.

3,310,733
HIGH VOLTAGE SWITCHING INSTRUMENT

William S. Fortune, 14100 Jouett St., Pacoima, Calif. 91331

Filed July 29, 1963, Ser. No. 298,101
10 Claims. (Cl. 324—18)

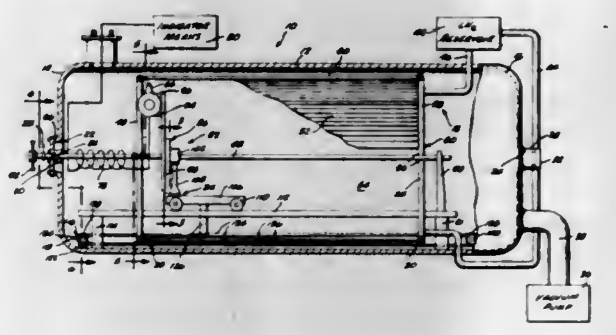


1. A high voltage rotary stepping switch comprising: a housing body; a plurality of switching chambers disposed along a circle and each separated from an adjacent one by a solid dielectric inclined ramp barrier; a plurality of high voltage, stationary contacting means disposed one each in said switching chambers and disposed substantially in a plane perpendicular to the axis of said circle, the surfaces of said ramp barriers defining an extended tortuous path as the shortest distance thereover between the high voltage stationary contacting means of adjacent ones of said switching chambers; a rotary armature assembly including a radially extended member having movable contacting means carried thereon, said movable contacting means being engageable with said stationary contacting means; force biasing means carried by said armature assembly for urging said movable contacting means against said stationary contacting means; motivation means for rotating said armature assembly about said axis and urging said movable contacting means sequentially from contact with one of said stationary contacting means to an adjacent one, said dielectric ramp barrier including surfaces engageable slidably with the surfaces on said rotary armature assembly whereby the motion of said movable contacting means between adjacent stationary contacting means includes a component of action in a direction parallel to said axis thereby lifting said extended member and movable contacting means of said armature assembly in opposition to said force biasing means and away from its previous contact with one of said stationary contacting means, carrying it without frictional contact by said movable contacting means, and then dropping it into contact with the stationary contacting means of the adjacent chamber.

3,310,734
LEAK DETECTION APPARATUS INCLUDING A MOVABLE PRESSURE SENSITIVE GAUGE FOR EVACUATED CHAMBERS

Siegfried Hansen, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Sept. 30, 1966, Ser. No. 583,371
10 Claims. (Cl. 324—33)

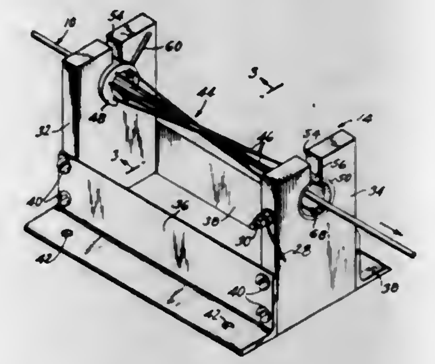


3. A leak detection apparatus for sensing leaks in an evacuated chamber comprising a pressure-sensitive detector, a detector reciprocating mechanism secured within the chamber, a detector rotating mechanism including a support carried by and journaled on said reciprocating mechanism and provided with means mounting said detector, and locater means associated with said mechanisms for indicating the position of said detector within the chamber.

3,310,735
APPARATUS FOR TESTING THE INSULATION OF ELECTRICALLY INSULATED WIRES INCLUDING A PLURALITY OF CONDUCTIVE RESILIENT ELEMENTS SUPPORTED BETWEEN A PAIR OF SPACED RINGS FOR CONTACTING THE INSULATION OF THE WIRES UNDER TEST

Stanley G. Peschel, 12 Bloomer Road, Brewster, N.Y. 10509

Filed Jan. 28, 1964, Ser. No. 340,698
4 Claims. (Cl. 324—54)



1. Apparatus for testing the insulation covering on insulated wires comprising a pair of insulated supports, frame means for holding said supports in spaced aligned relationship, a pair of C-shaped end rings mounted on said respective insulated supports defining an axial line extending through the axial openings of said rings, each of said C-shaped rings having a lateral slot for loading insulated wire to be tested therein, one of said rings being rotatable about said axial line, a plurality of sockets in the opposed surfaces of each of said end rings spaced uniformly about said axial line, said sockets converging

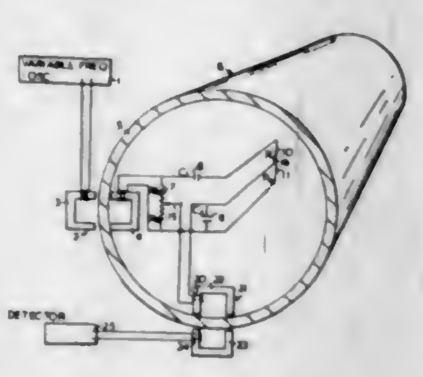
inwardly toward said axial line, a plurality of straight resilient wire elements having their opposite ends fitting into corresponding sockets in the respective end rings, said sockets being slightly larger in diameter than said wire elements, and said wire elements being bowed into curves convex toward said axial line when said lateral slots are aligned, urging said rotatable ring to revolve about said axial line until said wire elements are substantially straight and are approximately tangent to conical surfaces and converge to define a small throat near the mid-point between said C-shaped rings for embracing the insulated wire to be tested, and terminal means connected to one of said end rings for connecting a high voltage source thereto.

3,310,736

METHOD AND APPARATUS FOR TRANSMITTING SIGNAL INFORMATION FROM AN ENCLOSED REGION TO AN EXTERIOR REGION WITHOUT DIRECT ELECTRICAL CONNECTION BETWEEN THE REGIONS

John Goodenough Bayly and Edward Hesketh de Grey, Deep River, Ontario, Canada, assignors to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation

Filed Oct. 4, 1963, Ser. No. 313,824
21 Claims. (Cl. 324—62)



1. A method of transmitting signal information from an electrical transducer, located within an assembly having complete enclosing means, to an exterior observation station, without direct electrical connection between said transducer and said observation station, which method comprises the steps of:

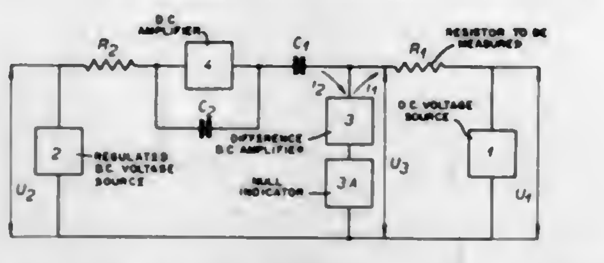
(i) generating a first variable frequency oscillatory signal, exteriorly of said assembly,
(ii) utilizing said first variable frequency oscillatory signal to produce a first magnetic flux exteriorly of said assembly and adjacent thereof,
(iii) intercepting said first magnetic flux at a first zone interiorly of said assembly,
(iv) generating a second variable frequency oscillatory signal within said assembly by means of the interception of said first flux,
(v) producing a variable frequency oscillatory third signal within said assembly as a function of said second variable frequency oscillatory signal and said signal information, said third signal having an amplitude indicative of the relationship of said second signal and said signal information,
(vi) producing a second alternating magnetic flux, by means of said first comparison signal, interiorly of said assembly at a second zone thereon,
(vii) intercepting said second alternating magnetic flux, exteriorly of said assembly, at said second zone,
(viii) generating a detecting signal by means of said interception of said second alternating magnetic flux, and adjusting the frequency of said first variable frequency oscillatory signal to establish a balance frequency,
(ix) utilizing said balance frequency to indicate the value of said signal information.

3,310,737

DEVICE FOR ACCURATELY MEASURING VERY HIGH RESISTANCES

Ludvík Ripper, Brno, Czechoslovakia, assignor to Tesla, narodni podnik, Prague, Czechoslovakia

Filed Nov. 4, 1963, Ser. No. 321,107
Claims priority, application Czechoslovakia, Nov. 5, 1962, 6,231/62; Sept. 17, 1963, 5,123/63
5 Claims. (Cl. 324—62)



1. A very high resistance measuring device comprising a difference amplifier having a pair of inputs and an output, a first unidirectional voltage source, a resistance to be measured being connected between one end of said first source and one of the inputs of said difference amplifier, a second and regulated adjustable unidirectional voltage source, a first D.C. amplifier, an integrating resistance connected between one end of said second source and the input of said D.C. amplifier, a first capacitance connected between the output of said D.C. amplifier and the junction of said resistance to be measured and the input of said difference amplifier, means for connecting the other ends of the sources and the other input of said difference amplifier together, indicating means connected to the output of said difference amplifier, and a second and integrating capacitance connected across said D.C. amplifier, the magnitude of the voltage from said second source being chosen such that it satisfies the relation

$$U_2=\frac{R_2}{R_1}\cdot\frac{C_2}{C_1}\cdot U_1$$

when the voltage input to said difference amplifier is zero wherein U_1 is the voltage supplied to the resistance to be measured from said first source, R_1 is the value of said resistance to be measured, R_2 is the value of said integrating resistance, C_2 is the value of said second and integrating capacitance, C_1 is the value of said first capacitance and U_2 is the value of the voltage from said second source, the current flowing into said difference amplifier from said first source through said resistance to be measured being balanced by the current flowing from said second source into said difference amplifier through said integrating resistance, said D.C. amplifier and said second capacitance.

3,310,738

MEASURING SYSTEM HAVING PHOTOELECTRIC RESISTOR FUNCTIONING AS BOTH A REBALANCE POTENTIOMETER AND CONVERTER

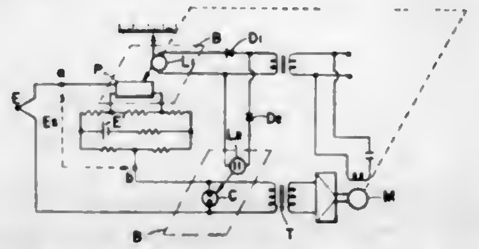
Shinichiro Ogawa, Chuo-ku, Tokyo, and Ichiro Ido, Yokohama, Japan, assignors to Honeywell Inc., a corporation of Delaware

Filed Dec. 3, 1963, Ser. No. 327,791
Claims priority, application Japan, Dec. 4, 1962, 37/53,601
3 Claims. (Cl. 324—99)

1. An automatically balancing instrument comprising

a potentiometer including a conductive element, a resistive element, and a photoconductive element bridging said conductive and resistive elements,
light producing means to produce a movable beam of light falling on said photoconductive element, the position of said beam on said photoconductive element determining the adjusted value of said potentiometer,
a direct current measuring circuit including said potentiometer and producing an error signal representing the difference between a value to be measured and said adjusted value of said potentiometer,

means for interrupting said light beam at a predetermined frequency to cause said error signal to undulate at said frequency,
alternating current servo means having input means and having a movable output member and operative to move said output member upon the application to said input means of a signal of said frequency,



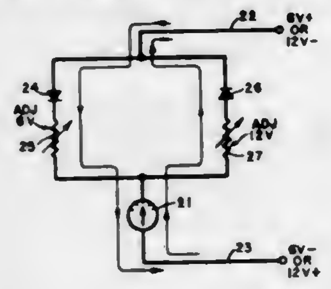
means connecting said measuring circuit to said input means for application thereto of said error signal, and
means coupling said member to said light producing means to cause movement of said member to move said light beam on said photoconductive element to minimize said difference.

3,310,739

D.C. DUAL RANGE METER USING RANGE DETERMINING OPPOSITELY POLED DIODES

Lewis A. Medlar, Lansdale, Pa., assignor to Fox Products Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 5, 1963, Ser. No. 270,899
10 Claims. (Cl. 324—115)



1. In a direct current dual range instrument, the combination of

an electrical meter for measuring a particular electrical parameter;
a pair of electrical leads;
first circuit means for permitting current flow only in a particular direction between said leads and in a path including said meter and having a predetermined impedance causing said meter to operate on one range; and
second circuit means for permitting current flow only in the opposite direction between said leads and in a path including said meter and having a different predetermined impedance value causing said meter to operate on a different range.

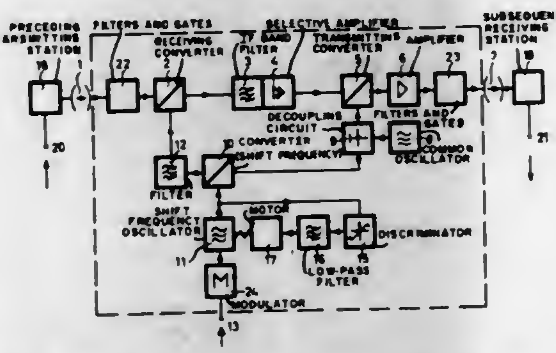
3,310,740

DIRECTIONAL RADIO SYSTEM WITH ANGLE MODULATION

Hans Leysieffer, Munich-Solln, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Sept. 10, 1963, Ser. No. 307,943
Claims priority, application Germany, Sept. 19, 1962, S 81,528
5 Claims. (Cl. 325—2)

1. A directional radio system with angle modulation, containing at least one intermediate station, comprising a common oscillator having first and second outputs, a receiving converter means connecting said receiving converter to said oscillator, said receiving converter mixing an input thereto with said first output of said oscillator to provide an intermediate frequency signal at an output thereof, to an intermediate frequency, means for amplifying the intermediate frequency output signal of said receiving converter, a transmitting converter, said connecting means connecting said transmitting converter to said oscillator, said transmitting converter mixing an input thereto with said second output of said oscillator to provide a signal for transmission at an output thereof, said connecting means including a third frequency converter connected between said common oscillator and one of said receiving and transmitting converters, a shifter-frequency oscillator operatively connected to said third frequency converter whereby said first and second outputs of said common oscillator are shifted in frequency with respect to each other by the operating frequency of said shifter-frequency oscillator and the transmitting frequency is correspondingly shifted with respect to the receiving frequency, means operatively connected to said shifter-frequency oscillator for frequency modulating an output thereof, said modulation means forming the input for additional intelligence to be inserted in the transmission, with such modulation being operative to provide a frequency range which corresponds to a frequency range of the transmission baseband of an intermediate preceding station which range was thereat maintained free of intelligence, a frequency regulating device for said shifter-frequency oscillator, said device comprising a frequency regulating member operatively connected to said shifter-frequency oscillator and operable independently of said modulation means, a discriminator to the input of which is fed a signal derived from the output of said shifter-frequency oscillator, and a low-pass filter operatively connecting said discriminator and said regulating member over which the frequency regulation voltage for the shifter-frequency oscillator is conducted, said low-pass filter having a cut-off frequency which is lower than the lowest frequency of the base-band of the directional radio system.



3,310,741

SYSTEM FOR ALTERNATELY TRANSMITTING CODED MESSAGES ON A PREDETERMINED PLURALITY OF CARRIER FREQUENCIES FROM A PLURALITY OF TRANSISTORS

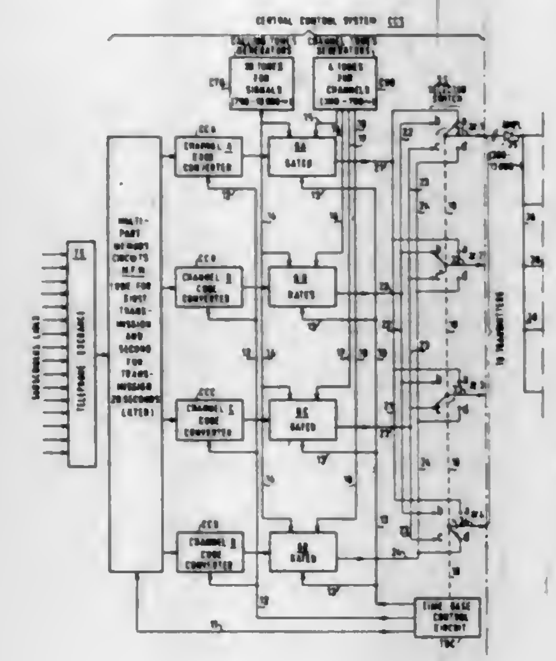
Gerardus Martinus Uitermark, Voorschoten, and Rienk Jan Visser, The Hague, Netherlands, assignors to De Staat der Nederlanden, ten deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

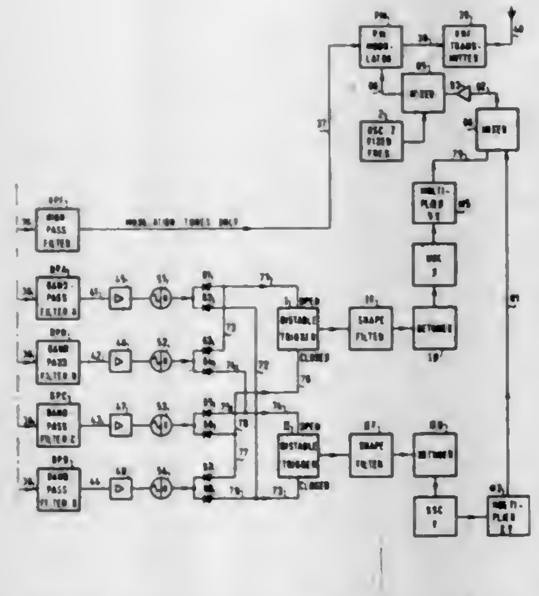
Filed July 21, 1965, Ser. No. 473,729
15 Claims. (Cl. 325—39)

1. A method for communicating multi-element code signals from a plurality of transmitters to a plurality of receivers, comprising:

(A) simultaneously transmitting different signals from adjacent transmitters, each of which simultaneously transmitted signals is modulated on a different carrier frequency, and

(B) simultaneously switching said different carrier frequencies with their modulated signals cyclically among adjacent transmitters after simultaneously transmitting at least one signal over each of said transmitters,

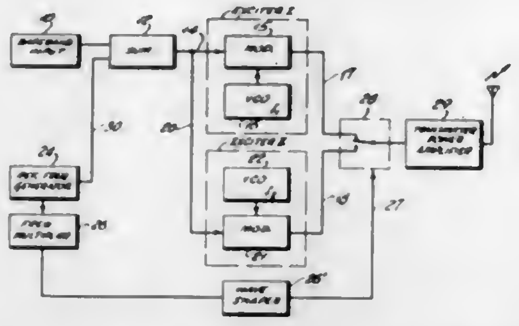




whereby the whole area covered by the spheres of action of said transmitters receives successively and repeatedly the signals on all of said different frequencies.

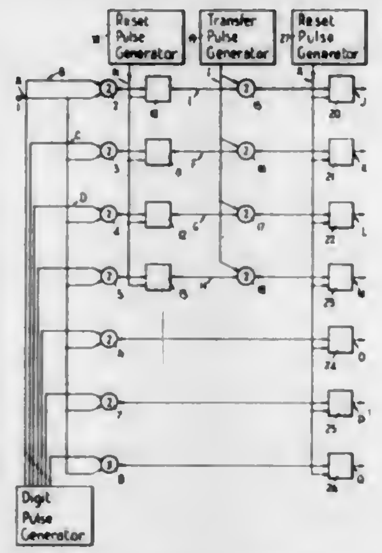
3,310,742
FREQUENCY DIVERSITY TRANSMITTING SYSTEM
Robert T. Adams, Short Hills, N.J., assignor to Sichak Associates, Nutley, N.J., a corporation of New Jersey
Filed Nov. 22, 1963, Ser. No. 325,530
4 Claims. (Cl. 325—56)

1. An apparatus for frequency diversity transmitting comprising:
- base band source means providing input information signals,
- a first exciting means comprising a first modulator and a first oscillator at a first frequency,
- a second exciting means comprising a second modulator and a second oscillator at a second frequency,
- means for continuously applying the said information signals to each of said modulators as modulating signals,
- single transmitting means,
- switching means for continuously switching the output from the first and second modulators sequentially to said transmitting means,



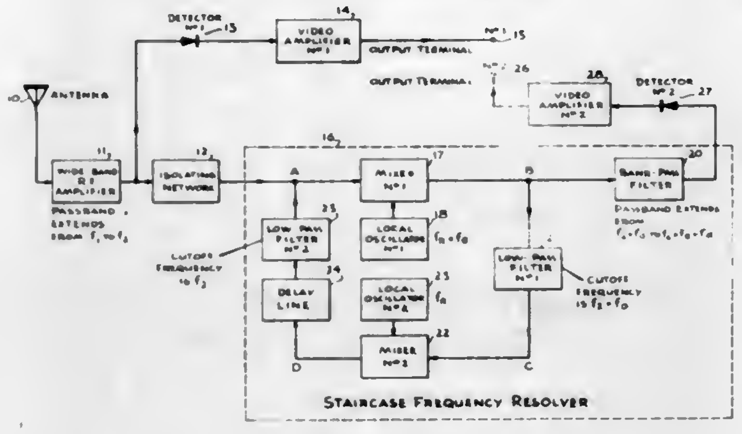
the frequency of switching being relatively high compared to said first and second frequencies.

3,310,743
DECODERS FOR PULSE CODE MODULATION SYSTEMS
Donald Jack Cleobury, Overseal, near Burton-on-Trent, and George Mitchell Smith, Coventry, England, assignors to General Electric Company Limited, London, England
Filed Jan. 15, 1964, Ser. No. 337,847
Claims priority, application Great Britain, Jan. 15, 1963, 1,785/63
11 Claims. (Cl. 325—321)



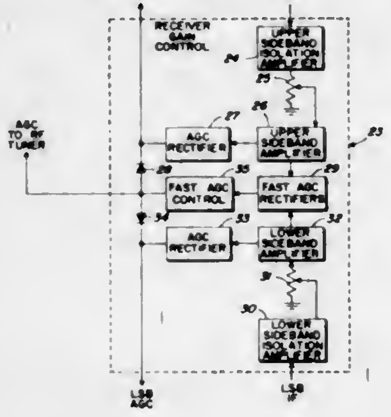
11. A decoder for a receiver of a pulse code modulation system of the kind in which successive amplitude samples of a signal to be transmitted over the system are represented in serial pulse form by respective groups of digits, each group consisting of a number, *a* plus *b*, of digits (*a* and *b* each being integral numbers), said decoder comprising a first group of *a* storage stages, a second group of *a* plus *b* storage stages, first gating means to supply the first *a* digits of each incoming group of *a* plus *b* digits to said first group of *a* storage stages respectively, transfer means connected between said first group of storage stages and the first *a* storage stage of said second group, means to control said transfer means to cause digits stored by the first group of storage means respectively to be transferred simultaneously to *a* stages of said second group subsequent to the first *a* digits of an incoming group being stored by the first group, second gating means to supply the last *b* digits of each incoming group respectively to the other *b* stages of said second group, and means operative subsequent to the last *b* digits of an incoming group being stored by the second group to supply in parallel *a* plus *b* electric signals that are respectively characteristic of the *a* plus *b* digits in each incoming group.

3,310,744
RECEIVER FOR DETERMINING THE FREQUENCY OF AN INTERCEPTED SIGNAL
Burton F. Miller, Pacific Palisades, Calif., assignor, by mesne assignments, to TRW Inc., a corporation of Ohio
Filed May 12, 1958, Ser. No. 735,091
15 Claims. (Cl. 325—363)



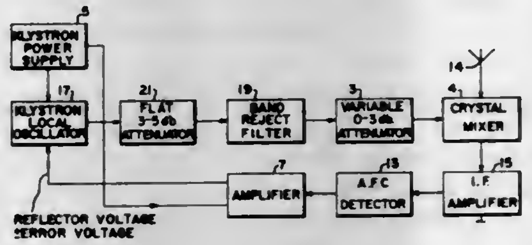
13. A receiver system for determining the frequency of an intercepted signal, said system comprising: first means for determining whether the frequency of the intercepted signal lies within a predetermined narrow band of frequencies; second means for successively translating the frequency of the intercepted signal by equal increments until the translated frequency lies within said predetermined narrow band; and third means for counting the number of frequency translations, the number of frequency translations corresponding to the difference between the frequency of the intercepted signal and the center frequency of said predetermined narrow band, whereby the frequency of the intercepted signal may be determined.

3,310,745
FAST AGC VOLTAGE DECAY CIRCUIT FOR DATA SIGNAL HANDLING SIDEBAND RECEIVERS
Richard E. Deasy, Robert H. Parker, and Richard C. White, Cedar Rapids, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Nov. 13, 1963, Ser. No. 323,497
8 Claims. (Cl. 325—410)



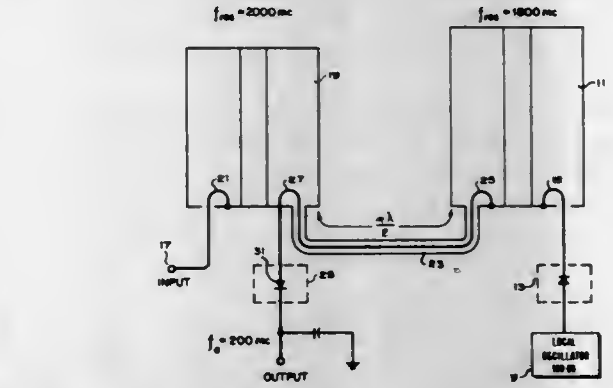
4. In a radio frequency sideband receiver having an RF tuner, an upper sideband section and a lower sideband section and with each of the sideband sections having an automatic gain control (AGC) loop: an RF tuner AGC line connected through respective individual gating diodes to each of the sideband AGC loops and with the gating diodes having a common connection with the RF tuner AGC line between like electrodes of the gating diodes; said RF tuner AGC line also being connected to a fast AGC voltage decay circuit comprising: a multielement solid state device having a first control element connected to a variable voltage bias control source, a second element connected to the RF tuner AGC line, and a third element connected to ground in order to establish a current flow path to ground from said RF tuner AGC line, and with forward biasing of said gating diodes to establish a current flow path to ground from said sideband AGC loops.

3,310,746
MICROWAVE OSCILLATOR OUTPUT CIRCUIT HAVING A BAND REJECT FILTER FOR INCREASING ELECTRONIC TUNABLE BANDWIDTH
Curtis E. Ward, Los Altos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 4, 1963, Ser. No. 256,081
21 Claims. (Cl. 325—439)



11. A microwave oscillator circuit including, a reflex klystron oscillator having an output terminal for extracting microwave power over an electronically tunable band of frequencies, said output microwave power being generally characterized by decreasing in amplitude with increase in frequency deviation from a certain frequency within the electronically tunable band of frequencies, a band reject filter connected in circuit with said output terminal of said oscillator, and said band reject filter having a reject characteristic which decreases in amplitude with increase in frequency deviation from a certain frequency within the electronically tunable band of frequencies of said oscillator for leveling the microwave oscillator power over the electronically tunable band of said oscillator as passed from said oscillator through said band reject filter.

3,310,747
FREQUENCY CONVERTERS USING A TRANSMISSION LINE IMPEDANCE TRANSFORMER
Richard W. Anderson, Los Altos, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Apr. 12, 1963, Ser. No. 272,671
4 Claims. (Cl. 325—445)



1. Signalling apparatus comprising:
- an input and a source of signal;
- a first cavity resonator connected to the input for receiving an input signal and a second cavity resonator connected to receive the signal from said source;
- the first and second cavities having resonant frequencies which are separated by a selected frequency value;
- a signal mixer element;

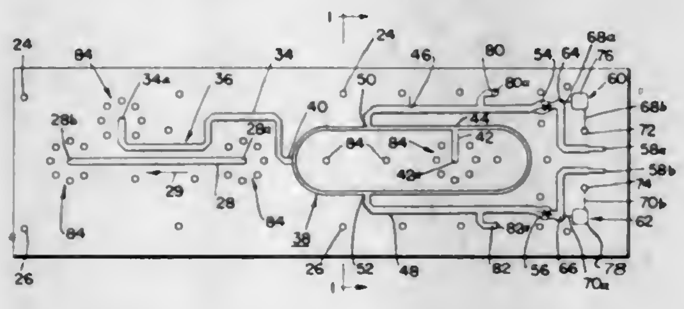
an electric wave transmission line having one end disposed in signal coupling relationship to the second cavity resonator and having a portion thereof disposed within said first cavity resonator in signal coupling relationship therewith with another end connected to said signal mixer element;

said transmission line having a length between the first and second cavity resonators which transforms the impedance presented by said second cavity resonator to signal on said transmission line having a frequency equal to the resonant frequency of said first cavity substantially to a short at the location of said portion of the transmission line which is coupled to said first cavity; and

means connected to said signal mixer element for producing an output signal of said selected frequency value.

3,310,748
STRIP LINE HYBRID RING AND BALANCED MIXER ASSEMBLY

Howard Putnam, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Mar. 18, 1963, Ser. No. 265,857
7 Claims. (Cl. 325—446)

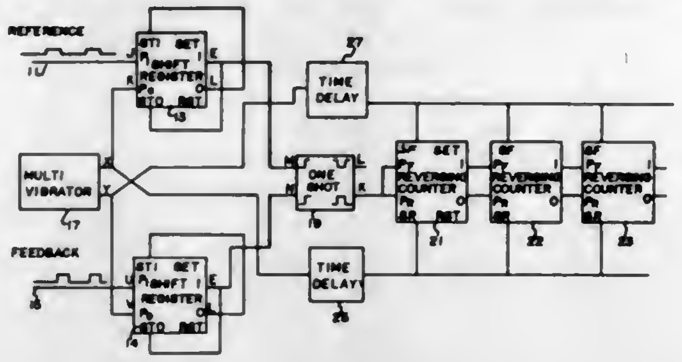


5. A strip line microwave mixer assembly of the type including a pair of ground plane conductors and central conductive strips, said mixer assembly comprising:
(a) a hybrid ring,
(b) a first conductive strip for introducing local oscillator signals to said hybrid ring,
(c) a second conductive strip for introducing received signals to said hybrid ring,
(d) an output line connected to said hybrid ring,
(e) a diode physically incorporated in and electrically connected in series with said output line,
(f) a beat frequency output terminal,
(g) means connecting said output terminal to said output line at a point between said diode and the termination of said output line where the reflected impedance of said termination is substantially zero, and
(h) a matching stub having one end coupled to said output line at a point intermediate said diode and said hybrid ring and the other end connected to at least one of said ground plane conductors.

3,310,749
REVERSING COUNTER HAVING ADD-AND-SUBTRACT INPUTS EMPLOYING TIME-CONTROL MEANS TO EFFECT ANTI-COINCIDENCE UPON SIMULTANEOUS OCCURRENCE OF INPUTS

Robert C. Clark, Roanoke, Va., assignor to General Electric Company, a corporation of New York
Filed Apr. 14, 1964, Ser. No. 359,603
3 Claims. (Cl. 328—44)

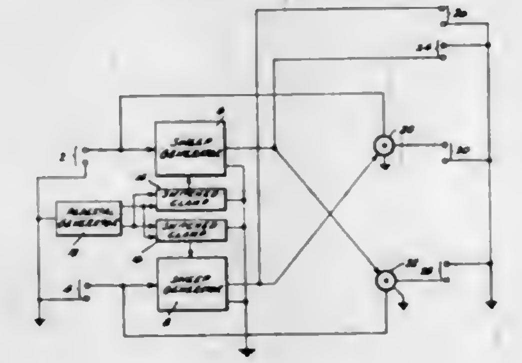
1. A counting circuit for counting input signals from a first and second independent sources comprising, first bistable means having first and second stable states responsive to an input signal from said first source to be set to its first stable state, second bistable means having first and second stable states responsive to an input signal from said second source to be set to its first stable state, means for resetting said first and second bistable means



to their second stable states at diffferent times, counting means, and means responsive to the resetting of said first and second bistable means for causing a count to be registered in said counting means.

3,310,750
VOLTAGE GENERATOR PROVIDING FIRST AND SECOND OFFSET CARRIER SWEEPS

William C. Hoffman, Hawthorne, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed June 10, 1964, Ser. No. 373,997
6 Claims. (Cl. 328—72)

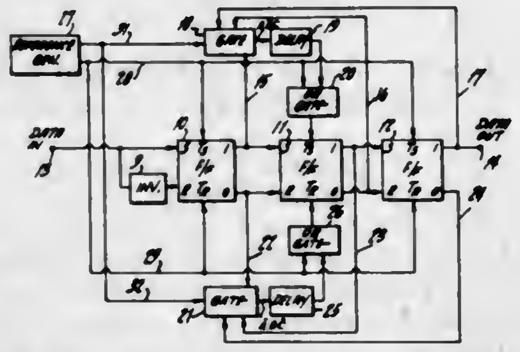


1. A voltage generator comprising:
first and second coupling means for receiving signal voltages;
first and second sweep generators respectively coupled to said first and second coupling means and respectively responsive to first and second signal voltages having respective first and second waveforms respectively representative of equal amplitude sine and cosine functions of an angle continuously varying with time between predetermined limits for respectively providing first and second sweep carrier voltages respectively having envelopes bearing the same relationship to each other as said first and second waveforms;
a pedestal generator;
first and second switched clamps coupled between said pedestal generator and, respectively, said first and second sweep generators and energized by said pedestal generator for returning said sweep carrier voltages to a predetermined reference level before the beginning of each successive sweep thereof;
first summing means coupled to said first sweep generator and said second coupling means for providing a first offset sweep carrier voltage representative of the algebraic sum of said first sweep carrier voltage and said second signal voltage;
second summing means coupled to said second sweep generator and said first coupling means for providing a second offset sweep carrier voltage representative of the algebraic sum of said second sweep carrier voltage and said first signal voltage; and

third, fourth, fifth and sixth coupling means respectively coupled to said first sweep generator, said second sweep generator, said first summing means, and said second summing means for respectively applying said first sweep carrier voltage, said second sweep carrier voltage, said first offset sweep carrier voltage, and said second offset sweep carrier voltage to a utilization device.

3,310,751
SIGNAL DISTORTION CORRECTION CIRCUIT EMPLOYING MEANS FOR STORING SIGNAL SAMPLES AND INITIATING CORRECTION WHEN THE PATTERN OF STORED SAMPLES INDICATES THE PRESENCE OF DISTORTION

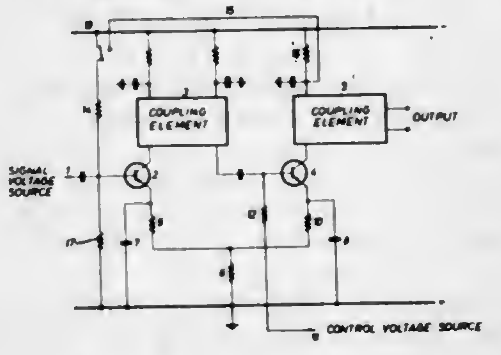
Charles R. Atzenbeck, Cranford, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 30, 1963, Ser. No. 276,705
15 Claims. (Cl. 328—163)



1. A circuit for detecting and correcting distortion in a signal comprising, in combination,
means for sampling said signal at a rate determined by said distortion and for storing said samples,
means for examining said stored samples for a pattern which indicates the presence of said distortion in said signal and for removing said pattern of stored samples from said storage means when said pattern occurs,
and means for deriving said signal from said storage means free of said distortion.

3,310,752
CIRCUIT ARRANGEMENT FOR EFFECTING THE FORWARD AND REVERSE CONTROL OF A TWO-STAGE TRANSISTOR AMPLIFIER

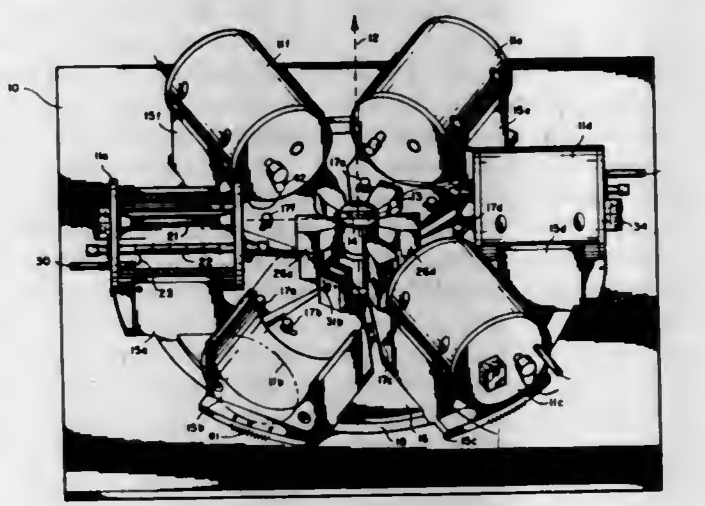
Hubert Forsthuber, Durm, and Gerhard Michaelis, Rastatt, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 29, 1964, Ser. No. 421,856
Claims priority, application Germany, Jan. 4, 1964, St 21,523
3 Claims. (Cl. 330—26)



1. A circuit arrangement for affecting the forward and reverse control of a two-stage transistor amplifier comprising:
a source of D.C. potential;
a first forward controlled transistor having a base, emitter, and collector;
a second reverse controlled transistor having a base, emitter, and collector;
means connecting said first and second transistor collectors to said source of D.C. potential;
means coupling the collector of said first transistor to the base of said second transistor;
a first emitter resistor connected between said first transistor emitter and a junction point;
a second emitter resistor connected between said second transistor emitter and said junction point;
a common emitter resistor connected between said junction point and ground;
a source of control voltage resistively coupled to the base of said second transistor;
a source of signal voltage capacitively coupled to the base of said first transistor; and
additional resistance means coupled to the base of said first transistor which in cooperation with said common emitter resistor adjusts the no signal base current of said first and second transistors to relatively high values, whereby the operating point of said first transistor is set so that the control affect has almost reached its maximum value by the time the control operation is initiated by said second reverse controlled transistor due to application of said control voltage to the base of said second transistor.

3,310,753
SEQUENTIALLY FIRING ARRAY OF LASER UNITS

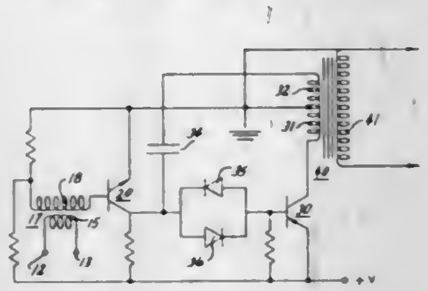
James H. Burkhalter, Orlando, Fla., assignor to Martin-Marietta Corporation, Middle River, Md.
Filed Feb. 7, 1963, Ser. No. 256,913
15 Claims. (Cl. 331—94.5)



1. An array of laser units capable of being operated in a Q-switching mode with the output beams thereof being disposed in a substantially common direction, said laser units each comprising a quality of laser material, reflecting means for forming in conjunction with each laser unit a portion of an optically resonant cavity in which said laser material is disposed, and pumping means for the generation of a population inversion in said materials, said laser units being disposed about an axis and arranged to utilize transiently a common Fabry-Perot plate for completing said optical resonant cavities, a rotating member utilizing a reflecting element rotating about said axis and inclined to said axis, said rotating member rotating through the positions in which said Fabry-Perot plate successively completes the optical resonant cavity of each laser unit in turn, such that those of the laser materials having existing population inversions due to previous pumping actions thereby undergo high intensity, short duration lasing action, said inclined

reflecting element reflecting the output beams substantially parallel to the axis of rotation of said rotating member.

3,310,754
OSCILLATOR TRIGGER CIRCUIT INCLUDING UNIDIRECTIONAL CONDUCTING DEVICE IN THE FEEDBACK PATH THEREOF
William M. Stewart, 2926 Calle Glorietta, Tucson, Ariz. 85716
Filed Aug. 19, 1965, Ser. No. 480,884
2 Claims. (Cl. 331—112)



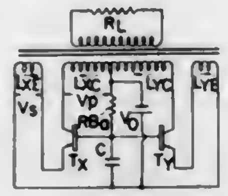
1. An oscillator trigger comprising: a unidirectional conducting device having an anode and a cathode and having a given forward incremental impedance and a substantially lower forward incremental impedance when the current flowing therethrough exceeds a predetermined value; a first transistor having a base electrode, a collector electrode and an emitter electrode; means connecting a bias potential to said first transistor; a first transformer having a secondary winding connected in series with said base electrode and a primary winding adapted to receive input signals; a second transistor having a base electrode, a collector electrode, and an emitter electrode; means connecting a bias potential to said second transistor; a second transformer having a pair of mutually inductive primary windings and a secondary winding adapted to provide an output signal; a feedback path connected between the collector and base electrodes of said second transistor, said feedback including, in series, said pair of mutually inductive primary windings, a capacitor, and said unidirectional conducting device; said unidirectional conducting device having the cathode thereof connected to said capacitor and to the collector electrode of said first transistor; said second transistor being in a substantially quiescent state when forward biased by said unidirectional conducting device having substantially said given forward incremental impedance, wherein an input signal applied to the primary winding of said first transformer increases the current flowing through said unidirectional conducting device to a value exceeding said predetermined value causing the said second transistor to produce oscillations.

3,310,755
D.C.-A.C. CONVERSION CIRCUIT HAVING OUTPUT FREQUENCY WHICH IS INDEPENDENT OF LOAD AND POWER SUPPLY VARIATIONS
Nobuhiko Aoki, Hachioji-shi, and Masayuki Ajiro, Chofu-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Feb. 21, 1964, Ser. No. 346,451
Claims priority, application Japan, Feb. 23, 1963, 38/9,274
4 Claims. (Cl. 331—113)

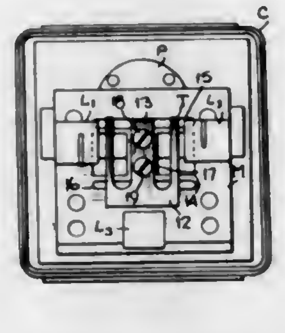
1. A D.C.-A.C. conversion circuit comprising a pair of transistors; a first winding provided with a center tap inserted between the collectors of said pair of transistors; second and third windings magnetically coupled to said first winding; said second and third windings each having first and second terminals; said first terminals being connected to a common junction; each second terminal being connected to an emitter of one of said pair of transistors; a direct current power supply; and a series circuit comprising a capacitance element and a resistance element inserted between the center tap of said first winding and said common junction; the junction of said resistance element and said capacitance element being connected to the bases of said pair of transistors, and said power supply being connected to said center tap and said common junction; whereby said pair of transistors is controlled to repeat periodically "on" and "off" states by the electric currents flowing in said capacitance and resistance elements at a frequency represented by equation

$$f=\frac{R_B N_P}{4L_{XC}N_S}$$

wherein R_B is the resistance value of said resistance element; L_{XC} is the inductance of the winding inserted between the collector of one of the transistors; and the power source; N_p is the number of turns of the winding inserted between the collectors of said pair of transistors; and N_S is the number of turn of the winding inserted between the emitters of said pair of transistors.

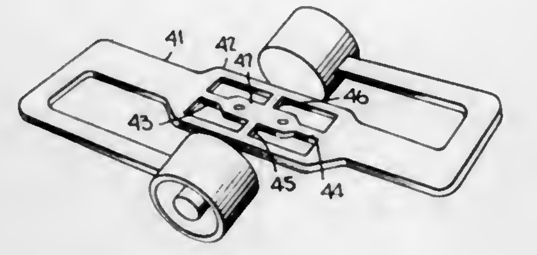


3,310,756
DECOUPLNG MOUNTING PLATE FOR TUNING FORK
Frank Dostal, Elmhurst, N.Y., assignor to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 24, 1965, Ser. No. 509,510
7 Claims. (Cl. 331—116)



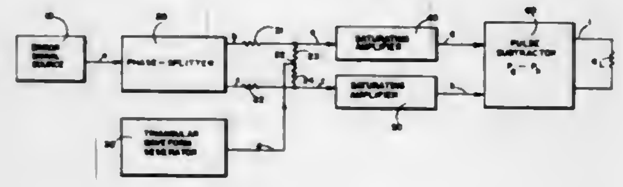
1. A precision tuning-fork oscillator comprising:
- (a) a tuning fork having a pair of tines interconnected by a base and extending therefrom in a common plane, said base having a mounting stud projecting therefrom,
- (b) means to sustain said fork in vibration at the natural frequency of said tines, the motion of said tines producing an axial component of motion which is transmitted to said stud,
- (c) a mounting plate for supporting said fork, said plate having a rigid portion for securing said plate to a fixture and a compliant portion resiliently connected to said rigid portion,
- (d) and means securing the stud of said fork to said compliant portion to dispose the plane containing said tines in parallel relationship to the plane of said mounting plate, the compliant portion of said plate having a value of elasticity which in combination with the mass of said fork establishes a frequency which is less than twice the natural frequency of the fork.

3,310,757
DECOUPLING MOUNTING PLATES FOR TUNING FORK OSCILLATORS
Frank Dostal, Elmhurst, N.Y., assignor to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 15, 1966, Ser. No. 579,792
6 Claims. (Cl. 331—116)



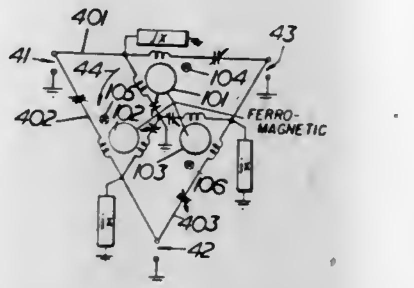
1. A precision oscillator comprising:
- (a) a tuning-fork having a Z-shaped configuration defining a pair of tines interconnected by a base,
- (b) means actuating said tines periodically to maintain said fork in oscillation at its natural frequency, said fork producing a torque about a central point in said base,
- (c) and a mounting for said fork, said mounting having a platform rigidly connected to the base of said fork, said platform being suspended within an opening in said mounting by at least one bendable element imparting a compliance to said mounting having a value of elasticity which in combination with the mass of the fork establishes a frequency which is lower than the natural frequency of the fork.

3,310,758
TERNARY PULSE WIDTH GENERATION
George B. Cottrell, Dairy Valley, Calif., assignor to North American Aviation, Inc.
Filed June 24, 1964, Ser. No. 377,616
4 Claims. (Cl. 332—9)



1. A pulse width modulator comprising a source of control signal, means responsive to said control signal for providing a plurality of first pulses, means responsive to said control signal for providing a plurality of second pulses with each of said second pulses normally having substantially the same time width and time domain as a corresponding one of said first pulses, said source of control signal being operative to increase the time width of said first pulses as the amplitude of said control signal increases and being operative to decrease the time width of said second pulses as the amplitude of said control signal increases, and means responsive to said plurality of first pulses and said plurality of second pulses for producing an output signal which is representative of the difference of the time width of said first pulses and said second pulses.

3,310,759
HIGH FREQUENCY CIRCULATOR COMPRISING A PLURALITY OF NON-RECIPROCAL FERROMAGNETIC CIRCUITS
Naoyuki Ogasawara, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed May 5, 1964, Ser. No. 364,962
Claims priority, application Japan, May 9, 1963, 38/24,676
5 Claims. (Cl. 333—1.1)



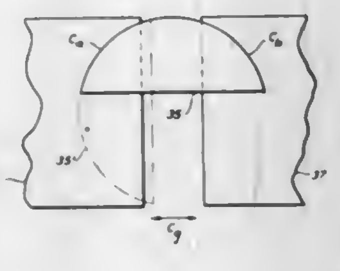
1. A compound non-reciprocal circuit comprising:

a plurality of non-reciprocal circuits each being comprised of:
- (A) a ferromagnetic body;
- (B) first and second windings wound around said body such that:
  - (1) each of said windings has at least one turn,
  - (2) each turn of each winding defines a plane,
    - (a) the plane defined by said second winding intersecting the plane defined by said first winding,
  - (3) said windings being insulated from said body and from each other;
- (C) connection means for interlinking a first end of the first winding wtih a first end of said second winding at a common terminal to permit high frequency current exchange between said windings;
- (D) first means directly connected to said connection means and second means connected to the second end of said first winding for supplying high frequency current to said windings, the supplied high frequency currents producing different high frequency current components in each of said windings, which components, in turn, respectively produce different magnetic field components in said ferromagnetic body;
- (E) said first and second means each including means for receiving high frequency current from said windings;
- (F) adjusting means each being coupled to an associated winding for adjusting the phase of said high frequency current components relative to each other, to thereby control said magnetic field components produced in said body; and
- (G) means for applying a uniform direct current magnetic field to said windings in a direction parallel to the planes defined by said windings whereby for a preselected ferromagnetic body and a predetermined direct current magnetic field, the spin resonance effect on said body can be controlled to regulate simultaneously the currents flowing in either direction from said first means to said second means;
- (H) means for serially interconnecting said circuits to form a closed loop such that each first means is simultaneously coupled to the common terminal of at least one of said non-recipro-

cal circuits and to the second end of the first winding of at least one other non-reciprocal circuit.

3,310,760
STRIP LINE TUNING STRUCTURES

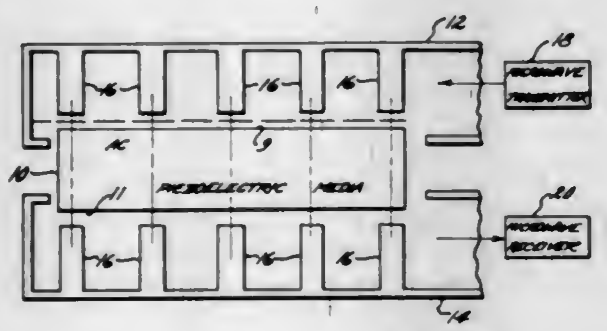
Clarence B. Swan, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 12, 1964, Ser. No. 389,125
4 Claims. (Cl. 333—24)



1. In combination:
a strip transmission line comprising a flat ground conductor and a flat active conductor;
a gap separating first and second portions of the active conductor;
means for varying the series capacitance between the first and second portions of the active conductor comprising a rotatable irregularly shaped flat conductor adjacent the gap and insulated from the ground conductor and both portions of the active conductor;
the rotatable flat conductor being capable of overlapping the first and second portions simultaneously.

3,310,761
TAPPED MICROWAVE ACOUSTIC DELAY LINE

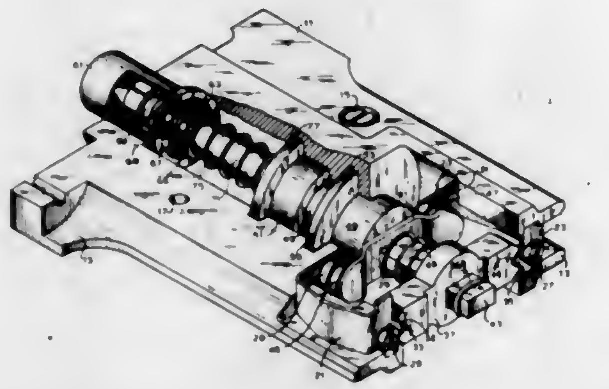
Joseph B. Brauer, Rome, N.Y., assignor to the United States of America as represented by the Secretary of the Air Force
Filed June 18, 1963, Ser. No. 288,845
6 Claims. (Cl. 333—30)



1. A microwave acoustic delay apparatus comprising an input waveguide transmission line and an output waveguide transmission line, said transmission lines arranged parallel to each other, a delay media inserted between adjacent walls of said transmission lines, each of said transmission lines having a plurality of probes located so as to concentrate the electric field component of an electromagnetic signal on the face of said delay media, and a short circuit in each of said transmission lines such that the voltage is a minimum at the shorted end and having a multiplicity of maximum voltage points along the transmission line at one-quarter wavelength from said shorted end and at successive half wave length multiples thereof along the direction of propagation of said electromagnetic signal, said delay media being of a sufficient length to contain more than one of said maximum voltage points to provide multiple delay paths of equal length to increase the effective signal power transferred across or through said delay device.

3,310,762
PUSHBUTTON SNAP ACTION SWITCH WITH PERMANENT MAGNET LATCHING MEANS

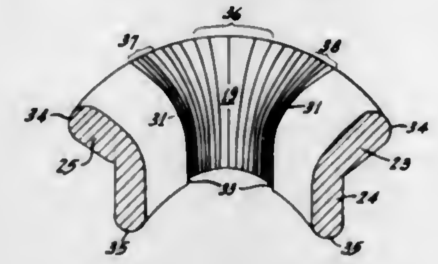
Ernest F. Goetz, Roanoke, Va., assignor to General Electric Company, a corporation of New York
Filed Feb. 1, 1966, Ser. No. 524,148
1 Claim. (Cl. 335—188)



A circuit breaker having fixed and movable contacts, a contact operating spring normally urging said contacts together, positive operating means for ultimately separating said contacts, a trip spring coacting with said operating means for initially separating said contacts, a return spring coacting with said contact operating spring to resist said operating means, said operating means including a permanent magnet, a first, fixed magnetizable member coacting with said magnet to provide snap-action to bring said contacts together, a second, fixed magnetizable member coacting with said magnet to provide snap-action to separate said contacts, a fixedly detachable abutment for said contact operating spring, the tension of said spring against said abutment normally retaining the alignment of said movable contacts with said fixed contacts, and a support engaging and disengaging said abutment upon its displacement whereby the alignment of said contacts is disrupted to permit said movable contacts to be removed from said circuit breaker.

3,310,763
DEFLECTION YOKE COIL

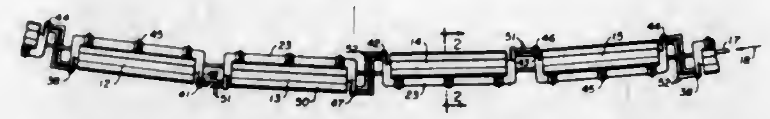
Ira F. Thompson, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 4, 1965, Ser. No. 430,309
6 Claims. (Cl. 335—213)



1. In an electromagnetic beam deflection yoke:
a closed ferromagnetic core encircling said yoke; and coils wound toroidally around said core at opposite sides thereof,
each of said coils having a plurality of layers each having the same width and the same number of turns,
the spacing between turns of each layer being a maximum at the center and gradually decreasing to a minimum at the outer extremities of the layer.

3,310,764
CONNECTION SYSTEM FOR MAGNET EXCITATION COILS

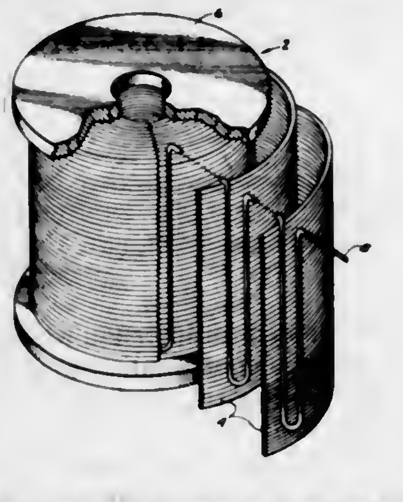
Robert A. Kilpatrick, Orinda, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 13, 1965, Ser. No. 471,774
9 Claims. (Cl. 335—213)



1. In combination with a plurality of magnets which are to be equally energized and each of which has a pair of spaced apart poles, a winding for each of said magnets comprising a first length of conductor extending from a first to a second end of said magnet and having at least one complete turn and one incomplete turn wound around a pole thereof in a first rotational sense, a second length of conductor extending from said first to said second end of said magnet and having an incomplete turn wound around said pole of said magnet in an opposite rotational sense, which incomplete turn is the complement of said incomplete turn of said first conductor thereon, and terminal means for connecting said first and said second lengths of conductor to the similar conductors of a preceding and a subsequent magnet at said first and second ends of said magnet.

3,310,765
STABLE SUPERCONDUCTING MAGNET

Roger W. Boom, Woodland Hills, Calif., assignor to North American Aviation, Inc.
Filed July 26, 1965, Ser. No. 474,815
13 Claims. (Cl. 335—216)

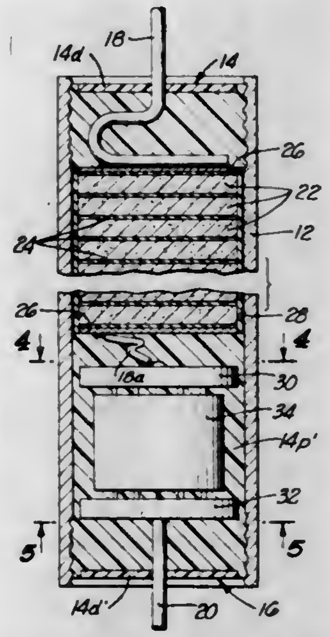


1. A method of obtaining a relatively high current in a magnet of a superconducting material, positioned in a bath of a gas refrigerant, which comprises
(a) adjusting the temperature of at least a portion of the superconducting material to above the temperature of said gas refrigerant in liquid phase but below the critical temperature for said superconducting material, and
(b) passing a supercurrent through said magnet.

3,310,766
ELECTRICAL RESISTANCE DEVICE

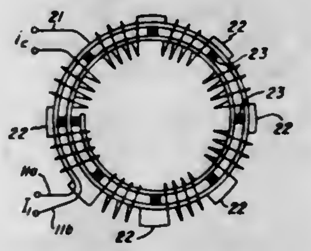
Leo G. Downing and James V. Kindall, Riverside, Calif., assignors to Bourns, Inc.
Filed July 14, 1965, Ser. No. 472,002
7 Claims. (Cl. 338—20)

5. An electrical resistive device comprising:
first means, including a stack of resistive semiconductive polycrystalline elements of disc-like form the internal face-to-face electrical resistance of which resistive elements varies nonlinearly with variation of applied potential, said resistive elements being arranged generally in face-to-face contact;
second means, including a series of masses of conductive metal-containing polymer adhesive each of said masses being disposed between and in electrical contact with the contacting faces of a respective pair of said resistive elements and serving to improve the conductivity of the electrical path therebetween and further serving to adhesively bind the respective pair of resistive elements together, whereby the said stack of resistive elements is firmly united into a rigid unitary structure with the resistive elements in electrical series relationship;
and third means, including means housing said resistive elements and providing electrical terminal connections thereto.



3,310,767
POWER CRYOTRON

Theodor A. Buchhold, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 23, 1964, Ser. No. 354,057
24 Claims. (Cl. 338—32)

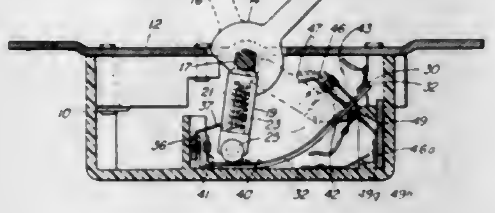


6. A power cryotron including in combination a relatively wide composite tape comprised by a relatively wide tape of first superconducting material joined together at one end but split along its entire length to form a doubly long superconducting path, and having a first critical magnetic field strength, two additional superconducting shielding tapes of comparative width to the first tape, mechanically secured on opposite sides of the first superconducting tape, the superconducting shielding tapes having a critical magnetic field strength greater than the first critical magnetic field strength and being spaced apart from the first superconducting tape a small distance less than the thickness of the first superconducting tape and electrically insulated from said first superconducting tape, the composite tape being rolled in the form of a coil, and a control winding of second superconducting material having a second critical magnetic field strength greater than the first critical magnetic field

strength surrounding and electrically insulated from the coiled composite tape of first superconducting material and shielding superconducting tapes.

3,310,768
ELECTRIC CIRCUIT CONTROL

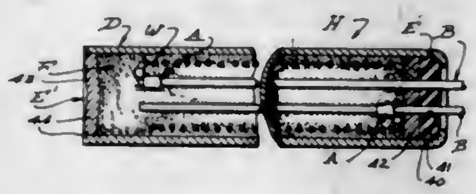
John J. Opalenik, New Britain, and Robert J. Petitjean, Simsbury, Conn., assignors to The Arrow-Hart & Hegeman Electric Company, Hartford, Conn., a corporation of Connecticut
Filed July 2, 1965, Ser. No. 470,344
16 Claims. (Cl. 338—198)



3. An electric circuit controller, comprising an insulating housing, an operating member pivotally supported for movement to and fro in said housing, a high conductivity arcuate track and high resistance arcuate track paralleling said conductive track both mounted in said housing, an electrically conductive bridging conductor carried by said operating member and positionable in any intermediate position along said tracks to provide for varying the amount of resistance encircuited as said conductor moves from one end of the resistance track to the other, fixed contacts at each end of said conductive track, a movable contact adjacent each end of said conductive track, the movable contact at one end being biased into engagement with its fixed contact, the movable contact at the other end being biased out of engagement with its contact, and means on said operating member causing disengagement of the normally engaged contacts when said bridging conductor reaches said one end of said conductive track and causing engagement of the normally disengaged contacts when said bridging conductor is at the other end of said conductive track to cause encircuiting or short circuiting respectively of said high resistance track.

3,310,769
CARTRIDGE HEATER

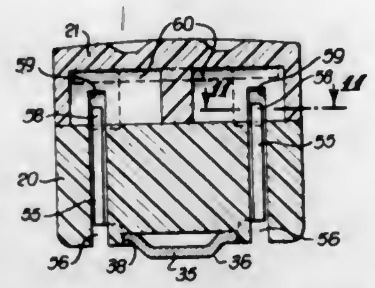
Ray L. Simmons, Hemet, Calif., assignor to Rama Corporation, San Jacinto, Calif., a corporation of California
Filed June 16, 1964, Ser. No. 375,519
10 Claims. (Cl. 338—241)



1. An elongate heater of the character referred to including an elongate resistance wire, a pair of elongate, straight, cylindrical conductors in spaced parallel relationship with each other and having portions adjacent the ends of the resistance wire, a coupler fixed to each end of the resistance wire and having a sleeve portion slidably engaged about the portion of the conductor related thereto, a case about the wire, couplers and conductors and a compacted filler of dielectric material in the case and about said wire, conductors and couplers and holding the sleeve portions of the couplers in tight contact about the conductors, said conductors having end portions projecting from one end of the case.

3,310,770
ELECTRICAL RECEPTACLE WITH STRAP INTERLOCK

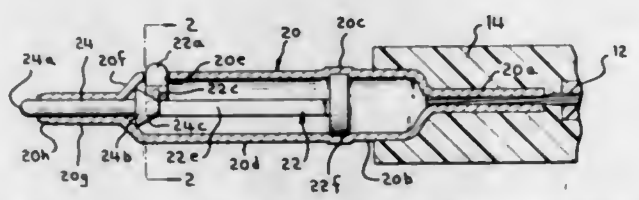
Robert E. V. Ramsing, Whittier, Calif., assignor to Sierra Electric Corporation, Gardena, Calif., a corporation of California
Filed Oct. 5, 1964, Ser. No. 401,419
9 Claims. (Cl. 339—14)



1. An electrical receptacle comprising an insulative body and removable cover containing openings for passage into the body of a pair of plug-in prongs and a grounding pin, a resilient mounting strap secured to the face of the body opposite the cover and having end extents in overlapping relation with opposite ends of the body and cover, inward projections carried by the strap and so positioned opposite surfaces of the body as to block separation of the body from the strap by engagement with said surfaces, said end extents of the strap each having a pair of projections extending into the cover and engageable therewith to block lateral shifting of the cover relative to the body.

3,310,771
LATCHING AND LOCKING CONTACTOR

Paul McCullen Amigh, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed July 13, 1964, Ser. No. 382,215
10 Claims. (Cl. 339—217)

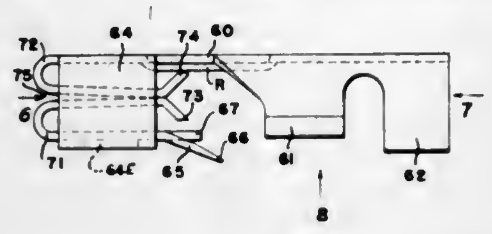


1. A contactor adapted for insertion within a receptacle, comprising a barrel of a configuration to slidingly fit within the receptacle, said barrel including a forward end carrying a contact surface thereon and a rearward end, an aperture proximate the forward end, a latching means secured in said barrel including a detent extending through said aperture to a point of engagement with an edge of the receptacle, a torsion spring fixed at said rearward end against rotation and extending along said barrel toward said forward end and including a crank arm connecting said spring to said detent and operable to bias said detent outwardly through said aperture to latch said contactor within the receptacle against axial movement.

3,310,772
CONNECTOR MEANS

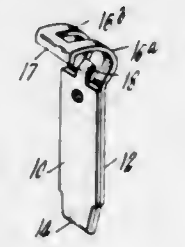
Robert E. Kirk and John R. Lubert, both of Warren, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 443,938
6 Claims. (Cl. 339—217)

1. A terminal means that mates with a flat conductor, comprising, a body portion having at least one pair of wiring crimp wings integral therewith, a transverse portion in an intermediate location of said body portion, a pair of resilient tongue portions located substantially parallel of each other and folded back adjacent said transverse portion, said tongue portions extending from a same edge of said transverse portion, one of said tongue portions having longitudinal alignment with said body portion, a locking tab integral with said transverse portion also and longitudinally in alignment with a second of said tongue portions, and an additional portion of said transverse portion in a location tightly against an underside of one tongue portion, said additional portion being located laterally inwardly to assure substantially equal formation of "box" configuration which restrains said tongue portions against excessive separation.



3,310,773
ELECTRICAL CONNECTOR

Leonard N. Baenziger, Attleboro, Mass., and George S. Tuck, Providence, R.I., assignors to Carlton Manufacturing Co., Pawtucket, R.I., a corporation of Rhode Island
Filed May 20, 1965, Ser. No. 457,270
2 Claims. (Cl. 339—276)

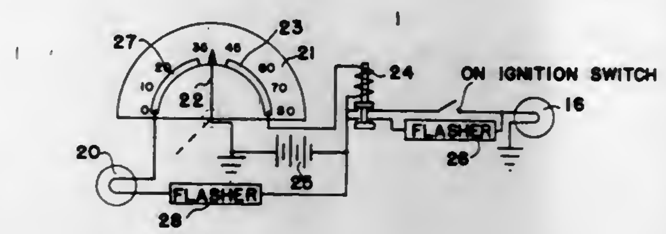


1. An electrical connector comprising
a pair of elongated conducting elements joined to each other at one end and flattened at least at the other end portion
said elements being arranged side by side in registry with and contacting each other
each of said elements having a tongue extending from its unjoined end and connected thereto only along a part of its width
one of said tongues being longer than the other and extending outwardly beyond and at least partly around the other end of the adjacent element
the other of said tongues being shorter and offset toward and beyond the end of the element which has the longer tongue at a location free of any connecting portion of said longer tongue so that a conductor placed between said tongues may be gripped by the longer tongue curled therearound while at the same time the unjoined ends of said elements will be clamped together by the engagement of the conductor with the shorter tongue.

3,310,774
MONITORING LIGHTS FOR ROAD VEHICLES

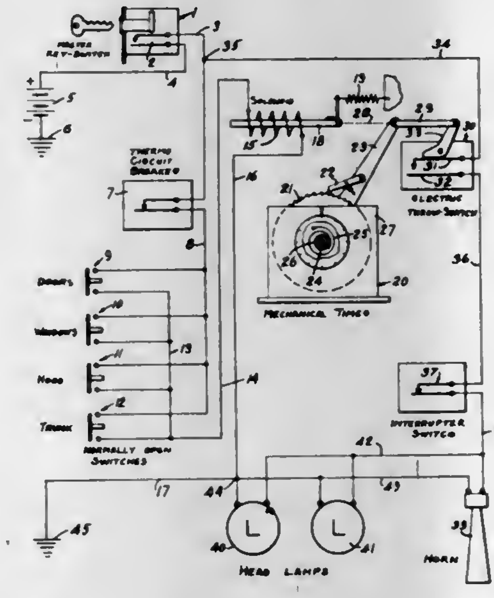
Daniel Marian, 3924 Cascade Drive, Youngstown, Ohio 44511
Filed Apr. 1, 1964, Ser. No. 356,592
2 Claims. (Cl. 340—62)

1. A signaling system for a highway motor vehicle comprising in combination a white or clear-lensed light projector mounted on the front of the vehicle in a distinctive positional relation to the normal head and signal lights on the front of the vehicle and having a viewable appearance which is distinctive with respect to said head and signal lights, a distinctively shaped red-lensed light projector on the rear of said vehicle positioned in distinctive positional relation with respect to the normal tail and signal lights on the rear of the vehicle, and energizing and control circuits to continuously energize the first mentioned projector so long as the vehicle is running under a predetermined speed, means to cause said first mentioned projector to flash on and off when said predetermined speed is exceeded, and means to cause the second mentioned projector to become periodically energized when the speed of the vehicle drops below the predetermined value.



3,310,775
VEHICLE BURGLAR ALARM

James E. Birth, 1428 W. 47th St., Los Angeles, Calif. 90062
Filed Feb. 24, 1965, Ser. No. 434,900
8 Claims. (Cl. 340—63)



1. A burglar alarm for vehicles, including: a battery, a master key switch in series connection with a terminal of said battery, a thermo circuit breaker in series connection with the master key switch and a normally open switch at a port of entry to said vehicle, a solenoid having a coil winding in series connection with the port of entry switch and in series connection with the other terminal of the battery; a mechanical timer and an electric throw switch operated by the mechanical timer to close the switch when the solenoid coil is energized, said electric throw switch being connected in series through said master key switch with the battery; an interrupter switch in series connection with the electric throw switch, and audible and visual electric signals connected in parallel circuit with each other and in series circuit with the interrupter switch and with the battery.

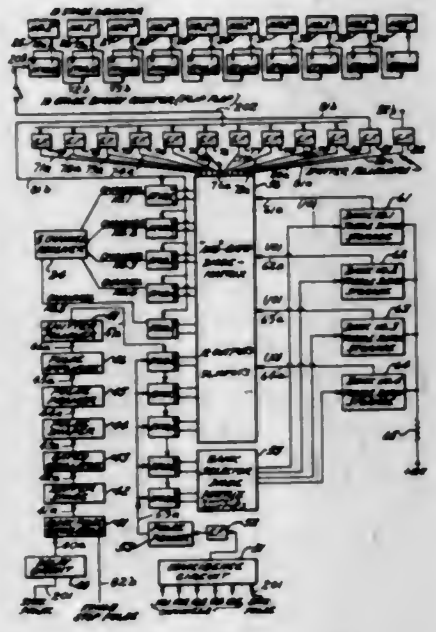
3,310,776

AUTOMATIC BINARY-CODE ERROR DETECTING SYSTEM

John A. Di Giorgio, Boston, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Sept. 28, 1960, Ser. No. 59,122

4 Claims. (Cl. 340—146.1)



1. An automatic binary code error detector comprising, a multi-channel binary code receiver, a bi-stable switching device associated with each channel of said receiver, storage means, said storage means being adapted to provide a stereotyped message in binary form, comparator means comprising an "AND" matrix and a bank-selector-matrix, a set of circuits including a first circuit for entering information from said binary-code receiver into said "AND" matrix, a second circuit for sequencing said stereotyped message through said "AND" matrix in cooperation with said bank-selector matrix, a third circuit for sequencing through all output lines of said "AND" matrix, and a fourth circuit for cycling the several outputs of each channel of said multi-channel binary code receiver through both said matrices, means for synchronizing said cycling means, and indicator means for indicating discrepancies between said binary code receiver output and said stereotyped message and wherein said comparator means comprises a triple-entry product and gate diode matrix.

3,310,777

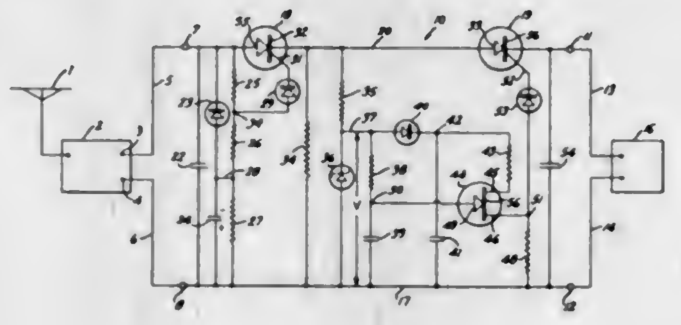
CONTROLLABLE RECTIFIER RECEIVER RESPONSIVE TO PLURAL SIGNAL CONDITIONS

Archie B. Fosdick, Levittown, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Jan. 3, 1963, Ser. No. 249,293

7 Claims. (Cl. 340—147)

1. A selective control circuit having an input terminal and an output terminal, said selective control circuit preventing the passage of any electrical signal from said input to said output terminal in the absence of a command signal of predetermined polarity and of predetermined minimum duration, said selective control circuit comprising said input and output terminals and a common reference line, a first and a second controllable rectifier connected in serial relationship between said input and output terminal and both arranged in the same conducting direction and each having a control electrode for initiating conduction therethrough, an input circuit for rejecting signals of the opposite polarity and for rejecting alternating current signals above a predetermined frequency connected between said input terminal and said reference line including a diode in series with an electrolytic capacitor shunted between said input terminal and said reference line, said diode blocking conduction of signals of said predetermined polarity and said electrolytic capacitor providing a low impedance conduction path for signals of said predetermined polarity, first resistance means connected across said diode and second resistance means connected across said electrolytic capacitor, an intermediate point in said first resistance means being connected to the trigger electrode of said first controllable rectifier device, whereby a signal of said predetermined polarity and of frequency below said predetermined frequency will initiate conduction through said first controllable rectifier, and a time-control circuit connected from the output of said first controllable rectifier to the control electrode of the second controllable rectifier for rejecting signals of duration below said predetermined minimum including a first resistor and voltage regulation means in series between the output of said first controllable rectifier and said reference line, a second resistor in series with a capacitor across said voltage regulation means, and circuit means connecting said capacitor to the control electrode of said second controllable rectifier for initiating conduction through said second controllable rectifier and the output terminal in the presence of a command signal exceeding said predetermined minimum duration.



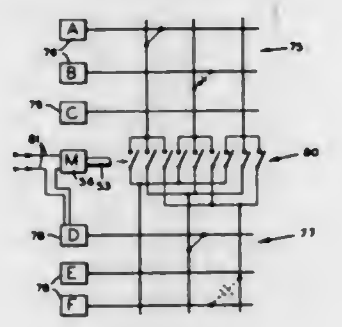
3,310,778

PROGRAMMING AND SWITCHING APPARATUS

Michael Grundfest, Forest Hills, and Milan E. Robich, Whitestone, N.Y., assignors to Actan Electronics, Mamaroneck, N.Y., a division of Sealectro Corporation

Filed July 24, 1963, Ser. No. 297,400

8 Claims. (Cl. 340—166)



5. A programming and switching device comprising:

(a) a first electric circuit selector having, a first set of contact conductors extending in parallel array in one direction, a second set of contact conductors extending in parallel array in a direction which is substantially at right angles to the first set, and plug means for manually connecting any one of said first contact conductors with any one of said second contact conductors, all of said conductors including a plurality of turned-over spring contact jaws for making electrical connections to a plug;

(b) a second electric circuit selector also having, a first set of contact conductors extending in parallel array in one direction, a second set of contact conductors extending in parallel array in a direction which is substantially at right angles to said first set, and plug means for manually connecting any one of said first contact conductors with any one of said second contact conductors, all of said conductors including a plurality of turned-over spring contact jaws for making electrical connections to a plug;

(c) a rotary contact device having a base portion, a plurality of pairs of contacts resiliently secured to said base portion, a cylindrical rotatable member journalled in bearings secured to said base portion, a plurality of contact positions disposed on the outside surface of the cylinder, each of said positions provided with manually settable means for respectively engaging said contacts and for operating the contacts when the cylinder is rotated, said contact positions arranged in equally spaced rows in axial alignment with the cylinder;

(d) connecting means for connecting each of said conductors in the first set of conductors in said first electric selector to one contact in each of said contact pairs;

(e) connecting means for connecting each of said conductors in the first set of conductors in said second electric selector to the other contact in each of said contact pairs;

(f) connecting means for respectively connecting each of said conductors in the second set of conductors in both of said electric selectors to an external circuit;

(g) and means for rotating said cylinder in steps, each of said steps arranged to present a row of contact positions to operate the contact pairs.

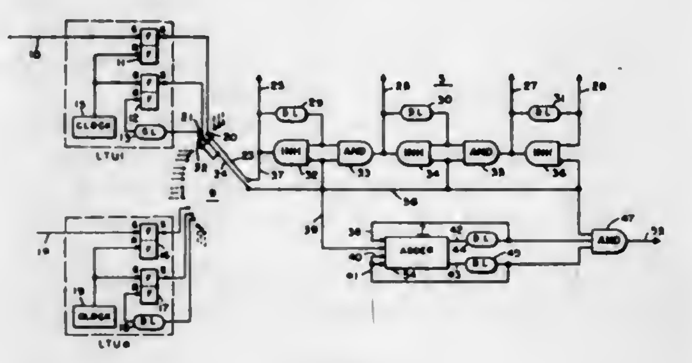
3,310,779

MULTIPLEX DIGITAL TO DIGITAL CONVERTER USING DELAY LINE SHIFT REGISTER

Leo H. Wagner, Oceanport, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed June 7, 1963, Ser. No. 286,435

9 Claims. (Cl. 340—167)



2. A circuit for assembling serial binary data from a plurality of different input transmission lines operating at different transmission frequencies comprising, means to sequentially sample the data on each input transmission line and sequentially apply said data to the serial input of a shift register, the stages of said shift register comprising delay lines, means to shift the data from any given input transmission line along the stages of said shift register at a rate dependent on the transmission rate of said given transmission line, and means responsive to the assembly of an entire character from said given transmission line to initiate the readout of said character in parallel form from said shift register.

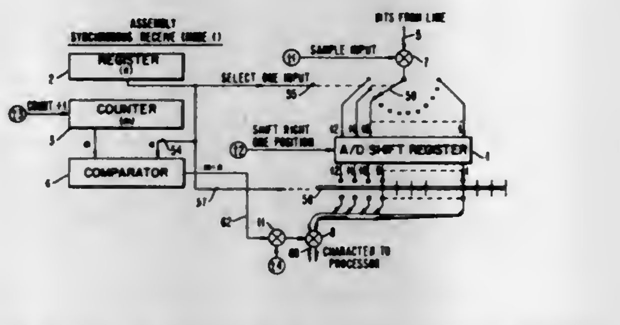
3,310,780

CHARACTER ASSEMBLY AND DISTRIBUTION APPARATUS

Charles H. Gilley and James R. Kersey, Poughkeepsie, and Robert M. Tomasulo, Staatsburg, N.Y., and Frederick M. Trapnell, Jr., Winchester, England, assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 15, 1962, Ser. No. 230,408

10 Claims. (Cl. 340—172.5)



1. Apparatus for assembling and distributing characters having all variable elements and characters having mixed variable and invariable elements, including:

control means, operable to generate two simultaneous signals each of which may assume either one of two values, a first signal indicating by one value an assembly operation and by the other value a distribution operation, a second signal indicating by one value operations involving characters with variable elements and by the other value operations involving characters with invariable elements;

an indicator register, for indicating as a value the number of elements included in a character;

a plural order shift register, connected to said control means and to said indicator register, operable in accordance with a first signal indicating an assembly operation to sequentially receive and hold elements in an incoming order determined by the value in said indicator register and to shift the elements in each order to an adjacent lower order to make said incoming order available for the next element, and operable in accordance with a first signal indicating a distribution operation to hold elements placed simultaneously into a number of the lowest orders of said shift register and to shift the elements in each order to an adjacent lower order making each element in turn available to the lowest order;

and character recognition means, associated with said shift register and said indicator register, operable in accordance with a second signal to generate a recognition signal when the number of shifts performed by said shift register bears a predetermined relationship to the value in said indicator register, and operable in accordance with a second signal indicating characters with invariable elements to generate said recognition signal when said invariable elements are recognized.

3,310,781

CODE TRANSLATOR CIRCUIT

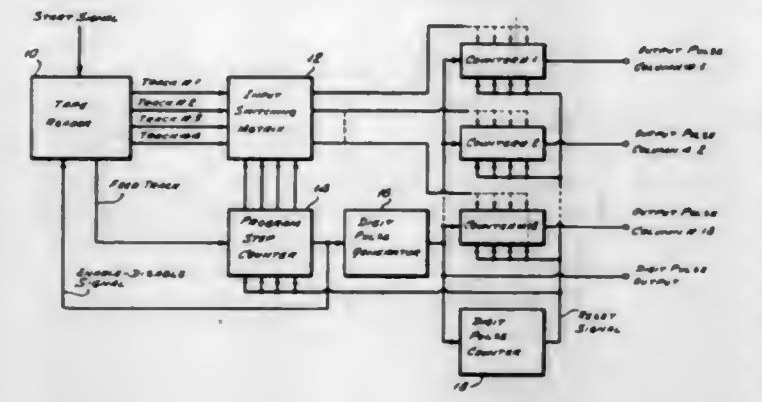
Henri B. Diamant, State College, Pa., assignor to HRB-Singer, Inc., State College, Pa., a corporation of Delaware

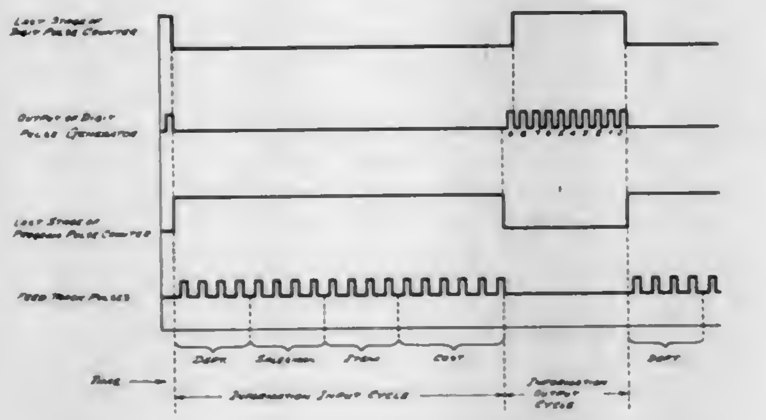
Filed Dec. 3, 1962, Ser. No. 241,680

16 Claims. (Cl. 340—172.5)

1. A code translator circuit for translating parallel-serial coded signals into serial-parallel coded signals, said

code translator circuit comprising input means for receiving parallel-serial coded signals, storage means for storing said parallel-serial coded signals in a plurality of storage circuits, and translation means for simultaneously translating the contents of said storage means into serial-parallel coded signals.

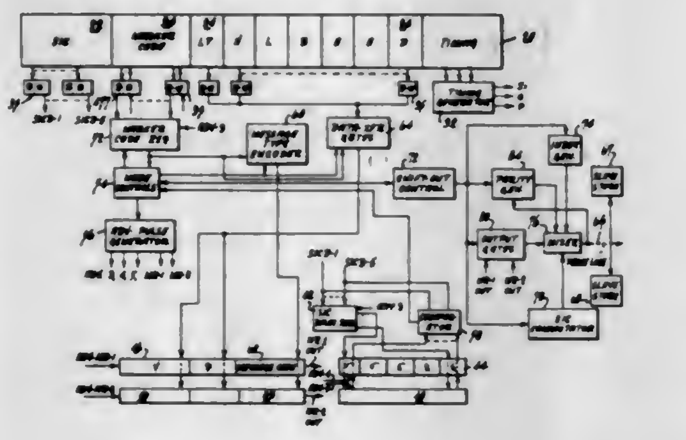




3,310,782
DATA MESSAGE SYSTEM
Robert Samuel Sinn, Seaside Park, and Dennis W. Habgood, Magnolia, N.J., assignors to Ultronic Systems Corp.

Filed Feb. 27, 1963, Ser. No. 261,530

15 Claims. (Cl. 340—172.5)

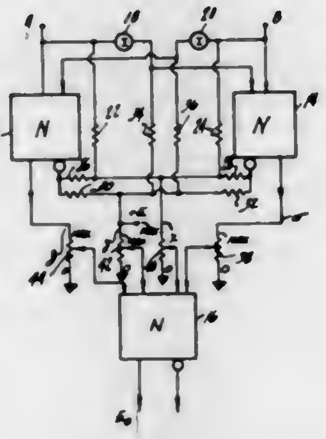


1. In a stock information system comprising a plurality of independent memory systems; each of said memory systems having a memory for storing coded signals representing stock transaction information for different stocks identified by different signal code combinations, a plurality of operator consoles each having means for selectively requesting stock information from said memory by establishing said stock code combinations and for manifesting the requested stock information obtained from said memory, means for coupling said consoles to said memory to obtain the requested information, and means for entering the stock information in said memory in accordance with coded signal messages specifying the stock code combinations and the stock information; and common means for supplying said messages to said memory systems, said common message supplying means including a cyclic master memory for storing stock information in accordance with said independent memory systems, said master memory having separate storage sections associated with each of said stock code combinations for storing the associated stock information signals and certain marker signals, means for writing new stock information signals in said master memory and for writing a marker signal in the associated storage section, and means responsive to said stored marker signals for assembling and transmitting said messages and for thereafter erasing the associated marker signals.

3,310,783
NEURON INFORMATION PROCESSING APPARATUS
Franz L. Putzrath, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Sept. 6, 1963, Ser. No. 307,075

3 Claims. (Cl. 340—172.5)



1. A neural network comprising
- (a) a plurality of circuit neurons, each producing an output when excited by input signals of one sense which exceed a threshold value,
- (b) means responsive to a pair of signals for supplying said signals individually as inputs to a first and a second of said plurality of neurons and together to a third of said plurality of neurons,
- (c) means responsive to the outputs of said first and second neurons for applying inputs to said third neuron, which inputs are of opposite sense to said inputs applied thereto by said first-named means, and

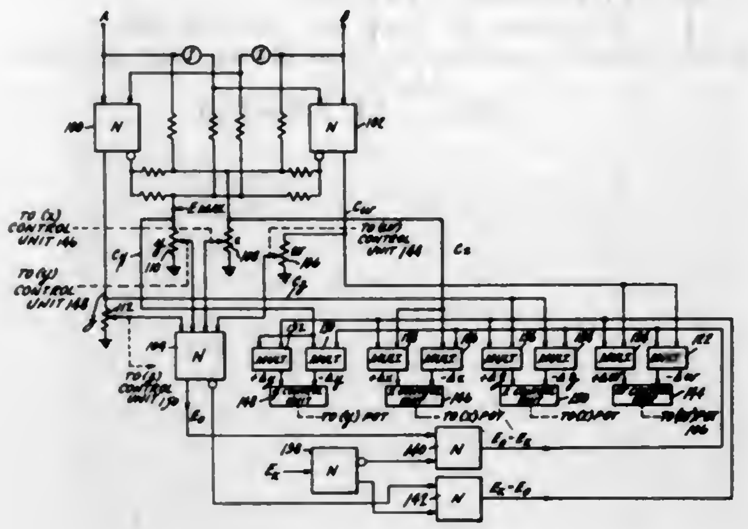
means coupled to said first and second neurons for varying the thresholds of said first and second neurons to desired values.

3,310,784
INFORMATION PROCESSING APPARATUS
Thomas C. Hilinski, Camden County, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Sept. 6, 1963, Ser. No. 307,112

7 Claims. (Cl. 340—172.5)

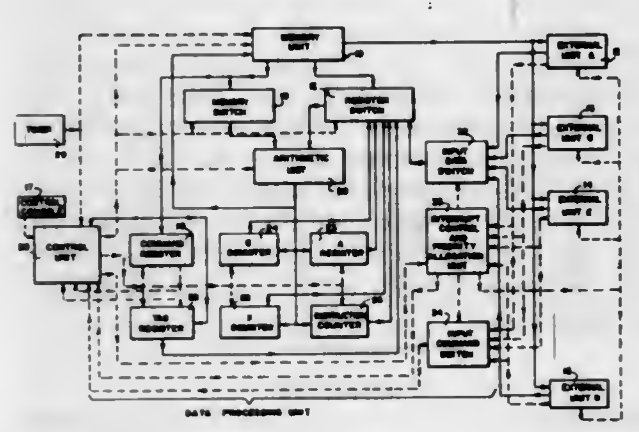
1. A neural-simulating system comprising
- (a) a network including a plurality of circuit neurons for producing an output which is a selected function of a pair of inputs to said network, and
- (b) means for adapting said network to provide an output which satisfies a certain function of said pair of inputs including means response to the product of
  - (1) the difference between an adaptation signal and the output of said neural network, and
  - (2) different combinations of said pair of inputs and the outputs of the neurons of said network.



3,310,785
DATA PROCESSING UNIT FOR SELECTIVELY CONTROLLING ACCESS TO MEMORY BY EXTERNAL APPARATUS
John F. Couleur, Philip F. Gudenschwager, and William A. Shelly, Phoenix, Ariz., and David L. Bahrs, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York

Filed May 4, 1964, Ser. No. 364,493

8 Claims. (Cl. 340—172.5)

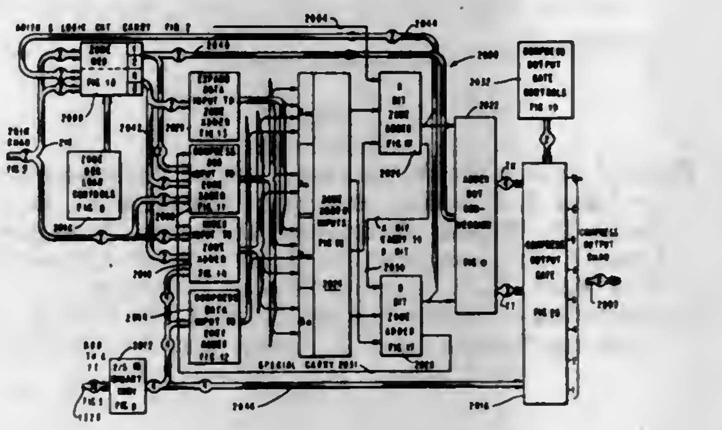


1. In a data processing system, the combination comprising: a data processing unit comprising command executing means, normally enabled, for executing in sequence a plurality of different operations on data received by said system; a data handling unit disposed externally to said data processing unit, said data handling unit providing an interrupt signal when said data handling unit must communicate with said data processing unit; said data processing unit further comprising interrupt means, normally enabled, for responding to an interrupt signal for disabling operation of said command executing means, means for coupling said interrupt signal to said interrupt means, means following disablement of said command executing means for providing communication between said data handling unit and said data processing unit, and means for disabling said interrupt means.

3,310,786
DATA COMPRESSION/EXPANSION AND COMPRESSED DATA PROCESSING
Russell G. Rinaldi, Poughkeepsie, and Brian B. Moore, New Paltz, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 30, 1964, Ser. No. 379,332

8 Claims. (Cl. 340—172.5)



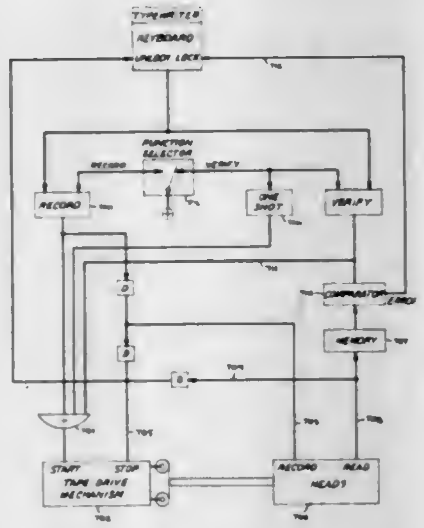
1. In a data processing system wherein data comprises character manifestations, each character having adjacent zone and numeric portions, and wherein said data is processed in accordance with instructions, each instruction comprising a plurality of character manifestations representing an operations part, and at least one instruction also comprising a first address portion and a second address portion; a compressed data arithmetic apparatus, comprising:
- a storage means having a plurality of addressable locations for holding groups of character manifestations expressing the orders of values, some of said orders being represented by the numeric portions of characters in said groups and the rest of said orders being represented by the zone portions of a number of said characters in said groups;
- first address means connected to said storage means, operable in accordance with said instruction first address portion, for gaining access to a first group of character manifestations;
- second address means, connected to said storage means, operable in accordance with said instruction second address portion, for gaining access to a second group of character manifestations;
- a numeric adder having two inputs, for receiving portions of two characters, and an output for emitting a numeric portion which is a function of the inputs;
- a zone adder having two inputs, for receiving portions of two characters, and an output for emitting a zone portion which is a function of the inputs;
- first numeric transfer means connected to said numeric adder inputs and to said storage means, under the control of said instruction operation portion, for directing from said storage means to said numeric adder inputs the orders of said first value represented by the numeric portions of said characters in said first group and the corresponding orders of said second value, as accessed by said first and second address means;
- first zone transfer means connected to said zone adder inputs and to said storage means, under the control of said instruction operation portion, for directing from said storage means to said zone adder inputs the orders of said first value represented by the zone portions of said number of characters in said first group and the corresponding orders of said

second value represented by the zone portions of said number of characters in said second group, as accessed by said first and second address means;

and second numeric and zone transfer means connected respectively to said numeric and zone adder outputs and to said storage means, under the control of said instruction operation portion, for returning to the addressable storage locations accessed by said second address means, in which said second group of character manifestations were located, the corresponding numeric portions and zone portions emitted from said numeric adder and zone adder outputs.

3,310,787
VERIFIER

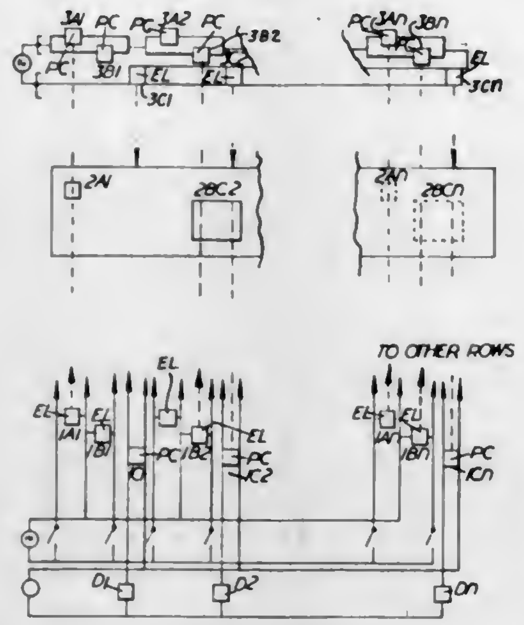
Herbert Frazer Welsh, deceased, late of Philadelphia, Pa., by Julea S. Chapline, executrix, Philadelphia, Pa., and Louis D. Wilson, Springfield Township, Montgomery County, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 851,849, Nov. 9, 1959. This application Apr. 23, 1965, Ser. No. 453,544
29 Claims. (Cl. 340—172.5)



1. A device for preparing a verified tape of data including initially performing the operation of recording data onto magnetic tape and for subsequently performing the operation of verifying data recorded on magnetic tape comprising, in combination, a tape driving mechanism for starting and stopping the motion of said tape; a plurality of magnetic heads for reading and writing data upon said tape; a typewriter keyboard having a plurality of keys; selected contacts connected to said keys which are operative in response to the actuation of any of said keys to reproduce a different associated character according to said key; means operative during a recording operation responsive to the actuation of said contacts for starting the motion of said tape, for causing appropriate ones of said heads corresponding to said contacts to record data upon said tape, and for stopping said tape, in the order named; a memory; a comparator; means operative during a verifying operation for entering information into said comparator, for reading a character from said tape, for storing said character in said memory, and for stopping the motion of said tape, in the order named; said comparator acting to directly compare the representation of a character stored in said memory with the representation of a character represented by the operation of said selected contacts; means responsive to the actuation of one of said keys for starting the motion of said tape; and means responsive to a noncomparison for preventing the actuation of said keys.

3,310,788
ELECTRO-OPTICAL INTELLIGENCE STORAGE APPARATUS

James Philip Birchenough, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 352,780
Claims priority, application Great Britain, Apr. 19, 1963, 15,476/63
9 Claims. (Cl. 340—173)



1. A photo-optical-logic memory comprising first and second pluralities of cell means separated by a punched opaque light mask memory card means having a plurality of binary words selectively stored therein by said punches to provide a coded pattern of light and dark areas, means for transmitting light in a selective pattern from said first plurality of cell means through said memory card to said second plurality of cell means, said memory card either passing or blocking said transmitted light according to the plurality of binary word patterns stored therein, said associations of said patterns being such that only one of said binary words is identified by the pattern of light read by said second plurality of cells, means associated with said one binary word for returning light from all data information digital positions of said one word, said returned light passing from said second plurality of cell means through said memory card to said first plurality of cell means, said memory card either passing or blocking the returned light in accordance with the binary code of the one word stored therein, and means associated with said first plurality of cells for reading out the binary code of said one word.

3,310,789
NON-DESTRUCTIVE READ-OUT MAGNETIC-CORE TRANSLATING MATRICE

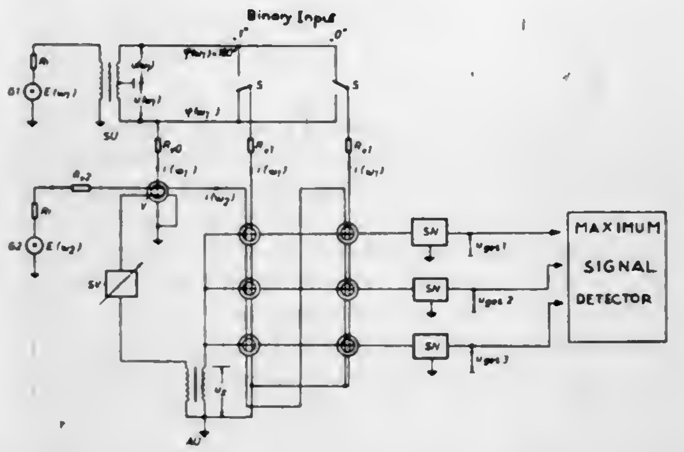
Karl Steinbuch, Ettlingen, Baden, and Hans Jürgen Hönerloh, Karlsruhe, Baden, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 2, 1963, Ser. No. 299,643
Claims priority, application Germany, Aug. 8, 1962, St 19,580
4 Claims. (Cl. 340—174)

1. An arrangement of apparatus for non-destructively interrogating a learning matrix—composed of a multiplicity of magnetic elements arrayed in rows and columns and having non-linear hysteresis characteristics—comprising:

first means for exciting each said column of elements with a first periodically varying signal having a predetermined first frequency and having a selected one of two predetermined, relative phases differing from each other by 180°;

second means for exciting all of said elements in common with a second periodically varying signal at a predetermined second frequency different from said first frequency;

third means coupled to each said element for producing an output signal corresponding to the magnetic response of the said element to the said first and second signals, said response signals including signal frequency components at the sum and difference of said first and second frequencies, and at one of two relative output phases different from each other by 180°, by virtue of the non-linear hysteresis action of said elements, the said output phase being determined by the input phase of said first signal and the state of magnetization of the said element;

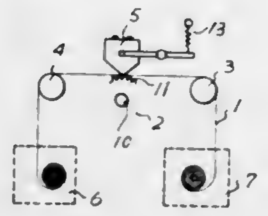


means coupled to the third means in each said row for selecting and additively combining the said output signal frequency components at one of said sum and difference frequencies to produce row output signals at the frequency of the selected frequency component; and

means coupled to said row output signal producing means for detecting the row position of the maximal row output signal at a given one of said two output phases.

3,310,790
PERFORATED MAGNETIC TAPE RECORDING AND REPRODUCING APPARATUS

Etsuro Nakamichi, 142 Kitazawa 2-chome, Setagaya-ku, Tokyo, Japan
Filed Nov. 21, 1962, Ser. No. 239,198
Claims priority, application Japan, Nov. 21, 1961, 36/42,489; Mar. 10, 1962 (utility model) 37/11,885; Mar. 24, 1962, 37/11,807; May 7, 1962 (utility model) 37/23,558; May 21, 1962, 37/20,749; July 2, 1962 (utility model) 37/36,220; July 4, 1962 (utility model) 37/36,595
9 Claims. (Cl. 340—174.1)



1. A magnetic recording and reproducing apparatus which employs a perforated magnetic tape as a record medium, comprising:

a sprocketed capstan the teeth of which are adapted to engage the perforations of said magnetic tape,

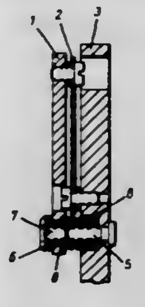
a pulse motor connected to said sprocketed capstan, said capstan being driven in a clockwise or anticlockwise direction by said pulse motor to thereby move a magnetic tape engaged by said capstan in one or another direction in discrete steps,

a magnetic recording and reproducing head, and

a holding member supporting said magnetic recording and reproducing head and urging said head into contact with said sprocketed capstan.

3,310,791
ADJUSTABLE THREE POINT BEARING HOLDING DEVICE FOR MAGNETIC HEADS

Walter Fischer, Stuttgart-Stammheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 5, 1963, Ser. No. 263,078
Claims priority, application Germany, Mar. 22, 1962 St 18,990
2 Claims. (Cl. 340—174.1)



1. An adjustable holding device for magnetic heads comprising:

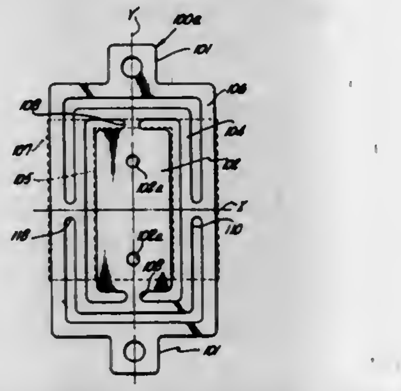
a stationary plate;

a head-carrier plate which is adjustable with respect to said stationary plate by means of a three point bearing arrangement; and

elastic means comprising a flat spring rigidly mounted to both said stationary and head-carrier plate, whereby the head-carrier plate is moved within the elastic range of said elastic means in accordance with the adjusting requirements.

3,310,792
MAGNETIC HEAD MOUNT APPARATUS

Robert G. Groom, La Crescenta, Shahbuddin A. Billawala, Pasadena, and Alpheus F. Stansell, West Covina, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 20, 1963, Ser. No. 281,504
12 Claims. (Cl. 340—174.1)

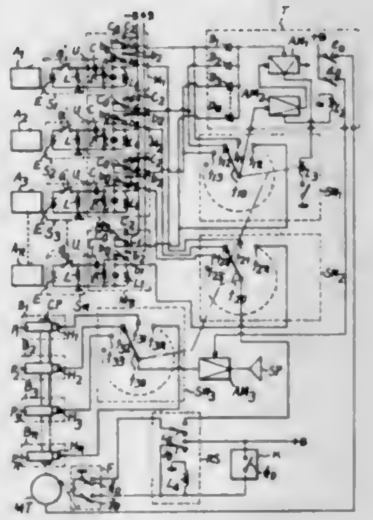


2. A device for supporting a magnetic recording head assembly on a fluid bearing formed by a magnetic recording surface moving in a fluid atmosphere comprising an elongated plate of elastic material having a first end for mounting the plate and including a head support member at a second end opposite to said first end adapted for supporting a magnetic recording head assembly, two substantially semicircular shaped perforations in said plate symmetrically positioned about the head support member, a third perforation in said plate and encircling a portion of said semicircular perforations and a portion of said

plate being removed on the other side of said first and second perforations from said third perforation, said removed portion and said perforations permitting restrained rotational movement of the head support member about a pivot point thereof and allowing the plate of material to inhibit movement of the head support member parallel with such recording surface.

3,310,793
ALARM SYSTEM WITH VERBAL WARNING

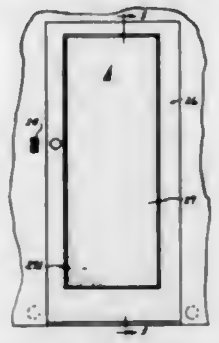
Takeki Takarabe, Nerima-ku, Tokyo, and Shoji Chikaraishi, Ohta-ku, Tokyo, Japan, assignors to Kabushiki Kaisha Tokyo Keiki Seizosho (Tokyo Keiki Seizosho Co., Ltd.), Tokyo, Japan, a corporation of Japan
Filed Feb. 9, 1965, Ser. No. 431,343
Claims priority, application Japan, Feb. 12, 1964, 39/7,299
6 Claims. (Cl. 340—221)



1. An alarm device announcing a message upon the occurrence of a condition in each of a plurality of systems, comprising
- (a) a plurality of transducers each corresponding to and associated with a respective system and each including a control signal generator generating an output signal upon the occurrence of the condition,
- (b) first memory circuits each connected to and responsive to an output of a respective signal generator,
- (c) control means connected to each of said first memory circuits and responsive to an output of any one of said first memory circuits for producing a switching signal,
- (d) means responsive to said switching signal for selectively connecting each of said first memory circuits to said control means to disable said switching signal upon connection of the respective memory circuit which has an output corresponding to the occurrence of the associated condition,
- (e) aural information sources each respectively corresponding to a respective one of the plurality of conditions,
- (f) an aural message generating device connected to said sources for broadcasting information from said sources,
- (g) a first switching circuit responsive to said switching signal for selectively connecting each of said aural information sources to said generating device in synchronism with the selective connection of said memory circuits to said control means by said connecting means, and
- (h) a reset circuit connected to each of said first memory circuits for returning the device to its initial position.

3,310,794
CABINET WITH DOOR HAVING A VIEWING AREA COVERED WITH SEMI-TRANSPARENT REFLECTIVE MATERIAL

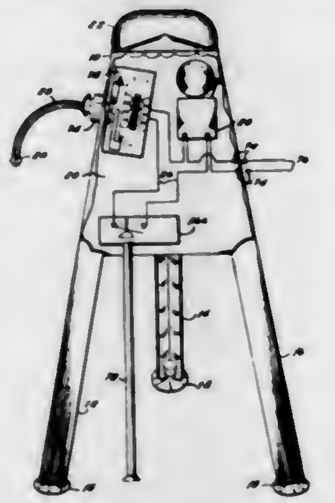
Amy L. Lusebrink, 7 Avalon Drive, New Shrewsbury, N.J. 00724
Filed Dec. 27, 1963, Ser. No. 333,865
4 Claims. (Cl. 340—227)



3. A cabinet which includes a closure door, said closure door having a viewing area, a transparent colored material covering said viewing area, said transparent material coated with colored particles up to a 50% deposition on the side facing the interior of the cabinet, a coating having a high degree of reflection on the side facing the exterior of the cabinet and composed of micro particles of low optical density, a plurality of lamps within said cabinet said lamps chosen for their spectral output to penetrate the particular color coatings chosen and a thermal switch mounted within said cabinet, said switch connected to said lamps to turn them on and off, colored light means to indicate the temperature within said cabinet is above the pre-determined setting.

3,310,795
PORTABLE SPACE FLOOD ALARM

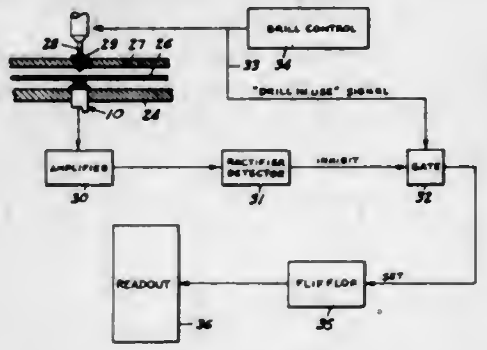
George David, 1447 W. Thome, Chicago, Ill. 60626
Filed July 20, 1964, Ser. No. 383,780
14 Claims. (Cl. 340—244)



1. A small, portable, lightweight flood warning device for use in any desired ground or floor area where rising water may be a problem, comprising:
- a tripod having a handle and an enclosed waterproof compartment elevated by three legs having respective suction means for securing the tripod to said area,
- sensing means positioned adjacent the level of said area for sensing any water rising thereon and having a connection means extending upwardly into said compartment to convey thereinto any rising movement of the sensing means,
- an alarm in and sensible outside of said compartment,
- a pair of lines in said compartment for supplying a relatively low voltage to said alarm,
- normally open switch means in one of said lines in said compartment, and
- means operatively connected between said connection means and switch means for causing the switch means to close and operate said alarm upon a predetermined amount of said rising movement of said sensing means.

3,310,796
DRILL INDICATOR

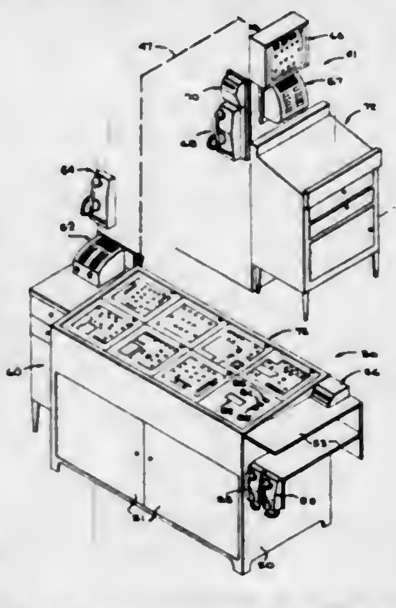
Edwin R. Sanders, Clarence, N.Y., assignor to Sensi-Tronics, Inc., Buffalo, N.Y.
Filed July 31, 1964, Ser. No. 386,524
9 Claims. (Cl. 340—271)



1. In combination with drilling apparatus comprising work holding means and rotatable drilling means including a fluted drill bit of ferro-magnetic material wherein said two means are relatively movable toward and away from each other along the drilling means axis, drill sensing probe means disposed in coaxial relation with respect to the drilling axis, said probe means comprising a pair of magnetic poles at opposite sides of said drilling axis, electrically conductive winding means in inductive relation with respect to said magnetic poles, and readout means responsive to alternating current induced in said winding means by rotation of said fluted drill bit in proximity to said probe means.

3,310,797
METHOD AND APPARATUS FOR COORDINATING RESTAURANT OPERATION

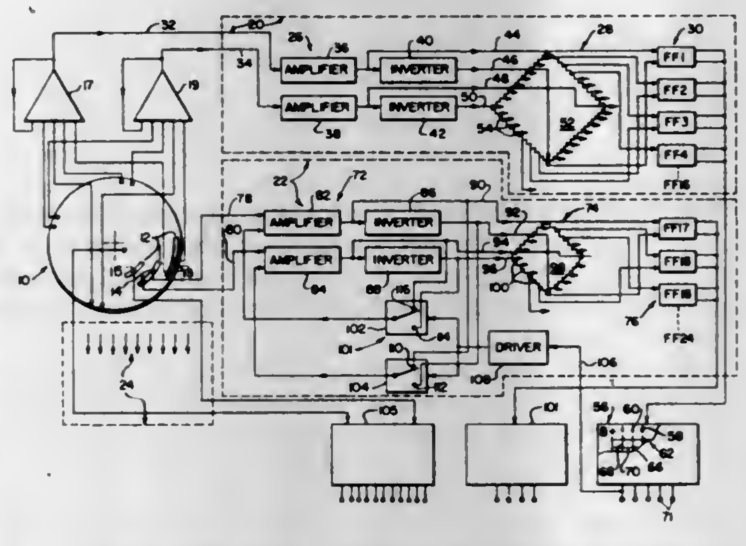
Ulysses G. Auger, 1217 22nd St. NW., Washington, D.C. 20037
Filed July 1, 1963, Ser. No. 291,694
16 Claims. (Cl. 340—286)



1. Apparatus for coordinating restaurant operation comprising, a master station unit adapted to be disposed at a control area in a restaurant, a remote station unit adapted to be disposed at a dining area within the restaurant, the dining area being remote from said control area, means providing communication between said master unit and said remote unit, said master unit having a plurality of separate indicator means, one indicator means being provided for each table within said dining area, said remote station including a plurality of control switches, a control switch being provided for each table within said dining area and each control switch being connected with one of said indicator means of said master unit, each of said control switches being movable to at least three different positions for indicating at least three different conditions of the individual tables in the dining area.

3,310,798
ANALOG TO DIGITAL OPTICAL ENCODER

Sidney A. Wingate, Concord, Mass., assignor to Wayne-George Corporation, Newton, Mass., a corporation of Massachusetts
Filed Oct. 1, 1963, Ser. No. 313,086
12 Claims. (Cl. 340—347)



1. An encoding system comprising code means presenting at least one track, a plurality of pairs of photocell means in registration with said track, illumination means for directing radiation to said track, said track having first regions for directing radiation to said photocell means and second regions for obscuring radiation from said photocell means, said first regions and said second regions being alternately sequenced, relative movement of said code means and said pairs of photocell means causing said photocell means to produce a plurality of pairs of out-of-phase signals, first signals of said pairs being approximately in-phase with each other, second signals of said pairs being approximately in-phase with each other, said plurality of pairs of out-of-phase signals constituting preliminary signals, vector summing means responsive to said preliminary signals to provide further signals, said preliminary signals and said further signals constituting representations of geometrical relationships between said code means and said plurality of photocell means, and electronic means for averaging certain of said representations in order to provide indications thereof.

3,310,799
NON-LINEAR DIGITAL TO ANALOGUE CONVERTER

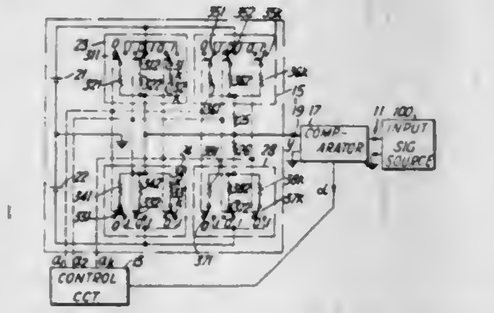
Yasutaka Ohashi, Shikoku-machi, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 6, 1964, Ser. No. 357,674
Claims priority, application Japan, Apr. 12, 1963, 38/18,975
12 Claims. (Cl. 340—347)

1. A device for converting a coded input signal into a non-linearly companded output signal comprising:
- (A) a pair of sources of substantially constant potential serially connected to each other;

(B) first and second parallel networks connected across said serially connected sources,

(1) said first parallel network including a first and a second weighted resistor switch-circuit serially connected to each other, said switch circuits being equivalent to each other but operating in a complementary manner to each other,

(2) said second parallel network including a third and a fourth weighted resistor switch-circuit and a pair of non-linear resistors connected to each other such that the pair of resistors are serially connected between said third and fourth weighted switches, said third and fourth switch circuits also being equivalent and operating complementary to each other,



(3) the weighted resistor switch circuits of each of said networks which are connected to receive the same output potential from said sources being selected to operate complementary to each other;

(C) coded input signal means connected to each of said weighted resistor switch circuits for controlling the switching of each of said switches in response to the code contained in said signals; and

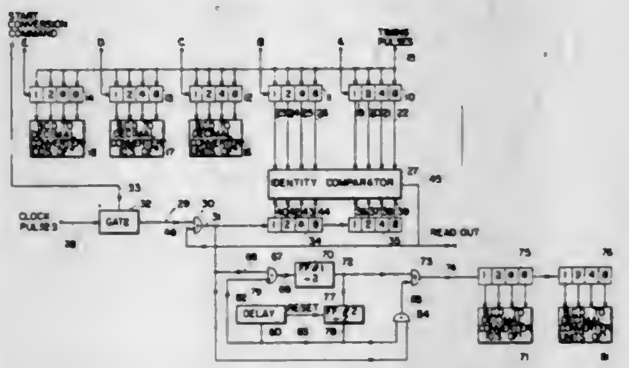
(D) output signal deriving means connected to a point between said first and second switch circuits in the first parallel network and to a point between said pair of non-linear resistors in said second parallel network for deriving a companded output signal.

3,310,800
SYSTEM FOR CONVERTING A DECIMAL FRACTION OF A DEGREE TO MINUTES

Bernard J. Havens, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed May 12, 1964, Ser. No. 366,868

12 Claims. (Cl. 340—347)



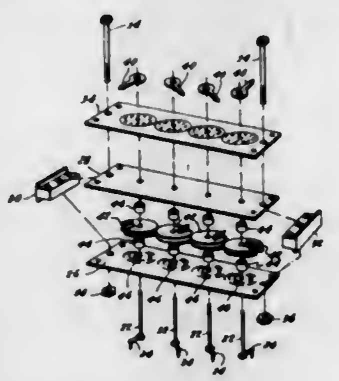
1. A system for converting input electrical signal information indicating a decimal fraction of a degree to output electrical signal information indicating the corresponding minutes comprising: means for providing a train of first pulses; means for counting said pulses, said counting means including means for providing other electrical signal information of the same type as said input signal information indicating the number of first pulses counted thereby; means for comparing said input and other electrical signal information, said comparing means including means for providing a stop signal when said input and other electrical signal information respectively indicate the same number; means for terminating said train of first pulses in response to said stop signal whereby the number of said first pulses in said train is equal to said decimal fraction; means for providing three other pulses in response to every five successive first pulses of said train whereby the decimal fraction is multiplied by sixty; and means for counting said other pulses, said other pulse counting means including means for providing said output signal information indicating the number of said other pulses counted thereby.

3,310,801
ANALOG-DIGITAL CONVERTER FOR WATT-HOUR METERS

R. T. Hood, Jr., Torrance, and David R. Stuettig, Manhattan Beach, Calif., assignors, by mesne assignments, to Hersey-Sparling Meter Company, Dedham, Mass.

Continuation of application Ser. No. 254,126, Jan. 28, 1963. This application May 15, 1964, Ser. No. 369,354

12 Claims. (Cl. 340—347)



11. In an analog-digital converter for a multi-stage register for encoding the digits successively represented by the individual stages of such a register into binary coded signals, and said register having a plurality of rotatable elements corresponding to the respective stages of said register, the combination of: support means mounted on said register over said rotatable elements, a plurality of code patterns disposed on said support means and positioned to be in axial registry with respective ones of said rotatable elements, each of said code patterns including segments positioned in a plurality of concentric annular tracks, a corresponding plurality of members rotatably mounted with respect to said support means for respectively detecting said segments of each of said code patterns as said rotatable elements rotate and to derive signals representative of successive digits from each of said code patterns, said successive digits corresponding to successive angular ranges of each of the respective rotatable elements; and at least one of said code patterns including further segments positioned in a further annular concentric track and indicative of whether the corresponding one of said rotatable elements is in the high portion or low portion of each such range; and a corresponding plurality of coupling members for coupling said detecting members to respective ones of said rotatable elements.

3,310,802
DATA LINK SYSTEM

Donald D. Coleman, Garden Grove, and Raymond F. Racine, Orange, Calif., assignors to North American Aviation, Inc.

Filed Dec. 1, 1965, Ser. No. 512,229

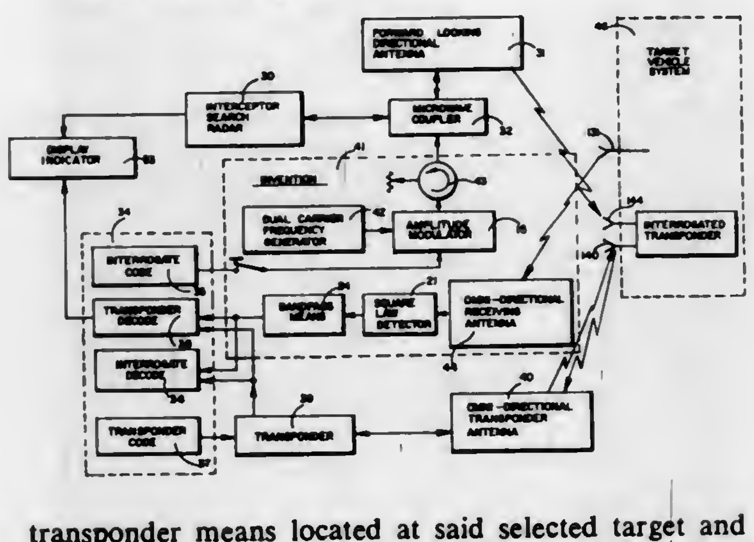
12 Claims. (Cl. 343—6.5)

12. In cooperation with a radar system having a directional antenna and display indicator, means for identifying a selected one of said group of targets, comprising

a dual carrier frequency generator located at said radar system for generating two carrier frequencies having a selected frequency difference and both of which frequencies are within the bandwidth of said directional antenna;

modulation means intercoupling said generator and said antenna, for commonly modulating and transmitting said two carrier frequencies;

bandpass limited receiving means located at said selected one of said targets and responsive to the beat frequency difference between said two commonly modulated carrier frequencies for providing a transponder control signal;



transponder means located at said selected target and responsive to said control signal for transmitting a selectively coded identifying signal; and

receiver means located at said radar system and responsive to said transmitted selectively coded signal for providing an input to said display indicator for identifying said selected target.

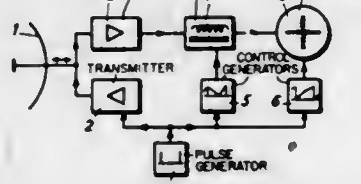
3,310,803
RADAR APPARATUS

Tore Torstensson Fjällbrant, Staborg, Fjaras, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed May 3, 1965, Ser. No. 452,820

Claims priority, application Sweden, May 6, 1964, 5,648/64

2 Claims. (Cl. 343—17.1)



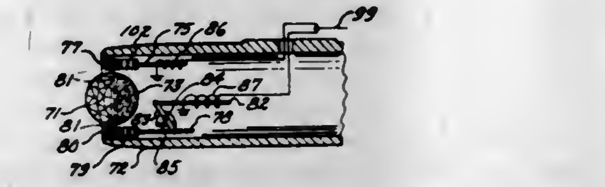
1. A radar apparatus comprising means for transmitting periodically occurring range pulses; receiver means including an input for receiving echo pulses and an output; a variable delay circuit means including an input connected to the output of said receiver means and an output, said delay circuit means delaying transmission of signals from its input to its output with a decreasing delay for a first part of the interval between two transmitted range pulses and with an increasing delay for a subsequent part of said interval; and an indicator means including an input connected to the output of said delay circuit means for displaying the delayed received echo pulses, said indicator means including a periodic sawtooth voltage generator means for generating a deflecting voltage in synchronism with the transmitted range pulses, the deflecting voltage increasing at a rate greater than a predetermined rate during one part of the interval between two transmitted range pulses and decreasing at a rate less than a predetermined rate during the remainder of said interval.

3,310,804
ISOTROPIC MICROWAVE REFLECTOR

Joseph B. Brauer, Rome, N.Y., assignor to the United States of America as represented by the Secretary of the Air Force

Original application June 18, 1963, Ser. No. 288,840. Divided and this application Dec. 9, 1965, Ser. No. 516,207

2 Claims. (Cl. 343—18)



1. An aircraft electromagnetic energy reflecting system comprising:

(a) first reflecting unit including a polyhedron having a reflecting surface and a non-reflecting surface, said reflecting and non-reflecting surfaces facing in opposite directions along a common axis of symmetry passing through said surfaces, the reflecting surface having a multiplicity of sides sufficiently numerous to produce an overall reflecting configuration that is substantially hemispherical, each of said sides including in the surface thereof a depressed portion forming a re-entrant angle, all of said depressed portions serving as corner reflectors;

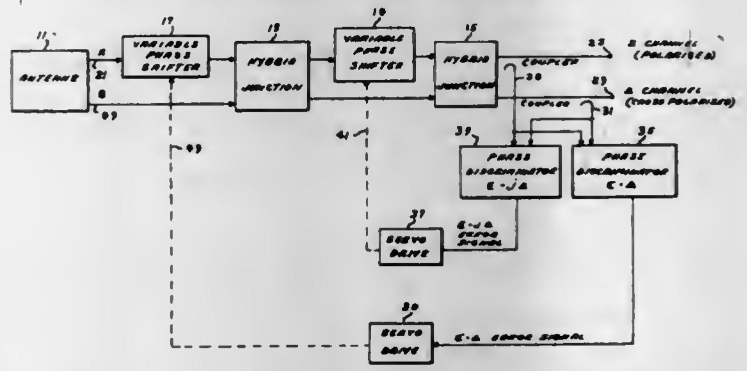
(b) and means including a rotatable axle affixed to said polyhedron for rotating the polyhedron through an angle of 180 degrees for selectively exposing in fixed positions either said reflecting surface or said non-reflecting surface to electromagnetic energy received by said reflecting system.

3,310,805
AUTOMATIC POLARIZATION TRACKER

Benedict P. Viglietta, Clinton, and Manuel Ares, Ithaca, N.Y., assignors to the United States of America as represented by the Secretary of the Air Force

Filed Oct. 19, 1964, Ser. No. 404,996

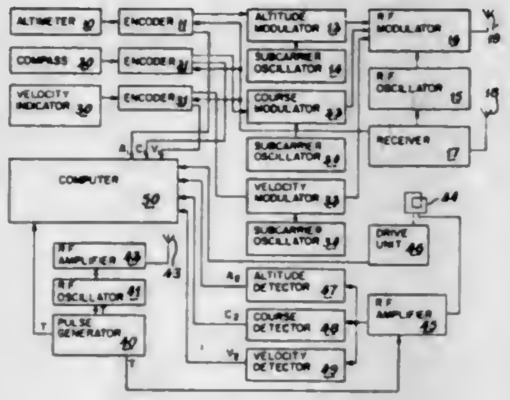
5 Claims. (Cl. 343—100)



1. An automatic polarization tracking system for automatically following changes in polarization of propagating electromagnetic radiation energy comprising: electromagnetic energy receiving means having a first signal output and a second signal output; a first phase shifting means for varying the phase relation of one of said output signals providing a first phase varied signal; additive means for providing a first summation signal proportional to the sum of the signals of said first phase varied signal and other signal output of said receiving means; additive means for providing a first difference signal proportional to the difference in the signal of said first phase varied signal and the other signal output of said receiving means; a second phase shifting means for varying the phase of the signal from one of said additive means providing a second phase varied signal; means for providing a second summation signal proportional to the sum of the signal from the second phase shifting means and the other

signal from said additive means; means for providing a second difference signal proportional to the difference of the signals from the second phase shifting means and the other signal from said additive means; means for determining the product of said second summation signal and said second difference signal providing a first error signal; means for determining the product of said second summation signal and the quadrature of said second difference signal providing a second error signal; means cooperating with said first error signal and said first phase shifting means whereby the phase shift effected in said phase shifting means is a function of said first error signal; and means cooperating with said second error signal and said second phase shifting means whereby the phase shift effected in said phase shifting means is a function of said second error signal.

3,310,806
COOPERATIVE COLLISION AVOIDANCE SYSTEM
Thomas A. Stansbury, Opera Bldg., 20 N. Wacker Drive, Chicago, Ill. 60606
Continuation of application Ser. No. 272,396, Apr. 11, 1963. This application Apr. 1, 1965, Ser. No. 448,554
65 Claims. (Cl. 343—112)



22. The method of indicating that a craft is a collision hazard to other craft comprising:

transmitting a signal from a first craft having characteristics indicative of its altitude,
receiving said signal having characteristics indicative of the first craft's altitude on a second craft,
generating a signal on said second craft having characteristics indicative of its altitude,
determining the bearing of the first craft from the second craft, and
utilizing only said signals having characteristics of the first craft's altitude and the second craft's altitude and said bearing to determine whether one said craft is a hazard to the other.

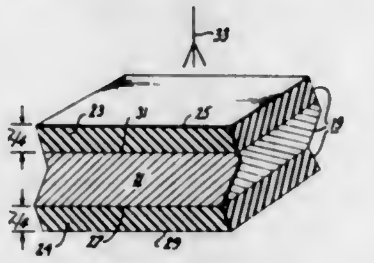
33. The method of indicating that a craft is a collision hazard to other craft comprising:

transmitting signals from a first craft having characteristics indicative of its altitude,
receiving said signals having characteristics indicative of the first craft's altitude on a second craft,
generating signals on said second craft having characteristics indicative of its altitude,
determining the range between said first and second craft, and
utilizing only said signals having characteristics of the first craft's altitude and the second craft's altitude, and said range to determine whether one said craft is a hazard to the other.

63. A computer comprising:

means for determining whether the distance of a first craft from a second craft is within a preselected range by comparing the elapsed time between a signal transmitted by the second craft and a signal received from said first craft in response to said second craft signal, and
means for indicating that said first craft is a navigational hazard to said second craft connected to said distance determining means for actuation when the distance of said first craft from said second craft is within the preselected range, said means requiring no other input than an input signal from said distance determining means.

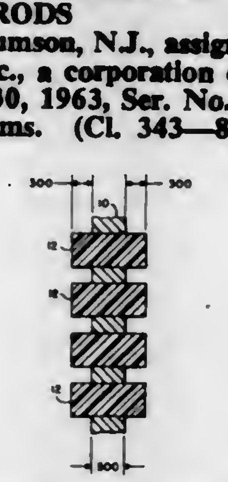
3,310,807
APPARATUS FOR EFFECTING THE TRANSMISSION OF ELECTROMAGNETIC ENERGY THROUGH A DENSE PLASMA
Melvin J. Kofoid, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Feb. 24, 1964, Ser. No. 346,792
4 Claims. (Cl. 343—787)



1. A composite antenna cover wall of a thickness in cross section of $\lambda/4+k(\lambda/2)$ in electrical thickness where k is zero or any whole number, said composite antenna cover wall being capable of effecting electromagnetic energy transmission through a dense plasma medium with a minimum of attenuation of electromagnetic energy comprising:

(a) at least one sheet of ceramic magnetic material having a permanent magnetization and thickness of such magnitudes to effect a 90-degree angular rotation of the space electric vector of electromagnetic energy in a one-way passage through said ceramic magnetic material;
(b) at least one sheet of a simple dielectric material affixed to said sheet of ceramic magnetic material wherein said at least one sheet of a simple dielectric material is of a type such that the ratio of the permeability constant to the dielectric constant of the ceramic magnetic material is equal to the ratio of the premeability constant to the dielectric constant of the dielectric material.

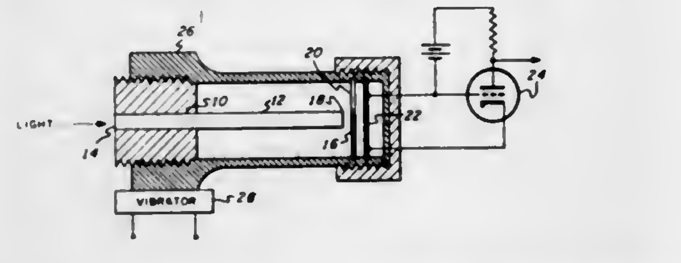
3,310,808
ELECTROMAGNETIC WAVE TRANSMISSIVE METAL WALLS UTILIZING PROJECTING DIELECTRIC RODS
Harald T. Friis, Rumson, N.J., assignor to Hazeltine Research, Inc., a corporation of Illinois
Filed Dec. 30, 1963, Ser. No. 334,542
2 Claims. (Cl. 343—872)



1. A wall, for resisting environmental stresses while transmitting electromagnetic waves, comprising:

a metal shell having an array of holes of circular cross-section and arranged in a regular array with a minimum center-to-center spacing in the range of from one-half to one times the operating wavelength and each of said holes has an identical diameter of approximately two-thirds times said spacing;
and a plurality of dielectric rods supported in said holes so as to go through the shell and project on both sides, the ends of said rods being shaped to provide a transition between free space and the dielectric-filled waveguides formed by the combination of said holes and said rods for electromagnetic waves;
the wall being so constructed and arranged as to provide protection from extreme environmental stresses while transmitting electromagnetic waves substantially without distortion.

3,310,809
RECORDING METHOD FOR USE WITH FREQUENCY RESPONSIVE DEVICE
Robert D. Hawkins, Greenlawn, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware
Original application Apr. 4, 1962, Ser. No. 185,064, now Patent No. 3,213,197, dated Oct. 19, 1965. Divided and this application Feb. 2, 1965, Ser. No. 429,736
1 Claim. (Cl. 346—1)



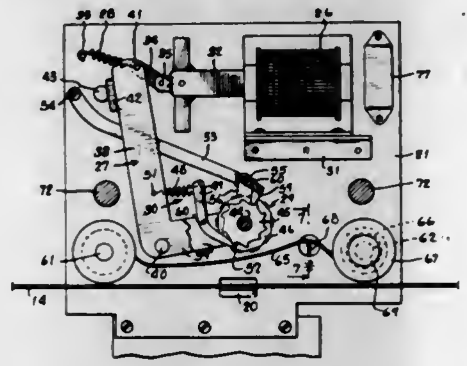
The method of producing photographically a recording of a pattern representative of a multifrequency signal from an array of light transmitting fibers so supported by a block that each has a different frequency of resonance, consisting of the steps of:

(1) exposing a first light sensitive film to light transmitted from said fibers when said fibers have substantially no vibratory motion,
(2) photographically developing said first film,
(3) masking a second light sensitive film with said developed first film,
(4) vibrating said block in accordance with said multifrequency signal to set certain fibers in motion to cause modulated light to impinge on said second film, and
(5) photographically developing said second film, whereby said two films, when superposed, record pictorially a pattern representative of said multifrequency signal.

3,310,810
NUMBERING MARKER FOR A RECORDER
Jacob Greissman, Brooklyn, N.Y. (285 West End Ave., Apt. 3 V-E, New York, N.Y. 10023)
Filed Apr. 30, 1965, Ser. No. 452,089
3 Claims. (Cl. 346—98)

1. An indicator marker suitable for use with a potentiometer comprised of,

a motivating means having a solenoid, a switch therefor and a coiled first spring, said solenoid upon the application of electrical energy being capable for forcing its plunger in one direction and expanding the first spring, and the spring capable of contracting and returning the plunger to its original position upon the de-energization of the solenoid, said switch being electrically connected to said solenoid and capable of opening and closing a source of current to said solenoid,
a linkage having a link and an L shaped bar, said L bar being rotatably, reciprocably supported at the vicinity of the juncture of its arms, said link being pivoted at one end to the upright arm of the L bar and secured to the spring and its other end pivoted to the solenoid plunger,
a numbering means having a ratchet wheel and pawl therefor and a numbering wheel having consecutive numbers on its face, said ratchet wheel and numbering wheel secured together and rotatably supported on said horizontal L bar arm,
a second arm,
an inverted U shaped yoke and
a second coiled spring, said second arm pivoted at one end and its other end pivotably carrying said inverted U shaped yoke, the legs of the U terminating in rings supported adjacent and either side of the ratchet wheel by the horizontal arm of the L bar, said pawl being supported by the inverted U within its legs and said second coiled spring being supported by the inverted U and bearing against it and the pawl to hold the pawl against the ratchet wheel,



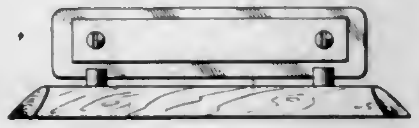
a steadying means having a third spring and a third bent arm, said third bent arm pivoted intermediate its ends to the horizontal arm of the L bar and one of its ends hook shaped and its other end being pinned to the third spring, said third spring being secured at one end to the upright arm of the L bar and said hooked end of the third arm engaging said ratchet wheel and steadying it and preventing its rotation contrary to the rotation normally produced by the pawl,
an anvil positioned to intercept the numbering wheel at the end of its travel when the solenoid is energized causing its plunger to centralize in the solenoid coil and the L bar to swing an arc and the L bar horizontal arm to move downward with its numbering wheel, and the length of the stroke of the plunger, the pivotal positions of the L bar and second arm, the location of the ratchet wheel on the L bar and the pawl on the second arm being so interrelated that when the plunger centralizes in the solenoid coil and the L bar horizontal arm has completed its travel downward the pawl has travelled over one tooth on the ratchet wheel and settled against the next tooth and when the first spring retracts the plunger and the L bar horizontal arm has completed its travel upward the ratchet wheel and the numbering wheel are rotated by the pawl to advance one number to a position facing the anvil.

DESIGNS

MARCH 21, 1967

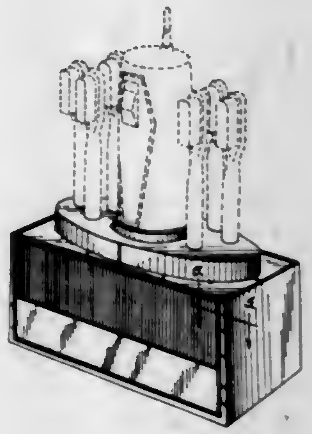
207,196
DESK NAME PLATE

Ernest R. Raehrs, 1204 Vermont St.,
Alamogordo, N. Mex. 88310
Filed Aug. 23, 1965, Ser. No. 86,680
Term of patent 14 years
(Cl. D1—12)



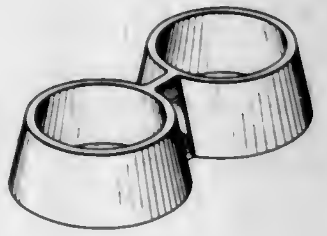
207,197
COMBINED DISPLAY AND CHARGING UNIT FOR BATTERY OPERATED TOOTHBRUSHES

Jerold R. Peterson, Roselle, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 29, 1966, Ser. No. 2,863
Term of patent 14 years
(Cl. D4—3)



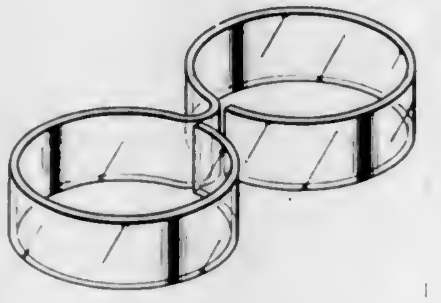
207,198
HOLDER FOR FOOD BOWLS FOR PETS

Tony Robert, 5701 Southwest Freeway,
Houston, Tex. 77027
Filed July 7, 1966, Ser. No. 2,964
Term of patent 14 years
(Cl. D12—2)



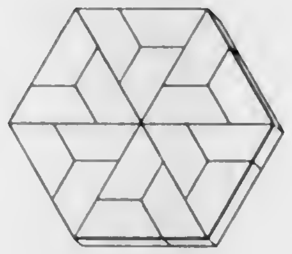
207,199
HOLDER FOR FOOD PANS FOR PETS

Tony Robert, 5701 Southwest Freeway,
Houston, Tex. 77027
Filed Aug. 12, 1966, Ser. No. 3,455
Term of patent 14 years
(Cl. D12—2)



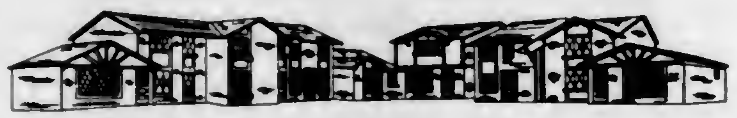
207,200
FLOORING SECTION FOR PARQUET FLOORS

Jerome Scheller, Rte. 1, Peach Orchard, Ark. 72453
Filed Apr. 19, 1965, Ser. No. 84,855
Term of patent 14 years
(Cl. D13—1)



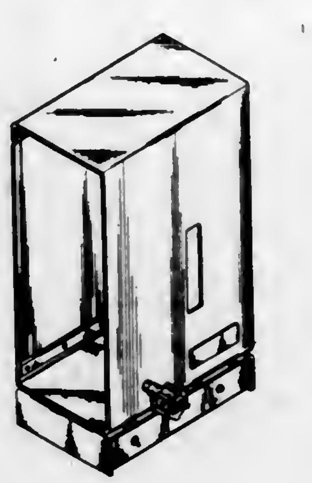
207,201
TOWNHOUSE COMPLEX

George D. Fonville, Dearborn, Mich., assignor to Kaufman & Broad Homes, Inc., Southfield, Mich., a corporation of Michigan
Filed Aug. 11, 1965, Ser. No. 86,542
Term of patent 14 years
(Cl. D13—1)



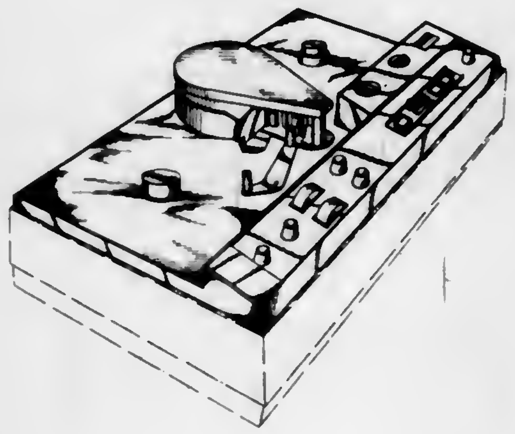
207,202
CABINET FOR WATER DISTILLATION APPARATUS

Charles M. Dole, Jr., Bedford, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed June 9, 1966, Ser. No. 2,625
Term of patent 14 years
(Cl. D16—2)



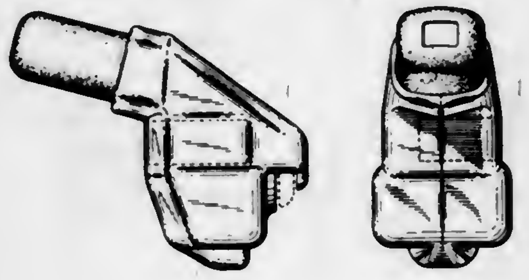
207,203
VIDEO TAPE RECORDER

Francis Arden Farey, Northfield, Ill., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed June 23, 1965, Ser. No. 85,865
Term of patent 14 years
(Cl. D26—14)



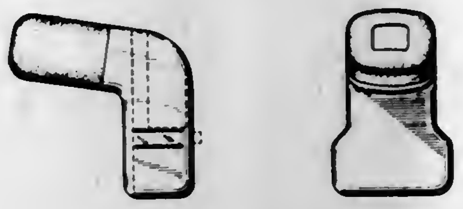
207,204
HEARING AID

Robert L. Geib, Wayzata, and Richard T. Martin, Minneapolis, Minn., assignors to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 1, 1966, Ser. No. 831
Term of patent 14 years
(Cl. D26—14)



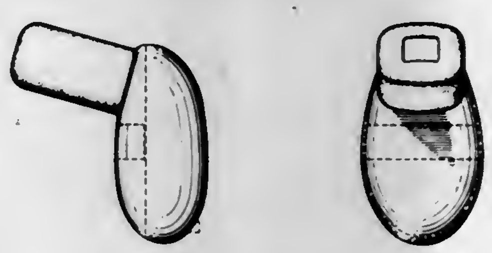
207,205
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 1, 1966, Ser. No. 832
Term of patent 14 years
(Cl. D26—14)



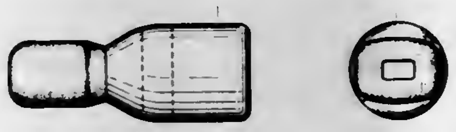
207,206
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 1, 1966, Ser. No. 833
Term of patent 14 years
(Cl. D26—14)



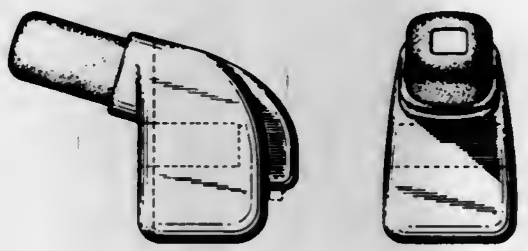
207,207
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 1, 1966, Ser. No. 834
Term of patent 14 years
(Cl. D26—14)



207,208
HEARING AID

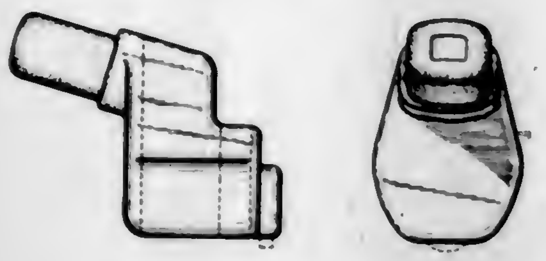
Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 1, 1966, Ser. No. 835
Term of patent 14 years
(Cl. D26—14)



207,209
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

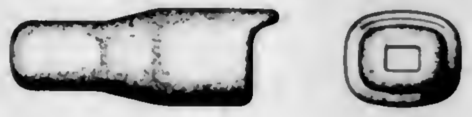
Filed Feb. 1, 1966, Ser. No. 840
Term of patent 14 years
(Cl. D26—14)



207,210
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

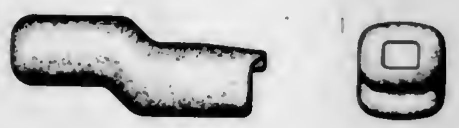
Filed Feb. 1, 1966, Ser. No. 841
Term of patent 14 years
(Cl. D26—14)



207,211
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

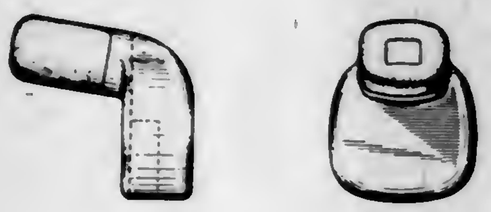
Filed Feb. 1, 1966, Ser. No. 842
Term of patent 14 years
(Cl. D26—14)



207,212
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

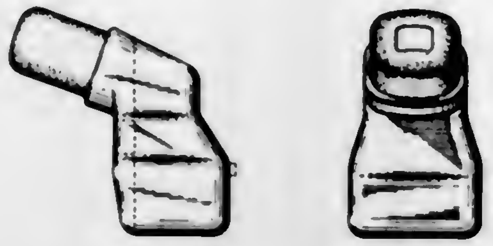
Filed Feb. 1, 1966, Ser. No. 843
Term of patent 14 years
(Cl. D26—14)



207,213
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

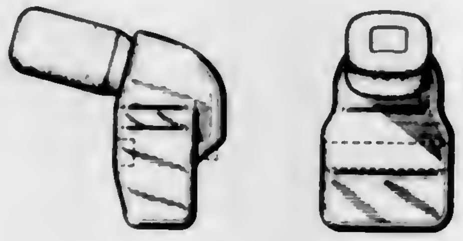
Filed Feb. 1, 1966, Ser. No. 844
Term of patent 14 years
(Cl. D26—14)



207,214
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

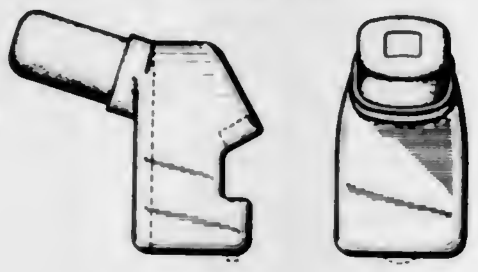
Filed Feb. 1, 1966, Ser. No. 862
Term of patent 14 years
(Cl. D26—14)



207,215
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

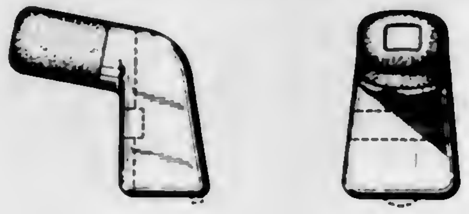
Filed Feb. 1, 1966, Ser. No. 863
Term of patent 14 years
(Cl. D26—14)



207,216
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

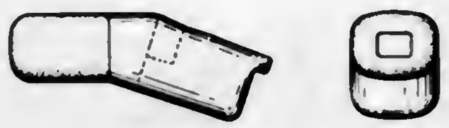
Filed Feb. 1, 1966, Ser. No. 864
Term of patent 14 years
(Cl. D26—14)



207,217
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

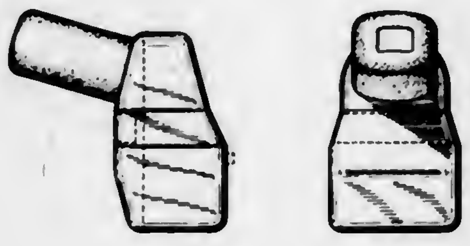
Filed Feb. 1, 1966, Ser. No. 865
Term of patent 14 years
(Cl. D26—14)



207,218
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

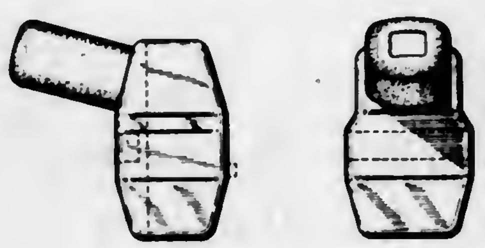
Filed Feb. 1, 1966, Ser. No. 867
Term of patent 14 years
(Cl. D26—14)



207,219
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

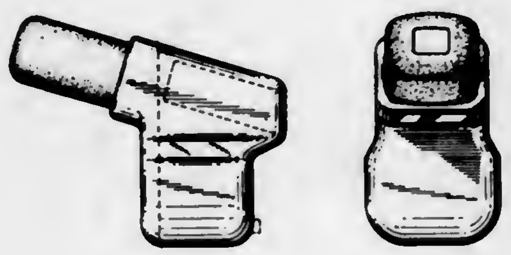
Filed Feb. 1, 1966, Ser. No. 871
Term of patent 14 years
(Cl. D26—14)



207,220
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

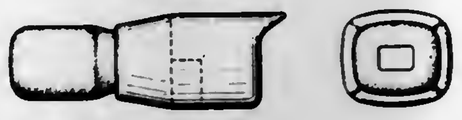
Filed Feb. 1, 1966, Ser. No. 872
Term of patent 14 years
(Cl. D26—14)



207,221
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

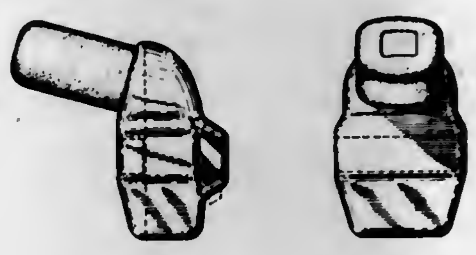
Filed Feb. 1, 1966, Ser. No. 873
Term of patent 14 years
(Cl. D26—14)



207,222
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

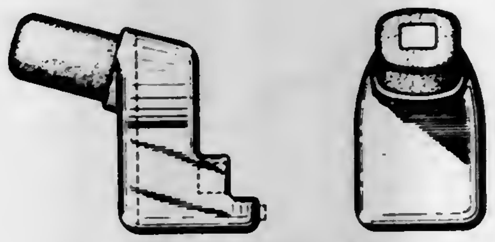
Filed Feb. 1, 1966, Ser. No. 874
Term of patent 14 years
(Cl. D26—14)



207,223
HEARING AID

Robert L. Geib, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

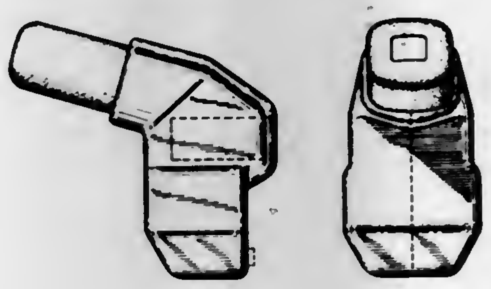
Filed Feb. 1, 1966, Ser. No. 875
Term of patent 14 years
(Cl. D26—14)



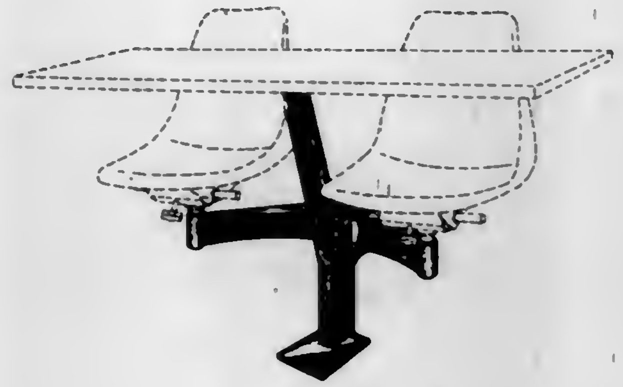
207,224
HEARING AID

Robert L. Geib, Wayzata, and Richard T. Martin, Minneapolis, Minn., assignors to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

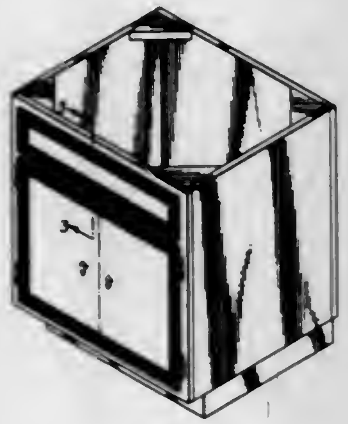
Filed Feb. 1, 1966, Ser. No. 876
Term of patent 14 years
(Cl. D26—14)



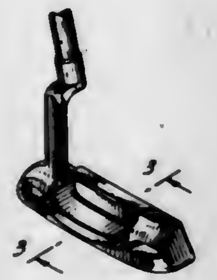
207,225
COMBINED TABLE AND SEATING UNIT
John W. Young, Kirkwood, Mo., assignor to Clarin Mfg. Co., Chicago, Ill., a corporation of Illinois
Filed Feb. 24, 1966, Ser. No. 1,166
Term of patent 14 years
(Cl. D33—14)



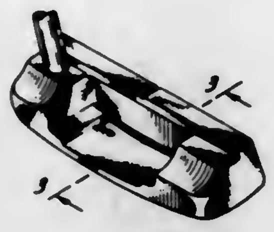
207,226
BASE UNIT FOR A CABINET
Karl A. Fries, Hayward, and Karl H. Heuken, Castro Valley, Calif. (both of 1273 W. Alquire Road, Hayward, Calif.)
Filed July 21, 1965, Ser. No. 86,264
Term of patent 14 years
(Cl. D33—19)



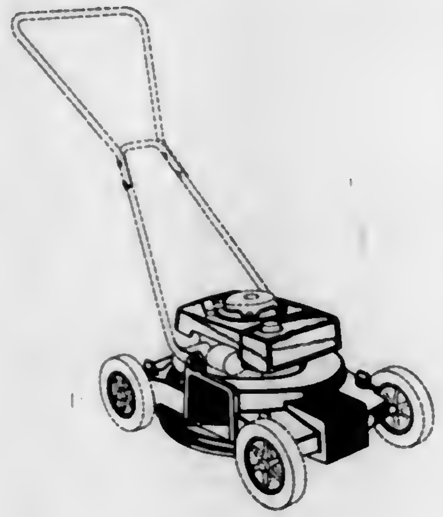
207,227
GOLF PUTTER
Karsten Solheim, 10412 N. 37th St., Phoenix, Ariz. 85028
Filed May 16, 1966, Ser. No. 2,305
Term of patent 14 years
(Cl. D34—5)



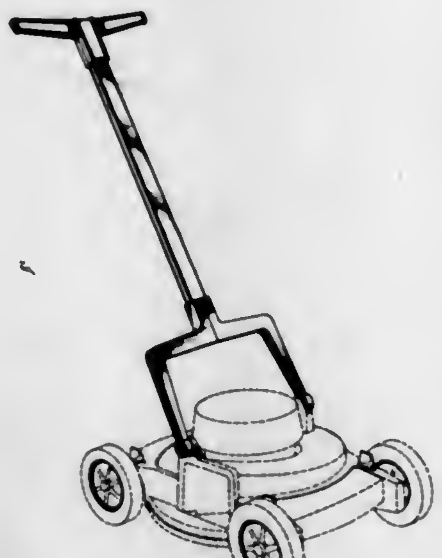
207,228
GOLF PUTTER
Karsten Solheim, 10412 N. 37th St., Phoenix, Ariz. 85028
Filed May 16, 1966, Ser. No. 2,306
Term of patent 14 years
(Cl. D34—5)



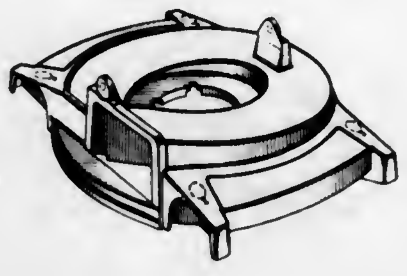
207,229
COMBINED ENGINE SHROUD AND BLADE HOUSING FOR A LAWN MOWER
James B. Stewart, Glen Ellyn, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed July 5, 1966, Ser. No. 2,937
Term of patent 14 years
(Cl. D40—1)



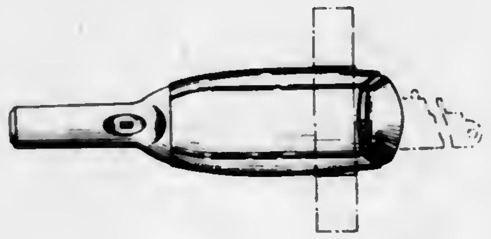
207,230
POWER LAWN MOWER HANDLE
James B. Stewart, Glen Ellyn, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed July 5, 1966, Ser. No. 2,938
Term of patent 14 years
(Cl. D40—1)

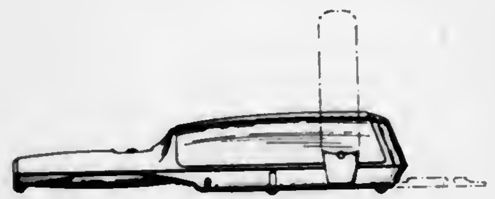


207,231
LAWN MOWER HOUSING
James B. Stewart, Glen Ellyn, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed July 5, 1966, Ser. No. 2,946
Term of patent 14 years
(Cl. D40—1)

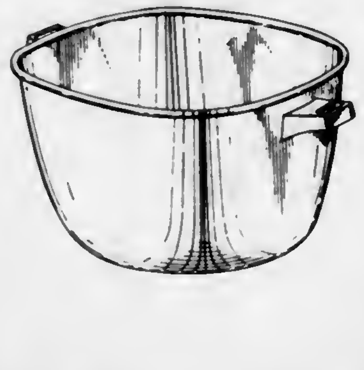


207,232
HEDGE TRIMMER
Joseph R. Mango, Midlothian, and Mario Giannola, Melrose Park, Ill., assignors to Portable Electric Tools, Inc., Geneva, Ill., a corporation of Illinois
Filed Nov. 30, 1965, Ser. No. 88,263
Term of patent 14 years
(Cl. D40—1)

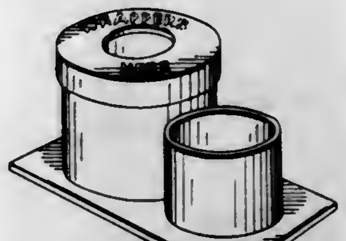




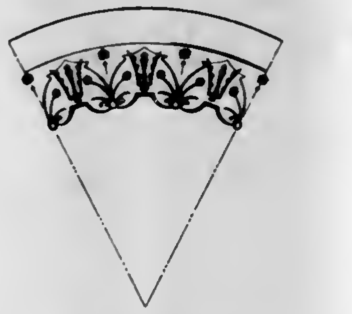
207,233
SAUCEPAN
Lloyd Ressler, Thorns Road, Quarry Bank, Brierly Hill, Staffordshire, England
Filed Dec. 3, 1965, Ser. No. 49
Claims priority, application Great Britain June 11, 1965
Term of patent 14 years
(Cl. D44—1)



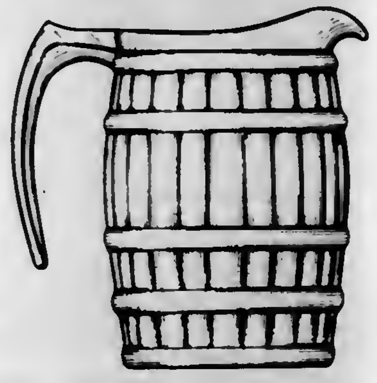
207,234
COMBINED HOLDER FOR TOOTHPICKS OR THE LIKE AND WRAPPER RECEPTACLE
Kermit E. Kerchberger, 1200 Duke Drive, Bakersfield, Calif. 93305
Filed Dec. 23, 1965, Ser. No. 313
Term of patent 14 years
(Cl. D44—10)



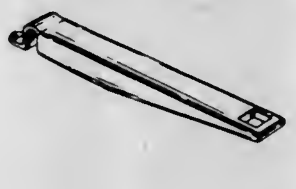
207,235
DINNER PLATE OR SIMILAR ARTICLE
Edward M. Otis, Syracuse, N.Y., assignor to Syracuse China Corporation, Syracuse, N.Y., a corporation of New York
Filed Apr. 13, 1966, Ser. No. 1,867
Term of patent 14 years
(Cl. D44—15)



207,236
PITCHER
Marvin J. Fields, Baldwin, N.Y., assignor to Quality Importers, Inc.
Filed June 2, 1966, Ser. No. 2,522
Term of patent 14 years
(Cl. D44—21)

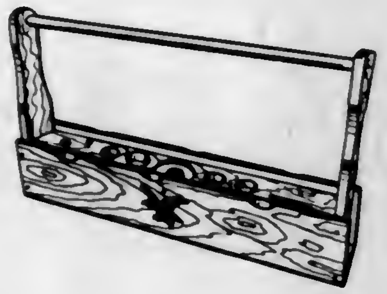


207,237
HANDLE FOR A COOKING UTENSIL OR THE LIKE
Lloyd Ressler, Thorns Road, Quarry Bank, Brierly Hill, Staffordshire, England
Filed Dec. 3, 1965, Ser. No. 48
Claims priority, application Great Britain June 11, 1965
Term of patent 14 years
(Cl. D44—29)



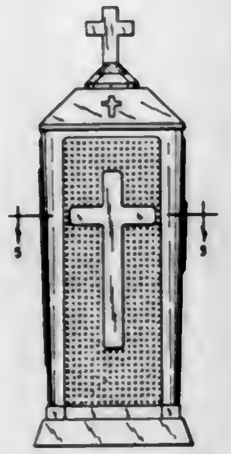
207,238
BAR TOOL HOLDER

Bela B. Nevai, Dobbs Ferry, N.Y., assignor to Nevco Wood Products Co., Inc., Yonkers, N.Y., a corporation of New York
Filed May 3, 1966, Ser. No. 2,141
Term of patent 14 years
(Cl. D44—29)



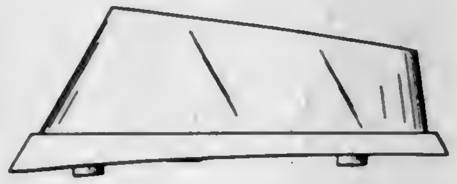
207,239
SANCTUARY LAMP

Oscar D. Guilfoil, Jr., 1125 Grant Blvd., Syracuse, N.Y. 13203
Filed Mar. 10, 1966, Ser. No. 1,388
Term of patent 3½ years
(Cl. D48—20)



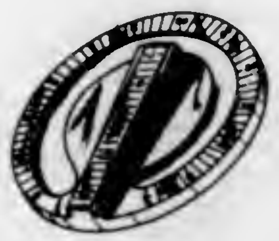
207,240
CAB ROOF LAMP

Philip H. Stevens, Syracuse, and David O. Chase, Camillus, N.Y., assignors to R. E. Dietz Company, Syracuse, N.Y., a corporation of New York
Filed Nov. 26, 1965, Ser. No. 88,220
Term of patent 14 years
(Cl. D48—32)



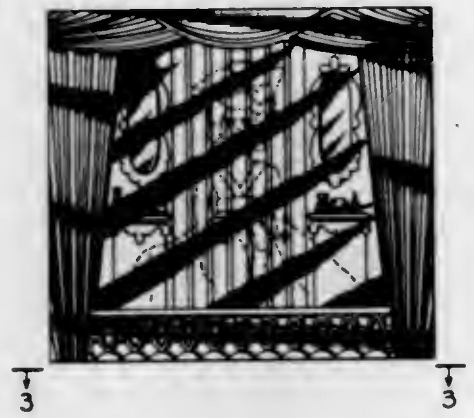
207,241
CONTACT LENS MEASURING INSTRUMENT

Robert E. Middleton, 5863 E. Powers Ave., Englewood, Colo. 80110
Filed Mar. 7, 1966, Ser. No. 1,320
Term of patent 14 years
(Cl. D57—1)



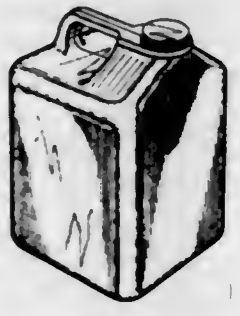
207,242
PACKAGING CONTAINER FOR A DOLL

Amram Haddad, New York, N.Y.
(43—12 50th St., Woodside, N.Y. 11377)
Filed Dec. 22, 1965, Ser. No. 277
Term of patent 7 years
(Cl. D58—2)



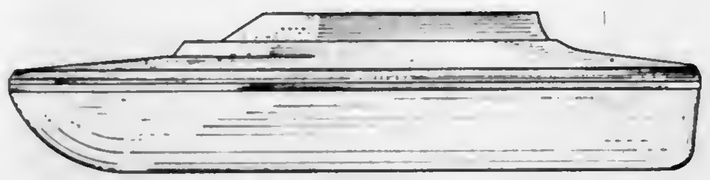
207,243
PLASTIC JUG

Norman A. Kelly, Wayne Township, Kosciusko County, Ind., assignor to Crystal Preforming and Packaging, Inc., Warsaw, Ind., a corporation of Indiana
Filed Nov. 12, 1965, Ser. No. 88,066
Term of patent 14 years
(Cl. D58—5)



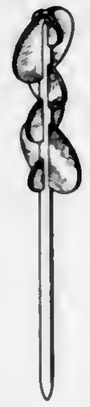
207,244
CARTON FOR COMESTIBLES

Richard E. Burnsworth, 521 6th St., Irwin, Pa. 15642; John W. Kirkpatrick 2208 5th Ave., McKeesport, Pa. 15132; and Walter Jerry Schade, 400 Pennsylvania Ave., Irwin, Pa. 15642
Filed Jan. 4, 1966, Ser. No. 450
Term of patent 14 years
(Cl. D58—11)



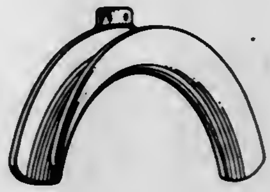
207,245
SANDWICH PICK OR THE LIKE

Homer Lynn, Johnstown, Ohio, assignor to Harold Leonard & Co., Inc., New York, N.Y.
Filed Mar. 2, 1966, Ser. No. 1,239
Term of patent 14 years
(Cl. D86—10)



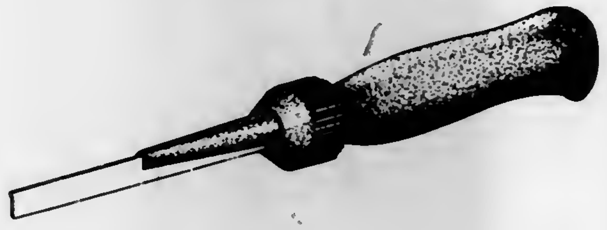
207,246
HOSE HANGER

Max Shames, 1313 Preston Way, Venice, Calif. 90291
Filed Jan. 19, 1966, Ser. No. 678
Term of patent 14 years
(Cl. D91—1)



207,247
HACKSAW BLADE HOLDER

Aldor S. E. Reuterfors, Rockford, Ill., assignor to Estwing Manufacturing Company, Inc., Rockford, Ill., a corporation of Illinois
Filed Nov. 12, 1965, Ser. No. 88,067
Term of patent 14 years
(Cl. D93—4)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 21ST DAY OF MARCH, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Automatic Canteen Company: *See*—
Steiner, John E. Re. 26,176.

Brammerlo, Allen A., and H. D. Stout, to General Electric Co. Stator for two speed induction type motor. Re. 26,179, 3-21-67, Cl. 318—224.

Deutsch, Alexander T. Automatic steering of space craft. Re. 26,177, 3-21-67, Cl. 60—202.

Earmaster, Inc.: *See*—
Leale, Leslie P. Re. 26,174.

Ferro Mfg. Corp.: *See*—
Pickles, Joseph. Re. 26,173.

General Electric Co.: *See*—
Brammerlo, Allen A., and Stout. Re. 26,179.

Leale, Leslie P., to Earmaster, Inc. Hearing aid. Re. 26,174, 3-21,67, Cl. 179—107.

Lukes, George E., and T. B. Williamson, to Stauffer Chemical Co. Method of controlling microorganisms with 2-halo-substituted acetophenones. Re. 26,178, 3-21-67, Cl. 167—30.

Pickles, Joseph, to Ferro Mfg. Corp. Top lift assembly. Re. 26,173, 3-21-67, Cl. 74—665.

Stauffer Chemical Co.: *See*—
Lukes, George E., and Williamson. Re. 26,178.

Steiner, John E., to Automatic Canteen Co. Currency testing system. Re. 26,176, 3-21-67, Cl. 194—4.

Stout, Harold D.: *See*—
Brammerlo, Allen A., and Stout. Re. 26,179.

Wesseler, William O. Cable hangers. Re. 26,175, 3-21-67, Cl. 248—68.

Williamson, Thomas B.: *See*—
Lukes, George E., and Williamson. Re. 26,178.

LIST OF PLANT PATENTEES

Boerner, Eugene S., to Jackson & Perkins Co. Rose plant. 2,729, 3-21-67, Cl. 15.

Byrum, Roy L., to Joseph H. Hill, Co. Rose plant. 2,728, 3-21-67, Cl. 22.

Hill, Joseph H., Co.: *See*—
Byrum, Roy L. 2,728.

Jackson & Perkins Co.: *See*—
Boerner, Eugene S. 2,729.

Swim, Herbert C., and O. L. Weeks., to Swim and Weeks. Rose plant. 2,727, 3-21-67, Cl. 24.

Swim and Weeks: *See*—
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Weeks, O. L.: *See*—
Swim, Herbert C., and Weeks. 2,727.

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Ampex Corp.: *See*—
Farey, Francis A. 207,203.

Burnsworth, Richard E., J. W. Kirkpatrick, and W. J. Schade. Carton for comestibles. 207,244, 3-21-67, Cl. D58—11.

Chase, David O.: *See*—
Stevens, Philip H., and Chase. 207,240.

Clarin Mfg. Co.: *See*—
Younng, John W. 207,225.

Corning Glass Works: *See*—
Dole, Charles M., Jr. 207,202.

Crystal Preforming and Packaging, Inc.: *See*—
Kelly, Norman A. 207,243.

Dahlberg Electronics, Inc.: *See*—
Geib. Robert L., and Martin. 207,204.
Gieb, Robert L. 207,205-23.
Geib, Robert L., and Martin. 207,224.

Dietz, R. E., Co.: *See*—
Stevens. Philip H., and Chase. 207,240.

Dole, Charles M., Jr., to Corning Glass Works. Cabinet for water distillation apparatus. 207,202, 3-21-67, Cl. D16—2.

Estwing Mfg. Co., Inc.: *See*—
Reuterfors, Aldor S. E. 207,247.

Farey, Francis A., to Ampex Corp. Video tape recorder. 207,203, 3-21-67, Cl. D26—14.

Fields, Marvin J., to Quality Importers, Inc. Pitcher. 207,236, 3-21-67. Cl. D44—21.

Fonville, George D., to Kaufman & Broad Homes, Inc. Townhouse complex. 207,201, 3-21-67, Cl. D13—1.

Fries, Karl A., and K. H. Heuken. Base unit for a cabinet. 207,226, 3-21-67, Cl. D33—19.

Gieb, Robert L., and R. T. Martin, to Dahlberg Electronics, Inc. Hearing aid. 207,204, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,205. 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,206, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,207, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,208, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,209. 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,210, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,211, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,212, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,213, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,214, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,215, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,216, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,217, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,218, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,219, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,220. 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,221, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,222, 3-21-67, Cl. D26—14.

Geib, Robert L., to Dahlberg Electronics, Inc. Hearing aid. 207,223, 3-21-67, Cl. D26—14.

Geib, Robert L., and R. T. Martin, to Dahlberg Electronics, Inc. Hearing aid. 207,224, 3-21-67, Cl. D26—14.

Giannola, Mario: *See*—
Mango Joseph R., and Giannola. 207,232.

Guilfoil, Oscar D., Jr. Sanctuary lamp. 207,239, 3-21-67, Cl. D48—20.

Haddad, Amram. Packaging container for a doll. 207,242, 3-21-67, Cl. D58—2.

Heuken, Karl H.: *See*—
Fries, Karl A., and Heuken. 207,226.

Kaukman & Broad Homes, Inc.: *See*—
Fonville, George D. 207,201.

Kelly, Norman A., to Crystal Preforming and Packaging, Inc. Plastic jug. 207,243, 3-21-67, Cl. D58—5.

Kerchberger, Kermit E. Combined holder for toothpicks or the like and wrapper receptacle. 207,234, 3-21-67, Cl. D44—10.

Kirkpatrick, John W.: *See*—
Burnsworth, Richard E., Kirkpatrick, and Schade. 207,244.

Leonard, Harold, & Co., Inc.: *See*—
Lynn. Homer. 207,245.

Lynn, Homer, to Harold Leonard & Co., Inc. Sandwick pick or the like. 207,245, 3-21-67, Cl. D86—10.

Mango, Joseph R., and M. Giannola, to Portable Electric Tools, Inc. Hedge trimmer. 207,232, 3-21-67, Cl. D40—1.

Martin, Richard T.: *See*—
Geib, Robert L., and Martin. 207,204.
Geib, Robert L., and Martin. 207,224.

Middleton, Robert E. Contact lens measuring instrument. 207,241, 3-21-67, Cl. D57—1.

Nevai, Bela B., to Nevco Wood Products Co., Inc. Bar tool holder. 207,238, 3-21-67, Cl. D44—29.

Nevco Wood Products Co. Inc. : *See*—
  Neval, Bela B. 207,238.
Otis, Edward M., to Syracuse China Corp. Dinner plate or similar article. 207,235, 3–21–67, Cl. D44—15.
Peterson, Jerold R., to Sunbeam Corp. Combined display and charging unit for battery operated toothbrushes. 207,197, 3–21–67, Cl. D4—3.
Portable Electric Tools, Inc. : *See*—
  Mango, Joseph R., and Giannola. 207,232.
Quality Importers, Inc. : *See*—
  Fields, Marvin J. 207,236.
Raehrs, Ernest R. Desk name plate. 207,196, 3–21–67, Cl. D1—12.
Ressler, Lloyd. Saucepan. 207,233, 3–21–67, Cl. D44—1.
Ressler, Lloyd. Handle for a cooking utensil or the like. 207,237, 3–21–67, Cl. D44—29.
Reuterfors, Aldor S. E., to Estwing Mfg. Co., Inc. Hacksaw blade holder with handle. 207,247, 3–21–67, Cl. D93—4.
Robert, Tony. Holder for food bowls for pets. 207,198, 3–21–67, Cl. D12—2.
Robert, Tony. Holder for food pans for pets. 207,199. 3–21–67, Cl. D12—2.
Schade, Walter J. : *See*—
  Burnsworth, Richard E., Kirkpatrick, and Schade. 207,244.
Scheller, Jerome. Flooring section for parquet floors. 207,200, 3–21–67, Cl. D13—1.
Shames, Max. Hose hanger. 207,246, 3–21–67, Cl. D91—1.
Solheim, Karsten. Golf putter. 207,227, 3–21–67, Cl. D34—5.
Solheim, Karsen. Golf putter. 207,228, 3–21–67, Cl. D34—5.
Stevens, Philip H., and D. O. Chase, to R. E. Dietz Co. Cob roof lamp. 207,240, 3–21–67, Cl. D48—32.
Stewart, James B., to Sunbeam Corp. Combined engine shroud and blade housing for a lawn mower. 207,229, 3–21–67, D40—1.
Stewart, James B., to Sunbeam Corp. Power lawn mower handle. 207,230, 3–21–67, Cl. D40—1.
Stewart, James B., to Sunbeam Corp. Lawn mower housing. 207,231, 3–21–67, Cl. D40—1.
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  Peterson, Jerold R. 207,197.
  Stewart, James B. 207,229.
  Stewart, James B. 207,230.
  Stewart, James B. 207,231.
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  Otis, Edward M. 207,235.
Young, John W., to Clarin Mfg. Co. Combined table and seating unit. 207,225, 3–21–67, Cl. D33—14.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 21ST DAY OF MARCH, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AGFA Aktiengesellschaft : *See*—
  Haydn, Hildegard, and Weyde. 3,309,991.
  Kiper, Gerd. 3,309,978.
  Kremp, Rudolf, Frost, and Hennig. 3,309,975.
  Muller-Bardorff, Wolfgang, Ulrich, and Heckelmann. 3,310,405.
AMP Inc. : *See*—
  Amigh, Paul M. 3,310,771.
A.P.V. Co., Ltd., The : *See*—
  Royston, Michael. 3,319,407.
Abbott, John A. : *See*—
  Ginnette, Lewis F., Lampi, and Abbott. 3,309,779.
Abbott, Paul D. Tractor hitch selectively adjustable stabilizer. 3,310,123, 3–21–67, Cl. 172—450.
Abernethy, Charles W., and M. H. Klein, to American Metal Climax, Inc. Sylvinite flotation with amine composition. 3,310,170, 3–21–67, Cl. 209—166.
Abex Corp. : *See*—
  Ratkowski, Thomas A. 3,309,801.
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  Ramo, Oliver H. 3,310,244.
Actan Electronics : *See*—
  Grundfest, Michael, and Robich. 3,310,778.
Adamovske Strojirny, narodni podnik : *See*—
  Jurny, Josef, and Kovar. 3,309,935.
Adams, George F. Apparatus for contacting fluidizable solids with gasiform fluids. 3,309,784, 3–21–67, Cl. 34—57.
Adams, Hugh D. Bird releaser for bird dog training device. 3,310,032, 3–21–67, Cl. 119—15.6.
Adams, Paul R., C. C. Miller, Jr., and R. S. Bovitz, to International Telephone and Telegraph Corp. Gyroscope. 3,309,931, 3–21–67, Cl. 74—5.
Adams, Robert T., to Sichak Associates. Frequency diversity transmitting system. 3,310,742, 3–21–67, Cl. 325—56.
Aenishaenslin, Rudolf : *See*—
  Huwyler, Rene, Aenishaenslin, and Porret. 3,310,503.
Aerojet-General Corp. : *See*—
  Havlik, Anton J., and Linden. 3,310,549.
  Zocher, Roy W. 3,310,611.
Aho, Charles E., to E. I. du Pont de Nemours and Co. Arresting chloroprene polymerization. 3,310,544, 3–21–67, Cl. 260—92.3.
Aiman, Charles E. : *See*—
  Biel, John H., and Aiman. 3,310,567.
Air-Shields, Inc. : *See*—
  Clynes, Manfred E. 3,310,049.
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  Aoki, Nobuhiko, and Ajiro. 3,310,755.
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  Sironi, Virginio, and Albertelli. 3,309,744.
Albin, Jerry R., to E. I. du Pont de Nemours and Co. Thiotrithiazyl compounds as vulcanizing agents. 3,310,538, 3–21–67, Cl. 260—79.5.
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  Bader, Alfred R. 3,310,561.
  Biel, John H., and Aiman. 3,310,567.
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  Savage, Albert B., and Aldrich. 3,310,057.
  Savage, Albert B., and Aldrich. 3,310,058.
Aleksa, Peter, and F. Prium, to Borg-Warner Corp. Overbed table. 3,310,008, 3–21–67, Cl. 108—146.
Alexander, Alex, and Y. Karabek, to Beteiligungs und Patentverwaltungsgesellschaft mit beschrankter Haftung. Converter, rotating in inclined position and capable of being tipped about a cross-axis. 3,310,297, 3–21–67, Cl. 266—36.
Alexander, Guy B., S. F. West, and P. C. Yates, to E. I. du Pont de Nemours and Co. Process of making metal powder compositions wherein some metal grains contain dispersed refractory metal oxide particles. 3,310,400, 3–21–67, Cl. 75—206.
Allen, John D., to Fawick Corp. Hydraulic system and valve arrangement therein. 3,309,852, 3–21–67, Cl. 56—208.
Aller, Edmund R. : *See*—
  Floehr, Walter L., Aller, and Shils. 3,310,005.
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  Du Bois, Robert J., and Veldhuis. 3,310,584.
  Du Bois, Robert J., and Veldhuis. 3,310,585.
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  Philips, Thomas W., Murphy, and Sweeney. 3,309,885.
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  Boksjo, Carl I. 3,310,707.
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  Goddard, George J., Evans, and Alpiser. 3,310,202.
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  Abernethy, Charles W., and Klein. 3,310,170.
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Amir, Emanuel M., to Esso Research and Engineering Co. Separation of alicyclic ketones and alcohols by extractive distillation with a glycol. 3,310,478, 3–21–67, Cl. 203—6.
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  Bryer, Philip S. 3,310,249.
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  Skov, Erling P. 3,310,637.
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  Surber, John L. and J. L. Surber, Jr., and Anderson. 3,310,211.
Anderson, Gerald R., S. H. Creed, and J. T. Parker, to FMC Corp. Apple coring machine. 3,310,084, 3–21–67, Cl. 146—52.
Ando, Toshio : *See*—
  Watanabe, Tatsuki, and Ando. 3,310,634.
Aoki, Nobuhiko, and M. Ajiro, to Kabushiki Kaisha Hitachi Seisakusho. D.C.-A.C. conversion circuit having output frequency which is independent of load and power supply variations. 3,310,755, 3–21–67, Cl. 331—113.
Apostle, George, D. W. P. Carlson, and P. J. Polland. Bowling score computer. 3,310,659, 3–21–67. Cl. 235—92.
Appleton, Arthur I. Quick mounting hanger for pipe and conduit. 3,310,264, 3–21–67, Cl. 248—72.
Appleton Machine Co. : *See*—
  Mater, Milton H. 3,310,079.
Archambault, Maurice, to Ministere des Richesses Naturelles, Province de Quebec. Production of zeolites and lithium salts. 3,310,368, 3–21–67, Cl. 23—63.
Archer-Daniels-Midland Co. : *See*—
  Curtice, Gerald M. 3,310,512.
Arentsen, Einar M., to Lee-Norse Co. Mining machine having independent means to rotate and oscillate cutters. 3,310,347, 3–21–67, Cl. 299—71.
Ares, Manuel : *See*—
  Viglietta, Benedict P., and Ares. 3,310,805.
Armstrong Cork Co. : *See*—
  Hager, Nathaniel E., Jr. 3,310,655.
Arndt, Charles J., and W. Silks, to Westinghouse Air Brake Co. Flexible link connection. 3,309,864, 3–21–67, Cl. 59—85.
Arndt, Leonard W. : *See*—
  Moore, James H., Gersten, and Arndt. 3,309,726.
Arnett, Boyd J., deceased; L. F. Arnett, administratrix. Carton flap-opening apparatus. 3,309,842, 3–21–67, Cl. 53—382.
Arnett, Lillian F. : *See*—
  Arnett, Boyd J. 3,309,842.
Aronoff, Samuel, to Gray & Huleguard, Inc. Magnetic coupling. 3,310,693, 3–21–67, Cl. 310—104.
Arrow-Hart & Hegeman Electric Co., The : *See*—
  Opalenik, John J., and Petitjean. 3,310,768.
Ashland Oil & Refining Co. : *See*—
  Hinson, Fletcher A., Wright, and Powell. 3,310,379.
Astor, Kurt, to J. J. Marx. Needle board for felting looms and the like. 3,309,753, 3–21–67, Cl. 28—4.
Atomic Energy of Canada, Ltd. : *See*—
  Bayly, John G., and de Grey. 3,310,736.
Atzenbeck, Charles R., to Radio Corp. of America. Signal distortion correction circuit employing means for storing signal samples and initiating correction when the pattern of stored samples indicates the presence of distortion. 3,310,751, 3–21–67, Cl. 328—163.
Auger, Ulysses G. Method and apparatus for coordinating restaurant operation. 3,310,797, 3–21–67, Cl. 340—332.
Aurelia, John R., and R. E. Schultz, to General Motors Corp. Friction parking brake. 3,310,137, 3–21–67, Cl. 188—78.
Auto Rinse Corp. : *See*—
  Baird, Roger P., Jr. 3,310,026.

Autolecture, Inc.: *See—*
  Burton, Val, and Ropes. 3,310,638.
Automated Building Components, Inc.: *See—*
  Jureit, John C. 3,309,833.
Automation Industries, Inc.: *See—*
  Weighart, Frederick G. 3,309,913.
  Weighart, Frederick G. 3,309,914.
Azoplate Corp.: *See—*
  Kluppel, Kurt-Walter, Tomanek, and Endermann. 3,309,990.
BOMAG Bopparder Maschinenbaugesellschaft m.b.H.: *See—*
  Peters, Hermann. 3,309,972.
Babcock & Wilcox Co., The: *See—*
  Coykendall, Leon H. 3,310,037.
  Frendberg, Arthur M., and Siegfried. 3,310,036.
  Hansen, Walter A., and Strileckyj. 3,310,041.
Babcock & Wilcox, Ltd.: *See—*
  Hutchings, Edward G. 3,309,872.
  Tillequin, Jean F. 3,310,104.
Babish, Richard C., to The Perkin-Elmer Corp. Maximum or minimum brightness responsive exposure control circuit. 3,310,679, 3–21–67, Cl. 250—209.
Bach, Frederick O., to A. B. Dick Co. Offset master preparation and elements. 3,310,404, 3–21–67, Cl. 96—33.
Bacon, Leslie R.: *See—*
  Sproule, Francis R., and Bacon. 3,310,494.
Bader, Alfred R., to Aldrich Chemical Co., Inc. 6-ammoniopurinides. 3,310,561, 3–21–67, Cl. 260—252.
Bader, I. Walton: *See—*
  Bader, Maximilian and I. W. 3,309,719.
Baenziger, Leonard N., and G. S. Tuck, to Carlton Mfg. Co. Electrical connector. 3,310,773, 3–21–67, Cl. 339—276.
Bahrs, David L.: *See—*
  Couleur, John F., Gundenschwager, Shelly, and Bahrs. 3,310,785.
Bailey, Clifton S.: *See—*
  Bonney, Robert E. 3,310,276.
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  Paul, Robert A., and Forchheimer. 3,310,415.
Baker, Wade. Ditch forming and cleaning mechanism. 3,309,802, 3–21–67, Cl. 37—191.
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  Stoll, Reiner G., and Balch. 3,309,855.
Baldwin, James F. Alloys for use at high temperatures. 3,310,399, 3–21–67, Cl. 75—171.
Baltensperger, Paul, to Brown, Boveri & Cie, Aktiengesellschaft. Gas blast circuit breaker with nozzle formed contacts and control for associated gas outlet valves. 3,310,648, 3–21–67, Cl. 200—148.
Balther Farms Equipment Mfg., Ltd.: *See—*
  Balthes, John, Jr. 3.310.090.
Balthes, John, Jr., to Balther Farm Equipment Mfg., Ltd. Carrying bin for agricultural machine. 3,310,090, 3–21–67, Cl. 150—51.
Banning, Thomas A., Jr. Subscription television system using phase inverted video signals. 3,310,624, 3–21–67, Cl. 178—5.1.
Bantam-Lite, Inc.: *See—*
  Schwartz, Sidney. 3,310,668.
Baranauckas, Charles F., and I. Gordon, to Hooker Chemical Corp. Pentaerythritol phosphites. 3,310,609, 3–21–67, Cl. 260—927.
Barber-Colman Co.: *See—*
  Kennedy, Walter W. 3,310,234.
Barle, Walter P., Jr., and N. W. Franke, to Gulf Research & Development Co. Coating compositions comprising polymers of acrylic esters. 3,310,513, 3–21–67, Cl. 260—29.6.
Barker, Theodore L., and L. M. Hamrick, to Geo. J. Meyer Mfg. Co. Uncaser. 3,310,187, 3–21–67, Cl. 214—304.
Barnes Engineering Co.: *See—*
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  McHenry, Thomas F. 3,309,957.
Barnett, Eugene R. and W. L. Refrigerated disposable container. 3,309,890, 3–21–67, Cl. 62—294.
Barnett, Willard L.: *See—*
  Barnett, Eugene R. and W. L. 3,309,890.
Barrett, George F., to The Kamphausen Co. Reinforced pole structure and method of banding a reinforcing stub to a pole. 3,309,824, 3–21–67, Cl. 52—170.
Barrett, Paul C., and G. W. Stambaugh, to The General Tire & Rubber Co. Semi-automatic filling device. 3,310,078, 3–21–67, Cl. 141—348.
Bartee, Thomas C., to Hickok Teaching Systems, Inc. Digital computer trainer. 3,309.793, 3–21–67, Cl. 35—10.
Bartholomew, Earl, to Ethyl Corp. Internal combustion engine fuel feeding system. 3,310,045, 3–21–67, Cl. 123—127.
Basic Inc.: *See—*
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Batchelder, Paul: *See—*
  Burkett, William E., and Batchelder. 3,310,614.
Baumann, Gert F.: *See—*
  Steingiser, Samuel, Baumann, and Gable. 3,310,604.
Bayer, Peter. Wig case. 3,310,162, 3–21–67, Cl. 206—8.
Bayly, John G., and E. H. de Grey, to Atomic Energy of Canada, Ltd. Method and apparatus for transmitting signal information from an enclosed region to an exterior region without direct electrical connection between the regions. 3,310,736, 3–21–67, Cl. 324—62.
Bazin, Lucas J., R. A. Dischert, and D. M. Taylor, to Radio Corp. of America. Color television phase test apparatus. 3,310,625, 3–21–67, Cl. 178—5.4.
Beary, Charles R., to General Motors Corp. Method of insulating a series of rectangular refrigerator cabinets. 3,310,616, 3–21–67, Cl. 264—45.
Beaumont, David H.: *See—*
  Friedman, Arnold I., and Beaumont. 3,310,418.
Beck, Walther: *See—*
  Schonbeck, Rupert, Kloimstein, Beck, and Diskus. 3,310,560.
Becker, Richard O., to E. I. du Pont de Nemours and Co. Process for curing polychloroprene. 3,310,545, 3–21–67, Cl. 260—92.3.
Becker, Richard O., to E. I. du Pont de Nemours and Co. Curable chloroprene polymer composition and method of curing same. 3,310,546, 3–21–67, Cl. 260—92.3.
Beckman Instruments, Inc.: *See—*
  Offner, Franklin F. 3,310,667.
Beduhn, Daniel E., to Manitowoc Engineering Corp. Apparatus for filtering liquid. 3,310,172, 3–21–67, Cl. 210—143.
Beehler, Vernon D.: *See—*
  Sawyer, Harold T. 3,310,129.
Beerman, Henry P., to Barnes Engineering Co. Black body radiation source. 3,309,881, 3–21–67, Cl. 62—3.
Beintum, Menzo and R. Vehicle mud flap construction. 3,310,344, 3–21–67, Cl. 298—1.
Beintum, Robert: *See—*
  Beintum, Menzo and R. 3,310,344.
Belknap, William B.: *See—*
  Marx, John W., Belknap, and Trantham. 3,310,109.
Bell Telephone Laboratories, Inc.: *See—*
  Gretter, Ralph W. 3,310,213.
  King, James C., and Thomas. 3,310,720.
  Marcatili, Enrique A. J. 3,310,358.
  Swan, Clarence B. 3,310,760.
  Vigilante, Frank S. 3,310,635.
Beloit Corp.: *See—*
  Boadway, John D. 3,309,781.
  Erbach, Fred R. 3,310,461.
  Hornbostel, Lloyd. 3,310,174.
Bender, Lloyd F. Milk line equipment. 3,310,061, 3–21–67, Cl. 134—58.
Bender, Richard B. Method for plugging pipe. 3,310,615, 3–21–67, Cl. 264—45.
Bendix Corp., The: *See—*
  Reznick, Frank J., and Nussear. 3,309,760.
Bennett, Moreland P., and H. D. Rainforth, to General Electric Co. Method of joining aluminum and dissimilar metal and joint formed by such method. 3,310,388, 3–21–67, Cl. 29—197.
Benoit, George J., Jr., to Chevron Research Co. Oils for two-cycle engines containing basic amino-containing detergents and aryl halides. 3,310,492, 3–21–67, Cl. 252—51.5.
Benson, Clark K., and A. A. Caridis, to Heat and Control Inc. Food cooker. 3,309,981, 3–21–67, Cl. 99—405.
Bercik, Paul G., and A. M. Henke, to Gulf Research & Development Co. Hydrogenation of olefinic gasoline. 3,310,485, 3–21–67, Cl. 208—143.
Bergman, David: *See—*
  Folas, Pavel, Enache, and Bergman. 3,310,304.
Bernick, Leslie M., and W. C. Stevert, to Inland Steel Co. Light guage, hot dip metal coated steel products. 3,309,906, 3–21–67, Cl. 72—47.
Berridge, Jack A., to Kaiser Aluminum & Chemical Corp. Nailing slot structure for panel. 3,309,829, 3–21–67, Cl. 52—50d.
Berry, Johnnie R. Staple remover. 3,310,288, 3–21–67, Cl. 254—28.
Besler, George D.: *See—*
  Hession, John W., Jr. 3,310,466.
Best, Charles E. Self-inserting seal for bearings. 3,310,315, 3–21–67, Cl. 277—10.
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  Mauthe, Mortimer C. 3,310,166.
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  Alexander, Alex, and Karabek. 3,310,297.
Beverly, James: *See—*
  Brand, John R., Plunkett, and Beverly. 3,310,622.
Bickley, Thomas F., to LTV Aerospace Corp. Pump for highly volatile liquid. 3,310,001, 3–21–67, Cl. 103—227.
Biel, John H., and C. E. Aiman, to Aldrich Chemical Co., Inc. 2,6-bis(aminoalkyl)-3-piperidinols. 3,310,567, 3–21–67, Cl. 260—294.7.
Bilaisis, Viktoras. Packaging machine. 3,309,840, 3–21–67, Cl. 53—243.
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  Groom, Robert G., Billawala, and Stansell. 3,310,792.
Binder, Herbert: *See—*
  Hanna, Samuel C., Binder, and Johnson. 3,310,694.
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  Haszeldine, Robert N., Birchall, and Umfreville. 3,310,543.
Birchenough, James M. P., to International Standard Electric Corp Electro-optical intelligence storage apparatus. 3,310.788, 3–21–67, Cl. 340—173.
Birginal, Sylvester J. Invertable table top support for machines. 3,310,352, 3–21–67, Cl. 312—30.
Birkholz, Dietrich: *See—*
  Kauffmann, William M., and Birkholz. 3,309,865.
Birth, James E. Vehicle burglar alarm. 3,310,775, 3–21–67, Cl. 340—63.
Bishop, Roger I., E. R. Kendall, and R. A. Palmer, deceased (by D. Palmer, executrix), to S. Smith & Sons (England) Ltd. Aircraft instruments. 3,309,923, 3–21–67, Cl. 73—178.
Bjorksten Research Laboratories, Inc.: *See—*
  Lappala, Risto P., and Diehl. 3,310,453.
Black, James J., to Pullman, Inc. Selective valve actuating mechanism for vessels. 3,310,070. 3–21–67, Cl. 137—637.1.
Black, Warren R., to American Seating Co. Hospital bed. 3,309,717, 3–21–67, Cl. 5—68.

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  Rigopulos, Peter N., and Blackmer. 3,309,843.
Blade, Arturo, and G. Muller, to Roussel-Uclaf. Colchiceinamide compounds and process of preparation. 3,310,579, 3–21–67 Cl. 260—465.
Blade, Arturo, and G. Muller, to Roussell-Uclaf. Colchicinic derivatives and process of preparation. 3,310,580, 3–21–67, Cl. 260—465.
Blanchard, Harry S., and H. L. Finkbeiner, to General Electric Co. Pyridine-cupric complexes with halophenols. 3,310,562, 3–21–67, Cl. 260—270.
Blandin, John F. Lithography accessory. 3,310,355, 3–21–67, Cl. 312—281.
Blaw-Knox Co.: *See—*
  Nowak, Leon J., Jr. 3,310.156.
Bleibtreu, Alexander, to Maschinenfabrik Reinhausen Gebruder Scheubeck KG. High current-carrying capacity switching devices requiring small contact pressures. 3,310,640, 3–21–67, Cl. 200—1.
Bloom, Barry M., and J. F. Muren, to Chas. Pfizer & Co., Inc. Alkylated thioxanthenesulfonamides. 3,310,553, 3–21–67, Cl. 260—240.
Bluestein, Ben A., to General Electric Co. Substituted silanes. 3,310,578, 3–21–67, Cl. 260—448.8.
Boadway, John D., to Beloit Corp. Speed differential driving method and apparatus. 3,309,781, 3–21–67, Cl. 34—25.
Bock, Ernst-Gunther: *See—*
  Breuers, Wilhelm, Kuth, Bock, and Tilk. 3,310,541.
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  Nader, Hugo O. M., and Haupt. 3,309,715.
Boden, Herbert C. Panel joint construction and connector. 3,310,324, 3–21–67, Cl. 287—20.92.
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  Kofoid, Melvin J. 3,310,807.
Bofors Aktiebolaget: *See—*
  Salomonsson, Hans M. A. 3,309,963.
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  Weinrotter, Ferdinand, Muller, Schmidt, Bohler, and Schweighofer. 3,310,559.
Boksjo, Carl I., to Allmanna Svenska Elektriska Aktiebolaget Vasteras. Over voltage protection means for high voltage mercury arc rectifiers. 3,310,707, 3–21–67, Cl. 315—123.
Boland, Paul, J. D. Fleming, Jr., and J. N. Harris, to Georgia Tech Research Institute. Porosity data apparatus. 3,309,912, 3–21–67, Cl. 73—38.
Bolt Associates, Inc.: *See—*
  Chelminski, Stephen V. 3,310,128.
Bolton, Douglas H. H.: *See—*
  Potts, Michael C., Pawling, and Bolton. 3,309,880.
Bon, Charles K., R. E. Carr, and M. P. Neipert, to The Dow Chemical Co. Electrolytic cell and anode assembly therefor. 3,310,462, 3–21–67, Cl. 204—219.
Bonnette, Roland E., to United Shoe Machinery Corp. Counting devices. 3,310,661. 3–21–67. Cl. 235—92.
Bonney, Robert E., 25% to S. Brookins, 5% to T. R. Cavines, 5% to C. S. Bailey, and 5% to E. C. Paine. Mold holder assembly for mounting in a molding apparatus. 3,310,276, 3–21–67, Cl. 249—120.
Boom, Roger W., to North American Aviation, Inc. Stable superconducting magnet. 3,310,765, 3–21–67, Cl. 335—216.
Borberg, Willy, to General Precision, Inc. Lens protective device utilizing dual air streams. 3,310,356, 3–21–67, Cl. 350—63.
Borg-Warner Corp.: *See—*
  Aleksa, Peter, and Pruim. 3,310,008.
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  Lemon, Peter H. R. B., and Peskett. 3,310,602.
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  Oddy, Edward P., and Kinal. 3,309,763.
  Smirl, Richard L. 3,310.141.
Bosse, Robert W., to Groov-Pin Corp. Insert orienting equipment 3,310,153, 3–21–67, Cl. 198—33.
Bostick, Louis D. Overhead stapling machine. 3,310,215, 3–21–67, Cl. 227—111.
Boteler, Henry W., to Grinnell Corp. Diaphragm valve and diaphragm therefor. 3,310,279, 3–21–67, Cl. 251—331.
Boteler, Henry W., to Grinnell Corp. Diaphragm valve. 3,310,280, 3–21–67, Cl. 251—331.
Boteler, Henry W., to Grinnell Corp. Diaphragm valve. 3,310,281, 3–21–67, Cl. 251—331.
Boteler, Henry W., to Grinnell Corp. Diaphragm control valves. 3,310,282, 3–21–67, Cl 251—331.
Bouman, Geert H., to Honeywell Inc. Logarithmic digital process controller. 3,310,663, 3–21–67, Cl. 235—151.1.
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  Downing, Leo G., and Kindall. 3,310,766.
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  Adams, Paul R., Miller, and Bovitz. 3,309,931.
Bowker, Rockton A. Fish rod handle. 3,309,809, 3–21–67, Cl. 43—22.
Boyer, James B. Cigarette-type smoking media. 3,310,055, 3–21–67, Cl. 131—9.
Bozek, John S., to Continental Can Co., Inc. Disposable coffee container. 3,309,980, 3–21–67, Cl. 99—295.
Bradu, Georges M., and P. F. Grosborne, to Societe des Verreries, Industrielles Reunies du Loing. Cathode ray tube envelope. 3,310,194, 3–21–67, Cl. 220—2.1.
Brand, John R., B. J. Plunkett, and J. Beverly, to Warwick Electronics Inc. Key switching for electric organ. 3,310,622, 3–21–67, Cl. 84—1.18.
Brauer, Joseph B., to United States of America, Air Force. Tapped microwave acoustic delay line. 3,310,761, 3–21–67, Cl. 333—30.
Brauer, Joseph B., to United States of America, Air Force. Isotropic microwave reflector. 3,310,804, 3–21–67, Cl. 343—18.
Braun, Robert A., to E. I. du Pont de Nemours and Co. 2H-1,3,5-oxadiazines. 3,310,554, 3–21–67, Cl. 260—244.
Brazerol, William A.: *See—*
  Briggs, Southwick W., and Brazerol. 3,310,177.
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  Broughton, Donald B., and Brearley. 3,310,486.
Brealoy, David S., to Hercules, Inc. Polyolefins stabilized with the combination of a nickel salt of a carboxylic acid and a phenolic antioxidant. 3,310,510, 3–21–67, Cl. 260—23.
Breuers, Wilhelm, G. Kuth, E.-G. Bock, and W. Tilk, to Bunawerke Huls Gesellschaft mit Beschränkter Haftung. Method of improving the color of rubber. 3,310,541, 3–21–67, Cl 260—82.1.
Brewer, Harry, and O. F. Cutright. Combined walking cane and stool. 3,310,340, 3–21–67, Cl. 297—16.
Bricker, Carl E., and K. P. Hillegass, to The Goodyear Tire & Rubber Co. Wrap around brake. 3,310,136, 3–21–67, Cl. 188—77.
Briggs, Southwick W., and W. A. Brazerol. Filter with pleat spacing means. 3,310,177, 3–21–67, Cl. 210—457.
Brignac, Edmond P., and R. T. Wright, to Monsanto, Co. Nylon composition having enhanced dyeability. 3,310,534, 3,21,67, Cl. 260—78.
British Aircraft Corp. (Operating) Ltd.: *See—*
  Swift, Norman, and Endean. 3,310,259.
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  Dew, David R. 3,309,723.
  Staden, Alfred A. 3,309,722.
  Staden, Alfred A. 3,309,725.
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  Cuthbert, Robert M. 3,309,920.
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  Bryant, David L., and Johnstone. 3,310,238.
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  Goble, Anthony G., and Thornhill. 3,310,597.
Broadbridge, Robert E., to Honeywell, Inc. Selective signaling apparatus for information handling device. 3,310,664, 3–21–67, Cl. 235—159.
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  Goldstein, Albert, and Brook. 3,310,460.
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  Bonney, Robert E. 3,310,276.
Brooks, William. Electroluminescent device and photo-resist method for making the same. 3,310,703, 3–21–67, Cl. 313—108.
Broughton, Donald B., and C. S. Brearley, to Universal Oil Products, Co. Separation process for the recovery of high purity components of hydrocarbon mixtures. 3,310,486, 3–21–67, Cl. 208—310.
Brown, Boveri & Cie, Aktiengesellschaft: *See—*
  Baltensperger, Paul. 3,310,648.
  Huwyler, Ernst, and Wenzel. 3,310,298.
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  Buttery, Kenneth T. 3,309,834.
  Buttery, Kenneth T. 3,310,222.
  Buttery, Kenneth T. 3,310,223.
Brown, D. S., Co., The: *See—*
  Brown, Delmont D. 3,309,818.
Brown, Delmont D., to The D. S. Brown Co. Blast cleaning machines and removable panels therefor. 3,309,818, 3–21–67, Cl. 51—8.
Brown, Henry, to The Udylite Corp. Chromium electroplating. 3,310,480, 3–21–67, Cl. 204—51.
Brown, Norman D. Disc-shaped playing piece and game board. 3,310,307, 3–21–67, Cl. 273—126.
Brown, Warren G., to International Telephone and Telegraph Corp. Communication system for the selective transmission of speech and data. 3,310,631, 3–21–67, Cl. 179—15.
Brunton, Donald C., to Industrial Nucleonic, Corp. Local and average fluid density measuring system. 3,310,674, 3–21–67, Cl. 250—43.5.
Brunger, Freidrich W. Suspension hook. 3,310,272, 3–21–67, Cl. 248—339.
Bryan, Joe H. Intravenons bottle trolley and track. 3,310,003, 3–21–67, Cl. 104—94.
Bryan, Thomas T., to Minnesota Mining & Mfg., Co. Process of making an intaglio plate using an image transfer film. 3,310,403, 3–21–67, Cl. 96—28.
Bryant, David L., and E. T. C. Johnstone, to The British Oxygen Co., Ltd. Furnace lances. 3,310,238, 3–21–67, Cl. 239—132.3
Bryer, Philip S., to Ampex Corp. Loop fault sensing means for web transport systems. 3,310,249, 3–21–67, Cl. 242—55.12.
Buchhold, Theodor A., to General Electric, Co. Power cryotron. 3,310,767, 3–21–67, Cl. 338—32.
Buckley, Charles W., and E. Schrempp, to Pitney-Bowes, Inc. Drive system. 3,310,139, 3–21–67, Cl. 192—.02.
Buckley, John J.: *See—*
  Simmons, Arthur L., and Buckley. 3,309,929.
Budden, Robert G., to Roberts-Gordon Appliance, Corp. Gas burning infra-red heating device. 3,310,047, 3–21–67, Cl. 126—92.
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  Dostal, Frank. 3,310,756.
  Dostal, Frank. 3,310,757.
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- Burch, Paul F., to Wolverine Shoe & Tanning, Corp. Skinning machine. 3,310,085, 3-21-67, Cl. 146—130.
- Burgess, Thomas H., and M. P. Kesnar, to Fan Tron, Corp. Rectifier circuit. 3,310,729, 3-21-67, Cl. 321—18.
- Burke, Wilbur A. Elevator for an end of a bed. 3,310,289, 3-21-67, Cl. 254—126.
- Burkett, William E., and P. Batchelder, to Pacific Vegetable Oil Corp. Method for making burned clay building products. 3,310,614, 3-21-67, Cl. 264—44.
- Burkhalter, James H., to Martin-Marietta, Corp. Sequentially firing array of laser units. 3,310,753, 3-21-67, Cl. 331—94.5.
- Burroughs Corp.: *See—*
  - Groom, Robert G., Billawala, and Stansell. 3,310,792.
  - Nesin, Daniel J. 3,310,214.
  - Rayfield, Harry F., and Hass. 3,310,253.
- Bursell, Claes G. B. Combined lighting fixture and fresh air intake. 3,310,672, 3-21-67, Cl. 240—78.
- Burt, Henry J. Ball batting practice apparatus. 3,310,306, 3-21-67, Cl. 273—26.
- Burton, Val, and F. E. Ropes, to Autolecture, Inc. Dual directional tape player. 3,310,638, 3-21-67, Cl. 179—100.2.
- Butler, Edward M.: *See—*
  - Gould, Jack R., and Butler. 3,310,444.
- Butt, Alan G., to The Trane Co. Heat exchanger with combined closing member and fluid distributor. 3,310,105, 3-21-67, Cl. 165—166.
- Buttery, Kenneth T., to Brown Co. Dispensing carton suitable for plastic bags and the like. 3,309,834, 3-21-67, Cl. 53—21.
- Buttery, Kenneth T., to Brown Co. Recloseable tear strip carton having cover lock. 3,310,222, 3-21-67, Cl. 229—51.
- Buttery, Kenneth T., to Brown Co. Recloseable tear strip carton having cover lock. 3,310,223, 3-21-67, Cl. 229—51.
- Byer, Ellis M., and A. A. Lang, ½ to General Foods Corp. Production of flavor-enhanced apple and prune concentrates. 3,310,409, 3-21-67, Cl. 99—205.
- Byer, Ellis M.: *See—*
  - Lang, Alfred A., and Byer. 3,310,410.
- Bylsma, Simon, and E. A. Madison, to Remcor Inc. Lawn spreader. 3,310,314, 3-21-67, Cl. 275—15.
- Bynum, George D., and N. D. Sims, to Monsanto Co. Spinnerette. 3,309,734, 3-21-67, Cl. 18—8.
- C. A. V., Ltd.: *See—*
  - Rosselli, Andrew C. 3,309,996.
- Cabanaw, Eldred J., to Phillips Petroleum Co. Employing bottoms of a second fractionator as a refrigerant medium for first fractionator overhead. 3,309,882, 3-21-67, Cl. 62—28.
- Cahill, William S., Sr. Mounting mandrel for buffing machines and the like. 3,310,081, 3-21-67, Cl. 144—288.
- Cal-Dak Co., The: *See—*
  - Luff, John E. 3,310,317.
- Caldwell, Samuel I., to King of Prussia Research and Development Corp. Push-pull handwheel and motor drive. 3,309,942, 3-21-67, Cl. 74—625.
- Callery Chemical, Co.: *See—*
  - Shepherd, James W. 3,310,507.
- Calvert, David G.: *See—*
  - Pavlich, Joseph P., and Calvert. 3,310,111.
- Camell, Nazateno: *See—*
  - Natta, Giulio, Mazzanti, Valvassori, Sartori, and Camell. 3,310,537.
- Canadian Ingersoll-Rand, Co., Ltd.: *See—*
  - Delcellier, Henri A. 3,310,080.
- Cann, Gordon L., to Electro-Optical Systems, Inc. Plasma accelerator using Hall currents. 3,309,873, 3-21-67, Cl. 60—203.
- Cappuzzello, Joseph J. Garment hanging apparatus. 3,310,179, 3-21-67, Cl. 211—113.
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  - Benson, Clark K., and Caridis. 3,309,981.
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- Carlson, Harry W.: *See—*
  - Robins, Augustine W., Harris, Carlson, McLean, and Middleton. 3,310,262.
- Carlson, Willard E.: *See—*
  - Russell, James, Carlson, and Mayhood. 3,310,363.
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  - Osborne, William T. 3,310,103.
- Carroll, John W. Gas meter change device. 3,310,322, 3-21-67, Cl. 285—18.
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- Carter, Sidney T., to Geo. J. Meyer Mfg., Co. Article combiner. 3,310,151, 3-21-67, Cl. 198—32.
- Carter, Sidney T., to Geo. J. Meyer Mfg. Co. Labeling machine with yieldable drive means for picker and emergency stop. 3,310,449, 3-21-67, Cl. 156—365.
- Cassidy, Francis T., Jr., to International Telephone and Telegraph Corp. Time shared telegraph transmission system including sequence transmission with reduction of start and stop signals. 3,310,626, 3-21-67, Cl. 178—50.
- Catalfimo, Joseph J. Clamping device. 3,310,302, 3-21-67, Cl. 269—154.
- Cavalier, Gilbert, to Institut de Recherches de la Siderurgie Francaise. Apparatus for withdrawing samples from molten metal baths. 3,309,928, 3-21-67, Cl. 73—425.6.
- Cavanaugh, Richard D., to Barry Wright Corp. Gravity-sensitive levelling. 3,310,263, 3-21-67, Cl. 248—23.
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- Cena, Domenico. Writing implement. 3,310,035, 3-21-67, Cl. 120—42.12.
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- Chadenson, Lucien F., to Societe Anonyme Safege-Transport. Railway switch. 3,310,004, 3-21-67, Cl. 104—130.
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  - Yager, Carl W., and Hollander. 3,309,823.
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  - Welsh, Herbert F., Chapline, and Wilson. 3,310,787.
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- Chelminski, Stephen V., to Bolt Associates, Inc. Seismic exploration methods and systems. 3,310,128, 3-21-67, Cl. 181—.5.
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  - Cook, Lucien H., and Mavrovic. 3,310,376.
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- Chenault, David R., to Union Steel Products, Co. Barrel lift mechanism. 3,310,336, 3-21-67, Cl. 294—90.
- Cheney, Richard F., L. P. Clare, and D. G. Cooper, to Sylvania Electric Products, Inc. Method and apparatus for infiltrating porous bodies. 3,310,427, 3-21-67, Cl. 117—113.
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  - Benoit, George J., Jr. 3,310,492.
- Chicago Pneumatic Tool Co.: *See—*
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- Chichester-Miles, Ian. to Hawker Siddeley Aviation Ltd. VSTOL aircraft. 3,310,260, 3-21-67, Cl. 244—12.
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  - Takarabe, Takeki, and Chikaraishi. 3,310,793.
- Chin, Wesley S. C. Closure device. 3,309,742, 3-21-67, Cl. 24—30.5.
- Chow, Wei T. Moment-compensated computing scale. 3,310,233, 3-21-67, Cl. 235—61.
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  - Perkins, Joseph K., and Chulada. 3,310,242.
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- Clark, Robert C., to Engineering Associates, Inc. Deflector. 3,310,157, 3-21-67, Cl. 198—68.
- Clark, Robert C., to General Electric Co. Reversing counter having add-and-subtract inputs employing time-control means to effect anti-coincidence upon simultaneous occurrence of inputs. 3,310,749, 3-21-67, Cl. 328—44.
- Clary Corp.: *See—*
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- Clary, Hugh L., and F. N. Schwend, to Clary Corp. Wheel striking data printer. 3,310,147, 3-21-67, Cl. 197—55.
- Clauss, John. Device for facilitating the putting on of stockings. 3,310,209, 3-21-67, Cl. 223—111.
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- Clynes, Manfred E., to Air-Shields, Inc. Ultrasonic cardiac volume measurements. 3,310,049, 3-21-67, Cl. 128—2.05.
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  - Cragg, William D., and Cockbain. 3,310,628.
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- Coffin, Louis F., Jr., to General Electric Co. Rolling method and apparatus. 3,309,908, 3-21-67, Cl. 72—218.
- Cogar, George R., to Sperry Rand Corp. Asynchronous counting devices. 3,310,660, 3-21-67, Cl. 235—92.
- Cogen, Leonard L., to Union Carbide Corp. Metallurgical process. 3,310,393, 3-21-67, Cl. 75—60.

- Cole, John M.: *See—*
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- Coleman, Donald D., and R. F. Racine, to North American Aviation, Inc. Data link system. 3,310,802, 3-21-67, Cl. 343—6.5.
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- Collins, David M., to York Tool and Mfg. Co. Loud speaker magnetic assembly and pot. 3,310,689, 3-21-67, Cl. 179—120.
- Collins Radio Co.: *See—*
  - Deasy, Richard E., Parker, and White. 3,310,745.
- Collins, Max B. Caster-equipped coasting board. 3,310,319, 3-21-67, Cl. 280—87.04.
- Collins, William L.: *See—*
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  - Hausen, Carl, and Johnson. 3,310,142.
  - Wagner, Edward W., and Sennello. 3,310,195.
- Continental Mfg. Co.: *See—*
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- Continental Oil Co.: *See—*
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- Controle Bailey (Societe Anonyme): *See—*
  - DeLivois, Guy M. 3,310,096.
- Convert, Lucien, and R. Fabre, to Rhone-Poulenc S.A. Imidazolidine-2-thione derivatives. 3,310,539, 3-21-67, Cl. 260—79.5.
- Cook Electric Co.: *See—*
  - Paddock, Alvin F. 3,310,712.
- Cook, Lucien H., and I. Mavrovic, to Chemical Construction Corp. Process for combined production of ammonia and urea. 3310,376, 3-21-67, Cl. 23—199.
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  - Cheney, Richard F., Clare, and Cooper. 3,310,427.
- Copp, Carl A., Jr., to General Motors Corp. Air conditioner for sliding windows. 3,309,889, 3-21-67, Cl. 62—262.
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- Cordis, Nat, deceased, by G. S. Cordis, executor, ½ to C. F. Jensen, and ½ to G. T. Doble. Storing and dispensing apparatus for wet wipe sheets. 3,310,353, 3-21-67, Cl. 312—39.
- Corhart Refractories Co.: *See—*
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- Coulson, Dale M. Gas-liquid contact apparatus. 3,309,845, 3-21-67, Cl. 55—228.
- Coykendall, Leon H., to The Babcock & Wilcox Co. Vapor generating apparatus. 3,310,037, 3-21-67, Cl. 122—392.
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  - Anderson, Gerald R., Creed, and Parker. 3,310,084.
- Cremer, Frits, to Thomas M. Dodds, Inc. Apparatus for stripping articles from forms. 3,309,732, 3-21-67, Cl. 18—2.
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  - Stricker, Henry C., Jr., and Cribben. 3,310,185.
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- Croucher, Antony H. Threading of wires or the like through apertures. 3,309,755, 3-21-67, Cl. 29—25.19.
- Crouzet, Valence: *See—*
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  - Ward, Samuel I. 3,309,849.
- Cuthbert, Robert M., to British Columbia Research Council. Torsion monitoring apparatus. 3,309,920, 3-21-67, Cl. 73—136.
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- D'Agostino, Michael: *See—*
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- Dale, Jack K.: *See—*
  - Kramer, Sherman F., and Dale. 3,310,467.
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  - Nielsen Helmar T., and Hansen. 3,309,926.
  - Nielsen, Helmar T., and Hansen. 3,310,277.
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- D'Arcy, Ellis W. Film stabilizer mechanism for projectors, cameras, and printers. 3,310,636, 3-21-67, Cl. 179—100.2.
- Darley, Henry C. H., to Shell Oil Co. Method for increasing drilling rate. 3,310,125, 3-21-67, Cl. 175—66.
- Darrow, Kenneth A., and E. H. Hull, to General Electric Co. Preparation of elongated needle-like diamond having electrically conductive properties. 3,310,501, 3-21-67, Cl. 252—502
- Da Silva, Herman, to De Staat der Nederlanden, ten Dese Vertegenwoordigd Door de Directeur-Generaal der Posterijen. Telecommunication system for producing service signals. 3,310,627, 3-21-67, Cl. 178—113.
- Dauer, David P., ½ to J. C. and V. C. Hendley. Silo distributor. 3,310,184, 3-21-67, Cl. 214—17.
- Davee, Robert L., and D. V. Louzos, to Union Carbide Corp. Cylindrical rechargeable battery having expanded metal grid with bond joints being bent flatwise. 3,310,437, 3-21-67, Cl. 136—13.
- David, George. Portable space flood alarm. 3,310,795, 3-21-67, Cl. 340—244.
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- Day, John E., Sr.: *See—*
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  - Hartley, Daniel W., and Day. 3,310,452.
- De Acetis, William, and H. A. Newey, to Shell Oil Co. Process for curing polyepoxides and resulting products. 3,310,527, 3-21-67, Cl. 260—47.
- De Acetis, William, and H. A. Newey, to Shell Oil Co. Curing polyepoxides with a mixture of difunctional and polyfunctional mercaptans. 3,310,601, 3-21-67, Cl. 260—831.
- Deakin, Stanley T., to Sealectro Corp. Method of making and plating socket contacts. 3,309,761, 3-21-67, Cl. 29—155.55.
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- De Butts, Edward H., and J. T. Hays, to Hercules, Inc. Manufacture of amino phenyl ethers. 3,310,588, 3-21-67, Cl. 260—575.
- Decker, Hanns, H. J. Maeder, and P. Wehren, to Klockner-Humboldt-Deutz, Aktiengesellschaft. Grinding mill of the swinging type with a plurality of grinder drums. 3,310,245, 3-21-67, Cl. 241—153.
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  - Chambers, William W., and De Forest. 3,310,713.
- Degen, Wilhelm. Vibrator for compacting soil. 3,309,877, 3-21-67, Cl. 61—35.
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  - Bayly, John G., and De Grey. 3,310,736.
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  - Kosman, Jerzy, and De Gruyther. 3,309,943.
- De la Tramerye, Raymond, to Societe Anonyme Tubest. Hand tool. 3,310,082, 3-21-67, Cl. 145—31.
- Delcellier, Henri A., to Canadian Ingersoll-Rand Co., Ltd. Centriloader. 3,310,080, 3-21-67, Cl. 143—49.
- De Livois, Guy M. B., to Controle Bailey (Societe Anonyme). Apparatus for securing burners. 3,310,096, 3-21-67, Cl. 158—1.
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Ditkofsky, Harry, to Radio Corp. of America. Electrical circuits. 3,310,688, 3–21–67, Cl. 307—88.5.
Dlugopolski, Joseph J., to Container Corp. of America. Heavy duty container with integral handle. 3,310,219, 3–21–67, Cl. 229—34.
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Dollison, William W., to Otis Engineering Corp. Pressure operated safety valve. 3,310,114, 3–21–67, Cl. 166—224.
Domenighetti, Domenico. Extensible levelling apparatus to be used in connection with finishers for the spreading of bituminous conglomerates. 3,309,971, 3–21–67, Cl. 94—45.
Donaldson, Desmond M., to Borg-Warner Corp. Filtering means for a heat exchanger. 3,309,847, 3–21–67, Cl. 55—268.
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Dostal, Frank, to Bulova Watch Co., Inc. Decoupling plates mounting for tuning fork oscillators. 3,310,757, 3–21–67, Cl. 331—116.
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Pavlich, Joseph P., and Calvert. 3,310,111.
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Savage, Albert B., and Aldrich. 3,310,058.
Downing, Leo G., and J. V. Kindall, to Bourns, Inc. Electrical resistance device. 3,310,766, 3–21–67, Cl. 338—20.
Downing, Noel L., and W. J. Steinmetz, Jr., to General Motors Corp. Engine control with anticipator. 3,309,868, 3–21–67, Cl. 60—39.16.
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Potts, Michael C., Pawling, and Bolton. 3,309,880.
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Drelichowski, Kazimierz. Anti-whiplash device. 3,310,342, 3–21–67, Cl. 297—395.
Dresner, Joseph, and H. P. D. Lanyon, to Radio Corp. of America. Photoconductive device incorporating stabilizing layers on the face of the selenium layer. 3,310,700, 3–21–67, Cl. 313—94.
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Dresser Industries, Inc.: *See—*
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Dresser, Jasper G., to Dresser Engineering, Inc. Coating remover. 3,309,729, 3–21–67, Cl. 15—236.
Dresser, Lloyd L., to D-S Industries, Inc. Continuous plastic laminator. 3,309,983, 3–21–67, Cl. 100—93.
Dripps, William F., to General Electric Co. Two position snap action positive indication switch. 3,310,643, 3–21–67, Cl. 200—67.
Du Bois, Robert J., and B. Veldhuis, to Allied Chemical Corp. Preparation of 2,3-dichlorotetrafluoro-2-cyclopenten-1-one. 3,310,584, 3–21–67, Cl. 260—586.
Du Bois, Robert J., and B. Veldhuis, to Allied Chemical Corp. Production of 2,3-dichlorotetrafluoro-2-cyclopenten-1-one. 3,310,585, 3–21–67, Cl. 260—586.
Duncan, Jack E., to Packaging Corp. of America. Container and blank therefor. 3,310,221, 3–21–67, Cl. 229—37.
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Dunn, Elman R., to Landis Tool Co. Feed mechanism for grinding machine. 3,309,820, 3–21–67, Cl. 51—165.
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Albin, Jerry R. 3,310,538.
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Amborski, Leonard E., and Weisenberger. 3,310,506.
Becker, Richard O. 3,310,545.
Becker, Richard O. 3,310,546.
Braun, Robert A. 3,310,554.
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Cole, Paul M. 3,309,720.
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Kelly, Douglas J. 3,310,603.
Maloney, Daniel E. 3,310,428.
Maloney, Daniel E. 3,310,518.
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Edwards, Ray C. Thermal switch device with adjusting bolt means for the arms of the U-shaped hinge assembly. 3,310,046, 3–21–67, Cl. 200—138.
Edwards, Rivers E. Washing machine dump valve. 3,310,063, 3–21–67, Cl. 137—216.
Egleston, Harry B., and M. W. Miller, to Ex-Cell-O-Corp. Selective top heater for plastic coated paperboard container packaging machines. 3,309,841, 3–21–67, Cl. 53—373.
Egner, Russell F. Automobile mileage reminder meter. 3,310,025, 3–21–67, Cl. 116—133.
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Ehrig, Raymond J., to W. R. Grace & Co. Process for preparing polymers of dihydropyran. 3,310,542, 3–21–67, Cl. 260—88.3.
Eichholz, Heinz. Animal food portioning apparatus. 3,310,033, 3–21–67, Cl. 119—56.
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Emeis, Reimer, to Siemens-Schuckertwerke Aktiengesellschaft. Connecting device for consolidating the housing of a semiconductor device. 3,310,716, 3–21–67, Cl. 317—234.
Emery, Michael B., to E. I. du Pont de Nemours and Co. Continuous yarn windup mechanism. 3,310,247, 3–21–67, Cl. 242—18.
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Erbach, Fred R., to Beloit Corp. Headbox for a papermaking machine. 3,310,461, 3–21–67, Cl. 162—344.
Erickson, Robert W., to The Regents of the University of Minnesota. Wood drying method. 3,309,778, 3–21–67, Cl. 34—5.
Ericson, Alvin E.: *See—*
Faust, Clifford C., and Ericson. 3,309,837.
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Corbett, Luke W., and Sparks. 3,310,517.
Karoly, Gabeiel, Noshay, and Turbak. 3,310,548.
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Mason, Ralph B., and Hamner. 3,310,484.
Mertzweiller, Joseph K., and Tenney. 3,310,576.
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Etienne, Andre, and G. Izoret, to l'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude. Manufacture of hydrogen peroxide from compounds with an anthraquinone nucleus. 3,310,378, 3–21–67, Cl. 23—207.
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Ewing, Dean E. Exsanguination valve. 3,310,048, 3–21–67, Cl. 128—2.
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Ginnette, Lewis F., Lampi, and Abbott. 3,309,779.
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Fair, James W.: *See—*
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Fairbanks, Edward R., D. E. Reed, and J. L. Toth, to Space Components, Inc. Electrical contact including resiliently interlocked wire mesh member. 3,310,650, 3–21–67, Cl. 200—166.
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Goldstein, Amnon, and McGreevy. 3,310,478.
Goldstein, Amnon, and McGreevy. 3,310,479.
Faige, Robert N. Vehicle headlamp with improved filament mounting structure. 3,310,702, 3–21–67, Cl. 313—113.
Falken, Henry R., to Essex Wire Corp. Wire cutting and stripping apparatus adjustable for sizes and lengths of wire to be stripped. 3,309,948, 3–21–67, Cl. 81—9.51.
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Burgess, Thomas H., and Kesnar. 3,310,729.
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Ferranti, Philip T., deceased, by A. Ferranti, administratrix. Automatic golf machine. 3,309,927, 3–21–67, Cl. 73—379.
Fessler, Theodore E., A. B. Smith, and J. S. Vincent, to United States of America, National Aeronautics and Space Administration. Method of forming thin window drifted silicon charged particle detector. 3,310,443, 3–21–67, Cl. 148—188.
Fielder, Albert L., to The Marconi Co. Ltd. Belt mounted printer hammers movable by shortest distance to indexed position. 3,310,146, 3–21–67, Cl. 197—49.
Fiess, Norman W., to American Cyanamid Co. Concentrated brown dye solution. 3,310,362, 3–21–67, Cl. 8—79.
Filsinger, Elmer J., to International Pipe and Ceramics Corp. Edge trim element for ceramic wall construction. 3,309,832, 3–21–67, Cl. 52—610.
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Fisher, Colon L., to Sheller Mfg. Corp. Mechanically fastened door weather strip. 3,309,817, 3–21–67, Cl. 49—492.
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Fitzgerald, Edward T., deceased; I. Fitzgerald, administratrix. Slotted block wall construction with interfitted wire tie. 3,309,830, 3–21–67, Cl. 52—513.
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Fjällbrant, Tore T., to Telefonaktiebolaget L. M. Ericsson. Radar apparatus. 3,310,803, 3–21–67, Cl. 343—17.1.
Flaherty, Walter L., to W. R. Grace & Co. Can end seal. 3,310,196, 3–21–67, Cl. 220—67.
Flannery, John B., to Ovirton Corp. D.C. to A.C. voltage converter with undervoltage-responsive, mode selector means. 3,310,727, 3–21–67, Cl. 321—14.
Fleischer, Alfred R., and M. H. Lowrey, to General Metal Corp. Fuel control system. 3,310,097, 3–21–67, Cl. 158—36.
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- Fletcher, Milton. Collapsible lamp. 3,310,673, 3–21–67, Cl. 240—81.
- Flex-O-Lite Mfg. Corp.: *See*—
  - Law, Preston D. 3,310,391.
- Flo-Tronics, Inc.: *See*—
  - Nunn, Ewing D. 3,310,671.
- Floehr, Walter L., E. R. Aller, and L. H. Shils, to Unitcast Corp. Railway hopper discharge gate actuating gearing mechanism. 3,310,005, 3–21–67, Cl. 105—305.
- Floren, Holger S. Artificial dentures and stress relieving attachment therefor. 3,309,771, 3–21–67, Cl. 32—7.
- Florio, Patrick A., and H. G. Schirmer, to Johnson & Johnson. Absorbent pads. 3,310,454, 3–21–67, Cl. 161—123.
- Flowers, Dervin L., to Ampex Corp. Magnetic recording medium with polyolefin base and a subcoating thereon. 3,310,421, 3–21–67, Cl. 117—76.
- Fluid Power Accessories, Inc.: *See*—
  - McGuire, John R., and Harms. 3,310,068.
- Foias, Pavel, G. Enache, and D. Bergman, to Comitetul de Stat Pentru Cultura si Arta. Shut feed deflector and interrupter responsive to photoelectric sheet position sensing means. 3,310,304, 3–21–67, Cl. 271—57.
- Folmsbee, Clyde H., and R. G. Portis, to Midland Mfg. Corp. Safety vent. 3,310,197, 3–21–67, Cl. 220—89.
- Forchheimer, Otto L.: *See*—
  - Paul, Robert A., and Forchheimer. 3,310,415.
- Ford, John C. Tortilla oven. 3,310,007, 3–21–67, Cl. 107—57.
- Ford Motor Co., The: *See*—
  - Pierce, Stanley L., Jr. 3,309,939.
- Forrester, Gilbert, to S. D. Warren Co. Automatic paper finishing machine. 3,310,169, 3–21–67, Cl. 209—74.
- Forschungslaboratorium Prof. Dr. Ing., Heimann Walter: *See*—
  - Heimann, Walter. 3,310,701.
- Forsthuber, Hubert, and G. Michaelis, to International Standard Electric, Corp. Circuit arrangement for effecting the forward and reverse control of a two-stage transistor amplifier. 3,310,752, 3–21–67, Cl. 330—26.
- Forsyth, George H., J. H. Taylor, and A. C. Grant, to Vickers-Armstrongs (Engineers) Ltd. Grate coolers. 3,309,787, 3–21–67, Cl. 34—185.
- Fosdick, Archie B., to Thiokol Chemical Corp. Controllable rectifier receiver responsive to plural signal conditions. 3,310,777, 3–21–67, Cl. 340—147.
- Fortune, William S. High voltage switching instrument. 3,310,733, 3–21–67, Cl. 324—18.
- Fox Products Co.: *See*—
  - Godshalk, James B. 3,310,065.
  - Medlar, Lewis A. 3,310,739.
- Fox, Wilfred, to Robert Jenkins & Co., Ltd. Closure means for pressure or vacuum. 3,310,328, 3–21–67, Cl. 292—256.6.
- Franke, Norman W.: *See*—
  - Barie, Walter P., Jr., and Franke. 3,310,513.
- Franklin Institute, The: *See*—
  - Hargens, Charles W., III. 3,310,681.
- Franzen, Gustav, to Palitex Project-Co. G.m.b.H. Thread brake, especially for double twist spindles. 3,309,858, 3–21–67, Cl. 57—58.86.
- Frazier, Larry C., to National-Standard Co. Restrictive tread component for pneumatic tires. 3,310,093, 3–21–67, Cl. 152—361.
- Freed, Meier E., and L. M. Rice, to American Home Products, Corp. Substituted 4-piperidino-butyrophenone oximes. 3,310,566, 3–21–67, Cl. 260—293.
- Freet, Betty. Decorative screening appliques. 3,310,130, 3–21–67, Cl. 161—18.
- Frendberg, Arthur M., and R. P. Siegfried, to The Babcock & Wilcox, Co. Gas off-take system. 3,310,036, 3–21–67, Cl. 122—1.
- Freund, Sheldon. Cover for a booklet. 3,310,321, 3–21–67, Cl. 281—31.
- Fricke, Arthur L.: *See*—
  - Dygert, Justin C., and Fricke. 3,310,617.
- Friedl, Walter. Powder spray units. 3,310,348, 3–21–67, Cl. 302—19.
- Friedman, Arnold I., and D. H. Beaumont, to General Electric, Co. Fluorescent lamp coating. 3,310,418, 3–21–67, Cl. 117—33.5.
- Friedman, Sol. Casting mold and clamping means. 3,309,738, 3–21–67, Cl. 18—26.
- Friis, Harald T., to Hazeltine Research, Inc. Electromagnetic wave transmissive metal walls utilizing projecting dielectric rods. 3,310,808, 3–21–67, Cl. 343—872.
- Fritz, Charles G., to E. I. du Pont de Nemours and Co. Thermosetting perfluorinated divinyl ether resins. 3,310,606, 3–21–67, Cl. 260—884.
- Frost, Paul: *See*—
  - Kremp, Rudolf, Frost, and Hennig. 3,309,975.
- Fuchs, Otto: *See*—
  - Sieber, Heinrich, and Fuchs. 3,310,563.
- Fujita, Ryuzo: *See*—
  - Masuda, Masaharu, Kita, Okada, and Fujita. 3,310,495.
- Fujita, Yoshimasa, and K. Shimoda, to American Cyanamid Co. Composite acrylonitrile fiber dyeable with both acid and basic dyestuffs and method of manufacture. 3,310,456, 3–21–67, Cl. 161—177.
- Fujitsu Ltd.: *See*—
  - Inaba, Seinemon, Ito, and Shirafuji. 3,310,284.
- Fukuda, Junichi, Y. Suzuki, M. Ikebe, and M. Sagara, to Mitsubishi Petrochemical Co., Ltd. Process for producing high purity benzene. 3,310,592, 3–21–67, Cl. 260—672.
- Fukumoto, Osamu, M. Kubo, and H. Hatakeyama, to Toyo Rayon Kabushiki Kaisha. Reformed dyeable polyolefin composition containing (1) a polyolefin containing transition metal, (2) organic tin compounds and (3) optionally an alkylphenol type antioxidant. 3,310,509, 3–21–67, Cl. 260—23.
- Fukushima, Osamu: *See*—
  - Matsubayashi, Kanji, Tanabie, and Fukushima. 3,310,608.
- Furukawa Electric Co. Ltd., The: *See*—
  - Takahashi, Sakae, Nishimura, and Inui. 3,310,522.
- GTC, Corp.: *See*—
  - Schmidlin, Frederick W. 3,310,685.
- Gable, Clarence L.: *See*—
  - Steingiser, Samuel, Baumann, and Gable. 3,310,604.
- Galantay, Eugene, to Sandoz, Inc. Dibenzoazabicycloalkanes. 3,310,565, 3–21–67, Cl. 260—288.
- Gallagher, Roy S., to R. W. Sheppard. Illuminated sign apparatus. 3,309,806, 3–21–67, Cl. 40—130.
- Galloway, Frederick M., G. J. Rittenhouse, R. H. Sinnamon, to H. K. Porter Co., Inc. High pressure hose connector. 3,310,323, 3–21–67, Cl. 285—249.
- Gally, Henry R., to E. J. Lavino and Co. Apparatus and method for manufacturing brick. 3,309,750, 3–21–67, Cl. 25—45.
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- Goldstein, Amnon, and A. R. McGreevy, to Fairchild Camera & Instrument Corp. Electrolytic recording media. 3,310,479, 3–21–67, Cl. 204—2.
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Marian, Daniel. Monitoring lights for road vehicles. 3,310,-774, 3–21–67, Cl. 340—62.

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  Wehner, Gottfried K., and Mayer. 3,310,424.

Mayhood, Charles H., Jr.: *See—*
  Russell, James, Carlson, and Mayhood. 3,310,363.

Mazdiyasni, Khodabakhsh S.: *See—*
  Prickett, Robert L., and Mazdiyasni. 3,310,675.

Mazzanti, Giorgio: *See—*
  Natta, Giulio, Mazzanti, Valvassori, Sartori, and Camelì. 3.310.537.

Mazzolini, Corrado, and S. Lo Monaco, to Monsanto Co. Acrylonitrile tetrapolymers, process for preparing same and fibers thereof. 3,310,535, 3–21–67, Cl. 260—78.5.

McBride, Willis M., Jr. Roasting fork. 3,309,770, 3–21–67, Cl. 30—322

McCann's Engineering & Mfg. Co.: *See—*
  McCann, Gerald P. 3,310,203.

McCann, Gerald P., to McCann's Engineering & Mfg. Co. Drink-dispensing device. 3,310,203, 3–21–67, Cl. 222—54.

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McCauley, Herbert J. Handle bar support. 3,310,325, 3–21–67, Cl. 287—54.1.

McClean-Anderson, Inc.: *See—*
  McClean, William G. 3,310,246.

McClean, William G., to McClean-Anderson, Inc. Strand winding machine. 3,310,246, 3–21–67, Cl. 242—2.

McConnell, Robert C. Signal balloon. 3,310,024, 3–21–67, Cl. 116—124.

McCormack, John F.: *See—*
  Schnebie, Frederick W., Jr., Zeblisky, McCormack, and Williamson. 3,310,430.

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  Turnbull, Albert E., and McDonald. 3,309,955.

McElroy, Wilbur R., to Mobay Chemical Co. Preparing polyurethanes. 3,310,533, 3–21–67, Cl. 260—77.5.

McEuen, Robert B., R. M. Haines, D. L. Klass, and T. W. Martinek, to Union Oil Co. of California. Apparatus for converting mechanical energy to electrical energy. 3,309,-915, 3–21–67, Cl. 73—71.2.

McGee, Sherwood W.: *See—*
  Sump, Cord H., and McGee. 3,310,387.

McGraw-Edison Co.: *See—*
  McLagan, Russell G. 3,310,175.
  Taylor, Robert J. 3,310,296.
  Whitlock, Bruce N. 3,309,796.

McGreevy, Allan R.: *See—*
  Goldstein, Amnon, and McGreevy. 3,310,479.

McGuire, James M.: *See—*
  Tompson, Robert Q., and McGuire. 3,310,468.

McGuire, John R., and L. C. Harms, to Fluid Power Accessories, Inc. Flow regulator valves and hydraulic systems. 3,310,068, 3–21–67, Cl. 137—625.69.

McHenry, Thomas F., to Barnes Engineering Co. Cinespectrograph spectrum order separation. 3,309,957, 3–21–67, Cl. 88—14.

McKee, James B. Golfing driving range and simulated golf course. 3,310,310, 3–21–67, Cl. 273—176.

McLagan, Russell G., to McGraw-Edison Co. Filter. 3,310,-175, 3–21–67, Cl. 210—193.

McLean, Francis E.: *See—*
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McLeod, John H., to Allied Chemical Corp. Azostilbene dyestuffs. 3,310,551, 3–21–67, Cl. 260—157.

McNally, Robert N.: *See—*
  Alper, Allen M., and McNally. 3,310,414.

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  Lopker, Edwin B. 3,310,016.

Medlar, Lewis A., to The Products Co. D.C. dual range meter using range determining oppositely rolled diodes. 3,310,-739, 3–21–67, Cl. 324—115.

Melone, Robert R., to Illinois Tool Works, Inc. Retainer. 3,310,326, 3–21–67, Cl. 287—87.

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  Kern, Fred J. A., and Kunz. 3,310,191.

Mero, John L. Filling device with vapor recovery means. 3,310,077, 3–21–67, Cl. 141—286.

Merrill, Edward M., to Cutting Room Appliances. Braking device for cloth laying machines. 3,310,254, 3–21–67, Cl. 242—75.4.

Merritt, Earl L. Swimming pool net elevator. 3,309,716, 3–21–67, Cl. 4—172.

Mertzweiller, Joseph K., and H. M. Tenney, to Esso Research and Engineering Co. Hydroformylation catalyst and process relating thereto. 3,310,576, 3–21–67, Cl. 260—439.

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  Glntz, David H., Messmer, and Miodus. 3,309,745.

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Metcalf, Eric. Self-regulating light-responsive devices. 3,309,-754, 3–21–67, Cl. 28—64.

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  Ingham, Herbert S., Jr. 3,310,423.

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  Barker, Theodore L., and Hamrick. 3,310,187.
  Carter, Sidney T. 3,310,030.
  Carter, Sidney T. 3,310,151.
  Carter. Sidney T. 3,310,449.

Meyer, John L., to Gardner-Denver Co. Fluid conductor and take-off apparatus. 3,310,067, 3–21–67, Cl. 187—580.

Meyer, Walter E., to Cra-Vax Corp. Feed mechanism for an apparatus for opposing offset in printing. 3,310,205, 3–21–67, Cl. 222—193.

Meyers, Donald N., and O. Stroukoff, to Piasecki Aircraft Corp. Coordinating-control linkage. 3,309,937, 3–21–67, Cl. 74—471.

Micaldon Corp.: *See—*
  Edwards, Albert J., and Healy. 3,310,192.

Micale, Angelo. Four-way adjustable shoe for shanked buttons. 3,310,012, 3–21–67, Cl. 112—114.

Michael, Johannes, to Nordischer Maschinenbau Rud. Boader. Fish filleting machines with dorsal knives, belly knives, rib knives and guides arranged therebetween. 3,309,730, 3–21–67, Cl. 17—4.

Michaelis, Gerhard: *See—*
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Michaels, Edwin B., and C. A. Wetmore, to Stamford Chemical Industries, Inc. Novel detergent compositions. 3,310,-499, 3–21–67, Cl. 252—152.

Michaud, Honore. Log book. 3,310,331, 3–21–67, Cl. 294—26.

Michel, Rupprecht, to Siemens-Schuckertwerke, Aktiengesellschaft. Once-through boiler with welded tube system. 3,310,040, 3–21–67, Cl. 122—510.

Michiels, Franciscus M., R. L. J. Laureys, and C. L. H. Van Roosbroeck, to International Standard Electric Corp. Tape handling system. 3,310,250, 3–21–67, Cl. 242—55.12.

Middleton, Wilbur D.: *See—*
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Middleton, William J., to E. I. du Pont de Nemours and Co. Trifluoromethyl-substituted 4-oxazolidones and their prepation. 3,310,570, 3–21–67, Cl. 260—299.

Midland Mfg. Corp.: *See—*
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Millar, Norval P., and M. E. Douglass, to General Electric Co. Apparatus for calculating the thrust of a jet engine. 3,310,666, 3–21–67, Cl. 235—193.

Miller, Burton F., to TRW Inc. Receiver for determining the frequency of an intercepted signal. 3,310,744, 3–21–67, Cl. 325—363.

Miller, Carlos C., Jr.: *See—*
  Adams, Paul R., Miller, and Bovitz. 3,309,931.

Miller, Melvin W.: *See—*
Egleston, Harry B., and Miller. 3,309,841.
Miller, Roger H., to United States of America, Atomic Energy Commission. Load leveler for pulse modulator. 3,310,684, 3–21–67, Cl. 307—39.
Miller, Thomas W. Herbicide and other agricultural chemical distributor. 3,310,011, 3–21–67, Cl. 111—1.
Miller, William F., to Texaco Inc. Submarine conduit system. 3,309,879, 3–21–67, Cl. 61—72.3.
Milleron, Norman, to United States of America, Atomic Energy Commission. Surge and backstreaming porous diaphragm filter for vacuum system. 3,310,227, 3–21–67, Cl. 230—101.
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Yoshiyama, Ichiro, Kobayashi, and Konishi. 3,309,974.
Miodus, Stanley: *See—*
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Mirviss, Stanley B., H. W. Dougherty, Jr., and R. W. Looney, to Esso Research and Engineering Co. Catalysts of transition metal borohydride complexes. 3,310,547, 3–21–67, Cl. 260—93.7.
Misch, Arthur, and R. W. Messner. Plastic shingle with interfitting means. 3,309,831, 3–21–67, Cl. 52—546.
Mitchell, Melville J., and F. W. Noller, to Massey-Ferguson Inc. Heavy duty flail rotor. 3,309,854, 3–21–67, Cl. 56—504.
Mitsubishi Petrochemical Co., Ltd.: *See—*
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Mitsui Shipbuilding and Engineering Co., Ltd.: *See—*
Saeki, Shogo, and Matsumoto. 3,310,116.
Miyata, Noboru, and M. Suzuki, to Naigai Amimono Ltd. Co. Machine for and method of knitting run-resistant fabric. 3,309,899, 3–21–67, Cl. 66—13.
Mobay Chemical Co.: *See—*
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Steingiser, Samuel, Baumann, and Gable. 3,310,604.
Mobil Oil Corp.: *See—*
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Johnson, George C. 3,310,373.
Mock, Richard A., and W. N. Vanderkooi, to The Dow Chemical Co. Removal of residual monomeric sulfonates from polymerizates thereof. 3,310,481, 3–21–67, Cl. 204—180.
Molinet, Georges, to Societe Anonyme dite: Societe National Des Petroles d'Aquitaine. Process for deodorising liquefied hydrocarbons, particularly commercial butane. 3,310,595, 3–21–677, Cl. 260—676.
Molins Organisation Ltd., The: *See—*
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Moller, Waldemar, to Bodenseewerk Perkin-Elmer & Co. G.m.b.H. Stabilized automatic pilot for high speed flight. 3,310,721, 3–21–67, Cl 318—18.
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Jones, Neville M., and Stephenson. 3,310,491.
Monsanto Co.: *See—*
Brignac, Edmond P., and Wright. 3,310,534.
Bynum, George D., and Sims. 3,309,734.
Hermes, Peter P. 3,309.863.
Mazzolini, Corrado, and Lo Monaco. 3,310,535.
Wright, Felix, and Dolan. 3,310,372.
Montecatini Edison, S.p.A.: *See—*
Natta, Giulio, Mazzanti, Valvassori, Sartori, and Camell. 3,310,537.
Moore, Brian B.: *See—*
Rinaldi, Russell G., and Moore. 3,310,786.
Moore, James H., D. W. Gersten, and L. W. Arndt. Shoe shining machine. 3,309,726, 3–21–67, Cl. 15—32.
Moore, Robert R., to American Hospital Supply Corp. Serlogical testing device. 3,310,292, 3–21–67, Cl. 250—72.
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Matthews, Richard A. 3,310,447.
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Motter, John C. 3,309,992.
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Moviecol Sales, Ltd.: *See—*
Jarvis, Brian C., Fitch, and Howes. 3,310,360.
Müller-Bardorff, Wolfgang, H. Ulrich, and K.-H. Heckelmann, to Agfa Aktiengesellschaft. Spot prevention in light-sensitive silver halide emulsion layers. 3,310,405, 3–21–67, Cl. 96—94.
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Blade, Arturo, and Muller. 3,310,580.
Muller, Walter: *See—*
Weinrotter, Ferdinand, Muller, Schmidt, Bohler, and Schweighofer. 3,310,559.
Mulloy, Miles F. Article holding means. 3,310,265, 3–21–67, Cl. 248—99.
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Murphy, Hugh W., to FMC Corp. Container carrier. 3,310,-334, 3–21–67, Cl. 294—87.28.
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N. V. Papierfabriek Gennep: *See—*
Rijssenbeek, Robertus C. J. M. 3,310,364.
Nader, Hugo O. M., and W. Haupt, to Bock Otto Orthopedic Industry, Inc. Safety knee assemblage with adjustable means for increasing or decreasing clearance between braking surfaces. 3,309,715, 3–21–67, Cl. 3—27.
Nagel, Dave D. Garbage can dolly. 3,310,318, 3–21–67, Cl. 280—47.13.
Naigai Amimono Ltd. Co.: *See—*
Miyata, Noboru, and M. Suzuki. 3,309,899.
Nakamichi, Etsuro. Perforated magnetic tape recording and reproducing apparatus. 3,310,790, 3–21–67, Cl. 340—174.1.
Nakane, Takashi, and T. Kobayashi, to The Yokohama Rubber Co., Ltd. Apparatus for building tires. 3,310,445, 3–21–67, Cl. 156—131.
National Aeronautics and Space Administration: *See—*
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Keynton, Robert J. 3,310,258.
Lee, David A. 3,309,961.
Phillips, Betty L. S. 3,310,054.
Reed, Wilmer H., III. 3,310,138.
Robins, Augustine W., Harris, Carlson, McLean, and Middleton. 3,310,262.
Rogallo, Francis M., and Sleeman. 3,310,261.
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National Cash Register Co., The: *See—*
Touchman, William S. 3,309,988.
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National Research, Corp: *See—*
Kneip, George D., Jr. 3,310,398.
Sibley, Clifton B. 3,310,226.
Torney, Franklin L., Jr. 3,310,699.
National-Standard Co.: *See—*
Frazier, Larry C. 3,310,093.
National Vending Research Ltd.: *See—*
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Natta, Giulio, G. Mazzanti, A. Valvassori, G. Sartori, and N. Camell, to Montecatini Edison, S.p.A. Hydrocarbon polymers containing ethylene, a higher alpha-olefin and at least two non-conjugated dienes. 3,310,537, 3–21–67, Cl. 260—79.5.
Neagle, Richard. Demountable clothes-stand for children's clothes. 3,310,180, 3–21–67, Cl. 211—177.
Neff, Ted. Snap-on type ratcheting flare-nut wrench. 3,309,-949, 3–21–67, Cl. 81—111.
Neher Alex A. G. Metallqaren & Werkzeugfabrik: *See—*
Kittel, Gunther. 3,310 644.
Nehru, Aditya K., and N. P. Suh, to Corning Glass Works. Electrically conductive abrasive bodies. 3,310,390, 3–21–67, Cl. 51—295.
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Bon, Charles K., Carr, and Neipert. 3,310,462.
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Grembecki, Elmer C., and Nelson. 3,309,993.
Nelson, Elwood E., R. E. Peterson, and E. M. Sutphin, to Gulf Research & Development Co. Method for improving the quality of dealkylated aromatic compounds. 3,310,593, 3–21–67, Cl. 260—672.
Nelson, Herbert E. Litter fork and yard tool. 3,310,332, 3–21–67, Cl. 294—55.5.
Nesin, Daniel J., to Burroughs, Corp. Tape drive mechanism. 3,310,214, 3–21–67, Cl. 226—181.
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Netzeler Gumiwerke Aktiengesellschaft: *See—*
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Scott, George A., and Newell. 3,310,046.
Newey, Herbert A.: *See—*
De Acetis, William. 3,310,601.
De Acetis, William, and Newey. 3,310,527.
Newlan, Irl E., and G. W. Stevenson. Explosive cap top. 3,309,813, 3–21–67, Cl. 46—66.
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Standridge, James A., and Nicholson. 3,310,019.
Nicholson, Burnard E., to Radio Corp. of America. Linearity correction circuit. 3,310,705, 3–21–67, Cl. 315—27.
Nicosia, Joseph A. Expandable building panel. 3,309,827, 3–21–67, Cl. 52—241.
Niederwemmer, Paul. Irrigation installation and mobile vehicle for producing the same. 3,309,875, 3–21–67, Cl. 61—13.
Nielsen, Emery H., and L. V. Volkel, to The Dow Chemical Co. Well fracturing method. 3,310,112, 3–21–67, Cl. 166—42.
Nielsen, Helmar T., and K. A. Hansen, to Danfoss A/S. Thermostatic valve regulator. 3,309,926, 3–21–67, Cl. 73—368.7.
Nielsen, Helmar T., and K. A. Hansen, to Danfoss A/S. Valve and valve disc. 3,310,277, 3–21–67, Cl. 251—84.
Niilola, Armas K., to O/Y Wartsila A/B. Means for mounting a cylinder in a padlock. 3,309,904, 3–21–67, Cl. 70—51.
Nippon Electric, Co., Ltd.: *See—*
Ogasawara, Naoyuki. 3,310,759.
Ohashi, Yasutaka. 3,310,799.
Watanabe, Tatsuki, and Ando. 3,310,634.
Nippon Sheet Glass Co., Ltd.: *See—*
Masuda, Masaharu, Kita, Okada, and Fujita. 3,310,495.

Nishimura, Hiroshi: *See—*
Takahashi, Sakae, Nishimura, and Inui. 3,310,522.
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Noddings, Charles R., and R. G. Gates, to The Dow Chemical Co. Double-band isomerization of olefins using chromium phosphate catalyst. 3,310,598, 3–21–67, Cl. 260—683.2.
Noller, Fred W.: *See—*
Mitchell, Melville J., and Noller. 3,309,854.
Norda Essential Oil and Chemical Co.: *See—*
Kohl, Hermann J. 3,310,472.
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Michael, Johannes. 3,309,730.
North American Aviation, Inc.: *See—*
Boom, Roger W. 3,310,765.
Coleman, Donald D., and Racine. 3,310,802.
Cottrell, George B. 3,310,758.
North American Products Corp.: *See—*
Segal, Arthur R. 3,309,756.
Northern Natural Gas Co. and Moore, W. S., Co.: *See—*
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Nowak, Edward A., to Owens-Illinois, Inc. Screen decorating apparatus. 3,309,985, 3–21–67, Cl. 101—35.
Nowak, Leon J., Jr., to Blaw-Knox Co. Bi-directional power feeding method. 3,310,156, 3–21–67, Cl. 198—62.
Nuclear Material and Equipment Corp.: *See—*
Haram, Severin A., Jr. 3,310.676.
Vondra, Benedict L., Jr. 3,310,385.
Nuissl, Carl W., to Nuval Co. Apparatus for producing slub yarn. 3,309,752, 3–21–67, Cl. 28—1.
Nunn, Ewing D., to Flo-Tronics, Inc., d.b.a. Northern Signal Co. Light fixture for flasher units. 3,310,671, 3–21–67, Cl. 240—11.2.
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O/Y Wartsila A/B: *See—*
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Lace, Melvin A. 3,310,697.
Obenland, Clayton O., to Olin Mathieson Chemical Corp. Process for preparing esters of pyridine thiones. 3,310,568, 3–21–67, Cl. 260—294.8.
O'Connell, John J., and L. J. Mann, to General Motors Corp. Flexible belt type ice maker. 3,309,892, 3–21–67, Cl. 62—345.
Oddy, Edward P., and L. Kinal, to Borg-Warner Corp. Method for making a heat exchanger. 3,309,763, 3–21–67, Cl. 29—157.3.
Oele, Adriaan P., G. J. J. M. Taks, S. Dingemans, and J. Damme, to Stamicarbon N.V. Melamine recovery. 3,310,-558, 3–21–67, Cl. 260—249.7.
Office Prive des Inventions Modernes O.F.P.R.I.M.: *See—*
Claeys, Marcel. 3,310,073.
Offner, Franklin F., to Beckman Instruments, Inc. Recorder multiplier. 3,310.667 3–21–67 Cl. 235—194.
Ogasawara, Naoyuki, to Nippon Electric Co., Ltd. High frequency circulator comprising a plurality of non-reciprocal ferromagnetic circuits. 3,310,759, 3–21–67, Cl. 333—1.1.
Ogawa, Shinichiro, and I. Ido, to Honeywell, Inc. Measuring system having photoelectric resistor functioning as both a rebalance potentiometer and converter. 3,310,738, 3–21–67, Cl. 324—99.
Ohashi, Yasutaka, to Nippon Electric Co., Ltd. Non-linear digital to analogue converter. 3,310,799, 3–21–67, Cl. 340—347.
Ohio Crankshaft Co., The: *See—*
Hala, Albert E. 3,310,651.
Okada, Yoshio: *See—*
Masuda, Masaharu, Kita, Okada, and Fujita. 3,310,495.
Olander, Lennart U., to Telefonaktiebolaget Ericsson, L M. Circuit arrangement for automatic telephone systems with different kinds of telephone communications. 3,310,630, 3–21–67, Cl. 179—8.
Olin Mathieson Chemical Corp.: *See—*
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Staba, Edward A. 3,310.569.
Olnhausen, Charles R., to American Motors Corp. Combination clutch and transmission shift assembly bellcrank arrangement. 3,310,140, 3–21–67, Cl. 192—3.5.
Opalenik, John J., and R. J. Petitjean, to The Arrow-Hart & Hegeman Electric Co. Electric circuit control. 3,310,768, 3–21–67, Cl. 338—198.
Orloff, George, to The Molins Organisation Ltd. Servo systems and control devices theretor. 3,310,182, 3–21–67, Cl. 214—1.
Ortegren, Herman A., to Federal-Mogul Corp. Bearing construction. 3,310,351, 3–21–67, Cl. 308—217.
Osborne, William T., to Carrier Corp. Direct contact heat exchanger. 3,310,103, 3–21–67 Cl. 165—141.
O'Shea, Francis X., to United States Rubber Co. Bis(3,5-substituted-4-hydroxybenzyl-thio) compounds and methods of making same. 3,310,587, 3–21–67, Cl. 260—609.
Osterreichische Sticksloffwerke Aktiengesellschaft: *See—*
Schonbeck, Rupert, Kloimstein, Beck, and Diskus. 3,310,560.
Weinrotter, Ferdinand, Muller, Schmidt, Bohler, and Schweighofer. 3,310,559.

Ostroff, Arthur, and M. D'Agostino, to Radio Corp. of America. Voltage reference circuit. 3,310,731, 3–21–67, Cl. 323—4.
Otis Engineering Corp.: *See—*
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Outboard Marine Corp.: *See—*
Shimanckas, William J. 3,310,021.
Ovitron Corp.: *See—*
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Owens-Corning Fiberglas Corp.: *See—*
Warthen, William P. 3,310,455.
Owens-Illinois, Inc.: *See—*
Nowak, Edward A. 3,309,985.
Owens, William F., Jr.: *See—*
Rickards, James C., and Owens. 3,310,060.
Oxy-Dry International, Ltd.: *See—*
Grembecki, Elmer C., and Nelson. 3,309,993.
Pacific Vegetable Oil Corp.: *See—*
Burkett, William E., and Batchelder. 3,310,614.
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Duncan, Jack E. 3,310,221.
Plough, Edwin J. 3,309,969.
Paddock, Alvin F., to Cook Electric Co. Communications circuit protector. 3,310,712, 3–21–67, Cl. 317—120.
Paine, E. C.: *See—*
Bonney, Robert E. 3,310,276.
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Bishop, Roger I., Kendall, and Palmer. 3,309,923.
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Bishop, Roger I., Kendall, and Palmer. 3,309,923.
Papazian, Martin S. Automobile wheel alignment apparatus. 3,309,776, 3–21–67, Cl. 33—203.14.
Paquette, Cyril D., to Taylor & Gaskin, Inc. Automobile frame stacker. 3,310,183, 3–21–67, Cl. 214—6.
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Parsons Corp.: *See—*
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Patt, Sylvester. 3,309,951.
Patt, Sylvester, to The Patt Bros. Co. Machine tool turning head. 3,309,951, 3–21–67, Cl. 82—35.
Patterson, Earl, Jr., to Char-Lynn Co. Drive mechanism for gerotor gear set. 3,309,999, 3–21–67, Cl. 103—130.
Pattison, Wesley S., to General Electric Co. Rack system for automatic dishwasher. 3,310,354, 3–21–67, Cl. 312—269.
Paul, Robert A., and O. L. Forchheimer, to The J. E. Baker Co. Refractory material. 3,310,415, 3–21–67, Cl. 106—58.
Paulilukonis, Richard S. Dewar design for storage and transportation of low temperature fluids. 3,309,884, 3–21–67, Cl. 62—45.
Paulshock, Marvin, and J. C. Watts, to E. I. du Pont de Nemours and Co. Pharmaceutical compositions and methods utilizing 1 - aminoadamantane and its derivatives. 3,310,469, 3–21–67, Cl. 167—65.
Paulson, Donald L.: *See—*
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Phillips, Lawrence, S. and A. J. Paymer, and Yeatman. 3,309,954.
Pearson, Carl F., to Ametek, Inc. Hardness tester. 3,309,-916, 3–21–67, Cl. 73—81.
Pedersen, Dane H., to Dymo Industries, Inc. Cutoff means for hand operated embossing tool. 3,310,145, 3–21–67, Cl. 197—6.7.
Peeples, Maurice E. Golf putting cup with random-direction ball ejection means. 3,310,311, 3–21–67, Cl. 273—179.
Peeples, Maurice E. Device for randomly ejecting articles. 3,310,312, 3–21–67, Cl. 273—179.
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Perkins, Joseph K., and E. C. Chulada, to Improved Machinery, Inc. Fiber disintegrating and classifying apparatus. 3,310,242, 3–21–67, Cl. 241—92.

Pervier, Charles F., to Kiekhaefer Corp. Single lever remote control for marine propulsion units. 3,309,938, 3–21–67, Cl. 74—472.

Peschel, Stanley G. Apparatus for testing the insulation of electrically insulated wires including a plurality of conductive resilient elements supported between a pair of spaced rings for contacting the insulation of the wires under test. 3,310,735, 3–21–67, Cl. 324—54.

Peskett, Francis J.: *See*—
  Lemon, Peter H. R. B., and Peskett. 3,310,602.

Pesson, Marcel, to Societe anonyme dite: Laboratoire Roger Bellou. 2-phenyl and cyclohexyl-2-cyano-2-tertiary amino lower alkyl acetamides. 3,310,555, 3–21–67, Cl. 260—246.

Peters, Hermann, to BOMAG Bopparder Maschinenbaugesellschaft m.b.H. Vibrating road roller. 3,309,972, 3–21–67, Cl. 94—50.

Peterson, Herbert J., to United States Steel Corp. Apparatus for picking up and rolling pipe lengths while traveling sidewise on chain conveyor. 3,310,154, 3–21–67, Cl. 198—33.

Peterson, John A., to Hooker Chemical Corp. Process for producing anhydrous ammonium bifluoride from an aqueous solution of ammonium fluoride. 3,310,369, 3–21–67, Cl. 23—88.

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Peterson, Rodney E., and E. M. Sutphin, to Gulf Research & Development Co. Method for improving the quality of aromatic compounds. 3,310,594, 3–21–67, Cl. 260—672.

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Petry, Robert K., to Congoleum Nairn, Inc. Smooth wear-resistant resilient floor covering and method of making same. 3,310,422, 3–21–67, Cl. 117—76.

Pexton, Frederic C., to International Business Machines Corp. Imprinting apparatus. 3,309,987, 3–21–67, Cl. 101—79.

Pfizer, Chas., & Co., Inc.: *See*—
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Phillips, Betty L. S., to United States of America, National Aeronautics and Space Administration. File card marker. 3,310,054, 3–21–67, Cl. 129—16.7.

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  Goins, Robert R. 3,309,780.
  Johnson, Frank E., and Potts. 3,310,487.
  Larkin, Mark E., and Marrs. 3,310,266.
  Marx, John W., Belknap, and Trantham. 3,310,109.
  Parker, Harry W. 3,310,505.
  Standridge, James A., and Nicholson. 3,310,019.
  Zuech, Ernest A., and Gray. 3,310,591.

Phillips, Thomas W., K. P. Murphy, and R. F. Sweeney, to Allied Chemical Corp. Absorption refrigeration. 3,309,885, 3–21–67, Cl. 62—112.

Phillips, Wayne. Shield for electrostatic painting. 3,310,709, 3–21–67, Cl. 317—2.

Piasecki Aircraft Corp.: *See*—
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Piearcey, Barry J., to United Aircraft Corp. Heat treatment of nickel base alloys. 3,310,440, 3–21–67, Cl. 148—13.

Pierce, Frank D., to Klemark, Inc. Method and means for flat folding bottom sealed cartons. 3,309,970, 3–21–67, Cl. 93—53.

Pierce, John N., and D. W. Lipke, to United States of America, Air Force. Optical polarization demodulator system. 3,310,677, 3–21–67, Cl. 250—199.

Pierce, Stanley L., Jr., to The Ford Motor Co. Automatic control valve system for a multiple speed-ratio power transmission system. 3,309,939, 3–21–67, Cl. 74—472.

Pierson, Robert M., and A. F. Finelli, to The Goodyear Tire & Rubber Co. Polyurethane coated glass rope. 3,309,861, 3–21–67, Cl. 57—140.

Pinkerton, John W., to Sundstrand Corp. Hydrostatic transmission. 3,309,870, 3–21–67, Cl. 60—53.

Pitney-Bowes, Inc.: *See*—
  Buckley, Charles W., and Schrempp. 3,310,139.

Pittsburgh Plate Glass Co.: *See*—
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Place, Donald E., to Therm-O-Disc, Inc. Temperature sensing probe with means for maintaining the tubular element in engagement with a ceramic rod member. 3,310,647, 3–21–67, Cl. 200—137.

Plant Service Corp.: *See*—
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Plough, Edwin J., to Packaging Corp. of America. Methods and machines for forming cartons. 3,309,969, 3–21–67, Cl. 93—49.

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  Brand, John R., Plunkett, and Beverly. 3,310,622.

Pneumatic Scale Corp.: *See*—
  Scully, John W. 3,309,968.

Poitras, Joseph A. Anti-inversion device for sneakers. 3,309,797, 3–21–67, Cl. 36—80.

Polaski, David N., to Sundstrand Corp. Gear pump with heat control. 3,309,998, 3–21–67, Cl. 103—126.

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Porter, H. K., Co., Inc.: *See*—
  Huwyler, Rene, Aenishaenslin, and Porret. 3,310,503.

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Porten, Laurence. Pneumatic cushion socket with a porous filler. 3,309,714, 3–21–67, Cl. 3—20.

Porter, H. K., Co., Inc.: *See*—
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Portis, Ralph G.: *See*—
  Folmsbee, Clyde H., and Portis. 3,310,197.

Posey, Bob, Jr., and T. E. Varnado, Jr., to The Dow Chemical Co. Process for removing iron from phosphoric acid. 3,310,374, 3–21–67, Cl. 23—165.

Potter, John M. Erosion prevention apparatus. 3,309,876, 3–21–67, Cl. 61—3.

Potts, John, and W. J. Henry, to Short Bros & Harland Ltd., and Gallaher, Ltd. Hardness measurer using tiltable mirrors. 3,310,682, 3–21–67, Cl. 250—230.

Potts, Mack F.: *See*—
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Potts, Michael C., F. Pawling, and D. H. H. Bolton, to Dowty Mining Equipment Ltd. Mining apparatus. 3,309,880, 3–21–67, Cl. 61—45.

Powell, Kenneth E.: *See*—
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  Zinman, Allan L., and Kauffman. 3,310,204.

Prevost, Henri M., to Societe Anonyme dite: Pneumatiques, Caoutchouc Manufacture et Plastiques Kleber Columbes. Outer casings for pneumatic tires. 3,310,094, 3–21–67, Cl. 152—361.

Price, Eldon N., to Douglas Aircraft Co., Inc. Drogue for airspeed-calibration trailing static source. 3,310,257, 3–21–67, Cl. 244—1.

Prickett, Robert L., and K. S. Mazdiyasni. An adjustable offset collimator for use on X-ray powder cameras. 3,310,675, 3–21–67, Cl. 250—105.

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Pruim Fred: *See*—
  Aleksa, Peter, and Pruim. 3,310,008.

Pugin, Andre: *See*—
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Pullman, Inc.: *See*—
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Putnam, Howard, to Sanders Associates, Inc. Strip line hybrid ring and balanced mixer assembly. 3,310,748, 3–21–67, Cl. 325—446.

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Racine, Raymond F.: *See*—
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  Bazin, Lucas J., Dischert, and Taylor. 3,310,025.
  Ditkofsky, Harry. 3,310,688.
  Dresner, Joseph, and Lanyon. 3,310,700.
  Goldsmith, Norman. 3,310,425.
  Greig, Harold G. 3,310 401.
  Hilinski, Thomas C. 3,310,784.
  Nicholson, Burnard E. 3,310,705.
  Ostroff, Arthur, and D'Agostino. 3,310,731.
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  Thompson, Ira F. 3,310,763.
  Valentine, Le Roy F. 3,310,686.

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Ralston, Robert E., Y. L. Ko, and G. W. Stackhouse, to P. R. Mallory & Co., Inc. Rechargeable cell and method of making a depolarizing electrode therefor. 3,310,436, 3–21–67, Cl. 136—6.

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Ramo, Oliver H., to Abington Textile Machinery Works. Load cell for crushing rolls. 3,310,244, 3–21–67, Cl. 241—101.

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Randall, Max. Apparatus for preventing the overturning of conveyor-carried objects. 3,310,159, 3–21–67, Cl. 198—162.

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  Fehrmann, Fred H., and Rassieur. 3,309,898.

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Razak, Charles K. Ventilating device. 3,309,979, 3–21–67, Cl. 98—78.

Reagan, William D. Boxing game with scoring device having automatic score difference indicator. 3,310,308, 3–21–67, Cl. 273—134.

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Reddall, Winifred S. Package. 3,310,164, 3–21–67, Cl. 206—42.

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Reed, Wilmer H., III, to United States of America, National Aeronautics and Space Administration. Viscous-pendulum-damper. 3,310,138, 3–21–67, Cl. 188—87.

Regan, Dean, and R. F. LeBrocq, to Servade Mfg. Corp., Ltd. Room service apparatus for dispensing articles and registering charges therefor. 3,310,198, 3–21–67, Cl. 221—7.

Regents of the University of Minnesota, The: *See*—
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  Loeb, Sidney, and Manjikian. 3,310,488.

Reib, John C. Pulling device. 3,310,210, 3–21–67, Cl. 226—1.

Reich, Robert W. Permanent magnet resonator. 3,310,690, 3–21–67, Cl. 310—36.

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Reilly, Donald C., to Westinghouse Air Brake Co. Tension equalizer for flexible strand sideframe conveyor. 3,310,158, 3–21–67, Cl. 198—139.

Reilly, Donald C., to Westinghouse Air Brake Co. Impact absorbing roller assembly and element therefor. 3,310,160, 3–21–67, Cl. 198—192.

Reiner, George, to Venus Pen & Pencil Corp. Combination shipping and display box. 3,310,165, 3–21–67, Cl. 206—45.25.

Reinert, Donald G., to The Electric Storage Battery Co. Hydraulic cement-epoxy resin composition. 3,310,511, 3–21–67, Cl. 260—29.2.

Reiss, Earl W. Means for obtaining a photographic record of a robbery. 3,309,976, 3–21–67, Cl. 95—11.

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Rhodes, Eugene G., to Corning Glass Works. Electrical capacitor manufacture. 3,310,392, 3–21–67, Cl. 65—54.

Rhodes, William A. Multicell oxyhydrogen generator. 3,310,483, 3–21–67, Cl. 204—268.

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  Freed, Meier E., and Rice. 3,310,566.

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Rickards, James C., and W. F. Owens, Jr., to Olin Mathieson Chemical Corp. Cellulosic filter for tobacco smoke. 3,310,060, 3–21–67, Cl. 131—267.

Riecken, George C. Fish trap. 3,309,812, 3–21–67, Cl. 43—103.

Rieder, Zoltan. Partition disc for inhale-proof cigarettes. 3,310,056, 3–21–67, Cl. 131—10.5.

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Rietjens, Pierre L. L. M.: *See*—
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Rigopulos, Peter N., and R. H. Blackmer, to General Electric Co. Liquid handling system. 3,309,843, 3–21–67, Cl. 55—35.

Riemenschneider, Helmut, to European Atomic Energy Community-Euratom. Automatic coupling and decoupling device. 3,310,337, 3–21–67, Cl. 294—97.

Rijssenbeek, Robertus C. J. M., to N.V. Papierfabriek Gennep. Method of sterilizing hygienic paperware. 3,310,364, 3–21–67, Cl. 21—2.

Rinaldi, Russell G., and B. B. Moore, to International Business Machines Corp. Data compression/expansion and compressed data processing. 3,310,786, 3–21–67, Cl. 340—172.5.

Ripper, Ludvik, to Tesla, Narodni Podnik. Device for accurately measuring very high resistances. 3,310,737, 3–21–67, Cl. 324—62.

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  Galloway, Frederick M., Rittenhouse, and Sinnamon. 3,310,323.

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Roberts, Tom J., and D. L. Paulson, to Ethicon, Inc. Article dispensing units removable from an enclosing casing. 3,310,199, 3–21–67, Cl. 221—25.

Roberts, William C., Jr., and W. B. Kerr; said Kerr assor. to W. C. Roberts, Jr. Triangularly-shaped sail launching and retracting means. 3,310,018, 3–21–67, Cl. 114—104.

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Robins, Augustine W., R. V. Harris, Jr., H. W. Carlson, F. E. McLean, and W. D. Middleton, to United States of America, National Aeronautics and Space Administration. Supersonic aircraft. 3,310,262, 3–21–67, Cl. 244—45.

Robinson, Melville W., Jr., C. Steelman, Jr., and E. Perkins, Jr., to Dravo Corp. Process for continuous pickling of steel strip and regeneration of the contact acid. 3,310,435, 3–21–67, Cl. 134—3

Robson, William W., Jr. Draft fan control circuit for underfeed stoker fired coal furnaces. 3,310,010, 3–21–67, Cl. 110—101.

Rodenacker, Wolf, to Farbenfabriken Bayer Aktiengesellschaft. Worm press. 3,309,736, 3–21–67, Cl. 18—12.

Rodwick, Frank P., to Knopp-Monarch Co. Motor housing assembly using strain relief as fastener. 3,310,692, 3–21–67, Cl. 310—71.

Rogallo, Francis M., and W. C. Sleeman, Jr., to United States of America, National Aeronautics and Space Administration. Control for flexible parawing. 3,310,261, 3–21–67, Cl. 244—44.

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Rosl, Wolfgang, to International Standard Electric, Corp. Detention mechanism for rotary switches, particularly stepping switches. 3,309,940, 3–21–67, Cl. 74—527.

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  Blade, Arturo, and Muller. 3,310,580.

Rowden, Myron A., to Timpte, Inc. Trailer. 3,310,345, 3–21–67, Cl. 298—35.

Roy, Hrischikesch C., to Netzeler Gummiwerke Aktiengesellschaft. Mixture for improving the chemico-physical properties of blends consisting of natural rubber and 1:4-cis-polybutadiene. 3,310,508, 3–21–67, Cl. 260—5.

Royston, Michael G., to The A. P. V., Co., Ltd. Fermentation processes for the production of beer. 3,310,407, 3–21–67, Cl. 99—31.

Rozmus, Walter J., to Kelsey-Hayes Co. Cold pressure welding apparatus and method. 3,309,766, 3–21–67, Cl. 29—470.1.

Ruch, David E., to General Motors, Corp. Circuit for approximating a desired waveform across a load. 3,310,730, 3–21–67, Cl. 321—18.

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  Wunsch, Wolfgang, Kreisel, and Ruger. 3,309,900.

Rummel, Theodor: *See*—
  Henker, Heinz, and Rummel. 3,310,426.

Rupprecht, Joachim, to Siemens-Schuckertwerke Aktiengesellschaft. Halogen doped Bi_2Te_3-Bi_2Se_3-As_2Se_3 Thermo-electric composition. 3,310,493, 3–21–67, Cl. 252—62.3.

Rusoff, Samuel, to Basic Inc. Method of manufacturing basic refractories. 3,310,618, 3–21–67, Cl. 264—63.

Russell, Jacob B. Constant pressure refrigeration cycle. 3,309,897, 3–21–67, Cl. 62—512.

Russell, James, W. E. Carlson, and C. H. Mayhood, Jr., to St. Regis Paper, Co. Process of reacting cellulose paper of low water content with gaseous formaldehyde. 3,310,363, 3–21–67, Cl. 8—116.4.

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Ryder, Elliott E., Jr., and R. K. June, to Shell Oil Co. Process for polymerizing unsaturated aldehydes and resulting products. 3,310,531, 3–21–67, Cl. 260—67.

Ryer, Damond V., to Honeywell, Inc. Relevant data readout apparatus. 3,310,658, 3–21–67, Cl. 235—61.11.

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Saeki, Shogo, and H. Matsumoto, to Mitsui Shipbuilding and Engineering Co., Ltd. Marine propeller. 3,310,116, 3–21–67, Cl. 170—159.

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  Fukuda, Junichi, Suzuki, Ikebe, and Sagara. 3,310,592.

St. Joseph Lead Co.: *See*—
  Huffman, Henry R., and Evans. 3,310,438.

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  Russell, James, Carlson, and Mayhood. 3,310,363.

Salomonsson, Hans M. A., to Aktiebolaget Bofors. Fire control system for an anti-aircraft weapon carrier. 3,309,963, 3–21–67, Cl. 89—41.

Sama, Lawrence, and G. T. Pepino, Jr., to United States of America, Atomic Energy Commission. Brazing alloy and method of brazing with same. 3,309,767, 3–21–67, Cl. 29—494.

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Santoro, Ralph, Jr., to Edwin L. Wiegand, Co. Electric immersion heater assembly. 3,310,657, 3–21–67, Cl. 219—523.
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Savage, Albert B., and J. C. Aldrich, to The Dow Chemical Co. Stabilized reconstituted tobacco foil. 3,310,057, 3–21–67, Cl. 131—15.
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Schmidt, Waldemar M., to General Binding Corp. Sheet feeding device with corner separators. 3,310,303, 3–21–67, Cl. 271—21.
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- Stewart, John R., to Geigy Chemical, Co. Process for the production of multi-colored woolen goods. 3,310,361, 3-21-67, Cl. 8—15.
- Stewart, William M. Oscillator trigger circuit including unidirectional conducting device in the feedback path thereof. 3,310,754, 3-21-67, Cl. 331—112.
- Stiller, Leonard A., to Lasco Industries, Inc. Salt water ice making machine. 3,309,891, 3-21-67, Cl. 62—323.
- Stoll, Reiner G., and R. H. Balch, to Celanese Corp of America. Process and apparatus for producing bulked piled yarn. 3,309,855, 3-21-67, Cl. 57—34.
- Stoutamire, Donald W., to Shell Oil Co. Fluorotoluene-dithiol-phosphorodithioate. 3,310,610, 3-21-67, Cl. 260—930.
- Streck, Roland: *See—*
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  - Meyers, Donald N., and Stroukoff. 3,309,937.
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  - Hofstadt, Carl E., Ludwig, and Fann. 3,310,412.
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  - Nehru, Aditya K., and Suh. 3,310,390.
- Suld, George, to Sun Oil Co. Heptaalkylcyclohexadienes and process of preparation. 3,310,590, 3-21-67, Cl. 260—666.
- Sump, Cord H., and S. W. McGee, to I.I.T. Research Institute. Brake lining materials and articles made therefrom. 3,310,387, 3-21-67, Cl. 29—182.5.
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  - Suld, George. 3,310,590.
- Sundstrand Corp.: *See—*
  - Pinkerton, John W. 3,309,870.
  - Polaski, David N. 3,309,998.
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  - Surber, John L., Surber, and Anderson. 3,310,211.
- Surks, Frank H. Cooking apparatus. 3,309,982, 3-21-67, Cl. 99—420.
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  - Nelson, Elwood E., Peterson, and Sutphin. 3,310,593.
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  - Peterson, Rodney E., and Sutphin. 3,310,594.
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  - Miyata, Noboru, and Suzuki. 3,309,899.
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- Swartz, Paul S., and R. L. Fleischer, to General Electric, Co. Superconductors containing a fissionable metal or boron impurity. 3,310,395, 3-21-67, Cl. 75—122.5.
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  - Hunter, Edwin J., and Swing. 3,310,099.
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  - Cheney, Richard F., Clare, and Cooper. 3,310,427.
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  - Miller, Burton F. 3,310,744.
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  - Oele, Adriaan P., Taks, Dingemans, and Damme. 3,310,558.
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  - Carlile, Alfred E. 3,309,746.
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- Taplin, John F. Rolling diaphragm devices having loose coupling between piston and piston rod to render the piston floating. 3,309,967, 3-21-67, Cl. 92—101.
- Taylor, Acton B. Drinking fountain arrangement and control valve therefor. 3,310,236, 3-21-67, Cl. 239—029.
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  - Bazin, Lucas J., Dischert, and Taylor. 3,310,625.
- Taylor & Gaskin, Inc.: *See—*
  - Paquette, Cyril D. 3,310,183.
- Taylor, Joseph H.: *See—*
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- Teplitz, Alfred, to United States Steel Corp. Stopper rod rigging for ladles. 3,309,740, 3-21-67, Cl. 22—85.
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  - Sordello, Frank J., and Thaler. 3,310,732.
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  - Goddard, George J., Evans, and Alpiser. 3,310,202.
  - Lambert, Rogers F. 3,310,571.
  - Terry, Walter S. 3,309,869.
- Thomas, Albert. Boring tool. 3,309,946, 3-21-67, Cl. 77—58.
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- Thompson, Ira F., to Radio Corp. of America. Deflection yoke coil. 3,310,763, 3-21-67, Cl. 335—213.
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- Tillequin, Jean F., to Babcock & Wilcox, Ltd. Tube bank heat exchanger with supports. 3,310,104, 3-21-67, Cl. 165—145.
- Tilley, Alton G., and R. M. Wall, to E. I. du Pont de Nemours and Co. Article and apparatus for conveying particulate matter pneumatically. 3,310,349, 3-21-67, Cl. 302—59.
- Timpte, Inc.: *See—*
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- Tochacek, Miroslav: *See—*
  - Danhel, Antonin, Tochacek, and Sedlecky. 3,309,901.
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  - Kluppel, Kurt-Walter, Tomanek, and Endermann. 3,309,990.
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- Torney, Franklin L., Jr., to National Research Corp. Ultra-high vacuum gauge having two collector electrodes. 3,310,699, 3-21-67, Cl. 313—7.
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- Tosti, Donald T., to Teaching Machines, Inc. Teaching apparatus. 3,309,792, 3-21-67, Cl. 35—8.2.
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  - Marx, John W., Belknap, and Trantham. 3,310,109.
- Trapnell, Frederick M., Jr.: *See—*
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- Tremblay, Joseph R. One-piece joint coupling. 3,310,327, 3-21-67, Cl. 287—189.36.
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- Trimble, David C., to Hercules, Inc. Plastic egg cartons. 3,310,217, 3-21-67, Cl. 229—2.5.
- Trofimow, Alex, and E. C. Dearborn, to W. R. Grace & Co. Vinylidene chloride copolymer latices and products produced therefrom. 3,310,514, 3-21-67, Cl. 260—29.6.
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- Tsumeb Corp. Ltd.: *See—*
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  - Baenziger, Leonard N., and Tuck. 3,310,773.
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  - Clark, Elwood L., and Tuttle. 3,310,287.
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  - Haszeldine, Robert N., Birchall, and Umfreville. 3,310,543.
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  - Davee, Robert L., and Louzos. 3,310,437.
  - Faust, Clifford C., and Ericson. 3,309,837.
  - Hemstreet, Russell A., and Ruttenbur. 3,309,844.
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    - Kylander, John C., and Soule. 3,310,678.
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- Valentine, LeRoy F., to Radio Corp. of America. Flip-flop circuits utilizing set-reset dominate techniques. 3,310,686, 3-21-67, Cl. 307—88.5.
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- Varian Associates: *See—*
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  - Du Bois, Robert J., and Veldhuis. 3,310,585.
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DESIGN PATENTS

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PLANT PATENTS

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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

March 21, 1967 Volume 836 Number 3

TRADEMARKS

NOTICES

Service by Publication

A petition to cancel the registration identified below having been filed, and an order to show cause why the registration should not be canceled sent to registrant at the last known address having been returned by the Post Office as undeliverable, and this Office having been advised that registrant is deceased, notice is hereby given that unless the registrant's assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, judgment will be entered and said registration will be canceled.

Louis M. Castor, d.b.a. Cast-Crete Products, San Angelo, Tex., Reg. No. 443,357, Canc. No. 8,677.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 315,277 (LASCCO in script), Los Angeles Smoking & Curing Co., Smoked, salted, spiced, and canned fish; **Reg. No. 581,677** (LASCCO (in script) AND DESIGN), same, Canned, spiced, smoked, salted and barbecued fish, etc., **filed** Oct. 24, 1966, D.C. Ariz. (Phoenix), Doc. 6152 Phx., *Los Angeles Smoking & Curing Co., Inc.* v. *Allen Foods, Inc.* Final judgment, injunction issued (notice Jan. 23, 1967).

Reg. No. 382,071 (LIVING), International Latex Corporation, Girdles; **Reg. No. 604,907**, same, Girdles, gloves, and brassieres; **Reg. No. 627,138**, same, All purpose cosmetic creams useful as a cleansing, night or hand cream or foundation base; **Reg. No. 640,481**, same, Baby powder; **Reg. No. 703,495**, same, Novelty and toy dolls, **filed** Jan. 26, 1967, D.C., S.D.N.Y., Doc. 67/343, *International Playtex Corporation* v. *Bendyne Ltd. et ano.*

Reg. No. 581,677. (See Reg. No. 315,277.)

Reg. No. 604,907. (See Reg. No. 382,071.)

Reg. No. 604,932 (FASHION WAVE in script), Helene Curtis Industries, Inc., Cold hair waving solutions, **filed** Sept. 23, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1593, *Helene Curtis Industries, Inc.* v. *Hart Beauty Supply Co.* Stipulation and order of dismissal Jan. 26, 1967.

Reg. No. 627,138. (See Reg. No. 382,071.)

Reg. No. 640,481. (See Reg. No. 382,071.)

Reg. No. 650,952 (OLEG CASSINI AND DESIGN), Oleg Cassini, Women's dresses, coats, and suits, children's dresses and snowsuits, men's ties and shirts; **Reg. No. 657,489** (OLEG CASSINI in script), same, **filed** June 22, 1966, D.C., S.D.N.Y., Doc. 66/1806, *Oleg Cassini, Inc.* v. *Casini Enterprises, Inc.* Stipulation and order of dismissal Jan. 30, 1967.

Reg. No. 657,489. (See Reg. No. 650,952.)

Reg. No. 675,032 (TIGER CUB), Peter Pan Foundations, Inc., Girdles and panty girdles; **Reg. No. 688,778** (TIGER), same; **Reg. No. 696,473** (TIGER (in script) AND DESIGN), same, Girdles, **filed** Sept. 7, 1966, D.C., S.D.N.Y., Doc. 66/2847, *Peter Pan Foundations, Inc.* v. *Vanity Fair Mills, Inc.* Stipulation and order dismissing action and counterclaim Jan. 25, 1967.

CONDITION OF TRADEMARK APPLICATIONS AS OF JANUARY 31, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17,077
Date of oldest new application	Jan. 4, 1966
Date of oldest amended application (filing date)	Oct. 8, 1963

C. M. WENDT, Director, Trademark Examining Operation **TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION**	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF. Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	1-4-66	5-4-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-17-66	10-8-63
Renewals (All Classes)	1-3-67	--------
Sec. 12 (c) Publications (All Classes)	1-9-67	--------

Applications filed during the month of January 1967—2,054

Registration Issued ------------------------357—No. 825,930 to No. 826,286
Renewals Issued ------------------------ 80

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Reg. No. 688,778. (See Reg. No. 675,032.)

Reg. No. 696,473. (See Reg. No. 675,032.)

Reg. No. 703,495. (See Reg. No. 382,071.)

Reg. No. 735,227 (DRIFTER AND DESIGN), Kop-Ron Machine Corporation, doing business as Kop-Ron, House boats, **filed** Feb. 1, 1967, D.C., M.D. Tenn. (Nashville), Doc. 4670, *Drifter Corp. et al.* v. *House Boating Corp. of America.*

Reg. No. 739,773 (STANLEY BLACKER), Stanley Blacker, Inc., Men's sportscoats, **filed** Jan. 26, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–124–CC, *Stanley Blacker, Inc.* v. *Blacker of California et al.*

Reg. No. 817,329 (DRINK-LITE), E. W. Gilson, Battery operated, portable signal light, **filed** Jan. 25, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c131, *Crossbow, Inc. et al.* v. *Glovemakers, Inc.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 189,540. Bel Art Products, Pequannock, N.J. Filed Mar. 25, 1964.

BEL-ART

Class 2—Receptacles

For Polyethylene Bottles of Various Types—Namely, Wash Bottles, Spray Bottles; Plastic Containers, Polyethylene Pouring Pails, Polyethylene Carboys With Handles.

Class 26—Measuring and Scientific Appliances

For Polyethylene Bottles and Filtering Flasks, Graduated Heavy Wall Polyethylene Cylinders, and Reagent Dispensers, All for Laboratory Use.

Class 44—Dental, Medical, and Surgical Appliances

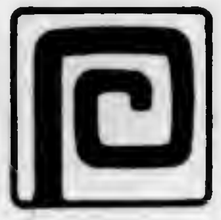
For Medicine Cups, Syringe Containers, Vacuum Cups, Hospital Protective Sheets, Hand Shields, Vinyl Protective Mattress Covers, Dropper Bottles, and Irrigating Eye Wash Bottles, for Medical Surgical, and Hospital Uses.

Class 50—Merchandise Not Otherwise Classified

For Bed Card Holders and General Card Holders.

First use July 1946.

SN 226,463. Panelgraphic Corporation, Caldwell, N.J. Filed Aug. 25, 1965.



Class 26—Measuring and Scientific Appliances

For Scientific Equipment—Namely, Instrument and Console Panels, Dials, Calibrated Scales.

Class 50—Merchandise Not Otherwise Classified

For Name Plates.

First use July 1963.

SN 232,260. Western Felt Works, Chicago, Ill. Filed Nov. 8, 1965.

ACADIA

Class 1—Raw or Partly Prepared Materials

For Industrial Felt and Plastic Sheets.
First use Jan. 1, 1943.

Class 12—Construction Materials

For Acoustical and Insulating Felt for Industrial Use.
First use Jan. 1, 1938.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Anti-Vibration Pads for Machinery and Pads for Similar Industrial Applications Where Cushioning and Padding Are Required.
First use Jan. 1, 1938.

Class 31—Filters and Refrigerators

For Filters.
First use Jan. 1, 1938.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Wicks for Feeding Oil to Motor Parts and Kindred Uses.
First use Jan. 1, 1938.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Seals, Gaskets, and Rubber Tubing.
First use Jan. 1, 1938.

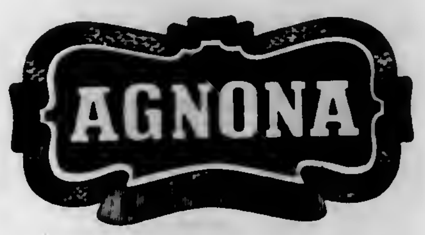
Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Wool Felt.
First use Feb. 1, 1935.

Class 44—Dental, Medical, and Surgical Appliances

For Surgical Pads.
First use Jan. 1, 1938.

SN 233,919. Lanerie Agnona di F. Ilorini & C., Borgosesia, Vercelli, Italy. Filed Dec. 3, 1965.



The word "Lanerie" is disclaimed apart from the mark as shown. The drawing is lined for red, gold and black. Owner of Italian Reg. No. 121,627, dated July 28, 1954.

Class 39—Clothing

For Dresses, Blouses, and Skirts, All Made Wholly of Wool or in Substantial Part of Wool.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fabrics, Including Knitted Ones, Wholly of Wool or in Substantial Part of Wool.

Class 43—Thread and Yarn

For Yarns Wholly of Wool or in Substantial Part of Wool.

SN 234,323. Mr. Swiss of America, Inc., Oklahoma City, Okla. Filed Dec. 10, 1965.

Mr. Swiss

Class 45—Soft Drinks and Carbonated Waters

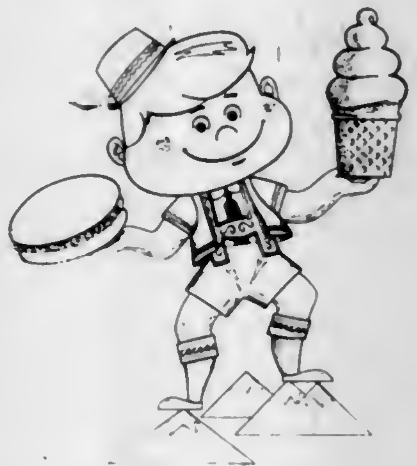
For Soft Drinks, Such as Carbonated Drinks, Limeades, and Fruit-Flavored Punches.

Class 46—Foods and Ingredients of Foods

For Foods and Food Beverages—Namely, Hot Chocolate, Malted Milks, Milk Shakes, Sandwiches, Fried Onion Rings, French Fried Potatoes, and Ice Cream.

First use May 10, 1965.

SN 234,324. Mr. Swiss of America, Inc., Oklahoma City, Okla. Filed Dec. 10, 1965.



No registration rights are claimed for the representation of the food apart from the mark shown but applicant waives none of its common law rights in the mark shown or any feature thereof.

Class 45—Soft Drinks and Carbonated Waters

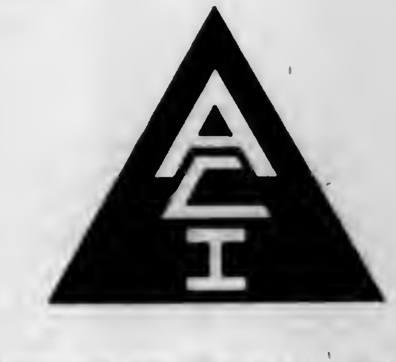
For Soft Drinks, Such as Carbonated Drinks, Limeades, and Fruit-Flavored Punches.

Class 46—Foods and Ingredients of Foods

For Foods and Food Beverages—Namely, Hot Chocolate, Malted Milks, Milk Shakes, Sandwiches, Fried Onion Rings, French Fried Potatoes, and Ice Cream.

First use May 10, 1965.

SN 234,591. Atlantic Chemicals, Inc., Orlando, Fla. Filed Dec. 13, 1965.



Class 16—Protective and Decorative Coatings

For Floor Finish Compound for Vinyl, Terrazzo, and Other Floors.

Class 52—Detergents and Soaps

For Concentrated Steam Cleaner, a Compound for Cleaning and Brightening Aluminum Surfaces, and a Phosphoric Acid Based Cleaner Especially for Cleaning Surfaces Used by Meat, Poultry, Sea-Food and Other Packers, Processors, Canners, and Bottlers.

First use January 1961.

SN 235,869. Shurfine-Central Corporation, Northlake, Ill. Filed Jan. 5, 1966.

EMBASSY

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Household Appliances—Namely, Toasters, Irons, Coffee Makers, and Food Mixers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Barber Kits, Including Clippers, Shears, Combs, and Electric Knives.

First use Dec. 15, 1965.

SN 238,807. Warenzeichenverband fuer Erzeugnisse des Textilund Schuhmaschinenbaues E.V., Karl-Marx-Stadt, Germany. Filed Feb. 14, 1966.

TEXTIMA

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machinery for the Textile and Shoe Industries, Including Preparatory, Auxiliary, and Conveyor Machinery, and Component Parts Thereof.

Class 24—Laundry Appliances and Machines

For Washing Machines for Cleaning, Washing, and After-Treatment of Textiles and Textile Fibers, and Component Parts Thereof.

Class 26—Measuring and Scientific Appliances

For Measuring and Testing Machinery for the Textile Industry, Including Machinery for Sorting and Packaging Textiles and Textile Fibers.

First use June 26, 1948; in commerce December 1951.

SN 244,285. The Ridge Tool Company, Elyria, Ohio. Filed Apr. 25, 1966.

RIDGID

Owner of Reg. Nos. 419,190, 770,621, and others.

Class 15—Oils and Greases

For Thread Cutting Oils, and Lubricants.
First use June 8, 1932.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Motors, for Use in Power Drives and Threading Machines.
First use June 13, 1945.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Benders for Conduit and Tubing; Brackets, Adapters for Geared Threaders; Brushes for Cleaning Copper Fittings, Internal and External; Carriages for Holding Pipe and Bolt Threaders on Power Drives; Carriers for Pipe and Nipple Threading Dies, Carrying Cases for Tools; Chasers for Threading Dies; Chucks for Power Drives, Pipe Threading Machines, Drill Presses and Lathes; Chucks for Nipples and Adapters Therefor; Cutters, Pipe, Tubing Facing and Cable Cutters and Blades Therefor; Dies, Threading, Beveling, Grooving and Sizing Dies; Die Head Adapters for Lathes and Drill Presses; Die Stocks, Plain and Ratchet; Drills, Twist; Drill Guides; Drives, Power for Rotating Pipe and Rods; Drive Bars for Transmitting Power; Drive Shafts With Universal Joints Therein; Extractors for Screws, Bolts and Nipples; Extractor Kits; Flaring Tools for Tubes; Handles, Plain and Ratchet Type for Dies and Reamers; Holders for Holding Copper Tubing While Soldering; Keys, Chuck; Loops for Geared Threaders; Machines, Pipe and Bolt Threading; Machines, Motor Driven Tube Brushing; Oilers, Hand Operated Squirt Type; Racks for Holding Die Heads; Reamers, Spiral and Straight Flute for Pipe; Saws, Hack and Compass and Blades Therefor; Screw Driver Bits; Soil Pipe Assembly Tools; Speed Reducers and Reversible Speed Reducers for Electric Drills; Stands, Display Stands, Vise Holding Stands for Pipe Threading Machines and Power Drive; Supports for Supporting Pipe During Threading Operation; Support Arms for Supporting Threaders on Power Drives; Taps for Threading Pipe; Threaders for Pipes and Bolts, Hand and Geared; Tool Trays; Transporters for Transporting Vise Stands; Tube Soldering Clips; Vises, Chain Pipe Holding, Bench, Kit, Post, Yoke, Machinist, Drill Press and Wood Worker; Wrenches, Pipe and Monkey, Compound Leverage, Chain Pipe, Extractor, Strap, Hex, Spud, Basin and Adjustable End Wrenches.

First use June 18, 1923.

SN 252,447. Friden, Inc., San Leandro, Calif. Filed Aug. 16, 1966.

FRIDEN

Owner of Reg. Nos 537,847, 805,221, and others.

Class 100—Miscellaneous

For Rental of Business and Office Machines.
First use Jan. 1, 1946.

Class 103—Construction and Repair

For Repair of Business and Office Machines.
First use Dec. 31, 1934.

Class 107—Education and Entertainment

For Educational Services.
First use May 25, 1956.

SN 254,645. Alberto-Culver Company, Melrose Park, Ill. Filed Sept. 19, 1966.

ECSTA

Class 4—Abrasives and Polishing Materials

For Furniture Polish.

Class 6—Chemicals and Chemical Compositions

For Spray Starch.

First use Sept. 7, 1966.

SN 254,902. Alberto-Culver Company, Melrose Park, Ill. Filed Sept. 22, 1966.

AMAZE

Class 4—Abrasives and Polishing Materials

For Furniture Polish.

Class 6—Chemicals and Chemical Compositions

For Spray Starch.

First use Sept. 7, 1966.

SN 255,391. Alberto-Culver Company, Melrose Park, Ill. Filed Sept. 23, 1966.

BLAZE

Class 4—Abrasives and Polishing Materials

For Furniture Polish.

Class 6—Chemicals and Chemical Compositions

For Fabric Softener and Spray Starch.

First use June 27, 1966.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 233,125. Peel's Poultry Farm Limited, Port Perry, Ontario, Canada. Filed Nov. 22, 1965.

MEATMASTER

For Live Poultry.
First use June 7, 1965; in commerce June 7, 1965.

SN 234,264. Westlake Plastics Company, Lenni Mills, Pa. Filed Dec. 8, 1965.

THERMALUX

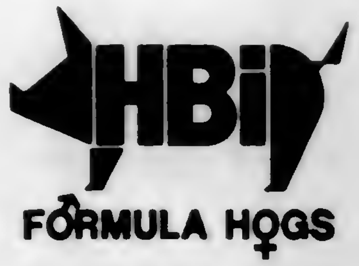
For Solid Plastic Rods, Sheets, and Tubes.
First use June 10, 1965.
Subj. to Intf. with SN 237,174 and SN 237,175.

SN 247,831. Pioneer Hi-Bred Corn Company, Des Moines, Iowa. Filed June 10, 1966.

PIONEER

Owner of Reg. Nos. 84,443, 778,911, and others.
For Soybean and Wheat Seeds.
First use on or about May 10, 1966.

SN 248,830. Nebraska Consolidated Mills Company, Omaha, Nebr. Filed June 23, 1966.



Applicant disclaims any rights in the words "Formula Hogs" apart from the mark as shown.
For Livestock—Namely, Hogs.
First use Apr. 4, 1966.

SN 251,731. LTV Aerospace Corporation, Dallas, Tex. Filed Aug. 4, 1966.

RAPID-SITE

For Resinous Material for Forming a Thermally Resistant Landing Mat for Aircraft.
First use Aug. 16, 1965.

SN 257,912. E. I. du Pont de Nemours and Company., Wilmington, Del. Filed Nov. 4, 1966.

Owner of Reg. Nos. 387,746, 779,588, and others.
For Sheets and Laminates of Polymeric Materials for General Use in the Industrial Arts.
First use Sept. 27, 1965.

SN 261,013. Stern's Nurseries, Inc., Geneva, N.Y. Filed Dec. 19, 1966.

MIRACLE-MUM

Owner of Reg. Nos. 668,868 and 760,880.
For Chrysanthemum Plants.
First use May 1, 1963.

Class 2 — Receptacles

SN 216,121. Air Reduction Company, Incorporated, New York, N.Y. Filed Apr. 9, 1965.

For Dewar Flasks and Vacuum Jacketed Containers, Tanks, and Vessels for Cryogenic Liquids Such as Liquified Air, Argon, Fluorine, Helium, Hydrogen, Neon, Nitrogen, and Oxygen.
First use 1948 on Dewar Flasks.

SN 236,776. Plastics Manufacturing Company, Dallas, Tex. Filed Jan. 18, 1966.

TEXAN

For Plastic Tumblers and Trays for Use in Restaurants.
First use 1954.

SN 236,778. Plastics Manufacturing Company, Dallas, Tex. Filed Jan. 18, 1966.

DALLAS WARE

No claim is made to the word "Ware" except as part of the entire mark.
For Table-Ware Made of Plastics.
First use 1953.

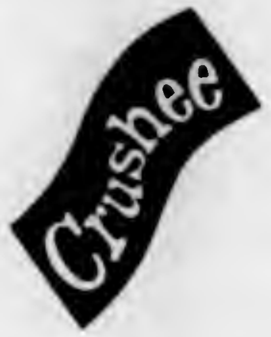
SN 237,030. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Jan. 21, 1966.

SQUARE-A-WAY

Owner of Reg. Nos. 647,278 and 790,554.
For Plastic Household Containers and Covers Therefor.
First use Jan. 12, 1966.

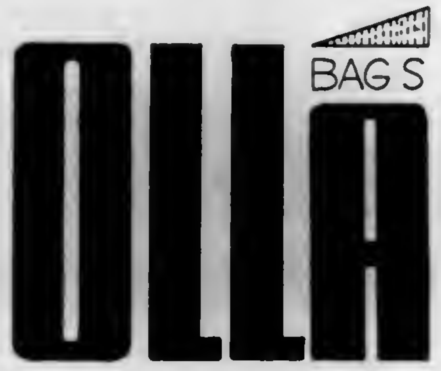
Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 233,028. Morris White Fashions, Inc., New York, N.Y. Filed Nov. 19, 1965.



For Ladies' Handbags.
First use Oct. 25, 1965.

SN 235,752. Apex Handbag Inc., Union City, N.J. Filed Jan. 3, 1966.



The word "Bags" is disclaimed apart from the mark as shown. The drawing is lined for violet.
For Handbags.
First use June 1965.

SN 237,072. Amity Leather Products Co., West Bend, Wis. Filed Jan. 24, 1966.

COURIER

For Billfolds and Card Cases and Combinations Thereof.
First use on or about Mar. 6, 1962.

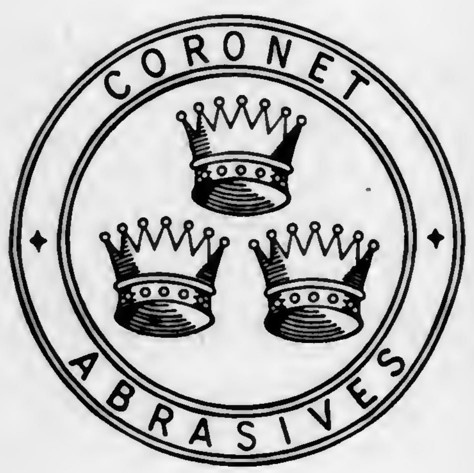
SN 241,388. Swank, Inc., Attleboro, Mass. Filed Mar. 18, 1966.

LADY SWANK

Owner of Reg. No. 798,541.
For Cases of Wood, Cardboard, Plastic, and Base Metal, Covered With Natural or Simulated Leather for Jewelry and Dress Accessories.
First use Mar. 8, 1966.

Class 4 — Abrasives and Polishing Materials

SN 226,689. Union Glue & Gelatine Co., Limited, London, England. Filed Aug. 27, 1965.



Applicant disclaims any exclusive right in the word "Abrasives" apart from the mark as shown. Owner of British Reg. No. 678,802, dated Apr. 19, 1949.
For Abrasive Coated Paper and Cloth.

SN 262,384. Arthur E. Johnson, d.b.a. Carbide Products Co., Huntington Park, Calif. Filed Jan. 12, 1967.

ECONO-LAP

For Abrasive Lapping Compound.
First use on or about Mar. 1, 1962.

Class 5 — Adhesives

SN 231,521. Evode Limited, Stafford, England. Filed Sept. 21, 1965.

EVO

Owner of Reg. Nos. 629,779, 693,664, and 741,119.
For Adhesives Used in Industry.
First use June 17, 1947; in commerce June 11, 1965.

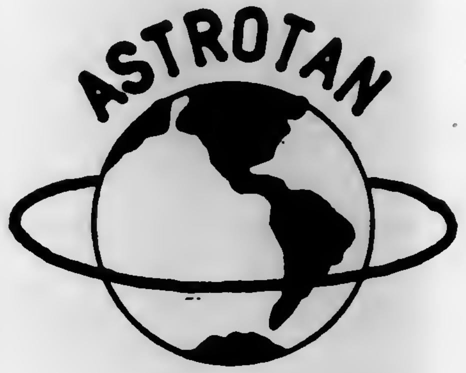
SN 237,204. Coated Products Corp., Lowell, Mass. Filed Jan. 25, 1966.

SLIP-STIK

For Adhesive Coating Ingredient of Coated Fabrics and Other Sheet Materials, for Use in the Shoe Industry.
First use September 1965.

Class 6 — Chemicals and Chemical Compositions

SN 183,998. Tanex Sociedad Anonima, Financiera, Inmobiliaria, Comercial, Industrial y Mandataria, Buenos Aires, Argentina. Filed Jan. 3, 1964.



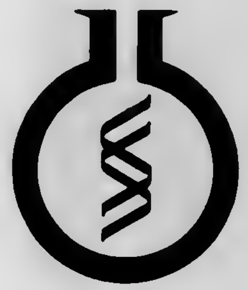
Owner of Argentine Reg. No. 524,342, dated Feb. 5, 1964.
For Quebracho Extract (Tannin).

SN 229,421. Fermco Laboratories, Inc., Chicago, Ill. Filed Oct. 6, 1965.

GOC

For Preparation Containing the Enzymes Glucose Oxidase and Catalase.
First use Aug. 5, 1965.

SN 235,583. P-L Biochemicals, Inc., Milwaukee, Wis. Filed Dec. 30, 1965.



The mark consists of a stylized representation of a vial containing vapor.
For Fine Biochemicals—Namely, Enzymes, Coenzymes, Nucleic Acids, Nucleotides, Nucleosides, and Sugar Phosphates.
First use Sept. 14, 1964.

SN 236,215. A. E. Staley Manufacturing Company, Decatur, Ill. Filed Jan. 12, 1966.

SILKEN LOOK

For Fabric Finish.
First use Dec. 3, 1965.

SN 237,406. Velsicol Chemical Corporation, Chicago, Ill. Filed Jan. 26, 1966.

PARAHEP

For Insecticides.
First use Apr. 28, 1965.

SN 238,633. W. R. Grace & Co., New York, N.Y. Filed Feb. 11, 1966.

ENDCOR

For Additive for Cooling Water Treatment.
First use Oct. 29, 1965.

SN 243,825. Air Products and Chemicals, Inc., Allentown, Pa. Filed Apr. 20, 1966.

EMI-24

For Curing Agents for Resins.
First use July 2, 1965.

SN 243,830. Basic Incorporated, Cleveland, Ohio. Filed Apr. 20, 1966.

PROGRESS IS BASIC

Owner of Reg. No. 746,780.
For Magnesium and/or Calcium Chemicals in Powder Form.
First use Feb. 14, 1966.

SN 246,477. Magnolia Industries, Inc., Spartanburg, S.C. Filed Mar. 24, 1966.

PIC-GARD

For Chemical Compositions for Use in the Finishing of Hosiery.
First use Sept. 10, 1965.

SN 247,167. Ventron Corporation, Beverly, Mass. Filed June 2, 1966.

PREBATE

For Chemical Preparation for Fine Hair Removal From Skins in the Leather Industry.
First use June 9, 1964.

SN 247,741. Universal Masonry Coatings, Inc., Arlington, Mass. Filed June 9, 1966.

UMACO

For Moisture Control and Waterproofing Additives for Cementitious Mixtures.
First use February 1966.

SN 249,210. Amchem Products, Inc., Ambler, Pa. Filed June 29, 1966.

RACK

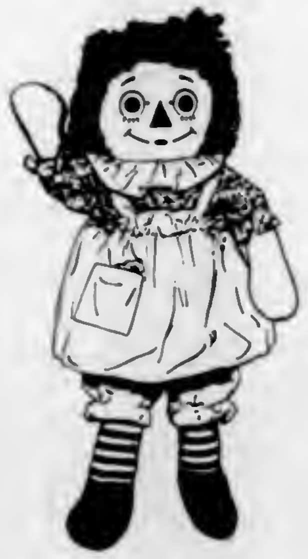
For Herbicides.
First use Mar. 29, 1966.

SN 251,285. Ciba Limited, Basel, Switzerland. Filed July 29, 1966.

SOMONIL

Owner of Swiss Reg. No. 159,407, dated Dec. 29, 1955.
For Chemical Preparations for Killing Weeds and Destroying Vermin, and Preparations for Combating Plant Pests.

SN 251,406. Faultless Starch Company, Kansas City, Mo. Filed Aug. 1, 1966.



For Laundry Preparations—Namely, Water Softening Agent, and a Sizing and Finishing Agent for Fabrics.
First use June 23, 1966.

SN 251,407. Faultless Starch Company, Kansas City, Mo. Filed Aug. 1, 1966.

RAGGEDY ANN'S

For Laundry Preparations—Namely, Water Softening Agent, and a Sizing and Finishing Agent for Fabrics.
First use June 23, 1966.

SN 251,475. Spartan Chemical Company Inc., Toledo, Ohio. Filed Aug. 1, 1966.

STERI-PHENE

For Disinfectant-Deodorant Dispersed in an Aerosol Form.
First use on or about June 24, 1966.

SN 251,483. Tenneco Chemicals, Inc., New York, N.Y. Filed Aug. 1, 1966.

TRI-FEN

For Herbicides.
First use on or about July 25, 1966.

SN 251,503. The Ansul Company, Marinette, Wis. Filed Aug. 2, 1966.

MONEX

For Agricultural Chemicals Such as Herbicides.
First use June 16, 1966.

SN 251,643. Metropolitan Refining Co., Inc., Long Island City, N.Y. Filed Aug. 3, 1966.

METRO
TOWER GUARD

Owner of Reg. No. 698,784.
For Chemical Compound for the Treatment of Water of Air Conditioning Systems for the Prevention of Corrosion and Scale.
First use June 1966.

SN 251,650. Peninsular Chemresearch, Inc., Gainesville, Fla. Filed Aug. 3, 1966.

CAT-FLOC

For Cationic Polyelectrolyte Polymeric Chemical Compositions for Treatment of Water for Coagulation and Sedimentation of Suspended Solids.
First use Mar. 25, 1965.

SN 251,691. Aluminum Extrusions, Inc., Charlotte, Mich. Filed Aug. 4, 1966.

CHEM COIN

For Selective Etching and Anodizing of Metals.
First use Feb. 10, 1966.

SN 251,801. The Dow Chemical Company, Midland, Mich. Filed Aug. 5, 1966.

AEROTHENE

For Fluid Hydrocarbon Propellants, Vapor Pressure Depressants, and Solvents for Use in Aerosol Compositions.
First use June 3, 1966.

SN 251,867. Allied Research Products, Inc., Baltimore, Md. Filed Aug. 8, 1966.

CANDOR ISOBRITE

Owner of Reg. No. 664,241.
For Electroplating Addition Agent.
First use June 2, 1966.

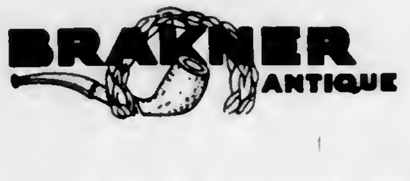
Class 8—Smokers' Articles, Not Including Tobacco Products

SN 214,477. Poul Nielsen, d.b.a. Stanwell Briar Pipes, Kyringe, near Ringsted, Denmark. Filed Mar. 18, 1965.

Royal Dane

Priority claimed under Sec. 44(d) on Danish application filed July 9, 1964, Reg. No. 3,708, dated Dec. 5, 1964; and U.S. Reg. No. 786,247.
For Smokers' Articles, Especially Smoking Pipes.

SN 246,876. Bradberry Briar Pipe Corporation, New York, N.Y. Filed May 31, 1966.



Applicant disclaims the word "Antique" and the pictorial representation of the goods apart from the mark as shown.
For Smokers' Pipes.
First use June 6, 1960.

SN 247,606. Lane Limited, New York, N.Y. Filed June 8, 1966.

CHARTWELL

For Pipes.
First use April 1966.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 240,639. Nosler Partition Bullet Co. Inc., Bend, Oreg. Filed Mar. 10, 1966.

ZIPEDO

For Rifle Bullets.
First use Feb. 7, 1966.

SN 246,160. Colt's Inc., Hartford, Conn. Filed May 20, 1966.

STAGECOACH

For Rifles.
First use Feb. 23, 1966.

SN 259,884. Ithaca Gun Company, Incorporated, d.b.a. Ithaca Gun Co., Inc., Ithaca, N.Y. Filed Dec. 2, 1966.

ITHACA-SKB

Owner of Reg. Nos. 559,787, 680,633, and 776,021.
For Shotguns.
First use Feb. 18, 1966.

Class 10—Fertilizers

SN 231,534. Bennett Chemical Company, Denver, Colo. Filed Oct. 24, 1965.

FORT-EL-IZER

For Fertilizer.
First use Aug. 20, 1964.

SN 234,043. Lawn-A-Mat Chemical and Equipment Corp., Mineola, N.Y. Filed Dec. 6, 1965.

LAWN-A-MAGIC

For Fertilizers.
First use May 1961.

SN 234,761. Maryland Peat & Humus Company, Betterton, Md. Filed Dec. 16, 1965,

BLACK BEAUTY

For Horticultural Peat.
First use Dec. 1, 1965.

Class 11 — Inks and Inking Materials

SN 233,966. Guy Mathelin, Saint Gratien, France. Filed Oct. 22, 1965.

ADESIFOB

Priority claimed under Sec. 44(d) on French Reg. No. 700,313, dated Sept. 3, 1965.
For Anti-Smudge Additives for Inks, Inks, Printing Inks, Ink for Duplicating Machines, and for All Printing Devices.

Class 12 — Construction Materials

SN 226,611. Beltraction Co., Chicago, Ill. Filed Aug. 27, 1965.

CORKOR

For Combined Gasket Cement and Pipe Joint Sealer.
First use Aug. 16, 1965.

SN 229,922. National Alumiware Products Corp., New York, N.Y. Filed Oct. 8, 1965.

DIAMOND POINT

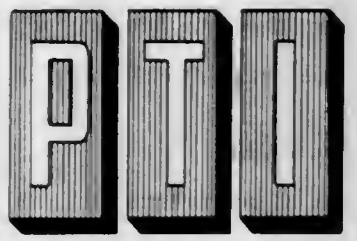
For Aluminum Self-Adhering Wall Tiles and Switch Plates.
First use Aug. 1, 1964.

SN 234,747. Gold Medal Family Pools, Inc., Edison, N.J. Filed Jan. 27, 1967.

GOLD MEDAL

For On-Ground Swimming Pools Comprising a Demountable Wood Frame and a Plastic Liner.
First use Apr. 22, 1966.

SN 235,935. Protective Treatments, Inc., Dayton, Ohio. Filed Jan. 6, 1966.



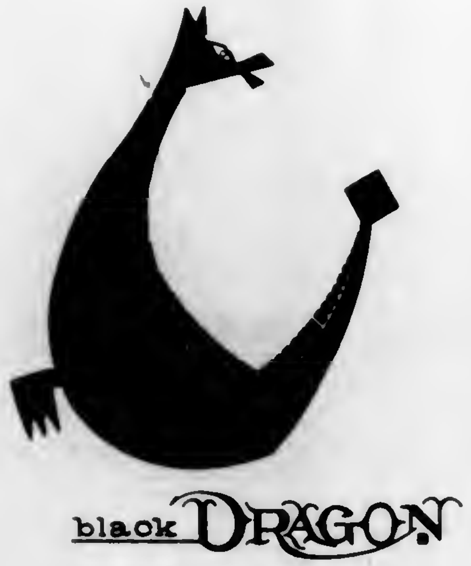
The mark is lined for the color red.
For Glazing Tape for Automotive and Building Construction Use.
First use on or about Dec. 3, 1965.

SN 236,133. P-C Western Chemicals, Inc., San Francisco, Calif. Filed Jan. 10, 1966.

P C/PROCO

For Concrete Treating Materials—Namely, Chlorinated Rubber Epoxy Concrete Treatment; Liquid Membrane Cure and Sealer; Patching Compound; and Chlorinated Rubber Epoxy Color Sealer.
First use Dec. 14, 1962.

SN 236,155. Sivad Ceramic Corp., Oak Hill, Ohio. Filed Jan. 10, 1966.



The word "Black" is disclaimed separate and apart from the design of the dragon as shown.
For Graphite Plastics and Coatings for Monolithic Refractory Linings.
First use Mar. 5, 1962.

SN 243,277. The J. G. Wilson Corporation, Norfolk, Va. Filed Apr. 12, 1966.

BANK GUARD

For Prefabricated Metal Slat Closures for Bank Teller Windows, Comprising a Hood, Roller Shutter, and Installation Accessories Sold as a Unit.
First use on or about Feb. 21, 1966.

SN 243,278. The J. G. Wilson Corporation, Norfolk, Va. Filed Apr. 11, 1966.

COUNTER FIRE

For Prefabricated, Metal Window-Like Slat Closures for Protection Against Fire, Comprising, a Frame, Rolling Shutter, and Accessories Necessary for Installation, Sold as a Unit.
First use on or about Feb. 24, 1966.

SN 243,831. Basic Incorporated, Cleveland, Ohio. Filed Apr. 20, 1966.

PROGRESS IS BASIC

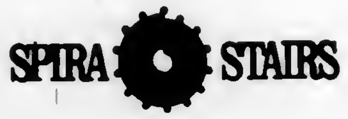
Owner of Reg. No. 746,780.
For Refractory Mixes and/or Shapes for Furnace Lining and Repairing.
First use Feb. 14, 1966.

SN 244,195. Crane Packing Company, Morton Grove, Ill. Filed Apr. 25, 1966.

THRED-TAPE

For Pipe-Joint Sealer in the Form of a Ribbon of Polytetrafluoroethylene.
First use Apr. 30, 1959.

SN 245,096. Pease Woodwork Company, Inc., Hamilton, Ohio. Filed May 6, 1966.



The word "Stairs" is disclaimed apart from the mark as shown.
For Prefabricated Stairways.
First use Apr. 21, 1966.

SN 247,827. Parkwood Laminates, Inc., Wakefield, Mass. Filed June 10, 1966.

PARKWOOD

For Laminated Plastic Boards and Sheets, and Plastic Impregnated Laminated Wood Board, Used as Decorative or Structural Surfacing Material on Furniture and All Interior Construction Applications; and Plastic Laminations for Industrial Applications.
First use at least as early as Apr. 3, 1937.

SN 248,482. Lake Chemical Co., Chicago, Ill. Filed June 20, 1966.

PIPETITE-STIK

For Pipe Joint Compound for Preventing Rusting.
First use October 1944.

SN 248,696. General Refractories Company, Philadelphia, Pa. Filed June 22, 1966.

GREFMAG

Owner of Reg. No. 690,071.
For Refractory Gunning Mix.
First use Feb. 10, 1966.

SN 249,950. The City Lumber Company of Bridgeport, Inc., Bridgeport, Conn. Filed July 11, 1966.

TRU-TECH

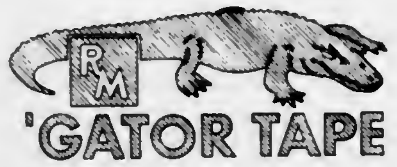
For Lumber.
First use Jan. 14, 1966.

SN 255,444. K-S-H Plastics, Inc., St. Louis, Mo. Filed Sept. 29, 1966.

AZTEC

For Decorative Plastic Panels.
First use June 12, 1966.

SN 259,990. Raybestos-Manhattan, Inc., Manheim, Pa. Filed Dec. 5, 1966.



The drawing is lined for green. Applicant disclaims the word "Tape" apart from the trademark as a whole.
For Protective Tape for Use in Wrapping Underground Cables.
First use Nov. 23, 1966.

SN 261,000. General Refractories Company, Philadelphia, Pa. Filed Dec. 19, 1966.

ARCOLOK

Owner of Reg. No. 534,889.
For Refractory Brick.
First use Nov. 11, 1965.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 245,156. Bridgeport Brass Company, Bridgeport, Conn. Filed May 9, 1966.

HOME-CRAFT

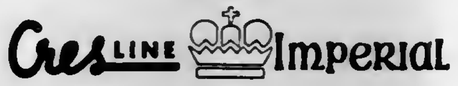
For Tubular Plumbing Supplies Including Traps, Sink Strainers, Sink Supply Lines, Toilet Tank Fittings, Showerheads, and Shower Curtain Rods.
First use Mar. 11, 1966.

SN 249,527. Gifford-Hill-Western, Inc., Lubbock, Tex. Filed July 5, 1966.

VANGUARD

For Plastic Underground Pipe.
First use Nov. 9, 1965.

SN 256,651. Crescent Plastics, Inc., Evansville, Ind. Filed Oct. 18, 1966.



Owner of Reg. No. 570,403.
For Plastic Pipe.
First use Mar. 24, 1966.

SN 258,300. Textron Inc., Providence, R.I. Filed Nov. 9, 1966.

TYGARD

For Preformed Helical Devices for Securing Cables and Electric Lines to Support Fittings.
First use June 7, 1962.

SN 258,643. Textron Inc., Providence, R.I. Filed Nov. 9, 1966.

TOP TIE

For Preformed Helical Devices for Securing Cables and Electrical Lines to Support Fittings.
First use Jan. 13, 1965.

Class 14 — Metals and Metal Castings and Forgings

SN 242,293. Toyo Kohan Co., Ltd., Chiyoda-ku, Tokyo, Japan. Filed Mar. 30, 1966.

Hi-Top

For Steel Sheets.
First use July 1951; in commerce April 1965.

SN 242,645. Phelps Dodge Refining Corporation, New York, N.Y. Filed Apr. 4, 1966.

PDRC

For Fire-Refined Copper.
First use Apr. 22, 1965.

SN 259,926. Kawecki Chemical Company, New York, N.Y. Filed Dec. 2, 1966.

TITAL

For Aluminum-Based Alloys.
First use Sept. 29, 1966.

Class 15—Oils and Greases

SN 247,270. Sun Oil Company, Philadelphia, Pa. Filed June 3, 1966.

SUNPAR

Owner of Reg. Nos. 548,922, 781,961, and others.
For Petroleum Oil for Plasticizing Rubber.
First use July 7, 1964.

SN 247,480. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Markers, Southern Pines, N.C. Filed June 7, 1966.

CATHEDRAL

For Candles.
First use at least as early as September 1962.

Class 16—Protective and Decorative Coatings

SN 222,953. Mobile Auto Cleaners, Inc., Timonium, Md. Filed July 8, 1965.

CAP-COTE

For Protective and Decorative Coating, Comprising a Lacquer Base, for Renewing Interior Surfaces of Vehicles, Rubber Mats, Furniture, and Woodwork.
First use Apr. 14, 1965.

SN 238,634. W. R. Grace & Co., New York, N.Y. Filed Feb. 11, 1966.

ENDCOR

For Resinous Coatings for Metal and Masonry Surfaces.
First use Sept. 24, 1965.

SN 248,174. Sterling Drug Inc., New York, N.Y. Filed June 15, 1966.

TRANS-OXIDE

For Pigments for Use in the Manufacture of Protective and Decorative Coatings.
First use May 16, 1966.

SN 248,765. American Art Clay Co., Inc., Indianapolis, Ind. Filed June 23, 1966.

POLYTEMPS

For Tempera Colors for Paper, Glass, Plastic and Clay.
First use Apr. 28, 1966.

Class 18—Medicines and Pharmaceutical Preparations

SN 232,021. E. R. Squibb & Sons, Inc., New York, N.Y., assignee of Olin Mathieson Chemical Corporation, New York, N.Y. Filed Nov. 2, 1965.

DEMASORB

For Dimethyl Sulfoxide Analgesic and Anti-Inflammatory Preparations or as a Vehicle for Other Medicaments.
First use Aug. 2, 1965.

SN 238,184. Divapharma Aktiengesellschaft, Zurich, Switzerland. Filed Feb. 7, 1966.

VITABIL

Owner of Swiss Reg. No. 142,789, dated June 13, 1952.
For Pharmaceutical Preparation for the Relief of Stomach Disturbances Such as Hyperacidity and Heartburn.

SN 239,651. Nephron Company, Tacoma, Wash. Filed Feb. 25, 1966.

NEPHRON

For Medicine for the Treatment of Bronchial Asthma and Hay Fever.
First use May 1, 1936.

SN 247,394. Onrig Chemical Corp., Sarasota, Fla. Filed June 6, 1966.

OVA-
NITE

For Soaking Solution for Contact Lenses.
First use June 1961.

SN 252,243. Beech-Nut Life Savers, Inc., d.b.a. Life Savers, New York, N.Y. Filed Aug. 12, 1966.

LIFE SAVER

Owner of Reg. Nos. 115,895 and 607,783.
For Antacid Preparation.
First use June 24, 1966.

SN 252,283. William H. Rorer, Inc., Fort Washington, Pa. Filed Aug. 12, 1966.

Quaālude

Owner of Reg. No. 810,378.
For Sedative-Hypnotic Tablets.
First use Aug. 2, 1966.

SN 253,064. Tarmac Products, Inc., New York, N.Y. Filed Aug. 24, 1966.

SANAFITIL

For Pharmaceutical Preparation for the Treatment of Athletes Foot, Herpes, Dry Eczema, and Mild Fungus Infection of the Skin.
First use June 1966.

SN 256,031. American Home Products Corporation, New York, N.Y. Filed Oct. 10, 1966.

GAMARIL

For Anaesthetic Adjunct.
First use Aug. 24, 1966.

Class 19—Vehicles

SN 230,181. Nissan Jidosha Kabushiki Kaisha, Kanagawa-ku, Yokohama, Japan. Filed Oct. 14, 1965.

PATROL

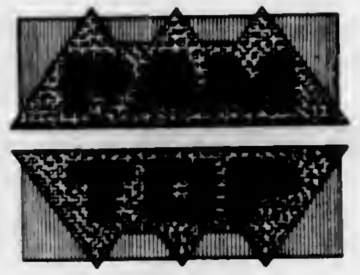
For Automobiles and Motor Road Trucks.
First use Sept. 1, 1951; in commerce Feb. 1, 1959.

SN 231,696. Newman Products, Chicago, Ill. Filed Oct. 27, 1965.

NICK STIX

For Detachable Bumpers for Car Body Panels Such as Doors, Fenders, and the Like.
First use Sept. 17, 1965.

SN 240,329. Pam Top Manufacturing Co., Inc., Portland, Oreg. Filed Mar. 7, 1966.



The drawing is lined for the colors yellow and red. Applicant disclaims the word "Top" as shown.
For Truck-Camper Tops and Trailer Tops.
First use Mar. 3, 1964.

SN 246,248. Atlas Juvenile Products, Inc., New York, N.Y. Filed May 23, 1966.

"WEATHER-GUARD"

For Baby Carriages, Strollers, Carriages Convertible to Car Beds, Beds and/or Strollers and Hoods for Use in Connection With Same.
First use Apr. 29, 1966.

SN 246,715. Persons-Majestic Mfg. Company, Worcester, Mass. Filed May 26, 1966.

ROAD RUNNER

For Bicycle Saddles.
First use Oct. 1, 1965.

SN 247,275. Utopia Coach Corp., Elkhart, Ind. Filed June 3, 1966.

UTOPIA
PAN-O-RAMIC

For Travel Trailers and Mobile Homes.
First use on or before Apr. 1, 1963.

SN 247,276. Utopia Coach Corp., Elkhart, Ind. Filed Apr. 20, 1966.

UTOPIA

For Travel Trailers and Mobile Homes.
First use on or before Apr. 1, 1963.

SN 250,577. D. P. Harris Hardware & Manufacturing Co., Inc., New York, N.Y. Filed July 19, 1966.

WATUSI

For Bicycles.
First use June 9, 1966.

Class 20—Linoleum and Oiled Cloth

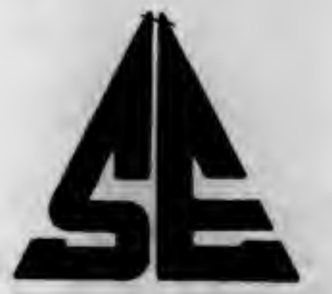
SN 227,837. The Flintkote Company, New York, N.Y. Filed Sept. 15, 1965.

Vintal

For Resilient Hard Surface Type Covering for Floors, Walls, etc.
First use July 21, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 218,494. Sprague Electric Company, North Adams, Mass. Filed May 10, 1965.



For Electronic Components—Namely, Electrical Delay Lines, Electrical Wave Filters, Coils, and Transformers.
First use Dec. 8, 1959.

SN 235,216. National Semiconductor Corporation, Danbury, Conn. Filed Dec. 23, 1965.

NSC

For Semiconductor Devices—Namely, Transistors, Diodes, and Semiconductor Switching Devices.
First use 1959.

SN 238,169. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Feb. 7, 1966.

ACRASET II

For Readout Instrument To Indicate Position of a Slide Member.
First use September 1965.

SN 238,188. Alfred Dunhill Limited, London, England. Filed Feb. 7, 1966.

DUNHILL

Owner of U.S. Reg. Nos. 155,951, 634,071, and others.
For Radios, Telephones, Flash Lights, Desk Lamps, Electrical Converters and Electrical Appliances—Namely, Bun Warmers, Cocktail Mixers, Coffee Makers, Lighters, and Portable Pants Pressers.
First use at least 1946; in commerce 1946.

SN 240,498. Battery Corporation of America, Fort Lauderdale, Fla. Filed Mar. 9, 1966.

MAG

For Dry Cell Batteries.
First use on or about Dec. 9, 1965.

Class 22 — Games, Toys, and Sporting Goods

SN 238,189. Alfred Dunhill Limited, London, England. Filed Feb. 7, 1966.

DUNHILL

Owner of U.S. Reg. Nos. 155,951, 634,071, and others.
For Playing Cards, Bridge Sets, Mahjong Sets, and Game Sets—Namely, Chess, Checkers, Backgammon, Dice, Poker Dice, and Roulette.
First use 1923, on playing cards, bridge sets and mahjong sets; in commerce 1923.

SN 240,448. Lark Toys, Inc., Freeport, N.Y. Filed Mar. 8, 1966.

LOVELY MISS

For Toys, in Particular Jewelry Sets, Purses, Vanity Sets, Combs, Fans, and Cosmetic Sets.
First use on or about Jan. 15, 1966.

SN 241,348. Lakeside Industries, Inc., Minneapolis, Minn. Filed Mar. 18, 1966.

Reflex

Owner of Reg. No. 798,773.
For Apparatus Sold as a Unit for Playing a Parlour Game To Test the Players' Reflexes.
First use on or about Feb. 23, 1966.

SN 242,336. Colt's Inc., Hartford, Conn. Filed Mar. 31, 1966.

HILBRE

The word "Hilbre" is a fanciful term.
For Arrowheads.
First use Mar. 25, 1966.

SN 243,793. Louis Marx & Co., Inc., New York, N.Y. Filed Apr. 19, 1966.

CHOP CHOP

For Toy Helicopters.
First use Mar. 1, 1966.

SN 243,908. Shakespeare Company, Kalamazoo, Mich. Filed Apr. 20, 1966.

Black Watch

For Sporting Goods—Namely, Golf Balls.
First use Jan. 21, 1966.

SN 243,909. Shakespeare Company, Kalamazoo, Mich. Filed Apr. 20, 1966.

GLASS-FLITE

For Sporting Goods—Namely, Golf Clubs.
First use Dec. 18, 1965.

SN 243,910. Shakespeare Company, Kalamazoo, Mich. Filed Apr. 20, 1966.

BLACK WATCH

For Sporting Goods—Namely, Golf Balls.
First use Jan. 21, 1966.

SN 243,929. The United States Playing Card Company, Cincinnati, Ohio. Filed Apr. 21, 1966.

RIDER

Owner of Reg. No. 52,026.
For Playing Cards.
First use July 1885.

SN 246,355. Pedigo Pork Rind Company, Inc., Bowling Green, Ky. Filed May 23, 1966.

SPINRITE

For Fish Bait and Fish Lures.
First use on or about Nov. 1, 1957.

SN 246,521. Tournament of Champions, Drexel Hill, Pa. Filed May 25, 1966.

SUPER DISTANCE

For Golf Glove.
First use Apr. 22, 1966.

SN 255,576. Mattel, Inc., Hawthorne, Calif. Filed Oct. 3, 1966.

Major MATT MASON

The mark is fictitious, and is not known to refer to any particular individual.
For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 19, 1966.

SN 260,207. Mattel, Inc., Hawthorne, Calif. Filed Dec. 7, 1966.

GANGLY DANGLIES

For Dolls, Doll Clothing, and Doll Accessories.
First use Nov. 14, 1966.

SN 260,211. Mattel, Inc., Hawthorne, Calif. Filed Dec. 7, 1966.

SNUGGLETALK

For Dolls, Doll Clothing, and Doll Accessories.
First use Nov. 14, 1966.

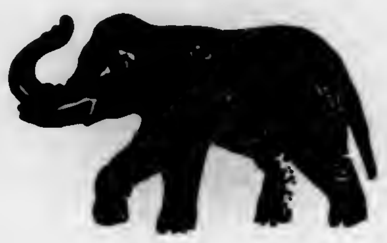
Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 218,704. Steel Storage Systems, Inc., Commerce City, Colo. Filed May 12, 1965.

ECONO-MATION

For Steel Racking Apparatus—Namely, Loaders and Hoists Suitable for Loading Channels, Bars, Pipes, and Other Shapes Into Racks.
First use Apr. 30, 1964.

SN 234,474. Sté Anonyme des Ets Thiers-Issard & Fils, Thiers, Puy-de-Dome, France. Filed Dec. 13, 1965.



For Knives.
First use Nov. 27, 1963; in commerce Nov. 27, 1963.

SN 234,943. Shur-Line Manufacturing Co., Inc., Lancaster, N.Y. Filed Dec. 20, 1965.

KLEEN-TRIM

For Painters' Trim Guard.
First use on or about Jan. 27, 1961.

SN 235,533. Sonic Engineering Corporation, Norwalk, Conn. Filed Dec. 29, 1965.

ROTOSONIC

For Machine for Homogenizing, Emulsifying, Mixing, and the Like.
First use Apr. 13, 1965.

SN 238,190. Alfred Dunhill Limited, London, England. Filed Feb. 7, 1966.

DUNHILL

Owner of U.S. Reg. Nos. 155,951, 634,071, and others.
For Knives, Carving Sets, Electric Razors, Tool Sets, Bottle Openers, Cork Screws, and Electrical Shoe Shiners.
First use 1928, on knives; in commerce 1928.

SN 239,324. S.K.B. Fabrique de Roulements Bienne S.A., Bienne, Switzerland. Filed Feb. 21, 1966.

RAX

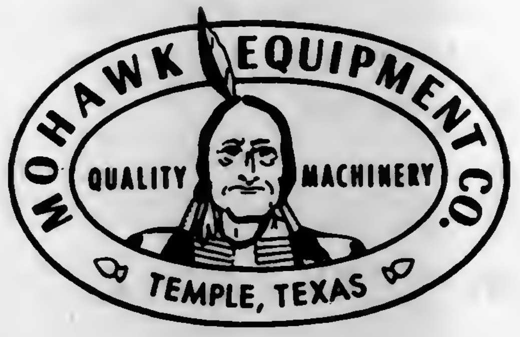
Priority claimed under Sec. 44(d) on Swiss application filed Sept. 1, 1965; Reg. No. 213,266, dated Sept. 1, 1965.
For Bearings and Bushings.

SN 242,608. Industrial Brush Company, Arcadia, Calif. Filed Apr. 4, 1966.

MILEMASTER

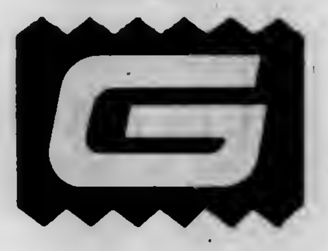
For Industrial Sweeper Brooms and Cores Therefor, for Use in Industrial and Road Areas.
First use May 10, 1963.

SN 243,155. Mohawk Equipment Company, Temple, Tex. Filed Apr. 11, 1966.



For Mechanized Rotary Brush and Weed Cutters of the Type Designed To Be Drawn by Farm Tractors, Tractor-Drawn Plant and Crop Cutters and Shredders, Plows Designed To Be Attached to or Drawn by Tractors, and Power-Take-Off Equipment for Tractors.
First use May 1958.

SN 243,516. A & A Manufacturing Company, Inc., Milwaukee, Wis. Filed Apr. 15, 1966.



Owner of Reg. No. 582,258.
For Bellows-Type Devices in the Form of a Telescopic Sleeve, Boot and Cover Made From Elastomer or Elastomer Coated Fabric Used as a Protective Cover Over Machine Members or as a Duct or a Flexible Connector.
First use Sept. 20, 1965.

SN 246,018. True Temper Corporation, Cleveland, Ohio. Filed May 19, 1966.

BRIAR EDGE

Owner of Reg. Nos. 164,880 and 398,379.
For Agricultural, Home and Industrial Hand Tools, Including Forks, Rakes, Hoes, Edgers, Trowels, Shears, Grass and Weed Tools, Cutters, Post Hole Diggers, Axes, Hatchets, Adzes, Scythes, Hooks, Machetes, Sledges, Picks, Mattocks, Hammers, Shovels, Spades and Scoops, and Repair Handles Therefor.
First use in or about September 1921.

SN 246,553. Gehl Bros. Manufacturing Company, West Bend, Wis. Filed May 25, 1966.

HAY-KING

For Agricultural Machinery—Namely, Swathers.
First use on or about May 14, 1966.

SN 246,907. Ideal Stencil Machine Company, Belleville, Ill. Filed May 31, 1966.

IDEALOGIC

Owner of Reg. Nos. 117,327 and 589,372.
For Tape Dispensing Machines.
First use Apr. 29, 1966.

SN 247,025. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed June 1, 1966.

THE FASHIONABLES

For Kitchen Cutlery and Stainless Steel Knives, Forks, and Spoons.
First use Apr. 14, 1966.

SN 247,026. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed June 1, 1966.

COUNTRY COLLECTION

For Kitchen Cutlery and Stainless Steel Knives, Forks, and Spoons.
First use Apr. 26, 1966.

SN 250,062. Wallace-Murray Corporation, New York, N.Y. Filed July 11, 1966.

TURBOCONVEYOR

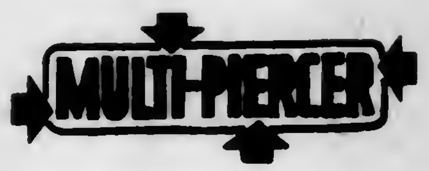
For Exhaust Gas Turbines for Use With a System That Conveys Bulk Material by Compressed Air.
First use Apr. 20, 1966.

SN 251,496. Timberjack Machines Limited, Woodstock, Ontario, Canada. Filed June 30, 1966.

MULTIJACK

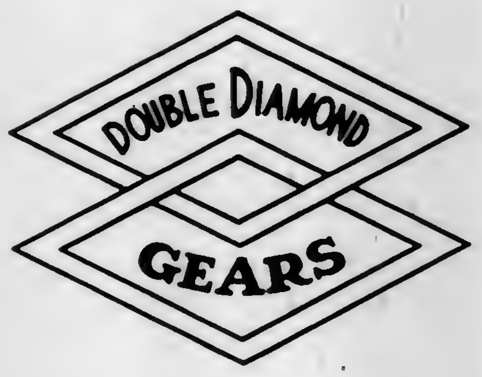
Owner of Canadian Reg. No. 140,663, dated June 4, 1965.
For Tractors With Utility Frames Built Onto the Rear To Take Various Choices of Equipment.

SN 257,879. Multi-Piercer Machine Co., Inc., Bridgeport, Conn. Filed Nov. 3, 1966.



For Piercing Machines for Working the Side Wall of Tubular Parts.
First use Sept. 29, 1966.

SN 258,015. Eaton Yale & Towne, Inc., Cleveland, Ohio. Filed Nov. 7, 1966.



Applicant disclaims any rights in the word "Gears" separate and apart from the mark as shown. Owner of Reg. No. 217,227.
For Gears—Namely, Automobile Gears and Shafting, Transmission Gears, Differential Gears, Pinions, Rear-Axle Gears, and Shafts.
First use about July 1941.

Class 26—Measuring and Scientific Appliances

SN 215,867. General Aniline & Film Corporation, New York, N.Y. Filed Apr. 6, 1965.

SPEED-X 'R'

For Automatic Photographic Machine for Developing X-Ray Film.
First use May 15, 1964.

SN 230,950. Thiokol Chemical Corporation, Bristol, Pa. Filed Oct. 21, 1965.

OPSCAN

For Optical Strain-Sensing Apparatus.
First use September 1965.

SN 234,392. Copia Manufacturing Corporation, Garden City, N.Y. Filed Dec. 13, 1965.

COPIA

Owner of Reg. No. 817,629.
For Electrostatic Copying Machines and Parts Thereof.
First use Sept. 24, 1965.

SN 235,024. Russell Wiles, Jr., d.b.a. Rig Products Company, Oregon, Ill. Filed Dec. 21, 1965.

EZE-SCORER

For Combination Magnifying Glass and Shot-Hole Gauge, Commonly Known as a Plug Scoring Bullet Gauge, for Determining the Value of a Rifle or Pistol Shot Which Has Pierced a Target Substantially Tangent to a Scoring Ring.
First use May 26, 1948.

SN 237,292. Barber-Colman Company, Rockford, Ill. Filed Jan. 26, 1966.

FLAME-EYE

Owner of Reg. No. 511,575.
For Radiation-Responsive Sensors Employed as Flame Scanners in Combustion Safeguard Systems.
First use at least as early as June 1940.

SN 238,131. Univis, Inc., Fort Lauderdale, Fla. Filed Feb. 4, 1966.

Owner of Reg. Nos. 634,562 and 638,020.
For Ophthalmic Lenses.
First use Jan. 3, 1951.

SN 238,980. Speedring Corporation, Warren, Mich. Filed May 27, 1966.

DIA-MET

For Workpiece Gaging Devices.
First use Feb. 8, 1966.

SN 240,164. Fisher Scientific Company, Pittsburgh, Pa. Filed Mar. 4, 1966.

DESICOOLER

For Desiccator.
First use May 10, 1938.

SN 240,283. The Electric Storage Battery Company, Philadelphia, Pa. Filed Mar. 7, 1966.

INDUSTRO-WELD

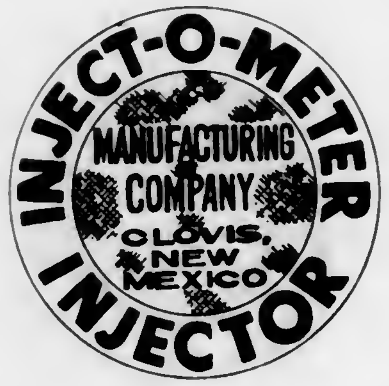
Owner of Reg. No. 514,112.
For Protection Glass Lenses for Welding Helmets and Handshields.
First use on or about Feb. 10, 1966.

SN 240,719. Harry A. Echols, d.b.a. Eppco, Houston, Tex. Filed Mar. 11, 1966.

CELVAC

For Cuvettes and Accessory Parts for Handling Liquid Samples in Various Laboratory Practices.
First use Aug. 10, 1965.

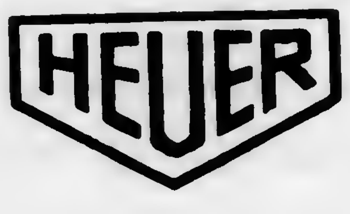
SN 250,623. Inject-O-Meter Injector Mfg. Company, Clovis, N. Mex. Filed July 20, 1966.



Applicant disclaims the word "Injector" and the words "Manufacturing Co., Clovis, New Mexico" which appear in the design of the circle. The applicant disclaims the orange color shown by lining in the drawing as an integral portion of the mark.
For Agricultural Chemical Measuring and Dispensing Machine for Adding and Measuring Fertilizer and Other Chemicals to Irrigation Water Systems.
First use on or before June 3, 1966.

Class 27—Horological Instruments

SN 242,601. Heuer-Leonidas S.A., Bienne, Switzerland. Filed Apr. 4, 1966.



For Clocks and Watches and Parts Thereof.
First use 1929; in commerce 1929.

Class 29—Brooms, Brushes, and Dusters

SN 232,464. Keystone Plastics, Inc., South Plainfield, N.J. Filed Nov. 10, 1965.

SPIREX

For Bristle Supporting Spirally Wound Channel Units for Mounting on Sweeper Broom Cores.
First use in or about January 1964.

SN 261,004. EZ Paintr Corporation, Milwaukee, Wis. Filed Dec. 19, 1966.

SPREAD-O-METER

For Paint Rollers.
First use Nov. 22, 1966.

Class 30—Crockery, Earthenware, and Porcelain

SN 238,193. Alfred Dunhill Limited, London, England. Filed Feb. 7, 1966.

DUNHILL

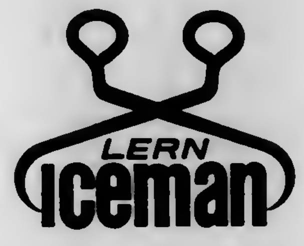
Owner of U.S. Reg. Nos. 155,951, 634,071, and others.
For Cups and Saucers, Creamers, Sugarers, Tea Pots and Coffee Pots, All Made of Crockery, Earthenware, or Porcelain.
First use at least since 1943, on china figurines; in commerce 1943.

SN 243,868. The Grindley Hotel Ware Company Ltd., Tunstall, Stoke-on-Trent, England. Filed Apr. 20, 1966.

Owner of British Reg. No. 732,014, dated July 9, 1954.
For Ceramic Tableware.
First use 1924; in commerce 1957.

Class 31—Filters and Refrigerators

SN 235,411. Lern, Inc., Chicago, Ill. Filed Dec. 28, 1965.



For Ice Making Machines.
First use April 1965.

SN 237,783. Amicon Corporation, Cambridge, Mass. Filed Feb. 2, 1966.

DIAFLO

For Ultrafiltration Membranes.
First use Jan. 26, 1966.

Class 32 — Furniture and Upholstery

SN 237,219. Norval Hinds, d.b.a. Bar-Quick Company, Greeley, Colo. Filed Jan. 25, 1966.

BAR QUICK

Applicant disclaims the word "Bar" apart from the mark as shown.
For Mobile Bar and Counter for Dispensing Beverages and the Like.
First use Nov. 15, 1965.

SN 238,194. Alfred Dunhill Limited, London, England. Filed Feb. 7, 1966.

DUNHILL

Owner of U.S. Reg. Nos. 155,951, 634,071, and others.
For Ashtray Stands, Bars, Book Cases, Book Ends, Desks, Globe Stands, Magazine Racks, Picture Frames, Serving Tables, Smokers' Cabinets, Umbrella Stands and Valets.
First use 1922 on smokers' cabinets; in commerce 1922.

SN 239,216. Bremshey & Co., Solingen-Ohligs, Germany. Filed Feb. 21, 1966.

VARIETT

Owner of German Reg. No. 780,611, dated Sept. 14, 1963.
For Furniture—Namely, Tables, Serving Carts, and Serving Trays.
First use May 11, 1964; in commerce Aug. 25, 1964.

SN 258,470. American Seating Company, Grand Rapids, Mich. Filed Nov. 14, 1966.

BETA II CLASSMATE

Owner of Reg. No. 632,676.
For Classroom Furniture, Specifically Chairs, Desks, Combination Chair-Desks, and Tablet Arm Chairs and Tables.
First use on or before Oct. 18, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 262,298. The Vulcan Radiator Company, Hartford, Conn. Filed Jan. 11, 1967.

RADI-VECTOR

Owner of Reg. No. 428,954.
For Finned Tube Type Radiators.
First use January 1946.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

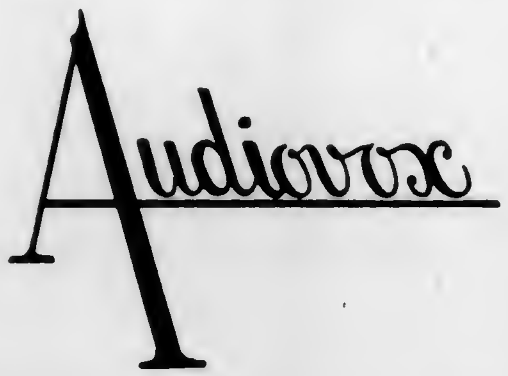
SN 240,174. Hercules Chemical Company, Inc., New York, N.Y. Filed Mar. 4, 1966.

TUFF-SEAL

For Joint Packing and Valve Packing.
First use Oct. 7, 1965.

Class 36 — Musical Instruments and Supplies

SN 233,885. Custom Imports, Inc., New York, N.Y. Filed Dec. 3, 1965.



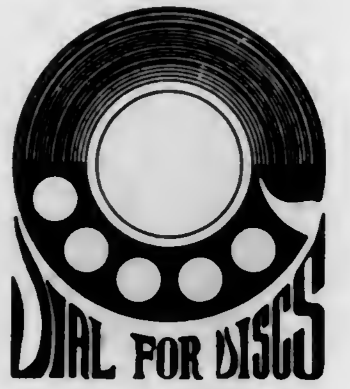
For Stereo Tape Players and Prerecorded Tapes.
First use Nov. 17, 1965.

SN 234,503. Belmar Products Corp., New York, N.Y. Filed Dec. 13, 1965.

SONOCAR

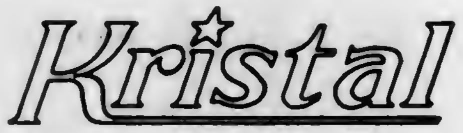
For Tape Cartridges and Playback Heads for Tape Recorders.
First use Dec. 9, 1965.

SN 234,902. Ralph S. Hodges, d.b.a. Dial for Discs, San Diego, Calif. Filed Dec. 20, 1965.



The word "Discs" is disclaimed apart from the mark as shown.
For Phonograph Records.
First use Nov. 8, 1965.

SN 235,524. Puchito Record Mfg. Co. Inc., Hialeah, Fla. Filed Dec. 29, 1965.



For Phonograph Records.
First use April 1964.

SN 237,061. David Wexler & Co., Chicago, Ill. Filed Jan. 21, 1966.

KING DAVID

Owner of Reg. No. 434,001.
For Musical Instrument Straps and Musical Instrument Lubricants.
First use August 1964.

Class 37 — Paper and Stationery

SN 227,595. Marsh Stencil Machine Company, Belleville, Ill. Filed Sept. 10, 1965.

PROJECT-A-MARK

For Felt Tip Markers.
First use Aug. 12, 1965.

SN 232,844. New England Envelope Manufacturing Company, Worcester, Mass. Filed Nov. 17, 1965.

MEMOCLIP

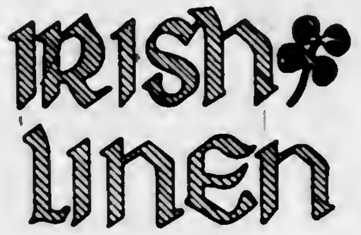
For Note Paper.
First use on or about Apr. 16, 1965.

SN 234,663. Oxford Paper Company, New York, N.Y. Filed Dec. 15, 1965.

STAR SAPPHIRE

Owner of Reg. No. 770,836.
For Coated Enamel Papers Used for Commercial Printing Purposes.
First use Aug. 26, 1965.

SN 235,152. American Paper & Plastic Products, Inc., Milwaukee, Wis. Filed Dec. 23, 1965.



The drawing is lined for green, but no claim is made to the color green as a feature of the mark. The word "Linen" is disclaimed apart from the mark as shown.
For Paper Napkins.
First use on or about Sept. 25, 1964.

SN 254,536. Albin B. Hammond, d.b.a. Hammond Business Forms, Roanoke, Va. Filed Sept. 15, 1966.

NOTE-WORTHY

For Business Forms.
First use Sept. 6, 1966.

SN 254,537. Albin B. Hammond, d.b.a. Hammond Business Forms, Roanoke, Va. Filed Sept. 15, 1966.

HALF-PENNY

For Business Forms.
First use Sept. 2, 1966.

SN 254,538. Albin B. Hammond, d.b.a. Hammond Business Forms, Roanoke, Va. Filed Sept. 15, 1966.

IBEX

For Business Forms.
First use Sept. 6, 1966.

SN 254,557. K.C. Pen Co., Inc., Brooklyn, N.Y. Filed Sept. 15, 1966.

TOPRITER

For Ball Point Pens and Refill Cartridges Therefor.
First use 1950.

SN 254,559. Puritan Stationery Company, Philadelphia, Pa. Filed Sept. 15, 1966.

SPOOKER

For Tablets of Writing Paper.
First use Sept. 1, 1966.

SN 254,621. Paper Mate Manufacturing Company, Santa Monica, Calif. Filed Sept. 16, 1966.

OPS 'N POPS

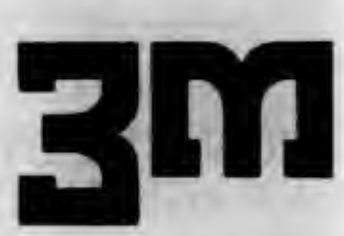
For Ball Point Pens.
First use Aug. 4, 1966.

SN 255,838. Wallace Business Forms, Inc., Chicago, Ill. Filed Oct. 5, 1966.

VISI-TINT

For Stock Computer Forms.
First use Dec. 15, 1965.

SN 258,960. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Nov. 18, 1966.



Owner of Reg. Nos. 647,089, 748,815, and 815,498.
For Gift Wrapping Paper.
First use July 15, 1966.

Class 38 — Prints and Publications

SN 233,386. Polar Metals, Incorporated, St. Louis, Mo. Filed Nov. 26, 1965.

THE POLARIZER

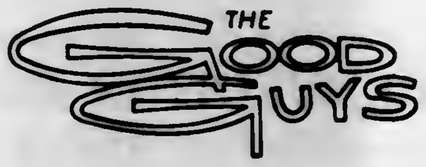
Owner of Reg. No. 797,952.
For Newsletter Relating to Corrosion Problems and the Control and Inhibition of Corrosion, Including the Electrolytic Control of Corrosion.
First use Sept. 22, 1964.

SN 244,513. Newspaper Enterprise Association, Inc., Cleveland, Ohio. Filed Apr. 28, 1966.

WINTHROP

For Comic Strip.
First use Feb. 27, 1966.

SN 244,514. Newspaper Enterprise Association, Inc., Cleveland, Ohio. Filed Apr. 28, 1966.



For Comic Strip.
First use Aug. 8, 1965.

SN 246,708. Modine Manufacturing Company, Racine, Wis. Filed May 26, 1966.

FIN'N TUBE

For House Organ.
First use July 1951.

SN 246,898. Fishing Gazette Publishing Corp., New York, N.Y. Filed May 31, 1966.

FISHING GAZETTE

Owner of Reg. No. 558,935.
For Trade Magazine.
First use 1934.

SN 246,962. Jessie Kahles Straut, Pearl River, N.Y. Filed May 31, 1966.

HAIRBREADTH HARRY

For Cartoon and Comic Strip.
First use 1907.

SN 254,018. McGraw-Hill, Inc., New York, N.Y. Filed Sept. 8, 1966.

CM—CONSTRUCTION MANAGEMENT

No registration rights are claimed in the words "Construction Management" apart from the mark as shown.
For Monthly Newsletter.
First use Dec. 4, 1964.

SN 257,007. The Conde Nast Publications Inc., New York, N.Y. Filed Oct. 24, 1966.

FASHIONABLY YOURS

For Column Syndicated to Newspapers.
First use April 1965.

Class 39 — Clothing

SN 231,481. J. C. Penney Company, New York, N.Y. Filed Oct. 23, 1965.

Suzy
Wells

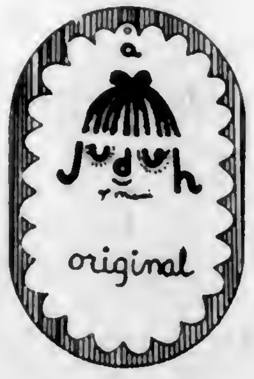
The name "Suzy Wells" is fictitious.
For Girls' Shoes and Underwear.
First use July 7, 1964.

SN 232,726. Sarong, Inc., Dover, Del. Filed Nov. 15, 1965.

PN PERFECTION FRONT

The exclusive use of the word "Front" is disclaimed apart from the mark as a whole. Owner of Reg. Nos. 154,641, 739,406, and others.
For Corsets.
First use Oct. 11, 1965.

SN 233,559. Judith of Miami, Inc., Miami, Fla. Filed Nov. 26, 1965.



The descriptive word "Original" and the geographical expression "of Miami" are disclaimed apart from the mark as shown.
For Children's Wear—Namely, Dresses, Blouses, Shorts, Slacks, and Bathing Suits.
First use Sept. 17, 1965.

SN 233,804. Lafeyette University Shop, Inc., Columbus, Ohio. Filed Dec. 2, 1965.

No claim is made to the words "The" and "Shop" apart from the mark as shown.
For Men's and Women's Clothing—Namely, Hosiery, Shirts, Suits, Sport Coats, Jackets, Dresses, Top Coats, Rain Coats, Sweaters, Trousers, and Slacks.
First use Oct. 2, 1961.

SN 233,951. Selden Manufacturing Corporation, New York, N.Y. Filed Dec. 3, 1965.

Robert
Franklin

The name "Robert Franklin" is fanciful.
For Boys' Shirts.
First use Dec. 10, 1961.

SN 235,074. Pat Niemi Mitchell, d.b.a. Pat Niemi Mitchell Studio, New York, N.Y. Filed Dec. 20, 1965.

"GAMMIT"

For Jacket.
First use Apr. 29, 1965.

SN 235,919. José María Masso Remiro, Barcelona, Spain. Filed Jan. 6, 1966.

TURBO

Owner of Spanish Reg. No. 295,401, dated Oct. 25, 1965.
For Water-Proof Knitted Isothermal and Elasticized Garments—Namely, Rubberized Suits for Water Skiing, Surfing and Underwater Fishing, and Bathing Suits.

SN 236,719. Rapid-American Corporation, New York, N.Y. Filed Jan. 18, 1966.

PPP
PREMINGER PERMANENT PRESS

The wording "Permanent Press" is disclaimed apart from the mark as shown.
For Men's and Boys' Outer Garments—Namely, Coats, Suits, Sport Coats, Jackets, Top Coats, Overcoats, Slacks, Trousers, and Vests.
First use Nov. 9, 1965.

SN 236,999. Jacques Isler Corporation, New York, N.Y. Filed Jan. 21, 1966.

MADRIGAL

For Hat Bodies and/or Hat Hoods.
First use Apr. 1, 1963.

SN 237,615. The Leon Godchaux Clothing Co., Ltd., New Orleans, La. Filed Jan. 28, 1966.

GODWIN

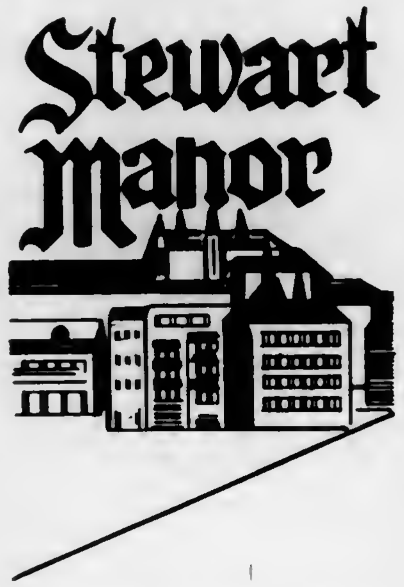
For Men's Dress and Sport Shirts.
First use Nov. 26, 1965.

SN 240,105. Masterbilt Foundations, Inc., Hackensack, N.J. Filed Mar. 3, 1966.

FORM-U-LACE

For Brassieres and Foundation Garments.
First use Feb. 10, 1966.

SN 240,177. I & S Sport Togs, Inc., Brooklyn, N.Y. Filed Mar. 4, 1966.



For Junior Sportswear—Namely, Skirts, Jackets, and Slacks.
First use Jan. 20, 1966.

SN 240,723. Fownes Brothers & Co. Incorporated, New York, N.Y. Filed Mar. 11, 1966.

LEATHER-BRITE

Applicant disclaims the exclusive right to the use of the word "Leather" apart from the mark as shown.
For Ladies' and Men's Leather Hand Gloves.
First use Mar. 1, 1966.

SN 241,036. Rapid-American Corporation, New York, N.Y. Filed Mar. 15, 1966.

BON TWISTER

For Men's and Boys' Outer Garments—Namely, Coats, Suits, Sport Coats, Jackets, Top Coats, Overcoats, Slacks, Trousers, and Vests.
First use Feb. 11, 1966.

SN 242,333. Rapid-American Corporation, New York, N.Y. Filed Mar. 31, 1966.

CENTURA 100

For Men's and Boys' Outer Garments—Namely, Coats, Suits, Sport Coats, Jackets, Top Coats, Overcoats, Slacks, Trousers, and Vests.
First use Feb. 11, 1966.

SN 242,393. S. Rudofker's Sons, Inc., Philadelphia, Pa. Filed Mar. 31, 1966.

AFTER SIX

Owner of Reg. Nos. 362,116, 793,331, and others.
For Hats, Shirts, Suspenders, Ties, Ascots, Gloves, Handkerchiefs, Top Coats, Belts, and Socks.
First use at least as early as 1947.

SN 242,616. Kureha Spinning Company, Limited, Higashi-ku, Osaka, Japan. Filed Apr. 4, 1966.

KUREPRESS

Owner of U.S. Reg. Nos. 223,201 and 223,246.
For Clothing for Men, Women, and Children—Namely, Suits, Uniforms, Jackets, Coats, Overcoats, Topcoats, Raincoats, Mantles, Sweaters, Vests, Collars, Sleeping Apparel, Bathrobes, Kimonos, Shirts, Slacks, Stockings, Gloves, Mufflers, Shawls, Hats, Ties, Caps, Skirts; Men's and Boys' Trousers; Women's Dresses, Foundation Garments, Chemises, Slips, Petticoats, Brassieres, Skirts, Blouses, Cuffs, Scarfs, Neckerchiefs, Night Caps, Skull Caps, and Handkerchiefs.
First use Feb. 10, 1965; in commerce June 1, 1965.

SN 243,010. Virginia P. Pawsey, West Hartford, Conn. Filed Apr. 8, 1966.

Kooker-Jak
by
Gib

For Youth's Sleeveless Jackets of Textile Material, Leather, etc.
First use Mar. 1, 1966.

SN 243,533. Bennett Sales Corporation, Gibsonville, N.C. Filed Apr. 15, 1966.

WANDA LEE

The name "Wanda Lee" is fanciful.
For Hosiery.
First use Oct. 24, 1962.

SN 243,681. The H. D. Lee Company, Incorporated, Shawnee Mission, Kans. Filed Apr. 18, 1966.

MERSEY TRIM

The word "Trim" is disclaimed apart from the mark as shown.
For Pants and Slacks.
First use Mar. 25, 1966.

SN 244,440. Mickey Thompson Enterprises, Inc., Long Beach, Calif. Filed Apr. 27, 1966.

BEWARE

For Wearing Apparel—Namely, Sweatshirts, T-Shirts, and Jackets.
First use Mar. 29, 1966.

SN 244,983. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed May 5, 1966.

WING FOOT

Owner of Reg. No. 127,406.
For Rubber or Composition Heels and Soles for Boots and Shoes.
First use Mar. 29, 1966.

SN 245,098. Perfect Garment Co., Inc., Baltimore, Md. Filed May 6, 1966.

Pege JUNIORS

Applicant disclaims the right to exclusive use of the word "Juniors" apart from the mark as shown.
For Junior Sportswear—Namely, Shorts, Jamaicas, Bermudas, Pedal Pushers, Pants, Blouses, Jackets, Tops, Skirts, Jumpers, Sweaters, Head Scarfs, and Kerchiefs.
First use Apr. 28, 1966.

SN 245,149. Baron Dino, Ltd., New York, N.Y. Filed May 9, 1966.

BD Baron-Dino

For Men's Knitted Sweaters and Sportshirts.
First use Apr. 30, 1964.

SN 245,613. Phil Rose of California, Inc., Los Angeles, Calif. Filed May 13, 1966.

FLEA MARKET SHIRT

No claim is made to the word "Shirt" apart from the mark as shown.
For Women's Sweaters and Shirts.
First use Apr. 21, 1966.

SN 245,697. Farah Manufacturing Company, Inc., El Paso, Tex. Filed May 16, 1966.

FaraPlaid

Applicant disclaims that portion of the mark "Plaid" apart from the mark as shown.
For Men's and Boys' Slacks and Shorts and Fabrics Sold Exclusively in the Form of Such Garments.
First use Apr. 17, 1962.

SN 245,698. Farah Manufacturing Company, Inc., El Paso, Tex. Filed May 16, 1966.

Master Weave

Without waiver of its common law rights, applicant disclaims the word "Weave" apart from the mark as shown.
For Men's and Boys' Slacks and Fabrics Sold Exclusively in the Form of Such Garments.
First use Apr. 1, 1966.

SN 246,076. M. I. Greisman & Son (Canada) Limited, Toronto, Ontario, Canada. Filed May 19, 1966.

GLOVE AFFAIRS

Applicant disclaims the right to the exclusive use of the word "Glove" apart from the mark. Owner of Canadian Reg. No. 144,592, dated Mar. 25, 1966.
For Gloves.

SN 246,932. Oceanic Properties, Inc., Honolulu, Hawaii. Filed May 31, 1966.

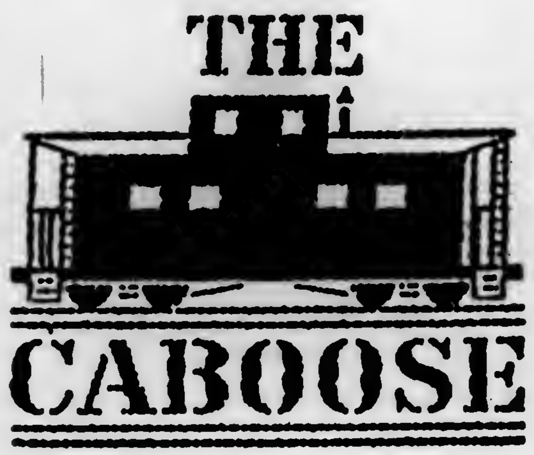
For Sweaters, Parkas, Sweat Shirts, Hats, Blouses, and Dresses.
First use April 1965.

SN 247,786. Dutchess Underwear Corporation, New York, N.Y. Filed June 10, 1966.

FUNDERWEAR

For Slips, Petticoats, Panties, and Ski Underwear.
First use on or about Apr. 18, 1966.

SN 248,420. Caboose Incorporated, Springfield, Ill. Filed June 20, 1966.



For Young Men's and Young Women's Outerwear—Namely, Suits, Sport Coats, Sweaters, Shirts, Trousers, Skirts, Ties, Belts, Socks, Sweat Shirts, and Blouses, But Excluding Shoes.
First use Mar. 29, 1966.

SN 248,887. Burlington Industries, Inc., New York, N.Y. Filed June 24, 1966.

Applicant disclaims the weave design apart from the mark as shown. Owner of Reg. Nos. 138,483, 504,523, and 740,085.
For Men's, Women's, and Children's Hosiery.
First use Apr. 26, 1966.

SN 249,162. Jantzen Inc., Portland, Oreg. Filed June 28, 1966.

POSTAGE STAMP

For Girdles.
First use 1950.

SN 249,331. Jacobs Brothers, Inc., Baltimore, Md. Filed June 30, 1966.

UNIFORMLY
YOURS

For Nurses' Uniforms and Maids' Dresses.
First use Mar. 10, 1937.

SN 249,632. Gant of New Haven, Inc., New Haven, Conn. Filed July 6, 1966.

GRAND DAD

For Outer Shirts and Blouses for Women and Young Women.
First use May 11, 1966.

SN 249,633. Gant of New Haven, Inc., New Haven, Conn. Filed July 6, 1966.

SHLIRT

For Outer Shirts and Blouses for Women and Young Women.
First use May 11, 1966.

SN 250,263. Ferrell Hosiery Mill, Inc., Graham, N.C. Filed July 14, 1966.

Sheerelle

For Hosiery.
First use June 9, 1966.

SN 250,390. Miss America Brassiere Company, Inc., Chicago, Ill. Filed July 15, 1966.

MissAmerica

Owner of Reg. Nos. 224,499, 660,389, and 768,211.
For Lingerie and Ladies' and Girls' Sportswear—Namely, Beachwear, Blouses, Shorts, and Slacks, Made From Textile Fabrics.
First use Aug. 14, 1940.

SN 250,776. Stanly Knitting Mills, Inc., Oakboro, N.C. Filed July 21, 1966.

STANDEL

For Ladies' Hosiery.
First use on or about Nov. 30, 1963.

SN 251,310. Kops Bros., Inc., New York, N.Y. Filed July 29, 1966.

BACK UNSEEN

Owner of Reg. No. 808,875.
For Women's Foundation Garments.
First use May 10, 1966.

Class 40—Fancy Goods, Furnishings, and Notions

SN 223,298. Fashion Tress, Inc., Miami Beach, Fla. Filed July 14, 1965.

CONTINENTAL

For Wigs and Wiglets.
First use Oct. 3, 1963.
Subj. to Intf. with SN 229,638.

SN 238,575. Sallee Imports, Inc., d.b.a. Sallee, Oakland, Calif. Filed Feb. 10, 1966.

CRESCENT

For Hair Pieces.
First use on or about Jan. 10, 1966.

Class 41 — Canes, Parasols, and Umbrellas

SN 238,197. Alfred Dunhill Limited, London, England. Filed Feb. 7, 1966.

DUNHILL

Owner of U.S. Reg. Nos. 155,951, 634,071, and others.
For Canes, Walking Sticks, Golf Seats, Umbrellas, and Golf Umbrellas.
First use 1923 on walking sticks; in commerce 1923.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 241,697. J. P. Stevens & Co., Inc., New York, N.Y. Filed Mar. 23, 1966.

STEVENSCARB

For Carbonized High Temperature Synthetic Fabrics Sold in the Bolt or by the Piece.
First use Mar. 14, 1966.

SN 241,698. J. P. Stevens & Co., Inc., New York, N.Y. Filed Mar. 23, 1966.

SINECURV

For Special Weave Fabrics of Glass, Carbon, Quartz, and other High Temperature Materials Sold in the Bolt or by the Piece.
First use Mar. 14, 1966.

SN 241,699. J. P. Stevens & Co., Inc., New York, N.Y. Filed Mar. 23, 1966.

TEXTICARB

For Carbon Fabrics Sold in the Bolt or by the Piece.
First use Mar. 14, 1966.

SN 241,700. J. P. Stevens & Co., Inc., New York, N.Y. Filed Mar. 23, 1966.

TEXTIGRAPH

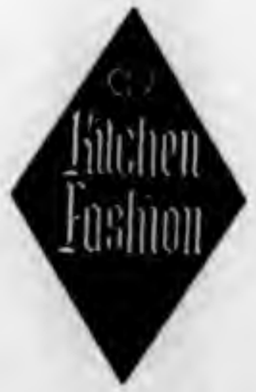
Owner of Reg. No. 584,144.
For Graphite Fabrics Sold in the Bolt or by the Piece.
First use Mar. 14, 1966.

SN 241,701. J. P. Stevens & Co., Inc. New York, N.Y. Filed Mar. 23, 1966.

STEVENSGRAPH

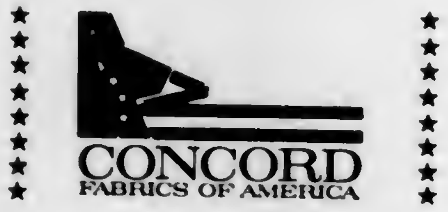
For Graphite Fabrics Sold in the Bolt or by the Piece.
First use Mar. 14, 1966.

SN 246,994. Barth & Dreyfuss of California, d.b.a. Barth and Dreyfuss, Los Angeles, Calif. Filed June 1, 1966.



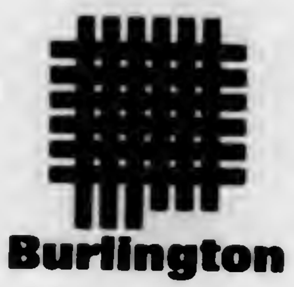
The drawing is lined for red, but no claim is made to a particular color.
For Towels.
First use Nov. 13, 1964.

SN 248,310. Concord Fabrics Inc., New York, N.Y. Filed June 17, 1966.



Applicant disclaims the words "Fabrics of America" apart from the mark as shown. Owner of Reg. Nos. 735,407 and 747,346.
For Textile Fabrics Made of Cotton and/or Synthetic Fibers, and Blends Thereof.
First use Aug. 15, 1965.

SN 248,891. Burlington Industries, Inc., New York, N.Y. Filed June 24, 1966.



Owner of Reg. Nos. 138,483, 504,523, and 740,085.
For Greige and Finished Fabrics in the Piece of All Types for Use in Men's, Women's, and Children's Apparel, in Home Furnishings, Carpets and Rugs, and in the Industrial Field.
First use Apr. 22, 1966.

SN 249,484. Anglo Fabrics Company, Inc., New York, N.Y. Filed July 5, 1966.

ANGLOSPUN

Owner of Reg. Nos. 430,051 and 636,015.
For Woolen and Worsted Piece Goods.
First use July 31, 1945.

SN 249,485. Anglo Fabrics Company, Inc., New York, N.Y. Filed July 5, 1966.

ANGLO-LOOMED

Owner of Reg. Nos. 430,052 and 636,015.
For Woolen and Worsted Piece Goods.
First use July 31, 1945.

SN 251,151. Princeton Knitting Mills, Inc., New York, N.Y. Filed July 27, 1966.

FRENCH BOY

For Fabrics Sold in the Piece and by the Yard, Made of Natural, Man-Made Fibers and of Special Blends for Making Wearing Apparel Such as Dresses, Suits, Slacks, Sweaters, Shirts, Swimwear, Undergarments, Linings, and Outerwear.
First use June 27, 1966.

SN 251,798. Colonial Process Supply Co., Inc., East Rutherford, N.J. Filed Aug. 5, 1966.

For Multifilament Polyester Fabric for Use in Silk Screen Printing.
First use June 27, 1966.

SN 257,834. Cooley, Incorporated, Pawtucket, R.I. Filed Nov. 3, 1966.

ARMOR GLASS

Applicant hereby disclaims exclusive use of the word "Glass" apart from the mark as shown. Owner of Reg. Nos. 679,353 and 797,529.
For Coated Fabrics Composed of Combined Glass and Organic Fibers for Making Into Waterproof Coverings.
First use October 1965.

Class 43 — Thread and Yarn

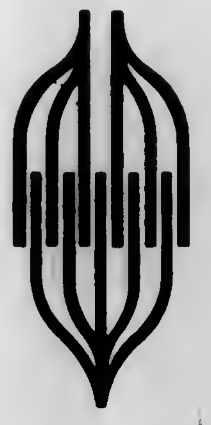
SN 238,981. Talon, Inc., Meadville, Pa. Filed Feb. 16, 1966.

TOP CORD

The word "Cord" is disclaimed apart from the mark as shown.
For Thread.
First use on or about Jan. 28, 1966.

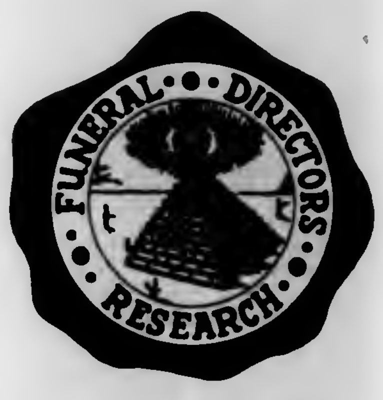
Class 44 — Dental, Medical, and Surgical Appliances

SN 240,919. Jobst Institute, Inc., Toledo, Ohio. Filed Mar. 14, 1966.



For Surgical Garments Involving Biomechanical Pressures —Namely, Surgical Supports, Elastic Stockings, Elastic Arm Bands, Elastic Leotards, Pneumatic Pressure Bandages, Pneumatic Pressure Garments, Pneumatic Pressure Bandage-Splints; Machines for Producing Intermittent Pressure in Pneumatic Pressure Garments, Surgical Clips, Tourniquets, and Surgical Chairs.
First use Nov. 15, 1965.

SN 244,618. Charles W. Rector, d.b.a. Funeral Directors Research, Olympia, Wash. Filed Apr. 29, 1966.



Applicant disclaims the words "Funeral Directors Research" apart from the mark as shown but without relinquishing any rights presently existing or which might hereafter arise in the disclaimed matter.
For Morticians' Supplies—Namely, Blocks for Support of Limbs, Necks, Etc., Calvarium Needles, and Natural Expression Formers.
First use Apr. 17, 1962.

SN 246,261. Natalie Brenner, Los Angeles, Calif. Filed May 23, 1966.

DERMA-VAC

For Adjustable, Power-Operated Facial Therapy Unit for Use by Professional Technicians and Embodying a Face-Engaging Vacuum Head That Is Moved Over the Facial Area in Administering the Therapy.
First use in about 1929.

SN 247,513. George L. Langdon, Newport Beach, Calif. Filed June 7, 1966.

BETTER BABY

For Nursing Bottles.
First use Aug. 16, 1921.

SN 257,134. D. Kaltman & Co., Inc., New York, N.Y. Filed Oct. 25, 1966.

CONTRACOIL

For Intrauterine Contraceptive Devices.
First use Oct. 5, 1966.

Class 45 — Soft Drinks and Carbonated Waters

SN 240,672. Stim Export Limited, London, England. Filed Mar. 10, 1966.

STIM

Owner of British Reg. No. B684,741, dated Dec. 14, 1949.
For Fruit Flavored Soft Drinks.

SN 242,431. Coca-Cola Bottling Company of Minnesota, Incorporated, Minneapolis, Minn. Filed Apr. 1, 1966.

TOM MOORE
FINE BEVERAGES

The words "Fine Beverages" are disclaimed apart from the mark as shown. "Tom Moore" is the nickname of "Thomas J. Moore," chairman of the board of applicant corporation, whose consent is of record. Owner of Reg. Nos. 633,260, 763,205, and 637,794.
For Carbonated Soft Drinks.
First use Feb. 18, 1966.

Class 46 — Foods and Ingredients of Foods

SN 213,471. The Pillsbury Company, Minneapolis, Minn. Filed Mar. 5, 1965.

HUNGRY JACK

Owner of Reg. No. 339,297.
For Refrigerated Dough Products—Namely, Biscuits.
First use Sept. 1, 1964.

SN 226,029. American Dairy Queen Corporation, Minneapolis, Minn. Filed Aug. 19, 1965.

DQ

For Toppings for Ice Cream and Ice Milk—Namely, Vanilla, Chocolate, Butterscotch, and Fruit Flavored Syrups; Malt and Syrup Bases for Ice Cream and Ice Milk Drinks; Sundaes, Sodas, and Malts.
First use Aug. 1, 1955.

SN 231,162. F. Price Merrels, d.b.a. Merrels Processed Meats, Bethesda, Md. Filed Oct. 22, 1965.

FREEZSEAR

For Frozen Hamburger Patties.
First use June 30, 1964.

SN 232,567. The Lexington Company, Inc., Orangeburg, S.C. Filed Nov. 12, 1965.

Mrs. Hane's

For Green Tomato Relish, Hot Cherry Peppers, Pickles, Hot Pepper Sauce, Onion Relish, Artichoke Relish, Tomatoes, and Vinegar.
First use 1918.

SN 233,620. Milani Foods, Inc., Los Angeles, Calif. Filed Nov. 30, 1965.

Milani
PREMIUM PACK

Without waiving its common law rights, and for the purposes of this application only, applicant makes no claim to the words "Premium Pack" apart from the mark as a whole. Owner of Reg. Nos. 637,800, 811,435, and others.
For Dry Soup Bases.
First use July 29, 1964.

SN 233,894. General Foods Corporation, White Plains, N.Y. Filed Dec. 3, 1965.

D-ZERTA

Owner of Reg. Nos. 175,564 and 772,439.
For Whipped Topping Mix for Use in Connection With Desserts.
First use Aug. 15, 1965.

SN 237,158. Rickel, Inc., Kansas City, Co. Filed Jan. 24, 1966.

FEATHERED FRIENDS

For Wild Bird Feed Comprising a Mixture of Grain and Sunflower Seeds.
First use Dec. 21, 1965.
Subj. to Intf. with SN 237,284.

SN 237,284. Agway, Inc., Syracuse, N.Y. Filed Jan. 26, 1966.

FEATHERED FRIEND

For Wild Bird Food Consisting of Sunflower Seed in Combination With Other Seeds and Grains.
First use Dec. 19, 1962.
Subj. to Intf. with SN 237,158.

SN 238,355. Just Born, Inc., Bethlehem, Pa. Filed Feb. 8, 1966.

JIMMIES

For Chocolate Decorative Particles.
First use Dec. 31, 1940.

SN 239,301. North American Food Service Corporation, Chicago, Ill. Filed Feb. 21, 1966.

SNOW HOST

For Frozen Potatoes, Frozen and Canned Vegetables, Frozen and Canned Fruits, Frozen Fish, Frozen Shellfish, Frozen or Canned Fruit Juice Concentrate, and Frozen Dinners, the Principal Ingredients of Which Constitute Chicken, Shrimp, Turkey, Beef, Ham, Chop Suey, and Chow Mein.
First use Dec. 27, 1965.

SN 240,641. Oberto Sausage Co., Seattle, Wash. Filed Mar. 10, 1966.

SMOK'A'RONI

For Smoked Sausage Sticks.
First use on or about Sept. 29, 1965.

SN 240,689. White-Stokes Company, Inc., Chicago, Ill. Filed Mar. 10, 1966.

DEXTRI-FOND

For Fondant or Icing Base.
First use Dec. 17, 1965.

SN 240,746. Lakeville Creameries, Inc., Lakeville, Minn. Filed Mar. 11, 1966.

CHANGE

For Flavored Milk Drink.
First use Aug. 9, 1965.

SN 240,811. United Biscuit Company of America, Melrose Park, Ill. Filed Mar. 11, 1966.

DOUBLOONS

For Cookies.
First use Jan. 22, 1966.

SN 242,647. Philadelphia Chewing Gum Corporation, Havertown, Pa. Filed Apr. 4, 1966.

MAGIC FLAVORS

Applicant disclaims the word "Flavors" apart from the mark as shown. Owner of Reg. No. 689,189 and others.
For Chewing Gum.
First use Jan. 4, 1965.

SN 242,822. International Salt Company, Clarks Summit, Pa. Filed Apr. 6, 1966.

THE STERLING YOU USE EVERY DAY

For Table Salt.
First use on or about Jan. 15, 1966.

SN 242,845. Ralston Purina Company, St. Louis, Mo. Filed Apr. 6, 1966.

ROUND-UP

For Dog Food.
First use Mar. 21, 1966.

SN 242,914. Peter Paul, Inc., Naugatuck, Conn. Filed Apr. 7, 1966.

TAKE 5

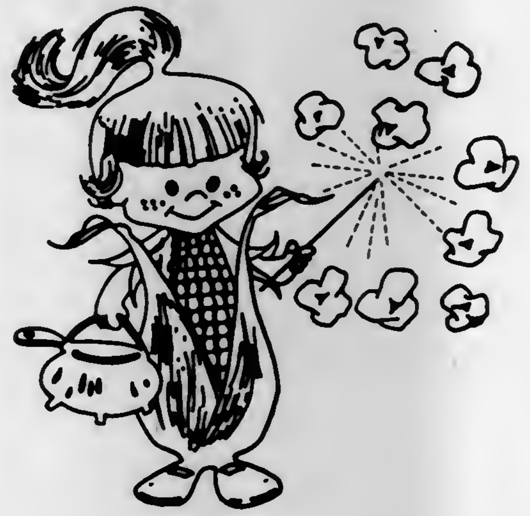
For Candy.
First use Mar. 15, 1966.

SN 243,411. Community Shops, Inc., d.b.a. Community Bakeries. Filed Apr. 14, 1966.

PARK AVENUE

For Cake.
First use in or about August 1957.

SN 243,733. Topsy's International, Inc., Kansas City, Mo. Filed Apr. 18, 1966.



For Popcorn.
First use during April 1965.

SN 243,898. Reedville Oil & Guano Company, Inc., Baltimore, Md. Filed Apr. 20, 1966.

SOLUSOY

For Fish Solubles for Use as Ingredients of Poultry and Swine Feeds.
First use Feb. 17, 1966.

SN 246,925. National Dairy Products Corporation, Chicago, Ill. Filed May 31, 1966.

PLACTO

For Acid Whey Powder.
First use May 6, 1966.

SN 246,985. Humble Oil & Refining Company, Houston, Tex. Filed June 1, 1966.

PROTECEL

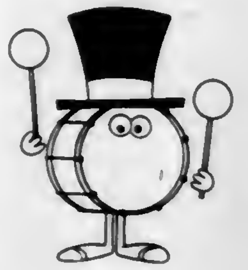
For Protein Food Supplement for Use as an Ingredient in Foods.
First use Apr. 28, 1966.

SN 247,022. Geo. A. Hormel & Company, Austin, Minn. Filed June 1, 1966.

CORETRATE

For Gelatin Mix.
First use Dec. 19, 1963.

SN 247,637. Spangler Candy Company, Bryan, Ohio. Filed June 8, 1966.



For Candy.
First use on or about Mar. 1, 1966.

SN 248,388. Burger Chef Systems, Inc., Indianapolis, Ind. Filed June 20, 1966.

BIG SHEF

For Ready-To-Eat Hamburger Sandwiches.
First use May 1, 1965.

SN 250,893. Cream Products Company, Inc., Cicero, Ill. Filed July 25, 1966.

DIPPIT

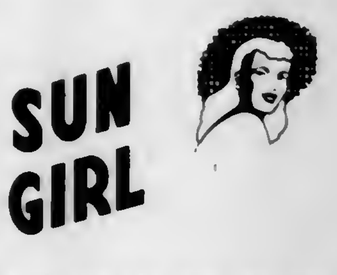
For Sour Non-Dairy Food Product for Use as a Dip, as a Dressing for Salads and Baked Potatoes, and in Sauces.
First use on or about June 13, 1966.

SN 256,497. Olympia Growers, Incorporated, Los Angeles, Calif. Filed Oct. 17, 1966.

MT. OLYMPUS

For Frozen Vegetables.
First use Oct. 26, 1965.

SN 257,739. Fine Foods, Inc., Seattle, Wash. Filed Nov. 2, 1966.



Owner of Reg. Nos. 588,979, 640,198, and 722,295.
For Fresh Apples and Fresh Dates.
First use 1946 or earlier.

SN 260,511. Kellogg Company, Battle Creek, Mich. Filed Dec. 12, 1966.

KEL-CENTRATE

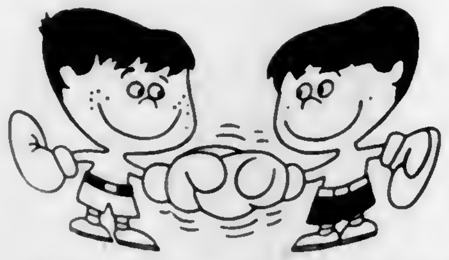
Owner of Reg. Nos. 415,047, 780,162, and others.
For Animal Feed, Particularly for Mink and Other Fur-Bearing Animals.
First use May 1, 1962.

SN 260,624. The Quaker Oats Company, Chicago, Ill. Filed Dec. 13, 1966.

Q

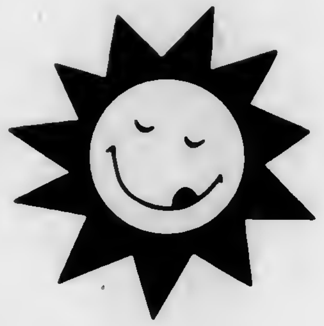
Owner of Reg. Nos. 384,811 and 716,944.
For Baking Mixes for Making Pancakes, Pastries, Cakes, Cookies, Doughnuts, Breads, Rolls, Biscuits, Muffins and the Like; and Cooked and Uncooked Breakfast Food Cereals.
First use Aug. 4, 1959 on pancake mix.

SN 261,421. Kellogg Company, Battle Creek, Mich. Filed Dec. 27, 1966.



For Cereal-Derived Food Product To Be Used as Breakfast Food, Snack Food and Confection.
First use at least as early as May 1, 1966.

SN 261,422. Kellogg Company, Battle Creek, Mich. Filed Dec. 27, 1966.



For Cereal Breakfast Foods.
First use Feb. 23, 1965.

SN 261,428. Kellogg Company, Battle Creek, Mich. Filed Dec. 27, 1966.

THE SMACKIN' BROTHERS

For Cereal-Derived Food Product To Be Used as a Breakfast Food, Snack Food, and Confection.
First use at least as early as May 1, 1966.

Class 47 — Wines

SN 247,342. Eastern Wine Corporation, New York, N.Y. Filed June 6, 1966.

CHATEAU MARTIN

For Wines.
First use about Dec. 31, 1933.

SN 248,485. Lekas & Drivas, Inc., Brooklyn, N.Y. Filed June 20, 1966.

Fort Lee

Owner of Reg. No. 532,895.
For Wine.
First use Dec. 15, 1964.

SN 249,165. Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt, Suider Paarl, Cape Province, Republic of South Africa. Filed June 28, 1966.

DIAMOND KEY

Owner of South African Reg. No. 64/4,847, dated Dec. 21, 1964.
For Wines.

SN 249,166. Ko-Operatieve Wijnbouwers Vereniging Van Zuid-Afrika Beperkt, Suider Paarl, Cape Province, Republic of South Africa. Filed June 28, 1966.

CORNER HOUSE

Owner of South African Reg. No. 64/3,657, dated Sept. 21, 1964.
For Wines.

Class 49 — Distilled Alcoholic Liquors

SN 233,722. Charles N. May & Company, Chicago, Ill. Filed Dec. 1, 1965.

CHARMÉ

The French word "Charmé" means "charm," "spell," "enchantment," "attraction."
For Brandy.
First use February 1956.

Class 50 — Merchandise Not Otherwise Classified

SN 234,206. Paul Kolozsvari, Manhattan Beach, Calif. Filed Dec. 8, 1965.

SWING ALONG

For Necktie Hangers.
First use Sept. 25, 1965.

SN 254,065. Raygold Industries Inc., Lindenhurst, N.Y. Filed Sept. 8, 1966.

alvinite
RAYGOLD

For Decorative Plastic Covering for Kitchen and Bathroom Cabinets.
First use June 1, 1966.

SN 261,265. Binney & Smith Inc., New York, N.Y. Filed Dec. 22, 1966.

Panorama

For Artists' Oil Painting Sets, Comprising Oil Colors, Brushes, Mediums Used To Extend Artists' Paints, viz, Linseed Oil and Turpentine; a Palette, Self-Teaching Color Mixing Guide and Instruction Folder.
First use Sept. 22, 1966.

Class 51 — Cosmetics and Toilet Preparations

SN 217,439. Avon Products, Inc., New York, N.Y. Filed Apr. 27, 1965.

AVON FLUFF

Owner of Reg. Nos. 204,936, 790,101, and others.
For Bath Powder, Facial Cream, Facial Mask, and Cream Foundation Make-Up.
First use Apr. 6, 1965.

SN 222,460. John H. Breck, Inc., Springfield, Mass. Filed July 1, 1965.

SILVERLIGHT

For Hair Coloring Preparation.
First use June 15, 1965.

SN 222,461. John H. Breck, Inc., Springfield, Mass. Filed July 1, 1965.

SATIN COLOR

For Hair Coloring Preparation.
First use June 15, 1965.

SN 222,462. John H. Breck, Inc., Springfield, Mass. Filed July 1, 1965.

SATIN QUICK

For Hair Coloring Preparation.
First use June 15, 1965.

SN 222,651. John H. Breck, Inc., Springfield, Mass. Filed July 6, 1965.

SILVER TRESS

For Hair Coloring Preparation.
First use June 15, 1965.

SN 222,652. John H. Breck, Inc., Springfield, Mass. Filed July 6, 1965.

SUDDENLY SILVER

For Hair Coloring Preparation.
First use June 15, 1965.

SN 244,655. Louis Bender, d.b.a. Elbee Sales Co., Westfield, N.J. Filed May 2, 1966.

DRI-SHOWER

For Body Deodorant.
First use Mar. 15, 1966.

SN 244,987. Hazel Bishop Inc., Union, N.J. Filed May 5, 1966.

PLUS WHITE

Owner of Reg. No. 743,556.
For Dentifrices.
First use July 10, 1961.

SN 246,873. Hazel Bishop Inc., Union, N.J. Filed May 31, 1966.

POWER PLUS

For Denture Cleanser.
First use Apr. 11, 1966.

SN 249,076. Sarong, Inc., Dover, Del. Filed June 27, 1966.

BODY VELVET

The exclusive use of the word "Body" is disclaimed apart from the mark as a whole.
For Body Powder, Talcum Powder, Deodorant, Body Moisturizer, Body Refresher, and Body Lotions.
First use June 24, 1966.

SN 249,958. Cosma-Droga G.m.b.H., Baden-Baden, Germany. Filed July 11, 1966.

COSMA
DROGA.
GMBH

For Cosmetics and Preparations for the Care of the Skin.
First use January 1964; in commerce May 1965.

SN 255,393. Harriet Hubbard Ayer, Inc., New York, N.Y. Filed Sept. 29, 1966.

AYER DRY

No claim is made to the word "Dry" apart from the mark. Owner of Reg. Nos. 427,038 and 615,451.
For Deodorant and Anti-Perspirant.
First use Jan. 2, 1945.

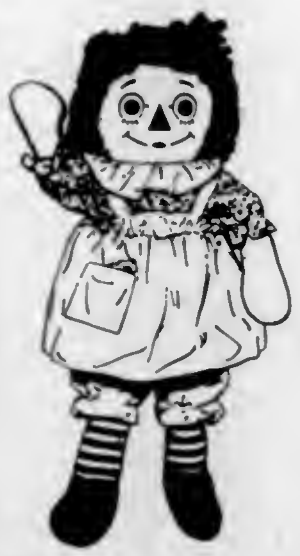
Class 52 — Detergents and Soaps

SN 249,338. Lazarus Laboratories, Inc., Long Island City, N.Y. Filed June 30, 1966.

RIDSTONE

For Liquid Acid Cleaner.
First use May 23, 1966.

SN 251,408. Faultless Starch Company, Kansas City, Mo. Filed Aug. 1, 1966.



For Laundry Detergent.
First use June 23, 1966.

SN 251,409. Faultless Starch Company, Kansas City, Mo. Filed Aug. 1, 1966.

RAGGEDY ANN'S

For Laundry Detergent.
First use June 23, 1966.

SN 255,854. S. C. Johnson & Son, Inc., Racine, Wis. Filed Oct. 6, 1966.

COME CLEAN

No rights are claimed under this registration in the term "Clean" apart from the mark "Come Clean."
Cleaning Preparation and/or Disinfecting Preparation for Use on Floors, Walls, Cabinets, Appliances, Fixtures, and So Forth.
First use Sept. 13, 1966.

SN 259,381. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed Nov. 25, 1966.

PUFT-BORAX

The word "Borax" is disclaimed apart from the mark as shown.
For Preparation for Cleaning Walls, Porcelain Enamel, and Other Hard Surfaces, and for Use as a Laundry Additive for Soaking and Whitening Purposes.
First use Oct. 26, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 184,563. Fernand Aubry, Paris, Seine, France. Filed Jan. 14, 1964.

VISAGISTE

Owner of French Reg. No. 514,789, dated July 12, 1963 (Seine); Natl. Inst. No. 208,904; and U.S. Reg. No. 685,657.
For Beauty Parlor Services.

SN 184,564. Fernand Aubry, Paris, Seine, France. Filed Jan. 14, 1964.

VISAGISME

Owner of French Reg. No. 514,790, dated July 12, 1963 (Seine); Natl. Inst. No. 208,905.
For Beauty Parlor Services.

SN 212,619. J. Richard Williams, d.b.a. Friendship Inns of America, Salt Lake City, Utah. Filed Feb. 23, 1965.

FRIENDSHIP INNS

No claim is made to the word "Inns," except in connection with the mark as shown.
For Providing Public Accommodations in Motor Lodges, Hotels, and Motels.
First use at least as early as Oct. 30, 1964.

SN 231,154. The Little Mint, Incorporated, Greenville, N.C. Filed Oct. 22, 1965.

LITTLE MINT

For Services Incident to the Operation of Drive-In Restaurants.
First use Jan. 4, 1964.

SN 235,056. Verstand Engineering, Inc., Madison Heights, Mich. Filed Dec. 17, 1965.

Σ

For Engineering Services—Namely, Related to Industrial Manufacturing, General Research, Sales, Service Engineering, Consultation, Business Systems Engineering, Product Development and Manufacture, Land Development, Process Development, Proposal Drawing, Cost Estimating, Estimate Specification Writeup, Mechnical Design, Layout Engineering, Detail Engineering, Design Checking, Machine Design, Tool Design, Gauge Engineering, Fixture Engineering, Die Design, Plant Engineering, Lubrication Engineering, Package Engineering, and Blue Print Service.
First use Apr. 19, 1961.

SN 236,534. W. T. Grant Company, New York, N.Y. Filed Jan. 14, 1966.

BRADFORD ROOM

Owner of Reg. Nos. 767,549, 775,673, and others.
For Restaurant Services.
First use Aug. 6, 1964.

SN 237,457. Knott Hotels Corporation, New York, N.Y. Filed Jan. 27, 1966.

WESTBURY

For Hotel, Restaurant, and Bar Services.
First use Mar. 2, 1953.

SN 240,298. Hickory House Motel Enterprises, Inc., Poplar Bluff, Mo. Filed Mar. 7, 1966.

Hickory House
MOTOR
INN
FINE FOOD · DRINK
& LODGING

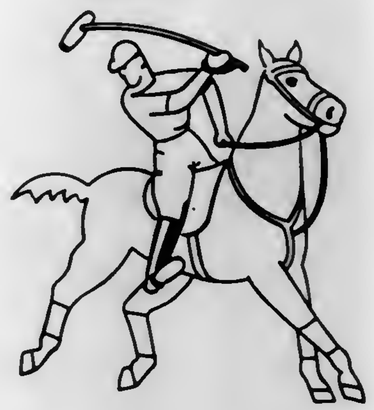
All of the wording of the mark, except the word "Hickory," is disclaimed apart from its relationship to the mark. Owner of Reg. No. 774,280.
For Complete Motor Hotel Service to the Traveling Public.
First use on about Dec. 1, 1965.

SN 242,697. Mortyn K. Zietz, d.b.a. Mortyn Associates, Providence, R.I. Filed Apr. 4, 1966.

DINE OUT INN

The word "Inn" is disclaimed separate and apart from the mark as shown.
For Food Catering Services.
First use on or about Mar. 29, 1966.

SN 245,659. Knott Hotels Corporation, New York, N.Y. Filed May 16, 1966.



For Bar and Restaurant Services.
First use Mar. 2, 1953.

SN 254,092. Royal Castle System, Inc., Miami, Fla. Filed Sept. 9, 1966.

ROYAL
CASTLE

Owner of Reg. Nos. 760,398 and 817,080.
For Walk-In, Drive-In, and Carry-Out Restaurant Service.
First use Mar. 18, 1938.

Class 101 — Advertising and Business

SN 190,398. Luce-Romeike Press Clipping Service, Topeka, Kans. Filed Apr. 6, 1964.

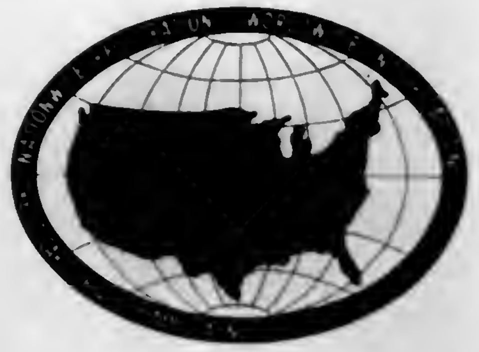
LUCE-ROMEIKE

For Press Clipping Services.
First use Nov. 24, 1963; 1881 as to "Romeike"; 1888 as to "Luce."

SN 230,901. Robosonics, Inc., Bronx, N.Y. Filed Oct. 21, 1965.

For Telephone Answering Apparatus Which Automatically Answers the Phone, Gives Callers Personal Messages, and Records Incoming Messages.
First use Sept. 20, 1965.

SN 232,532. Credit Card Service of America, Inc., Chicago, Ill. Filed Nov. 12, 1965.



The words "Nationwide Registration" and "Worldwide Notification" are disclaimed apart from the composite mark and without waiving any common law rights.
For Registering of Credit Credentials in Order To Notify All Listed Issuers of Same of Loss or Theft.
First use Oct. 12, 1965.

SN 239,486. Bennett Brothers, Inc., New York, N.Y. Filed Feb. 24, 1966.

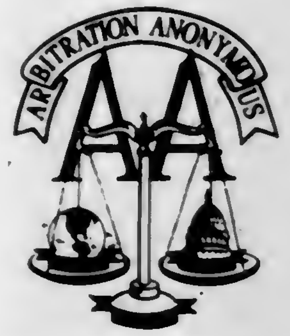
BENNETT

For Wholesale and Retail Mail Order Services and Wholesale and Retain Store Services in the Field of General Merchandise.
First use Sept. 1, 1909.

SN 239,944. William G. Sloan, d.b.a. Auditron, Riverside, Calif. Filed Mar. 1, 1966.

For Bookkeeping, Accounting, and Tax Services.
First use Feb. 1, 1962.

SN 242,656. Leo Potishman, d.b.a. Arbitration Anonymous, Fort Worth, Tex. Filed Apr. 4, 1966.



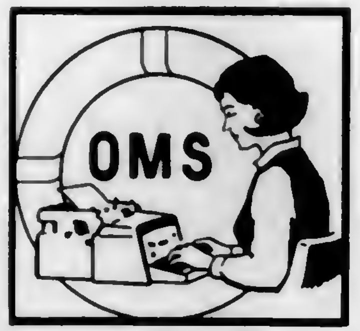
The descriptive words "Arbitration," "Speed," "Economy," and "Justice," are disclaimed apart from the mark as shown.
For Arbitration of Business and Legal Controversies Arising Between Individuals, Companies, Labor and Management, and Disputants in All Types of Controversies Having Capabilities of Settlement Without Litigation.
First use Jan. 1, 1966.

SN 243,655. Thomas A. Faulhaber, d.b.a. Medifile, Boston, Mass. Filed Apr. 18, 1966.

MEDIFILE

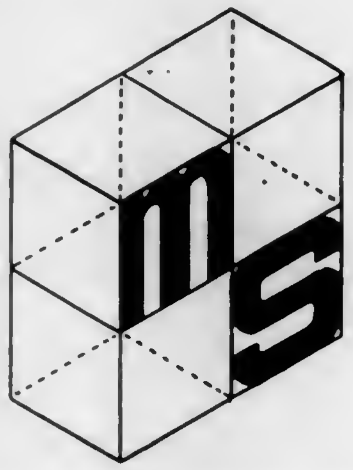
For Compiling and Maintaining Comprehensive Medical Records or Histories for Others.
First use at least as early as Apr. 12, 1966.

SN 245,221. Office Management Services, Incorporated, Hartford, Conn. Filed May 9, 1966.



For Supplying Temporary Office Personnel.
First use Apr. 19, 1966.
Subj. to Intf. with SN 249,591.

SN 249,591. Statistical Tabulating Corporation, Chicago, Ill. Filed July 5, 1966.



For Supplying Temporary Help for Office and Clerical Work.
First use Apr. 1, 1966.
Subj. to Intf. with SN 245,221.

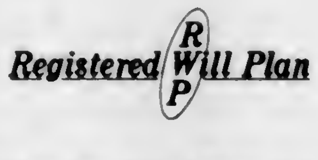
SN 256,326. Welcome Wagon International, Inc., Memphis, Tenn. Filed Oct. 12, 1966.

WELCOME WAGON

Owner of Reg. No. 735,805 and others.
For Community Services in Bringing Civic, Religious, Social, and Commercial Information to the Public, Through Individual Home Visits Made in Person by Its Representatives, as a Public Service and in Behalf of Interested Sponsors.
First use July 1928.

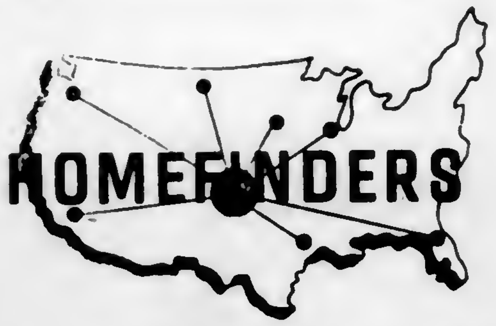
Class 102 — Insurance and Financial

SN 187,189. First National Bank of Canton, Canton, Ohio. Filed Feb. 21, 1964.



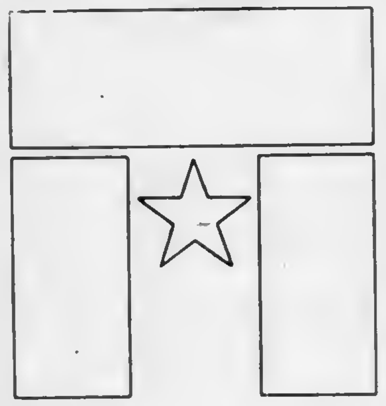
The words "Registered" and "Will" are disclaimed apart from the mark as shown.
For Registering of Wills, Maintaining of Same in Lock Boxes, Supplying the Testators With Special Identification Cards Relating to the Aforementioned Registrations, and Delivering Wills in Accordance With Testators' or Courts' Instructions.
First use Nov. 20, 1963.

SN 236,094. The Homefinders, Inc., Wilmette, Ill. Filed Jan. 10, 1966.



The outline map of the United States is disclaimed apart from the mark as shown. Owner of Reg. No. 629,295.
For Real Estate Brokerage Service and Arranging for the Financing of Homes.
First use May 11, 1964.

SN 242,960. Bank of Texas, Houston, Tex. Filed Apr. 8, 1966.



For Banking Services.
First use August 1963.

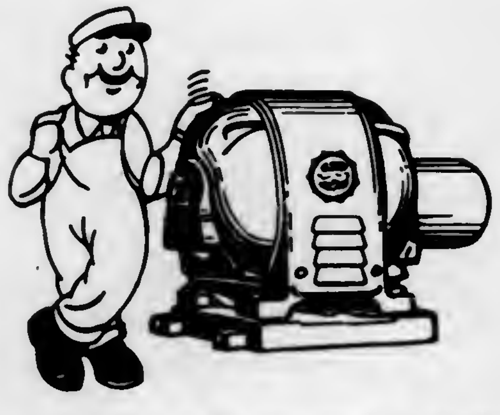
SN 249,364. United California Bank, Los Angeles, Calif. Filed June 30, 1966.

BALANCE+PLUS

For Revolving Credit Account Services.
First use May 17, 1966.

Class 103 — Construction and Repair

SN 221,937. The Klemie-Hankins Company, Toledo, Ohio, by change of name from The Klemie Company, Toledo, Ohio. Filed June 24, 1965.



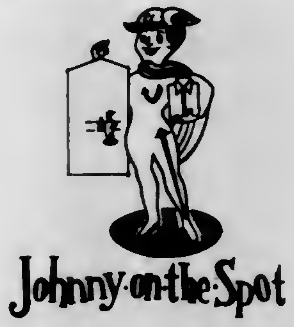
The representation of an electric motor is disclaimed apart from the mark as shown.
For Repairing and Rebuilding Electric Motors, and Associated Control Equipment.
First use Aug. 28, 1945.

SN 245,733. Michelin Tire Corporation, Woodside, N.Y. Filed May 16, 1966.

RENOVEX

Owner of Reg. No. 725,911.
For Rebuilding Tires.
First use Mar. 23, 1961.

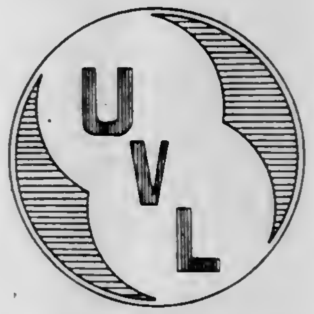
SN 260,704. Johnny-on-the-Spot Central, Inc., Scarsdale, N.Y. Filed Dec. 14, 1966.



For Dry Cleaning and Laundering Services.
First use Jan. 25, 1952.

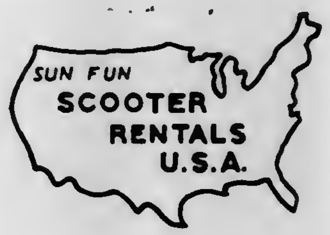
Class 105 — Transportation and Storage

SN 226,807. Universal Van Lines, Inc., Norfolk, Va. Filed Aug. 30, 1965.



The drawing is lined for the colors blue and red.
For Packing, Crating, Storage, and Transportation of Household Goods by Truck.
First use Feb. 6, 1965.

SN 245,423. Scooter Rentals, U.S.A., Inc., Red Bank, N.J. Filed May 11, 1966.



No claim is made to the wording "Scooter Rentals U.S.A." or the map outline of the United States apart from the mark as presented without waiving any common law rights therein.
For Rental of Motor Scooters.
First use Mar. 14, 1966.

SN 257,671. Trans-Texas Airways, Inc., Houston, Tex. Filed Oct. 31, 1966.

PAMPER-JET

For Air Transportation of Persons, Property, and Mail.
First use Oct. 30, 1966.

Class 106 — Material Treatment

SN 243,410. Colorfax Laboratories, Inc., Silver Spring, Md. Filed Apr. 14, 1966.

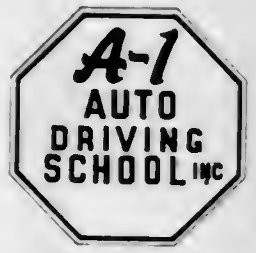
COLORFAX

For Photographic Processing, Printing, Mounting and Duplicating Services.

First use at least as early as 1948.

Class 107 — Education and Entertainment

SN 232,263. A-1 Auto Driving School, Inc., Chicago, Ill. Filed Nov. 8, 1965.



The words "Auto Driving School, Inc." are disclaimed apart from the mark as shown.

For Teaching and Instruction of Automotive Vehicle Operation.

First use September 1961.

SN 236,586. Fiesta Dance Clubs, Inc., Washington, D.C. Filed Jan. 17, 1966.

FIESTA

For Instruction and Teaching of Dancing and Dances of All Types.

First use May 20, 1965.

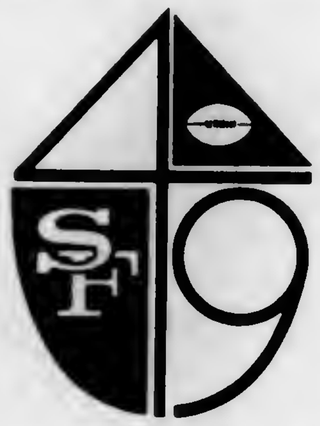
SN 247,040. Alexander F. MacDonald, Jr., Dover, N.H. Filed June 1, 1966.

THE TIDAL WAVES

For Musical Entertainment.

First use May 12, 1963.

SN 255,174. San Francisco Forty Niners, San Francisco, Calif. Filed Sept. 27, 1966.



For Entertainment Services in the Nature of Football Exhibitions.

First use 1965.

SN 255,175. San Francisco Forty Niners, San Francisco, Calif. Filed Sept. 27, 1966.

SAN FRANCISCO FORTY NINERS

"San Francisco" is disclaimed apart from the mark as shown.

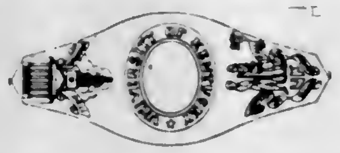
For Entertainment Services in the Nature of Football Exhibitions.

First use 1946.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 235,022. University of Kentucky, Lexington, Ky. Filed Dec. 21, 1965.



For Indicating Membership in the Student Body of the University of Kentucky as an Upper Classman, and/or for Indicating Membership in the Alumni Body of the University of Kentucky as One Who Previously Attained the Status of an Upper Classman in the Student Body Thereof.

First use in or about November 1965.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

825,930. ACRYLITE. American Cyanamid Company, assignee of Wasco Products, Inc. SN 125,696. Pub. 3–12–63. Filed 8–9–61.

825,931. CHICKEN (DESIGN). Vantress Farms, Inc., by change of name from International Genetics Corporation. SN 222,034. Pub. 1–3–67. Filed 6–25–65.

825,932. TALJAR. Societe CTA, Compagnie Industrielle de Textiles Artificiels & Synthetiques. MULTIPLE CLASS (Classes 1, 42, and 43). SN 230,443. Pub. 1–3–67. Filed 10–18–65.

825,933. CADILLAC. Dayco Corporation (Delaware corporation), by merger from Dayco Corporation (Ohio corporation). SN 234,006. Pub. 7–26–66. Filed 12–6–65.

825,934. DAYCO. Dayco Corporation (Delaware corporation), by merger from Dayco Corporation (Ohio corporation). SN 234,009. Pub. 7–26–66. Filed 12–6–65.

825,935. IMCO. International Minerals & Chemical Corporation. SN 235,405. Pub. 1–3–67. Filed 12–28–65.

825,936. PHOENIX. Bates Manufacturing Company, Incorporated. SN 235,484. Pub. 1–3–67. Filed 12–29–65.

825,937. OLEPLATE. Avisun Corporation. SN 236,553. Pub. 1–3–67. Filed 1–17–66.

825,938. PULLETS UNLIMITED. Pullets Unlimited, Inc., assignee of Pullets Unlimited. SN 238,560. Pub. 1–3–67. Filed 2–10–66.

825,939. GROTESQUE HUMAN FIGURE (DESIGN). Robert J. Lambert, d.b.a. Lambert Seed Company. SN 245,724. Pub. 1–3–67. Filed 5–16–66.

825,940. REYLINER. Reynolds Metals Company. SN 246,101. Pub. 1–3–67. Filed 5–19–66.

825,941. RUCOTEX. Hooker Chemical Corporation. SN 246,310. Pub. 1–3–67. Filed 5–23–66.

825,942. FANTA SUEDE. Kroy Tanning Company, Incorporated. SN 249,435. Pub. 1–3–67. Filed 7–1–66.

Class 2 — Receptacles

825,943. FABRICON AND DESIGN. The Eagle-Picher Company. SN 211,352. Pub. 1–3–67. Filed 2–4–65.

825,944. SNAP-LOCK AND DESIGN. Midwest Hanger Co. SN 219,804. Pub. 1–3–67. Filed 5–26–65.

825,945. RING GO. The Genesee Brewing Company, Inc. SN 229,231. Pub. 1–3–67. Filed 10–4–65.

825,946. ARMOR-GARD. Olin Mathieson Chemical Corporation. SN 238,273. Pub. 1–3–67. Filed 2–7–66.

Class 4 — Abrasives and Polishing Materials

825,947. IDEAL AND DESIGN. Ideal Industries, Inc. MULTIPLE CLASS (Classes 4, 15, 21, and 23). SN 212,320. Pub. 1–3–67. Filed 2–18–65.

825,948. EVENRUN. Minnesota Mining and Manufacturing Company. SN 240,319. Pub. 1–3–67. Filed 3–7–66.

Class 5 — Adhesives

825,949. CONSO PERMA BOND. Conso Products, Inc. SN 230,513. Pub. 1–3–67. Filed 10–19–65.

825,950. CONSO PERMA BOND GOLD LABEL. Conso Products, Inc. SN 230,514. Pub. 1–3–67. Filed 10–19–65.

825,951. ENERGIC. Graphic Electronics, Inc. SN 233,264. Pub. 1–3–67. Filed 11–24–65.

825,952. WIL-STIK. Wilco Company. SN 246,840. Pub. 1–3–67. Filed 5–31–66.

Class 6 — Chemicals and Chemical Compositions

825,953. DALTOSEC. Imperial Chemical Industries Limited. SN 225,419. Pub. 1–3–67. Filed 8–10–65.

825,954. ICI AND DESIGN. Imperial Chemical Industries Limited. SN 225,422. Pub. 1–3–67. Filed 8–10–65.

825,955. PROBAN. American Cyanamid Company. SN 230,480. Pub. 1–3–67. Filed 10–19–65.

825,956. ODEX AND DESIGN. Moser Paper Company. SN 231,172. Pub. 1–3–67. Filed 10–22–65.

825,957. LIFE-TIME AND DESIGN. Monsanto Company. MULTIPLE CLASS (Classes 6 and 12). SN 233,037. Pub. 1–3–67. Filed 11–22–65.

825,958. NAFERITE. International Salt Company. SN 236,826. Pub. 1–3–67. Filed 1–19–66.

825,959. APOGEE. Apogee Chemical, Inc. SN 240,144. Pub. 1–3–67. Filed 3–4–66.

825,960. A AND DESIGN. Apogee Chemical, Inc. SN 240,145. Pub. 1–3–67. Filed 3–4–66.

825,961. CAB-O-TI. Cabot Corporation. SN 247,479. Pub. 1–3–67. Filed 6–7–66.

825,962. CABLAK. Cabot Corporation. SN 247,577. Pub. 1–3–67. Filed 6–8–66.

825,963. STANDEX. Standard X-Ray Company. SN 247,638. Pub. 1–3–67. Filed 6–8–66.

825,964. SAF-T-DIAL. Extracorporeal and Medical Specialties Company, Inc. SN 248,087. Pub. 1–3–67. Filed 6–15–66.

Class 7 — Cordage

825,965. NYGEN. The General Tire & Rubber Company. SN 231,682. Pub. 1–3–67. Filed 10–27–65.

Class 8 — Smokers' Articles, Not Including Tobacco Products

825,966. GRAMERCY PARKE. Park Electrochemical Corporation. MULTIPLE CLASS (Classes 8 and 32). SN 243,613. Pub. 1–3–67. Filed 4–18–66.

825,967. MEDICO. S. M. Frank & Co., Inc. SN 245,185. Pub. 1–3–67. Filed 5–9–66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

825,968. SPITTERCORD. Coast Fuse, Inc., assignee of Coast Manufacturing & Supply Company. SN 192,992. Pub. 1–3–67. Filed 5–8–64.

825,969. VOSTOK. Vsesojuznoje Exportno-Importnoje Objedinenije "Raznoexport." SN 227,980. Pub. 1-3-67. Filed 9-16-65.

Class 11 — Inks and Inking Materials

825,970. P.OSTS.CRIPT. Old Town Corporation. SN 222,054. Pub. 1-3-67. Filed 6-25-65.

825,971. ARTONE. Higgins Ink Co., Inc. SN 247,794. Pub. 1-3-67. Filed 6-10-66.

Class 12 — Construction Materials

825,957. (See Class 6 for this trademark.)

825,972. PENNSALT. Pennsalt Chemicals Corporation. SN 223,816. Pub. 1-3-67. Filed 7-20-65.

825,973. TIGER PATCH AND DESIGN. "Pull Over" Corporation. SN 235,424. Pub. 1-3-67. Filed 12-28-65.

825,974. DURACRETE. Duracrete Spray Co., Inc. SN 237,825. Pub. 1-3-67. Filed 2-2-66.

825,975. TRIUMPH. Coleco Industries, Inc. SN 238,406. Pub. 1-3-67. Filed 2-9-66.

825,976. SEASIDE. Coleco Industries, Inc. SN 238,407. Pub. 1-3-67. Filed 2-9-66.

825,977. KESTRAL. Coleco Industries, Inc. MULTIPLE CLASS (Classes 12 and 22). SN 239,101. Pub. 1-3-67. Filed 2-18-66.

825,978. ROYAL OLYMPIAN. Coleco Industries, Inc. SN 239,125. Pub. 1-3-67. Filed 2-18-66.

825,979. ARISTOCRAT. Garland Manufacturing Company. SN 239,407. Pub. 1-3-67. Filed 2-23-66.

825,980. PARA-PORT. R. L. Kuss & Co., Inc. SN 243,677. Pub. 1-3-67. Filed 4-18-66.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

825,981. P.OSTS.CRIPT. Old Town Corporation. MULTIPLE CLASS (Classes 13, 23, 29, and 37). SN 222,055. Pub. 1-3-67. Filed 6-25-65.

825,982. PV-DUIT. Continental Oil Company. SN 231,546. Pub. 1-3-67. Filed 10-24-65.

825,983. ZIP SEAL. Silo-Vac Corporation. SN 238,577. Pub. 1-3-67. Filed 2-10-66.

825,984. FAST-JOINT. Eugene Dobish, d.b.a. Fastener Sales Company. SN 248,444. Pub. 1-3-67. Filed 6-20-66.

Class 14 — Metals and Metal Castings and Forgings

825,985. SMI MADE IN ITALY AND DESIGN. Società Metallurgica Italiana. SN 230,920. Pub. 1-3-67. Filed 10-21-65.

825,986. SMI AND DESIGN. Società Metallurgica Italiana. SN 230,939. Pub. 1-3-67. Filed 10-21-65.

825,987. PALATINO. Eltra Corporation. MULTIPLE CLASS (Classes 14 and 50). SN 231,078. Pub. 1-3-67. Filed 10-22-65.

825,988. OPTIMA. Eltra Corporation. MULTIPLE CLASS (Classes 14 and 50). SN 231,079. Pub. 1-3-67. Filed 10-22-65.

825,989. HELVETICA. Eltra Corporation. MULTIPLE CLASS (Classes 14 and 50). SN 231,080. Pub. 1-3-67. Filed 10-22-65.

825,990. MELIOR. Eltra Corporation. MULTIPLE CLASS (Classes 14 and 50). SN 231,081. Pub. 1-3-67. Filed 10-22-65.

825,991. SEALVAR. Chas. Pfizer & Co., Inc. SN 256,133. Pub. 1-3-67. Filed 10-10-66.

Class 15 — Oils and Greases

825,947. (See Class 4 for this trademark.)

825,992. GO-TANE. Harvard Oil Company. SN 224,611. Pub. 1-3-67. Filed 7-30-65.

825,993. AUTO A GO GO AND DESIGN. Gold Eagle Products Co. SN 240,093. Pub. 1-3-67. Filed 3-3-66.

825,994. CC AND DESIGN. Coulter Electronics, Inc. SN 243,101. Pub. 1-3-67. Filed 4-11-66.

Class 16 — Protective and Decorative Coatings

825,995. AKTIPLAST. Rhein-Chemie G.m.b.H. SN 149,210. Pub. 4-27-65. Filed 7-17-62.

825,996. CJ COLOR JET AND DESIGN. Haas Chemical Corporation. SN 229,240. Pub. 1-3-67. Filed 10-4-65.

825,997. RITE KOTE. Mary Carter Paint Co. SN 229,757. Pub. 1-3-67. Filed 10-11-65.

825,998. ASTRO RIPPLE AND DESIGN. Badger Manufacturing Corporation. SN 230,500. Pub. 1-3-67. Filed 10-19-65.

825,999. WRINKLE RIPPLE AND DESIGN. Badger Manufacturing Corporation. SN 230,501. Pub. 1-3-67. Filed 10-19-65.

826,000. JANNEY BEST. The Valspar Corporation. SN 233,846. Pub. 1-3-67. Filed 12-2-65.

Class 17 — Tobacco Products

826,001. CAMACHO AND DESIGN. Camacho Cigars, Inc. SN 241,234. Pub. 1-3-67. Filed 3-17-66.

826,002. AVILA. Philip Morris Incorporated. SN 242,926. Pub. 1-3-67. Filed 4-7-66.

826,003. TAMANACO. Philip Morris Incorporated. SN 242,927. Pub. 1-3-67. Filed 4-7-66.

826,004. MIRANDA. Philip Morris Incorporated. SN 242,928. Pub. 1-3-67. Filed 4-7-66.

826,005. PANCHO ARANGO. Glaser Bros., assignee of General Cigar Co., Inc. SN 243,860. Pub. 1-3-67. Filed 4-20-66.

826,006. BRIGADOON. General Cigar Co., Inc. SN 244,097. Pub. 1-3-67. Filed 4-22-66.

826,007. DEALER'S CHOICE. General Cigar Co., Inc. SN 244,098. Pub. 1-3-67. Filed 4-22-66.

826,008. BARRACUDA. Riggio Tobacco Corporation of New York Limited. SN 245,014. Pub. 1-3-67. Filed 5-5-66.

Class 18 — Medicines and Pharmaceutical Preparations

826,009. MYLASE. Baxter Laboratories, Inc. SN 230,127. Pub. 1-3-67. Filed 10-14-65.

826,010. LANTABID NO. 1. Marion Laboratories, Inc. SN 235,689. Pub. 1-3-67. Filed 1-3-66.

826,011. TUTHIN-JEL. American Pharmaceutical Company. SN 236,702. Pub. 1-3-67. Filed 1-18-66.

826,012. DRAMISSION. American Home Products Corporation. SN 238,035. Pub. 8-30-66. Filed 2-4-66.

826,013. WHIP - A - COLD. Bristol-Myers Company. SN 238,142. Pub. 1-3-67. Filed 2-1-66.

826,014. GERMOLENE. Beecham Group Limited, d.b.a. The Veno Drug Company. SN 239,872. Pub. 1-3-67. Filed 3-1-66.

826,015. VITA MART. Janelly Sales, Ltd. SN 246,175. Pub. 1-3-67. Filed 5-20-66.

826,016. VAD. Richardson-Merrell Inc. SN 246,199. Pub. 1-3-67. Filed 5-20-66.

826,017. REHEPTAR. Armour Pharmaceutical Company, d.b.a. Reheis Chemical Company. SN 246,527. Pub. 1-3-67. Filed 5-25-66.

Class 19 — Vehides

826,018. MEADE. Meade Manufacturing, Incorporated. SN 212,226. Pub. 1-3-67. Filed 2-17-65.

826,019. WISCOT. Wiscot Products Limited. SN 216,035. Pub. 1-3-67. Filed 4-7-65.

826,020. CUSH-N-AIRE BY NATIONAL. Artnell Company. SN 226,715. Pub. 1-3-67. Filed 8-30-65.

826,021. T.O.M. TRAILER OF THE MONTH! Strick Corporation, by assignment and change of name from Fruehauf Corporation. SN 227,274. Pub. 1-3-67. Filed 9-7-65.

826,022. HYDRO-VEE. Chrysler Boat Corporation. SN 239,231. Pub. 1-3-67. Filed 2-21-66.

826,023. TAHITI. Trade Winds Campers, Inc. SN 239,680. Pub. 1-3-67. Filed 2-25-66.

826,024. JIFFLOX. Cunha Products, Inc. SN 249,912. Pub. 1-3-67. Filed 7-11-66.

826,025. JIFFLOX DOLLY EMBLEM (DESIGN). Cunha Products, Inc. SN 249,921. Pub. 1-3-67. Filed 7-11-66.

826,026. TRAIL-O-SHOP. Associated Equipment Company, Inc. SN 255,751. Pub. 1-3-67. Filed 10-5-66.

Class 21 — Electrical Apparatus, Machines, and Supplies

825,947. (See Class 4 for this trademark.)

826,027. RIPLEY. Ripley Company, Inc. SN 224,121. Pub. 1-3-67. Filed 7-23-65.

826,028. EXACT AND DESIGN. Exact Electronics, Inc. SN 227,409. Pub. 1-3-67. Filed 10-8-65.

826,029. KENWOOD. Kenwood Manufacturing (Woking) Limited. SN 231,142. Pub. 1-3-67. Filed 10-22-65.

826,030. LADY ALMART. Allied Stores Corporation. SN 233,300. Pub. 1-3-67. Filed 11-26-65.

826,031. TENULINE. Bird Electronic Corporation. SN 234,170. Pub. 1-3-67. Filed 12-8-65.

826,032. SMOKEETER. Air Specialists, Inc. SN 235,249. Pub. 1-3-67. Filed 12-27-65.

826,033. PURITAN HEAD (DESIGN). Puritan Chemical Company. MULTIPLE CLASS (Classes 21 and 29). SN 236,442. Pub. 1-3-67. Filed 1-14-66.

826,034. MAVERICK. Channel Master Corporation. SN 236,463. Pub. 1-3-67. Filed 1-14-66.

826,035. CONSEW. Consolidated Sewing Machine Corp. SN 237,089. Pub. 1-3-67. Filed 1-24-66.

826,036. DUOCENTRIC. Reuland Electric Company. SN 237,485. Pub. 1-3-67. Filed 1-28-66.

826,037. VAC-A-FLOOD. Rite-O-Lite of California, Inc. SN 237,745. Pub. 1-3-67. Filed 2-1-66.

826,038. NACON. Union Carbide Corporation. SN 237,764. Pub. 1-3-67. Filed 2-1-66.

Class 22 — Games, Toys, and Sporting Goods

825,977. (See Class 12 for this trademark.)

826,039. ISO-CIZER. The J. Roberts Manufacturing Co. SN 170,337. Pub. 3-3-64. Filed 6-4-63.

826,040. PIXIE VENDORS AND DESIGN. Louis S. Axelrod, d.b.a. Pixie Vendors. MULTIPLE CLASS (Classes 22 and 44). SN 197,357. Pub. 1-3-67. Filed 7-8-64.

826,041. JUNIOR. Medicated Products Co. SN 203,784. Pub. 5-3-66. Filed 10-12-64.

826,042. COSTUMED JESTER (DESIGN). Auburn Rubber Company, Inc. SN 209,985. Pub. 1-3-67. Filed 1-15-65.

826,043. SAFE T GARD AND DESIGN. Madison Dental Co. SN 213,149. Pub. 1-3-67. Filed 3-2-65.

826,044. PINKY THE SALMON. New England Fish Company. SN 217,071. Pub. 1-3-67. Filed 4-22-65.

826,045. CAT (DESIGN). Lowe's, Inc. SN 232,004. Pub. 1-3-67. Filed 11-2-65.

826,046. MIDGE. Mattel, Inc. SN 237,856. Pub. 1-3-67. Filed 2-2-66.

826,047. SKIPPER. Mattel, Inc. SN 237,857. Pub. 1-3-67. Filed 2-2-66.

826,048. RBB AND DESIGN. R. B. Beurmann & Associates. SN 238,488. Pub. 1-3-67. Filed 2-10-66.

826,049. ROCK-A-TUB. Regal Toy Limited. SN 241,005. Pub. 1-3-67. Filed 12-30-65.

826,050. SWIVELERS. Manning Manufacturing Corporation. SN 241,355. Pub. 1-3-67. Filed 3-18-66.

826,051. MOTORMAGIC. Champion Slot Car Products, Inc. SN 241,429. Pub. 1-3-67. Filed 3-21-66.

826,052. GLADIATOR AND DESIGN. Southern Athletic Service, Inc. SN 241,537. Pub. 1-3-67. Filed 3-21-66.

826,053. LAVENDER LICORICE. Margaret Lucile Thomas, d.b.a. Lavender Licorice Products. SN 241,544. Pub. 1-3-67. Filed 3-21-66.

826,054. PIONEER. Colt's Inc. SN 241,640. Pub. 1-3-67. Filed 3-23-66.

826,055. TINY BLOSSOM. Totsy Manufacturing Co., Inc. SN 241,946. Pub. 1-3-67. Filed 3-25-66.

826,056. LUCKY JIM. The "Bingo King" Company, Incorporated. SN 242,202. Pub. 1-3-67. Filed 3-30-66.

826,057. THE IMPERIAL. The "Bingo King" Company, Incorporated. SN 242,203. Pub. 1-3-67. Filed 3-30-66.

826,058. FLASH ACTION. The "Bingo King" Company, Incorporated. SN 242,204. Pub. 1-3-67. Filed 3-30-66.

826,059. PORT-O-FLASH. The "Bingo King" Company, Incorporated. SN 242,205. Pub. 1-3-67. Filed 3-30-66.

826,060. BONUS AWARD. The "Bingo King" Company, Incorporated. SN 242,207. Pub. 1-3-67. Filed 3-30-66.

826,061. LITTLE JOE. The "Bingo King" Company, Incorporated. SN 242,209. Pub. 1-3-67. Filed 3-30-66.

826,062. MR. MOD AND DESIGN. Mr. Mod Shop, Inc. SN 245,439. Pub. 1-3-67. Filed 4-4-66.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

825,947. (See Class 4 for this trademark.)

825,981. (See Class 13 for this trademark.)

826,063. SWORD BRAND AND DESIGN. Camillus Cutlery Company. SN 212,496. Pub. 1-3-67. Filed 2-23-65.

826,064. BAY STATE C AND DESIGN. The Cleveland Twist Drill Company. SN 214,751. Pub. 1-3-67. Filed 3-23-65.

826,065. ANGER. U.S. Anger, Inc. SN 222,786. Pub. 1-3-67. Filed 7-6-65.

826,066. APM. U.S. Anger, Inc. SN 222,787. Pub. 1-3-67. Filed 7-6-65.

826,067. ANGER APM AND DESIGN. U.S. Anger, Inc. SN 222,789. Pub. 1-3-67. Filed 7-6-65.

826,068. PROBEE. Phillip E. Boxrud, d.b.a. Nokes Rim & Wheel Co. SN 226,719. Pub. 1–3–67. Filed 8–30–65.

826,069. DART. Western Gear Corporation. SN 229,473. Pub. 1–3–67. Filed 10–6–65.

826,070. MANOR AND DESIGN. Crane Co. SN 230,238. Pub. 1–3–67. Filed 10–15–65.

826,071. DYNAWEITZ. Richler. SN 230,291. Pub. 1–3–67. Filed 10–15–65.

826,072. ELECTROPOSE. Richler. SN 230,292. Pub. 1–3–67. Filed 10–15–65.

826,073. HURA KING AND DESIGN. A. W. Kelley, d.b.a. Hura-King Coin-Op Car Wash. SN 231,762. Pub. 1–3–67. Filed 10–28–65.

826,074. SPRAYWAY. Moyer & Diebel Metalcrafts Limited. SN 231,768. Pub. 1–3–67. Filed 10–28–65.

826,075. HYDRA-SWING. Ronan & Kunzl, Inc. SN 234,238. Pub. 1–3–67. Filed 12–8–65.

826,076. FIRE-TOOTH AND DESIGN. Vermont American Corporation. SN 238,805. Pub. 1–3–67. Filed 2–14–66.

826,077. M–C. Morehouse-Cowles, Inc. SN 238,883. Pub. 11–1–66. Filed 2–15–66.

826,078. OVAL DESIGN ETC. Sullivan Machinery Company, Inc. SN 239,455. Pub. 1–3–67. Filed 2–23–66.

826,079. SCHICK-BAND. Eversharp, Inc. SN 241,586. Pub. 1–3–67. Filed 3–22–66.

826,080. MARLBORO. Philip Morris Incorporated. SN 242,030. Pub. 1–3–67. Filed 3–28–66.

826,081. AUTOBAND. Eversharp, Inc. SN 244,399. Pub. 1–3–67. Filed 4–27–66.

826,082. AMERICAN. True Temper Corporation. SN 248,760. Pub. 1–3–67. Filed 6–23–66.

Class 26—Measuring and Scientific Appliances

826,083. COMPUR ELECTRONIC. Compur-Werk Gesellschaft mit beschrankter Haftung & Co. SN 225,735. Pub. 1–3–67. Filed 8–16–65.

826,084. HOFFMAN AND DESIGN. Hoffman Camera Corporation. SN 230,538. Pub. 1–3–67. Filed 10–19–65.

826,085. VISUAL-STAT. The Philadelphia Thermometer Company. SN 230,686. Pub. 1–3–67. Filed 10–20–65.

826,086. MIKROTEST. Elektro-Physik Hans Nix & Dr. Ing. Steingroever. SN 230,804. Pub. 1–3–67. Filed 10–21–65.

826,087. SURE-SET. Federal Products Corporation. SN 232,378. Pub. 1–3–67. Filed 11–4–65.

826,088. MONOPAK. Spiratone, Inc. SN 233,645. Pub. 1–3–67. Filed 11–30–65.

826,089. EPIC. Monroe International Corporation. SN 234,292. Pub. 1–3–67. Filed 12–9–65.

826,090. METZLER. Optische Anstalt Metzler & Cie. SN 237,869. Pub. 1–3–67. Filed 2–2–66.

826,091. UNI-LITE. Univis, Inc. SN 238,128. Pub. 1–3–67. Filed 2–4–66.

826,092. SMOGGLES. John Marshall, d.b.a. John Marshall Productions. SN 239,284. Pub. 1–3–67. Filed 2–21–66.

826,093. CPK. The Ealing Corporation. SN 247,205. Pub. 1–3–67. Filed 6–3–66.

Class 27—Horological Instruments

826,094. JEAN PIQUET. Emil Leichter Watch Co., Inc. SN 195,308. Pub. 1–3–67. Filed 6–10–64.

826,095. ERNEST BOREL. Ernest Borel & Cie S.A. SN 235,824. Pub. 1–3–67. Filed 1–5–66.

826,096. AMHURST. Sunbeam Corporation. SN 238,798. Pub. 1–3–67. Filed 2–14–66.

826,097. FUTURITY. Sunbeam Corporation. SN 238,799. Pub. 1–3–67. Filed 2–14–66.

Class 28—Jewelry and Precious-Metal Ware

826,098. CARRIAGE TRADE. Cheever, Tweedy & Co., Inc. SN 239,013. Pub. 1–3–67. Filed 2–17–66.

826,099. KOMBOLOGIA. Peter J. Mamakos, d.b.a. The Demetrios Co. SN 239,532. Pub. 1–3–67. Filed 2–24–66.

826,100. T–T. Tela-Time Industries. SN 239,675. Pub. 1–3–67. Filed 2–25–66.

826,101. WELLS. Wells, Inc. SN 256,040. Pub. 1–3–67. Filed 10–10–66.

Class 29—Brooms, Brushes, and Dusters

825,981. (See Class 13 for this trademark.)

826,033. (See Class 21 for this trademark.)

826,102. GOLDEN-GLO. The Wooster Brush Company. SN 238,817. Pub. 1–3–67. Filed 2–14–66.

826,103. WOONEL. The Wooster Brush Company. SN 238,818. Pub. 1–3–67. Filed 2–14–66.

826,104. PACIFIC PRIDE. Rawson Drug and Sundry Company, Inc. SN 240,021. Pub. 1–3–67. Filed 3–2–66.

Class 31—Filters and Refrigerators

826,105. MPC–1. Nalco Chemical Company. SN 234,456. Pub. 1–3–67. Filed 12–13–65.

826,106. DELTA AND DESIGN. Sternco Industries, Inc. SN 247,078. Pub. 1–3–67. Filed 6–1–66.

Class 32—Furniture and Upholstery

825,966. (See Class 8 for this trademark.)

826,107. REPRESENTATION OF A DOG WEARING A HAT AND CARRYING A CANE (DESIGN). Russ Bassett Corp. SN 231,021. Pub. 1–3–67. Filed 10–22–65.

826,108. SPOR-TIER. Harry A. Robbins, d.b.a. A.R.M. Display Racks & Co. SN 242,288. Pub. 1–3–67. Filed 3–30–66.

826,109. SCANLINE. Norsk Møbelfabrikk A/S. SN 242,381. Pub. 1–3–67. Filed 3–31–66.

826,110. OMNI-CHAIR. Directional Industries, Incorporated. SN 243,104. Pub. 1–3–67. Filed 4–11–66.

826,111. SIGMUND. The Kenmar Manufacturing Company. SN 243,247. Pub. 1–3–67. Filed 4–12–66.

826,112. HOSPITAL-BILT. Simmons Company. SN 243,590. Pub. 1–3–67. Filed 4–15–66.

Class 34—Heating, Lighting, and Ventilating Apparatus

826,113. HEAT HOARDER. Hodgins Combustion Devices Limited. SN 216,593. Pub. 1–3–67. Filed 4–15–65.

826,114. MCKAY. The McKay Company. SN 235,926. Pub. 1–3–67. Filed 1–6–66.

826,115. HORNET. The J. B. Williams Company, Inc. SN 242,950. Pub. 1–3–67. Filed 4–7–66.

826,116. EAGLE. The J. B. Williams Company, Inc. SN 242,952. Pub. 1–3–67. Filed 4–7–66.

826,117. PET. The J. B. Williams Company, Inc. SN 242,953. Pub. 1–3–67. Filed 4–7–66.

826,118. NUTMEG. The J. B. Williams Company, Inc. SN 242,954. Pub. 1–3–67. Filed 4–7–66.

826,119. DRAWMASTER. The Donley Brothers Company. SN 256,255. Pub. 1–3–67. Filed 10–12–66.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

826,120. FINALIST. The Gates Rubber Company. SN 237,689. Pub. 1–3–67. Filed 2–1–66.

826,121. SOLID-MATIC. The B. F. Goodrich Company. SN 238,078. Pub. 1–3–67. Filed 2–4–66.

Class 36—Musical Instruments and Supplies

826,122. AD+N+ECHO. Tel-Ray Electronics. SN 218,205. Pub. 1–3–67. Filed 5–6–65.

826,123. MURPH. Murphy Music Industries. SN 231,924. Pub. 1–3–67. Filed 11–1–65.

Class 37—Paper and Stationery

825,981. (See Class 13 for this trademark.)

826,124. LIQUI-SEAL. Continental Can Company, Inc. SN 199,176. Pub. 1–3–67. Filed 8–4–64.

826,125. CELLUCLAY. Betty Jetton, d.b.a. The Celluclay Co. SN 221,976. Pub. 1–3–67. Filed 6–24–65.

826,126. TT. Library Binding Service, Inc. SN 238,097. Pub. 1–3–67. Filed 2–4–66.

Class 38—Prints and Publications

826,127. THE SQUIER CREATIVE THOUGHTS IN CARDS AND DESIGN. Squier Cards. SN 144,284. Pub. 7–23–63. Filed 5–10–62.

826,128. DIALOGUE WITH YOUTH. The Christian Science Publishing Society. SN 201,100. Pub. 1–3–67. Filed 9–2–64.

826,129. CHOO-CHOO VALLEE TALES. Valma B. Bauscher. SN 210,522. Pub. 1–3–67. Filed 1–25–65.

826,130. AFHA AND DESIGN. Jose Maria Llovet Catala, d.b.a. AFHA. SN 229,409. Pub. 1–3–67. Filed 10–6–65.

826,131. PLACEFINDER. Glen E. Hall, d.b.a. Place-Finder. SN 230,387. Pub. 1–3–67. Filed 10–18–65.

826,132. THE FURNITURE TRANSPORTER. Bohman Industrial Traffic Consultants, Inc. SN 241,426. Pub. 1–3–67. Filed 3–21–66.

Class 39—Clothing

826,133. SLAX. Commonwealth Shoe & Leather Co., Inc. SN 228,331. Pub. 1–3–67. Filed 9–22–65.

826,134. MARK XII BY A. G. Craddock-Terry Shoe Corporation. SN 231,059. Pub. 1–3–67. Filed 10–22–65.

826,135. VICSHU AND DESIGN. Victory Sales, Inc. SN 235,944. Pub. 1–3–67. Filed 1–6–66.

826,136. TALL TALK. Teen-Age Beachwear Corporation. SN 241,095. Pub. 1–3–67. Filed 3–15–66.

826,137. SOUND-OFF. Welsh Manufacturing Company. SN 241,400. Pub. 1–3–67. Filed 3–18–66.

826,138. SHAKER SQUARE. Stanley M. Feil, Inc. SN 241,653. Pub. 1–3–67. Filed 3–23–66.

826,139. SULKA. A. Sulka & Company. SN 241,818. Pub. 1–3–67. Filed 3–24–66.

826,140. A. SULKA & COMPANY. A. Sulka & Company. SN 241,821. Pub. 1–3–67. Filed 3–24–66.

826,141. CORDONNET. Linder Brothers, Inc. SN 242,027. Pub. 1–3–67. Filed 3–28–66.

826,142. FAIRVIEW. Camp and McInnes, Inc. SN 243,957. Pub. 1–3–67. Filed 4–21–66.

826,143. TURISTO. Byer-Rolnick Corporation. SN 245,062. Pub. 1–3–67. Filed 5–6–66.

826,144. KARATE. Host Pajamas, Inc. SN 245,312. Pub. 1–3–67. Filed 5–10–66.

826,145. WITHDRAWN.

826,146. SUMMER FRESH. Genesco Inc. SN 245,703. Pub. 1–3–67. Filed 5–16–66.

826,147. LIONTREE AND DESIGN. R. Lowenbaum Manufacturing Company. SN 250,004. Pub. 1–3–67. Filed 7–11–66.

Class 40—Fancy Goods, Furnishings, and Notions

826,148. TI-GEAR. Plykon Corporation. SN 238,783. Pub. 1–3–67. Filed 2–14–66.

826,149. SPRAY-TECT. Brother International Corporation. SN 239,492. Pub. 1–3–67. Filed 2–24–66.

826,150. HERITAGE COLLECTION. Reid-Meredith, Inc. SN 250,118. Pub. 1–3–67. Filed 7–13–66.

826,151. PRESTIGE. Fashion Tress, Inc. SN 255,307. Pub. 1–3–67. Filed 9–28–66.

826,152. CORINA. F. C. Schmidt, Ltd. SN 244,531. Pub. 1–17–67. Filed 4–28–66.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

825,932. (See Class 1 for this trademark.)

826,153. CHEAT SHEETS. William S. Doxey, Jr. SN 230,365. Pub. 1–3–67. Filed 10–18–65.

826,154. AVCERAM. FMC Corporation. SN 236,248. Pub. 1–3–67. Filed 1–12–66.

826,155. CONCORD FABRICS OF AMERICA AND DESIGN. Concord Fabrics Inc. SN 245,390. Pub. 1–3–67. Filed 5–11–66.

826,156. DANSANTE. Dan River Mills, Incorporated. SN 247,486. Pub. 1–3–67. Filed 6–7–66.

826,157. CHARCOMB. Dan River Mills, Incorporated. SN 247,487. Pub. 1–3–67. Filed 6–7–66.

826,158. "FILKAUF." P. Kaufmann, Inc. SN 247,512. Pub. 1–3–67. Filed 6–7–66.

Class 43—Thread and Yarn

825,932. (See Class 1 for this trademark.)

Class 44—Dental, Medical, and Surgical Appliances

826,040. (See Class 22 for this trademark.)

826,159. VANI-PADS. The Teltscher Corporation. SN 239,826. Pub. 1–3–67. Filed 2–28–66.

826,160. CUTIPEN. Foster-McClellan Products Limited. SN 243,120. Pub. 1–3–67. Filed 4–11–66.

826,161. STANDEX. Standard X-Ray Company. SN 247,639. Pub. 1–3–67. Filed 6–8–66.

Class 45 — Soft Drinks and Carbonated Waters

826,162. WINDSOR SPRING WATER. Ella Clarke Nulte, d.b.a. Windsor Spring Water Company. SN 221,399. Pub. 1–3–67. Filed 6–17–65.

826,163. WEIGHT-WATCHERS. The Low Calorie Candy Co., Inc. MULTIPLE CLASS (Classes 45 and 46). SN 237,574. Pub. 1–3–67. Filed 1–28–66.

826,164. DRINK CHEERWINE AND DESIGN. Carolina Beverage Corporation. SN 240,502. Pub. 1–3–67. Filed 3–9–66.

826,165. TOP FORM. PepsiCo, Inc. SN 256,029. Pub. 1–3–67. Filed 10–10–66.

Class 46 — Foods and Ingredients of Foods

826,163. (See Class 45 for this trademark.)

826,166. PERMA-RISE. Abilene Flour Mills Company, Inc. SN 191,236. Pub. 1–3–67. Filed 4–16–64.

826,167. AC'CENT INTERNATIONAL AND DESIGN. International Minerals & Chemical Corporation, d.b.a. Ac'cent International. SN 208,076. Pub. 1–3–67. Filed 12–14–64.

826,168. CHEF (DESIGN). International Minerals & Chemical Corporation, d.b.a. Ac'cent International. SN 208,077. Pub. 1–3–67. Filed 12–14–64.

826,169. FARM CREST TWIN ORBITS AND DESIGN. Ward Foods, Inc., by merger and change of name from Jersey Farm Baking Company. SN 212,326. Pub. 1–3–67. Filed 2–18–65.

826,170. FARM CREST FUN TIME AND DESIGN. Ward Foods, Inc., by merger and change of name from Jersey Farm Baking Company. SN 212,327. Pub. 1–3–67. Filed 2–18–65.

826,171. BRIDGFORD. Bridgford Foods Corporation. SN 215,170. Pub. 1–3–67. Filed 3–29–65.

826,172. CHEF (DESIGN). Texas Meat Packers, Inc., assignee of Smokehouse Barbecued Products, Inc. SN 223,838. Pub. 11–15–66. Filed 7–20–65.

826,173. DAN'S FAMOUS AND DESIGN. Dan's Bakery, Inc. SN 225,863. Pub. 1–3–67. Filed 8–17–65.

826,174. DAN'S FAMOUS ENRICHED ITALIAN BREAD LONG ISLAND'S KING BREAD MAKER AND DESIGN. Dan's Bakery, Inc. SN 225,864. Pub. 1–3–67. Filed 8–17–65.

826,175. DUTCH DOGS. George Lloyd, d.b.a. G. Lloyd & Son. SN 226,652. Pub. 1–3–67. Filed 8–27–65.

826,176. LADY CRYSTAL AND DESIGN. Lady Crystal, Inc. SN 228,376. Pub. 4–12–66. Filed 9–22–65.

826,177. NOVA. General Foods Corporation. SN 232,205. Pub. 1–3–67. Filed 11–5–65.

826,178. AIRDO. Peavey Company. SN 234,297. Pub. 1–3–67. Filed 12–9–65.

826,179. CIRCUS FULL OF ALMONDS. United States Tobacco Company. SN 235,142. Pub. 1–3–67. Filed 12–22–65.

826,180. CHIPATOES. General Mills, Inc. SN 236,087. Pub. 1–3–67. Filed 1–10–66.

826,181. CANDY LANE. Stevens Candy Kitchens, Incorporated. SN 236,156. Pub. 1–3–67. Filed 1–10–66.

826,182. BONUS. General Mills, Inc. SN 236,742. Pub. 1–3–67. Filed 1–18–66.

826,183. THE JELLY CANE. Houston Foods, Inc. SN 236,759. Pub. 1–3–67. Filed 1–18–66.

826,184. CHIPADOS. General Mills, Inc. SN 236,812. Pub. 1–3–67. Filed 1–19–66.

826,185. ALPINE ETC. AND DESIGN. Alpine Brand Meat Products Limited. SN 237,071. Pub. 1–3–67. Filed 1–24–66.

826,186. GOLD SKIN. Knapp-Sherriff-Koelle, Inc. SN 237,228. Pub. 1–3–67. Filed 1–25–66.

826,187. INDIO. Charles A. Sayous, Inc. SN 237,388. Pub. 1–3–67. Filed 1–26–66.

826,188. DESIGN OF A GIANT (A). Green Giant Company. SN 237,551. Pub. 1–3–67. Filed 1–28–66.

826,189. GREEN GIANT. Green Giant Company. SN 237,552. Pub. 1–3–67. Filed 1–28–66.

826,190. DESIGN OF A GIANT (B). Green Giant Company. SN 237,553. Pub. 1–3–67. Filed 1–28–66.

826,191. JICOTEA. Juan Sanchez Lima, d.b.a. Sanchelima. SN 238,576. Pub. 1–3–67. Filed 2–10–66.

826,192. BLUE FLAG. Di Giorgio Corporation. SN 239,025. Pub. 1–3–67. Filed 2–17–66.

826,193. PRECISION. The Dietene Company. SN 239,026. Pub. 1–3–67. Filed 2–17–66.

826,194. LITTLE OLD WINEMAKER. United Vintners, Inc., d.b.a. Cella Vineyards. SN 239,470. Pub. 1–3–67. Filed 2–23–66.

826,195. SUN DIET AND DESIGN ETC. Heggblade-Marguleas Co., d.b.a. Co-River Citrus Company. SN 239,622. Pub. 1–3–67. Filed 2–25–66.

826,196. POPCURLS. Irish Potato Chips Ltd. SN 239,851. Pub. 1–3–67. Filed 12–27–65.

826,197. BUTTERGOLD. National Tea Co. SN 240,942. Pub. 1–3–67. Filed 3–14–66.

826,198. A & W ROOT BEER AND DESIGN. A & W Root Beer Co. SN 246,234. Pub. 1–3–67. Filed 5–23–66.

826,199. A & W ROOT BEER AND DESIGN. A & W Root Beer Co. SN 246,235. Pub. 1–3–67. Filed 5–23–66.

826,200. RPC ROMNEY PRODUCE CO. AND DESIGN. Romney Produce Co. SN 250,433. Pub. 1–3–67. Filed 7–18–66.

826,201. DUFF'S. Martha White, Inc. SN 252,981. Pub. 1–3–67. Filed 8–23–66.

826,202. LIPTON. Thomas J. Lipton, Inc. SN 255,049. Pub. 1–3–67. Filed 9–26–66.

826,203. CINDY. John Manning, d.b.a. John Manning & Company. SN 256,038. Pub. 1–3–67. Filed 10–10–66.

Class 47 — Wines

826,204. CAMBORIO. Fernando A. de Terry S.A. SN 237,944. Pub. 1–3–67. Filed 2–3–66.

826,205. LITTLE OLD WINEMAKER. United Vintners, Inc., d.b.a. Italian Swiss Colony. SN 239,471. Pub. 1–3–67. Filed 2–23–66.

Class 49 — Distilled Alcoholic Liquors

826,206. GILT CREST. Intercontinental Import & Export Co., Inc. SN 235,779. Pub. 1–3–67. Filed 1–4–66.

826,207. ONE-EYED KNAVE AND DESIGN. J. & J. Vickers & Co. Ltd., d.b.a. Stratton Distilled Products. SN 239,474. Pub. 1–3–67. Filed 2–23–66.

826,208. ONE-EYED KNAVE. J. & J. Vickers & Co., Ltd., d.b.a. Stratton Distilled Products. SN 239,475. Pub. 1–3–67. Filed 2–23–66.

Class 50 — Merchandise Not Otherwise Classified

825,987. (See Class 14 for this trademark.)

825,988. (See Class 14 for this trademark.)

825,989. (See Class 14 for this trademark.)

825,990. (See Class 14 for this trademark.)

826,209. ALTA-WRAP. Alta Industries, Inc. SN 224,289. Pub. 1–3–67. Filed 7–27–65.

826,210. NICKELEEN. The Osborne Coinage Co. SN 237,475. Pub. 1–3–67. Filed 1–27–66.

826,211. SILVEEN. The Osborne Coinage Co. SN 237,584. Pub. 1–3–67. Filed 1–28–66.

Class 51 — Cosmetics and Toilet Preparations

826,212. ROYAL SEAL. Helene Curtis Industries, Inc., d.b.a. LKM Div. SN 192,475. Pub. 12–29–64. Filed 5–1–64.

826,213. HUDSON PARADE. Hudson National, Inc., by change of name from Hudson Vitamin Products, Inc. SN 197,294. Pub. 1–3–67. Filed 7–7–64.

826,214. LADY CARLTON. Pharmaceutical Laboratories, Inc. (Delaware corporation), assignee of Pharmaceutical Laboratories, Inc. (New Jersey corporation). SN 205,608. Pub. 1–11–66. Filed 11–5–64.

826,215. NEW MAN. Neiman - Marcus Company. SN 217,766. Pub. 1–11–66. Filed 4–30–65.

826,216. SOFTOL. Elbon, Inc. SN 218,973. Pub. 1–3–67. Filed 5–17–65.

826,217. NUAGE ROUGE. Avon Products, Inc. SN 223,953. Pub. 1–3–67. Filed 7–22–65.

826,218. SPOTLIGHTS. Lanvin-Charles of the Ritz, Inc. SN 225,874. Pub. 5–3–66. Filed 8–17–65.

826,219. CARLTON HOUSE. Krasnow Industries, Inc. SN 225,960. Pub. 4–26–66. Filed 8–18–65.

826,220. FOUNTAIN OF BEAUTY. Beauty Counselors, Inc. SN 227,231. Pub. 2–15–66. Filed 9–7–65.

826,221. JEUNIQUE. Con - Stan Industries, Inc. SN 228,643. Pub. 1–3–67. Filed 9–27–65.

826,222. ESTRA-LO. Beauty Counselors, Inc. SN 239,709. Pub. 1–3–67. Filed 2–28–66.

826,223. PALE RADIANCE. Patricia Fell O'Hara, d.b.a. Robin Johns Perfumed Colognes. SN 241,177. Pub. 1–3–67. Filed 3–16–66.

826,224. SEVEN SPIRES. Patricia Fell O'Hara, d.b.a. Robin Johns Perfumed Colognes. SN 241,178. Pub. 1–3–67. Filed 3–16–66.

826,225. JODORESQUE. Josephine K. Preston, d.b.a. Jo Preston Cosmetics. SN 245,749. Pub. 1–3–67. Filed 5–16–66.

826,226. WILD ABOUT. Bobbie Brooks Incorporated. SN 254,493. Pub. 1–3–67. Filed 9–15–66.

826,227. WILD ONE. Bobbie Brooks Incorporated. SN 254,494. Pub. 1–3–67. Filed 9–15–66.

826,228. ENIGMA. Alexandra de Markoff Sales Corporation. SN 255,261. Pub. 1–3–67. Filed 9–28–66.

Class 52 — Detergents and Soaps

826,229. SOFTEX. Softex Chemical Company, Inc. SN 201,154. Pub. 3–30–65. Filed 9–2–64.

826,230. SURPHEX. Omega Hospital Supply, Inc. SN 222,605. Pub. 2–8–66. Filed 7–2–65.

826,231. AMCREST AND DESIGN. Aimcee Wholesale Corporation. SN 223,058. Pub. 1–3–67. Filed 7–12–65.

826,232. HANDI-CLEAN. Handi-Clean Products, Inc. SN 227,284. Pub. 1–3–67. Filed 9–7–65.

826,233. PERMA-POWER. Purex Corporation, Ltd. SN 247,855. Pub. 1–3–67. Filed 6–13–66.

826,234. CAPTEEN. Burns Pharmaceuticals, Inc., d.b.a. H. C. Burns Pharmaceuticals. SN 249,134. Pub. 1–3–67. Filed 6–28–66.

826,235. GENTLE FELS. Purex Corporation, Ltd. SN 252,330. Pub. 1–3–67. Filed 8–15–66.

826,236. AZUREL. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 252,515. Pub. 1–3–67. Filed 8–17–66.

826,237. AZARET. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 253,705. Pub. 1–3–67. Filed 9–2–66.

Service Marks

Class 100 — Miscellaneous

826,238. LETTER M AND DESIGN. McDonald's Corporation (Delaware corporation), by merger of and change of name from McDonald's Corporation (Illinois corporation). SN 163,740. Pub. 1–3–67. Filed 3–1–63.

826,239. PC AND DESIGN. The Plastic Coating Corporation. MULTIPLE CLASS (Classes 100, 103, and 107). SN 166,483. Pub. 1–3–67. Filed 4–10–63.

826,240. MISTER S. Commissary Corporation. SN 180,374. Pub. 9–1–64. Filed 11–4–63.

826,241. PIRATES CLUB. The Gold Buffet Franchise, Inc. SN 201,582. Pub. 1–3–67. Filed 9–10–64.

826,242. DESIGN OF TURKEY HEAD. Green Ridge Turkey Farm, Inc. SN 225,477. Pub. 1–3–67. Filed 8–11–65.

826,243. US LEASING AND DESIGN. United States Leasing Corporation. SN 233,541. Pub. 1–3–67. Filed 11–29–65.

826,244. US LEASING. United States Leasing Corporation. SN 235,740. Pub. 1–3–67. Filed 1–3–66.

826,245. MISCELLANEOUS DESIGN. Leonard A. Cohen, d.b.a. Human Capability Corporation. SN 240,418. Pub. 1–3–67. Filed 1–3–67. Filed 3–8–66.

Class 101 — Advertising and Business

826,246. CORY. Cory Corporation. SN 211,511. Pub. 1–3–67. Filed 2–8–65.

826,247. BONNIE BLUE RIBBON. Marquette Corporation, assignee of Westway Advertising, Inc. SN 221,669. Pub. 1–3–67. Filed 6–21–65.

826,248. SYSTEMAT ETC. AND DESIGN. Edward R. Ningard, d.b.a. Systemat. SN 230,873. Pub. 1–3–67. Filed 10–21–65.

826,249. WELCOME WAGON INTERNATIONAL. Welcome Wagon International, Inc. SN 240,687. Pub. 1–3–67. Filed 3–10–66.

Class 103 — Construction and Repair

826,239. (See Class 100 for this trademark.)

826,250. "THE GRASS IS GREENER ON OUR SIDE." Lawn-A-Mat of Metro, Washington, Inc. SN 233,921. Pub. 1–3–67. Filed 12–3–65.

826,251. DRAIN-GUARD AND DESIGN. Arthur N. Monroe. SN 235,320. Pub. 1–3–67. Filed 12–27–65.

826,252. STA-SOIL. Sta-Soil Corporation. SN 245,542. Pub. 1–3–67. Filed 5–13–66.

Class 105 — Transportation and Storage

826,253. GOLD SEAL TOURS AND DESIGN. National Tours, Inc. SN 229,114. Pub. 1–3–67. Filed 10–1–65.

826,254. RITE-RATE RENT-A-CAR AND DESIGN. Rite Rate Rent-A-Car. SN 235,232. Pub. 1–3–67. Filed 12–23–65.

826,255. GULLIVER'S TRAILS. Gulliver's Trails, Inc. SN 240,294. Pub. 1-3-67. Filed 3-7-66.

826,256. KADESH TRAVEL AGENCY INC. ETC. AND DESIGN. Kadesh Travel Agency, Inc. SN 240,521. Pub. 1-3-67. Filed 3-9-66.

Class 107 — Education and Entertainment

826,239. (See Class 100 for this trademark.)

826,257. THE PETERSON SYSTEM. The Peterson System, Inc. SN 202,709. Pub. 1-3-67. Filed 9-25-64.

826,258. FORREST GREEN SHOW. William F. Green. SN 223,992. Pub. 1-3-67. Filed 7-22-65.

826,259. AFHA AND DESIGN. Jose Maria Llovet Catala, d.b.a. AFHA. SN 229,410. Pub. 1-3-67. Filed 10-6-65.

826,260. MISCELLANEOUS DESIGN. Screen Gems, Inc. SN 234,075. Pub. 1-3-67. Filed 12-6-65.

826,261. TV BOWL-AIRO. C. Elwin Warren. SN 235,023. Pub. 1-3-67. Filed 12-21-65.

826,262. WINK AT THE WEATHER. Claster Enterprises, Inc. SN 238,840. Pub. 1-3-67. Filed 2-15-66.

Collective Membership Mark

Class 200

826,263. KDA AND DESIGN. Kennebunkport Dump Association. SN 225,038. Pub. 1-3-67. Filed 8-5-65.

Certification Marks

Class A — Goods

826,264. BISSC AND DESIGN. Baking Industry Sanitation Standards Committee. SN 225,263. Pub. 1-3-67. Filed 8-9-65.

Class B — Services

826,265. AM AUTHORIZED SERVICE AMERICAN MOTOR SALES CORPORATION KELVINATOR AND DESIGN. American Motors Corporation. SN 220,065. Pub. 1-3-67. Filed 6-1-65.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1 — Raw or Partly Prepared Materials

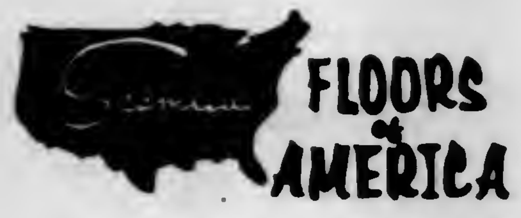
826,266. Asbestos Gel Corporation, Midland, Tex. SN 239,868. Filed P.R. 3-1-66; Am. S.R. 1-19-67.

ASBESTOS GEL

For Oil Well Drilling Fluid Additive.
First use Jan. 8, 1965.

Class 12 — Construction Materials

826,267. Lee P. Killeen, Dallas, Tex. SN 219,998. Filed P.R. 5-28-65; Am. S.R. 12-22-66.



For Floor Construction Materials.
First use Mar. 26, 1964.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

826,268. Plews Oiler, Inc., Minneapolis, Minn. SN 247,719. Filed P.R. 6-9-66; Am. S.R. 11-25-66.

FLIP·SPOUT

For Detachable Spout for Lubricating Oil Containers.
First use Apr. 23, 1965.

Class 19 — Vehicles

826,269. The Huffman Manufacturing Company, Miamisburg, Ohio. SN 224,947. Filed P.R. 8-4-65; Am. S.R. 1-16-67.

CHEATER SLICK

For Bicycles, and Parts Therefor.
First use May 17, 1965.

Class 21 — Electrical Apparatus, Machines, and Supplies

826,270. Frank T. Lindgren, d.b.a. The Silencer Electronics, Berkeley, Calif. SN 220,858. Filed P.R. 6-10-65; Am. S.R. 12-14-66.

THE SILENCER

For Kits Made Up of Electrical Parts for Connecting Into the Audio Circuit of Television Receiving Sets in Order To Permit the Viewer To Interrupt the Emission of Sound Without Affecting the Video Circuit.
First use on or about Feb. 23, 1963.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

826,271. Art Aldropp, Langlois, Oreg. SN 218,377. Filed P.R. 5-10-65; Am. S.R. 11-30-66.

ALDROPP

For Apparatus for Loading Camper Bodies on Pick-Up Trucks and for Unloading Them Therefrom.
First use Mar. 27, 1965.

826,272. The Black and Decker Manufacturing Company, Towson, Md. SN 228,121. Filed P.R. 9-20-65; Am. S.R. 1-18-67.

TWISTON

For Ring Blade for Hole Saws.
First use Feb. 1, 1965.

Class 26 — Measuring and Scientific Appliances

826,273. Georg C. K. Withof GmbH., Kassel, Germany. SN 232,953. Filed P.R. 11-18-65; Am. S.R. 1-4-67.

WITHOF

For Instruments for Measuring, Recording and Regulating Temperatures and Pressures—Namely, Indicating Millivoltmeters, Controllers, Multipoint Indicator, Strip Chart Millivoltmeter Recorder, Millivolt Amplifiers, Thermocouple Reference Junction, Electronic Potentiometer Recorder, Single Channel Pen Recorder, Rotary Switch, and Motor Actuators.
First use prior to June 1965; in commerce June 1965.

826,274. Standard Instrument Corporation, New York, N.Y. SN 237,162. Filed P.R. 1-24-66; Am. S.R. 1-5-67.

PRINT-A-COUNT

For Printing Counter.
First use Aug. 1, 1965.

Class 33 — Glassware

826,275. Earl Nygren, Lees Summit, Mo. SN 234,928. Filed P.R. 12-20-65; Am. S.R. 1-12-67.

BAKE-N-SERVE

For Glass Ovenware.
First use Sept. 26, 1963.

Class 34 — Heating, Lighting, and Ventilating Apparatus

826,276. Tescom Corporation, Minneapolis, Minn. SN 235,537. Filed P.R. 12-29-65; Am. S.R. 1-12-67.

TWIST-LOCK

For Two Piece Torch Tips for Welding, Heating and Cutting Torches.
First use on or about September 1965.

Class 38 — Prints and Publications

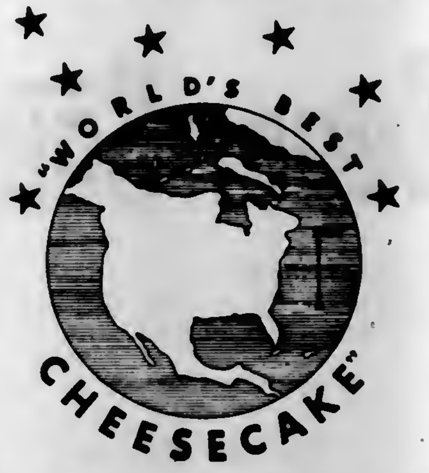
826,277. Broadcasting Publications, Inc., Washington, D.C. SN 238,164. Filed P.R. 2-7-66; Am. S.R. 1-24-67.

FOR THE RECORD

For Section of a Periodical Publication.
First use January 1953.

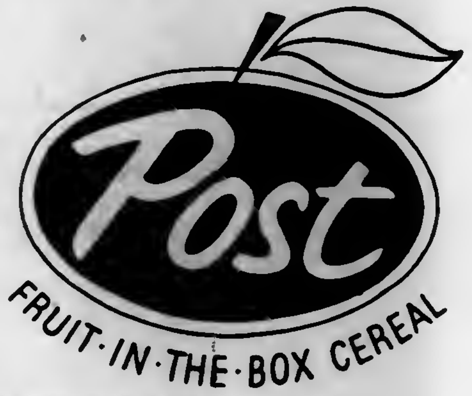
Class 46 — Foods and Ingredients of Foods

826,278. World's Best Cheesecake, Inc., Falls Church, Va. SN 209,322. Filed P.R. 1-4-65; Am. S.R. 6-27-66.



The drawing is lined for blue. The words "World's Best Cheesecake" are disclaimed apart from the mark as shown.
For Cheesecake.
First use Feb. 1962.

826,279. General Foods Corporation, White Plains, N.Y. SN 248,035. Filed 6-14-66.



For Cereal Breakfast Food.
First use Mar. 9, 1965.

Class 49 — Distilled Alcoholic Liquors

826,280. Charles N. May & Company, Chicago, Ill. SN 231,575. Filed P.R. 10-24-65; Am. S.R. 1-26-67.

GAYLORD'S

For Whisky.
First use March 1962.

Class 51 — Cosmetics and Toilet Preparations

826,281. Estee Lauder, Incorporated, New York, N.Y. SN 234,998. Filed P.R. 12-21-65; Am. S.R. 1-3-67.

VIENNESE CREME

No claim is made to the word "Creme" apart from the mark as shown.
For Rouge and Make-Up Cream.
First use Sept. 25, 1965.

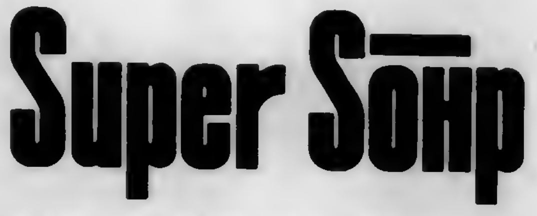
826,282. Estee Lauder, Incorporated, New York, N.Y. SN 234,999. Filed P.R. 12-21-65; Am. S.R. 1-3-67.

VIENNA ROSE

For Lipsticks.
First use Sept. 25, 1965.

Class 52 — Detergents and Soaps

826,283. The Keever Company, Columbus, Ohio, assignee of The Keever Starch Company, Columbus, Ohio. SN 212,683. Filed P.R. 2–24–65; Am. S.R. 10–6–66.



Owner of Reg. Nos. 508,345 and 757,035.
For Soap for Commercial Laundry Purposes.
First use on or about Jan. 20, 1965.

Service Marks

Class 100 — Miscellaneous

826,284. Cork 'N Cleaver, Inc., Scottsdale, Ariz. SN 225,284. Filed P.R. 8–9–65; Am. S.R. 1–9–67.

BEEF & BOOZE

For Restaurant and Bar Services.
First use Jan. 16, 1964.

Class 101 — Advertising and Business

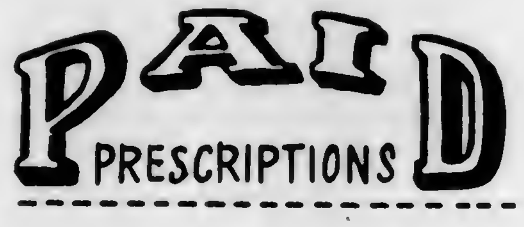
826,285. Rent-A-Man, Inc., Baltimore Md. SN 228,402. Filed P.R. 9–22–65; Am. S.R. 12–5–66.

RENT·A·MAN

For Providing Temporary Employees.
First use Aug. 30, 1962.

Class 102 — Insurance and Financial

826,286. California Pharmaceutical Services, Inc., Los Angeles, Calif. SN 218,961. Filed P.R. 5–17–65; Am. S.R. 1–30–67.



For Contracting for the Collection of and Payment of Pharmaceutical Fees.
First use Sept. 27, 1964.

TRADEMARK REGISTRATIONS RENEWED

29,529. S AND DESIGN. Cl. 23. 1–26–1897.
56,496. GISHOLT. Cl. 23. 10–2–06.
58,085. EUTHYMOL. Cl. 18. 12–4–06.
58,497. MURPHY'S. Cl. 16. 12–18–06.
58,674. LA MONTE. Cl. 37. 12–25–06.
58,856. GARFIELD AND DESIGN. Cl. 6. 12–25–06.
59,578. DIAMOND. Cl. 18. 1–8–07.
59,788. PYROZONE. Cl. 18. 1–15–07.
60,018. DIAMOND DESIGN. Cl. 18. 1–22–07.
60,825. TRICOPHEROUS. Cl. 51. 2–19–07.
61,283. ECLIPSE. Cl. 15. 3–12–07.
61,787. EAGLE AND DESIGN. Cl. 46. 4–2–07.
62,480. RED STAR (DESIGN). Cl. 9. 5–7–07.
62,781. SILVERETTE. Cl. 16. 5–28–07.
63,503. LINK BELT. Cl. 23. 6–25–07.
63,643. 9 AND DESIGN. Cl. 6. 7–2–07.
218,528. DR. DAVIS NIGHT AND DAY AND DESIGN. Cl. 51. 9–28–26.
219,142. NANCY. Cl. 51. 10–12–26.
219,698. THERMO AND DESIGN. Cl. 6. 10–19–26.
220,445. NTE CO. LTD. AND DESIGN. Cl. 1. 11–9–26.
220,703. LINOIL. Cl. 5. 11–16–26.
221,457. MAPLE LEAF BRAND AND DESIGN. Cl. 46. 11–30–26.
222,080. GREEK LETTERS FOR PSK. Cl. 28. 12–21–26.
222,137. VITA TUATTBJORN AND DESIGN. Cl. 52. 12–21–26.
222,213. BLATZ. Cl. 46. 12–28–26.
222,708. SIMPLEX AND DESIGN. Cl. 11. 1–4–27.
223,027. STEAREX. Cl. 15. 1–11–27.
223,263. THE NUMISMATIST. Cl. 38. 1–25–27.
223,428. KRYOLITH. Cl. 1. 2–1–27.
224,236. DURUS AND DESIGN. Cl. 11. 2–22–27.
224,453. COLONIAL. Cl. 15. 3–1–27.
225,157. HAWAIIAN CROSS AND DESIGN. Cl. 46. 3–15–27.
225,220. FLAIR. Cl. 51. 3–15–27.
225,399. BEL PAESE. Cl. 46. 3–15–27.
226,258. COUNTRY CLUB. Cl. 46. 4–5–27.
226,735. OLD QUAKER AND DESIGN. Cl. 49. 4–19–27.
227,056. TOOT SWEET. Cl. 46. 4–26–27.
227,075. PANELOUVRE. Cl. 12. 4–26–27.
227,553. TANNATE AND DESIGN. Cl. 27. 5–10–27.
227,922. COMMUNITY BRAND. Cl. 46. 5–17–27.
227,933. HALLMARK. Cl. 46. 5–17–27.
228,077. BIRMINGHAM SCHOOL CITY OF BIRMINGHAM, ALA. AND DESIGN. Cl. 37. 5–24–27.
228,558. EATRITE. Cl. 46. 6–7–27.
229,228. "TUCOLOR." Cl. 36. 6–21–27.
229,380. COCA-COLA AND DESIGN. Cl. 45. 6–28–27.
229,789. 6121. Cl. 39. 7–5–27.
229,910. METATONE. Cl. 18. 7–12–27.
422,440. UKM AND DESIGN. Cl. 23. 7–23–46.
422,613. DE-STA-CO. Cl. 23. 8–6–46.
425,141. ALPHATRON. Cl. 26. 11–5–46.
425,411. BLUE RIBBON AND DESIGN. Cl. 50. 11–19–46.
426,016. ELECTROX. Cl. 21. 12–10–46.
426,252. STAN-WICK. Cl. 6. 12–24–46.
426,468. THE INTERNATIONAL OUTLOOK. Cl. 38. 12–24–46.
426,814. SUPER HI-MO. Cl. 23. 1–14–47.
426,903. WILLIAM BAACK AND DESIGN. Cl. 18. 1–21–47.
426,929. MICE DOOM. Cl. 6. 1–21–47.
426,930. RAT DOOM. Cl. 6. 1–21–47.
426,953. VERSITOL. Cl. 18. 1–21–47.
426,967. OZON. Cl. 51. 1–21–47.
426,981. QUINOSIN. Cl. 6. 1–21–47.
427,091. DANTONE. Cl. 42. 1–28–47.
427,150. HARCO AND DESIGN. Cl. 37. 1–28–47.
427,417. CORO AND DESIGN. Cl. 28. 2–11–47.
427,437. V–10. Cls. 44 and 51. 2–11–47.
427,644. META SUDS. Cl. 52. 2–18–47.
427,892. MICROCELL. Cl. 31. 2–25–47.
427,893. AIRKEM. Cl. 34. 2–25–47.
428,373. NOEL AND DESIGN. Cl. 46. 3–25–47.
428,851. N AND DESIGN. Cl. 23. 4–8–47.
429,031. BARCOID. Cl. 14. 4–15–47.
429,292. THE CARDONE. Cl. 18. 4–29–47.
429,397. PLANKWELD. Cl. 12. 4–29–47.
429,556. PLATINE. Cl. 52. 5–6–47.
430,139. DELEX. Cl. 18. 6–10–47.
430,254. HAMITERGE. Cl. 52. 6–10–47.
430,307. ZIVAN-45. Cl. 14. 6–10–47.
430,404. COQUETTE. Cl. 43. 6–10–47.
430,665. MIGHTY-MAC. Cl. 39. 6–17–47.
430,756. DYNASTY. Cl. 44. 6–24–47.

TRADEMARK REGISTRATIONS CANCELED

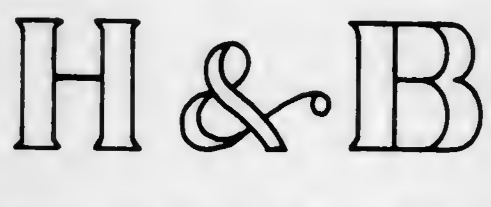
Section 8

The following registrations issued Jan. 31, 1961

710,382. SUPER TREATED. Cl. 1.
710,384. VAN WAVEREN AND DESIGN. Cl. 1.
710,385. NEVAMAR DECORATOR DESIGNS AND DESIGN. Cl. 1.
710,386. CCA-TEXTITE. Cl. 2.
710,387. LIQUI-LOK. Cl. 2.
710,389. DEKKOR. Cl. 2.
710,394. INSERTO-PAK. Cl. 3.
710,395. U.S. BASKET AND DESIGN. Cl. 3.
710,401. PRESERVE-A-TREE. Cl. 6.
710,405. ORJEL. Cl. 6.
710,422. SMOOTHAWAL. Cl. 12.
710,429. MORTARITE. Cl. 12.
710,444. STEUBEN. Cl. 17.
710,448. HESICAPS. Cl. 18.
710,453. PSORIACIDE. Cl. 18.
710,455. SPARKS AND DESIGN. Cl. 18.
710,458. VET-CARE. Cl. 18.
710,461. PARYTMID. Cl. 18.
710,464. PRIMADERM-B. Cl. 18.
710,465. LANTHOL-7. Cl. 18.
710,466. PRIMADERM. Cl. 18.
710,467. AROGUENT. Cl. 18.
710,472. MUSCATONE. Cl. 18.
710,478. ORADUCT. Cl. 18.
710,483. CV. Cl. 19.
710,485. CENTRONIC. Cl. 19.
710,486. WALK N TOTE. Cl. 19.
710,487. TOPPER. Cl. 19.
710,488. VII. Cl. 19.
710,489. UNITED SKIFF. Cl. 19.
710,493. MOVIELUX. Cl. 21.
710,495. LIBERTY BELL. Cl. 21.
710,496. KLEER-BRITE. Cl. 21.
710,504. SOLATROL. Cl. 21.
710,505. FIDELI-KRAFT. Cl. 21.
710,512. VOICEPLEX. Cl. 21.
710,519. L & K. Cl. 21.
710,523. NUMBERS MAGIC. Cl. 22.
710,527. FLEX-O-LINK. Cl. 22.
710,528. ELLSWORTH ELEPHANT. Cl. 22.
710,530. AUGUSTA AND DESIGN. Cl. 23.
710,532. SILVER GLORY. Cl. 23.
710,536. ROVACTOR. Cl. 23.
710,537. SEAL-A-ROUND. Cl. 23.
710,543. VICTOR. Cl. 23.
710,547. MICROMECH. Cl. 23.
710,554. CHALLENGER. Cl. 23.
710,556. DISTRIBUTADE. Cl. 26.
710,558. REDA TEMP-ALARM. Cl. 26.
710,561. LECTRO-SYNC. Cl. 26.
710,566. TEMPLINE. Cl. 26.
710,570. TIME TOTALIZER AND DESIGN. Cl. 26.
710,573. VIDIAC. Cl. 26.
710,577. DL AND DESIGN. Cl. 26.
710,585. WONDERCHROME. Cl. 26.
710,586. MULTICHROME. Cl. 26.
710,587. STELLACHROME. Cl. 26.
710,588. OCUPAK. Cl. 26.
710,593. FLEETWOOD. Cl. 26.
710,594. WATAMETER. Cl. 26.
710,595. WATA AND DESIGN. Cl. 26.
710,598. AMERESCO. Cl. 26.
710,603. MITRALUX AND REOLI. Cl. 26.
710,604. SPACELIGHT. Cl. 26.
710,605. PORTASPEC. Cl. 26.
710,608. "KEYLINKS." Cl. 28.
710,611. DIXIE LILY. Cl. 29.
710,613. TILT-A-BED. Cl. 32.
710,616. SLUMBER SLOPE. Cl. 32.
710,620. WATERFALL AND DESIGN. Cl. 32.
710,623. CRAMWELL AND DESIGN. Cl. 33.
710,624. MAX-O-KOOK. Cl. 34.
710,625. SENTINEL. Cl. 34.
710,632. MEDALLION AND DESIGN. Cl. 36.
710,633. HEARTBEAT. Cl. 36.
710,640. AROMINK. Cl. 39.
710,645. CHANGEWAY. Cl. 39.
710,649. GSW AND DESIGN. Cl. 39.
710,651. KLING FORM. Cl. 42.
710,652. CRIMPLON. Cl. 42.
710,655. EVER GRIP. Cl. 42.
710,656. HI! JEANIE. Cl. 44.
710,660. GEL GUIDE. Cl. 44.
710,663. VIP AND DESIGN. Cl. 44.
710,673. GRANDMA BURNS. Cl. 46.
710,677. SAMBO. Cl. 46.
710,680. WELCOME ARRIVAL. Cl. 46.
710,685. ORBIT. Cl. 46.
710,688. WBCO ETC. AND DESIGN. Cl. 48.
710,691. SALES DARTER. Cl. 50.
710,693. PERMA PINE. Cl. 50.
710,696. PIERRE CARDIN SUITE 16. Cl. 51.
710,702. EDEE. Cl. 52.
710,705. PA MA ALLEN AND DESIGN. Cl. 100.
710,714. PEELQUIK. Cl. 23.
710,717. JAMA BOOTS. Cl. 39.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

116,637. H & B. Cl. 22. 5–15–17. Hillerich & Bradsby Company, Louisville, Ky. Amended: In the statement, column 1, line 10 through column 2, line 1, the description of goods is deleted and *bats, golf clubs and golf bags* is inserted, and the drawing is amended to appear:



224,504. SIREN. Cl. 39. 3–1–27. Clarence L. Harvey, doing business as Firemen's Supply Co. United States Rubber Company, New York, N.Y. Amended to appear:

SIREN

227,991. LIGHTNIN. Cl. 21. 5–17–27. Mixing Equipment Co., Inc., Rochester, N.Y. Amended to appear:

425,569. BUTAPHYLLAMINE. Cl. 18. 11–26–46. The Wm. S. Merrell Company. Richardson-Merrell Inc., New York, N.Y. Amended: In the statement, column 1, lines 8 through 10, the description of goods is deleted and *A preparation having diuretic and myocardial stimulant properties* is inserted.

508,733. CHEMICAL & ENGINEERING NEWS. Cl. 38. 4–19–49. American Chemical Society, Washington, D.C. Amended to appear:

CHEMICAL & ENGINEERING NEWS

529,961. CONCENTRATES. Cl. 38. 8–29–50. American Chemical Society, Washington, D.C. Amended to appear:

CONCENTRATES

740,359. DENNY'S. Cl. 100. 11–6–62. Harold Butler Investment Corporation. Denny's Restaurants, Inc., La Mirada, Calif. Corrected: In the statement, column 2, line 2, "1958" should be deleted and *1959* should be inserted.

740,359. DENNY'S. Cl. 100. 11–6–62. Harold Butler Investment Corporation. Denny's Restaurants, Inc., La Mirada, Calif. Amended: In the statement column 1, after line 2, *, now by change of name Denny's Restaurants, Inc.* is inserted.

747,806. HB KRONENFILTER ETC. AND DESIGN. Cl. 17. 4–9–63. British-American Tobacco Co. (C.E.) G.m.b.H. B. A. T. Cigaretten-Fabriken G.m.b.H., Hamburg, Germany. Amended: In the statement, column 1, after line 2, *, now by change of name B. A. T. Cigaretten-Fabriken G.m.b.H.* is inserted.

814,393. SAF-T-PAK. Cl. 23. 9–6–66. KVP Sutherland Paper Company. Brown Company, Kalamazoo, Mich. Corrected: In the statement, column 1, before line 1 *Brown Company (Delaware corporation), 243 E. Paterson St., Kalamazoo, Mich. 49004*, should be inserted.

814,518. SPARKLE MOST. Cl. 37. 0–6–66. KVP Sutherland Paper Company. Brown Company, Kalamazoo, Mich. Corrected: In the statement before line 1, *Brown Company (Delaware corporation), 243 East Paterson St., Kalamazoo, Mich. 49004, assignee of* should be inserted.

818,257. POLY-PAINTER. Cl. 29. 11–8–66. Art & Sign Brush Manufacturing Corporation, Long Island City, N.Y. Corrected: In the statement, column 1, line 1, "Mfg. Corp." should be deleted and *Manufacturing Corporation* should be inserted.

822,573. STEP. Cl. 101. 1–17–67. Eric Marder Associates, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "Marden" should be deleted and *Marder* should be inserted.

823,470. TOMMY TUCKER SINGS FOR HIS SUPPER AND DESIGN. Cl. 46. 1–31–67. Thomas & Howard Company, Incorporated, Charlotte, N.C. Corrected: In the statement, column 1, line 1, "Thomas Howard Company, Inc." should be deleted and *Thomas & Howard Company, Incorporated* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

516,748. VELVA-FLO. Cl. 13. The Firestone Tire & Rubber Company. 10–25–49. New Cert. Sec. 7(c) to Chicago Specialty Manufacturing Company, Skokie, Ill.

609,053. RESQPAK. Cl. 22. The Muter Company, assignee of Superior Plastics, Inc. 7–19–55. New Cert. Sec 7(c) to Ero Industries, Inc., Chicago, Ill.

614,257. BELL BOY. Cl. 19. Bellingham Shipyards Co. 10–18–55. New Cert. Sec. 7(c) to American Marine Industries, Tacoma, Wash.

703,369. FOTO PLUS. Cl. 106. Charles Scharf, doing business as Foto Plus. 8–23–60. New Cert. Sec. 7(c) to Paramount Photo Service, Inc., Englewood, N.J.

711,316. IDX. Cl. 46. Food Industries Company. 2–14–41. New Cert. Sec. 7(c) to Food Industries Corporation, Dallas, Tex.

750,674. CALIB. Cl. 46. Food Industries Company. 6–4–63. New Cert. Sec. 7(c) to Food Industries Corporation, Dallas, Tex.

810,213. RED BRYAN'S AND DESIGN. Cl. 46. Smokehouse Barbecued Products, Inc. 6–21–66. New Cert. Sec. 7(c) to Texas Meat Packers, Inc., Dallas, Tex.

819,606. PINE CONE. Cl. 46. Albert W. Sisk & Son. 11–29–66. New Cert. Sec. 7(c) to Albert W. Sisk & Son, Inc., Preston, Md.

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General Cigar Co., Inc., New York, N.Y. 826,005, pub. 1–3–67. Cl. 17.
General Cigar Co., Inc., New York, N.Y. 826,006, pub. 1–3–67. Cl. 17.
General Cigar Co., Inc., New York, N.Y. 826,007, pub. 1–3–67. Cl. 17.
General Foods Corp., White Plains, N.Y. 826,177, pub. 1–3–67. Cl. 46.
General Foods Corp., White Plains, N.Y. 826,279. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 826,180, pub. 1–3–67. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 826,184, pub. 1–3–67. Cl. 46.
General Optics, Inc., Denver, Colo. 710,588, canc. Cl. 26.
General Tire & Rubber Co., The, Akron, Ohio. 825,965, pub. 1–3–67. Cl. 7.
Genesco Inc., Nashville, Tenn. 823,146, pub. 1–3–67. Cl. 39.
Genessee Brewing Co., The, Rochester, N.Y. 825,945, pub. 1–3–67. Cl. 2.
Georgia-Pacific Corp.: *See—*
  La Monte, George, & Son.
Getz, Alex, Chicago, Ill., to Maple Leaf Farms, Inc., Milford, Ind. 221,457, ren. 3–21–67. Cl. 46.
Giddings & Lewis Machine Tool Co.: *See—*
  Gisholt Machine Co.
Ginna Corp., Chicago, Ill. 710,486, canc. Cl. 19.
Gisholt Machine Co., Madison, to Giddings & Lewis Machine Tool Co., Fond Du Lac, Wis. 56,496, ren. 3–21–67. Cl. 23.
Glaser Bros., San Francisco, Calif., from General Cigar Co., Inc., New York, N.Y. 826,005, pub. 1–3–67. Cl. 17.
Gold Buffet Franchise, Inc., The, North Kansas City, Mo. 826,241, pub. 1–3–67. Cl. 100.
Gold Eagle Products Co., Chicago, Ill. 825,993, pub. 1–3–67. Cl. 15.
Goodrich, B. F., Co., The, Akron, Ohio. 826,121, pub. 1–3–67. Cl. 35.
Graphic Electronics, Inc., La Salle, Ill. 825,951, pub. 1–3–67. Cl. 5.
Green Giant Co., Le Sueur, Minn. 826,188, pub. 1–3–67. Cl. 46.
Green Giant Co., Le Sueur, Minn. 826,189, pub. 1–3–67. Cl. 46.
Green Giant Co., Le Sueur, Minn. 826,190, pub. 1–3–67. Cl. 46.
Green Ridge Turkey Farm, Inc., Nashua, N.H. 826,242, pub. 1–3–67. Cl. 100.
Green, William F., Clio, Mich. 826,258, pub. 1–3–67. Cl. 107.
Grumman Boats, Inc., Bethpage, N.Y. 710,485, canc. Cl. 19.
Gulliver's Trails, Inc., New York, N.Y. 826,255, pub. 1–3–67. Cl. 105.
Haack Bros. Mfg. Pharmacists, Inc., Portland, Oreg., to Lemmon Pharmacal Co., Sellersville, Pa. 429,292, ren. 3–21–67. Cl. 18.
Haas Chemical Corp., Taylor, Pa. 825,996, pub. 1–3–67. Cl. 16.
Haas-Miller Corp., to Harry Miller Corp., Philadelphia, Pa. 430,254, ren. 3–21–67. Cl. 52.
Hall, Glen, d.b.a. Place Finder, San Diego, Calif. 826,131, pub. 1–3–67. Cl. 38.
Handi-Clean Products, Inc., Greensboro, N.C. 826,232, pub. 1–3–67. Cl. 52.
Harland, John H., Co., Atlanta, Ga. 427,150, ren. 3–21–67. Cl. 37.
Harley-Davidson Motor Co., Milwaukee, Wis. 710,487, canc. Cl. 19.
Harvard Oil Co., Forest Park, Ill. 825,992, pub. 1–3–67. Cl. 15.
Harvey, Clarence L., d.b.a. Firemen's Supply Co. United States Rubber Co., New York, N.Y. 224,504. Am. 7(d). Cl. 39.
Hauck, Herman J., d.b.a. Hauck's, Dickinson, N. Dak. 710,620, canc. Cl. 32.
Heartbeat Music Publishing, Inc., Chicago, Ill. 710,683, canc. Cl. 36.
Heggblade-Marguleas Co., d.b.a. Co-River Citrus Co., San Francisco, Calif. 826,195, pub. 1–3–67. Cl. 46.
Helios Kemisk Tekniska Fabriker Aktiebolag: *See—*
  Lindahl, Anders.
Higgins Ink Co., Inc., Brooklyn, N.Y. 825,971, pub. 1–3–67. Cl. 11.
Highway Equipment Co., Cedar Rapids, Iowa. 710,554, canc. Cl. 23.
Hillerich & Bradsby Co., Louisville, Ky. 116,637. Am. 7(d). Cl. 22.
Hodgins Combustion Devices Ltd., Ottawa, Ontario, Canada. 826,118, pub. 1–3–67. Cl. 34.
Hoffman Camera Corp., Farmingdale, N.Y. 826,084, pub. 1–3–67. Cl. 26.
Hoffman Electronics Corp., Los Angeles, Calif. 710,496, canc. Cl. 21.
Holzapfel's Compositions Co., Ltd., New Castle-Upon-Tyne, England, to International Paint Co., Inc., New York, N.Y. 62,761, ren. 3–21–67. Cl. 16.
Hooker Chemical Corp., Niagara Falls, N.Y. 825,941, pub. 1–3–67. Cl. 1.
Hoppe, Frank A., to Frank A. Hoppe, Inc., Philadelphia, Pa. 63,643, ren. 3–21–67. Cl. 6.
Hoppe, Frank A., Inc.: *See—*
  Hoppe, Frank A.
Host Pajamas, Inc., New York, N.Y. 826,144, pub. 1–3–67. Cl. 39.
Houston Foods, Inc., Chicago, Ill. 826,183, pub. 1–3–67. Cl. 46.
Hudson National, Inc., from Hudson Vitamin Products, Inc., New York, N.Y. 826,213, pub. 1–3–67. Cl. 51.
Hudson Vitamin Products, Inc.: *See—*
  Hudson National, Inc.
Huffman Mfg. Co., The, Miamisburg, Ohio. 826,269. Cl. 19.
Human Capability: *See—*
  Cohen, Leonard A.
Humble Oil & Refining Co.: *See—*
  Beacon Oil Co.
Ideal Industries, Inc., Sycamore, Ill. 825,947, pub. 1–3–67. Multiple Class (Classes 4, 15, 21, and 23).
Imperial Chemical Industries Ltd., London, England. 710,652, canc. Cl. 42.
Imperial Chemical Industries Ltd., London, England. 825,953, pub. 1–3–67. Cl. 6.
Imperial Chemical Industries Ltd., London, England. 825,954, pub. 1–3–67. Cl. 6.
Indola N.V., Rijswijk, Netherlands. 710,493, canc. Cl. 21.
Industrial Electronics Laboratories, Inc., Toledo, Ohio. 710,566, canc. Cl. 26.
Interchemical Corp.: *See—*
  Webster, F. S., Co.
Intercontinental Import & Export Co., Inc., Chicago, Ill. 826 206, pub. 1–3–67. Cl. 49.
International Genetics Corp.: *See—*
  Vantress Farms, Inc.
International Minerals & Chemical Corp., Skokie, Ill. 825,935, pub. 1–3–67. Cl. 1.
International Minerals & Chemical Corp., d.b.a. Ac'cent International Skokie, Ill. 826,167, pub. 1–3–67. Cl. 46.
International Minerals & Chemical Corp., d.b.a. Ac'cent International, Skokie, Ill. 826,168, pub. 1–3–67. Cl. 46.
International Paint Co., Inc.: *See—*
  Holzapfel's Compositions Co., Ltd.
International Salt Co., Clarks Summit, Pa. 825,958, pub. 1–3–67. Cl. 6.
Irish Potato Chips Ltd., Manitoba, Canada. 826,196, pub. 1–3–67. Cl. 46.
Italia Swiss Colony: *See—*
  United Vintners, Inc.
Janelly Sales, Ltd., Saratoga Springs, N.Y. 826,015, pub. 1–3–67. Cl. 18.
Jersey Farm Baking Co.: *See—*
  Ward Foods, Inc.
Jetton, Betty, d.b.a. The Celluclay Co., Midland, Tex. 826,125, pub. 1–3–67. Cl. 37.
Johns, Robin, Perfumed Colognes: *See—*
  O'Hara, Patricia F.
KVP Sutherland Paper Co. Brown Co., Kalamazoo, Mich. 814,393, cor. Cl. 23.
KVP Sutherland Paper Co. Brown Co., Kalamazoo, Mich. 814,518, cor. Cl. 37.
Kadesh Travel Agency, Inc., North Plainfield, N.J. 826,256, pub. 1–3–67. Cl. 105.
Kahn Research Laboratories, Inc., Freeport, N.Y. 710,512, canc. Cl. 21.
Kauai Fruit & Land Co. Ltd., Kalaheo, Kauai, Hawaii, to Maui Pineapple Co., Ltd., Haliimaile, Maui, Hawaii. 225,157, ren. 3–21–67. Cl. 46.
Kaufmann, P., Inc., New York, N.Y. 826,158, pub. 1–3–67. Cl. 42.
Keever Co., The, from The Keever Starch Co., Columbus, Ohio. 826,283. Cl. 52.
Keever Starch Co., The: *See—*
  Keever Co., The.
Kelley, A. W., d.b.a. Hura-King Coin-Op Car Wash, San Antonio, Tex. 826,073, pub. 1–3–67. Cl. 23.

Kenmar Mfg. Co., The, East Palestine, Ohio. 826,111, pub. 1–3–67. Cl. 32.
Kennebunkport Dump Association, Kennebunkport, Maine. 826,263, pub. 1–3–67. Cl. 200.
Kenwood Mfg. (Woking) Ltd., New Lane, Havant, England. 826,029, pub. 1–3–67. Cl. 21.
Killeen, Lee P., Dallas, Tex. 826,267. Cl. 12.
Knapp-Sherriff-Koelle, Inc., Donna, Tex. 826,186, pub. 1–3–67. Cl. 46.
Knaust Brothers, Inc., d.b.a. Knaust Bros., Catskill, N.Y. 710,472, canc. Cl. 18.
Krasnow Industries, Inc., Long Island City, N.Y. 826,219, pub. 4–26–66. Cl. 51.
Kroger Co., The: *See—*
  Kroger Grocery & Baking Co.
Kroger Grocery & Baking Co., The, to The Kroger Co., Cincinnati, Ohio. 226,258, ren. 3–21–67. Cl. 46.
Kroy Tanning Co., Inc., Salem, Mass. 825,942, pub. 1–3–67. Cl. 1.
Kuss, R. L., & Co., Inc., Findlay, Ohio. 825,980, pub. 1–3–67. Cl. 12.
L & K Mfg. Co., Denver, Colo. 710,519, canc. Cl. 21.
LKM Div.: *See—*
  Curtis, Helene, Industries, Inc.
L & R Mfg. Co., d.b.a. Edee Products Division, Kearny, N.J. 710,702, canc. Cl. 52.
Lady Crystal, Inc., Buffalo, N.Y. 826,176, pub. 4–12–66. Cl. 46.
Lambert, Robert J., d.b.a. Lambert Seed Co., Newport, Ark. 825,939, pub. 1–3–67. Cl. 1.
Lambert Seed Co.: *See—*
  Lambert, Robert J.
La Monte, George, & Son, New York, N.Y., to Georgia-Pacific Corp., Portland, Oreg. 58,674, ren. 3–21–67. Cl. 37.
Lanman & Kemp-Barclay & Co. Inc.: *See—*
  Barclay & Barclay.
Lanvin-Charles of The Ritz, Inc., New York, N.Y. 826,218, pub. 5–3–66. Cl. 51.
Lavender Licorice: *See—*
  Thomas, Margaret L.
Lawn-A-Mat of Metro, Washington, Inc., Washington, D.C. 826,250, pub. 1–3–67. Cl. 103.
Leichter, Emil, Watch Co., Inc., New York, N.Y. 826,094, pub. 1–3–67. Cl. 27.
Lemmon Pharmacal Co.: *See—*
  Haack Bros. Mfg. Pharmacists, Inc.
Lendt & Co., Inc.: *See—*
  Augusta Absauganlagen Ernst Jacobi.
Les Parfums de Dana, Inc., New York, N.Y. 429,556, ren. 3–21–67. Cl. 52.
Levy & Levis Co., Inc., The, New York, N.Y. 228,558, ren. 3–21–67. Cl. 46.
Liberty Bell Promotion Co.: *See—*
  Montgomery, Carlos A.
Library Binding Service, Inc., Des Moines, Iowa. 826,126, pub. 1–3–67. Cl. 37.
Lilly, Eli, and Co.: *See—*
  Lilly, Eli, & Co., The.
Lilly, Eli, & Co., The, to Eli Lilly and Co., Indianapolis, Ind. 59,578, ren. 3–21–67. Cl. 18.
Lilly, Eli, & Co., The, to Eli Lilly and Co., Indianapolis, Ind. 60,018, ren. 3–21–67. Cl 18
Lima, Juan S., d.b.a. Sanchelima, Miami, Fla. 826,191, pub. 1–3–67. Cl. 46.
Lindahl, Anders, to Helios Kemisk Tekniska Fabriker Aktiebolag, Stockholm, Sweden. 222,137, ren. 3–21–67. Cl. 52.
Linder Bros., Inc., Scranton, Pa. 826,141, pub. 1–3–67. Cl. 39.
Lindgren, Frank T., d.b.a. The Silencer Electronics, Berkeley, Calif. 826,270. Cl. 21.
Link-Belt Co., Chicago, Ill. 63,503, ren. 3–21–67. Cl. 23.
Lipton, Thomas J., Inc., Englewood Cliffs, N.J. 826,202, pub. 1–3–67. Cl. 46.
Llovet Catala, Jose M., d.b.a. AFHA, Barcelona, Spain. 826,259, pub. 1–3–67 Cl. 107.
Lloyd, George, d.b.a. A. Lloyd & Son, Huntingdon, Pa. 826,175, pub. 1–3–67. Cl. 46.
Lloyd, G., & Son: *See—*
  Lloyd, George.
Low Calorie Candy Co., Inc., The, Yonkers, N.Y. 826,163, pub 1–3–67. Multiple Class (Classes 45 and 46).
Lowenbaum, R., Mfg. Co., St. Louis, Mo. 826,147, pub. 1–3–67. Cl. 39.
Lowe's Inc., Cassopolis, Mich. 826,045, pub. 1–3–67. Cl. 22.
Luber-Finer Inc., Los Angeles, Calif. 427,892, ren. 3–21–67. Cl. 31.
Madison Dental Co., Madison, Wis. 826,043, pub. 1–3–67. Cl. 22
Mamakos, Peter J., d.b.a. The Demetrios Co., Hollywood, Calif. 826,099, pub. 1–3–67. Cl. 28.
Mandarin Textiles, Ltd.: *See—*
  Associated Products, Inc.
Manning, John, d.b.a. John Manning & Co., Saticoy, Calif. 826,203, pub. 1–3–67. Cl. 46.
Manning, John, & Co.: *See—*
  Manning, John.
Manning Mfg. Corp., Chicago, Ill. 826,050, pub. 1–3–67. Cl. 22.
Maple Leaf Farms, Inc.: *See—*
  Getz, Alex.
Marder, Eric, Associates, Inc., New York, N.Y. 822,573, cor. Cl. 101.
Marion Laboratories, Inc., Kansas City, Mo. 826,010, pub. 1–3–67. Cl. 18.
Marquette Corp., Minneapolis, Minn., from Westway Advertising, Inc., Seattle, Wash. 826,247, pub. 1–3–67. Cl. 101.
Marshall Field & Co., Chicago, Ill., to Yardley of London, Inc., Totowa, N.J. 225,220, ren. 3–21–67. Cl. 51.
Marshall, John, d.b.a. John Marshall Productions, Hollywood, Calif. 826,092, pub. 1–3–67. Cl. 26.
Marshall, John, Productions: *See—*
  Marshall, John.
Mattel, Inc., Hawthorne, Calif. 826,046, pub. 1–3–67. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 826,047, pub. 1–3–67. Cl. 22.
Maui Pineapple Co., Ltd.: *See—*
  Kauai Fruit & Land Co. Ltd.
Max-O-Kook, Inc., Fremont, Nebr. 710,024, canc. Cl. 34.
May, Charles N., & Co., Chicago, Ill. 826,280. Cl. 49.
McDonald's Corp., Chicago, Ill. 826,238, pub. 1–3–67. Cl. 100.
McGraw-Hill, Inc.: *See—*
  McGraw-Hill Publishing Co., Inc.
McGraw-Hill Publishing Co., Inc., to McGraw-Hill, Inc., New York, N.Y. 426,468, ren. 3–21–67. Cl. 38.
McKay Co., The, Pittsburgh, Pa. 826,114, pub. 1–3–67. Cl. 34.
McKesson & Robbins, Inc.: *See—*
  McKesson & Robbins.
McKesson & Robbins, to McKesson & Robbins, Inc., New York, N.Y. 59,788, ren. 3–21–67. Cl. 18.
Meade Mfg., Inc., Meade, Kans. 826,018, pub. 1–3–67. Cl. 19.
Medallion Records, New York, N.Y. 710,632, canc. Cl. 36.
Medicated Products Co., Chicago, Ill. 826,041, pub. 5–3–66. Cl. 22.
Melvin Candy Co., Inc., to The Sweets Co. of America, Inc., of New York, N.Y., Chicago, Ill., to Tootsie Roll Industries, Inc., Hoboken, N.J. 227,056, ren. 3–21–67. Cl. 46.
Merrell, Wm. S., Co., The. Richardson-Merrell Inc., New York, N.Y. 425,569. Am. 7(d). Cl. 18.
Metals Processing & Welding Corp., Columbus, Ind. 710,458, canc. Cl. 18.
Micromech Mfg. Corp., Union, N.J. 710,547, canc. Cl. 23.
Midwest Hanger Co., Liberty, Mo. 825,944, pub. 1–3–67. Cl. 2.
Miller, Harry Corp.: *See—*
  Haas-Miller Corp.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 825,948, pub. 1–3–67. Cl. 4.
Mr. Mod Shop, Inc., New Orleans, La. 826,062, pub. 1–3–67. Cl. 22.
Mixing Equipment Co., Inc., Rochester, N.Y. 227,991. Am. 7(d). Cl. 21.
Monroe, Arthur N., Portland, Oreg. 826,251, pub. 1–3–67. Cl. 103.
Monroe Calculating Machine Co., Orange, N.J. 710,550, canc. Cl. 26.
Monroe International Corp., Orange, N.J. 826,089, pub. 1–3–67. Cl 26.
Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 426,981, ren. 3–21–67. Cl. 6.
Monsanto Co.: *See—*
  Monsanto Chemical Co.
Monsanto Co., St. Louis, Mo. 825,957, pub. 1–3–67. Multiple Class (Classes 6 and 12).
Montgomery, Carlos A., d.b.a. Liberty Bell Promotion Co., Atlanta, Ga. 710,495, canc. Cl. 21.
Moreau, Abel, Brussels, Belgium. 710,453, canc. Cl. 18.
Morehouse-Cowles, Inc., Los Angeles, Calif. 826,077, pub. 11–1–66. Cl. 23.
Morris, Philip, Inc., New York, N.Y. 826,002, pub. 1–3–67. Cl. 17.
Morris, Philip, Inc., New York, N.Y. 826,003, pub. 1–3–67. Cl. 17.
Morris, Philip, Inc., New York, N.Y. 826,004, pub. 1–3–67. Cl. 17.
Morris, Philip, Inc., New York, N.Y. 826,080, pub. 1–3–67. Cl. 23.
Moser Paper Co., Chicago, Ill. 825,956, pub. 1–3–67. Cl. 6.
Moyer-Diebel Metalcrafts Ltd., Ontario, Canada. 826 074, pub. 1–3–67. Cl. 23.
Murphy Music Industries, San Fernando, Calif. 826,123, pub. 1–3–67. Cl. 36.
Murphy Paints, Inc.: *See—*
  Murphy Varnish Co.
Murphy Varnish Co., Newark, N.J., to Murphy Paints, Inc., Baltimore, Md. 58,497, ren. 3–21–67. Cl. 16.
Murray, Edgar A., Co., Detroit, Mich., to H. A. Chittick, d.b.a. Fairfax Biological Laboratory, Clinton Corners, N.Y. 426,929, ren. 3–21–67. Cl. 6.
Murray, Edgar A., Co. Detroit, Mich., to H. A. Chittick, d.b.a. Fairfax Biological Laboratory, Clinton Corners, N.Y. 426,930, ren. 3–21–67. Cl. 6.
Muter Co., The, assignee of Superior Plastics, Inc., to Ero Industries, Inc. Chicago, Ill. 609,053, new cert. Cl. 22.
Nalco Chemical Co., Chicago, Ill. 826,105, pub. 1–3–67. Cl. 31.
Nash Engineering Co., South Norwalk, Conn. 428,851, ren. 3–21–67. Cl. 23.
Natal Tanning Extract Co., Ltd., The, Pietermaretzburg, Natal, South Africa. 220,445, ren. 3–21–67. Cl. 1.
National Gypsum Co., Buffalo, N.Y. 710,422, canc. Cl. 12.
National Plastic Products Co., The, Odenton, Md. 710,385, canc. Cl. 1.
National Presto Industries, Inc., Eau Claire, Wis. 710,593, canc. Cl. 26.
National Research Corp., Boston, Mass., to National Research Corp., Newton Highlands, Mass. 425,141, ren. 3–21–67. Cl. 26.
National Tea Co., Chicago, Ill. 826,197, pub. 1–3–67. Cl. 46.
National Tours, Inc., Chicago, Ill. 826,253, pub. 1–3–67. Cl. 105.
Neiman-Marcus Co., Dallas, Tex. 826,215, pub. 1–11–66. Cl. 51.
New England Fish Co., Seattle, Wash. 826,044, pub. 1–3–67. Cl. 22.

Night & Day Chemical Co., Water Valley, Miss., to G. Davis, d.b.a. Night & Day Chemical Co., Memphis, Tenn. 218,528, ren. 3–21–67. Cl. 51.
Ningard, Edward R., d.b.a. Systemat, Silver Spring, Md. 826,248, pub. 1–3–67. Cl. 101.
Noel & Compania Limitada Sociedad Anonima Argentina de Dulces Y Conservas: *See—*
  Noel & Cia. Ltda. Sociedad Argentina de Dulces Y Conservas.
Noel & Cia Ltda. Sociedad Argentina de Dulces Y Conservas, to Noel & Compania Limitada Sociedad Anonima Argentina de Dulces Y Conservas, Buenos Aires, Argentina. 428,373, ren. 3–21–67. Cl. 46.
Nokes Rim & Wheel Co.: *See—*
  Boxrud, Phillip E.
Norsk Mobelfabrikk A/S, Oslo, Norway. 826,109, pub. 1–3–67. Cl. 32.
North Lubec Mfg. & Canning Co., North Lubec, Maine. 61,787, ren. 3–21–67. Cl. 46.
Novelty Wreath Co., Philadelphia, Pa. 710,693, canc. Cl. 50.
Nulte, Ella C., d.b.a. Windsor Spring Water Co., Hephizbah, Ga. 826,162, pub. 1–3–67. Cl. 45.
Nygen, Earl, Lees Summit, Mo. 826,275. Cl. 33.
Office Specialties Co., to L. Delevie, d.b.a. Office Specialties Co., and The Simplex Rubber Stamp and Printing Co., Los Angeles, Calif. 222,708, ren. 3–21–67. Cl. 11.
O'Hara, Patricia F., d.b.a. Robin Johns Perfumed Colognes, Frederick, Md. 826,223, pub. 1–3–67. Cl. 51.
O'Hara, Patricia F., d.b.a. Robin Johns Perfumed Colognes, Frederick, Md. 826,224, pub. 1–3–67. Cl. 51.
Old Town Corp., Brooklyn, N.Y. 825,970, pub. 1–3–67. Cl. 11.
Old Town Corp., Brooklyn, N.Y. 825,981, pub. 1–3–67. Multiple Class (Classes 13, 23, 29, and 37).
Olin Mathieson Chemical Corp., New York, N.Y. 825,946, pub. 1–3–67. Cl. 2.
Omega Hospital Supply, Inc., Passaic, N.J. 826,230, pub. 2–8–66. Cl. 52.
Optische Anstalt Metzler & Cie., Waiblingen, Germany. 826,090, pub. 1–3–67. Cl. 26.
Osborne Coinage Co., The, Cincinnati, Ohio. 826,210, pub. 1–3–67. Cl. 50.
Osborne Coinage Co., The, Cincinnati, Ohio. 826,211, pub. 1–3–67. Cl. 50.
Pabst Brewing Co.: *See—*
  Blatz, Valentin, Brewing Co.
Paramount Photo Service, Inc.: *See—*
  Scharf, Charles.
Park Electrochemical Corp., Flushing, N.Y. 825,966, pub. 1–3–67. Multiple Class (Classes 8 and 32).
Parke, Davis & Co., to Parke, Davis & Co., Detroit, Mich. 58,085, ren. 3–21–67. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 229,910, ren. 3–21–67. Cl. 18.
Peavey Co., Minneapolis, Minn. 826,178, pub. 1–3–67. Cl. 46.
Peelquik Co. Inc., New Rochelle, N.Y. 710,714, canc. Cl. 23.
Pennsalt Chemicals Corp.: *See—*
  Pennsylvania Salt Mfg. Co.
Pennsalt Chemicals Corp., Philadelphia, Pa. 825,972, pub. 1–3–67. Cl. 12.
Pennsylvania Salt Mfg. Co., to Pennsalt Chemicals Corp., Philadelphia, Pa. 223,428, ren. 3–21–67. Cl. 1.
Pepsico, Inc., New York, N.Y. 826,165, pub. 1–3–67. Cl. 45.
Peritz, Alice: *See—*
  Peritz, Ernst.
Peritz, Ernst, d.b.a. Delex Products, to A. Peritz, d.b.a. Delex Products, New York, N.Y. 430,139, ren. 3–21–67. Cl. 18.
Peterson System, Inc., The, Greensburg, Pa. 826,257, pub. 1–3–67. Cl. 107.
Pfizer, Chas., & Co., Inc., New York, N.Y. 825,991, pub. 1–3–67. Cl. 14.
Pharmaceutical Laboratories, Inc., Jersey City, from Pharmaceutical Laboratories, Inc., Plainfield, N.J. 826,214, pub. 1–11–66. Cl. 51.
Philadelphia Thermometer Co., The, Philadelphia, Pa. 826,085, pub. 1–3–67. Cl. 26.
Philips Electronics and Pharmaceutical Industries Corp., New York, N.Y. 710,605, canc. Cl. 26.
Phi Sigma Kappa Fraternity, Appleton, Wis., to Phi Sigma Kappa Fraternity, Drexal Hill, Pa. 222,080, ren. 3–21–67. Cl. 28.
Picaso-Anstalt, Vaduz, Liechtenstein. 710,696, canc. Cl. 51.
Pioneer Industries, Inc., Darby, Pa. 710,645, canc. Cl. 39.
Pittsburgh Chemical Laboratory, to L. R. Schmidt, d.b.a. Pittsburgh Chemical Laboratory, Pittsburgh, Pa. 427,644, ren. 3–21–67. Cl. 52.
Pixie Vendors: *See—*
  Axelrod, Louis S.
Place Finder: *See—*
  Hall, Glen E.
Plastic Coating Corp., The, Holyoke, Mass. 826,239, pub 1–3–67. Multiple Class (Classes 100, 103, and 107).
Plews Oiler, Inc., Minneapolis Minn. 826,268. Cl. 13.
Plykon Corp., Hyde, Md. 826,148, pub. 1–3–67. Cl. 40.
Pres-Stick, Inc., Haverhill, Mass. 710,651, canc. Cl. 42.
Preston, Jo, Cosmetics: *See—*
  Preston, Josephine K.
Preston, Josephine K., d.b.a. Jo Preston Cosmetics, Wantagh, N.Y. 826,225, pub. 1–3–67. Cl. 51.
Publicker Commercial Alcohol Co., to Publicker Industries Inc., Philadelphia, Pa. 219,698, ren. 3–21–67. Cl. 6.
Publicker Industries Inc.: *See—*
  Publicker Commercial Alcohol Co.
Pullets Unltd.: *See—*
  Pullets Unltd., Inc.
Pullets Unltd., Inc., from Pullets Unltd, Fort Recovery, Ohio. 825,938, pub. 1–3–67. Cl. 1.
"Pull Over" Corp., Worcester, Mass. 825,973, pub. 1–3–67. Cl. 12.
Pure Milk Association, Chicago, Ill. 710,705, canc. Cl. 100.
Purex Corp., Ltd., Lakewood, Calif. 826,233, pub. 1–3–67. Cl. 52.
Purex Corp., Lakewood, Calif. 826,235, pub. 1–3–67. Cl. 52.
Puritan Chemical Co., Atlanta, Ga. 826,033, pub. 1–3–67. Multiple Class (Classes 21 and 29).
Rado, Tibor, Columbus, Ohio. 710,523, canc. Cl. 22.
Rawson Drug and Sundry Co., Inc., Oakland, Calif. 826,104, pub. 1–3–67. Cl. 29.
Reda, Edward E., San Jose, Calif. 710,558, canc. Cl. 26
Regal Toy Ltd., Toronto, Ontario, Canada. 826,049, pub 1–3–67. Cl. 22.
Rehois Chemical Co.: *See—*
  Armour Pharmaceutical Co.
Reid-Meredith, Inc., Lawrence, Mass. 826,150, pub. 1–3–67. Cl. 40.
Rent-A-Man, Inc., Baltimore, Md. 826,285. Cl. 101.
Reuland Electric Co., City of Industry, Calif. 826,035, pub. 1–3–67. Cl. 21.
Reynolds Metals Co., Richmond, Va. 825,940, pub. 1–3–67. Cl. 1.
Rhein-Chemie G.m.b.H., Heidelberg, Germany. 825,995, pub. 4–27–65. Cl. 16.
Rhoads, J. E., & Sons Inc.: *See—*
  Rhoads, J. E., & Sons.
Rhoads, J. E., & Sons, Philadelphia, Pa., to J. E. Rhoads & Sons, Wilmington, Del. 227,553, ren. 3–21–67. Cl. 27.
Richardson-Merrell Inc., New York, N.Y. 826,016, pub. 1–3–67. Cl. 18.
Richier, Paris, France. 826,071, pub. 1–3–67. Cl. 23.
Richier, Paris, France. 826,072, pub. 1–3–67. Cl. 23.
Riggio Tobacco Corp. of New York Ltd., New York, N.Y. 826,008, pub. 1–3–67. Cl. 17.
Ripley Co., Inc., Middletown, Conn. 826,027, pub. 1–3–67. Cl. 21.
Rite-O-Lite of California, Los Angeles, Calif. 826,038, pub. 1–3–67. Cl. 21.
Rite Rate Rent-A-Car, Los Angeles, Calif. 826,254, pub. 1–3–67. Cl. 105.
Riverside & Dan River Cotton Mills, Inc., to Dan River Mills, Inc., Danville, Va. 427,091, ren. 3–21–67. Cl. 42.
Roberts, J., Mfg. Co., The, Kingston, Pa. 826,039, pub. 3–3–64. Cl. 22.
Robbins, Harry A., d.b.a. A.R.M. Display Racks & Co., Danville, Ill. 826,108, pub. 1–3–67. Cl. 32.
Romney Produce Co., Phoenix, Ariz. 826,200, pub. 1–3–67. Cl. 46.
Ronan & Kunzl, Inc., Marshall, Mich. 826,075, pub. 1–3–67. Cl. 23.
St. Regis Paper Co.: *See—*
  Birmingham Paper Co.
Samoa Corp., The. *See—*
  Scovil, D. & H.
Sanchelima: *See—*
  Lima, Juan S.
Saurage, Henry N., d.b.a. Baton Rouge Coffeemills, to Community Coffee Co., Inc., Baton Rouge, La. 227,922, ren. 3–21–67. Cl. 46.
Sayous, Charles A., Inc., New York, N.Y. 826,187, pub. 1–3–67. Cl. 46.
Scharf, Charles, d.b.a. Foto Plus, to Paramount Photo Service, Inc., Englewood. N.Y. 703,369, new cert. Cl. 106.
Schauer Machine Co., to Schauer Mfg. Corp., Cincinnati, Ohio. 426,016, ren. 3–21–67. Cl. 21.
Schauer Mfg. Corp.: *See—*
  Schauer Machine Co.
Schenley Distillers, Inc.: *See—*
  Corning Distilling Co.
Scherl & Roth, Inc.: *See—*
  Simson & Frey, Inc.
Schmidt, F. C., Ltd., Brooklyn, N.Y. 826,152, pub. 1–17–67. Cl. 40.
Schmidt, Lois R.: *See—*
  Pittsburgh Chemical Laboratory.
Scholten's, W. A., Chemische Fabrieken N.V., Groningen, Netherlands. 710,405, canc. Cl. 6.
Scovil, D. & H., Higganum, Conn., to The Samoa Corp., New York, N.Y. 29,529, ren. 3–21–67. Cl. 23.
Screen Gems, Inc., New York, N.Y. 826,260, pub. 1–3–67. Cl. 107.
Sealaround Corp., Chicago, Ill. 710,537, canc. Cl. 23.
Selchow & Righter Co., Bay Shore, N.Y. 710,528, canc. Cl. 22.
Seng Co., The, from Serta Associates, Inc., Chicago, Ill. 710,613, canc. Cl. 32.
Serta Associates, Inc.: *See—*
  Seng Co., The.
Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 826,236, pub. 1–3–67. Cl. 52.
Sherman, Robert M., d.b.a. Madeleine de Martel Cosmetics, New York, N.Y. 826,237, pub. 1–3–67. Cl. 52.
Siegler Corp., The, Pasadena, Calif. 710,625, canc. Cl. 34.
Silencer Electronics, The: *See—*
  Lindgren, Frank T.
Silo-Vac Corp., Richfield, Minn. 825,983, pub. 1–3–67. Cl. 13.
Silva Industries, Inc., New York, N.Y. 710,527, canc. Cl. 22.
Simmons Co., New York, N.Y. 826,112, pub. 1–3–67. Cl. 32.
Simplex Rubber Stamp and Printing Co., The: *See—*
  Office Specialties Co.
Simson & Frey, Inc., New York, N.Y., Scherl & Roth, Inc., Cleveland, Ohio. 229,228, ren. 3–21–67. Cl. 36.

Sisk, Albert W., & Son, to Albert W. Sisk & Son, Inc., Preston, Md. 819,606, new cert. Cl. 46.
Smith, Werner G., Co., The, Cleveland, Ohio, to Archer-Daniels-Midland Co., Minneapolis, Minn. 220,703, ren. 3–21–67. Cl. 5.
Smoke House Barbecued Products, Inc.: *See—*
    Texas Meat Packers, Inc.
Smokehouse Barbecued Products, Inc., to Texas Meat Packers, Inc., Dallas, Tex. 810,213, new cert. Cl. 46.
Societa Metallurgica Italiana, Florence, Italy. 825,985, pub. 1–3–67. Cl. 14.
Societa Metallurgica Italiana, Florence, Italy. 825,986, pub. 1–3–67. Cl. 14.
Societe CTA, Compagnie Industrielle de Textiles Artificiels & Synthetiques, Paris, France. 825,932, pub. 1–3–67. Multiple Class (Classes 1, 42, and 43).
Softex Chemical Co. Inc., Orange, Tex. 826,229, pub. 3–30–65. Cl. 52.
Solarsonic Devices, Inc., Hicksville, N.Y. 710,504, canc. Cl. 21.
Southern Athletic Service, Inc., Leesburg, Fla. 826,052, pub. 1–3–67. Cl. 22.
Spacelight, Inc., Hereford, Tex. 710,603, canc. Cl. 26.
Spacelight, Inc., Hereford, Tex. 710,604, canc. Cl. 26.
Sparks Professional Veterinary Supply Co.: *See—*
    Sparks, Samuel G.
Sparks, Samuel G., d.b.a. Sparks Professional Veterinary Supply Co., Des Moines, Iowa. 710,455, canc. Cl. 18.
Spinnerin Yarn Co., Inc., to Spinnerin Yarn Co., Inc., New York, N.Y. 430,404, ren. 3–21–67. Cl. 43.
Spiratone, Inc., Flushing, N.Y. 826,088, pub. 1–3–67. Cl. 26.
Squier Cards, Milford, Conn. 826,127, pub. 7–23–63. Cl. 38.
Standard Instrument Corp., New York, N.Y. 710,570, canc. Cl. 26.
Standard Instrument Corp., New York, N.Y. 826,274. Cl. 26.
Standard X-Ray Co., Chicago, Ill. 825,963, pub. 1–3–67. Cl. 6.
Standard X-Ray Co., Chicago, Ill. 826,161, pub. 1–3–67. Cl. 44.
Stanley Home Products, Inc., Westfield, Mass. 426,252, ren. 3–21–67. Cl. 6.
Sta-Soil Corp., Van Nuys, Calif. 826,252, pub. 1–3–67. Cl. 103.
Stein, Hall & Co., Inc., New York, N.Y. 227,933, ren. 3–21–67. Cl. 46.
Sternco Industries, Inc., Allendale, N.J. 826,106, pub. 1–3–67. Cl. 31.
Steuben Cigarette Co., Inc., New York, N.Y. 710,444, canc. Cl. 17.
Stevens Candy Kitchens, Inc., Chicago, Ill. 826,181, pub. 1–3–67. Cl. 46.
Stratton Distilled Products: *See—*
    Vickers, J. & J., & Co., Ltd.
Strick Corp., from Fruehauf Corp., Fairless Hills, Pa. 826,021, pub. 1–3–67. Cl. 19.
Sulka, A., & Co., New York, N.Y. 826,139, pub. 1–3–67. Cl. 39.
Sulka, A., & Co., New York, N.Y. 826,140, pub. 1–3–67. Cl. 39.
Sullivan Machinery Co., Inc., Michigan City, Ind. 826,078, pub. 1–3–67. Cl. 23.
Sunbeam Corp., Chicago, Ill. 826,096, pub. 1–3–67. Cl. 27.
Sunbeam Corp., Chicago, Ill. 826,097, pub. 1–3–67. Cl. 27.
Sweets Co., of America, Inc., The: *See—*
    Tootsie Roll Industries, Inc.
Systemat: *See—*
    Ningard, Edward R.
Teen-Age Beachwear Corp., New York, N.Y. 826,136, pub. 1–3–67. Cl. 39.
Tela-Time Industries, New York, N.Y. 826,100, pub. 1–3–67. Cl. 28.
Tel-Ray Electronics, Los Angeles, Calif. 826,122, pub. 1–3–67. Cl. 36.
Teltscher Corp., The, New York, N.Y. 826,159, pub. 1–3–67. Cl. 44.
Tescom Corp., Minneapolis, Minn. 826,276. Cl. 34.
Texas Meat Packers, Inc.: *See—*
    Smokehouse Barbecued Products, Inc.
Texas Meat Packers, Inc., from Smoke House Barbecued Products, Inc., Dallas, Tex. 826,172, pub. 11–15–66. Cl. 46.
Thomas & Howard Co., Inc., Charlotte, N.C. 823,470, cor. Cl. 46.
Thomas, Margaret L., d.b.a. Lavender Licorice Products, Broderick, Calif. 826,053, pub. 1–3–67. Cl. 22.
Tootsie Roll Industries, Inc.: *See—*
    Melvin Candy Co., Inc.
Totsy Mfg. Co., Inc., Holyoke, Mass. 826,055, pub. 1–3–67. Cl. 22.
Trade Winds Campers, Inc., Manawa, Wis. 826,023, pub. 1–3–67. Cl. 1v.
True Temper Corp., Cleveland, Ohio. 826,082, pub. 1–3–67. Cl. 23.
United Knitting Machine Co., Cheltenham, to M. Weisbecker, Lansdale, Pa. 422,440, ren. 3–21–67. Cl. 23.
United Marine, Inc., Millville, N.J. 710,489, canc. Cl. 19.
United Nations Trading Co., Inc., New York, N.Y. 710,532, canc. Cl. 23.
U.S. Anger, Inc., New York, N.Y. 826,065, pub. 1–3–67. Cl. 23.
U.S. Anger, Inc., New York, N.Y. 826,066, pub. 1–3–67. Cl. 23.
U.S. Anger, Inc., New York, N.Y. 826,067, pub. 1–3–67. Cl. 23.
U.S. Basket Co., Inc., New York, N.Y. 710,395, canc. Cl. 3.
United States Leasing Corp., San Francisco, Calif. 826,243, pub. 1–3–67. Cl. 100.
United States Leasing Corp., San Francisco, Calif. 826,244, pub. 1–3–67. Cl. 100.
United States Plywood Corp., New York, N.Y. 429,397, ren. 3–21–67. Cl. 12.
United States Tobacco Co., New York, N.Y. 826,179, pub. 1–3–67. Cl. 46.
United Vintners, Inc., d.b.a. Cella Vineyards, San Francisco, Calif. 826,194, pub. 1–3–67. Cl. 46.
United Vintners, Inc., d.b.a. Italian Swiss Colony, San Francisco, Calif. 826,205, pub. 1–3–67. Cl. 47.
Univis, Inc., Fort Lauderdale, Fla. 826,091, pub. 1–3–67. Cl. 26.
Valspar Corp., The, Rockford, Ill. 826,000, pub. 1–3–67. Cl. 16.
Vantress Farms, Inc., from International Genetics Corp., Duluth, Ga. 825,931, pub. 1–3–67. Cl. 1.
Veno Drug Co., The: *See—*
    Beecham Group Ltd.
Ventilouvre Co., Inc.: *See—*
    Ventilouvre Co., The.
Ventilouvre Co., The, Bridgeport, Conn., to The Ventilouvre Co., Inc., Marietta, Ohio. 227,075, ren. 3–21–67. Cl. 12.
Vermont American Corp., Louisville, Ky. 826,076, pub. 1–3–67. Cl. 23.
Viceroy Mfg. Co., Ltd., Toronto, Ontario, Canada. 710,656, canc. Cl. 44.
Vickers, J. & J., & Co., Ltd., d.b.a. Stratton Distilled Products, Picadilly, London, England. 826,207, pub. 1–3–67. Cl. 49.
Vickers, J. & J., & Co., Ltd., d.b.a. Stratton Distilled Products, Picadilly, London, England. 826,208, pub. 1–3–67. Cl. 49.
Victor, Alexander F., Enterprises, Inc., Carmel-By-The-Sea, Calif. 710,543, canc. Cl. 23.
Victory Sales, Inc., Brockton, Mass. 826,135, pub. 1–3–67. Cl. 39.
Vigorol Co. Inc., Brooklyn, to The Borden Co., New York, N.Y. 426,967, ren. 3–21–67. Cl. 51.
Visual Improvement Products, Inc., New York, N.Y. 710,663, canc. Cl. 44.
Voss Photo Corp., Yonkers, N.Y. 710,594, canc. Cl. 26.
Voss Photo Corp., Yonkers, N.Y. 710,595, canc. Cl. 26.
Vought Industries, Inc., Dallas, Tex. 710,488, canc. Cl. 19.
Vsesojuznoje Exportno-Importnoje Objedinenije "Raznoexport," Moscow, U.S.S.R. 825,969, pub. 1–3–67. Cl. 9.
Wallace Silversmiths, Inc., Wallingford, Conn. 710,389, canc. Cl. 2.
Ward Foods, Inc., New York, N.Y., from Jersey Farm Baking Co., Detroit, Mich. 826,169, pub. 1–3–67. Cl. 46.
Ward Foods, Inc., New York, N.Y., from Jersey Farm Baking Co., Detroit, Mich. 826,170, pub. 1–3–67. Cl. 46.
Warren, Elwin C., Seattle, Wash. 826,261, pub. 1–3–67. Cl. 107.
Warner, William R., & Co. Inc., New York, N.Y., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 426,953, ren. 3–21–67. Cl. 18.
Warner-Lambert Pharmaceutical Co.: *See—*
    Warner, William R., & Co. Inc.
Wasco Products, Inc.: *See—*
    American Cyanamid Co.
Wausau Brewing Co., Wausau, Wis. 710,688, canc. Cl. 48.
Van Waveren, M., & Sons, Inc., Totowa, N.J. 710,384, canc. Cl. 1.
Webster, F. S., Co., Boston, Mass., to Interchemical Corp., New York, N.Y. 224,236, ren. 3–21–67. Cl. 11.
Weisbecker, Mary: *See—*
    United Knitting Machine Co.
Welcome Arrival Products Co., Inc., Minneapolis, Minn. 710,680, canc. Cl. 46.
Welcome Wagon International, Inc., Memphis, Tenn. 826,249, pub. 1–3–67. Cl. 101.
Wells, Inc., Attleboro, Mass. 826,101, pub. 1–3–67. Cl. 28.
Welsh Mfg. Co., Providence, R.I. 826,137, pub. 1–3–67. Cl. 39.
Western Gear Corp., Lynwood, Calif. 826,068, pub. 1–3–67. Cl. 23.
Westway Advertising, Inc.: *See—*
    Marquette Corp.
White, Martha, Inc., Nashville, Tenn. 826,201, pub. 1–3–67. Cl. 46.
Wilco Co., Los Angeles, Calif. 825,952, pub. 1–3–67. Cl. 5.
Williams, J. B., Co., Inc., The, Thomaston, Conn. 826,115, pub. 1–3–67. Cl. 34.
Williams, J. B., Co., Inc., The, Thomaston, Conn. 826,116, pub. 1–3–67. Cl. 34.
Williams, J. B., Co., Inc., The, Thomaston, Conn. 826,117, pub. 1–3–67. Cl. 34.
Williams, J. B., Co., Inc., The, Thomaston, Conn. 826,118, pub. 1–3–67. Cl. 34.
Windsor Spring Water Co.: *See—*
    Nulte, Ella C.
Wiscot Products Ltd., Hamilton, Ontario, Canada. 826,019, pub. 1–3–67. Cl. 19.
Withof, Georg C. K., G.m.b.H., Kassel, Germany. 826,273. Cl. 26.
Woodville Lime Products Co., The, Toledo, Ohio. 710,429, canc. Cl. 12.
Wooster Brush Co., The, Wooster, Ohio. 826,102, pub. 1–3–67. Cl. 29.
Wooster Brush Co., Inc., Wooster, Ohio. 826,103, pub. 1–3–67. Cl. 29.
World's Best Cheesecake, Inc., Falls Church, Va. 826,278. Cl 46.
Yardley of London, Inc.: *See—*
    Marshall Field & Co.
Ziv Steel & Wire Co., Chicago, Ill. 430,307, ren. 3–21–67. Cl. 14.

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OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

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PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of February 1967

Examiner affirmed	204
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Recording of Instruments

Effective April 1, 1967, the Patent Office will accept and record legible certified copies of original assignments or other instruments.

The certified copy, if not in the English language, will not be recorded unless accompanied by a translation signed by the translator.

Certification shall be to the fact that the instrument submitted is a true copy of the original and shall be made by a notary public or, if in a foreign country, by a consular officer of the United States or an officer authorized to administer oaths and authenticated by a consular officer of the United States.

RICHARD A. WAHL,
Assistant Commissioner.

Mar. 3, 1967.

Adjudicated Patents

(C.A.N.Y.) Mastini Patent No. 2,129,332 (237—55), for TELEPHONE SYSTEM. Claims 1 to 3 *Held* not infringed. *Mastini* v. *American Tel. and Tel. Co.*, 369 F.2d 378; 152 USPQ 368.

(C.A. Calif.) Lugash Patent No. 2,837,227 (214—77), for LOAD ELEVATOR FOR MOTOR TRUCKS, *Held* invalid. *Santa Anita Mfg. Corp.* v. *Lugash*, 369 F.2d 964; 152 USPQ 44.

(C.A.N.Y.) Kellner and Block Patent No. 2,914,070 (128—559), for BODY ENCIRCLING GARMENTS, *Held* invalid. *Formal Fashions, Inc.* v. *Braiman Bows Inc.*, 369 F.2d 536; 152 USPQ 78.

(C.A. Mo.) Hillberg Patent No. 2,985,937 (245—207), for OUTSIDE HANGER ASSEMBLY FOR SUSPENDED CONCRETE FORM, *Held* invalid. *Superior Concrete Accessories, Inc.* v. *Richmond Screw Anchor Co.*, 369 F.2d 353; 151 USPQ 677.

(C.A. Calif.) Lugash Patent No. 2,989,196 (214—77), for HYDRAULIC HOIST FOR VEHICLES, *Held* invalid. *Santa Anita Mfg. Corp.* v. *Lugash*, 269 F.2d 964; 152 USPQ 44.

(C.A. Ill.) Iwerks Patent No. 3,118,340 (352—70), for PANORAMIC MOTION PICTURE CAMERA ARRANGEMENT. Claim 8 *Held* valid and infringed. *Walt Disney Productions* v. *Fred A. Niles Communications Center, Inc.*, 369 F.2d 230; 151 USPQ 528.

Disclaimers

Reissue No. 24,607.—*Arthur W. Seyfried*, Racine, Wis. FLEXIBLE COUPLING MEANS FOR SEPARABLE SHAFTS. Reissue Patent dated Feb. 24, 1959. Disclaimer filed Dec. 28, 1966, by the assignee, *Scovill Manufacturing Company*.

Hereby enters this disclaimer to claims 9 to 14 of said patent.

3,033,472.—*George D. Shelton-V*, Riverside, Calif. SPRAYING OF LIQUID PLASTIC AND AN ADDITIVE MATERIAL. Patent dated May 8, 1962. Disclaimer filed Dec. 23, 1966, by the assignee, *The Flintkote Company*.

Hereby enters this disclaimer to claims 1–4 of said patent.

3,133,640.—*Fredrick L. Calhoun*, Torrance, *Donald D. Williams*, Inglewood, and *James H. Wyman*, Pasadena, Calif. BOTTLE INSPECTION SYSTEM. Patent dated May 19, 1964. Disclaimer filed Dec. 2, 1966, by the assignee, *Geo. J. Meyer Manufacturing Co.*

Hereby enters this disclaimer to claim 16 of said patent.

3,152,702.—*Herman G. Klemm*, Largo, Fla., and *Donald S. Horne, Robert Ashton*, and *Leslie L. Kepkay*, Toronto, Ontario, Canada. GRAIN TANK AND CONVEYOR ASSEMBLY FOR COMBINES. Patent dated Oct. 13, 1964. Disclaimer filed Dec. 20, 1966, by the assignee, *Massey-Ferguson Limited*.

Hereby enters this disclaimer to claims 10 and 12 of said patent.

3,199,558.—*Gerald R. Anderson*, Campbell, and *Sherman H. Creed*, San Jose, Calif. FRUIT STEMMING, CORING AND SPLITTING MACHINE. Patent dated Aug. 10, 1965. Disclaimer filed Dec. 27, 1966, by the assignee, *FMC Corporation*.

Hereby enters this disclaimer to claim 23 of said patent.

3,259,812.—*William Marshall O'Neil*, Oak Park, Ill. NON-STICKING ARMATURE STRUCTURE FOR ELECTRO-

New Application Received During February 1967

Patents	6366
Designs	359
Plant Patents	12
Reissues	21
Total	6758

Issue—March 28, 1967

Patents	1110	—No. 3,310,811 to No. 3,311,920, incl.
Designs	50	—No. 207,248 to No. 207,297, incl.
Total	1160	

MAGNET. Patent dated July 5, 1966. Disclaimer filed Dec. 12, 1966, by the assignee, *Teletype Corporation*.

Hereby enters this disclaimer to claim 4 of said patent.

3,275,393.—*Blair E. Stentz*, and *William R. Conklin*, Murfreesboro, Tenn. HOT AND COLD FOOD SERVICE CART. Patent dated Sept. 27, 1966. Disclaimer filed Dec. 16, 1966, by the assignee, *United Service Equipment Co., Inc.*

Hereby disclaims the terminal portion of the term of said patent subsequent to Dec. 8, 1981.

Patents Available for Licensing or Sale

D. 204,006. FLOWER STAND. Thomas H. Reed, 280 Seavey Circle, Sacramento, Calif., 95818.

3,299,970. ICE HOLE REAMER AND LIFTER. Marvin M. Anderson, South Shore, S. Dak., 57263.

3,300,167. CAN HOLDER HAVING MEANS TO GRASP A HORIZONTAL MEMBER OF A LADDER. Robert C. Malicoat, 3405 Concetta Way, Sacramento, Calif., 95821.

American Cyanamid Company is prepared to grant nonexclusive licenses under the following patent upon reasonable terms to responsible domestic manufacturers.

Applications for license may be addressed to: Director, Law Division, American Cyanamid Company, Wayne, N.J., 07470.

2,734,018. PROCESS FOR THE PREPARATION OF TETRACYCLINE AND CHLORTETRACYCLINE.

Reynolds Metals Company is prepared to grant nonexclusive licenses under the following patent.

Inquiries should be addressed to: Patent Counsel, Reynolds Metals Company, Richmond, Va., 23218.

3,284,590. AIR BREAK SWITCH AND A MOUNTING BASE THEREFOR.

Owens-Illinois, Inc., is prepared to grant nonexclusive licenses under the following 5 patents upon reasonable terms to domestic manufacturers.

Applications for license may be addressed to: Owens-Illinois, Inc., P.O. Box 1035, Toledo, Ohio, 43601. Attention: Patent Counsel.

2,950,039. RECEPTACLE.
2,991,922. TWO-COMPARTMENT RECEPTACLE.
3,014,637. DISPENSING CONTAINER.
3,032,254. SHIPPING CONTAINER.
3,123,254. LIQUID DISPENSING CONTAINER.

The Radio Corporation of America offers to grant nonexclusive licenses on reasonable terms and conditions under patents listed below.

Inquiries respecting license under RCA patents should be addressed to: Radio Corporation of America, Staff Vice President, Patent Licensing, 30 Rockefeller Plaza, New York, N.Y., 10020.

3,276,896. ELECTROSTATIC PRINTING.
3,277,558. METHOD OF MAKING REED SWITCHES.
3,278,731. MULTIPLIER HAVING ADDER AND COMPLEMENTER CONTROLLED BY MULTIPLIER DIGIT COMPARATOR.
3,278,761. DIFFERENTIAL AMPLIFIER HAVING A HIGH OUTPUT IMPEDANCE FOR DIFFERENTIAL INPUT SIGNALS AND A LOW OUTPUT IMPEDANCE FOR COMMON NODE SIGNALS.
3,278,762. EXCLUSIVE-OR CIRCUIT EMPLOYING NEGATIVE RESISTANCE DIODES.
3,278,915. TWO CORE PER BIT MEMORY MATRIX.
3,279,028. METHOD OF MANUFACTURING THERMIONIC ENERGY CONVERTER TUBE.
3,279,029. METHOD OF SPACING ELECTRON TUBE ELEMENTS.
3,279,175. APPARATUS FOR GENERATING AND ACCELERATING CHARGED PARTICLES.
3,279,340. ART OF MAKING COLOR-PHOSPHOR MOSAIC SCREENS.
3,279,954. THERMOELECTRIC DEVICE HAVING SILICON-GERMANIUM ALLOY THERMOELEMENT.
3,280,339. BIAS CIRCUITS FOR HIGH FREQUENCY CIRCUITS UTILIZING VOLTAGE CONTROLLED NEGATIVE RESISTANCE DEVICES.
3,280,356. IMAGE TUBE WITH TRUNCATED CONICAL ANODE AND A PLURALITY OF COAXIAL SHIELD ELECTRODES.
3,280,357. LIGHT SENSITIVE DEVICE.
3,280,358. COLOR CATHODE RAY TUBE WITH RADIATION-EMITTING INDEX STRIPES.
3,280,452. METHOD OF MANUFACTURING HEATERS FOR ELECTRON DISCHARGE DEVICES.
3,281,147. ADJUSTABLE SIZE DOCUMENT STACKER.
3,281,291. SEMICONDUCTOR DEVICE FABRICATION.
3,281,664. APPARATUS FOR FABRICATING REED SWITCHES WITH MEANS TO AUTOMATICALLY SET THE GAP TO A PRESELECTED VALUE.
3,281,699. INSULATED GATE FIELD EFFECT TRANSISTOR OSCILLATOR CIRCUITS.
3,281,738. SUPERCONDUCTING SOLENOID.
3,281,800. FERROELECTRIC STORAGE MEANS.
3,281,915. METHOD OF FABRICATING A SEMICONDUCTOR DEVICE.
3,282,485. ACCELERATION AND SPEED CONTROL DEVICE.
3,282,691. METHOD OF FABRICATING CATHODE RAY TUBE SCREEN.
3,283,067. SIGNAL PROCESSING APPARATUS FOR COLOR SYSTEMS UTILIZING SEPARATE LUMINANCE SIGNAL PICKUP.
3,283,084. FLUID SUPPORTED APPARATUS.
3,283,180. LOGIC CIRCUITS UTILIZING TRANSISTOR AS LEVEL SHIFT MEANS.
3,283,217. ELECTROMAGNETICS.
3,283,221. FIELD EFFECT TRANSISTOR.
3,283,259. PULSE DISTRIBUTION AMPLIFIER.
3,283,279. VARIABLE SATURABLE REACTOR.
3,283,306. INFORMATION HANDLING APPARATUS INCLUDING TIME SHARING OF PLURAL ADDRESSABLE PERIPHERAL DEVICE TRANSFER CHANNELS.
3,284,118. CERAMIC-TO-METAL SEALS.
3,284,633. SIGNAL TRANSMISSION AND RECEPTION SYSTEM COMPRISING FREQUENCY MODULATED LIGHT BEAM.
3,284,663. DISPLAY SYSTEMS.
3,284,715. ELECTRONIC CLOCK.
3,284,722. LIGHT COUPLING DEVICE.
3,284,782. MEMORY STORAGE SYSTEM.
3,286,029. INFORMATION TRANSLATING APPARATUS.
3,286,113. CATHODE RAY TUBE.
3,287,080. ELECTRON TUBE MOUNT AND METHOD OF MAKING THE SAME.
3,287,151. METHOD OF MAKING LUMINESCENT SCREENS.
3,287,186. SEMICONDUCTOR DEVICES AND METHOD OF MANUFACTURE THEREOF.
3,287,596. SINGLE TUBE VERTICAL DEFLECTION CIRCUIT FOR A TELEVISION RECEIVER.
3,287,614. PORTABLE, SELF-POWERED, CORONA CHARGING APPARATUS.
3,287,705. COMPUTER SYSTEM.
3,288,662. METHOD OF ETCHING TO DICE A SEMICONDUCTOR SLICE.
3,289,106. TRANSISTOR OSCILLATOR USING PARAMETRIC ACTION.
3,289,197. CHARACTER DISPLAY SYSTEM.

General Electric Company is prepared to grant nonexclusive licenses under the following 37 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 2 patents may be addressed to: General Electric Company, Industrial Drives Systems Division, 3001 East Lake Road, Erie, Pa., Attn: Patent Counsel.

2,747,118. SUPPORTING OF COIL END TURNS.
2,747,119. BINDING OF ROTOR END TURNS.

Applications for license under the following 3 patents may be addressed to: General Electric Company, Patent Counsel, Silicone Products Department, Chemical and Metallurgical Division, Waterford, N.Y., 12188.

2,758,124. CONTINUOUS HYDROLYSIS OF ORGANOHALOGENOSILANES.
3,153,007. PROCESS FOR MAKING ORGANOPOLYSILOXANES USING BROMOALKANE DECATALYZING AGENTS FOR EXCESS ALKALI-METAL CATALYSTS.
3,220,070. METHOD OF CASTING MOLTEN METAL IN COATED INGOT MOLD.

Applications for license under the following 32 patents may be addressed to: Patent Counsel, Lamp Division, General Electric Company, Nela Park, Cleveland, Ohio, 44112.

2,948,635. PHOSPHOR EVAPORATION METHOD AND APPARATUS.
3,116,819. FILAMENT LOADING MECHANISM.
3,128,141. ELECTRIC LAMP SOCKET.
3,136,428. ARTICLE UNLOADING APPARATUS.
3,136,441. GAS TIGHT SEAL AND METHOD OF MANUFACTURE.
3,136,914. VEHICLE HEADLAMP AND FILAMENT SHIELD THEREFOR.
3,143,246. LEAD FEEDING APPARATUS.
3,148,299. ELECTROLUMINESCENT LAMP HAVING ENVELOPE OF WATER-IMPERMEABLE PLASTIC HAVING HYDROPHYLIC PLASTIC LINER.
3,156,841. ELECTRIC LAMP BASE END STRUCTURE.
3,177,391. ELECTROLUMINESCENT LAMP AND MANUFACTURE THEREFOR.
3,188,227. MANUFACTURE OF COATED ELECTRIC LAMPS.
3,194,389. LAMP BULB FEEDING MECHANISM.
3,219,865. ELECTROLUMINESCENT DISPLAY DEVICE WITH SELECTED INDICIA.
3,226,175. ELECTRIC LAMP MAKING APPARATUS.
3,226,272. ELECTROLUMINESCENT LAMP MANUFACTURE.
3,235,938. METHOD OF MANUFACTURING AN ELECTROLUMINESCENT PANEL.
3,238,407. MATRIX FOR ELECTROLUMINESCENT CELLS.
3,243,629. ELECTROLUMINESCENT LAMP AND MANUFACTURE THEREOF.
3,243,633. FILAMENT CONNECTION FOR ELECTRIC LAMP OR SIMILAR DEVICE.
3,247,414. PLASTIC COMPOSITIONS FOR ELECTROLUMINESCENT CELLS.
3,247,477. PHOTOCONDUCTIVE ELECTRICAL COMPONENT.
3,252,845. MANUFACTURE OF ELECTROLUMINESCENT CELLS.
3,253,173. ELECTROLUMINESCENT CELLS WITH PHOSPHOR-CONDUCTOR ADHESION AND MANUFACTURE THEREOF.
3,253,178. ELECTRIC INCANDESCENT LAMP.
3,256,507. BASE END STRUCTURE FOR ELECTRIC LAMPS OR SIMILAR DEVICES.
3,256,508. BASE END STRUCTURE FOR ELECTRIC LAMPS OR SIMILAR DEVICES.
3,270,238. ELECTRIC LAMP FILAMENT SUPPORT.
3,284,853. APPARATUS FOR MOLDING HOLLOW ARTICLES WITH RECESS IN INNER WALL.
3,286,116. ELECTRIC INCANDESCENT LAMP FILAMENT SUPPORT.
3,281,619. ELECTROLUMINESCENT DISPLAY DEVICE WITH EDGE TERMINATED CONTACTS OVERLYING AN APERTURED LOW DIELECTRIC INSULATOR SHEET.
3,295,002. LIGHT TRANSMITTING ELECTRODE INCLUDING N-TYPE SEMICONDUCTIVE IN_2O_3.
3,295,016. MANUFACTURE OF ELECTRIC INCANDESCENT LAMPS.

Correction

In the OFFICIAL GAZETTE of February 28, 1967, among the patents listed as being available for nonexclusive licensing by General Electric Company, Patent Counsel, Major Appliance & Hotpoint Division, Appliance Park, Louisville, Ky., 40225, Patent "3,289,584" should have been *3,289,854*, ARTICLE RETAINING DEVICE.

THE PATENT REFORM ACT OF 1967

The following is the text of "The Patent Reform Act of 1967." This bill was transmitted by the President to the Congress on February 21, 1697 and introduced in the Senate by Senator McClellan (S. 1042) and in the House of Representatives by Representative Kastenmeier (H.R. 5924). A copy of the President's transmittal letter to the President of the Senate and the Speaker of the House of Representatives precedes the bill

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THE WHITE HOUSE

DEAR MR. PRESIDENT: (DEAR MR. SPEAKER:)

I have the honor to transmit the Patent Reform Act of 1967. This important measure is designed to aid America's economic growth by strengthening the U.S. Patent System.

From the earliest days of our Republic, the patent system has played an indispensable role in stimulating the Nation's progress and prosperity. It has spurred the creative work of inventors and scientists. It has fostered the most far-reaching technological advances in the history of civilization. It has helped American businesses to translate "the fire of genius" into the products and processes that have enriched the lives of all of us.

But we have learned that institutions must change to meet the demands of the times.

Modernization of the patent system is long overdue. This Nation which has reached unparalleled industrial and technological heights is still operating under a patent system that has remained unchanged for the past 130 years.

That system is not equipped to deal with today's problems and tomorrow's challenges. Consider the following:

> It sometimes takes an inventor 2½ years and more often much longer to receive a patent.
>
> The inventor is often faced with time consuming, costly and unnecessary legal action to enforce his rights.
>
> The expense of securing a patent is needlessly high, particularly when there are competing claims to the same invention.
>
> New technological advances take far too long before they benefit the public.
>
> International trade is hindered by inconsistent patent practices from one country to another which increase costs to American businessmen.

America's patent system must be strengthened so that it can serve the technological advances it was designed to foster. I recommend the Patent Reform Act of 1967. Its purposes are threefold:

1. To raise the quality and reliability of U.S. patents.
2. To reduce the time and expense of obtaining and protecting a patent.
3. To speed public disclosure of scientific and technological information.

These changes will accomplish another important objective—they will bring the U.S. patent system more closely into harmony with those of other nations.

This Act was shaped from the recommendations of the Commission on the Patent System. I appointed this Commission of leading American citizens in July 1965 to study ways "to insure that the patent system will be more effective in serving the public interest." When I received the Commission's report last December, I directed the Commerce Department, the Justice Department and my Science Advisor to consider it carefully and, if necessary, to develop legislative proposals to carry out its objectives. The Patent Reform Act of 1967 is the result of that intensive review.

To Improve the Quality and Reliability of U.S. Patents

Today, inventors and businessmen alike are faced with uncertain and conflicting standards in obtaining and enforcing a patent. Under the Patent Reform Act the standards would be clarified and in every case the inventor would be required to show that his invention is really new.

In addition, we should take action to reduce the likelihood of issuing patents which are later declared invalid by the courts. This would eliminate needless expense by the public, the business community, and the inventor. For the first time, under the Act, third parties will be permitted to argue—before a patent is issued—that an invention does not meet the required standards.

But more must be done. The Patent Office's information and retrieval systems are at the heart of the patent examination process. They supply the vital technical background against which inventions must be judged before a patent can be issued. As the world's library of scientific and engineering information increases and as inventions become more complex, conventional information retrieval systems are becoming roadblocks to rapid and effective patent searches. These roadblocks must be eliminated through expanded research and development and increased international cooperation.

To Reduce the Time and Expense of Obtaining and Protecting a Patent

One of the most burdensome aspects of the present patent system lies in resolving the dispute between two persons who claim that they have invented the same product or process. These disputes are costly and protracted. They are judged against standards that are often vague and sometimes unfair.

Most nations resolve those disputes by a simple and clear standard: "the first to file." Under this standard the inventor who first recognizes the worth of the invention and files a patent application is awarded a patent. It is now time to apply the "first to file" rule to the U.S. patent system.

To help make this work, an inventor could file an informal disclosure of his invention to establish an early legal filing date. This new "preliminary application" will help the small inventor and will give him time to test and perfect his idea.

To Speed Public Disclosure of Scientific and Technological Information

Patent applications are now kept secret until the patent is granted. This may take up to five years or more.

As a result:

> Public disclosure of new technology is delayed.
>
> Businessmen are unaware of new inventions and may invest substantial sums in developing a product that has already been patented by a competitor.

The legislation I am proposing provides that most pending patent applications must be published no later than 24 months after they are filed, regardless of how long it takes to issue the patent.

* * * * * * *

The Patent Reform Act contains a series of far-reaching and fundamental proposals. They will benefit businessmen, scientists and inventors. They will bring our patent system into harmony with those of other nations. But more important, they will serve the interests of all Americans, as the Constitution mandates, by promoting "the progress of science and the useful arts" in the decades ahead.

The Congress, I believe, will want to give favorable and prompt consideration to this important and long overdue legislation.

Sincerely,

LYNDON B. JOHNSON.

HONORABLE HUBERT H. HUMPHREY
President of the Senate
Washington, D.C.

HONORABLE JOHN W. MCCORMACK
Speaker of the House of Representatives
Washington, D.C.

A BILL

For the general revision of the Patent Laws, title 35 of the United States Code, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That title 35 of the United States Code, entitled "Patents", is hereby amended in its entirety to read as follows:

"TITLE 35—PATENTS

"PART	Sec.
"I. Patent Office	1
"II. Patentability of Inventions and Grant of Patents	100
"III. Patents and Protection of Patent Rights	251

"PART I—PATENT OFFICE

"CHAPTER	Sec.
"1. Establishment, Officers, Functions	1
"2. Proceedings in the Patent Office	21
"3. Practice Before the Patent Office	31
"4. Patent Fees	41

"Chapter 1.—ESTABISHMENT, OFFICERS, FUNCTIONS

"Sec.
"1. Establishment.
"2. Seal.
"3. Officers and employees.
"4. Restrictions on officers and employees as to interest in patents.
"5. Bond of Commissioner and other officers.
"6. Duties of Commissioner.
"7. Board of Appeals.
"8. Library.
"9. Classification of patents.
"10. Certified copies of records.
"11. Publications.
"12. Research and studies.
"15. Advisory Council on the patent system.

"§ 1. *Establishment*

"The Patent Office shall be an Office in the Department of Commerce, where records, books, drawings, specifications, and other papers and things pertaining to patents and to trademark registrations shall be kept and preserved, except as otherwise provided by law.

"§ 2. *Seal*

"The Patent Office shall have a seal with which letters patent, certificates of trademark registrations, and papers issued from the Office shall be authenticated.

"§ 3. *Officers and employees*

"(a) There shall be in the Patent Office a Commissioner of Patents, one first assistant commissioner, two other assistant commissioners, and not more than twenty-four examiners-in-chief. The assistant commissioners shall perform the duties pertaining to the office of Commissioner assigned to them by the Commissioner. The first assistant commissioner, or, in the event of a vacancy in that office, the assistant commissioner senior in date of appointment, shall fill the office of Commissioner during a vacancy in that office until a Commissioner is appointed and takes office. The Commissioner of Patents shall be appointed by the President, by and with the advice and consent of the Senate. The Secretary of Commerce, upon the nomination of the Commissioner in accordance with law, shall appoint all other officers and employees.

"(b) The Secretary of Commerce may vest in himself the functions of the Patent Office and its officers and employees specified in this title and may from time to time authorize their performance by any other officer or employee.

"(c) The Secretary of Commerce is authorized to fix the per annum rate of basic compensation of each examiner-in-chief in the Patent Office at not in excess of the maximum scheduled rate provided for positions in grade 17 of the General Schedule of positions referred to in section 5104 of title 5, United States Code, and of the assistant commissioners at not in excess of the rate provided for positions in grade 18.

"§ 4. *Restrictions on officers and employees as to interest in patents*

"Officers and employees of the Patent Office shall be incapable, during the period of their appointments and for one year thereafter, of applying for a patent and of acquiring, directly or indirectly, except by inheritance or bequest, any patent or any right or interest in any patent, issued or to be issued by the Office. In patents applied for thereafter they shall not be entitled to any priority date earlier than one year after the termination of their appointment.

"§ 5. *Bond of Commissioner and other officers*

"The Commissioner and such other officers as he designates, before entering upon their duties, shall severally give bond, with sureties, the former in the sum of $10,000, and the latter in sums prescribed by the Commissioner, conditioned for the faithful discharge of their respective duties and that they shall render to the proper officers of the Treasury a true account of all money received by virtue of their offices.

"§ 6. *Duties of Commissioner*

"The Commissioner, under the direction of the Secretary of Commerce, shall superintend or perform all duties required by law respecting the granting and issuing of patents and the registration of trademarks; and he shall have charge of property belonging to the Patent Office. He may establish regulations, not inconsistent with law, for the conduct of proceedings in the Patent Office. Such regulations and all other regulations issued pursuant to this title shall be subject to the approval of the Secretary of Commerce.

"§ 7. *Board of Appeals*

"(a) The Commissioner, the assistant commissioners, and the examiners-in-chief shall constitute a Board of Appeals in the Patent Office. The examiners-in-chief shall be persons of competent legal knowledge and scientific ability, who shall be appointed under the classified Civil Service.

"(b) The Board of Appeals shall:

"(1) Review adverse decisions of the examiners upon applications for patents as provided in section 134 of this title.

"(2) Review or consider actions arising under sections 136 and 257 of this title in accordance with regulations established for such purpose.

"(3) Perform the functions specified as being performed by a Board of Patent Interferences in Public Law 593, Eighty-second Congress (ch. 950, 66 Stat. 792, section 1), and in other Acts of Congress and when perfoming said functions shall constitute a Board of Patent Interferences.

"(c) Each appeal or other action shall be heard or considered by at least three members of the Board of Appeals. The Board of Appeals has sole power to grant rehearings.

"(d) Whenever the Commissioner considers it necessary to maintain the work of the Board of Appeals current, he may designate any patent examiner of the primary examiner grade or higher having the requisite ability, to serve as examiner-in-chief for periods not exceeding six months each. An examiner so designated shall be qualified to act as a member of the Board of Appeals. Not more than one acting examiner-in-chief shall be a member of the Board of Appeals hearing an appeal or considering a case. The Secretary of Commerce is authorized to fix the per annum rate of basic compensation of each designated examiner-in-chief in the Patent Office at not in excess of the maximum scheduled rate provided for positions in grade 16 of the General Schedule of positions referred to in section 5104 of title 5, United States Code. The per annum rate of basic compensation of each designated examiner-in-chief shall be adjusted, at the close of the period for which he was designated to act as examiner-in-chief, to the per annum rate of basic compensation which he would have been receiving at the close of such period if such designation had not been made.

"§ 8. *Library*

"The Commissioner shall maintain a library of scientific and other works and periodicals, both foreign and domestic, in the Patent Office to aid the officers in the discharge of their duties.

"§ 9. *Classification of patents*

"The Commissioner may revise and maintain the classification by subject matter of published specifications of United States patents and applications and of such other patents and applications and other scientific and technical information as may be necessary or practicable, for the purpose of determining with readiness and accuracy the novelty of inventions for which applications for patent are filed.

"§ 10. *Certified copies of records*

"The Commissioner may, upon payment of the prescribed fee, furnish certified copies of records of the Patent Office to persons entitled thereto.

"§ 11. *Publications*

"(a) The Commissioner may print, or cause to be printed, the following:

"(1) Patent applications and parts thereof, subject to the provisions of this title, patent abstracts and patents, including specifications and drawings, together with copies of the same.

"(2) Certificates of trademark registrations, including statements and drawings, together with copies of the same.

"(3) The Official Gazette of the United States Patent Office.

"(4) Annual indices of patents and patentees, published applications and applicants, and of trademarks and registrants.

"(5) Annual volumes of decisions in patent and trademark cases.

"(6) Classification manuals and indices of the classifications of patents.

"(7) Pamphlet copies of the patent laws and rules of practice, laws and rules relating to trademarks and circulars or other publications relating to the business of the Office.

"(b) The Patent Office may print the headings of the drawings for patents for the purpose of photolithography.

"§ 12. *Research and studies*

"(a) The Commissioner shall conduct a program of research and development to improve and expedite the handling, classification, storage and retrieval of patents and other scientific and technical information.

"(b) The Commissioner, in consultation with the Advisory Council established pursuant to section 15 of this title, shall conduct and sponsor studies to aid in analyzing the contemporary needs of the patent system and in evaluating the effectiveness of the patent system in serving the public interest.

"§ 15. *Advisory Council on the patent system*

"(a) There is hereby established an Advisory Council on the Patent System (referred to in this section as the 'Council') of not less than twelve nor more than twenty-four members to be appointed by the Secretary of Commerce from the general public, without regard to the civil service laws, and to consist of persons representing sectors affected by the patent system. The Secretary of Commerce shall designate the Chairman of the Council and set the term of the members.

"(b) It shall be the duty of the Council, on a continuing basis, to evaluate the effectiveness of the patent system in serving the public interest; to analyze the contemporary conditions and needs of the patent system; to study and appraise the methods and operations of the United States Patent Office including the quality of United States patents, the procedures and timing of publication of pending applications and the need for and scope of any deferred examination system; and to report to the Secretary of Commerce its conclusions and recommendations.

"(c) The Secretary of Commerce shall furnish to the Council an executive secretary and such professional, secretarial, clerical, and other services and facilities as are deemed necessary to the conduct of its business.

"Chapter 2.—PROCEEDINGS IN THE PATENT OFFICE

"Sec.
"21. Day for taking action falling on Saturday, Sunday, or holiday.
"22. Printing of papers filed.
"23. Testimony in Patent Office cases.
"24. Subpenas, witnesses.
"25. Oath and declaration in lieu of oath.
"26. Effect of defective execution.

"§ 21. *Day for taking action falling on Saturday, Sunday, or holiday*

"When the day, or the last day, for taking any action or paying any fee in the United States Patent Office falls on Saturday, Sunday, or a holiday within the District of Columbia, the action may be taken, or the fee paid, on the next succeeding secular or business day.

"§ 22. *Printing of papers filed*

"The Commissioner may require papers filed in the Patent Office to be printed or typewritten.

"§ 23. *Testimony in Patent Office cases*

"The Commissioner may establish rules for taking affidavits and depositions required in cases in the Patent Office. Any officer authorized by law to take depositions to be used in the courts of the United States, or of the State where he resides, may take such affidavits and depositions.

"§ 24. *Subpenas, witnesses*

"The clerk of any United States court for the district wherein testimony is to be taken for use in any contested case in the Patent Office, shall, upon the application of any party thereto, issue a subpena for any witness residing or being within such district, commanding him to appear and testify before an officer in such district authorized to take depositions and affidavits, at the time and place stated in the subpena. The provisions of the Federal Rules of Civil Procedure relating to the attendance of witnesses and to the production of documents and things shall apply to contested cases in the Patent Office.

"Every witness subpenaed and in attendance shall be allowed the fees and traveling expenses allowed to witnesses attending the United States district courts.

"A judge of a court whose clerk issued a subpena may enforce obedience to the process or punish disobedience as in other like cases, on proof that a witness, served with such subpena, neglected or refused to appear or to testify. No witness shall be deemed guilty of contempt for disobeying such subpena unless his fees and traveling expenses in going to, and returning from, and one day's attendance at the place of examination, are paid or tendered him at the time of the service of the subpena; nor for refusing to disclose any secret matter except upon appropriate order of the court which issued the subpena.

"§ 25. *Oath and declaration in lieu of oath*

"(a) An oath to be filed in the Patent Office may be made before any person within the United States authorized by law to administer oaths, or, when made in a foreign country, before any diplomatic or consular officer of the United States authorized to administer oaths, or before any officer authorized to administer oaths in the foreign country in which the applicant may be, whose authority shall be proved by certificate of a diplomatic or consular officer of the United States, and such oath shall be valid if it complies with the laws of the state or country where made.

"(b) The Commissioner may by rule prescribe that any document to be filed in the Patent Office and which is required by any law, rule, or other regulation to be under oath may be subscribed to by a written declaration in such form as the Commissioner may prescribe, such declaration to be in lieu of the oath otherwise required.

"(c) Whenever such written declaration is used, the document must warn the declarant that willful false statements and the like are subject to punishment including fine or imprisonment, or both.

"§ 26. *Effect of defective execution*

"Any document to be filed in the Patent office and which is required by any law, rule, or other regulation to be executed in a specified manner may be provisionally accepted by the Commissioner despite a defective execution, provided a properly executed document is submitted within such time as may be prescribed.

"Chapter 3.—PRACTICE BEFORE PATENT OFFICE

"Sec.
"31. Regulations for agents and attorneys.
"32. Suspension or exclusion from practice.
"33. Unauthorized representation as practitioner.

"§ 31. *Regulations for agents and attorneys*

"The Commissioner, subject to the approval of the Secretary of Commerce, may prescribe regulations governing the recognition and conduct of agents, attorneys, or other persons representing applicants or other parties before the Patent office, and may require them, before being recognized as representatives of applicants or other persons, to show that they are of good moral character and reputation and are possessed of the necessary qualifications to render to applicants or other persons valuable service, advice, and assistance in the presentation or prosecution of their applications or other business before the Office.

"§ 32. *Suspension or exclusion from practice*

"The Commissioner may, after notice and opportunity for a hearing, suspend or exclude, either generally or in any particular case, from further practice before the Patent Office, any person, agent, or attorney shown to be incompetent or disreputable, or guilty of gross misconduct, or who does not comply with the regulations established under section 31 of this title, or who shall, by word, circular, letter, or advertising, with intent to defraud in any manner, deceive, mislead, or threaten any applicant or prospective applicant, or other person having immediate or prospective business before the Office. The reasons for any such suspension or exclusion shall be duly recorded. The United States District Court for the District of Columbia, under such conditions and upon such proceedings as it by its rules determines, may review the action of the Commissioner upon the petition of the person so refused recognition or so suspended or excluded.

"§ 33. *Unauthorized representation as practitioner*

"Whoever, not being recognized to practice before the Patent Office, holds himself out or permits himself to be held out as so recognized, or as being qualified to prepare or prosecute applications for patent, shall be fined not more than $1,000 for each offense.

"Chapter 4.—PATENT FEES

"Sec.
"41. Patent fees.
"42. Payment of patent fees; return of excess amounts.

"§ 41. *Patent fees*

"(a) The Commissioner shall prescribe by regulations the fees to be paid in connection with the filing and examination of patent applications, the issuance of patents, and other matters set forth in this title as requiring a fee and for copies of records, publications or other services furnished by the Patent Office, designed to effect an overall recovery in the range of 65 to 75 per centum of the costs of operation of the Patent Office.

"(b) The Commissioner shall prescribe by regulations, consistent with the provisions of this title, the time for payment of the fees to be paid under this title. If payment of the fees in connection with the examination, publication or issuance of a patent application are not timely made, the application shall be regarded as abandoned. An applicant shall be given at least thirty days following notice of a fee due pursuant to section 123 or 151 of this title in which to pay the fee.

"(c) The fees established under the authority of this section shall apply to any other Government department or agency, or officer thereof, except that the Commissioner may waive the payment of any fee for services or materials in cases of occasional or incidental requests by a Government department or agency, or officer thereof.

"(d) The Commissioner may prescribe by regulations when copies of Patent Office records and publications may be provided without charge or in exchange for records or publications of foreign countries.

"§ 42. *Payment of fees; return of excess amounts*

"All fees shall be paid to the Commissioner, who shall deposit the same in the Treasury of the United States in such manner as the Secretary of the Treasury directs, and the Commissioner may refund any sum paid by mistake or in excess of the fee required.

"PART II—PATENTABILITY OF INVENTIONS AND GRANT OF PATENTS

"CHAPTER	Sec.
"10. Patentability of Inventions	100
"11. Application for Patent	111
"12. Examination of Applications	131
"13. Review of Patent Office Decisions	141
"14. Issue of Patent	151
"15. Plant Patents	161
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"17. Secrecy of Certain Inventions and Filing Applications Abroad	181

"Chapter 10.—PATENTABILITY OF INVENTIONS

"Sec.
"100. Definitions.
"101. Right to patent: inventions patentable.
"102. Conditions for patentability.
"103. Conditions for patentability; nonobvious subject matter.
"105. Nonprejudicial disclosure.
"106. Computer programs not patentable.

"§ 100. *Definitions*

"When used in this title unless the context otherwise indicates—

"(a) The term 'invention' means invention or discovery.

"(b) The term 'process' means process, art or method and includes a new use of a known process, machine, manufacture, composition of matter, or material.

"(c) The term 'United States' means the United States of America, its territories and possessions.

"(d) The term 'applicant' means any person who has filed an application for patent as provided in this title.

"(e) The term 'patentee' includes not only the person to whom the patent was issued but also the successors in title to such person.

"(f) The term 'effective filing date,' when used in reference to a complete application for patent, includes the filing date to which such application, or the subject matter of any claim thereof, may be entitled under the provisions of sections 119 or 120. A complete application or the resulting patent may contain separate claims for subject matter having different effective filing dates.

"§ 101. *Right to patent: inventions patentable*

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, or his successor in title, may obtain a patent therefor, subject to the conditions and requirements of this title.

"§ 102. *Conditions for patentability*

"A person shall not be entitled to a patent if—

"(a) prior to the effective filing date of the application, the subject matter sought to be patented was known to the public, or made available to the public by means of a disclosure in tangible form, or in public use or on sale, or

"(b) the subject matter sought to be patented was disclosed in a published United States application, or United States patent, having an effective filing date on or before that of the application for patent for the subject matter sought to be patented unless such application for patent is filed by the same applicant and is filed prior to the publication date of such prior published United States application, or

"(c) the inventor named in the application did not himself invent the subject matter sought to be patented, or

"(d) he has abandoned the invention.

"§ 103. *Conditions for patentability; nonobvious subject matter*

"A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious on or before the effective filing date of the application to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

"§ 105. *Nonprejudicial disclosure*

"(a) A public disclosure of subject matter concerning an invention less than six months prior to the date of filing of a complete application for patent, shall not bar the issuance of the patent if—

"(1) the subject matter was derived from the inventor named in such application, and

"(2) the disclosure was made in violation of an obligation not to disclose the subject matter.

"(b) The Commissioner may establish procedures for making determinations under subsection (a) of this section. No such determination in favor of the applicant shall be subject to direct judicial review.

"§ 106. *Computer programs not patentable*

"A plan of action or set of operating instructions, in whatever form presented, to cause a controllable data processor or computer to perform selected operations shall not be patentable.

"Chapter 11.—APPLICATION FOR PATENT

"Sec.
"111 Application for patent.
"112. Specification of a complete application.
"113. Drawings.
"114. Models specimens.
"115. Oath of applicant.
"116. Joint Inventors.
"117 Death or incapacity of inventor.
"118. Action when no oath or assignment can be obtained.
"119. Benefit of earlier filing date in foreign country; right of priority.
"120. Benefit of earlier filing date in the United States.
"121. Divisional applications.
"122. Confidential status of applications.
"123. Publication.

"§ 111. *Application for patent*

"(a) An application for patent may be filed by either the inventor or the owner of the invention sought to be patented. The application shall be made in writing to the Commissioner, shall be signed by the applicant and include the name of each person believed to have made an inventive contribution, and shall be accompanied by the prescribed fee. An application filed by a person not the inventor shall include, at the time of filing, a statement of the facts supporting the allegation of ownership of the invention.

"(b) A complete application for patent shall include:

"(1) a specification as prescribed by section 112 of this title;

"(2) a drawing as prescribed by section 113 of this title; and

"(3) if filed by the inventor, an oath prescribed by section 115(a) of this title.

"(c) A preliminary application containing the written description of an invention and otherwise complying with paragraph (a) of this section may be filed.

"(d) In a preliminary or complete application, omission of an inventor's name or inclusion of the name of one not an inventor, without deceptive intent, may be corrected at any time, in accordance with regulations established by the Commission.

"(e) When the Commissioner requires or publishes an abstract of the technical disclosure of a complete application, such abstract shall not be used either in the Patent Office or after the issuance of a patent to determine or interpret the scope of the invention claimed.

"§ 112. *Specification of a complete application*

"(a) The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

"(b) The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor regards as his invention. A claim may be written in independent or dependent form, and if in dependent form, it shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim.

"(c) An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

"§ 113. *Drawings*

"When the nature of the case admits, the applicant shall furnish a drawing.

"§ 114. *Models, specimens*

"The Commissioner may require the applicant to furnish a model of convenient size to exhibit advantageously the several parts of his invention.

"§ 115. *Oath of applicant*

"(a) The applicant of a complete application, if he is the inventor, shall make oath that he believes himself to be the original inventor of the subject matter sought to be patented and shall state of what country he is a citizen.

"(b) The applicant of a complete application, if he is not the inventor, shall prior to the publication of the application:

"(1) file an oath by the inventor containing the averment prescribed in subsection (a) of this section and

"(2) record in the Patent Office an assignment, if ownership resulted from an assignment, or proof of ownership, in other cases.

"(c) The applicant of a complete application filed pursuant to section 117 of this title may make the oath required by subsection (b) of this section, so varied in form that it can be made by him.

"§ 116. *Joint inventors*

"(a) When two or more persons have made inventive contributions to subject matter claimed in an application, they shall apply for a patent jointly and each sign the application and make the required oath, or, if the application is filed by some other person having the right to do so, they shall be named as the inventors.

"(b) In an application for patent for a joint invention, it shall not be necessary for each person named as joint inventor to be a joint inventor of the invention asserted in each claim.

"(c) If a joint inventor refuses to join in an application for patent or cannot be found or reached after diligent effort, the application may be made by the other inventor on behalf of himself and the omitted inventor. The Commissioner, on proof of the pertinent facts and after such notice to the omitted inventor as he prescribes, may publish the application and grant a patent to the inventor making the application, subject to the same rights which the omitted inventor would have had if he had been joined. The omitted inventor may subsequently join in the application.

"§ 117. *Death or incapacity of inventor*

"Legal representatives of deceased inventors and of those under legal incapacity may make application for patent upon compliance with the requirements and on the same terms and conditions applicable to the inventor.

"§ 118. *Action when no oath or assignment can be obtained*

"Whenever an application is filed by someone not the inventor and the inventor refuses to execute the oath required by section 115(b)(1) of this title or an assignment, or cannot be found or reached after diligent effort, the Commissioner may, on proof of the pertinent facts and a showing by the applicant that such action is necessary to preserve the rights of the parties, and on compliance with such regulations as he prescribes:

"(a) publish the application in the absence of such oath or assignment, and

"(b) grant a patent in the name of the inventor.

"§ 119. *Benefit of earlier filing date in foreign country; right of priority*

"(a) A complete application for patent for an invention filed in this country by any person who has, or whose predecessor or successor in title has, previously regularly filed an application for a patent for the same invention by the same inventor in a foreign country which affords similar privileges in the case of applications filed in the United States or to citizens of the United States, shall have the same effect as the same application would have if filed in the United States on the date on which the application for patent for the same invention was first filed in any such foreign country, if the complete application in this country is filed within twelve months from the earliest date on which such foreign application was filed.

"(b) No application shall be entitled to a right of priority under this section, unless the applicant makes a claim therefor at the time the complete application is filed and complies with such requirements as the Commissioner may prescribe by regulations.

"(c) In like manner and subject to the same conditions and requirements, the right provided in this section may be based upon a subsequent regularly filed application in the same foreign country instead of the first filed foreign application, provided that any foreign application filed prior to such subsequent application has been withdrawn, abandoned, or otherwise disposed of, without leaving any rights outstanding, and has not served, nor thereafter shall serve, as a basis for claiming a right of priority.

"§ 120. *Benefit of earlier filing date in the United States*

"(a) A complete application for patent for an invention shall have the same effect as to such invention as though filed on the date a preliminary application was filed if:

"(1) the two applications have the same inventor as to such invention;

"(2) the invention sought to be patented, including every feature recited in the claims therefor, is disclosed in the preliminary application so as to enable any person skilled in the art to which it pertains or with which it is most nearly connected to make and use the same;

"(3) the complete application is filed within one year of the date of filing of the preliminary application, and

"(4) the applicant specifically claims the benefit of the date of filing the preliminary application for subject matter claimed in the complete application, at the time of filing the complete application.

"(b) A complete application for patent for an invention shall have the same effect as to such invention as though filed on the date a prior complete application was filed if:

"(1) the two applications have the same inventor as to such invention;

"(2) the invention is disclosed in the prior application in the manner provided by the first paragraph of section 112 of this title;

"(3) the second application is filed before the abandonment of, or the termination of proceedings in, or the filing of an appeal under section 134 in (unless the second application is a divisional application resulting from a requirement under section 121(a)), or the publication of the application under section 151 of this title of, the prior application, whichever is earlier, and

"(4) the applicant specifically claims the benefit of the date of filing the prior application for subject matter claimed in the second application, at the time of filing the second application.

"(c) If the prior complete application referred to in subsection (b) of this section is directly entitled to the benefit of the date of a prior preliminary application under subsection (a) or to the date of an application in a foreign country under section 119, with respect to the invention, then the second application referred to in subsection (b) shall also be entitled to benefit of such date.

"§ 121. *Divisional applications*

"(a) If two or more independent and distinct inventions are claimed in one complete application, the Commissioner may require the application to be restricted to one of them. The Commissioner may by rule dispense with signing and execution in the case of an application directed solely to subject matter described and claimed in the original application.

"(b) The validity of a patent may not be questioned for failure of the Commissioner to require the application to be restricted under subsection (a) of this section, nor may the validity of either of two or more patents resulting from and in accordance with a requirement under said subsection (a) be questioned solely because of the existence of several patents, if the subsequent application is filed in accordance with the provisions of section 120 of this chapter.

"§ 122. *Confidential status of applications*

"Applications for patents shall be kept in confidence by the Patent Office and no information concerning the same given without authority of the applicant or owner unless necessary to carry out the provisions of any Act of Congress or in such special circumstances as may be determined by the Commissioner.

"§ 123. *Publication*

"(a) Under regulations prescribed by the Commissioner, a pending complete application which has not already been published under the provisions of section 151 of this title, shall be published as soon as practicable after such time, not less than eighteen months and not more than twenty-four months, from the earliest effective filing date claimed, as the Commissioner appoints, except that publication of applications under this subsection may be deferred in circumstances established by the Commissioner when such action will expedite disposition of such applications.

"(b) An applicant may, upon the payment of the prescribed fee, request earlier publication of his pending complete application and publication of the pending complete application shall occur as soon as practicable after the request.

"(c) Before publication of an application under this section, the applicant may be required, subject to sections 132 and 133 of this title, to place the application in proper form for publication.

"Chapter 12.—EXAMINATION OF APPLICATION

"Sec.
"131. Examination of application.
"132. Notice of rejection; reexamination.
"133 Time for prosecuting application.
"134. Appeal to the Board of Appeals.
"136. Reexamination after publication.
"137. Burden of persuasion.

"§ 131. *Examination of application*

"The Commissioner shall cause an examination to be made of the complete application and the alleged new invention; and if on such examination it is determined that the applicant is entitled to a patent under the law, the Commissioner shall issue a patent therefor as hereinafter provided.

"§ 132. *Notice of rejection; reexamination*

"Whenever, on examination, any claim of a complete application is rejected, or any objection or requirement made, the Commissioner shall notify the applicant thereof, stating the reasons therefor, together with such information and references as may be useful in judging the propriety of continuing the prosecution of the application; and if after receiving such notice, the applicant requests reexamination, with or without amendment, the application shall be reexamined. No amendment shall introduce new matter into the disclosure of the invention.

"§ 133. *Time for prosecuting application*

"Upon failure of the applicant to prosecute the application within six months after any action therein, of which notice has been given or mailed to the applicant, or within such shorter time, not less than thirty days, as fixed by the Commissioner in such action, the application shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

"§ 134. *Appeal to the Board of Appeals*

"An applicant for a patent, any of whose claims has been twice rejected, may appeal from the decision of the primary examiner to the Board of Appeals, having once paid the fee for such appeal.

"§ 136. *Reexamination after publication*

"(a) Any person may at any time notify the Commissioner of patents or publications which may have a bearing on the patentability of a published application, and the Commissioner may cause the application to be examinaed or reexamined in the light thereof.

"(b) If such notification explains in writing the pertinency of the patents or publications cited and is received within three months, or within such longer time as the Commissioner appoints but not more than six months, after publication of the application under section 151 of this title, the citations shall be considered by the Patent Office.

"(c) The identity of the person making the citations under subsection (a) or (b) of this section shall be kept in confidence by the Patent Office, and no information concerning the same shall be given without the authority of such person, unless necessary to carry out the provisions of an Act of Congress or in such special circumstances as may be determined by the Commissioner.

"(d) Any person may notify the Commissioner within three months, or within such longer time as the Commissioner appoints but not more than six months, after publication of an application under section 151 of this title that:

"(1) the invention claimed in such application was in public use or on sale prior to the effective filing date of the application, or

"(2) the inventor named in such application did not himself invent the subject matter sought to be patented.

If such person within the time specified above makes a prima facie showing and offers to present evidence in support of such showing, the matter shall be determined in such proceedings as the Commissioner may establish by regulation.

"(e) A refusal of the Commissioner to reject any claim of an application on the basis of a notification under this section shall not be subject to direct judicial review.

"§ 137. *Burden of persuasion*

"In all proceedings in the Patent Office in which the patentability of a claim is in issue, the applicant shall have the burden of persuading the Office that the claim is allowable.

"Chapter 13.—REVIEW OF PATENT OFFICE DECISIONS

"Sec.
"141. Appeal to Court of Customs and Patent Appeals.
"142. Notice of appeal.
"143. Proceedings on appeal.
"144. Decision on appeal.
"145. Civil action.
"147. Appeal to the United States Court of Appeals for the District of Columbia.
"148. Presumption.

"§ 141. *Appeal to Court of Customs and Patent Appeals*

"An applicant, or his successor in title, or a patentee dissatisfied with the decision of the Board of Appeals refusing a patent or any claim or cancelling a claim of a patent may appeal to the United States Court of Customs and Patent Appeals, thereby waiving his right to proceed under section 145 of this title.

"§ 142. *Notice of appeal*

"When an appeal is taken to the United States Court of Customs and Patent Appeals, the appellant shall file in the Patent Office a written notice of appeal directed to the Commissioner, within such time after the date of the decision appealed from, not less than sixty days, as the Commissioner appoints.

"§ 143. *Proceedings on appeal*

"The Patent Office shall transmit to the United States Court of Customs and Patent Appeals certified copies of all the necessary papers and evidence designated by the appellant and any additional papers and evidence designated by the Commissioner. The Commissioner may appear in court by his representative and present the position of the Patent Office. The court shall, before hearing an appeal, give notice of the time and place of the hearing to the Commissioner and the appellant.

"§ 144. *Decision on appeal*

"The United States Court of Customs and Patent Appeals shall review the decision appealed from on the evidence produced before the Patent Office and transmitted to the court under the provisions of section 143 of this title. The court may, in the case of review of a decision refusing a patent or any claim, adjudge that such applicant is entitled to receive a patent for his invention, as specified in any of his claims involved in the decision of the Board of Appeals. Upon its determination the court shall return to the Commissioner a certificate of its proceedings and decision, which shall be entered of record in the Patent Office and govern the further proceedings in the case. In the case of review of a decision rendered under section 257 of this title, the adjudication of the court that a claim of the patent involved should not have been allowed, shall, upon its becoming final, operate to cancel the claim from the patent.

"§ 145. *Civil action*

"An applicant, or his successor in title, or a patentee dissatisfied with the decision of the Board of Appeals refusing a patent or any claim or cancelling a claim of a patent may, unless appeal has been taken to the United States Court of Customs and Patent Appeals, have remedy by civil action against the Commissioner in the United States District Court for the District of Columbia. Such action shall be commenced within such time after such decision, not less than sixty days, as the Commissioner appoints. The court may, in the case of review of a decision refusing a patent or any claim, adjudge that such applicant is entitled to receive a patent for his invention, as specified in any of his claims involved in the decision of the Board of Appeals, as the facts in the case may appear, and such adjudication shall be entered of record in the Patent Office and govern further proceedings in the case. In the case of review of a decision rendered under section 257 of this title, the adjudication of the court that a claim of the patent involved should not have been allowed, shall, upon its becoming final, operate to cancel the claim from the patent.

"§ 147. *Appeal to the United States Court of Appeals for the District of Columbia*

"Any party, or the Commissioner of Patents, dissatisfied with the decision of the Court of Customs and Patent Appeals in a proceeding under section 141 of this title may seek a review thereof by the United States Court of Appeals for the District of Columbia Circuit by petition for the allowance of an appeal. The petition shall be in writing and shall be filed with the clerk of said United States Court of Appeals within the prescribed time, the contents of the petition to conform to the requirements which said United States Court of Appeals may by rule prescribe. Said Court of Appeals may prescribe rules governing time for making such petition, the practice and procedure on such petition, the preparation of and the time for filing the transcript of the record in such cases, and generally to regulate all matters relating to appeals in such cases. If said Court of Appeals shall allow an appeal, the court shall review the record on appeal and shall affirm, reverse, or modify the decision in accordance with law.

"§ 148. *Presumption*

"In all actions under sections 141 and 145 of this title, the Patent Office decisions shall be given a presumption of correctness, and such decision shall be upheld unless it is without substantial basis or not in accordance with law.

"Chapter 14.—ISSUE OF PATENT

"Sec.
"151. Publication and issue of patents.
"153. How issued.
"154. Contents and term of patent.

"§ 151. *Publication and issue of patent*

"(a) If it is determined that an applicant is entitled to a patent under the law, a written notice of allowance of the application shall be given or mailed to the applicant. The notice shall specify a fee, upon payment of which within the time established, the application shall be published.

"(b) Applications which have been published under section 123 of this title need not be published in full under this section, but in lieu thereof a notice that the application has been allowed together with any changes may be published.

"(c) If no action under section 136 of this title has been taken, and provided the fee prescribed for issuance of a patent has been paid within the time established, the Commissioner shall issue the patent. If an action under section 136 of this title has been commenced, the patent shall be issued after the conclusion of the proceedings if then warranted.

"(d) If any payment required by this section is not timely made, but is submitted with the fee for delayed payment within three months after the due date and sufficient cause is shown for the late payment, it may be accepted by the Commissioner as though no abandonment or lapse had ever occurred.

"§ 153. *How issued*

"Patents shall be issued in the name of the United States of America, under the seal of the Patent Office, and shall be signed by the Commissioner or have his signature placed thereon, and shall be recorded in the Patent Office.

"§ 154. *Contents and term of patent*

"(a) Every patent shall contain a grant to the applicant, his heirs or assigns, of the right, during the term of the patent to exclude others from making, using, or selling the invention throughout the United States, referring to the specification for the particulars thereof. A copy of the specification and drawings shall be annexed to the patent and be a part thereof.

"(b) The term of a patent shall expire twenty years from the date of filing the application in the United States or, if the benefit of the filing date in the United States of a prior application is claimed, from the earliest such prior date claimed. In determining the term of the patent, the date of filing any application in a foreign country which may be claimed by the applicant shall not be taken into consideration.

"(c) The term of a patent whose issuance has been delayed by reason of the application having been ordered kept secret under section 181 of this title shall be extended for a period equal to the delay in issuance of the patent after the notice of allowability referred to in section 183 of this title.

"Chapter 15.—PLANT PATENTS

"Sec.
"161. Patents for plants.
"162. Description, claim.
"163. Grant.
"164. Assistance of Department of Agriculture.

"§ 161. *Patents for plants*

"(a) Whoever invents or discovers and asexually reproduces any distinct and new variety of plant including cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuber propagated plant or a plant found in an uncultivated state, may obtain a patent therefor, subject to the conditions and requirements of this title.

"(b) The provisions of this title relating to patents for inventions shall apply to patents for plants, except as otherwise provided.

"(c) The provisions of this title relating to any publication of applications under sections 123 and 151 shall not apply to applications for patents for plants.

"§ 162. *Description, claim*

"No plant patent shall be declared invalid for noncompliance with section 112 of this title if the description is as complete as is reasonably possible.

"The claim in the specification shall be in formal terms to the plant shown and described.

“§ 163. *Grant*

“In the case of a plant patent the grant shall be of the right to exclude others from asexually reproducing the plant or selling or using the plant so reproduced.

“§ 164. *Assistance of Department of Agriculture*

“The President may by Executive order direct the Secretary of Agriculture, in accordance with the requests of the Commissioner, for the purpose of carrying into effect the provisions of this title with respect to plants (1) to furnish available information of the Department of Agriculture, (2) to conduct through the appropriate bureau or division of the Department research upon special problems, or (3) to detail to the Commissioner officers and employees of the Department.

“Chapter 16.—DESIGNS

“Sec.
“171. Patents for designs.
“172. Right of priority.
“173. Term of design patent.

“§ 171. *Patents for designs*

“(a) Whoever invents any new, original and ornamental design for an article of manufacture may obtain a patent therefor, subject to the conditions and requirements of this title.

“(b) The provisions of this title relating to patents for inventions shall apply to patents for designs, except as otherwise provided.

“(c) The provisions of this title relating to any publication of applications under sections 123 and 151 shall not apply to applications for patents for designs.

“§ 172. *Right of priority*

“The right of priority provided for by section 119 of this title shall be six months in the case of designs.

“§ 173. *Term of design patent*

“Patents for designs may be granted for the term of three years and six months, or for seven years, or for fourteen years, as the applicant, in his application, elects.

“Chapter 17.—SECRECY OF CERTAIN INVENTIONS AND FILING APPLICATIONS IN FOREIGN COUNTRIES

“Sec.
“181. Secrecy of certain inventions and withholding of patent.
“182. Abandonment of invention for unauthorized disclosure.
“183. Right of compensation.
“184. Filing of application in foreign country.
“185. Patent barred for filing without license.
“186. Penalty
“187. Nonapplicability to certain person.
“188. Rules and regulations, delegation of power.

“§ 181. *Secrecy of certain inventions and withholding of patent*

“(a) Whenever publication or disclosure of an invention in which the Government has a property interest might, in the opinion of the head of an interested Government agency, be detrimental to the national security, the Commissioner upon being so notified shall order that the invention be kept secret and shall withhold publication thereof and the grant of a patent under the conditions set forth hereinafter.

“(b) Whenever the publication or disclosure of an invention in which the Government does not have a property interest, might, in the opinion of the Commissioner, be detrimental to the national security, he shall make the application for patent in which such invention is disclosed available for inspection to the Atomic Energy Commission, the Secretary of Defense, and the chief officer of any other department or agency of the Government designated by the President as a defense agency of the United States.

“(c) Each individual to whom the application is disclosed shall sign a dated acknowledgment thereof, which acknowledgment shall be entered in the file of the application. If, in the opinion of the Atomic Energy Commission, the Secretary of a Defense Department, or the chief officer of another department or agency so designated, the publication or disclosure of the invention would be detrimental to the national security, the Atomic Energy Commission, the Secretary of a Defense Department, or such other chief officer shall notify the Commissioner and the Commissioner shall order that the invention be kept secret and shall withhold publication and the grant of a patent for such period as the national interest requires, and notify the applicant thereof. Upon proper showing by the head of the department or agency who caused the secrecy order to be issued that the examination of the application might jeopardize the national interest, the Commissioner shall thereupon maintain the application in a sealed condition and notify the applicant thereof. The applicant whose applications has been placed under a secrecy order shall have a right to appeal from the order to the Secretary of Commerce under rules prescribed by him.

“(d) An invention shall not be ordered kept secret and publication withheld for a period of more than one year. The Commissioner shall renew the order at the end thereof, or at the end of any renewal period, for additional periods of one year upon notification by the head of the department or the chief officer of the agency who caused the order to be issued that an affirmative determination has been made that the national interest continues so to require. An order in effect, or issued, during a time when the United States is at war, shall remain in effect for the duration of hostilities and one year following cessation of hostilities. An order in effect, or issued, during a national emergency declared by the President shall remain in effect for the duration of the national emergency and six months thereafter. The Commissioner may rescind any order upon notification by the heads of the departments and the chief officers of the agencies who cause the order to be issued that the publication or disclosure of the invention is no longer deemed detrimental to the national security.

“§ 182. *Abandonment of invention for unauthorized disclosure*

“The invention disclosed in an application for patent subject to an order made pursuant to section 181 of this title may be held abandoned upon its being established by the Commissioner that in violation of said order the invention has been published or disclosed or that an application for a patent therefor has been filed in a foreign country by the inventor, his successors, assigns, or legal representatives, or anyone in privity with him or them, without the consent of the Commissioner. The abandonment shall be held to have occurred as of the time of violation. The consent of the Commissioner shall not be given without the concurrence of the heads of the departments and the chief officers of the agencies who caused the order to be issued. A holding of abandonment shall constitute forfeiture by the applicant, his successors, assigns, or legal representatives, or anyone in privity with him or them, of all claims against the United States based upon such invention.

“§ 183. *Right to compensation*

“An applicant, his successors, assigns, or legal representatives, whose patent is withheld as herein provided, shall have the right, beginning at the date the applicant is notified that, except for such order, his application is otherwise in condition for allowance, or February 1, 1952, whichever is later, and ending six years after a patent is issued thereon, to apply to the head of any department or agency who caused the order to be issued for compensation for the damage caused by the order of secrecy and/or for the use of the invention by the Government, resulting from his disclosure. The right to compensation for use shall begin on the date of the first use of the invention by the Government. The head of the department or agency is authorized, upon the presentation of a claim, to enter into an agreement with the applicant, his successors, assigns, or legal representatives, in full settlement for the damage and/or use. This settlement agreement shall be conclusive for all purposes notwithstanding any other provision of law to the contrary. If full settlement of the claim cannot be effected, the head of the department or agency may award and pay to such applicant, his successors, assigns, or legal representatives, a sum not exceeding 75 per centum of the sum which the head of the department or agency considers just compensation for the damage and/or use. A claimant may bring suit against the United States in the Court of Claims or in the District Court of the United States for the district in which such claimant is a resident for an amount which when added to the award shall constitute just compensation for the damage and/or use of the invention by the Government. The owner of any patent issued upon an application that was subject to a secrecy order issued pursuant to section 181 of this title, who did not apply for compensation as above provided, shall have the right, after the date of issuance of such patent, to bring suit in the Court of Claims for just compensation for the damage caused by reason of the order of secrecy and/or use by the Government of the invention resulting from his disclosure. The right to compensation for use shall begin on the date of the first use of the invention by the Government. In a suit under the provisions of this section the United States may avail itself of all defenses it may plead in an action under section 1498 of title 28. This section shall not confer a right of action on anyone or his successors, assigns, or legal representatives who, while in the full-time employment or service of the United States, discovered, invented, or developed the invention on which the claim is based.

“§ 184. *Filing of application in foreign country*

“(a) Except when authorized by a license obtained from the Commissioner, a person shall not file or cause or authorize to be filed in any foreign country prior to six months after filing a complete application in the United States an application for patent or for the registration of a utility model, industrial design or model in respect of an invention made in this country. A license shall not be granted with respect to an invention subject to an order issued by the Commissioner pursuant to section 181 of this title without the concurrence of the head of the departments and the chief officers of the agencies who caused the order to be issued. The license may be granted retroactively where an application has been inadvertently filed abroad and the application does not disclose an invention within the scope of section 181 of this title.

“(b) The term ‘application’ when used in this chapter in relation to a United States application means a complete application. The term ‘application’ when used in this chapter in relation to an application filed in a foreign country includes any modifications, amendments, supplements thereto, or divisions thereof.

“§ 185. *Patent barred for filing without license*

“Notwithstanding any other provisions of law any person, and his successors, assigns, or legal representatives, shall not receive a United States patent for an invention if that person, or his successors, assigns, or legal representatives shall, without procuring the license prescribed in section 184 of this title, have made, or consented to or assisted another's making, application in a foreign country for a patent or for the registration of a utility model, industrial design, or model in respect of the invention. A United States patent issued to such person, his successors, assigns, or légal representatives shall be invalid.

“§ 186. *Penalty*

“Whoever, during the period or periods of time an invention has been ordered to be kept secret and the grant of a patent thereon withheld pursuant to section 181 of this title, shall, with knowledge of such order and without due authorization, willfully publish or disclose or authorize or cause to be published or disclosed the invention, or material information with respect thereto, or whoever, in violation of the provisions of section 184 of this title, shall file or cause or authorize to be filed in any foreign country an application for patent or for the registration of a utility model, industrial design, or model in respect of any invention made in the United States, shall, upon conviction, be fined not more than $10,000 or imprisoned for not more than two years, or both.

“§ 187. *Nonapplicability to certain persons*

“The prohibitions and penalties of this chapter shall not apply to any officer or agent of the United States acting within the scope of his authority, nor to any person acting upon his written instructions or permission.

“§ 188. *Rules and regulations, delegation of power*

“The Atomic Energy Commission, the Secretary of a defense department, the chief officer of any other department or agency of the Government designated by the President as a defense agency of the United States, and the Secretary of Commerce, may separately issue rules and regulations to enable the respective department or agency to carry out the provisions of this chapter, and may delegate any power conferred by this chapter.

“Chapter 18.—DEFERRED EXAMINATION

“Sec.
“191 Initiation of deferred examination system.
“192 Deferment of examination.
“193. Examination.
“194. Examination of related applications.

“§ 191. *Initiation of deferred examination system*

“Upon the issuance of implementing regulations by the Secretary of Commerce, if he determines such action to be in the public interest, the examination of complete applications may be deferred in accordance with the provisions of this chapter and such regulations. The regulations may apply to all such applications or to such applications in specific classes as may be designated by the Secretary of Commerce, filed after the date specified in the regulations and prior to a termination date specified therein or in a subsequent order, and to further proceedings on such applications.

“§ 192. *Deferment of examination*

“(a) Notwithstanding the provisions of chapter 12 of this title, the examination of a complete application to which the provisions of this chapter apply shall be deferred unless at the time of filing the applicant requests immediate examination and pays the prescribed fee.

“(b) An application, the examination of which is deferred under the provisions of this chapter, shall be examined as to formal matters and other such matters as the Commissioner may prescribe, and action may be taken under sections 132 and 133 of this title to place the application in condition for publication. Notwithstanding the provisions of section 123 of this title, such application shall be published as soon as practicable, except under such special circumstances as the Commissioner shall prescribe.

“§ 193. *Examination*

“(a) If a request for examination of an application, the examination of which has been deferred under the provisions of this chapter, accompanied by payment of the required fee is made at any time before the expiration of five years from the earliest effective filing date claimed, such application shall be examined as provided in chapter 12.

“(b) The applicant or any other person may make the request under subsection (a) of this section. Where the request is made by the applicant, he shall pay the full examination fee. Where the request is made by any other person, that person shall pay the basic examination fee on the requested application and the applicant shall pay all other fees including any fee for extra claims. The identity of such other person requesting the examination shall be kept in confidence by the Patent Office and no information concerning the same given without authority of such person unless necessary to carry out the provisions of any Act of Congress or in such special circumstances as may be determined by the Commissioner.

“(c) If no request for examination is received within the time specified in subsection (a) of this section, the application shall be regarded as abandoned.

“§ 194. *Examination of related applications*

“When examination of a deferred application is requested under section 193 of the title, the Commissioner may call upon the applicant to request examination of any other of his applications which may have been deferred and which claim the date of the first mentioned application or any application the date of which is claimed by the first mentioned application and to pay the fee. Notice shall be given the applicant of the fee due and a time of not less than thirty days shall be set for payment. If the fee is paid within the specified time, examination shall proceed on all such applications concurrently. If the fee is not paid within such time, the applications on which the required fee has not been paid shall be regarded as abandoned.

“PART III—PATENTS AND PROTECTION OF PATENT RIGHTS

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“Chapter 25.—AMENDMENT, CORRECTION AND REVOCATION OF PATENTS

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“252. Effect of reissue.
“253. Disclaimer.
“254. Certificate of correction of Patent Office mistake.
“255. Certificate of correction of applicant's mistake.
“256. Correction of named inventor.
“257 Revocation.

“§ 251. *Reissue of defective patents*

“(a) Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, by reason of a defective specification or drawing, or by reason of the patentee claiming more than he had a right to claim in the patent, the Commissioner shall, on the surrender of such patent and the payment of the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new and amended application, for the unexpired part of the term of the original patent. No new matter shall be introduced into the application for reissue.

"(b) The provisions of chapters 12, 13 and 14 of this title relating to applications for patent shall be applicable to applications for reissue of a patent.

"(c) No reissued patent shall be granted enlarging the scope of the claims of the original patent.

"§ 252. *Effect of reissue*

"(a) The surrender of the original patent shall take effect upon the issue of the reissued patent, and every reissued patent shall have the same effect and operation in law, on the trial of actions for causes thereafter arising, as if the same had been originally granted in such amended form, but in so far as the claims of the original and reissued patents are identical, such surrender shall not affect any action then pending nor abate any cause of action then existing, and the reissued patent, to the extent that its claims are identical with the original patent, shall constitute a continuation thereof and have effect continuously from the date of the original patent.

"(b) No reissued patent shall abridge or affect the right of any person or his successors in business who made, purchased or used prior to the grant of the reissue anything patented by the reissued patent, to continue the use of, or to sell to others to be used or sold, the specific thing so made, purchased or used, unless the making, using or selling of such thing infringes a valid claim of the reissued patent which was in the original patent. The court before which such matter is in question may provide for the continued manufacture, use or sale of the thing made, purchased or used as specified, or for the manufacture, use or sale of which substantial preparation was made before the grant of the reissue, and it may also provide for the continued practice of any process patented by the reissue, practiced, or for the practice of which substantial preparation was made, prior to the grant of the reissue, to the extent and under such terms as the court deems equitable for the protection of investments made or business commenced before the grant of the reissue.

"§ 253. *Disclaimer*

"(a) Whenever, without any deceptive intention, a claim of a patent is invalid the remaining claims shall not thereby be rendered invalid. A patentee, whether of the whole or any sectional interest therein, may, on payment of the fee required by law, make disclaimer of any complete claim, stating therein the extent of his interest in such patent. Such disclaimer shall be in writing and recorded in the Patent Office; and it shall thereafter be considered as part of the original patent to the extent of the interest possessed by the disclaimant and by those claiming under him.

"(b) In like manner any patentee or applicant may disclaim or dedicate to the public the entire term, or any terminal part of the term, of the patent granted or to be granted.

"(c) The fact that two patents which have been or may be issued expire at the same time by means of a terminal disclaimer or dedication under this section or otherwise, shall have no effect in the determination of the patentability or validity of a claim in either.

"§ 254. *Certificate of correction of Patent Office mistake*

"Whenever a mistake in a patent, incurred through the fault of the Patent Office, is clearly disclosed by the records of the Office, the Commissioner may issue a certificate of correction stating the fact and nature of such mistake, under seal, without charge, to be recorded in the records of patents. A printed copy thereof shall be attached to each printed copy of the patent, and such certificate shall be considered as part of the original patent. Every such patent, together with such certificate, shall have the same effect and operation in law on the trial of actions for causes thereafter arising as if the same had been originally issued in such corrected form. The Commissioner may issue a corrected patent without charge in lieu of and with like effect as a certificate of correction.

"§ 255. *Certificate of correction of applicant's mistake*

"Whenever a mistake of a clerical or typographical nature, or of minor character, which was not the fault of the Patent Office, appears in a patent and a showing has been made that such mistake occurred in good faith, the Commissioner may, upon payment of the required fee, issue a certificate of correction, if the correction does not involve such changes in the patent as would constitute new matter or would require reexamination. Such patent, together with the certificate, shall have the same effect and operation in law on the trial of actions for causes thereafter arising as if the same had been originally issued in such corrected form.

"§ 256. *Correction of named inventor*

"Omission of an inventor's name or inclusion of the name of a person not an inventor, without deceptive intent shall not affect validity of a patent, and may be corrected at any time by the Commissioner in accordance with regulations established by him or upon order of a Federal court before which the matter is called in question. Upon such correction the Commissioner shall issue a certificate accordingly.

"§ 257. *Revocation*

"(a) Any person, or the head of an agency or department of the Government, may. within three years from the issuance of a patent, petition the Patent Office for a determination that a claim of such patent is invalid in view of designated patents or publications. Such petition shall explain the pertinency of the references cited and be accompanied by a fee of $500. The Patent Office shall determine on the basis of such petition whether or not a claim should have been allowed. If the Patent Office determines that a claim should not have been allowed, the owner of the patent as shown by the records of the Patent Office shall be notified and given an opportunity to amend the claim as provided in subsection (b) of this section or to request reconsideration of such determination as provided in subsection (c) of this section, within such time, not less than thirty days, as the Commissioner appoints. If the owner of the patent takes neither such action during the prescribed time, the claim in question shall be cancelled from the patent.

"(b) Upon receipt of the notice specified in subsection (a) of this section, if the patentee elects to amend the claim specified in the notice, he shall file an application for a reissue patent under the provisions of section 251 of this title.

"(c) Upon receipt of the notice specified in subsection (a) of this section, the patentee may request reconsideration before the Board of Appeals whose decision shall be reviewable as provided in chapter 13 of this title. A final decision, from which no appeal has been or can be taken, that the claim should not have been allowed shall operate to cancel the claim from the patent. Neither the denial of a petition under subsection (a) of this section, nor a determination that the claim was properly allowed, shall be subject to direct judicial review.

"(d) Upon a decision by the Patent Office that the claim should have been allowed, a petitioner under subsection (a) of this section may in appropriate cases be required to pay to the patent owner the reasonable cost of defending such claim in the Patent Office, including attorney's fees, not to exceed a total of $1,000. as determined by the Commissioner. The Commissioner may require an appropriate deposit or bond with surety for such cost prior to considering the petition.

"(e) If a claim of a patent is cancelled or amended as provided in this section on the basis of patents or publications which the petitioner previously presented under section 136 of this title, the fee required in subsection (a) of this section shall be refunded.

"(f) If the petition is filed by the head of an agency or department of the Government, the fees and cost prescribed by subsections (a) and (d) of this section shall not be required.

"(g) Nothing contained in this section shall be construed to supersede the jurisdiction of any Federal court or agency, nor to make any proceeding before such court or agency subject to the primary jurisdiction of the Patent Office.

"Chapter 26.—OWNERSHIP AND ASSIGNMENT

"Sec.
"261 Ownership; assignment.
"262. Joint owners.

"§ 261. *Ownership; assignment*

"(a) Subject to the provisions of this title, patents shall have the attributes of personal property.

"(b) Applications for patent, patents, or any interest therein, shall be assignable in law by an instrument in writing. The applicant, patentee, or his assigns or legal representatives may in like manner grant and convey an exclusive right under his application for patent, or patents, to the whole or any specified part of the United States.

"(c) A certificate of acknowledgment under the hand and official seal of a person authorized to administer oaths within the United States, or, in a foreign country, of a diplomatic or consular officer of the United States or an officer authorized to administer oaths whose authority is proved by a certificate of a diplomatic or consular officer of the United States, shall be prima facie evidence of the execution of an assignment, grant or conveyance of a patent or application for patent.

"(d) An assignment, grant or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, without notice, unless it is recorded in the Patent Office within three months from its date or prior to the date of such subsequent purchase or mortgage.

"§ 262. *Joint owners*

"In the absence of any agreement to the contrary, each of the joint owners of a patent may make, use or sell the patented invention without the consent of and without accounting to the other owners.

"Chapter 27.—GOVERNMENT INTERESTS IN PATENTS

"Sec.
"267. Time for taking action in Government applications.

"§ 267. *Time for taking action in Government applications*

"Notwithstanding the provisions of sections 133 and 151 of this title, the Commissioner may extend the time for taking any action to three years, when an application has become the property of the United States and the head of the appropriate department or agency of the Government has certified to the Commissioner that the invention disclosed therein is important to the armament or defense of the United States.

"Chapter 28.—INFRINGEMENT OF PATENTS

"Sec.
"271. Infringement of patent.
"272. Temporary presence in the United States.
"273. Unauthorized practice of subject matter prior to issuance of patent.

"§ 271. *Infringement of patent*

"(a) Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent therefor, infringes the patent.

"(b) Whoever, without authority of the patentee, imports into the United States, for purposes of trade or use in trade or industry, a product made in another country by a process patented in the United States shall be liable as an infringer provided patent protection for the process is not available in such country.

"(c) Whoever actively induces infringement of a patent shall be liable as an infringer.

"(d) Whoever sells a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

"(e) No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: (1) derived revenue from acts which it performed by another without his consent would constitute contributory infringement of the patent; (2) licensed or authorized another to perform acts which if performed without his consent would constitute contributory infringement of the patent; (3) sought to enforce his patent rights against infringement or contributory infringement.

"§ 272. *Temporary presence in the United States*

"The use of any invention in any vessel, aircraft, or vehicle of any country which affords similar privileges to vessels, aircraft or vehicles of the United States, entering the United States temporarily or accidentally, shall not constitute infringement of any patent, if the invention is used exclusively for the needs of the vessel, aircraft or vehicle and is not sold in or used for the manufacture of anything to be sold in or exported from the United States.

"§ 278. *Unauthorized practice of subject matter prior to issuance of patent*

"(a) After the issuance of a patent, a patentee may obtain damages for the unauthorized making, using or selling of the subject matter of a claim in the patent during an interim period prior to issuance of such patent, under the provisions of subsections (b) and (c) of this section and chapter 29 of this title.

"(b) Such interim period shall begin after the occurrence of all of the following events:

"(1) publication of the application containing such claim,

"(2) such claim is indicated as allowable by the Patent Office, and

"(3) actual notice to the alleged unauthorized practitioner that such claim has been indicated as allowable and how his acts are considered to constitute unauthorized practice of the subject matter of such claims,

and shall end upon issuance of the patent.

"(c) Damages for unauthorized practice during the interim period shall be limited to royalties reasonable in the circumstances. No injunction or other relief may be had with respect to the subsequent use or sale of machines, manufactures or compositions of matter made prior to the grant of the patent as to which a notice under this section applies, but reasonable royalties may be obtained.

"Chapter 29.—REMEDIES FOR INFRINGEMENT OF PATENT, AND OTHER ACTIONS

"Sec.
"281. Remedy for infringement of patent.
"282. Presumption of validity; defenses.
"283. Injunction.
"284. Damages.
"285. Attorney fees.
"286. Time limitation on damages.
"287. Limitation on damages; marking and notice.
"288. Action for infringement of a patent containing an invalid claim.
"289. Additional remedy for infringement of design patent.
"290. Notice of patent suits.
"292. False marking.
"293. Nonresident patentee, service and notice.
"294. Estoppel and cancellation.

"§ 281. *Remedy for infringement of patent*

"A patentee shall have remedy by civil action for infringement of his patent.

"§ 282. *Presumption of validity; defenses*

"(a) A patent shall be presumed valid. Each claim of a patent (whether in independent or dependent form) shall be presumed valid independently of the validity of other claims; dependent claims shall be presumed valid even though dependent upon an invalid claim. The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting it.

"(b) The following shall be defenses in any action involving the validity or infringement of a patent and shall be pleaded:

"(1) Noninfringement, absence of liability for infringement, or unenforceability,

"(2) Invalidity of the patent or any claim in suit on any ground specified in part II of this title as a condition for patentability,

"(3) Invalidity of the patent or any claim in suit for failure to comply with any requirement of sections 112 or 251 of this title,

"(4) Any other fact or act made a defense by this title.

"(c) In actions involving the validity or infringement of a patent the party asserting invalidity or noninfringement shall give notice in the pleadings or otherwise in writing to the adverse party at least thirty days before the trial, of the country, number, date, and name of the patentee of any patent, the title, date, and page numbers of any publication to be relied upon as anticipation of the patent in suit or, except in actions in the United States Court of Claims, as showing the state of the art, and the name and address of any person who may be relied upon as the prior inventor or as having prior knowledge of or as having previously used or offered for sale the invention of the patent in suit. In the absence of such notice proof of the said matters may not be made at the trial except on such terms as the court requires.

"§ 283. *Injunction*

"The several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.

"§ 284. *Damages*

"(a) Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court.

"(b) When the damages are not found by a jury, the court shall assess them. In either event the court may increase the damages up to three times the amount found or assessed.

"(c) The court may receive expert testimony as an aid to the determination of damages or of what royalty would be reasonable under the circumstances.

"§ 285. *Attorney fees*

"The court in exceptional cases may award reasonable attorney fees to the prevailing party.

"§ 286. *Time limitation on damages*

"(a) Except as otherwise provided by law, no recovery shall be had for any infringement committed more than six years prior to the filing of the complaint or counterclaim for infringement in the action.

"(b) In the case of claims against the United States Government for use of a patented invention, the period before bringing suit, up to six years, between the date of receipt of a written claim for compensation by the department or agency of the Government having authority to settle such claim, and the date of mailing by the Government of a notice to the claimant that his claim has been denied shall not be counted as part of the period referred to in the preceding paragraph.

"§ 287. *Limitation on damages; marking and notice*

"Patentees, and persons making or selling any patented article for or under them, may give notice to the public that the same is patented, either by fixing thereon the word 'patent' or the abbreviation 'pat.', together with the number of the patent, or when, from the character of the article, this can not be done, by fixing to it, or to the package wherein one or more of them is contained, a label containing a like notice. In the event of failure so to mark, no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter, in which event damages may be recovered only for infringement occurring after such notice. Filing of an action for infringement shall constitute such notice.

"§ 288. *Action for infringement of a patent containing an invalid claim*

"Whenever, without deceptive intention, a claim of a patent is invalid, an action may be maintained for the infringement of a claim of the patent which may be valid. The patentee shall recover no costs unless a disclaimer of the invalid claim has been entered at the Patent Office before the commencement of the suit.

"§ 289. *Additional remedy for infringement of a design patent*

"(a) Whoever during the term of a patent for a design, without license of the owner, (1) applies the patented design, or any colorable imitation thereof, to any article of manufacture for the purpose of sale, or (2) sells or exposes for sale any article of manufacture to which such design or colorable imitation has been applied shall be liable to the owner to the extent of his total profit, but not less than $250, recoverable in any United States district court having jurisdiction of the parties.

"(b) Nothing in this section shall prevent, lessen, or impeach any other remedy which an owner of an infringed patent has under the provisions of this title, but he shall not twice recover the profit made from the infringement.

"§ 290. *Notice of patent suits*

"The clerks of the courts of the United States, within one month after the filing of an action under this title shall give notice thereof in writing to the Commissioner, setting forth so far as known the names and addresses of the parties, name of the inventor, and the designating number of the patent upon which the action has been brought. If any other patent is subsequently included in the action he shall give like notice thereof. Within one month after the decision is rendered or a judgment issued the clerk of the court shall give notice thereof to the Commissioner. The Commissioner shall, on receipt of such notices, enter the same in the file of such patent.

"§ 292. *False marking*

"(a) Whoever, without the consent of the patentee, marks upon, or affixes to, or uses in advertising in connection with anything made, used, or sold by him, the name or any imitation of the name of the patentee, the patent number, or the words 'patent,' 'patentee,' or the like, with the intent of counterfeiting or imitating the mark of the patentee, or of deceiving the public and inducing them to believe that the thing was made or sold by or with the consent of the patentee; or

"Whoever marks upon, or affixes to, or uses in advertising in connection with any unpatented article, the word 'patent' or any word or number importing that the same is patented, for the purpose of deceiving the public; or

"Whoever marks upon, or affixes to, or uses in advertising in connection with any article, the words 'patent applied for,' 'patent pending,' or any word importing that an application for patent has been made, when no application for patent has been made, or if made, is not pending, for the purpose of deceiving the public—

"Shall be fined not more than $500 for every such offense.

"(b) Any person may sue for the penalty, in which event one-half shall go to the person suing and the other to the use of the United States.

"§ 293. *Nonresident patentee; service and notice*

"Every patentee not residing in the United States may file in the Patent Office a written designation stating the name and address of a person residing within the United States on whom may be served process or notice of proceedings affecting the patent or rights thereunder. If the person designated cannot be found at the address given in the last designation, or if no person has been designated, the United States District Court for the District of Columbia shall have jurisdiction and summons shall be served by publication or otherwise as the court directs. The court shall have the same jurisdiction to take any action respecting the patent or rights thereunder that it would have if the patentee were personally within the jurisdiction of the court.

"§ 294. *Estoppel and cancellation*

"(a) In any action in a Federal court in which the issue of the validity or scope of a claim of a patent is properly before the court, and the owner of the patent as shown by the records of the Patent Office is a party or has been given notice as provided in subsection (c) of this section, a final adjudication, from which no appeal has been or can be taken, limiting the scope of the claim or holding it to be invalid, shall constitute an estoppel against the patentee, and those in privity with him, in any subsequent Federal action, and may constitute an estoppel in such other Federal actions as the latter court may determine, involving such patent. Within thirty days of such adjudication the clerk of the court shall transmit notice thereof to the Commissioner, who shall place the same in the public records of the Patent Office pertaining to such patent, and endorse notice on all copies of the patent thereafter distributed by the Patent Office that the patent is subject to such adjudication.

"(b) In any action as set forth in subsection (a) of this section, upon a final adjudication from which no appeal has been or can be taken that a claim of the patent is invalid, the court may order cancellation of such claim from the patent. Such order shall be included in the notice to the Commissioner specified in subsection (a) of this section, and the notice of cancellation of a claim shall be published by the Commissioner and endorsed on all copies of the patent thereafter distributed by the Patent Office.

"(c) In any action in a Federal court in which the validity or scope of a claim of a patent is drawn into question, the owner of the patent, as shown by the records of the Patent Office, shall have the unconditional right to intervene to defend the validity or scope of such claim. The party challenging the validity or scope of the claim shall serve upon the patent owner a copy of the earliest pleadings asserting such invalidity. If such owner cannot be served with such pleadings, after reasonable diligence is exercised, service may be made as provided for in the Federal Rules of Civil Procedure and, in addition, notice shall be transmitted to the Patent Office and shall be published in the OFFICIAL GAZETTE."

TRANSITITIONAL AND SUPPLEMENTARY PROVISIONS

SEC. 2. (a) Section 1256 of title 28, United States Code, Judicial Code and Judiciary, is amended to read as follows:

"§ 1256. *Court of Customs and Patent Appeals: certiorari*

"Cases in the Court of Customs and Patent Appeals, except those capable of review under section 1295 of this title, may be reviewed by the Supreme Court by writ of certiorari."

(b) Title 28, United States Code, Judicial Code and Judiciary, is amended by adding new section 1295 reading as follows:

"§ 1295. *Patent Office cases*

"The United States Court of Appeals for the District of Columbia Circuit shall have jurisdiction of appeals from decisions of the Court of Customs and Patent Appeals as provided for in section 147 of title 35, United States Code."

(c) The section analysis of Chapter 83—Courts of Appeals, of title 28, United States Code, Judicial Code and Judiciary, preceding section 1291, is amended by adding the following line:

"1295. Patent Office cases."

(d) Section 1542 of title 28, United States Code, Judicial Code and Judiciary, is amended to read as follows:

"§ 1542. *Patent Office decisions*

"The Court of Customs and Patent Appeals shall have jurisdiction of appeals from decisions of:

"(1) The Board of Appeals of the Patent Office as to patent applications and patents as provided in chapter 13 of title 35, Patents, United States Code.

"(2) The Commissioner of Patents as to trademark applications and proceeding as provided in section 1071 of title 15."

SEC. 3. (a) Title 28, United States Code, Judicial Code and the Judiciary, is amended by adding new section 757 reading as follows:

"§ 757. *Civil commissioners for patent cases*

"(a) When the volume of litigation arising under the patent laws so justifies, the court may appoint one or more Civil Commissioners who shall be subject to removal by the court and shall devote all of their time to the duties of the office. A Commissioner may be appointed to serve in more than one district.

"(b) Unless otherwise ordered by the court for good cause, such Civil Commissioners shall regulate and control the conduct of all discovery proceedings, preside over any oral examination for discovery of parties, officers, directors and managing agents of associations, preside over any pretrial hearings, and make any necessary orders with respect thereto and as a result thereof.

"(c) Each such Civil Commissioner shall receive basic compensation at the rate of $26,000 per year."

(b) The section analysis of Chapter 49—District Courts, of title 28, United States Code, Judicial Code and the Judiciary, preceding section 751, is amended by adding the following line:

"757. Civil commissioners for patent cases."

SEC. 4. If any provision of title 35 Patents, United States Code, as amended by this Act, or any other provision of this Act, is declared unconstitutional or is held invalid, the validity of the remaining provisions shall not be affected.

SEC. 5. (a) This Act shall take effect on the day six months after enactment.

(b) Applications for patent actually filed in the United States prior to the effective date of this Act shall continue to be governed by the provisions of title 35 in effect immediately prior to the effective date, except that any such application still pending eighteen months after its filing date or effective filing date may be published by the Commissioner in accordance with the provisions of section 123 of title 35 as enacted by this Act and except sections 137 and 148 and as provided in subsection (c) of this section.

(c) Section 147 of title 35 as enacted by this Act and sections 1256 and 1295 of title 28 United States Code as amended by this Act shall apply in the case of appeals to the United States Court of Customs and Patent Appeals in which the notice of appeal from the decision of the Patent Office to such court was filed on or after the effective date of this Act.

(d) Complete applications for patent actually filed in the United States within one year after the effective date of this Act and not relying on a prior preliminary application shall continue to be governed by the provisions of chapter 10 and by the provisions relating to interferences in chapters 12 and 13, of title 35 in effect immediately prior to the effective date.

(e) Assistant commissioners of patents and examiners-in-chief in office on the effective date of this Act shall continue in office under and in accordance with their then existing appointments.

(f) The amendment of title 35, United States Code, by this Act, shall not affect any rights or liabilities existing under title 35 in effect immediately prior to the effective date of this Act.

SEC. 6. This Act may be cited as "The Patent Reform Act of 1967."

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF FEBRUARY 13, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	8- 6-63	11-30-61
GENERAL ORGANIC CHEMISTRY, GROUP 120—G. D. MITCHELL, Manager Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	7-25-63	9-12-61
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—M. STERMAN, Manager Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	11-18-63	1-16-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	10- 7-63	3- 2-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apperatus; Misc. Physical Processes.	7- 2-63	10-23-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—M. L. LEVY, Manager Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	7-17-63	8-30-62
SECURITY, GROUP 220—S. BOYD, Manager Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedos, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	9-15-64	6- 5-63
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—E. J. SAX, Manager Communications; Multiplexing Techniques; Facsimile; Date Processing, Computation and Conversion; Storage Devices and Related Arts.	7-26-63	7- 3-61
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—F. M. STRADER, Manager Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	8- 8-63	11- 3-61
PHYSICS, GROUP 260—R. L. EVANS, Manager Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-13-64	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager Industrial Arts; Household, Personal and Fine Arts.	10-18-65	3-12-65

Total number of pending applications (excluding Designs)	191,891
Total number of Design applications pending	4,039
Total number of applications awaiting action (excluding Designs)	140,377
Total number of Design applications awaiting action	2,418
Date of oldest new application awaiting action	July 2, 1963
Date of oldest amended application awaiting action	July 3, 1961

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during March 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963.*

Patents	Numbers 2,499,345 to 2,502,407, inclusive
Plant Patents	Numbers 926 to 929, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid, Flexible and Special Receptacles and Packages.	4- 2-65	9- 3-63
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	1- 4-65	10-16-62
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, Etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	10- 8-64	7-16-62
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	6- 2-65	2-28-64
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	3-19-65	4-26-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2- 5-65	7-25-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE ALAN J. LEMIN

No. 7580. Decided July 28, 1966

[53 CCPA —; 354 F.2d 864; 150 USPQ 546]

1. PATENTABILITY—AFFIDAVIT.

"While the Examiner is presumed to be an expert in his field of examination, and while, in the absence of instruction, we might be inclined to agree with him that '>50' would seem to mean positive activity at some unknown concentration above 50 µg./ml., we must, in making determinations under section 103, give weight to the sworn statements of workers skilled in the art as to the meaning to them of symbols with which they, and not we, are familiar. This is particularly so when, as here, questions of convention and custom come into dispute."

2. SAME—SAME.

Held, with respect to sworn statements of workers skilled in the art as to the meaning to them of symbols with which they * * * are familiar, "we see no merit in the Patent Office argument that the affidavits express mere opinions and do not state facts."

3. SAME—PROCESS—NEW USE OF KNOWN COMPOUND—OBVIOUSNESS.

"A reference which shows to workers in the field only that a compound is not effective up to 50 µg./ml. * * * is not a basis on which we can find obviousness."

4. SAME—PARTICULAR SUBJECT MATTER—FUNGICIDAL COMPOSITIONS AND PROCESS.

The refusal of certain claims to fungicidal compositions and a process for controlling plant pathogenic fungi therewith, as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 32,518.

REVERSED.

George T. Johannesen (*Eugene O. Retter* of counsel) for appellant.

Clarence W. Moore (*Irving R. Pellman* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania*

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals,[1] adhered to on reconsideration, affirming the Examiner's rejection of process claims 3–5 and composition claims 6–10 in application Serial No. 32,518, filed May 31, 1960, for "Organic Compounds and Process."

The invention is directed to a new use of an old compound and its position isomer. Appellant has found that α-ethynyl-1-naphthalenemethanol and α-ethynyl-2-naphthalenemethanol are active against plant pathogenic fungi and that, when applied to seeds or to the soil in which the seeds are planted, effective control of the fungi is obtained. Claims 3 and 6 are illustrative:

> 3. A process for the control of fungal infestations of seeds and of soil which comprises applying to the locus to be treated a fungicidally effective amount of a compound selected from the class consisting of α-ethynyl-1-naphthalenemethanol and α-ethynyl-2-naphthalenemethanol.

---

[1] Consisting of Examiners-in-Chief Federico and Rosa and Acting Examiner-in-Chief Stone, the latter writing the opinion.

6. A fungicidal composition which comprises a fungicidally effective amount of a compound selected from the class consisting of α-ethynyl-1-naphthalenemethanol and α-ethynyl-2-naphthalenemethanol dispersed in a carrier consisting of water containing a surfactant.

Claim 4 is directed to a process in which the chemical is applied to the seeds either before or after planting; claim 5 to a process in which the chemical is applied to the soil. Claim 7 is directed to an emulsifiable concentrate which comprises a surfactant, a water-immiscible solvent, and a fungicidally effective amount of the compound; claim 8 to a concentrate adapted to form an aqueous dispersion on dilution with water which comprises a surfactant, a water-miscible solvent, and a fungicidally effective amount of the compound; claim 9 to a dispersible powder which comprises a surfactant, an inert solid diluent, and a fungicidally effective amount of the compound; and claim 10 to a dusting powder which comprises an inert solid diluent and a fungicidally effective amount of the compound. Concentrations of 500 to 10,000 parts per million are contemplated when using aqueous dispersions or oil-in-water emulsions for the treatment of soil.

The claims were rejected as unpatentable over:

> Tanaka et al., "Antibiotics and Chemotherapy," volume 9, pp. 151–155 (March 1959).

The sole issue, simple to state but not so easily resolved, is: does this reference teach or suggest to one of ordinary skill in the biochemical art that α-ethynyl-1-naphthalenemethanol would control plant pathogenic fungi on seeds or in soil? More specifically, the question is what certain terms used in the reference actually mean. The parties are in total disagreement on this question.

Tanaka et al. disclose tests of certain synthetic acetylenic compounds performed by an agar streak two-fold serial dilution technique using sometimes two and sometimes three fungi, and two bacteria, as test microorganisms. Among those compounds tested is one of the two used by appellant as the active ingredient, α-ethynyl-1-naphthalenemethanol. The 2-naphthalene compound used by appellant is not disclosed in the reference and will not be discussed further since no claim is limited thereto. Each compound of the reference, dissolved first in acetone in adequate concentration, was diluted with the agar medium to the final concentration. One of the test fungi, *Piricularia oryzae*, is admittedly a pathogen to the rice plant.

The test results are reported as "minimal concentrations," expressed as μg./ml.,[2] "required for complete inhibition." As to each of the four species, including *P. oryzae*, upon which the 1-naphthalene compound was tested, the symbol ">50" is used to report the test results.[3] It is over the interpretation to be given this expression that the dispute arises.

The gist of the Patent Office position is that Tanaka et al. say, in effect, that the compound *has* antifungal activity because the expression ">50" means, in the context used, that at some concentration greater than 50 μg./ml. the compound gives "complete inhibition" of the microorganisms treated. The Board, furthermore, felt "that the mere disclosure in the reference of testing the compound α-ethynyl-1-naphthalenemethanol as a fungicide renders the reference applicable against the instant claims," and, while passing over the *results* of those tests and the significance thereof except to express disagreement with appellant's argument that they show the compound *lacks* fungicidal activity, concluded that "To use a higher concentration of the fungicide and find it is effective as such, is believed to be within the skill of the art and not patentable."

Appellant contends there is no basis in law or in fact to support the Board's position—that the symbol ">" is a conventional designation in this kind of test reporting and what it *actually means* to one of ordinary skill in *this* art is simply that the compound tested was ineffective *at the highest concentration tested*, here 50 μg./ml. Thus, appellant insists the reference says nothing at all, even by implication, about whether the compound is or would be effective at concentrations above 50 μg./ml., or whether Tanaka et al. found *some* inhibition at 50 μg./ml. or less, an alleged fact the Solicitor asks us to assume. Finally, appellant points out that Tanaka et al. themselves, obviously workers skilled in this art, call another compound which exhibited "complete inhibition" at 25 μg./ml. "ineffective," and, that being so, one of ordinary skill in this art would certainly not be directed toward using a compound found to be ineffective at 50 μg./ml.

Appellant's case is based on two affidavits, which, because of the significance we attach thereto, are set out in full. The first affidavit submitted to the Examiner and therefore before the Board, reads:

> LIONEL E. RHULAND, being duly sworn, deposes and says:
>
> THAT, he is a bacteriologist having received the degree of Doctor of Philosophy in Bacteriology from the University of Indiana in 1951;
>
> THAT, since 1951 he has been in the continuous employ of The Upjohn Company and is currently Research Manager of the Infectious Diseases Division of the Research Department of said company;
>
> THAT, he has long experience in the testing of compounds for bactericidal and fungicidal activity and in the reporting and analyzing of data derived from said testing;
>
> THAT, he has read and is familiar with the paper of Tanaka et al. published in Antibiotics and Chemotherapy, 9, 151–155;
>
> THAT, in Table III on page 153 of the aforesaid paper there appears in tabulated form the results of testing a number of acetylenic compounds against two species (*T. asteroides* and *P. oryzae*) of fungi and two species (*E. coli* and *B. subtilis*) of bacteria;
>
> THAT, the notation ">50" which is shown as the result recorded against all four of said microorganisms in said Table III for the compound α-ethynyl-1-naphthalenemethanol (third compound) means, according to convention universally used in the reporting of such results, that the compound was tested in concentrations up to and including 50 μg./ml. and was found to be inactive at all such concentrations;
>
> THAT, the paragraph immediately under Table III on page 153 of said paper states that all the active compounds, with the exception of one (1-naphthyl-1-oxo-hexa-2,4-diyne; activity against *B. subtilis* recorded as 6 μg./ml. in Table II), were inactive against bacteria;
>
> THAT, in reporting the results of testing of said compounds against bacteria the authors used the notation ">50" in all cases except one, namely that of compound 6 in Table II where the notation "25" appears; and
>
> THAT, accordingly, the authors are employing the term ">50" in accordance with normal convention as meaning no activity when tested in concentrations up to and including 50 μg./ml.
>
> FURTHER, deponent sayeth not.

---

[2] 1 μg./ml. corresponds to 1 part per million.

[3] For a better understanding of the form of reporting in the tables of the reference, an example of a compound showing complete effectiveness on some of the five test microorganisms in terms of the minimal concentrations (μg./ml.) is this:

[compound] 3 1.6 6 >50 >50

The test on applicant's compound reads thus, in four columns:

[compound] >50 >50 >50 >50

The second affidavit, filed after the first Board decision with a request to remand but treated by the Board as a request for reconsideration, reads:

> LIONEL E. RHULAND, being duly sworn, deposes and says:
>
> THAT, I am the Lionel E. Rhuland who on January 14, 1963 executed an affidavit in the above-identified application in regard to a paper of Tanaka et al. published in Antibiotics and Chemotherapy, 9, 151–155; and thus being qualified further depose and say as follows:
>
> I have again reviewed the data given by Tanaka et al. and reaffirm that there is no evidence of any activity against fungi for compounds in question. All that the symbol ">" means is that the compounds were not active, i.e., did not give complete inhibition, at the highest concentration tested. It does not mean or imply that the compounds in question were partially active at the highest concentration tested. Thus the paper conveys no information whatever indicating fungicidal activity for the compounds in question, complete nor partial.
>
> Furthermore, if the compounds in question actually gave partial inhibition at the highest concentrations tested, this fact either was not observed by the authors or was deliberately withheld by the authors. In either case information to this effect is not communicated to me, and would not be communicated to any other persons skilled in the art by the paper.
>
> FURTHER, deponent sayeth not.

The decisive question is whether appellant or the Patent Office gives to the expression ">50" a meaning corresponding to that used by workers in this field, for it is that interpretation which determines what information the reference conveys to one of ordinary skill in the art. It is this question of *fact* which controls the ultimate *legal* issue of whether the invention would have been obvious within the meaning of 35 U.S.C. 103.

We think the affidavits speak for themselves. [1] While the Examiner is presumed to be an expert in his field of examination, and while, in the absence of instruction, we might be inclined to agree with him that ">50" would seem to mean positive activity at some unknown concentration above 50 μg./ml., we must, in making determinations under section 103, give weight to the sworn statements of workers skilled in the art as to the meaning to them of symbols with which they, and not we, are familiar. This is particularly so when, as here, questions of convention and custom come into dispute. Having considered these statements, together with the arguments of the Examiner, the Board, and the Solicitor, and noting the absence of any refutation of the factual statements in the affidavits on the part of the Patent Office, we accept the statements as to what the Tanaka et al. article discloses to one of ordinary skill in this art. Accepting it, we must find that it does not render the claimed invention obvious.

[2] We see no merit in the Patent Office argument that the affidavits express mere opinions and do not state facts.

Further, as to the contention that Tanaka et al. *might* have observed *some* activity at the various concentrations used, our answer is that we are not concerned with what Tanaka et al. might have observed, but only with what they in fact reported and with what this would mean to one of ordinary skill in the art.

Accepting, as we do, appellant's interpretation of the reference on the basis of unrefuted affidavits reciting the technical meaning of the symbology employed, we are of the opinion that the sole reference teaches nothing whatever about the properties, the discovery of which underlies the claimed inventions.

The Board, on rehearing, said "*To use* a higher concentration of the fungicide *and find it is effective* as such, is believed to be *within the skill of the art* and not patentable." [Our emphasis.] This is tantamount to saying that those skilled in the art could discover what appellant discovered by doing what he did. This is unquestionably so, but the issue under the law is whether it would be *obvious* to do what he did. [3] A reference which shows to workers in the field only that a compound is not effective up to 50 μg./ml. (and we so interpret it) is not a basis on which we can find obviousness.

[4] The decision of the Board is reversed.

REVERSED.

MARTIN, *J.*, concurring.

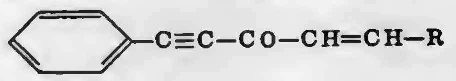
I agree with the views expressed in Judge Smith's concurring opinion. In addition, it is my view that the affidavits only *prima facie* show that the convention in this art would lead to an interpretation of the Tanaka disclosure as teaching that the compound was tested at 50 μg./ml. and did not give complete inhibition, and also that no information on partial inhibition was conveyed. That still leaves in my mind a close question of whether or not the use of the compound at higher, "fungicidally effective," amounts or the composition of the compound in the usual carriers is obvious. Although it is not clear, the majority appears to view the Tanaka reference as teaching away from the claimed invention(s). However, I resolve the doubt, and it is considerable in the case of the composition claims, in favor of appellant.

SMITH, *J.*, concurring, with whom MARTIN, *J.*, joins.

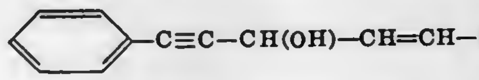
Absent the affidavits I would give full credence to the statements in the reference relied on by the Patent Office. These statements are as follows:

> **Antifungal Activity of Some Synthetic Acetylenic Compounds**
>
> KIICHIRO TANAKA, ISSEI IWAI, YAKUTARO OKAJIMA, AND TAKUO KONOTSUNE
>
> *Takamine Laboratory, Sankyo Co., Ltd., Tokyo, Japan*
>
> Capillin, 1-phenyl-1-oxo-hexa-2, 4-diyne, which was isolated in our laboratory a few years ago from the essential oil of *Arlemisia capillaris Thunb.*, has been reported to have high antifungal activity.
>
> Using procedures of synthesis described elsewhere, we have recently prepared compounds related to capillin having the following general formulae:

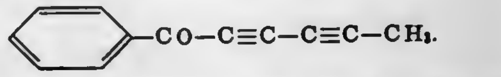
$$\left.\begin{array}{ll} R_1\text{—CO—}(C{\equiv}C)_n\text{—}R_2 & \text{(I)} \\ R_1\text{—CH(OH)—}(C{\equiv}C)_n\text{—}R_2 & \text{(II)} \end{array}\right\}(n=1 \text{ or } 2)$$



(III)



(IV)

Capillin: 

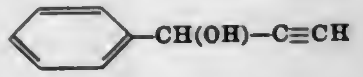
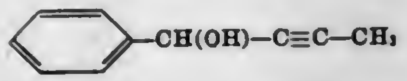
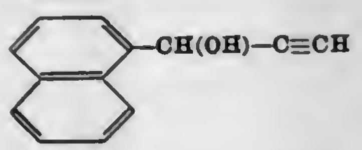
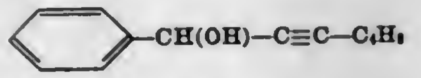
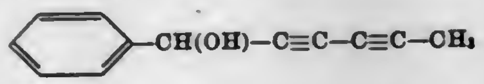
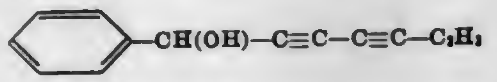
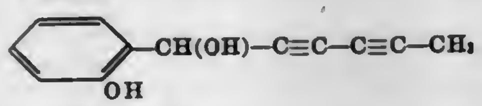
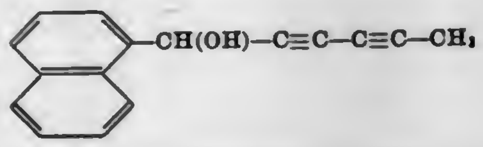
> In the present paper we wish to report some results of our investigations on the antimicrobial activity of these compounds.
>
> METHODS
>
> The tests were performed by the agar streak dilution technique using three fungi and two bacteria as test microorganisms.
>
> Each compound, dissolved first in acetone in adequate concentration, was diluted with the culture medium to the final concentration. In all cases the final concentration of acetone was less than 0.5 percent.

The culture conditions for the test microorganisms are shown in Table I.

The antimicrobial activity of each compound was expressed by the minimal concentration required for complete inhibition of the test organism after the incubation period.

TABLE III

Minimal Concentrations (µg./ml.) of Compounds Represented by the General Formula $R_1—CH(OH)—(C{\equiv}C)_n—R_2$ *(II) Required for Complete Inhibition of 4 Species of Microorganisms*

Compound	Test organism			
	T. asteroides	*P. oryzae*	*E. coli*	*B. subtilis*
 $—CH(OH)—C{\equiv}CH$	>50	>50	>50	>50
 $—CH(OH)—C{\equiv}C—CH_3$	>50	>50	>50	>50
 $—CH(OH)—C{\equiv}CH$	>50	>50	>50	>50 [1]
 $—CH(OH)—C{\equiv}C—C_4H_9$	>25	>25	>30	>30 [2]
 $—CH(OH)—C{\equiv}C—C{\equiv}C—CH_3$	>50	>50	>50	>50
 $—CH(OH)—C{\equiv}C—C{\equiv}C—C_2H_5$	50	>50	>50	>50
 $—CH(OH)—C{\equiv}C—C{\equiv}C—CH_3$	>50	>30	>50	>50
 $—CH(OH)—C{\equiv}C—C{\equiv}C—CH_3$	6	>50	>50	>50

The above statements appear to teach that compounds related to capillin, which has been reported to have high antifungal activity, were tested for antimicrobial activity and the "*Minimal* Concentrations * * * Required for *Complete* Inhibition of 4 Species of Microorganisms" is greater than 50 and 25 µg./ml. respectively for the two compounds identified above concerning the *P. oryzae* species. [Emphasis added.]

However, what appears to be clearly taught by the reference must be qualified according to appellant's affidavits. The first affidavit states in the singularly important part that "the notation '>50'" means "according to *convention universally* used in the reporting of such results that the compound * * * was found to be *inactive* at all such concentrations," and this is "*normal convention* * * * meaning *no activity* when tested in concentrations up to and including 50 µg./ml." [Emphasis added.]

The second affidavit states the greater than symbol means "the compounds were not active, i.e., did not give *complete inhibition*, at the highest concentration tested." I do not find this statement to be contrary to the statements of the reference.

If this was all the affidavits stated, it is at once apparent that they support the position of the Patent Office. However, there is a sentence in the second affidavit which states, the greater than symbol "does not *mean or imply* that the compounds in question were *partially active* at the highest concentration tested." [Emphasis added.]

It is clear that the above sentence is the strength upon which appellant's case stands or falls. It seems to me that appellant has taken the position by introducing the affidavit that the reference teaches *no inhibition* against any of the test organisms set forth where the greater than symbol is employed.

We are here dealing with a question of *fact* as to what the above symbol conveys to one of ordinary skill in the art. While appellant has offered only affidavit proof to establish this very important fact, vital to appellant's case, I find from the record that the Patent Office has continuously avoided consideration of the fact averred in the affidavit. Where an applicant fails to respond to a fact averred by the Patent Office, we have accepted that fact as established in our determination under section 103. See *In re Boe*, — CCPA —, — F.2d —, 148 USPQ 507; *In re Diamond*, — CCPA —, — F.2d —, 149 USPQ 562.

Here I find from the facts of record the reference teaches one of ordinary skill that there is no inhibition wherever the greater than symbol is used. I must conclude that the claimed processes and compositions are non-obvious within the meaning of section 103. For the above reasons I would reverse the decision of the Board.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,648,879, H. W. Patterson, TYING AND FASTENING DEVICE; **2,943,371**, same, TYING AND FASTENING DEVICE, **filed** Feb. 7, 1967, D.C. Nebr. (Omaha), Doc. 02695, *H. W. Patterson, doing business as Ti-Not Company* v. *Tip-Top Products Company.*

2,736,895, C. A. Cochrane, HIGH FREQUENCY RADIO AERIALS; **2,876,801**, P. F. Mariner et al., HIGH FREQUENCY RADIO AERIALS, **filed** Dec. 29, 1966, Ct. Cl. Doc. 432–66, *Elliott-Automation Ltd. et al.* v. *The United States.*

2,753,694, Trow and Nelson, ICE DISINTEGRATING AND CHIP DELIVERING SPIRAL ICE CHIP PRODUCING MACHINE; **3,034,311**, N. L. Nelson, ICE MAKING APPARATUS, **filed** Jan. 11, 1967, D.C., W.D. Wis. (Madison), Doc. 67–C–5, *King-Seeley Thermos Co.* v. *Nor-Lake, Incorporated.*

2,867,801. (See 2,736,895.)

2,896,837, E. J. Risucci, SEVERABLE FROZEN FOOD CARTON; **3,135,457**, same, PLURAL CARTON CONTAINING SEPARABLE UNITS, **filed** Jan. 11, 1966, D.C., S.D.N.Y., Doc. 67–C–124, *E. J. Risucci* v. *Hygrade Food Products Corporation.*

2,942,429, Van Dolah & Patterson, POULTRY CHILLING; **3,092,975**, R. S. Zebarth, ARTICLE CHILLING METHOD AND APPARATUS; **3,240,026**, Van Dolah & Patterson, POULTRY CHILLING, **filed** Feb. 2, 1967, D.C., W.D. Mo. (Kansas City), Doc. 16336–4, *Gordon Johnson Company et al.* v. *R. S. Zebarth et al.*

2,943,371. (See 2,648,879.)

3,028,576, J. C. Gerard, METHODS AND APPARATUS FOR MAKING THIN PLASTIC GLOVES; **3,153,481**, R. Orsini, PLASTIC ARTICLES, **filed** Jan. 24, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c123, Ethicon, *Inc.* v. *T. H. Reidy.*

3,034,311. (See 2,753,694.)

3,092,975. (See 2,942,429.)

3,097,684, F. Le Tarte, METHOD OF FORMING A CLOSED CORNER IN A HOLLOW RECTILINEAR METAL WORKPIECE; **3,202,245**, same, WINDOW AND DOOR FRAME CONSTRUCTION; **3,290,076**, same, FRAME CORNER CONSTRUCTION, **filed** Feb. 10, 1967, D.C., S.D. Iowa (Des Moines), Doc. 7–1963–C–1, *The Letarte Company, Inc. et al.* v. *Bee Cee Manufacturing & Supply Co. et al.*

3,135,457. (See 2,896,837.)

3,153,481. (See 3,028,576.)

3,190,996, W. A. Bedford, Jr., PRECISION FORMED METAL BARS HAVING HARDENED BEARING PORTIONS; **3,202,122**, same, METHOD OF MAKING PRECISION FORMED METAL PARTS, **filed** Jan. 9, 1967, D.C., S.D. Ind. (Indianapolis), Doc. IP67–C–16, *Republic Industrial Corporation* v. *Western Electric Company, Inc.*

3,202,122. (See 3,190,996.)

3,202,245. (See 3,097,684.)

3,240,026. (See 2,942,429.)

3,290,076. (See 3,097,684.)

Re. 25,545, J. L. White, CASKET INTERIOR STRUCTURE, **filed** Feb. 3, 1967, D.C., W.D. Tenn. (Memphis), Doc. C–67–29, *J. L. White et al.* v. *Major Casket Co., Inc.*

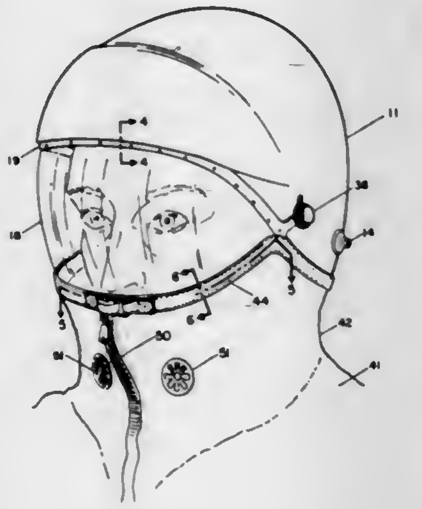
PATENTS

GRANTED MARCH 28, 1967

GENERAL AND MECHANICAL

3,310,811
HELMET ENCLOSURE

Vincent D. Iacono, Jr., Rumford, R.I., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 7, 1964, Ser. No. 358,131
16 Claims. (Cl. 2—6)

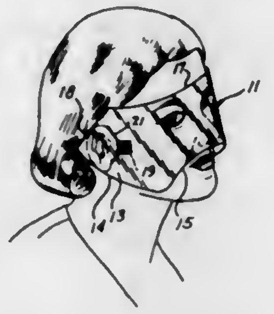


1. A helmet comprising a protective shell, said shell including means providing a housing for a visor, a protective visor of transparent material, means pivotally mounting said visor on said helmet for pivotal movement outwardly of said housing to an operative position, said visor having an upper edge disposed inwardly of said housing at times, said upper edge of said visor and said housing including cooperative means providing a gas tight seal therebetween, said helmet having a brim, a sealing strip along said brim outwardly thereof, said visor having a lower edge, a sealing strip along said lower edge of said visor, said strips having end edges, said end edges of said strips abutting when said visor is in said operative position to provide a continuous sealing strip entirely around said shell and visor, an impervious garment portion having an upper edge, a second sealing strip along said upper edge of said garment and complementary to said sealing strips of said visor and brim, said complementary sealing strips being interengaged providing a gas tight seal between said garment portion and said visor and helmet.

3,310,812
PROTECTIVE FACE MASK

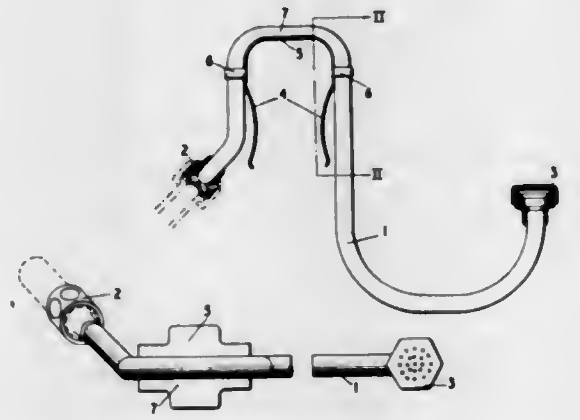
Gladys F. Gaisser, 249 High St., Buffalo, N.Y. 14204
Filed Oct. 2, 1964, Ser. No. 401,020
3 Claims. (Cl. 2—9)

1. A protective face mask comprising a body of transparent flexible sheet plastic material formed with side wings shaped to cover the sides of a person's face, said body being formed with a concave intermediate top edge portion substantially conforming to the curvature of a person's forehead and being formed with a concave intermediate bottom edge portion to provide clearance for a person's mouth when the body is engaged over the person's nose and eyes, said side wings having relatively rigid top edge portions shaped to underlie the person's hairline, respective loop members secured to the inner surfaces of the side wings at locations spaced substantial distances inwardly from the side edges of said side wings, and respective elastic bands engaged through said loop members and being located so as to be engageable over the person's ears, whereby the side wings substantially overlie the person's ears when the elastic bands are engaged over the ears.



3,310,813
MOUNTING MEANS FOR SANITARY BIDET-ADAPTER FOR LAVATORIES

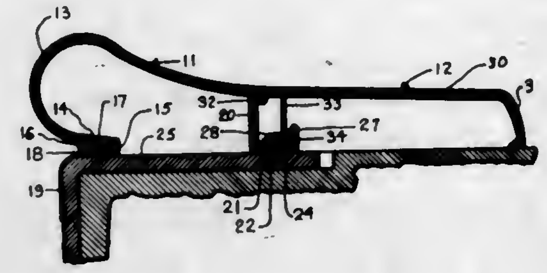
Jon Martin Jonsson, Finspangsvagen 142, Norrkoping, Sweden
Filed June 15, 1964, Ser. No. 375,083
Claims priority, application Sweden, Apr. 2, 1964, 4,037/64
5 Claims. (Cl. 4—7)



1. A detachable bidet-adapter for use with a lavatory bowl, comprising a substantially S shaped pipe, a portion of this pipe being substantially U-shaped and adapted to fit over the rim of a lavatory bowl, a spray nozzle attached to one end of the said pipe, a flexible tube attached to the other end of the pipe adjacent the portion of the pipe adapted to fit over the edge of the bowl, the tube being attachable to a water supply means, two leaf springs, attachment means for attaching each spring to each shank of the said U-shaped portion of the pipe, the said springs being adapted to grip the sides of the lavatory bowl when bidet-adapter is mounted on the bowl so that the spray nozzle is directed upwards within the bowl, and a flat plate, the plate being attached to the part of the pipe adapted to fit over the upper edge of the rim of the lavatory bowl.

3,310,814
SWIMMING POOL COPING

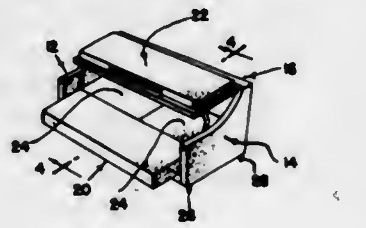
Leonard Lipman, East Orange, N.J., assignor to Vincent C. Shanni, Scotch Plains, and Fred Katzman, New Market, N.J.
Filed Jan. 7, 1965, Ser. No. 423,978
11 Claims. (Cl. 4—172)



1. A swimming pool coping comprising:
(a) an edge-piece;
(b) an end-piece;
(c) a ribbed channel and a ribbed insert on the edge-piece and the end-piece;
(d) the insert dimensioned too large for entry into the channel when the end-piece and edge-piece are disposed on a generally flat surface;
(e) the edge-piece and the end-piece being made of rigid, yet slightly deformable material, whereby the channel and insert may be snap-fitted together with the ribbed portions interlocked.

3,310,815
CONVERTIBLE SOFA-BUNK

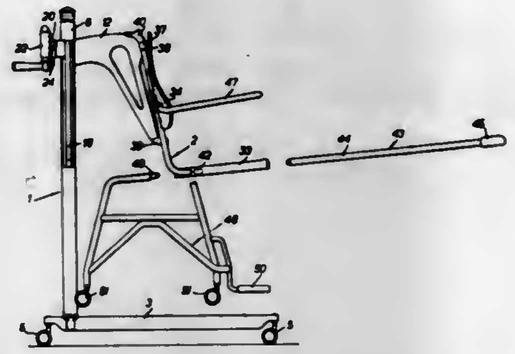
Mickey E. Griffin, 16430 NE. 29th, Bellevue, Wash. 98004
Filed July 6, 1966, Ser. No. 563,231
12 Claims. (Cl. 5—9)



1. In a convertible sofa bed in which said sofa has arm structures interconnected by main longitudinal frame members defining permanent seat and back frame means, said sofa bed including a generally rectangularly shaped movable seat frame adapted to be supported on said permanent seat frame, the improvements at each end of said sofa bed comprising: (a) an end member at the end of said movable seat frame including first movement restriction means thereon and also including on the outside surface thereof a holding pin means, (b) permanent support means located below and spaced outwardly from said end member to define a relatively narrow and unobstructed operating space therebetween, (c) second movement restriction means mounted on said permanent support means coacting with said first movement restriction means to restrict movement of said movable seat frame, (d) an elongated arm means pivotally mounted on said permanent support means and including a holding notch means in the forward edge thereof at a predetermined distance above its pivot mounting for engaging said holding pin means when said arm is swung to an upwardly extended position, and (e) generally rectangular upper berth frame means hingedly attached to the permanent back frame and having an elongated arm slot in the end members thereof to receive a locking pin means located at the upper end of said arm means.

3,310,816
APPARATUS FOR ASSISTING DISABLED PERSONS

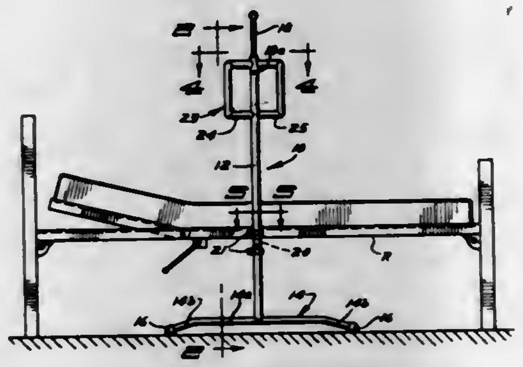
David Richard James, Hasfield, and Derek John Richards, May Hill, Longhope, England, assignors to Mecanaids, Limited, Gloucester, England, a British company
Filed Oct. 1, 1964, Ser. No. 400,755
Claims priority, application Great Britain, Oct. 2, 1963, 38,727/63
2 Claims. (Cl. 5—83)



1. Apparatus for supporting a disabled or infirm patient, comprising a wheeled chassis, an upright column supported on said chassis and of hollow box section with a longitudinal slot in one side wall, a cantilever arm projecting from said column through said slot, lifting means to raise and lower said arm including a carriage which is connected to the arm and runs along said column within the box section thereof, a legless chair which provides a support member for the patient in a sitting position, the legless chair being directly and rigidly connected to said arm at the back of the chair to provide a spacing between the chair and the column which allows the chair and a patient thereon to be lowered into a bath, and a mobile trolley for supporting the chair when detached from said arm, the chair having on opposite sides two spaced parallel guide recesses, the trolley being of tubular construction with two parallel horizontal members arranged at an upper level for engagement in the guide recesses.

3,310,817
INVALID AID STAND

Dale A. Harding, 206 N. 2nd St., Eagle Grove, Iowa 50533
Filed Feb. 8, 1965, Ser. No. 431,068
3 Claims. (Cl. 5—92)



1. Apparatus for use in conjunction with a bed including:
(a) a generally U-shaped member wherein the individual sections comprising the U are adjustable to permit variations of the overall cross sectional area encompassed between elements forming the U;
(b) a pair of supporting bars arranged respectively on the lowermost ends of the arms of the U normal to the plane defined by the U being of substantial length and having ground engaging portions on the ends thereof; and

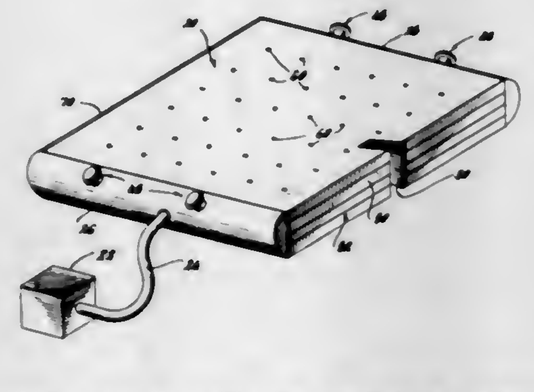
(c) an adjustable cross member received between the arms of said U with means on the ends thereof for adjustably mounting the same along the length of said arms whereby the cross member will be arranged below a bed in normal abutting relation to the frame of the bed to normally abut with the frame should the U member be tipped about either of the ground engaging members.

3,310,818
SHOCK ABSORBING APPARATUS

William H. Fischer, Sandy Hook, Conn., assignor to Air Inflatable Products Corporation, a corporation of Delaware

Filed Oct. 22, 1964, Ser. No. 405,664

8 Claims. (Cl. 5—348)



1. Pneumatic shock absorbing apparatus, comprising, in combination:

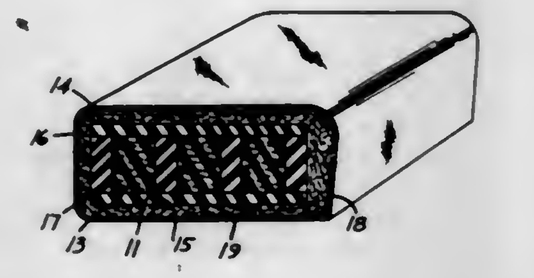
- A. means forming a plurality of superimposed chambers of flexible sheet material,
  - (1) each of said chambers having means forming an open air passage in a wall thereof,
    - (a) said passages decreasing in size for each successive chamber from the top down;
- B. a manifold of flexible sheet material in fluid communication with said chambers,
  - (1) an air inlet on said manifold, and
  - (2) an air valve outlet on said manifold,
    - (a) said valve outlet being normally closed but opening on a slight increase in manifold air pressure; and
- C. means for inflating said manifold and said chambers through said air inlet and said air passages.

3,310,819
UPHOLSTERY CONSTRUCTION

Ben Morrison, 11124 Westwood Blvd., Culver City, Calif. 90230

Filed Oct. 18, 1965, Ser. No. 497,214

5 Claims. (Cl. 5—353)



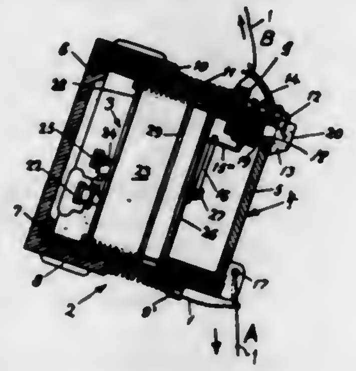
1. A coil spring core assembly for use in upholstered furniture which comprises: a center core sheet, said center core sheet in the form of an elastomeric foam sheet, a plurality of coil springs, a series of cylindrical pockets cut from said foam core, said pockets of substantially the same diameter as the outside diameter of said coil springs, a plurality of plugs, said plugs made of said foam center core sheet material cut from said cylindrical pockets, said plug adapted to be inserted in said coil spring for reinforcement; a first sheet and a second sheet of elastomeric foam material, said first sheet of foam material bonded to one side of said center core sheet to cover said coil pockets which contain said coil springs and said plugs, said second sheet of said foam adapted to be bonded to the other side of said center core sheet to cover the coil pockets containing said coil springs and plugs.

3,310,820
DEVICE FOR BRINGING ARTICLES SUBMERGIBLE IN WATER, SUCH AS MARKING FLOATS AND THE LIKE, BACK TO THE WATER SURFACE

Anssi T. T. Elo, Siltakatu 12B, Joensuu, Finland

Filed Feb. 26, 1965, Ser. No. 435,503

11 Claims. (Cl. 9—9)



1. A device for surfacing buoyant objects such as marking floats and the like, submerged in a body of fluid comprising; a water tight casing, clockwork means mounted within said casing and having a turnable hand, a coiled line situated at the exterior of and retained by said casing, a buoyant object being adapted to be connected to one end of said line, locking means mounted on said casing at the exterior thereof for locking said line and buoyant object below the surface of the fluid, said locking means including an arm beneath which a portion of said line is located, and release means for releasing said locking means responsive to said clockwork means, thereby releasing said coiled line held by said locking means to permit the buoyant object to ascend to the surface as the line uncoils, said release means including a rotary pin extending fluid-tightly through said casing from the interior to the exterior thereof and having in the interior of said casing one angle portion situated in the path of movement of said hand to be turned thereby and having at the exterior of said casing a second angle portion preventing movement of said portion of said line from beneath said arm away from the latter until said pin is turned by said hand.

3,310,821
SELF-LOCKING FASTENER MACHINE

Forrest G. Rehberg, Monterey Park, Calif., assignor to Long-Lok Corporation, Los Angeles, Calif., a corporation of California

Filed July 1, 1964, Ser. No. 379,612

15 Claims. (Cl. 10—2)

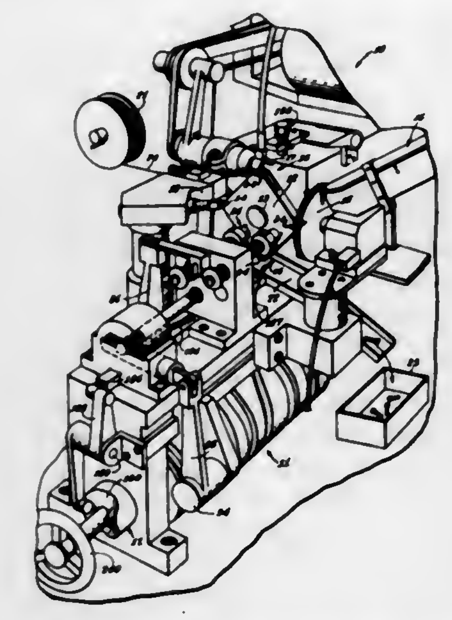
1. A machine for making a self-locking fastener, comprising:

a feeder,

a rotatable dial assembly including a plurality of gripping elements for receiving and gripping said fastener transferred from the feeder,

actuation means for actuating said gripping elements to grip the fastener, said actuation means being movable toward and away from contact with said dial assembly to permit said dial assembly to rotate free thereof,

means for rotating said dial assembly after gripping said fastener to transport said fastener to sequential operations in said machine,



a cutter in said machine for making a longitudinal cut in said fastener,

a guillotine and swager in said machine for inserting a plastic insert in the cut and to swage the fastener to anchor said plastic insert therein, and

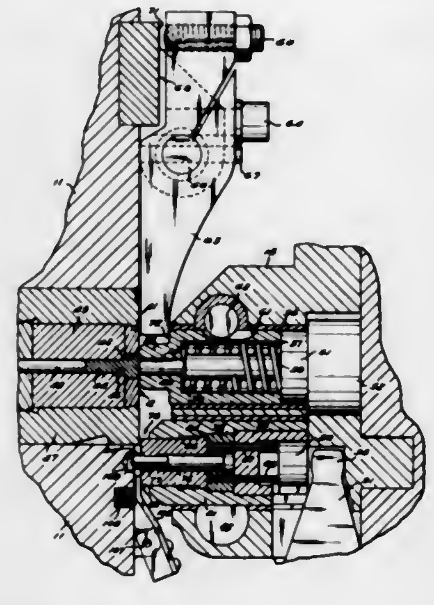
means for opening said gripping elements to release said fastener.

3,310,822
METHOD AND APPARATUS FOR MAKING SOCKET HEAD SCREWS

Herbert L. McClellan and Donald E. Huss, Tiffin, Ohio, assignors to The National Machinery Company, Tiffin, Ohio, a corporation of Ohio

Filed May 4, 1964, Ser. No. 364,508

13 Claims. (Cl. 10—7)



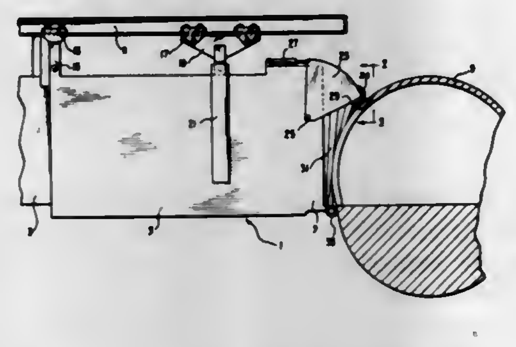
1. A machine for cold forging articles with socketed heads comprising a frame, a die in said frame having a die cavity, a slide reciprocable in said frame forward and away from said die through a cycle including two forward working strokes, a first tool assembly on said slide operable to engage and upset said blank on the first working stroke, and a second tool assembly operable on the second working stroke to engage and socket the upset formed by the first tool assembly, said first tool assembly including a tool engaging the end of a blank in said die and upsetting such end until the upset portion thereof engages the cylindrical wall of said die cavity only at a zone intermediate its ends, said second tool assembly including a punch pressed into said upset portion during said second working stroke backward extruding a part thereof and displacement forging the inner part forward of said zone thereby filling said die cavity.

3,310,823
CONVEYANCE GANGWAY WITH LEVELING SYSTEM

Lester L. Preiss, Miami, Fla., assignor to Wollard Aircraft Service Equipment Inc., a corporation of Florida

Filed Nov. 12, 1964, Ser. No. 412,876

11 Claims. (Cl. 14—71)



4. A conveyance gangway comprising:

(a) power driven means for moving the gangway up or down to a desired position relative to a doorway of a conveyance,

(b) support means carried by the gangway movable relative to the gangway,

(c) conveyance contacting means carried by support means (b) movable relative to support means (b) in a direction having a vertical component from a normal position of repose relative to support means (b) in which it projects toward the conveyance to first and second operative positions spaced from the position of repose,

(d) means for moving support means (b) along a path having a component in the direction of the conveyance to cause conveyance contacting means (c) to contact a nonvertical surface of the conveyance,

(e) means constraining the conveyance contacting means on further movement of support means (b) along said path to move from the position of repose through and past the first operative position into an intermediate position between the first and second operative positions,

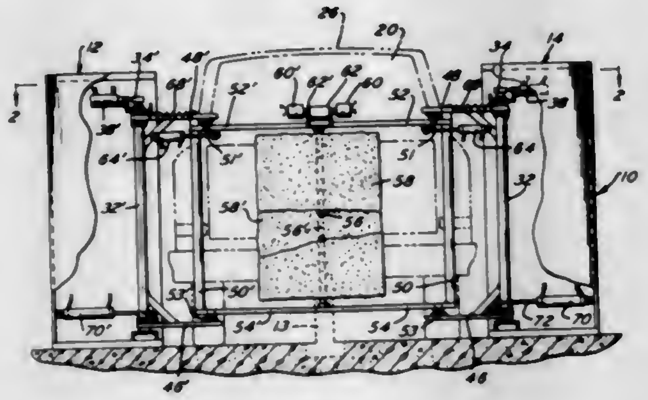
(f) first movement indicator means carried by support means (b) and positioned to be actuated upon conveyance contacting means (c) assuming the first operative position and being deactivated upon conveyance contacting means (c) moving toward the intermediate position,

(g) second movement indicator means carried by support means (b) positioned to be actuated upon conveyance contacting means (c) assuming the second operative position and deactivated upon conveyance contacting means (c) moving toward the intermediate position,

(h) first control means operable in response to actuation of the first movement indicator means to operate the power driven means (a) to cause movement of the gangway in one vertical direction, and

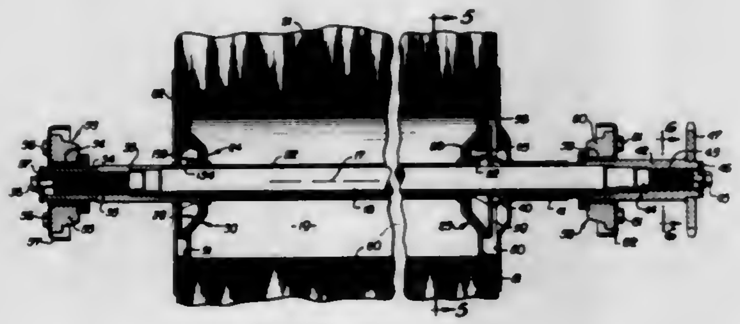
(i) second control means operable in response to actuation of the second movement indicator means to operate the power driven means (a) to cause movement of the gangway in the opposite vertical direction.

3,310,824
VEHICLE WASHER
Carl C. Beer, Philadelphia, Pa., assignor to Sherman Car Wash Equipment Company, Palmyra, N.J., a corporation of New Jersey
Filed Apr. 21, 1966, Ser. No. 544,233
10 Claims. (Cl. 15—21)



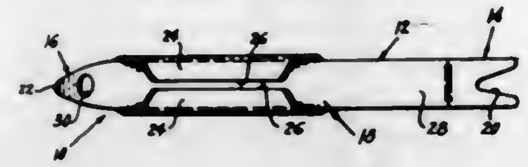
1. In a vehicle washer comprising a brushing unit mounted for pivotably movement between a retracted position and an extended position, said unit having two sections pivoted together, support structure for said unit, a brush rotatably supported by one section, means connected to said brush to rotate said brush in collapsed and extended positions of said sections, limit stop means to limit the maximum pivotable extent of said one section with respect to the other section, means connected to said sections for selectively opposing pivoting of said one section relative to the other section, spring means coupled between said sections for biasing said one section to its extended position, and means connected to said unit for moving said entire unit between its retracted and extended positions relative to said support structure.

3,310,825
QUICK CHANGE SWEEPER BROOM
Simon Tamny, Los Angeles, Calif., assignor to Wayne Manufacturing Company, Pomona, Calif., a corporation of California
Filed Feb. 4, 1965, Ser. No. 430,317
14 Claims. (Cl. 15—82)



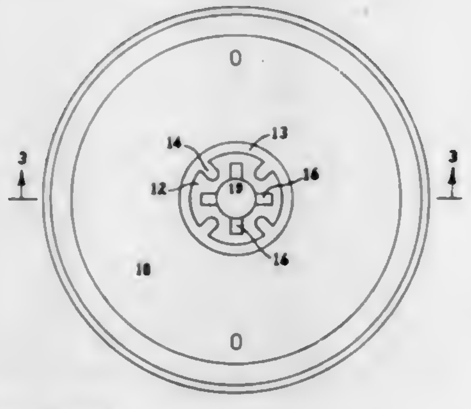
1. For combination in a power driven sweeper, a rotary broom, and means for mounting and driving the broom in rotation and including nesting bodies having driving and driven surfaces mutually interengaged along planes defined by the surfaces of a regular pyramid, one body providing said driven surfaces being integral with the broom to rotate therewith and another body providing said drive surfaces, said bodies being relatively separable out of nesting relation to permit rapid demounting of the broom.

3,310,826
CLEANING TOOL
Rex M. Ellis, 2929 Southwood, Dallas, Tex. 75233
Filed July 31, 1964, Ser. No. 386,679
1 Claim. (Cl. 15—105)



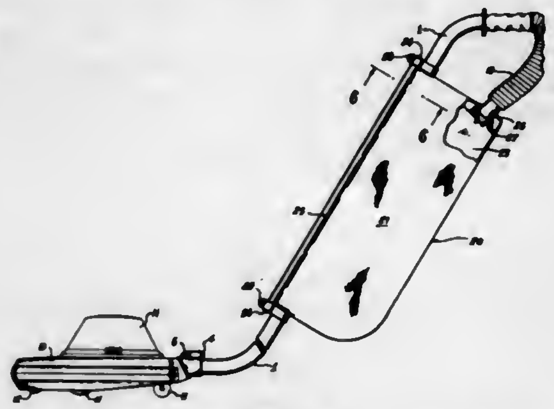
A golfer's cleaning tool comprising an elongated blade member including a substantially flat central portion, a first end portion extending at an obtuse angle out of the plane of said central portion and terminating in a bifurcated shoe cleat cleaning extremity characterized by a substantially V-shaped opening between two relatively blunt points, a second end portion extending arcuately from the plate of said central portion in a direction opposite to said first end portion and terminating in a relatively blunt point adapted for cleaning the junction between the sole and upper of a golfer's shoe, said second end portion having an opening therein adapted to receive a suspension device, and a pair of oppositely disposed reverted wing members each comprising a side portion extending in substantially perpendicular relation to an edge of said central portion, and an inwardly extending portion overlying said central portion and substantially parallel thereto, each inwardly extending portion terminating in a straight edge, said straight edges terminating in spaced opposed relation to each other to provide scraper blades adapted for the removal of mud from the golfer's shoes, said reverted wing portion extending from a longitudinal point on said central portion adjacent said second end portion in a direction opposite to the direction of extension of said second portion, and terminating at a longitudinal point on said central portion spaced from said first end portion to provide auxiliary oppositely disposed scraping edges on the sides of said central body portion.

3,310,827
REINFORCED MOLDED ROTARY BRUSH BACK
Edward L. Verhagen, Rahway, N.J., assignor to The Regina Corporation, Rahway, N.J., a corporation of Delaware
Filed Nov. 1, 1966, Ser. No. 591,154
1 Claim. (Cl. 15—180)



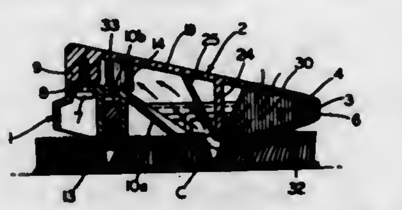
In a rotary brush
a rigid brush back comprising
  a unitary molded discoid back and hub with a vertical contral bore adapted to fit on a driving shaft,
  a recess surrounding the central bore in the top surface of the back,
  a peripheral ledge within the recess on the bottom surface thereof,
  a plurality of arms projecting inward of the recess above the ledge,
  a flat metal disc with a hole therethrough in registry with the central bore and shaped to fit within the recess on top of the ledge in locking engagement with the projecting arms, and
radial slots outward from the hole in the metal disc adapted to receive the driving pin of a driving shaft.

3,310,828
VACUUM CLEANER
Don W. Clark, Menomonee Falls, Wis., and Raymond S. Garvin, Muscatine, Iowa, assignors, by mesne assignments, to Direct Sales, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed June 10, 1964, Ser. No. 373,963
6 Claims. (Cl. 15—328)



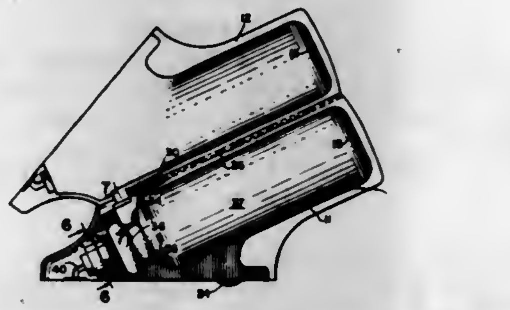
2. An upright type vacuum cleaner comprising a head adapted to be moved over a floor to be cleaned and having an electric motor driven fan therein for picking up dirt from said floor, a rigid tubular handle extending generally upwardly from said head and in communication with the interior thereof, a bag attached to said handle and extending generally upwardly from said head, the bag having a quick detachable connection thereon to removably attach it to said handle, and a flexible conduit detachably connected to and placing the upper end of said tubular handle in communication with the upper end of said bag to deliver dirt blown by said fan from said head and through said handle to said bag at the upper end thereof.

3,310,829
FLOOR AND RUG TOOL FOR VACUUM CLEANING SYSTEMS
Robert F. McGrath, Alliance, William M. Leavens, Canton, and Roger L. Schumacher, Louisville, Ohio, assignors to H-P Products, Inc., Louisville, Ohio, a corporation of Ohio
Filed May 27, 1965, Ser. No. 459,218
7 Claims. (Cl. 15—371)



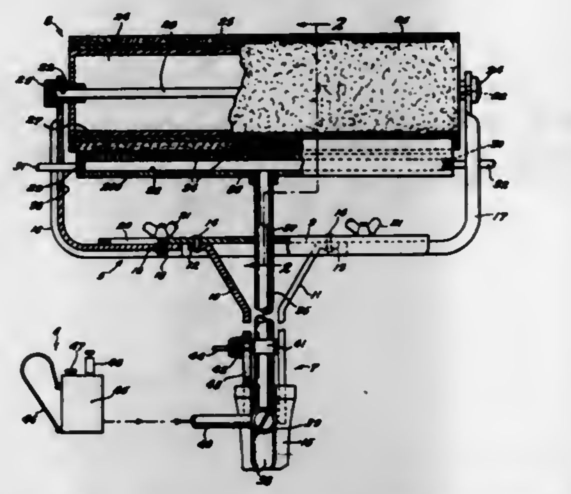
1. A hollow vacuum cleaning tool including spaced bottom and top walls, an outlet at the rear portion of said tool, means for connecting said outlet to vacuum producing means, there being an elongated inlet slot in said bottom wall at a point intermediate the front and rear of the tool, a V-shaped deflector located within the hollow tool, the apex thereof being located in said inlet slot intermediate the front and rear edges of said slot and the legs thereof contacting said top wall, there being an elongated inlet opening in said top wall forward of said V-shaped deflector, and a spaced plurality of vanes located in the hollow tool extending from the bottom wall to the top wall and from the front of the tool to said V-shaped deflector, said vanes being angularly disposed from each end of the tool toward the center thereof.

3,310,830
SELF-CONTAINED APPLICATOR FOR USE WITH PRESSURIZED CONTAINERS
Daniel H. Gattone, 4409 Dermond Ave., Drexel Hill, Pa. 19026
Filed Jan. 18, 1965, Ser. No. 426,079
4 Claims. (Cl. 15—552)



1. A self-contained pressurized cartridge dispensing hand unit comprising a casing with a handle and a head, said handle being a hollow shell, said head of the shell having a pressurized container type valve activator surface with a central bore, said central bore connecting to the head through a channel, spaced groove means on the head for connecting with suitably formed interchangeable treating units having at least one opening in alignment with the said channel, and a slidable button with a pressurized cartridge connecting means for moving the cartridge to activate the valve of the cartridge by said activator surface.

3,310,831
PAINT APPLYING ROLLER
William J. Brinker, 308 E. 8th St., Cincinnati, Ohio 45202
Filed June 1, 1965, Ser. No. 459,988
4 Claims. (Cl. 15—575)

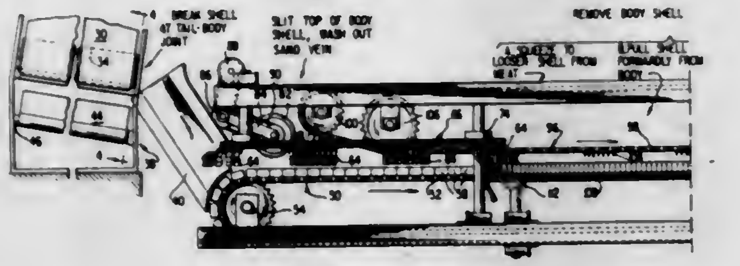


1. A paint applicator comprising a roller having a soft paint applying surface, a handle having a lateral mounting member, an L-shaped arm mounted for lateral adjustment on each end of the mounting member, a roller axle mounted between the ends of the arms, a pair of laterally spaced apart handle extension members connected to opposite sides of the central portion of the mounting member, a handle grip secured to the free ends of the extension members, an elongated, laterally extending manifold mounted on the handle between the arms and having a concave, paint spreading surface thereon confronting the roller and in close spaced apart relation thereto, longitudinal guide means between the ends of the manifold and the arms, an elongated chamber disposed

laterally within the manifold, a row of laterally spaced apart discharge openings formed in the manifold and each opening extending from the chamber through the paint spreading surface thereon, a rigid conduit fixed to the central portion of the manifold and extending through the mounting member and between the handle extension members, releasable clamp means between the handle and the conduit permitting longitudinal adjustment of the conduit and the attached manifold relative to the paint applying surface of the roller, a remote source of paint under pressure, and valved means connecting the remote source of paint to the conduit.

3,310,832
APPARATUS FOR PROCESSING SHRIMP

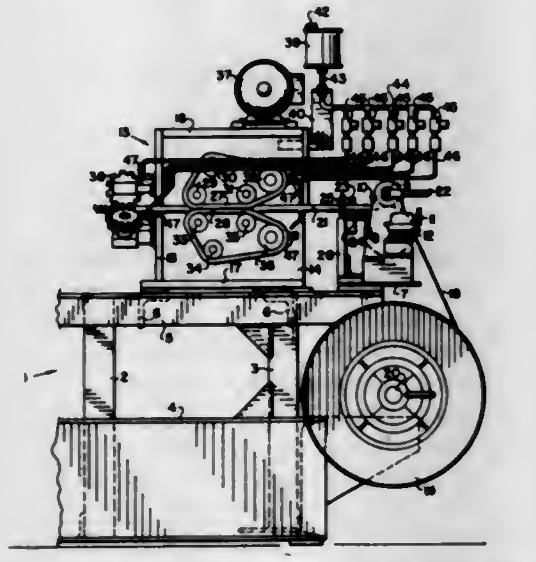
Henry F. Ambos and Herman R. Letchworth, Savannah, Ga., assignors to Seafoods Automation Corp., Savannah, Ga., a corporation of Delaware
Filed Dec. 17, 1964, Ser. No. 419,177
23 Claims. (Cl. 17—2)


BREAK SHELL AT TAIL-BODY JOINT
SLIT TOP OF BODY SHELL, WASH OUT SAND VEIN
REMOVE BODY SHELL
SQUEEZE TO LOOSEN SHELL FROM MEAT
PULL SHELL FORWARDLY FROM BODY

1. Shrimp processing apparatus comprising shell slitting means for longitudinally slitting the top of a shrimp body shell from the head end of the shrimp rearwardly to the shell joint at which the shrimp body shell is joined to the shrimp tail shell, shrimp feeding means for receiving shrimp and advancing the shrimp in succession to said shell slitting means, and shell breaking means associated with said shrimp feeding means for flexing the tail of the shrimp from side to side to circumferentially break the shrimp shell at the tail shell-body shell joint before the shrimp is advanced to said slitting means.

3,310,833
SHIRRING APPARATUS

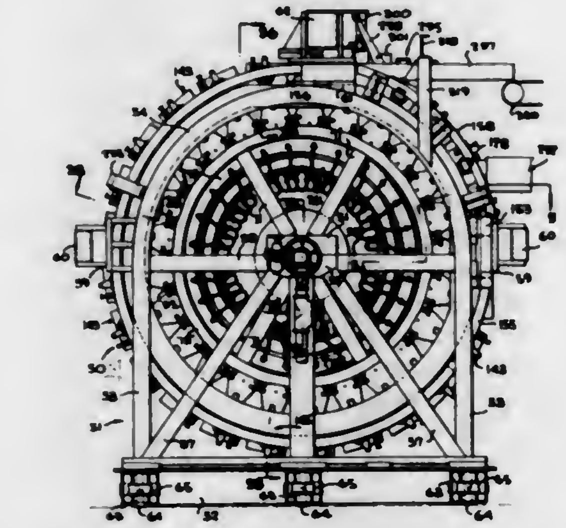
James W. Clement, Chicago, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois
Original application Oct. 7, 1963, Ser. No. 314,215, now Patent No. 3,266,911, dated Aug. 16, 1966. Divided and this application Dec. 15, 1965, Ser. No. 514,013
7 Claims. (Cl. 17—42)



1. In an apparatus for shirring tubular synthetic casing having a mandrel along which a gas inflated casing is fed,
a plurality of identical shirring wheels each having
  closely spaced shirring lugs spaced around its periphery,
said shirring lugs being narrow and closely spaced
  in relation to the diameter of the casing being shirred,
the peripheries of said shirring wheels being spaced
  equidistant from the axis of said mandrel,
and said shirring lugs being positioned for simultaneous
  rotation to engage and indent the inflated casing simultaneously around its entire periphery from at least two radially spaced directions to cause a circumferentially disposed pleat to form in the space between the lugs in shirring contact with the casing and the next adjacent lugs.

3,310,834
PLASTIC BOTTLE MOLDING MACHINE

Justin Simpson, Elmhurst, Ill., Earl E. Gilkeson, Rocky River, Ohio, and John S. Bozek, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 30, 1963, Ser. No. 320,192
49 Claims. (Cl. 18—5)

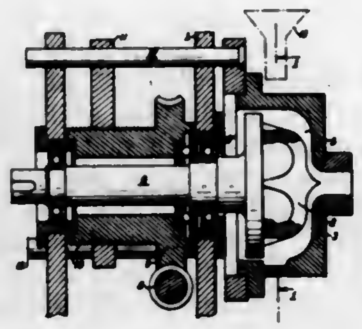


1. A blow molding machine associated with a tubing extruder for extruding tubing in a straight line, comprising a plurality of molds for receiving the tubing, and means mounting said molds for movement along a continuous path including a straight line portion generally coincidental with the line of movement of the tubing, said mounting means including a moving rigid frame supporting all of said molds.

3,310,835
DISC EXTRUDER

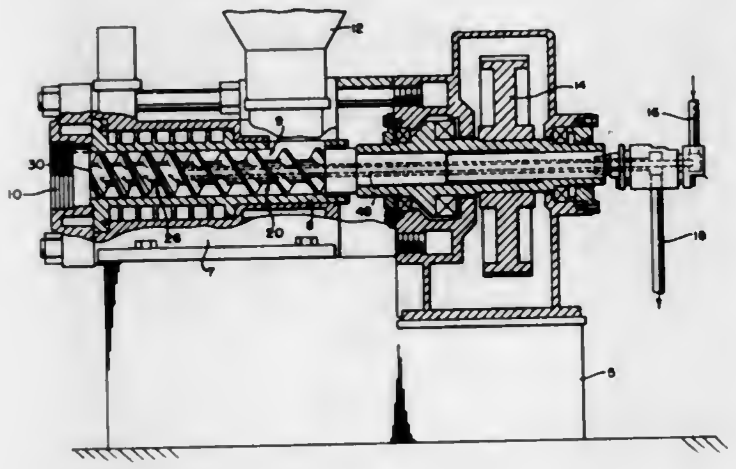
Vladimir Ivanovich Morozov, Gorjkovskaja region, Majakovskogo ulitsa 26, Apt. 35, Dzerzhinsk, U.S.S.R.; Evgeny Evlampievich Rylov, Novye Cheremushki, kvartal 10, korpus 6, Apt. 28, Moscow, U.S.S.R.; Boris Petrovich Shtarkman, Gorjkovskaja region, Lenin pr, I, Apt. 53, Dzerzhinsk, U.S.S.R.; Alexandr Ivanovich Grachev, Gorjkovskaja region, 40 let Oktjabrja pr, 16–a, Apt. II, Dzerzhinsk, U.S.S.R.; and Victor Mikhailovich Khanov, Gorjkovskaja region, Suvorova ulitsa 32, Apt. 17, Dzerzhinsk, U.S.S.R.
Filed July 16, 1964, Ser. No. 383,066
11 Claims. (Cl. 18—12)

1. A disc extruder comprising a housing, means mounted on said housing for receiving material to be extruded, a rotatable disc arranged within said housing and defining a spacing between the housing and said disc for the extruding and advancement of the material, said spacing gradually decreasing in the direction of movement of the extruded material, said disc having a side surface formed by alternate curved and flat regions which define a radially varying clearance between said housing and said disc during rotation of said disc to induce the extruded material to perform vortex motions between the disc and housing; means associated with said housing and disc for adjusting the spacing therebetween, and means for driving the disc in rotation.



3,310,836
EXTRUDER, ETC.

George B. Nichols, Akron, Ohio
(159 Homewood Ave., Barberton, Ohio 44203)
Filed Sept. 25, 1964, Ser. No. 399,149
6 Claims. (Cl. 18—12)

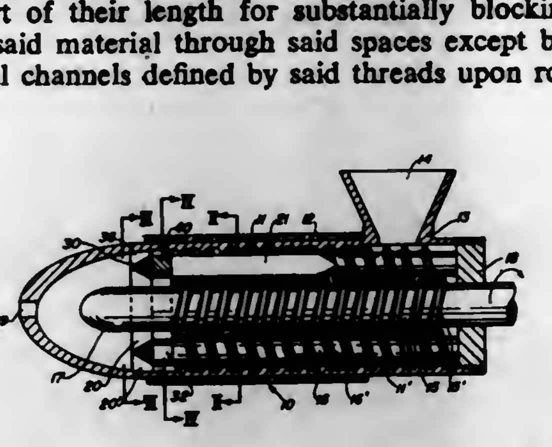


1. An extruder screw at least a section of which has external flight means and at least a portion of said section is a hollow element the hollow of which extends into at least a portion of the external flight means.

3,310,837
PLASTICIZING DEVICE FOR EXTRUSION OR INJECTION MOLDING

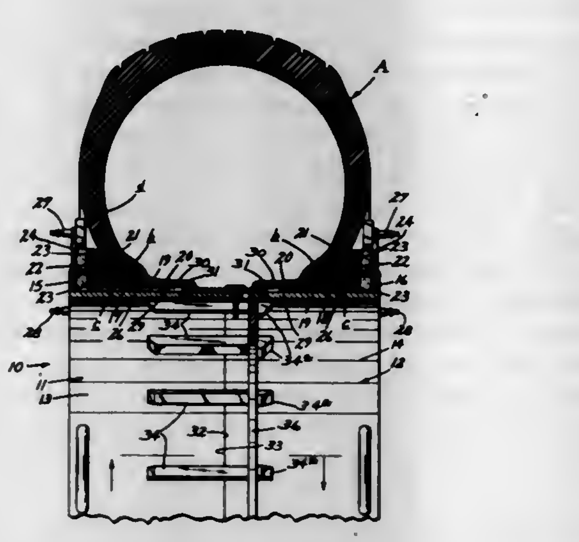
Ludwig Wittrock, Marl, Germany, assignor to Gewerkschaft Schalker Eisenhütte, Gelsenkirchen-Schalke, Germany, a corporation of Germany
Filed Aug. 24, 1965, Ser. No. 482,215
Claims priority, application Germany, Dec. 6, 1961, G 33,760; Sept. 8, 1962, G 35,883
4 Claims. (Cl. 18—12)

1. A plasticizing and feeding device for the discharge of moldable plastic material, comprising a generally cylindrical housing with an inlet for said material and an outlet therefor, said housing being provided with internal teeth forming a helical thread thereon between said inlet and said outlet, a central feed screw with a peripheral helical thread matching that of said housing, a plurality of planetary feed screws with complementary helical threads matingly engaging the threads of said central feed screw and said housing, said planetary feed screws being disposed in an annular clearance between said central feed screw and said housing with peripheral spacing from one another, drive means for rotating said central feed screw, a plurality of spacer bars occupying the spaces between adjoining planetary feed screws over at least part of their length for substantially blocking the flow of said material through said spaces except by way of helical channels defined by said threads upon rotation of said feed screws by said drive means, and means for heating said housing at least in the region of said bars, the pitch radius r of the thread of said central feed screw, the pitch radius ρ of the threads of said planetary feed screws and the pitch radius R of the thread of said housing being proportioned substantially in conformity with the relationships $R+r=n\rho$ and $R=r+2\rho$, n being the number of said planetary feed screws.



3,310,838
BEAD REPAIR MOLD

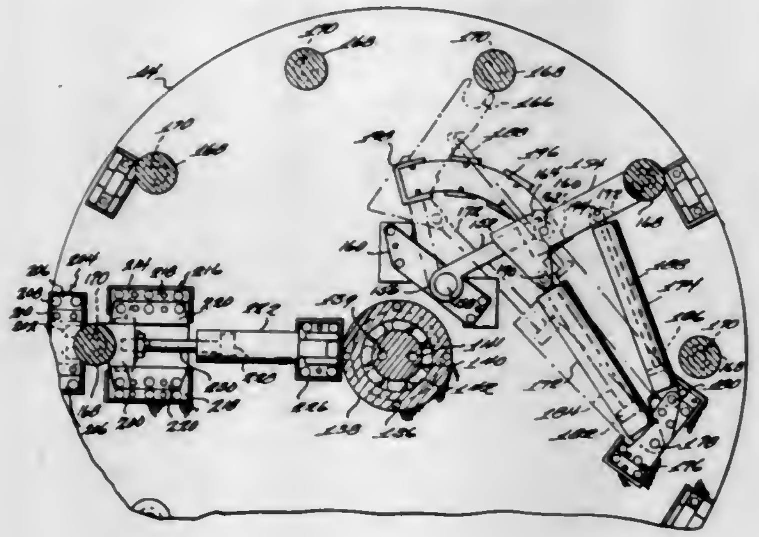
Wallace V. Sornsen, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 26, 1965, Ser. No. 450,852
4 Claims. (Cl. 18—18)

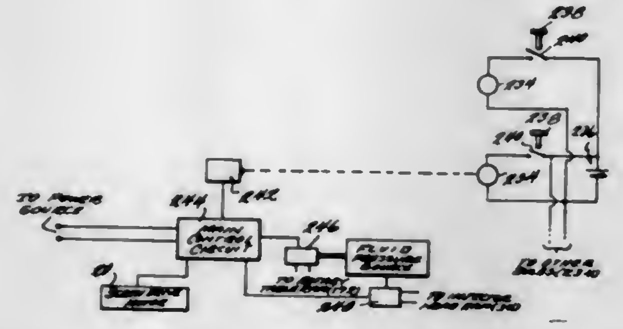


1. In a bead repair mold for aircraft tires and the like:
(a) a pair of cooperating rim sections each having abutting cylindrical felly portions and each having radially outwardly projecting flange portions at their outer edges,
(b) a pair of annular bead-engaging mold elements one each telescopically received over the felly portion of one each of said rim sections and engageable with said flange portion thereof,
(c) means for anchoring each of said mold elements to their respective rim sections,
(d) means for imparting vulcanizing heat to said mold elements, and
(e) means for securing said rim sections within the central opening of a tire with the inner edges thereof in said abutting relationship.

3,310,839
INJECTION MOLDING MACHINE

Angelo Joseph Son, Dallas, and John J. Delaney, West Pittston, Pa., assignors to Medico Industries, Inc., Pittston, Pa., a corporation of Pennsylvania
Filed Aug. 21, 1963, Ser. No. 303,484
10 Claims. (Cl. 18—30)



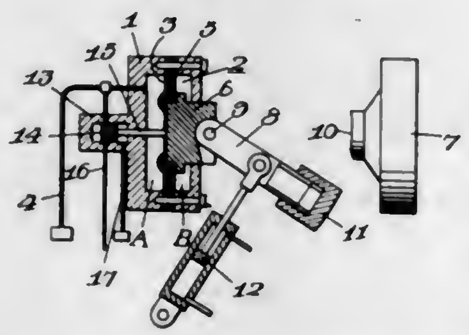


1. A molding machine comprising: an injection head having a discharge opening; means within said injection head for feeding plastic outwardly through said discharge opening; means mounting said injection head for reciprocal movement in the direction of the axis of said discharge opening; a plurality of molds each having an inlet opening; means for aligning said molds sequentially in a position spaced from said injection head and such that said discharge opening and said inlet opening are coaxial; means for moving said injection head axially of said openings toward and away from an aligned mold between a position in which said injection head is engaged with the aligned mold so that said discharge and inlet openings are in communication and a position in which said injection head is spaced from the aligned mold; and control means responsive to the filling of the aligned mold with plastic for deactivating said plastic feeding means and for activating said injection head moving means to disengage said injection head from the aligned mold, said control means including an electric light source, a source of power for said light source, means mounting said light source and said power source for movement with said plurality of molds, means responsive to the filling of the aligned mold for activating said light source with said power source, a light detector, and means securing said detector against movement with said molds and in a position to detect light from said source when the same is activated by said power source.

4. In a molding machine which includes an injection head having a discharge opening for the passage of molding material, a plurality of molds fixed in circumferentially spaced relationship and means for rotating said molds about an axis to bring each of said molds sequentially into alignment with the discharge opening of said injection head, the improvement comprising: an index means corresponding to each of said molds, all of said index means being fixed to a rotatable support means in spaced relationship to each other along a circle whose center coincides with the axis of rotation of said support means; a drive linkage including first and second links pivoted to each other near one end of each link for rotation about a first axis which is parallel to the rotational axis of said support means; the other end of said first link being pivoted for rotation about a second axis of rotation which is parallel to the rotational axis of said support means and the other end of said second link being releasably engageable with said index means; resistance means associated with said second link tending to impede rotation of said links about said second axis in either direction; reciprocal thrust means acting in a plane transverse to said axes and engaging said drive linkage whereby movement of said thrust means in one direction simultaneously buckles said linkage to disengage the outer end thereof from an index means and rotates said linkage about said first axis and whereby movement of said thrust means in an opposite direction simultaneously tends to straighten said linkage to engage the outer end thereof with another index means and rotates said linkage and said support means in an opposite direction.

3,310,840
HYDRAULICALLY ACTUATED CLAMPING MECHANISM FOR THE MOLD IN AN INJECTION MOLDING APPARATUS

Eizo Aoki, 935 Oaza Nagano, Tchinomiya-cho, Mitsu-gun, Okayama Prefecture, Japan
Filed Mar. 31, 1964, Ser. No. 356,243
Claims priority, application Japan, Sept. 17, 1963, 38/50,004
6 Claims. (Cl. 18—30)

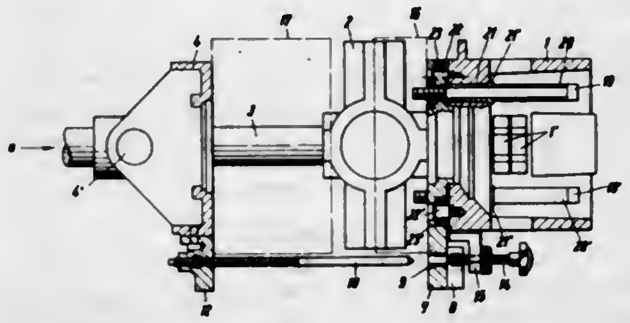


1. A hydraulically actuated clamping mechanism for the mold in an injection molding apparatus comprising a structure having a hydraulic press chamber partitioned by a diaphragm, a receiver piston supported by an elastic disk so as to closely contact with said diaphragm at its rear end, a rod movably and insertedly interposing between the front free end of the receiver piston and a pressure receiving surface of a movable part of a mold, a cylinder interconnected to the back side of the structure, a connecting rod connecting a piston contained in the cylinder with the diaphragm, and a fluid transmitting pipe connected to the hydraulic press chamber and also provided with a branch pipe diverging from said fluid transmitting pipe.

3,310,841
SAFETY DEVICE FOR INJECTION MOLD CLOSING MACHINE

Karl Hehl, Lossburg, Wurttemberg, Germany, assignor to Arburg Maschinenfabrik Hehl & Söhne, Lossburg, Wurttemberg, Germany
Filed May 1, 1964, Ser. No. 364,216
Claims priority, application Germany, July 31, 1963, A 20,385
11 Claims. (Cl. 18—30)

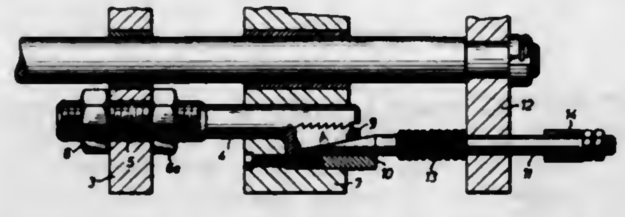
1. In a hydraulically driven safety mold closing device of an injection molding machine for thermoplastic materials having a hydraulic drive and a control circuit for precluding the closing of the casting mold halves under a pressure which normally keeps the halves closed when a foreign body is present between the casting mold halves by controlling the moving portions of the unit which are moved in the closing direction to actuate electromechanical reversing means, the improvement comprising:
- a stationary mold base plate;
- a mold clamping plate resiliently supported with respect to said stationary mold base plate;
- a mold clamping plate movable toward and away from said base plate;
- two microswitches mounted on said resiliently supported mold clamping plate and disposed in the control circuit of the hydraulic drive and arranged to switch in opposite directions;



- a first axially displaceable switching bar mounted on the movable mold clamping plate in a position so that one of said microswitches is in its path of movement; and
- a second axially adjustable switching bar disposed on said mold base plate and arranged so that the other microswitch is disposed in its axial extension; said one microswitch being mounted on the side of said resiliently mounted plate which faces away from said movable plate, said resiliently mounted plate having a bore therethrough in the region of the path of movement of said first switching bar with the edge of this bore extending from said one microswitch.

3,310,842
INJECTION MOULDING APPARATUS LOCKING DEVICE

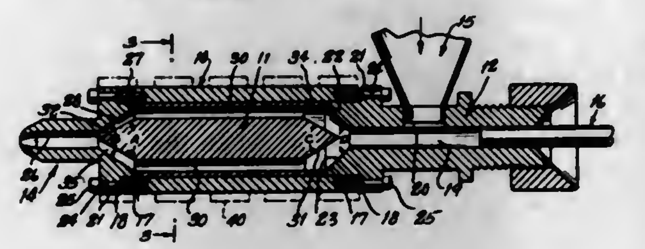
Alfred Fischbach, Am Scheffert, Runderoth, Bezirk, Cologne, Germany
Filed Feb. 26, 1965, Ser. No. 435,747
Claims priority, application Germany, Mar. 21, 1964, E 26,685
6 Claims. (Cl. 18—30)



1. Injection moulding apparatus comprising a nonmovable part and two relatively displaceable mould clamping members mounted therein, cooperating locking members each mounted on one of said clamping members, mould parts being supported by the clamping members, an injection device for charging the mould parts and single drive means for closing the mould parts and operating the injection device, in which an additional locking device resiliently mounted on the non-movable part of the apparatus engages at least one of said cooperating locking members during movement thereof so as to lock said cooperating locking members for locking the mould parts together during operation of the injection device.

3,310,843
PRE-HEATER FOR MOLDING MATERIAL

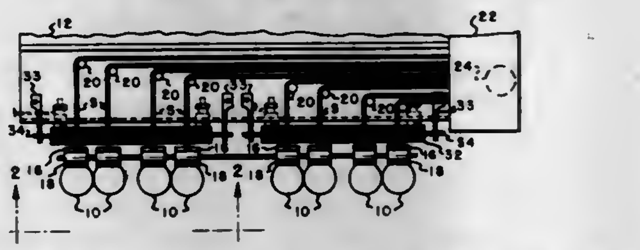
Arion Mancuso, North Valley Stream, N.Y., assignor to Ilikon Corporation, Natick, Mass., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 445,861
8 Claims. (Cl. 18—30)



1. Apparatus for preheating a free flowing molding material which apparatus comprises, in combination:
- an elongated body member,
- an elongated heat exchange member enclosed within said body member and in heat exchange relationship therewith, said heat exchange member having a plurality of annularly arranged passageways for carrying said molding material extending therethrough and having first and second cones axially disposed at the inlet end and at the outlet end respectively of said member;
- an inlet member secured to the inlet end of the body member and having a material inlet passageway for directing molding material into the passageways of the heat exchange member, said inlet member also having a conical inner surface facing but spaced from the conical surface of the first cone to thereby form a portion of said material inlet passageway the included angle of said first cone being less than the included angle of the cone defined by the conical inner surface of said inlet member;
- an outlet member secured to the outlet end of the body and having an outlet passageway for the discharge of heated and plasticized molding material from the heat exchange passageways, said outlet member having a converging conical inner surface facing the conical surface of the second cone to provide a funnel-shaped annular passage converging in cross-section from said heat exchange member and leading to said outlet passageway, the included angle of said second cone being less than the included angle of the cone defined by the conical inner surface of said outlet member, said funnel-shaped passageway terminating in an outlet orifice of small cross-sectional area compared to the cross-sectional area of the inlet passageway to said heat exchange member; and
- means for heating said heat exchange member.

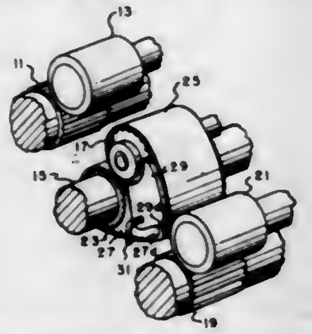
3,310,844
DRAW FRAME STOP MOTION APPARATUS

John A. Robertson, Greenville, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed June 30, 1964, Ser. No. 379,277
1 Claim. (Cl. 19—.25)



A draw frame comprising: a draw box, a creel table operably associated with said draw box, a plurality of pairs of rolls in operative relationship with sliver supply adjacent said creel table, draw frame drive means supplying sliver from said sliver supply through said pairs of rolls, onto said creel table and into said draw box, a U-shaped channel member mounted between said pairs of rolls and said creel table with the legs of the channel member extending upwardly providing an opening therebetween, bracket means mounted to said creel table and projecting outwardly therefrom toward said pairs of rolls, a wire member freely pivoted in said bracket means and hanging free into said opening in said channel member and means electrically interconnecting said wire member, said channel member and said draw frame drive means to deactivate said drive means when the sliver breaks between said draw box and said pairs of rolls and said sliver acts against said wire member to pivot said wire member into contact with said channel member.

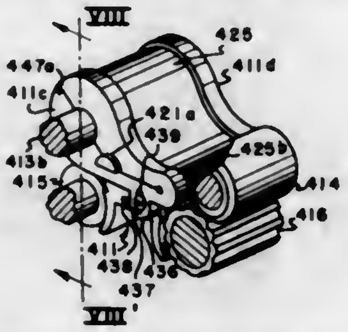
3,310,845
TEXTILE DRAFTING ARRANGEMENT
Bobby L. Pitts, Spartanburg, Walter A. Smith, Inman, and William P. Warthen, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Continuation of application Ser. No. 169,281, Jan. 29, 1962. This application July 17, 1964, Ser. No. 384,286
13 Claims. (Cl. 19—245)



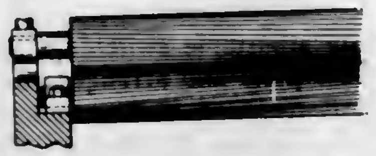
1. A drafting apron cradle assembly comprising an apron-and-roll-clearing member adapted to engage in rubbing and guiding relation with the inner surface of an apron carried thereabout, said element having a concave roll-engaging surface at one end thereof having sufficient width to contact and clear substantially the full width of the apron carrying portion of a drafting roll and a tapered reduced size opposite nose, and an apron-run-clearing-and-guiding surface disposed between said one end and said nose, and a second element having an apron-run-clearing-and-guiding surface facing and spaced from said apron-run-engaging-and-guiding surface on said first mentioned element, said elements being removably connected together in substantially fixed interspatial relationship, and side ear connectors integral with at least one of said elements and interconnecting said elements, said side ear connectors also acting as lateral apron guides.

3,310,846
TEXTILE DRAFTING APPARATUS
William P. Warthen, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Original application Mar. 25, 1963, Ser. No. 267,541, now Patent No. 3,254,375, dated June 7, 1966. Divided and this application June 10, 1965, Ser. No. 462,900
6 Claims. (Cl. 19—253)

1. A drafting assembly comprising two spaced-apart pairs of drafting rolls, an endless fiber-control apron disposed about one roll of one pair of said rolls and having a fiber control run, a return run and a reverse bend spaced from said one roll of said pair of rolls, a fiber supporting and guiding bridge element having oppositely extending concave surfaces in engagement with the peripheral surfaces of two successive rolls of said pairs of drafting rolls, said fiber supporting and guiding element having a substantially planar surface in opposed relationship to said fiber control run of said apron, and spaced apart guides provided with a recessed portion operably associated with said fiber supporting and guiding bridge element to deflect opposite lateral edge portion of the external surface of the return run of said apron, said recessed portion being on the side of spaced apart guides which face said apron and forming a pair of substantially identical continuous shoulders which provide tracking surfaces for the edges of said apron, said edges of said apron being located in said recesses.



3,310,847
HELICAL DRAFT ROLLS
Christoph W. Aurich, Clemson, S.C., assignor to Maremont Corporation, Chicago, Ill., a corporation of Illinois
Filed June 9, 1964, Ser. No. 373,793
1 Claim. (Cl. 19—258)



In a drawing frame a plurality of successively disposed pairs of helically fluted hard surface rolls for high-speed drafting of fibers including front line and back line pairs of said rolls in which the engaging helical fluted surfaces thereof are formed with opposed similar undulating top and valley contours which provide a substantially continuous rolling nip, said flutes having flanks disposed at a greater than 90° included angle, and top and valley portions formed on radii which vary in length for top and valley portions from nearly equal length for said front line pair of rolls to a ratio of radius length in which the top radius is shorter than the valley radius for said back line teeth by an increasing ratio which corresponds to the bulk thickness of the fiber mass passed through each said pair of rolls, and to the increase in draft ratio from said back line to said front line rolls.

3,310,848
SUPPORTING AND LOADING ARM FOR DRAWING MECHANISM OF A SPINNING MACHINE
Fritz Stahlecker, Bad Uberkingen, and Sigmund Kemmler, Geislingen, Germany, assignors to Spindelfabrik Sussen, Schurr, Stahlecker & Grill G.m.b.H., Sussen, Germany
Filed Sept. 24, 1964, Ser. No. 398,847
7 Claims. (Cl. 19—267)

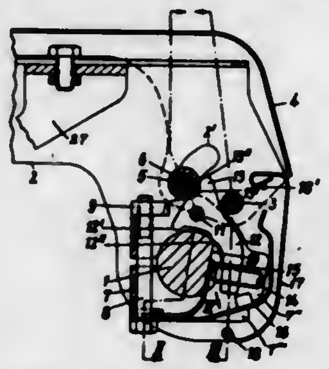
3. A locking mechanism for the loading arm of a drawing mechanism for spinning machines having a support shaft for rotatably mounting said loading arm comprising clamp means fastened to said support shaft, locking lever means swingably arranged to a limited extent on said loading arm and having a locking member supported thereon, and adjusting lever means rotatably mounted on said clamp means including a locking latch means cooperating with said locking member to releasably maintain said loading arm in a selectively adjustable operating position,

said adjusting lever means including position adjusting means biased in relation to said support shaft by said locking member for adjusting the position of said locking latch means in relation to said support shaft,

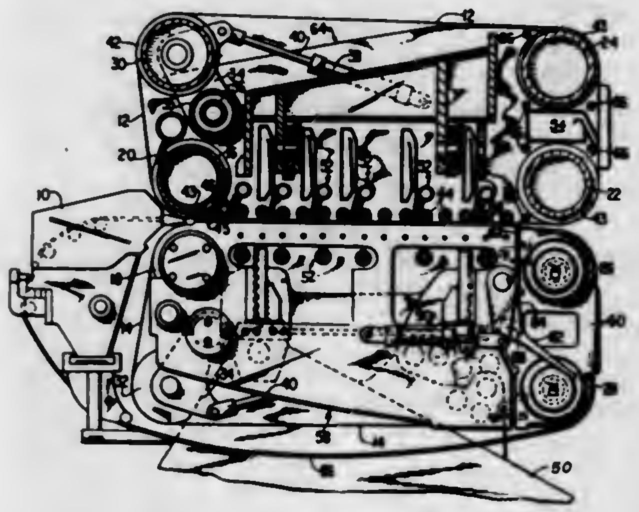
said position adjusting means including an adjusting screw threaded into said adjusting lever means and biased into contact with said support shaft by said locking member for determining the relative position between said shaft and said adjusting lever means,

said support shaft being provided with a flat reference surface against which said adjusting screw is biased, said reference surface also providing a form-locking connection between said clamp means and said shaft,

pressure plate means arranged between said reference surface on said support shaft and said adjusting screw.



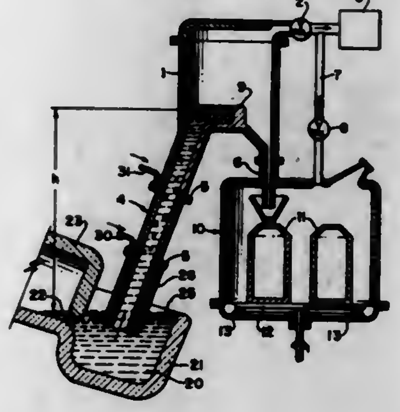
3,310,849
CONTINUOUS METAL CASTING APPARATUS
Robert William Hazelett, Winooski, Vt., and Richard Hazelett, Austin, Tex., assignors to Hazelett Strip-Casting Corporation, Winooski, Vt., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,773
7 Claims. (Cl. 22—57.4)



1. A machine for continuously casting molten metal comprising first and second moving flexible belts, means supporting and driving said belts for movement in the same direction at the same speed in spaced face-to-face relationship defining a casting region therebetween including first and second belt carriages, each of said carriages including four main rolls arranged in a generally rectangular pattern for guiding the respective belts along a rectangular path, and belt steering means on each carriage for simultaneously and equally skewing the axes of a pair of said main rolls at one end of each carriage for steering the belts.

7. A machine for continuously casting molten metal comprising first and second moving flexible belts, means for supporting and moving said belts in the same direction at the same speed in space face-to-face relationship defining a casting region therebetween for receiving molten metal into the input end of the casting region and for discharging solidified metal from the exit end thereof including first and second belt carriages, each of said carriages having a first main roll at the input end and a second main roll at the exit end for supporting the belt at the input and exit ends of the casting region, coolant application means for flowing coolant against the belt along the casting region, a plurality of back-up rollers extending across behind the belt having spaced narrow peripheral ridges for guiding the belt while accommodating the flow of coolant, a pair of flexible moving edge dams traveling between the belts from input to exit in the casting region, a plurality of smaller diameter back-up rollers closely adjacent to the first main roll each having narrow peripheral ridges, and a rigid back-up bar having a plurality of saddle surfaces engaging said smaller diameter rollers for preventing deflection of said rollers for holding the belt closely adjacent to the moving edge dams immediately behind said first main roll.

3,310,850
METHOD AND APPARATUS FOR DEGASSING AND CASTING METALS IN A VACUUM
Werner Karl Armbruster, Hanau am Main, Germany, assignor, by mesne assignments, to Rheinstahl Huttenwerke Aktiengesellschaft, Essen, Germany
Filed Dec. 13, 1963, Ser. No. 330,462
11 Claims. (Cl. 22—73)

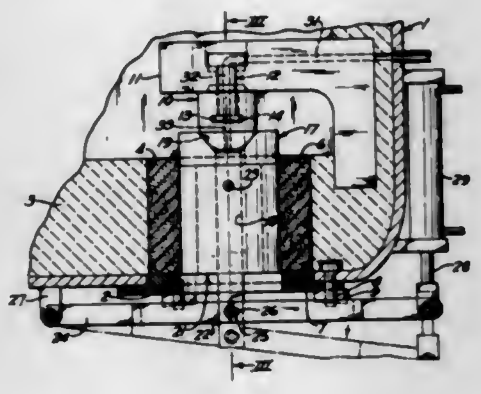


1. A method of vacuum degassing and continuously casting molten metal, especially steel, into at least one mold, comprising the steps of inserting the lower end of the intake pipe of a degassing vessel into the molten metal, *said degassing vessel forming a vacuum siphon and containing said mold exposed to the vacuum*, evacuating said vessel so that said metal will rise in the intake pipe to a level *below* the upper end of said intake pipe but without flowing through said vessel into the outlet pipe *of said siphon, the upper end of said intake pipe having an overflow barrier*, feeding at least one gas into said intake pipe and into the molten metal therein at least at one point spaced from said *level of the metal* in said intake pipe, *and permitting the flow of said gas to raise* the level of said metal so that the metal will then flow *at a desired flow rate* through said vessel *and over said overflow barrier* to said outlet pipe and will thereby be degassed, and will then flow through said outlet pipe into said mold *at a controlled flow rate.*

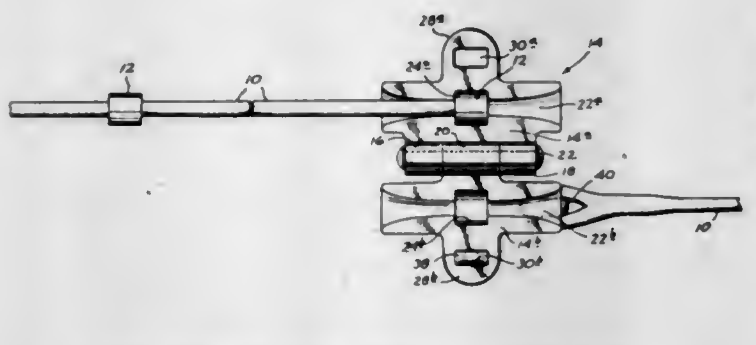
3,310,851
LADLE VALVE ARRANGEMENT WITH STATIONARY PLUG AND SLIDABLE NOZZLE
Ellwood C. Stiteler, 244 Cascade Road,
Pittsburgh, Pa. 16101
Filed Aug. 26, 1964, Ser. No. 392,181
5 Claims. (Cl. 22—85)

1. The combination with a ladle for molten metal having an outlet opening in its bottom and a refractory tube

rigidly mounted in said opening, of a refractory nozzle slidably mounted in said tube in sealing engagement therewith and provided with an open-top vertical passage therethrough encircled at its upper end by a valve seat, a stationary refractory valve plug inside the ladle above the nozzle passage, means rigidly supporting said plug, means normally supporting the nozzle from below with its seat pressed up against the plug to close the upper end of said passage, said supporting means extending down below the ladle, and means outside of the ladle connected with the lower end of said supporting means for lowering the nozzle away from the plug to open said passage to flow of molten metal down through the nozzle.

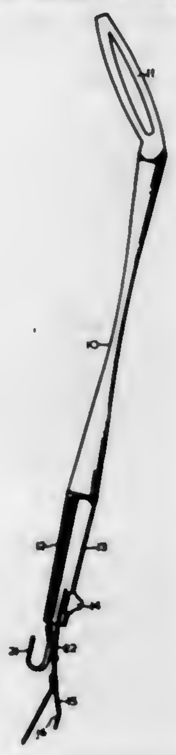


3,310,852
LOG BUNDLING CABLE APPARATUS
George W. Flanders, Box 213, Cathlamet, Wash. 98612
Filed Mar. 1, 1965, Ser. No. 435,841
9 Claims. (Cl. 24—123)



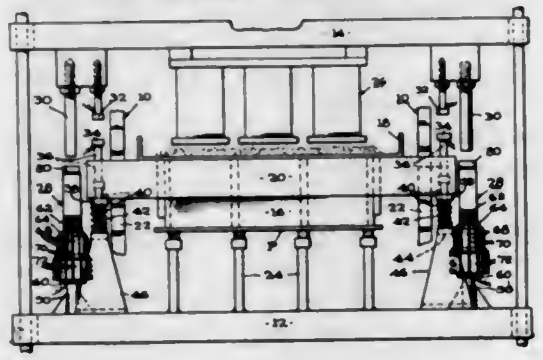
1. A log bundling cable assembly comprising
(a) a cable,
(b) at least one button of enlarged diameter fixed to one end portion of the cable,
(c) a cable fastener comprising two halves,
(d) means securing the other end of the cable to one only of the halves,
(e) hinge means hinging the two halves together for adjustment between open and closed positions,
(f) lock means for releasably locking the halves in their closed positions,
(g) each half having a longitudinal recess formed with a central seat section,
(h) the longitudinal recesses in the respective halves registering with each other in the closed position of the fastener and forming a longitudinal passageway greater than the diameter of the cable but smaller than the diameter of the button thereon, for receiving said one end portion of the cable adjustably therethrough,
(i) the central seat sections registering with each other and forming a seat dimensioned to contain and retain the button in the closed position of the fastener.

3,310,853
DEVICE FOR OPERATING ZIP FASTENERS
Stanley P. Winn, 26 William St., Roseville, New South Wales, Australia
Filed May 5, 1965, Ser. No. 453,270
Claims priority, application Australia, May 8, 1964, 44,247/64
2 Claims. (Cl. 24—205.15)



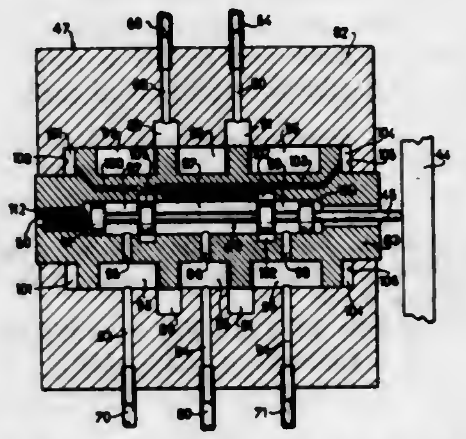
1. A device for operating zip fasteners comprising an elongated body in the form of a rod having a handle at one end and a hook at the other end adapted for engagement with an aperture in the tongue associated with the slider of a zip fastener, means defining a projection extending outwardly adjacent each side of the hook arranged and adapted to deflect from the path of the slider adjacent portions of an undergarment worn by the user and adjacent overlapping portions of the garment in which the zip fastener is fixed, said body having a tubular extension at one end on which the said projecting means are slidably mounted so as to be capable of being retracted into and being extended from said tubular extension at will.

3,310,854
AUTOMATIC HEIGHT CONTROL MEANS FOR BLOCK MOLDING MACHINES
Thomas K. Zevely, 5826 Swarthmore Drive, College Park, Md. 20740
Filed Aug. 28, 1964, Ser. No. 392,709
5 Claims. (Cl. 25—45)



3. In combination with a masonry block molding machine of the type including a vibratable mold box open at the top and bottom and adapted to receive a block forming aggregate mix, a vertically movable pallet supporting frame adapted to lift and hold a pallet against the bottom of said mold box and to also support said mold box during the block molding operation, and a stripper head frame having a depending stripper head and shoe assembly movable downwardly relative to the mold box and to the pallet supporting frame to initially compact the aggregate mix in said mold box to a predetermined level and to subsequently eject the molded blocks from the mold;
a block height control system operable independently of variations in pallet thickness comprising:
(a) a control rod projecting downwardly from said stripper head frame toward said pallet supporting frame;
(b) a control assembly carried by said pallet supporting frame in normally spaced vertical alignment with said control rod including a pair of coaxially mounted members one of which is fixed to said pallet supporting frame and the other is a sleeve member yieldably movable relative to said fixed member upon initial engagement with said control rod during approaching relative movement of said frames;
(c) an electromagnet carried by said fixed member and operable after said initial engagement for preventing further yieldable movement of said sleeve member; and
(d) electrical control means for energizing said electromagnet including electrical contacts carried by said frame in normally spaced-apart relationship and adapted to make contact with one another when said stripper head frame reaches a predetermined position relative to said mold box during the approaching movement of said frames.

3,310,855
APPARATUS FOR OPERATING ON CONTINUOUSLY MOVING MATERIAL WITH MEANS TO RELATE THE SPEED OF THE TOOL CARRIAGE TO THAT OF THE MATERIAL
Alessandro Orioli, Via di Villa Tipano 91, Cesena, Italy
Filed Feb. 21, 1966, Ser. No. 529,125
9 Claims. (Cl. 25—107)

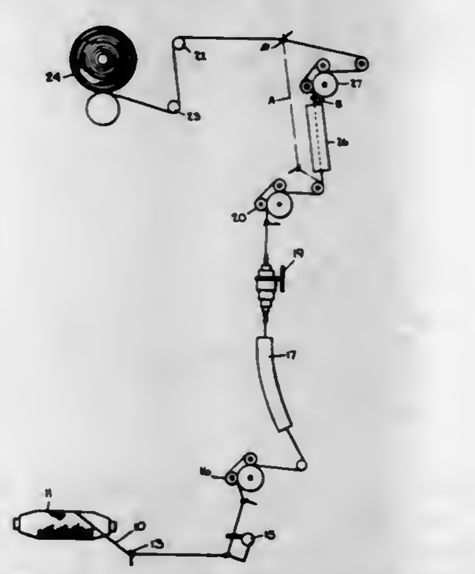


1. Apparatus for performing a series of successive operations at preselected places of material moving continuously in one direction comprising, in combination, support means; a carriage carried by said support means movable from a starting position in said one direction to an advanced position and in an opposite direction back to said starting position; operating means mounted on said carriage movable in a direction transverse to said one direction for performing said operations; drive means connected to said carriage for moving the same in said one and said opposite direction; a roll carried by said carriage for rotation about an axis substantially normal to said one direction and engaging the material to be rotated thereby; rotatable means turnably carried by said carriage and connected to said roll to be rotated thereby in a first direction when said carriage moves in said one direction slower than said material and in an opposite second direction when said carriages moves in said one direction faster than said material; control means including a movable member having an end portion located in the path of said rotatable means to be engaged and moved by the latter, said control means constructed and operatively connected to said drive means so as to control the latter to accelerate movement of said carriage in said one direction when said rotatable means is rotated in said first direction and to decelerate movement of said carriage when said rotatable means is rotated in said second direction until no relative movement between said carriage and said material takes place; second drive means connected to said operating means for moving the same in said transverse direction; actuating means connected to said second drive means for actuating the latter while said carriage moves at the same speed as the material and after said carriage is moved in said one direction a predetermined distance away from said starting position; and reversing means cooperating with said control means to cause reversal of said movement of said carriage after said operating means has performed one operation.

3,310,856
METHOD OF PRODUCING A DIMENSIONAL STABLE FABRIC
William T. Roff, Jr., and John A. Soltis, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
No Drawing. Filed Oct. 12, 1962, Ser. No. 230,292
6 Claims. (Cl. 28—75)

1. A process for the preparation of an organic polymeric resin sized fabric comprising passing warp yarns through a coating composition comprising from 3% by weight to 25% by weight of a water-insoluble organic polymeric resin in an aqueous carrier and then weaving the sized warp yarns with filling yarns which are free of coating compositions capable of plasticizing the water-insoluble organic polymeric resin so that the polymeric resin may cause adherence between the fabric yarns to produce a dimensionally stable fabric.

3,310,857
METHOD OF TEXTURING SECONDARY CELLULOSE ACETATE YARN
Robert J. Loftin and Earl H. Hartgrove, Charlotte, N.C., assignors to Celanese Corporation, a corporation of Delaware
Filed Oct. 14, 1963, Ser. No. 316,057
15 Claims. (Cl. 28—76)

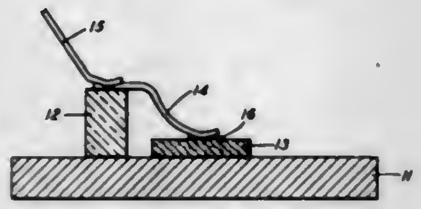


10. A process comprising twisting a secondary cellulose acetate yarn such that it contains about 30 to 46 turns per inch and subsequently untwisting the yarn, feeding the twisted yarn to a first temperature zone where it is heated while twisted to a temperature of about 170 to 190° C. for a period of about 3.0 to 0.03 seconds, feeding the yarn after it is substantially untwisted

to a second temperature zone at a rate of about 102 to 108% that at which it is fed to said first temperature zone, said yarn being heated in said second temperature zone to a temperature of about 175 to 192° C. for a period of about 1.6 to 1.2 seconds, advancing the yarn beyond said second temperature zone at a rate of about 96 to 70% that at which it is fed to said second temperature zone, taking up the yarn at a rate of about 97.6 to 107.9% of the rate at which it is advanced beyond said second temperature zone, knitting the yarn into a fabric, dry tumbling the fabric at a temperature of about 170 to 185° F. and contacting the fabric with steam at a temperature of about 180 to 210° F. to obtain a fabric of high bulk.

3,310,858
SEMICONDUCTOR DIODE AND METHOD OF MAKING

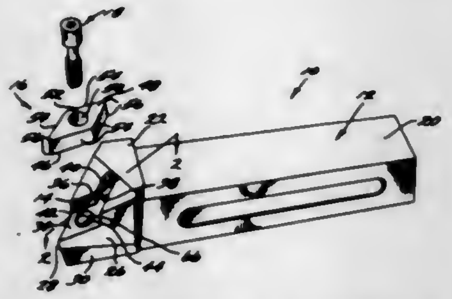
Ralph L. Johnston, South Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 12, 1963, Ser. No. 330,189
1 Claim. (Cl. 29—25.3)



A method of fabricating a silicon semiconductor diode comprising immersing a body of silicon semiconductor material in a copper sulphate-hydrofluoric acid solution for a period of several seconds to provide a plating of copper having a thickness of from about 2000 to 5000 angstroms, removing the body from said solution, then bonding a metal electrode selected from the group consisting of palladium, platinum, nickel, silver and copper to a limited portion of the copper plating on said body at a temperature of from about 400 to 450 degrees centigrade and a pressure of about 50,000 p.s.i. and then treating said copper plated surface with concentrated nitric acid to remove said copper plate except where it underlies said bonded electrode.

3,310,859
CUTTING TOOL

Le Roy H. Diemond, 82 Arnold Drive 06108, and Frank T. Obrochta, 44 Claire Road 06118, both of East Hartford, Conn.
Filed May 3, 1966, Ser. No. 547,241
8 Claims. (Cl. 29—96)



1. A cutting tool assembly comprising a tool holder having a cutter insert receiving notch defined by a generally horizontal seating surface and at least one generally forwardly facing clamp surface extending generally vertically upward with respect to said seating surface, said holder having a threaded screw receiving opening in said seating surface and including a cam surface adjacent at least the forward side of said opening and generally opposite said clamp surface, said cam surface being inclined generally upwardly and forwardly with respect to said opening, a cutter insert received in said notch and having a first seating face engaging said seating surface and including an opening at leat partially defined by a forwardly facing generally upwardly extending wall, said insert including at least one clamp face adapted to engage said clamp surface, and a resilient clamp screw having a shank portion threadably received within said holder opening and including a head received within said insert opening and normally axially aligned with said shank portion and with said holder opening, said screw including a generally conical portion between said head and said shank portion converging toward said shank portion and adapted to engage said cam surface to displace said head rearwardly and generally toward said wall as said screw is threaded into said opening, said head in the rearwardly displaced position engaging said wall of said insert opening and urging said clamp face rearwardly into engagement with said clamp surface whereby said insert is securely held in assembly with said holder.

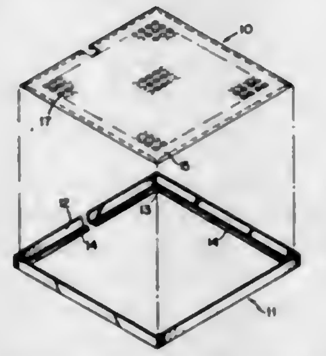
3,310,860
PROCESS OF PRODUCING "NODULAR CHILL ROLLS"

Le Roy Frederick Gronholz, Richmond, and Daniel Kenyon Owens, Bon Air, Va., and Charles Ronald Price, Borger, Tex., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Original application Aug. 20, 1962, Ser. No. 218,150, now Patent No. 3,177,558, dated Apr. 13, 1965. Divided and this application Aug. 12, 1964, Ser. No. 389,201
4 Claims. (Cl. 29—148.4)

1. The process comprising: polishing the surface of a metal having a Rockwell hardness of between B85 and C30 to reduce the roughness to no more than 2 microinches; plating the polished metal surface with a layer of chromium no more than 0.002 inch in thickness; providing 2×10^4 to 12×10^6 hemi-spheroidal indentations per square inch in the chrome surface separated by areas of highly polished surface having a mirror finish by blasting the chrome plated metal surface with a stream of fluid under pressure, said fluid containing, and propelling against said metal surface, smooth spheres of a solid of hardness greater than the hardness of said metal surface.

3,310,861
METHOD OF CLAMPING

Gustav A. Oddsen, Locust Valley, N.Y., assignor to Columbian Bronze Corporation, Freeport, N.Y., a corporation of New York
Filed July 29, 1965, Ser. No. 475,695
4 Claims. (Cl. 29—150)



1. A method of securing a seat member having a generally planar work-supporting surface to a frame, comprising providing a frame having at least three sides joined to each other to form a rigid unit, each of said sides being formed with a vertically depending wall, a base wall joined to the lowermost end of said depending wall and extending to one side thereof, and a clamping wall joined to the end of said base wall and terminating in a free end extending toward said depending wall but spaced therefrom, said clamping wall forming an acute interior angle with said base wall,

providing a seat member having the same number of sides as said frame, each of said sides being shorter than its corresponding side of said frame and having a generally planar upper work-supporting surface opposed by a lower surface and a flange depending from the circumference of said seat member and forming an acute interior angle with said lower surface of said seat member,

placing said seat member on said frame in a position in which corresponding sides of said seat member and said frame are parallel, said lower surface of said seat member rests on said free end of said clamping wall and each of said flanges extends into the space bounded by a depending wall, a base wall and a clamping wall of the corresponding side of said frame,

and simultaneously applying pressure to all of the sides of said seat member in a direction substantially perpendicular to said work-supporting surface until each of said flanges is gripped between a clamping wall and a base wall of one side of said frame.

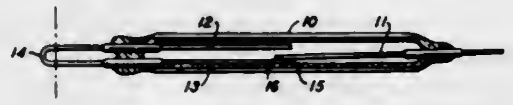
3,310,862
PROCESS FOR FORMING NIOBIUM-STANNIDE SUPERCONDUCTORS

Lloyd R. Allen, Belmont, Mass., assignor, by mesne assignments, to National Research Corporation, a corporation of Massachusetts
No Drawing. Filed July 10, 1962, Ser. No. 208,937
5 Claims. (Cl. 29—155.5)

2. The process of forming superconductive niobium stannide on the surface of an elongated niobium body by reacting with said niobium surface a reducing agent selected from the group consisting of alkaline earths, rare earths, and their compounds and then holding molten tin in contact with said freshly reduced surface and heating the surface to form a diffusion coating of the stannide on the niobium body, then bending the body into a desired shape.

3,310,863
MANUFACTURE OF REED TYPE DEVICES

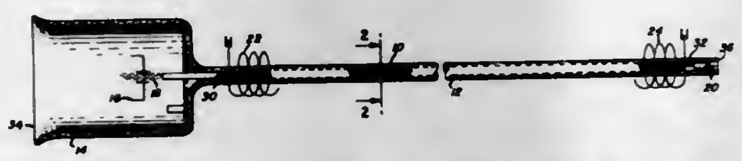
Walter B. Ellwood, New York, and Joseph M. Niedzwiecki, Haverstraw, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 10, 1963, Ser. No. 271,902
1 Claim. (Cl. 29—155.5)



The method of assembling a sealed reed switch including a back contact, a front contact, a reed-type swinger, and a tubular envelope; that comprises providing the swinger with a bevel end, sealing the swinger into one end of the envelope with the swinger's axial center line at an angle to the axial center line of the envelope and a portion of the level end of the swinger resting against the envelope wall and another portion of the bevel diverging away therefrom, inserting the contacts which are suitably spaced from each other and joined to each other at their outer ends by a common portion into the other end of the envelope with the axial center line of said contacts parallel to the axial center line of said envelope and said common portion remaining outside said envelope, wedging the back contact end between the swinger divergent bevel portion and the contiguous envelope wall to move the swinger and decrease the spacing between said front contact and said swinger by varying the depth of insertion of the back contact in the envelope and cause the divergent bevel end to ride thereupon with deeper insertion causing said angled swinger to come closer to said front contact and shallow insertion increasing the spacing between the front contact and the angled swinger, sealing the contacts into the other end of the envelope to fix their geometric relationship, and separating the front contact from the back contact by cutting off the common portion.

3,310,864
METHOD OF MAKING A TRAVELING WAVE GUIDE DEVICE

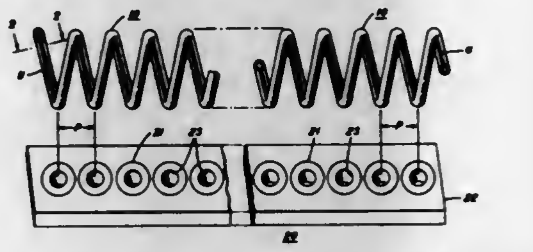
Donald E. Mackerrow, Cupertino, Calif., assignor to Huggins Laboratories, Inc., Sunnyvale, Calif., a corporation of California
Filed May 1, 1963, Ser. No. 277,360
9 Claims. (Cl. 29—155.5)



1. The method of bonding a traveling wave tube helix to a traveling wave tube envelope comprising the steps of:
(a) positioning an internally unsupported helix into said envelope;
(b) sealing the ends of said envelope to provide a sealed enclosure;
(c) reducing the pressure in said sealed enclosure below atmospheric pressure; and
(d) concentratively heating a narrow longitudinal segment of said envelope to its softening point so that said segment moves inwardly under the force applied to it by reduced pressure in said sealed enclosure for bonding contact with said helix.

3,310,865
MAGNETIC CORE THREADING APPARATUS AND METHOD

Arthur W. Schelling, Emmaus, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 22, 1964, Ser. No. 361,706
14 Claims. (Cl. 29—155.5)



1. Apparatus for threading a conductor through the apertures of a sequence of apertured magnetic cores comprising a helical tube having a pitch substantially equal to the spacings between said cores, a conductor within said tube, means for rotating said tube successively through the apertures of said cores, means for fixing said conductor at one end of said sequence of cores after said tube has at least entered each of said apertures, and means for further rotating said tube in a direction away from said one end, said tube also having a slot therein facing its helical axis for permitting the removal of said conductor as said tube is rotated in said last-mentioned direction.

10. The method of wiring a sequence of equally spaced apertured magnetic cores comprising rotating a helical hollow needle having a conductor therein successively through the apertures of said cores, securing one end

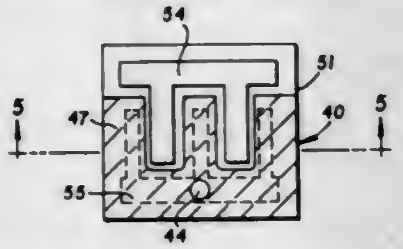
of said conductor after said needle has passed through the aperture of the first core of said sequence, and continuing the rotation of said needle in a direction away from said one end to withdraw said conductor through a slot provided in said needle.

3,310,866
MOUNTINGS FOR POWER TRANSISTORS

Robert E. Anderson, Kingsville, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 28, 1964, Ser. No. 392,888

2 Claims. (Cl. 29—155.5)



1. The method of mounting an epitaxial planar transistor on a preformed heat conductive header electrode to provide an efficient heat sink, comprising the steps of coating the base electrode of said transistor with an insulating material leaving a small area uncoated to which contact is to be made, mounting the emitter contact area of said transistor on a flat surface of said header, and conductively bonding said emitter to said header in such manner as to maintain said base electrode insulatedly spaced from said header by the thickness of said insulating material.

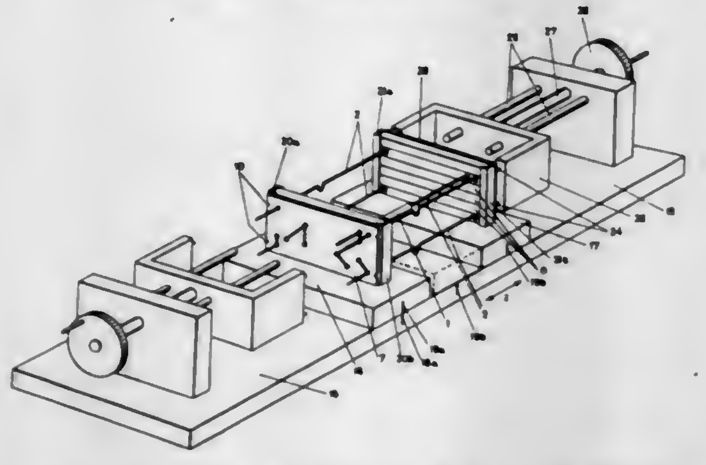
3,310,867
METHOD AND A JIG FOR ASSEMBLING A PLURALITY OF WIRE-ENDED, ELECTRICAL COMPONENTS INTO A MODULE

Kurt Ehrat, Zurich, and Dieter Eckstein, Birmensdorf, Switzerland, assignors to Gretag Aktiengesellschaft, Regensdorf, Switzerland

Filed Nov. 30, 1964, Ser. No. 414,727

Claims priority, application Switzerland, Dec. 5, 1963, 14,931/63

8 Claims. (Cl. 29—155.5)



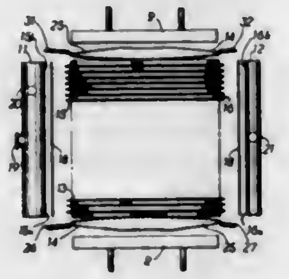
1. A method of assembling a plurality of wire-ended, electrical components into a module, which method includes the steps of positioning two notched, locating racks opposite one another with their notches uppermost; placing at least one wire-ended electrical component between said locating racks so that its wire ends lie in oppositely aligned notches the wire ends supported in each rack projecting beyond that side of the rack facing away from the component; supporting two further notched, locating racks, notches uppermost, above the two first-mentioned racks and spaced apart therefrom to form two stacks of individually supported racks; placing at least one further wire-ended, electrical component between said two further locating racks so that its wire-ends lie in oppositely aligned notches in said further racks, the wire end supported in each of said further racks projecting beyond that side of the rack facing away from the further electrical component; moving said stacks away from each other until the wire ends supported in the racks thereof are at most just projecting beyond the stacks; positioning a pair of apertured mounting plates on opposite sides of said stacks facing away from the supported electrical components to receive in the apertures of said plates those wire ends supported in said stacks; moving said mounting plates in the direction of said stacks until those wire ends supported in said stacks pass through the apertures in said mounting plates; and moving the mounting plates and racks to predetermined positions.

3,310,868
METHOD OF MAKING RADIATORS

Gerald E. La Porte, Buffalo, Joseph D. Lear, Snyder, and William C. Whitcher, Kenmore, N.Y., assignors to Fedders Corporation, Edison, N.J.

Filed May 4, 1964, Ser. No. 364,415

1 Claim. (Cl. 29—157.3)



The method of assembling a cellular-tubular radiator, wherein the components include flattened solder coated tubes, zig-zag fins, a pair of concave resilient sidewalls, and inlet and outlet tanks including headers having spaced tube receiving apertures, which consists of the following steps:

first, in sub-assembling a core wherein said flattened solder coated tubes are spaced in parallel disposal by interposed zig-zag fins to form a flexible rectilinear core mass;

secondly, placing said sidewalls on the sides of the core mass and then compressing externally the assembled core mass and side walls during which the sidewalls are deformed from their concave shape to a lineal configuration;

third, applying said tanks to the ends of the compressed assembled core and sidewalls, wherein the ends of the tubes are entered in their respective apertures in the tank header;

fourth, attaching the sidewalls to said tanks wherein said sidewalls are of a configuration to retain the desired compressed condition after the external compressing forces are removed;

fifth, releasing the external compressing forces; and finally in fluxing and baking the unit to melt the solder to bond the assembly together.

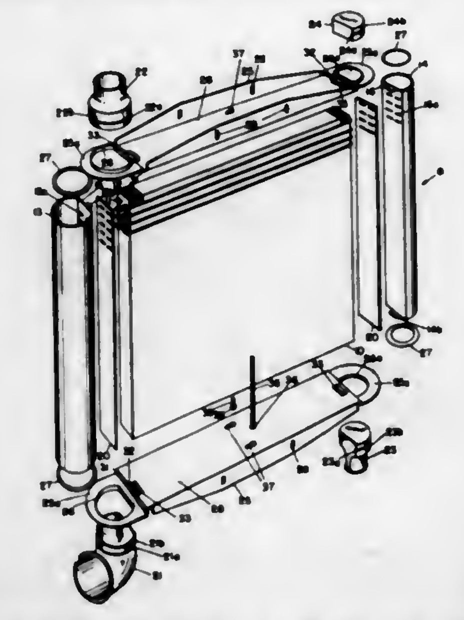
3,310,869
METHOD OF MAKING RADIATORS

Gerald E. La Porte, Buffalo, Joseph D. Lear, Snyder, and William C. Whitcher, Kenmore, N.Y., assignors to Fedders Corporation, Edison, N.J.

Original application Nov. 27, 1963, Ser. No. 326,404, now Patent No. 3,246,691, dated Apr. 19, 1966. Divided and this application Oct. 20, 1965, Ser. No. 513,883

7 Claims. (Cl. 29—157.3)

1. The method of assembling a radiator including a cellular-tubular core, tanks at each end of said core, sidewalls adapted to engage the sides of the core, cap elements for the ends of the tanks and applicable through the sidewalls, and solder means at all interlocking and contacting points; wherein the core is first racked up upon one sidewall, succeeded by applying the second sidewall to the core and applying pressure thereto to compress the core to proper dimensions, then forcing the tanks on the ends of the tubes, applying the caps through the sidewalls and into the ends of the tanks to lock the assembly in one dimension, then locking the sidewalls in fixed parallel spacing against decompression of the core mass, so that pressure on the core mass may be removed, and finally conveying the radiator as a physically self-supporting unit through fluxing and baking operations to integrate the same.

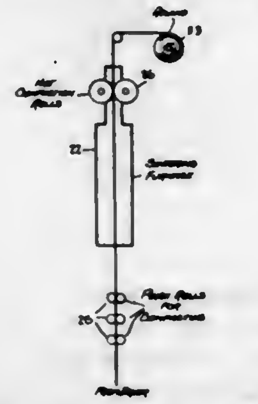


3,310,870
PROCESS FOR PRODUCING NICKEL-COATED STEEL

Niranjan Maganbhai Parikh, Park Woods, and Robert L. Hodson, Oak Lawn, Ill., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 23, 1965, Ser. No. 481,454

11 Claims. (Cl. 29—420.5)



1. The process for applying a sound, dense nickel coating to hot-rolled steel strip using fine nickel powder as the source of nickel which comprises the steps of:

(a) treating at least one surface of a hot-rolled steel strip to be coated to remove oxides and other defects therefrom,

(b) coating the treated surface of the steel strip with an alkaline slurry containing about 50% to about 80%, by weight, of metal powder consisting of, on the basis of metal powder weight, up to about 75% of copper powder and the balance essentially nickel powder, with the balance consisting essentially of at least one liquid vehicle, a polymeric binder dispersible in the vehicle, and a wetting agent,

(c) drying the slurry coating to substantially remove the vehicle therefrom,

(d) sintering the resulting dried coating in an atmosphere nonoxidizing to steel at a temperature of about 1300° F. to about 2300° F. for at least about 15 seconds up to about 90 minutes to provide nickel sinter-coated strip, and

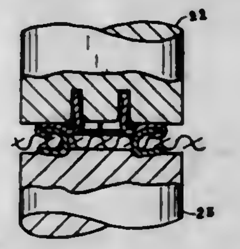
(e) subjecting the nickel sinter-coated strip to at least one compaction operation.

3,310,871
METHOD OF COLLAPSING STUD BREAST

John H. Humiston, Watertown, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Apr. 20, 1964, Ser. No. 360,917

6 Claims. (Cl. 29—432.2)



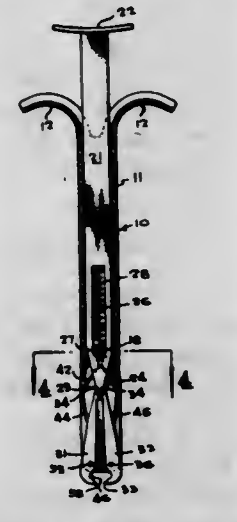
1. The method of securing a stud of a snap fastener member to a support, said stud having a bulbous head with a reduced neck and an annular hollow anvil breast portion joined to the neck opposite the head end, said breast portion comprising a first prong deflecting surface extending radially outwardly and upwardly from its neck connection portion substantially half the distance of the combined height of the neck and head, and a second arcuate radially inwardly directed rim portion which terminates short of said reduced neck to define a prong-receiving opening between said rim edge and said reduced neck, said method comprising the step of positioning the stud against one surface of said support and positioning an attaching member having a series of prongs against the opposite surface of said support, next forcing the stud and prong member together causing said prongs to pierce through said support and to be bent outwardly along said prong-deflecting surface into said hollow anvil breast portion, and finally forcing the set breast portion and prongs therein downwardly to a plane closer to the plane of said neck and anvil connected portion.

3,310,872
END CUTTER

Lansing H. Dowdell, Saugerties, N.Y., assignor to Dell Industries, Saugerties, N.Y., a company of New York

Filed July 23, 1965, Ser. No. 474,222

11 Claims. (Cl. 30—187)

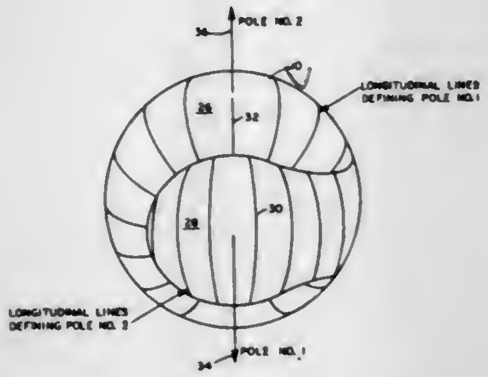


1. A cutting tool comprising an elongated hollow housing of rectangular configuration, cooperating cutters pivotally mounted in opposing relation at one end of the

housing, a reciprocable rectangular plunger shaft extending through the housing having one end terminating exteriorly thereof in a concave shaped pressure application member, the other end of the plunger shaft terminating in a pair of converging inclined surfaces, each of the cutters having a forward cutting jaw end and a rearward end, the rearward end having a diverging inclined planar surface, with respect to the opposing cutter, the diverging inclined planar surfaces adapted to operatively mate with respective inclined surfaces of the plunger shaft to effect closing of the cutting jaws when the plunger shaft is reciprocated, means for biasing the plunger shaft in a non-operative rest position, means for guiding the plunger shaft between the rest position and the operative cutting position when the plunger shaft is reciprocated and to effect cessation of movement of the plunger shaft at the rest position, means causing the cutting jaws to open as the plunger shaft is returned to the rest position.

3,310,873
ATTITUDE PICKOFF ARRANGEMENT FOR INERTIAL REFERENCE PACKAGE

Theodore J. Peregrim, Westford, Mass., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Aug. 5, 1964, Ser. No. 387,678
3 Claims. (Cl. 33—1)

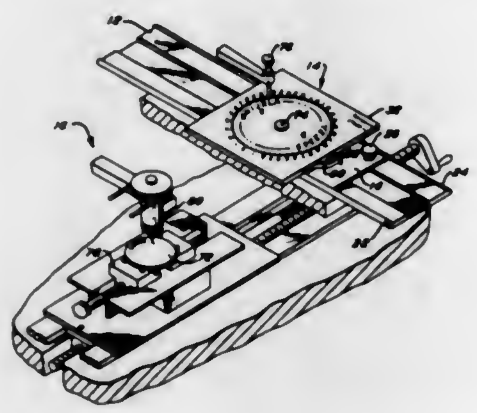

POLE NO. 2
36
LONGITUDINAL LINES DEFINING POLE NO. 1
26
32
28
30
LONGITUDINAL LINES DEFINING POLE NO. 2
POLE NO. 1
34

1. A grid coordinate arrangement useful in space navigation, comprising in combination a sphere coordinate support; two symmetrical zones of equal area and identical geometric configuration defined on said support, said zones being of double-S configuration, the smallest width of the zone being of the order of the radius of the sphere multiplied by the square root of two, the one and the other zones extending across the two poles in the one and the other axes of the zones and respectively having a surface area of pi multiplied by twice the square of the radius of the sphere, the lengthwise centerline of each zone partially extending along a circumferential line of the sphere an equal distance beyond each pole in said respective one and the other axis; longitudinal lines laterally traversing each zone, equi-angularly spaced, the lines in the one zone emanating from the poles of the other axis, and the lines in the other zone emanating from the poles of the one axis.

3,310,874
CIRCULAR ENGRAVING APPARATUS

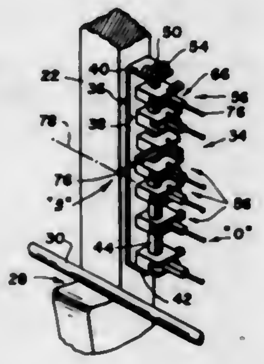
George Berlant, New York, N.Y., assignor to New Hermes Engraving Machine Corp., New York, N.Y., a corporation of New York
Filed Feb. 1, 1965, Ser. No. 429,463
9 Claims. (Cl. 33—23)

1. Apparatus for circular engraving comprising a support base for mounting said apparatus on an engraving machine, a character disc rotatably supported by said support base, a plurality of tracing characters on said disc, said tracing characters being circumferentially positioned on said disc, said tracing characters being adapted to receive an engraving tool tracing stylus, a layout surface juxtaposed said disc, said layout surface having a plurality of circumferentially disposed layout indicia fixed thereon, said layout surface being adapted to have written thereon a representation of the characters to be engraved, said plurality of layout indicia circumferentially arranged on said layout surface being concentric of said circumferential tracing characters and at equally spaced angular distances, a plurality of index notches on said disc, a dog cooperating with said notches and positioned for rotatably locking said disc with said characters in radial alignment with said layout indicia.



3,310,875
ARCHERY BOW SIGHT

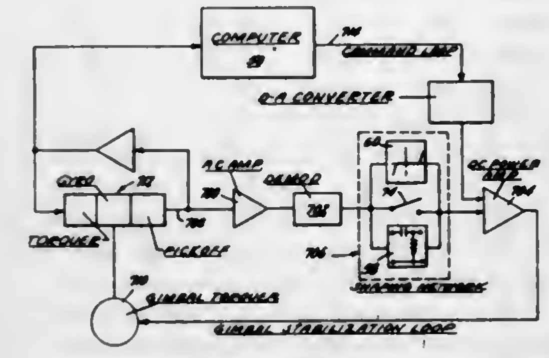
Robert J. Kowalski, 512 Berner St., Pittsburgh, Pa. 15215
Filed July 15, 1964, Ser. No. 382,917
11 Claims. (Cl. 33—46)



1. A sight for aiming a bow, comprising in combination: an elongated carrier member mounted on the body of said bow above the arrow receiving portion thereof, said carrier member extending substantially parallel with the string of said bow; a plurality of sighting elements mounted on said carrier member at a plurality of locations along the length thereof, each of said sighting elements being spaced from the arrow receiving portion of said bow by a predetermined distance whereby said sighting elements may be employed for aiming said bow at different elevations to strike targets disposed at various distances from said bow; means pivotally mounting each of said sighting elements to said carrier for movement in a plane extending transversely of the body of said bow, between a first position wherein the selected one of said sighting elements extends laterally of the body of said bow and is disposed in a sighting position, to a second position wherein the selected one of said sighting elements extends toward the string of said bow and is out of the line of sighting.

3,310,876
INERTIAL PLATFORM OPERATIVE IN EITHER THE STRAPPED-DOWN OR GIMBAL MODE AS SELECTED

Joseph Yamron, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 30, 1961, Ser. No. 148,761
4 Claims. (Cl. 33—61)



1. A navigation system for a space vehicle comprising an inertial measurement unit including a plurality of gyros mounted rigidly to a platform, said gyros being adapted to sense changes in vehicle orientation about preselected reference axes in a coordinate system,

gyro torquing means responsive to said changes in vehicle orientation for nulling said gyros, said torquing means generating nulling currents proportional to the amplitude and rate of orientation change about said reference axes,

a computer for continuously monitoring said nulling currents and maintaining an indication of vehicle orientation relative to said coordinate system,

gimbal means for rotatably mounting said platform relative to said vehicle,

means for generating signals indicative of the position of said platform relative to said vehicle,

gimbal torquer means for rotating said platform about said gimbal means,

means for feeding said gyro nulling currents to said gimbal torquer means to actuate said gimbal torquer means in response thereto,

and circuit means including the parallel combination of a high pass filter circuit and a non-linear circuit connected between said gyro torquing means and said gimbal torquer means for passing said gyro nulling currents to said gimbal torquer means only when said gyro nulling currents exceed a predetermined value, said circuit means blocking passage of said gyro nulling currents to said gimbal torquer means to prevent rotation of said platform when said gyro nulling currents are below said predetermined value,

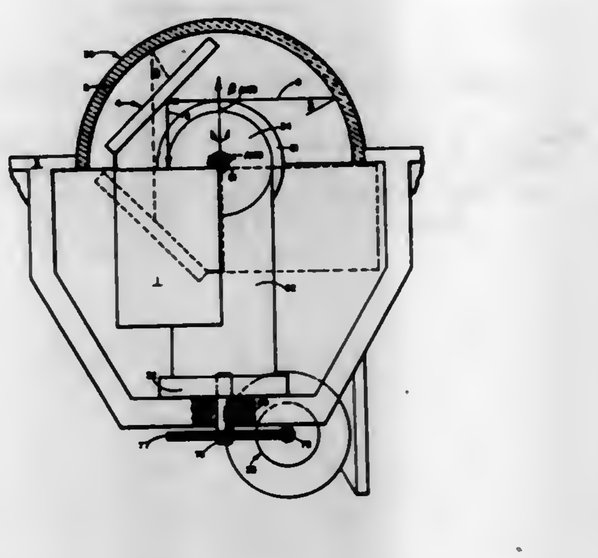
said high pass filter circuit passing to said gimbal torquer means only the portion of said gyro nulling currents generated when the frequency of vehicle orientation change exceeds a predetermined value,

and said non-linear circuit including a deadband and passing to said gimbal torquer means only the portion of said gyro nulling currents generated when the rate of change of vehicle orientation exceeds a predetermined value.

3,310,877
VEHICLE OPTICAL ALIGNMENT DEVICE

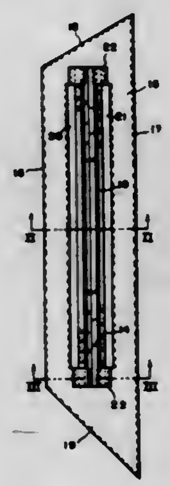
John M. Slater, Fullerton, Calif., assignor to North American Aviation, Inc.
Filed July 20, 1964, Ser. No. 383,693
6 Claims. (Cl. 33—61)

1. In combination a dome of transparent material subtending a substantial portion of a hemisphere, a telescope, means for gimballing said telescope about inner and outer orthogonal axes intersecting at the center of curvature of said hemisphere and displaced laterally from the telescope optical axis, and a substantially flat mirror fixedly mounted on said telescope and inclined with respect thereto about an axis parallel to the inner gimbal axis at a predetermined angle, such that the effective optical axis of the telescope makes a constant finite angle δ relative to a line normal to the dome.



3,310,878
DRAFTING INSTRUMENT

John E. Giba, 1501 Brownlee Ave., Youngstown, Ohio 44514
Filed Apr. 5, 1965, Ser. No. 445,596
2 Claims. (Cl. 33—107)

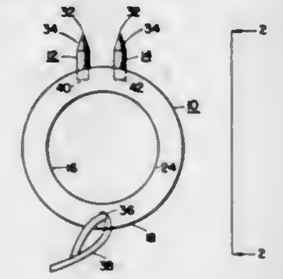


1. A combined measuring and drafting instrument comprising an elongated plate having spaced parallel and straight side edges at least one of which may be lodged against the horizontal bar of a T-square, spring clips near the extremities of said plate, a double-edged scale slideably received in and releaseably retained by said spring clips, said plate having a first elongated slot therein which is straight and parallel to said side edges and one elongated edge of which is coincident with a first edge of said double-edged scale while the second elongated edge of which is spaced a precise distance from said double-edged scale, said plate also having a second elongated slot in spaced parallel relation to said first elongated slot such that one elongated edge of said second slot is coincident with a second edge of said double-edged scale while the second elongated edge of which is spaced a precise distance from said double-edged

scale, the arrangement being such that either of the scale indicia thus exposed to view may be readily used in drafting operations with a straight edge on said plate being coincident with the edge extremity of either of said two scale indicia.

3,310,879
GOLF BALL SPHERICITY GAUGE AND UTILITY TOOL

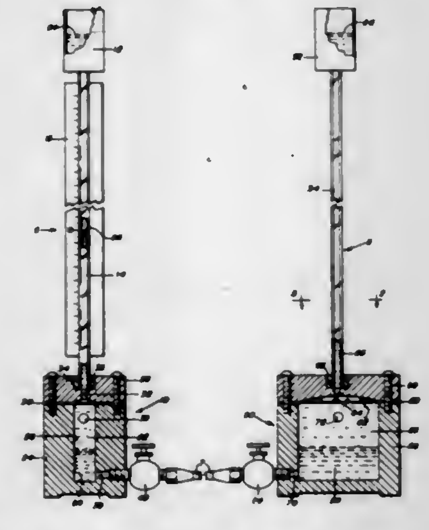
Norbert J. Brzezinski, South Bend, Ind., and Clinton L. Milliken, 2205 E. Madison, South Bend, Ind. 46615; said Brzezinski assignor to said Milliken
Filed July 10, 1964, Ser. No. 381,799
4 Claims. (Cl. 33—178)



1. A golfer's tool for cleaning and removing golf shoe spikes having tightening holes, comprising a rigid hand grip member having a circular passage of a size to snugly receive a standard, undeformed golf ball, and two spaced similar rigid rods fixedly secured to and projecting side by side from said member at an angle to said passage, each of said rods having a pointed distal end and a conically shaped end portion spaced from said member, said rods being spaced to receive a golf shoe spike therebetween with clearance, and said distal ends being spaced apart to register with and fit in said spike tightening holes and being spaced from said hand grip member a distance greater than the spacing between said spike holes and the end of the spike when said distal ends fit in said spike holes and said rods extend substantially parallel to said spike.

3,310,880
GRAVITY TYPE HYDRAULIC AMPLIFIER PRECISE LEVEL

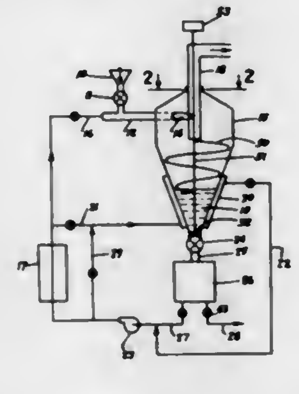
Abner W. Watts, 7231 W. Bayaud Ave., Denver, Colo. 80226
Filed Oct. 29, 1964, Ser. No. 407,597
6 Claims. (Cl. 33—209)



1. A liquid level system comprising a pair of vertically disposed columnar structures having fluid flow passages extending longitudinally thereof, each said columnar structure including an elongated conduit having a flow passage of substantially uniform cross sectional area, one of said conduits containing in the lower part thereof a first liquid having a relatively low specific gravity and in the upper part thereof a second liquid slightly lighter than and immiscible with said first liquid, the line of contact between said liquids serving as an indicator line, the other of said conduits being filled with said first liquid, at least said conduit containing two liquids being transparent, each said columnar structure also including a vessel attached to the lower end of said conduit, each said vessel having one of said conduit passages opening into it, each said vessel also having a flow passage of substantially uniform cross sectional area substantially larger than the cross sectional area of the conduit passage which opens into it, each said vessel further having its upper portion filled with said first liquid and its lower portion filled with a third liquid having a relatively high specific gravity and being immiscible with said first liquid, a further fluid flow passage connecting the said lower portions of said vessels, the flow passage in one of said vessels having a cross sectional area substantially larger than the flow passage in the other of said vessels, each columnar structure also including container means attached to the upper end of said conduit with said conduit flow passage opening into said container, each said container having an internal cross sectional area substantially larger than the cross sectional area of the conduit passage opening into it, the container attached to said conduit containing two liquids being partially filled with said second liquid, and the container attached to said other conduit being partially filled with said first liquid.

3,310,881
APPARATUS AND METHOD FOR CONTINUOUS DRYING

Edward L. Fritzberg, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Continuation of application Ser. No. 425,533, Jan. 14, 1965. This application Mar. 14, 1966, Ser. No. 534,247
14 Claims. (Cl. 34—8)

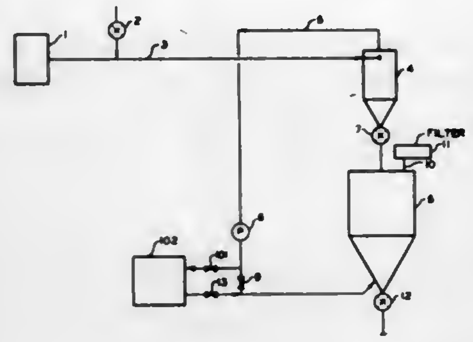


1. A method of dehydrating moist particulate solid material continuously under partial vacuum which comprises

(A) introducing a stream of hot oil into a confined blending zone,
(B) entraining the material to be dried in said stream of hot oil in said blending zone,
(C) passing said mixture of material to be dried entrained in hot oil from said blending zone into a larger directly communicating expansion zone maintained under partial vacuum,
(D) withdrawing vaporized moisture evolved from said material in said expansion zone,
(E) collecting said resulting dehydrated material and oil in a collection zone at the bottom of said expansion zone,
(F) removing the dehydrated material and oil from said collection zone while maintaining the partial vacuum therein, and
(G) separating the excess oil from the dehydrated material.

3,310,882
SOLIDS TRANSFER AND STORAGE SYSTEM

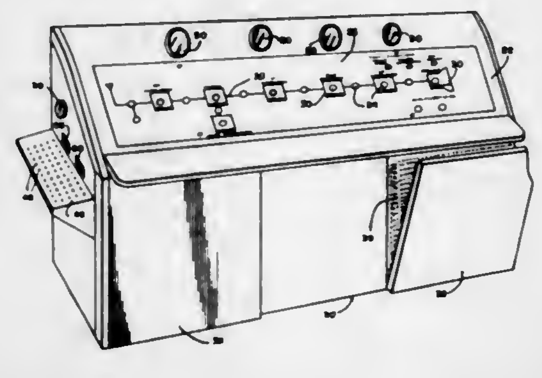
Franklin Taylor Barber, Madrid, Spain, and William James Wride, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 20, 1964, Ser. No. 412,810
5 Claims. (Cl. 34—10)



1. A method of transporting a solid and removing combustible material therefrom comprising transporting the solid in a gas stream, separating said gas stream from said solid, dividing said separated gas stream into a first and a second portion, transporting said separated solid pneumatically with said first portion, depositing said transported solid in a storage zone and purging said solid of said combustible material with said second portion of the divided gas stream whereby the combustible material is removed.

3,310,883
TRAINER

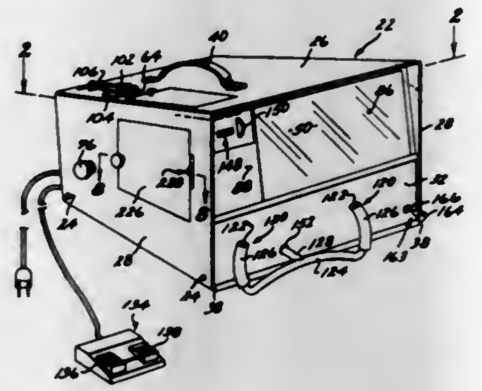
George H. Young, Sicklerville, N.J., assignor to North American Electronic Systems, Inc., a corporation of Pennsylvania
Filed Feb. 11, 1964, Ser. No. 344,060
18 Claims. (Cl. 35—10)



1. A trainer comprising a panel, a plurality of switch actuators and visually changeable indicators carried by said panel; a changeable template overlying all of said actuators and indicators and containing openings registering with certain of said actuators and indicators, said template bearing a portrayal of an operating system and bearing indicia identifying said actuators and indicators with respect to components and functions of said system; electric switches and lamps associated with said actuators and indicators and having terminals; a plurality of gating units having circuits adapted for selective connection with said terminals; a plurality of simulated test instruments associated with said panel to indicate selectively the conditions prevailing at any of a plurality of locations in said system, certain of said actuators serving to select a particular location in said system whose condition is to be indicated, means for selecting any of said instruments to produce an indication of said condition; and readily changeable plug board means providing circuitry interconnecting certain of said circuits with certain of said terminals in correspondence with the operating system portrayed by said template.

3,310,884
TEACHING MACHINE AND MOTOR RESPONSE TRAINING APPARATUS

Norman G. Weitzman and Barry S. Weitzman, both % Arnold J. Provisor, attorney at law, 16401 Knapp St., Sepulveda, Calif. 91343
Filed June 1, 1965, Ser. No. 460,167
18 Claims. (Cl. 35—12)

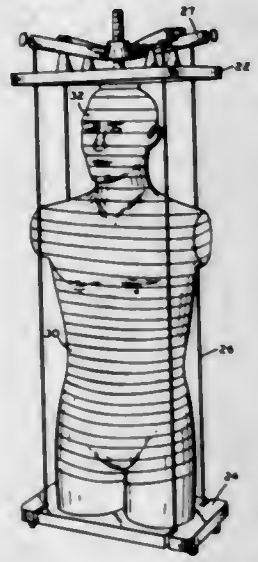


1. A teaching machine comprising: problem presentation means for visibly presenting a problem for appropriate motor response by a user of the teaching machine, said problem presentation means comprising optical projector means adapted to be provided with at least one projection panel frame means with at least a certain portion of said projection panel frame means bearing a problem presentation projection portion and a problem correct answer and response projection portion, said problem presentation means including projection and viewing screen means adapted to have projected thereon and to visibly display to a user of the teaching machine an image of said upper problem presentation portion of said projection panel frame means, with the lower correct answer and response portion of the image projected from said projection panel frame means being invisible to the user of said teaching machine; a plurality of individually operable problem solution control means positioned for individual and selective effective operation by said user of the teaching machine, each of said control means being effectively provided with a corresponding electric control circuit portion effectively electrically connected in parallel with respect to each other and being provided with, and connected in series with respect to, a common error circuit portion, with said parallel control circuit portions and said common error circuit portion being adapted to be connected between the terminals of an electric power supply source, each of said control circuit portions being provided with corresponding control switch means effectively openable and closable in correspondence with operation of the corresponding control means and also being provided in series therewith with a corresponding photosensitive means adapted to be rendered either conductive or non-conductive in accordance with the reception of light thereon from said correct answer and response portion of the image projected from said projection panel frame means, the correlation or lack of correlation between the operation by said user of the teaching machine of said problem solution control means and the conductivity or non-conductivity of the corresponding ones of said photosensitive means being effectively operable to perceivably indicate the correctness or incorrectness of the response of said user of the teaching machine, by said operation of said problem solution control means, to the problem visibly presented; said control means simulating flight control members for an airplane, comprising an

airplane rudder control means, an airplane aileron control means, an airplane elevator control means, and an airplane engine throttle control means.

3,310,885
RADIO-THERAPY PHANTOM

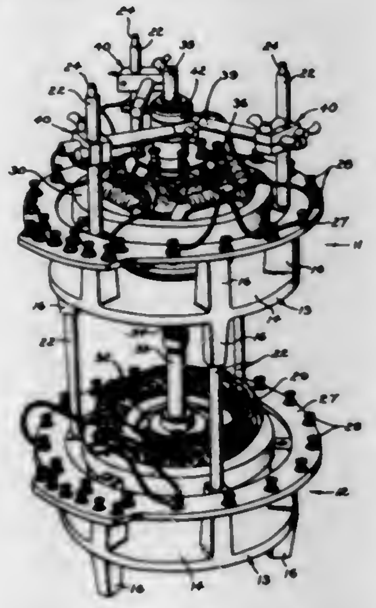
Samuel W. Alderson, 650 West End Ave.,
New York, N.Y. 10025
Filed June 4, 1964, Ser. No. 374,561
10 Claims. (Cl. 35—17)



9. A plurality of transverse sections, each having holes in grid array, forming a radiation-equivalent phantom comprising a human skeleton and radiation-equivalent plastic lungs and an enveloping molding therefor made from tissue-equivalent material to form the contours of the human body.

3,310,886
ELECTRICAL TEACHING AID

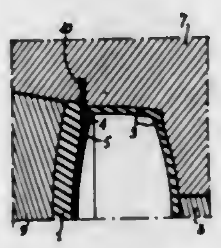
Allan J. Tudor, 12 Ruthven Ave., Finchley Park,
South Australia, Australia
Filed Apr. 13, 1965, Ser. No. 447,814
Claims priority, application Australia, Apr. 15, 1964,
43,300/64
6 Claims. (Cl. 35—19)



1. An electrical teaching aid comprising:
a pedestal,
a plurality of circumferentially spaced columns around the periphery of the pedestal and upstanding therefrom,
a central boss in the pedestal,
a bearing in the boss,
a series of interchangeable rotors,
a shaft in each rotor of size to be rotationally journalled in said bearing whereby the rotors are selectively positionable in said pedestal,
stator positioning means on said pedestal, and at least one stator removably engageable on the pedestal and located by the stator positioning means concentric with said rotor when journalled in said bearing.

3,310,887
VENTILATED MOLDED SHOES

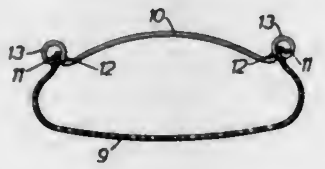
Edmond Stokis, 6 Square de la Gascogne,
Paris, France
Filed Oct. 26, 1964, Ser. No. 406,236
7 Claims. (Cl. 36—3)



1. A shoe comprising a unitary one-piece molded upper and outsole constructed from synthetic material and having means for eliminating water and perspiration products molded integrally therewith, and an insole which covers said eliminating means and is of a non-toxic, flexible, rotproof material which is insoluble in water as well as in perspiration products but permeable thereto.

3,310,888
ATTACHMENT OF THE TOE PIECE TO THE VAMP IN A SHOE OF THE MOCCASIN TYPE

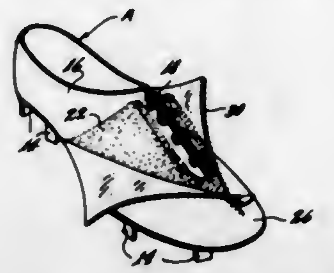
Ronald Fielding, Blackburn, England, assignor to Newman's Footwear Limited, Blackburn, England a British company
Filed Oct. 30, 1962, Ser. No. 234,114
Claims priority, application Great Britain, May 3, 1962,
16,962/62
1 Claim. (Cl. 36—11)



A moccasin-type shoe, comprising a vamp member for defining a sole and upper, a toe piece having a free rear edge, a first line of stitching securing the remainder of the perimeter of said toe piece to the toe portion of said vamp member, said first line of stitching being very close to the edges of the vamp member and the toe piece, a second line of stitching passing through the toe piece and being spaced inwardly from and parallel with said first line of stitching, said second line of stitching also passing through the vamp member and being spaced inwardly from said first line of stitching in the latter, the spacing of said first and second lines of stitching along said toe piece being greater than the spacing of said first and second lines of stitching along said vamp member, the marginal part of the toe piece between said first and second lines of stitching having a helically rolled configuration constituting a bead tightly closed at the inside by said second line of stitching and totally enclosing said first line of stitching and the edges of the toe piece and vamp member secured together by the latter, and said edges of the toe piece and vamp member being directed outwardly within said enclosing bead.

3,310,889
BASEBALL SHOE WITH INTEGRAL TOE AND INSTEP GUARD

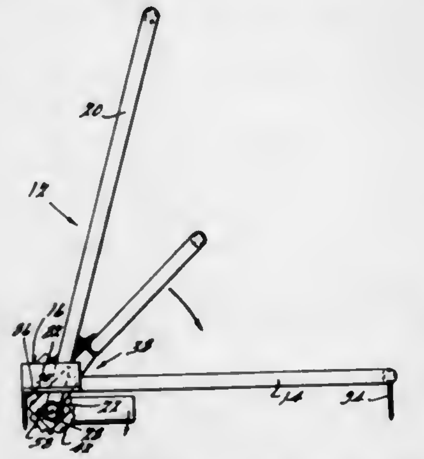
Samuel Samuels, 1801 Pennsylvania Blvd.,
Philadelphia, Pa. 19103
Filed Oct. 21, 1963, Ser. No. 317,568
4 Claims. (Cl. 36—72)



1. A permanently attached toe and instep guard for a baseball shoe having a separable upper and a sole including a welt, said guard comprising a resilient cushion having a toe encapsulating portion and a rearwardly-extending bifurcated portion cemented to the upper of the shoe upon the respective toe and instep portions thereof, a leather jacket secured only along its periphery to the welt of said shoe and extending upwardly therefrom in a pair of lateral portions, and a zipper detachably interconnecting the adjacent lateral portions about said cushion.

3,310,890
TREE DIGGING APPARATUS

Charles N. Dickey, 9826 Auburndale,
Livonia, Mich. 48150
Filed Sept. 28, 1964, Ser. No. 399,652
17 Claims. (Cl. 37—2)

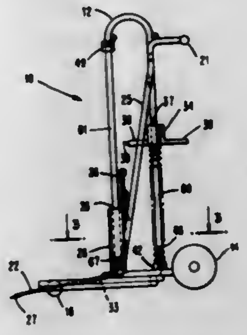


1. A digger for removing trees or the like from the ground, comprising; a substantially arcuate blade mounted for arcuate movement through the ground about an axis substantially at ground level and passing through the trunk of the tree, and means for moving the blade through an arc of at least 180° for cutting a substantially continuous hemispherical ball of earth from the ground containing the roots of the tree including means for substantially fixing the pivot of the blade relative to the tree and means for rotating the blade about its axis in successive increments in the same direction through said 180°.

3,310,891
SNOW REMOVER

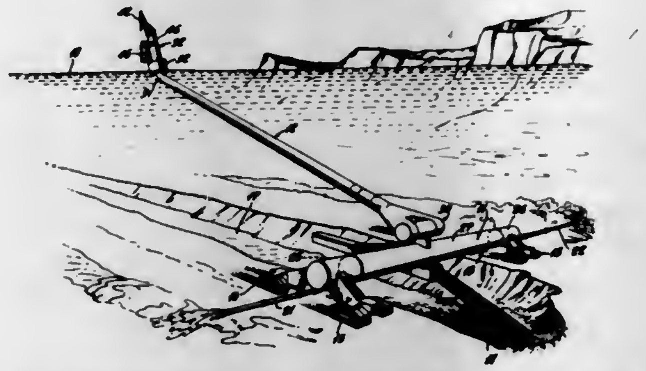
John T. Sachaczenski, 916 Fayette St.,
Conshohocken, Pa. 19428
Filed Feb. 17, 1964, Ser. No. 345,174
8 Claims. (Cl. 37—53)

1. A device for removing snow comprising a main body, means for receiving snow movably mounted to said body and normally disposed close to ground level, a transfer element mounted on said main body in a position to engage said means for receiving snow, locking means for holding said transfer element close to ground level, energy storing means and connected to said transfer element, normally urging said transfer element away from ground level and means for releasing said locking means whereby energy stored in said energy storing means causes said transfer element to move said means for removing snow to cause any received snow to be removed from said means for receiving snow.



3,310,892
SUBMARINE DREDGE

Ernest W. Spannhake, Kinnelon Borough, N.J., and Henri Prehn, Roslyn Heights, N.Y., assignors to John J. McMullen Associates, Inc., New York, N.Y., a corporation of New York
Filed Dec. 31, 1963, Ser. No. 334,740
10 Claims. (Cl. 37—56)



8. In combination, a hollow body which is adapted to be submerged in water; a hollow snorkel tube which has one end that is adapted to float freely above water; a hollow universal joint for permanently connecting the other end of said snorkel tube to said hollow body, said upper end being upwardly elongated and being normally free of connection with a vessel so as to respond to wave action in heave only in cooperation with the other parts of said snorkel tube and the universal joint; and non-buoyant streamlined bow-shaped plates attached at the waterline to said snorkel tube at the free-floating end of said tube for minimizing wave slap.

9. A submarine dredge comprising a hollow submersible body, said body being divided into compartments for housing personnel, machinery and a source of power for driving the body along the bottom of a body of water to dig a trench; a hollow snorkel tube extending from said body on an incline relative to the surface of said body of water, the upper end of said snorkel tube being free-floating upon the water; a hollow universal joint for permanently connecting the lower end of said snorkel tube to said body for transferring personnel from said snorkel tube to said submersible body, said upper end being upwardly elongated and being normally free of connection with a vessel so as to respond to wave action in heave only in cooperation with the other parts of said snorkel tube and the universal joint, the upper portion of said snorkel tube being bent at a point slightly below the surface of said water so that said upper portion

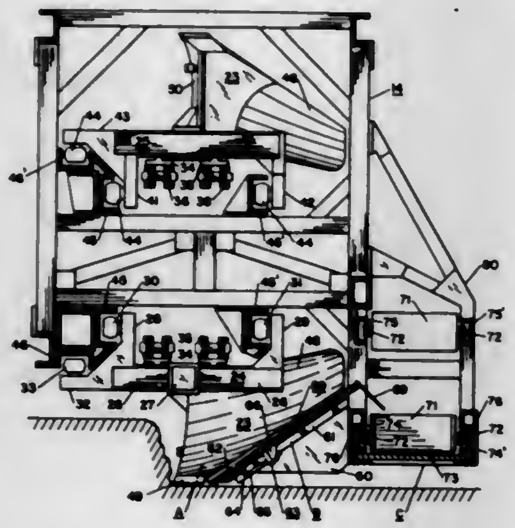
extends nearly vertically from said water at a moment when the remaining portion of said snorkel tube is inclined by an angle of forty-five degrees relative to the surface of said water; a landing cage; and means for supporting said cage in hinged relationship upon said upper portion of said snorkel tube.

3,310,893
COMBINATION EXCAVATING AND TRIMMING MACHINE

Alfred Perry, Moses Lake, and Harry Dewey Durston, Kennewick, Wash., assignors to J. A. Terteling & Sons, Inc., Boise, Idaho

Filed Dec. 27, 1965, Ser. No. 516,402

11 Claims. (Cl. 37—85)



1. In a combination excavating and trimming machine including a work frame disposed between respective transport vehicles, the combination of an excavating means carried by the work frame and including a plurality of digging members, each of said digging members having integral therewith earth cutting implements in substantially continuous engagement with an earth foundation, when said digging members are progressively excavating material therefrom;

a drive means operatively connected to said excavating means for moving said earth cutting implements of each of said digging members progressively into engagement with earth material; and

a trimming means depending aft of the excavating means for scraping excavated earth material from the earth foundation, said trimming means being disposed transversely to the direction of travel of the machine and being substantially coextensive in length with the work frame; and

wherein each of said digging members has an integral engaging portion thereof positioned in vertical overlapping relationship and being substantially contiguously to a portion of the said trimming means; and

said trimming means cross section configuration substantially conforming to the geometric silhouette of said vertically overlapping integral engaging portion of each said digging members; and

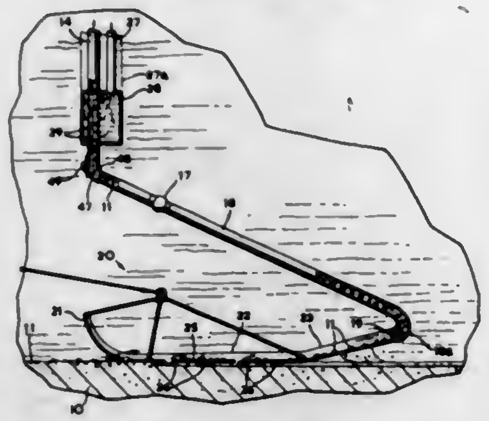
said overlapping integral engaging portion of each said digging members and said overlapped portion of the trimming means define therebetween a means for containing excavated and trimmed earth material and a means for conducting the materials so contained rearwardly to the direction of travel of the machine and over the trimming means toward a point of disposal of said materials, whereby the excavated and trimmed earth materials are subjected to movement substantially continuously by said containing and said conducting means.

3,310,894
DREDGING METHOD

James Ball, Box 14, Nobleton, Ontario, Canada

Filed May 11, 1964, Ser. No. 366,262

3 Claims. (Cl. 37—195)



1. The method of recovering solid particulate material from the floor of a deep body of water comprising the steps of:

traversing the floor of the body of water with an intake of a duct extending between the floor and a work station on the surface of the body of water,

causing a sufficient upward flow of water in the duct to deliver solid particulate material entrained therein to the work station by continuously introducing a substantially incompressible liquid having a density less than 1 into the duct adjacent its lower end to form a water/liquid mixture within the duct, said mixture having a density less than 1,

separating the solid particulate material from the water/liquid mixture arriving at the work station,

separating the liquid from the water/liquid mixture, discarding the water,

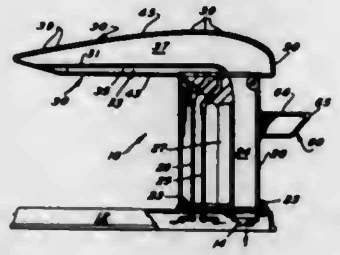
re-introducing the liquid into the duct adjacent its lower end to maintain the upward flow in the duct.

3,310,895
DUAL EDGER

John G. Weingarten, 354 Lancaster Ave., Haverford, Pa. 19041

Filed Aug. 17, 1965, Ser. No. 480,386

2 Claims. (Cl. 38—16)



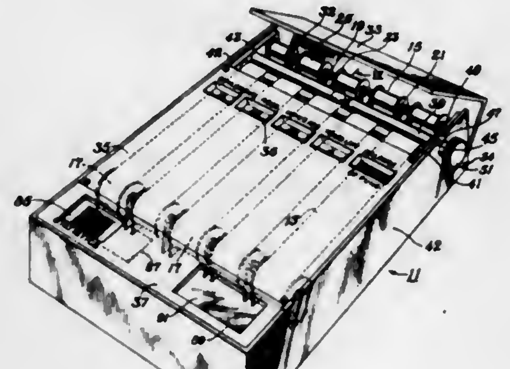
1. A buck for opening and underpressing seams of a coat comprising: a horizontal base, an upright standard rigidly extending from said base, at least one horizontally disposed oblong and slender form mounted on said upright standard and being rigidly supported thereby, said form having an elongated narrow uppermost flat face, said flat face when viewed from the side having an arcuate profile, said form being hollow so that it includes a separate vacuum and steam heat chamber therein, said uppermost face of said form having a row of perforations extending therealong in communication with said vacuum chamber, said form having closely spaced upstanding members, said closely spaced upstanding members converging towards said uppermost face at the uppermost ends of said members, said closely spaced members defining a tapered end and an opposite blunt end, said upright standard firmly supporting said hollow form proximate said blunt end, said standard being hollow to provide an evacuating passage in communication with said vacuum chamber; and steam conduit means within said hollow standard in communication with said steam heat chamber.

3,310,896
APPARATUS FOR DISPLAYING INSURANCE DATA

Robert E. Ruffner, 2601 Stark, Fort Worth, Tex. 76112

Filed July 8, 1965, Ser. No. 470,384

4 Claims. (Cl. 40—28)



1. Apparatus for displaying insurance data for sales presentations and the like, said apparatus comprising:

(a) a carriage;

(b) a plurality of parallel tapes mounted to said carriage for longitudinal movement, each of the tapes having groups of indicia that represent insurance data, the indicia of each tape being selectively visible through an associated aperture in said carriage;

(c) a pair of friction rollers disposed within said carriage transversely with respect to the tapes for simultaneously and longitudinally moving the tapes, with the tapes being threaded between said rollers and with one of said rollers being selectively movable in a direction away from the other roller to release the tapes for relative longitudinal adjustments thereof; and

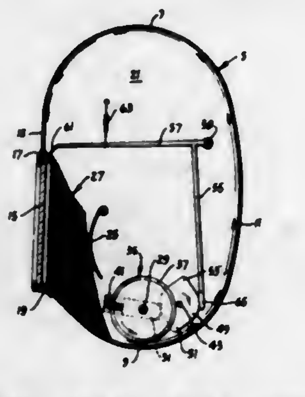
(d) storage means connected with said carriage for collecting and dispensing the end portions of said tapes responsive to rotation of said friction rollers.

3,310,897
MULTIPOSTER

Lafayette Chace Grover, 582 Market St., San Francisco, Calif. 94104

Filed Nov. 24, 1964, Ser. No. 413,592

2 Claims. (Cl. 40—36)



1. An advertising display device comprising in combination:

(a) a holder for a plurality of individual display cards, said holder having smoothly rounded back, top and bottom portions;

(b) a transparent window whereby the foremost card of a plurality of cards in said holder is visible;

(c) a shaft driven at a relatively high rate of speed, mounted behind the plurality of individual display cards, said shaft having a plurality of wheels thereon, said wheels being normally held out of contact with the cards;

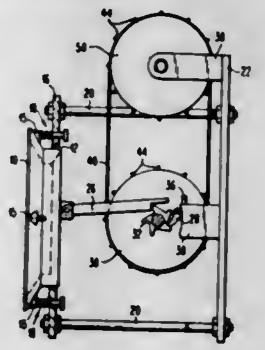
(d) cam means for periodically bringing said wheels into momentary contact with the rearmost card of said plurality of cards, whereby the rearmost card is moved rapidly downwardly off the back of the stack and travels by inertia around the bottom, back, and top portion of the holder and assumes a position in the front of the stack of cards.

3,310,898
SCORING DEVICE

George Oscar Saile, Jr., 20 McIntosh Drive, Poughkeepsie, N.Y. 12603, and George Oscar Saile, Sr., 2713 Erie Ave., Cincinnati, Ohio 45208

Filed May 2, 1966, Ser. No. 547,055

10 Claims. (Cl. 40—96)



1. A scoreboard comprising:

a movable target means to be hit against by an instrument;

said target means having a substantially centrally located slot;

target edge supporting means for maintaining the target parallel to its usual position during recoil and for returning the target back to its usual position after recoil;

a score indicating means; and

means for converting the energy expended by the strike against the said target means into energy which changes the score on the said score indicating means, said means for converting being connected to said slot.

3,310,899
SUSPENDED POLE BANNER CONSTRUCTION

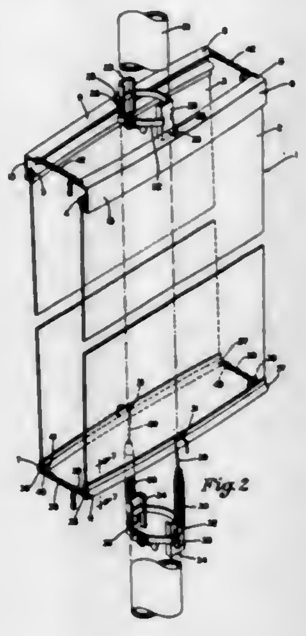
William S. Hart, Howard Beach, N.Y., and Walter R. Saunders, Wooster, and Thomas Friedrichsen, Massillon, Ohio, assignors to The Massillon-Cleveland-Akron Sign Company, Massillon, Ohio, a corporation of Ohio

Filed Jan. 20, 1966, Ser. No. 521,956

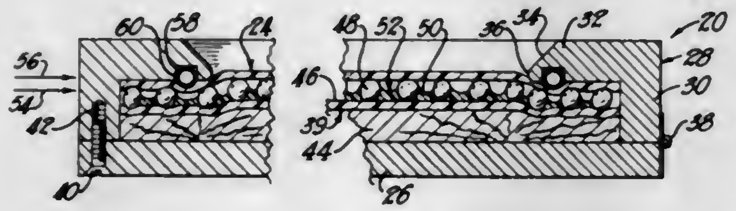
6 Claims. (Cl. 40—125)

1. Pole banner construction of a type in which a flexible banner component is mounted on a pole, including a flexible generally rectangular banner sheet component having upper and lower edge portions, said upper and lower edge portions having thickening means; mounting means for supporting and suspending the banner component on a pole, the mounting means including upper and lower gripper bars releasably connected to and gripping the upper and lower edge portions of the banner component, said mounting means also including an upper bracket and a lower bracket adapted to be connected to a pole in spaced relation; the upper gripper bar including a rigid angle member disposed with one angle member flange mounted in a horizontal plane, a slotted tubular portion integral with a surface of the other angle member flange and extending longitudinally therewith, and aperture means formed in one of said flanges intermediate the

ends thereof; said lower gripper bar including a slotted tubular portion and aperture means formed intermediate the ends thereof; said banner component upper and lower edge thickening means being releasably held respectively in the upper and lower gripper bar slotted tubular portions; means engaged with upper bracket and said upper gripper bar aperture means supporting said upper gripper bar on said upper bracket; and tension means engaged with said lower gripper bar apperture means connecting the lower gripper bar with the lower bracket; whereby said banner may be mounted on a pole and may move by wind action and thus absorb the force of such wind without damage.

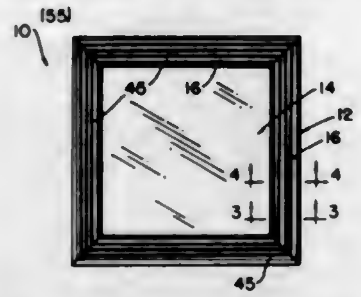


3,310,900
RETROREFLECTIVE SIGN
Robert G. Hamilton, Mentor, and Lester R. Dickard, Painesville, Ohio, assignors to Avery Products Corporation, a corporation of California
Filed Oct. 4, 1963, Ser. No. 313,914
1 Claim. (Cl. 40—135)



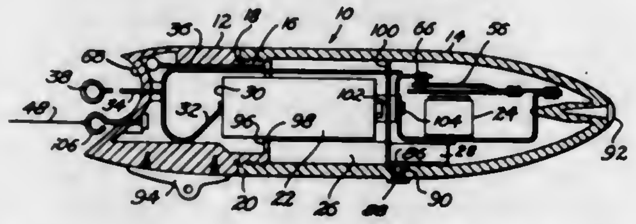
In a retroreflective sign system,
a support having a light-reflective layer and a layer of light-refracting beads attached to said reflective layer,
a transparent cover film overlying said beads,
a base member behind said support,
an endless peripheral frame member overlying said support and cover film,
means holding said frame and base members together and applied with sufficient force to simultaneously anchor said support cover film together, seal said support and cover film against entry of ambient atmospheric constituents, and press the beads around the periphery of the support to a level below the original level of the tops of the beads,
and said film thereby being retained in supported but unattached relationship across the remaining bounded area of the reflective layer.

3,310,901
DISPLAY HOLDER
Robert Sarkisian, 8644 Woodside Park Drive, Oak Park, Mich. 48237
Filed June 15, 1965, Ser. No. 464,073
21 Claims. (Cl. 40—156)



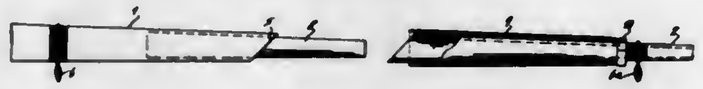
1. A display or like holder, comprising a pair of front and back parts adapted to be assembled in pivotal relationship to one another in defining a polygonal frame structure to receive a display piece, said parts being provided with coacting hinge formations integral respectively therewith and in mating pivotal engagement with one another, and a spring extending between said front and back parts to bias the former between a closed position in clamping engagement with the display piece and an open position to removably receive said piece, said front part substantially wholly covering the back part forwardly of said piece in said closed position.

3,310,902
SONIC FISHING LURE
John H. Godby, 103 George St., Yuma, Ariz. 85364
Filed Nov. 27, 1964, Ser. No. 414,268
7 Claims. (Cl. 43—17.1)



1. A sonic fishing lure comprising a hollow body; a battery therein; a sonic device electrically coupled to said battery; and switch means in serial relationship with said battery and said sonic device to complete a circuit for energizing said sonic device by energy from said battery; a fishing line coupled to said switch means, said switch means operably responsive to tension of said fishing line; a thermal flasher switch connected in parallel relationship with said switch means for intermittently energizing said sonic device by energy from said battery; a second switch in serial relationship with said thermal flasher switch; and means externally of said body for operating said thermal flasher switch.

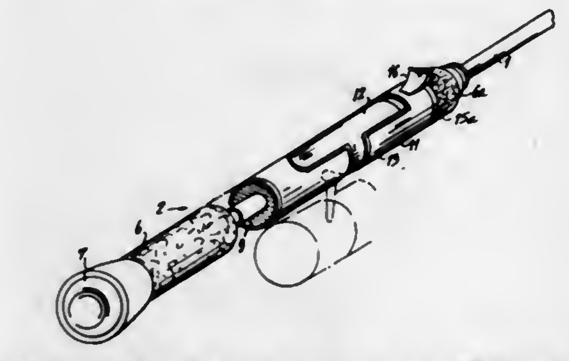
3,310,903
DISMOUNTABLE FISHING ROD
René Georges Binvignat, 41 Ave. de Suffren, Paris, France
Filed Feb. 17, 1965, Ser. No. 433,392
Claims priority, application France, Feb. 25, 1964, 965,113, Patent 1,409,245
3 Claims. (Cl. 43—18)



1. In a sectional fishing rod comprising axially alignable, progessively-tapered, hollow sections having a circular cross section, said sections including eye elements projecting radially therefrom for receiving a fishing line

therethrough, the improvement comprising complimentary, oblique chamfers at adjacent ends of said respective sections for orienting said eye elements in colinear relationship, a frustoconical sleeve circumposed about one of said sections having the smallest cross section, said frustoconical sleeve being axially displaceable on said one section and having a minimum opening at one end less than the maximum terminal diameter of said one section whereby said sleeve cannot be axially removed from said terminal end, an abutment element on said one section at an intermediate portion thereof for retaining said sleeve on said one section, and a tapered core element in said other section, said core element projecting axially beyond said other section, the portion of said core element projecting axially from the terminal end of said other section being axially received in and complementary to the terminal bore portion of said one section, whereby when said sections are rotated about their longitudinal axis with respect to each other, said chamfer ends will cam the sections apart when the said frustoconical sleeve is circumposed about said adjacent ends.

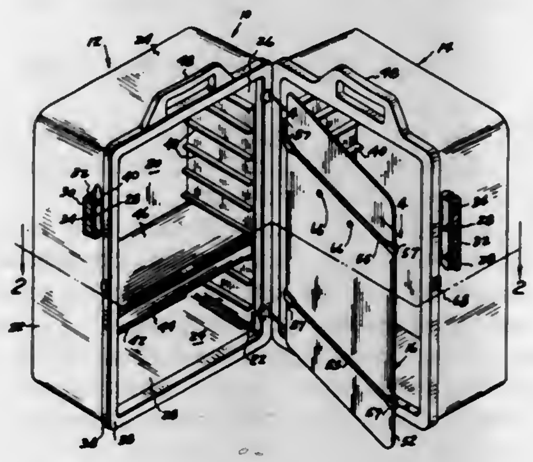
3,310,904
DEVICE FOR FASTENING A REEL ON A FISHING-ROD AND FISHING-ROD PROVIDED WITH THIS DEVICE
René Georges Binvignat, 41 Ave. de Suffren, Paris, France
Filed Feb. 17, 1965, Ser. No. 433,391
Claims priority, application France, Feb. 25, 1964, 965,114, Patent 1,409,246
11 Claims. (Cl. 43—22)



1. A device for fastening a reel on a fishing-rod, characterized in that said device comprises a sheath having a circular cross-section and mounted on that part of a fishing-rod constituting the handle of the latter, and having a longitudinally extending aperture therethrough of which the shape, length and width correspond to the shape, length and width of the fastening sole-plate of said reel, said aperture communicating at a medial portion of one side thereof with a transverse slot extending through said sheath, said slot extending along an angular spread of about 180° from said aperture, said slot defining an arcuate path and adapted to receive a lug connecting the body of said reel to the fastening sole-plate of the latter and permitting the lug to rotate relatively to the end of the slot.

3,310,905
FISHING TACKLE BOX
Roger E. Davis, 411 N. Elmwood, and Douglas G. B. Hill, 331 Grandview Parkway, both of Traverse City, Mich. 49684
Filed Jan. 3, 1966, Ser. No. 518,449
5 Claims. (Cl. 43—57.5)

1. A hand carried container useful in transporting relatively small fishing articles such as hooks, flies and the like and relatively large fishing articles such as fishing reels, comprising:
- (a) means defining an article carrying compartment, comprising:
    - (1) a pair of generally rectangular box halves, each having a bottom, four sides extending normally from the bottom and an open top;
    - (2) hinge means pivotally connecting the edge of one side of each half adjacent their open tops so that the two halves may be disposed between a first position wherein the edges defining their open tops are in abutment to define a closed compartment, and a second position wherein the open tops are separated from one another to provide access to a portion of said compartment;
- (b) means associated with said compartment for supporting in a classified arrangement a plurality of relatively small articles and permitting accessibility of selected classifications of said small articles, said means comprising:
    - (1) a series of guideways in each of said box halves, said guideways disposed at regularly spaced intervals one above the other when said container is in its upright position, each of said guideways comprising a pair of guides extending along opposite interior sides of each of said box halves and perpendicular to the hinge axis of said box halves;



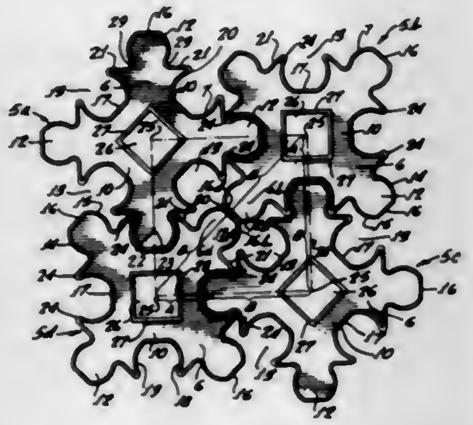
    - (2) a plurality of similarly shaped article containers each having a width slightly less than the interior dimensions between the guide supporting sides of each box half, a thickness corresponding to the spacing between each pair of guideways, and the containers on at least one side having a depth slightly less than the corresponding depth of its associated box half to accommodate a partition when the box halves are closed, whereby each of said article containers may be inserted between two adjacent guideways to serve as a drawer and slidably removed from its guideways in directions perpendicular to the hinge axis of said box halves;
- (c) means associated with said compartment for supporting relatively large articles, comprising:
    - (1) a partition supported for pivotal movement about an axis adjacent the edges of said box halves supporting said hinge means and movable between the open tops of said box halves when said halves are separated from one another between positions adjacent the open top of one of said box halves and permitting access to the opposite of said box halves, said partition being adapted to support fishing articles which project into one of said box halves when the partition is in a position adjacent the open top of said one of said box halves by removing selected article containers from the guideways in said one of said box halves which interfere with the reception of said projecting fishing articles; and
- (d) means for locking said box halves one to the other when their open tops are in abutment.

3,310,906
TOY CONSTRUCTION BLOCKS AND ASSEMBLY

Bernard R. Glukes, Los Angeles, Calif., assignor to Fowler, Knobbe & Gambrell, a partnership composed of Allan R. Fowler, Louis J. Knobbe, and James B. Gambrell

Filed July 22, 1965, Ser. No. 473,983

10 Claims. (Cl. 46—25)



1. A series of identical toy construction blocks, each comprising:
- (a) a first pair of opposite arms lying along a first axis;
- (b) a second pair of opposite arms lying along a second axis which intersects said first axis perpendicularly at the center of said block;
- (c) a projection at the end of each arm comprising
  - a pair of opposed, arcuate sides concentric about a central axis perpendicular to the axis of the arm to form a circular segment,
  - and an outer rectilinear portion at the distal end of the projection forming a chord of said circular segment perpendicular to the axis of the arm;
- (d) a recess formed between each adjacent pair of arms, said recess being proportioned to receive the projections of other blocks of said series to interconnect said blocks in a plurality of configurations, each said recess comprising
  - a pair of opposed, arcuate sides concentric about a central axis perpendicular to the axes of the arms to form a circular segment,
  - an opening through the outer portion of said segment,
  - and a rectilinear inner portion nearest the center of the block forming a chord of said circular segment;
- (e) said projections being dimensioned so that when four of said blocks are interconnected such that their centers define the corners of a square, the projections on the inwardly disposed arms do not overlap or interfere with each other; and,
- (f) each said block being proportioned so that $(2B)^2 \lesssim 2(A+B)^2$ wherein
  - A=the distance between the center of the block and the inner rectilinear portion of any recess thereof, and
  - B=the distance between the center of the block and the outer rectilinear portion of any projection thereof.

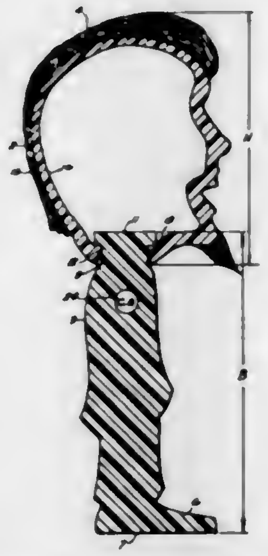
9. A toy wheeled-vehicle having a flat body surface comprising:
- (a) four identical blocks interconnected to form a substantially flat surface, each said block comprising
- (b) parallel front and rear faces, a central bore, and a peripheral surface, said peripheral surface defining
- (c) four arms of equal length spaced from each other by 90°;
- (d) a projection at the end of each arm, each said projection including an outer rectilinear end surface and opposed arcuate side surfaces;
- (e) a recess midway between each adjacent pair of arms, each said recess including an inner rectilinear end surface and opposed arcuate side surfaces;
- (f) said blocks being interconnected by appropriate ones of said projections being snugly received in appropriate ones of said recesses to form a flat surface with the centers of the blocks defining the corners of a square and with two of said arms extending toward the center of said square;
- (g) the distance from the center of each block to the outer rectilinear end surface of its projections being such that the pair of end surfaces near the center of said square are slightly spaced one from the other;
- (h) at least one connecting member extending downward from said blocks;
- (i) an axle attached to said connecting member below said blocks; and,
- (j) a wheel mounted on said axle for rotation relative to said blocks.

3,310,907
FIGURINE HAVING IMPROVED INERTIA CHARACTERISTICS

Saul Robbins, 35 Mountain Way,
West Orange, N.J. 07052

Filed Mar. 4, 1965, Ser. No. 438,470

2 Claims. (Cl. 46—156)



1. A figurine formed of molded thermoplastic material having a density lying between 0.9 and 1.7, comprising:
- a large hollow head portion and a small, stiff body portion including a body and supporting feet at the base of a body, said supporting feet being directly below said body,
- said head portion being frictionally inter-engaged with the said body portion,
- the ratio of the length of said body portion to the length of said head portion being no more than about 2.5:1,
- said head portion having a volume greater than the volume of said body portion, but having walls of sufficient thinness, such that the weight of said head portion is less than the weight of said body portion,
- said density, volume, and portion weight factors, fixing the center of gravity of said figurine in said body portion above said feet and in the upper one-third of said body portion, thereby improving the balance and inertia characteristics of said figurine on said supporting feet.

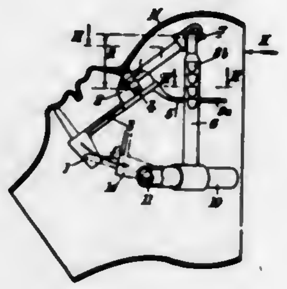
3,310,908
SLEEPING DOLLS

Claude Refabert, Paris, France, assignor to Etablissements Clodrey-Polyflex, Paris, France, a society of France

Filed May 27, 1964, Ser. No. 370,447

Claims priority, application France, June 7, 1963, 937,420

4 Claims. (Cl. 46—169)



1. A doll's head which comprises, in combination, a casing, two eyes pivotally mounted in said casing about a first axis, parallel to the line passing through both of said eyes, means including a counterweight rigid with said eyes so as to urge them toward the open position thereof when said head is vertical and toward the closed position thereof when said head is at least substantially horizontal, escapement gear means comprising a first element rigid with said counterweight and a second element pivoted to said casing about a second axis located in the plane of symmetry of said doll's head and horizontal when said head is at least substantially horizontal, said escapement gear means being adapted to produce a step by step closing of said eyes when said head in horizontal position is rocked about a horizontal axis perpendicular to the line passing through both of said eyes, and means for producing, in response to a reciprocating movement substantially in the direction of the longitudinal axis of said doll's head in horizontal position, an oscillating movement of said second element and the operation of said escapement gear means.

3,310,909
SOIL TREATMENT PROCESS

Donald Alfred Bennett, Beaulieu, England, assignor to The International Synthetic Rubber Company Limited, Southampton, England, a corporation of the United Kingdom

No Drawing. Continuation of application Ser. No. 341,768, Jan. 31, 1964. This application Mar. 11, 1966, Ser. No. 533,731

Claims priority, application Great Britain, Feb. 6, 1963, 4,836/63

6 Claims. (Cl. 47—9)

1. A process of stabilizing the soil particles of croplands and preventing the erosion thereof, comprising applying to the surface layer of said soil particles a film of an aqueous dispersion of oil extended rubber, wherein the ratio of oil to rubber in parts by weight is 1–10 parts of oil to 1 part of rubber, applied at a rate of between about 20 and about 150 grams of solids per square meter of soil surface, and wherein the solid contents of said dispersion are in a range from about 5 to about 30 percent by weight.

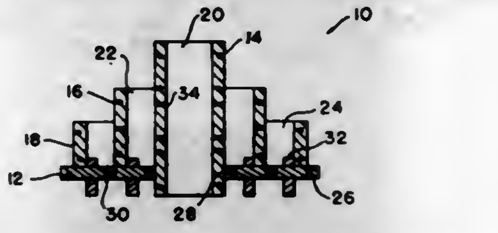
3,310,910
CAST PLANTER

Rean Otis Titus, 4436 Mount Elliott Ave.,
Detroit, Mich. 48207

Filed Jan. 4, 1965, Ser. No. 423,142

4 Claims. (Cl. 47—33)

1. A planter comprising a flat base having a central opening therethrough, a plurality of spaced apart members positioned on said base and concentric with respect to said opening through said base, each of which is shorter than the next inner member, and a central member concentric with and spaced apart from said other members,



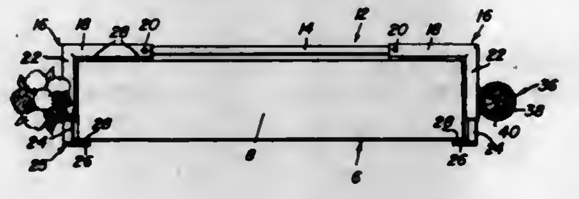
the lower end of which is received in the opening through the base and the upper end of which extends above the adjacent one of said plurality of members.

3,310,911
FLOWER POT SUPPORTING ATTACHMENT FOR CEMETERY MONUMENTS

Bernard E. Boser, 102 5th Ave. SE., Little Falls, Minn. 56345, and James A. Mares, Cushing, Minn. (RFD 3, Box 17, Wadena, Minn. 56482)

Filed Jan. 7, 1965, Ser. No. 424,039

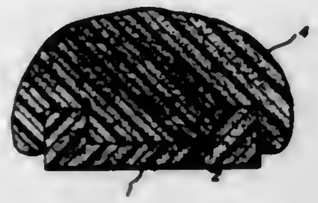
2 Claims. (Cl. 47—39)



1. For use with a headstone of the type including a pair of generally parallel upstanding opposite sides interconnected at one pair of corresponding ends by means of a third upstanding side, a flower pot holder comprising a generally U-shaped horizontal frame including a pair of generally parallel jaws interconnected at one pair of corresponding ends by means of a bight portion extending therebetween, said one pair of ends of said jaws including right angled end portions projecting toward each other at their inner ends, said inner ends being axially aligned and spaced axially apart, said bight portion extending between and being telescopingly engaged with said end portions and being adjustable in effective length whereby the distance between said jaws may be varied as desired so as to adapt said holder to clampingly embrace said headstone therebetween with said jaws engaging said opposite sides and said right angled end portions and said bight portion extending along said third side, said jaws including resilient pad means on the opposing surfaces thereof for non-marring engagement with said opposite sides of said headstone, said jaws being of minimal width in the direction of a line extending between said jaws, said holder including means adapted to support a flower container therefrom, the outer ends of said jaws including laterally directed end members projecting toward each other, said headstone including a fourth side extending between the other pair of corresponding ends of said opposite sides thereof, said end members, when said flower pot holder is mounted on a headstone, being adapted to overlie the corresponding end portions of said fourth side, said jaws being adjustable in effective length from said end portions to said end members whereby said holder is also adapted to clampingly engage said headstone between said end portions and said end members, said jaws each comprising a pair of telescopically engaged tubular members, said right angled end portions being carried by the ends of one pair of corresponding tubular members remote from the other pair of corresponding tubular members and said end members being carried by the corresponding ends of the other pair of tubular members remote from said right angled end portions.

3,310,912
ARTICLE HOLDER

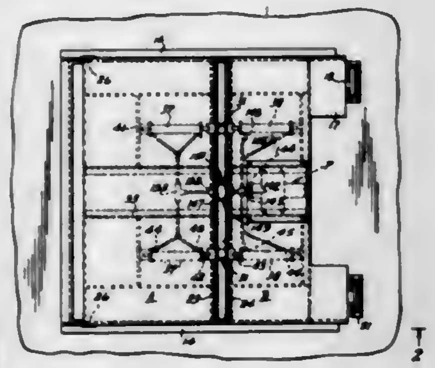
Richard C. Melander, Ballston Spa, N.Y., assignor to Tuffite Plastics, Incorporated, Ballston Spa, N.Y.
Filed Aug. 3, 1965, Ser. No. 476,811
2 Claims. (Cl. 47—41.12)



1. An ornamental article holder comprising a block like rigid backing member having at least one planar surface and a peripheral surface extending about said block, a pocket in said planar surface, said planar surface having laterally extending portions extending from said pocket, and a mass foamed in situ in said pocket and secured to said pocket, said planar surface, and peripheral surface of the backing member.

3,310,913
HYDRAULICALLY OPERATED HATCH COVER

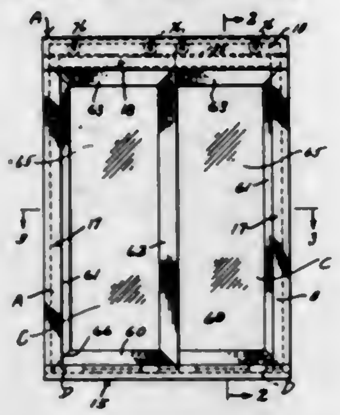
Philip Richter, Bethlehem, Pa., assignor to Fuller Company, a corporation of Delaware
Filed May 11, 1965, Ser. No. 454,788
7 Claims. (Cl. 49—340)



1. A cover assembly for a hatchway in the deck of a ship comprising a first member, a second member comprising a panel adapted to extend over said hatchway, said panel lying in substantially a horizontal plane when in closed position and in a substantially vertical plane when in open position, means pivotally mounting said panel for movement between such positions, hydraulic actuating means operatively connected to said first member and said panel to move the latter between said positions, a power source mounted on said panel to provide the fluid under pressure to said hydraulic actuating means, said power source comprising a plurality of elements including a pump, a motor driving said pump, a selector valve operatively connected between said pump and said hydraulic actuating means, and a fluid reservoir comprising a rigid casing having a removable top wall, said pump, said motor and said selector valve being directly secured to said casing, said pump being positioned in said casing and operatively connected to said motor, and means mounting said casing with respect to the undersurface of said panel to inhibit transmittal of vibration to said plurality of elements from said panel, said means comprising a vibration damper, said vibration damper mounting said casing beneath said panel, said top wall being spaced from the panel and having a filling port, a removable plug in said port, said panel having an opening aligned with the fluid reservoir to provide access thereto.

3,310,914
SHOWER ENCLOSURES

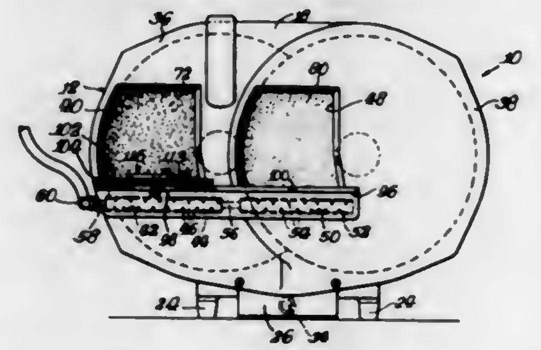
William F. De Klavon, Miami, Fla., assignor to Nash Aluminum Products Co., Inc., Hialeah, Fla., a corporation of Florida
Filed Jan. 7, 1965, Ser. No. 424,010
3 Claims. (Cl. 49—408)



1. In a sanitary closure assemblage for bathtubs and showers, a combination of a frame including a sill having an uninterrupted upper surface which slopes downwardly and inwardly, the outer margin of said sill having an upstanding water shield flange, jambs secured at the ends of the sill, a header secured at the upper ends of said jambs, doors suspended by said header, guide members mounted on the sill top surface at relatively spaced distances therealong, each guide member having a bottom wall and upwardly projecting outer and intermediate extensions to define slide passageways for receiving the lower margins of said doors, the bottom wall top surface of each guide member in each passageway being horizontally transversely positioned and which horizontal top surfaces all lie in the same plane, said guide member extensions at the facing surfaces thereof being bevelled so that the outer ends of said passageways are wider than the intermediate portions thereof, the top surfaces of said bottom walls of the guide members also sloping laterally in downward bevelled relation at each side of their horizontal surface, the bevels of the upward extensions defining passageways facilitating door entrance and exit and said bevels including the bevels of the bottom wall and the sloping surface of the sill permitting ready water drainage and easy access for cleaning purposes.

3,310,915
TRIMMER MACHINE

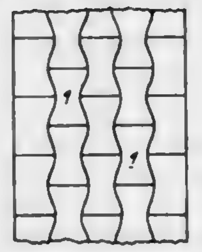
Bruno F. Wehmer, 740 Old Dobbin Road, Lexington, Ky. 40502
Filed Oct. 30, 1963, Ser. No. 320,086
9 Claims. (Cl. 51—128)



9. A dental trimmer machine comprising a pair of abrasive discs each supported by a hub member, said hub members being rotatable about parallel axes lying in a horizontal plane, said abrasive discs being axially spaced and arranged in overlapping relationship, drive means for effecting rotation of one of said hub members, power transmission means interconnecting said hub members for effecting conjoint rotation thereof, said abrasive discs having faces to which dental models may be presented for trimming, and said abrasive discs and said hub members and said power transmission means being enclosed within a housing having a front wall with two access openings therein through which dental models may be presented to said faces of said abrasive discs for trimming.

3,310,916
COMPOSITE ABRASIVE GRINDSTONES

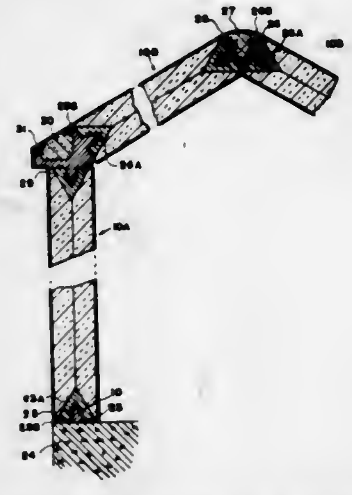
Guillermo Nussbaum-Christmann, Calle Paz 24, Caldas de Estrach, Barcelona, Spain
Filed Aug. 24, 1964, Ser. No. 391,421
Claims priority, application Spain, Apr. 11, 1964, 298,929
7 Claims. (Cl. 51—206.5)



1. A composite abrasive rotary grindstone of substantially cylindrical configuration, comprising a plurality of sectors together constituting a tubular outer shell of said grindstone having spaced axial ends and a grinding surface intermediate said ends, each of said sectors having a pair of spaced endfaces and a pair of sidefaces extending between said endfaces, and all such faces as are located inwardly of said axial ends of said shell being at an angle to a plane extending normal to the axis of rotation of said grindstone; and securing means securing said sectors against relative movement in axial and radial direction of said grindstone.

3,310,917
BUILDING CONSTRUCTION AND MODULAR PANELS THEREFOR

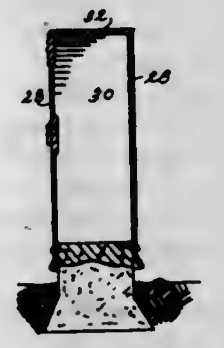
Sam A. Simon, 424 Glacierview Drive, Youngstown, Ohio 44509
Filed Apr. 13, 1964, Ser. No. 359,153
8 Claims. (Cl. 52—90)



1. A building structure formed of discrete panels each having a rigid peripheral frame, said frame having longitudinal grooves extending inwardly from the outer peripheral face thereof and said grooves being arrow-shaped in cross-section, an apertured metal sheet spanning the inner periphery of said frame intermediate the side faces of said frame and being rigidly secured to said frame, lightweight insulating structural material adhered to the opposite sides of said sheet within the confines of the frame and having outer surfaces spaced from said sheet at least as far as the outer edges of said frame, said outer surfaces being coated with a hard adherent layer of weatherproof plastic material, and means to secure said panels in proper positions in said building structure comprising elongated connecting members having integral ribs fitting tightly within said arrow-shaped grooves, said ribs being fitted with outwardly expanding splines whereby said ribs are securely locked within said arrow-shaped grooves.

3,310,918
PLASTIC CEMETERY MONUMENT

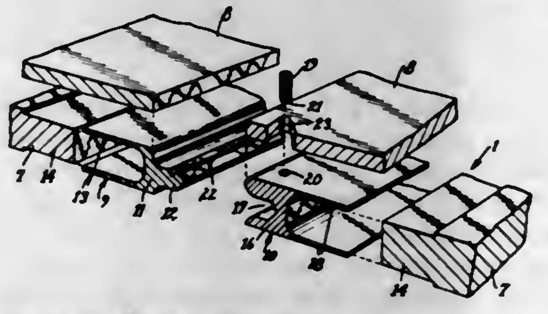
Ira P. Taylor, Jr., 112 E. 4th St., Owensboro, Ky. 42301
Filed Mar. 25, 1964, Ser. No. 354,665
2 Claims. (Cl. 52—103)



1. An elegiac monument comprising a substantially solid base member fixedly secured to a hollow body member having an open lower end and a closed upper end, said solid base member having a lower portion adaptable to be embeddable in soil and an upper portion fixedly engageable about its periphery within said lower open end of said hollow body member, said upper portion terminating adjacent said lower open end of said hollow body member, thereby being spacedly removed from said closed upper end of said body member comprising a unitary glass fiber reinforced synthetic resin form having two substantially parallel faces and two substantially parallel end walls, at least one of said parallel faces adaptable to receive indicia thereon in a predetermined area thereof, said face being thicker in cross-section at said predetermined area whereat said indicia is placed, said body member being thicker in cross-section about the periphery of said closed upper end and said lower end of said body member provided with a downwardly and outwardly extending skirt member adaptable to be spacedly removed from the surface of said soil.

3,310,919
PORTABLE FLOOR

Richard C. Bue and Julian Gutierrez, both of Minneapolis, Minn., assignors to Sico Incorporated, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 2, 1964, Ser. No. 401,120
6 Claims. (Cl. 52—127)



1. A portable floor comprising:

(a) a plurality of like flat panels each having top and bottom surfaces and an even numbered plurality of straight sides,

(b) said panels being arranged in contiguous rows, each row including a plurality of said panels in side-by-side engagement,

(c) each of said panels including male coupling elements projecting laterally outwardly of one-half of the number of sides thereof, and female coupling elements including laterally outwardly opening recesses in the remaining sides thereof for reception of male coupling elements of adjacent ones of said panels,

(d) said male coupling elements having outer edges disposed in laterally outwardly spaced relationship to the bottoms of their respective recesses when said panels are disposed in side-by-side engagement,

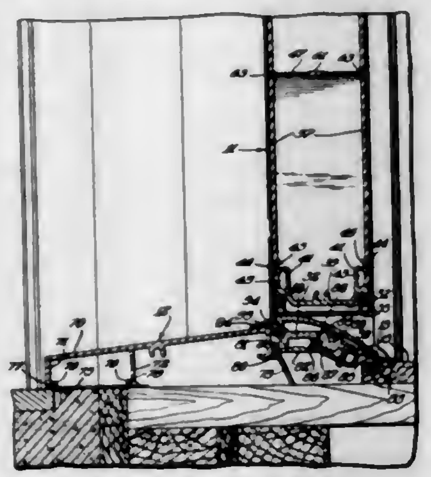
(e) each of said panels having screw threaded apertures in said female coupling elements, said apertures extending downwardly from the top surface of the panel to said recesses,

(f) and locking elements screw threaded in said apertures and having conical lower ends movable into and out of said recesses,

(g) said male coupling elements having surface portions disposed to have camming engagement with said conical ends, when said male coupling elements are disposed in said recesses, to draw adjacent sides of adjacent panels into snug side-by-side engagement responsive to downward movement of said locking elements.

3,310,920
DOOR PANEL ASSEMBLY

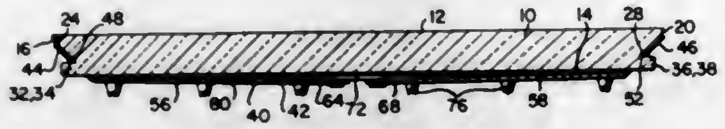
John Harold Bell and Everett E. Daniels, Litchfield, Ill., assignors to The Weather-Proof Company, Litchfield, Ill., a corporation of Ohio
Filed Jan. 18, 1965, Ser. No. 426,189
4 Claims. (Cl. 52—309)



1. In a closure panel particularly adapted for doors and the like, a rectangular frame comprising:
a pair of parallel stiles and parallel top and bottom rails connecting said stiles together,
said rails and stiles being generally channel-like in cross section and each having a web and parallel legs extending inwardly of said web,
said legs each having an outwardly opening recess on each side thereof, extending therealong and diverging from the outer to the inner end thereof as it extends inwardly of the associated leg,
a metal core bounded by said stiles and rails and comprising a plurality of connected metal core strips connected together intermediate their ends and having notched end portions engageable within the channel-like surfaces of said stiles and rails and having opposite edges flaring outwardly for the lengths thereof to form generally dove-tail interlocking extremities,
and plastic panels having mechanical interlocking engagement with said stiles, rails and outwardly flared dove-tail formations of said core strips by applying said plastic panels to said stiles, rails and core strips in semi-liquid states and mechanically retaining said panels to said stiles, rails and core strips by hardening of said panels upon cooling.

3,310,921
GLASS TILE SYSTEM

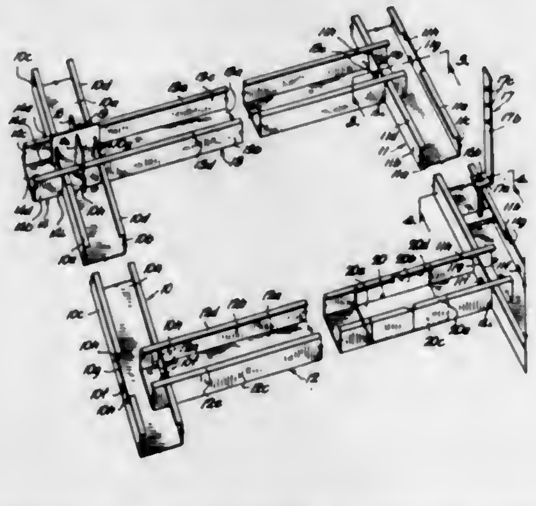
Agustin Perez Forcadell, 616 S. Electric Ave., Alhambra, Calif. 91803
Filed June 1, 1964, Ser. No. 371,268
11 Claims. (Cl. 52—391)



1. A glass tile system comprising:
a glass tile having front, rear, and edge surfaces, two of said edge surfaces being disposed along opposite parallel sides of said rear surface;
holding tab portions of said glass tile formed integrally therewith and extending outwardly from each of said two edge surfaces;
holding bracket means including a metal sheet portion juxtaposed contiguously over said rear surface of said glass tile and having edge portions affixed thereto substantially conforming to at least a portion of said two edge surfaces of said glass tile, said edge portions of said bracket means being formed to define openings therein receiving and holding said holding tab portions;
said holding bracket means being divided across said metal sheet portion along a line parallel to said edge portions;
tension supporting means securing the divided holding bracket means together in tile holding contact with said holding tab portions.

3,310,922
VISIBLE CEILING SUSPENSION SYSTEM

George A. Hoffmann, Jr., Kansas City, Mo., assignor, by mesne assignments, to Certain-Teed Products Corporation, Ardmore, Pa., a corporation of Maryland
Filed Apr. 13, 1964, Ser. No. 359,058
4 Claims. (Cl. 52—475)

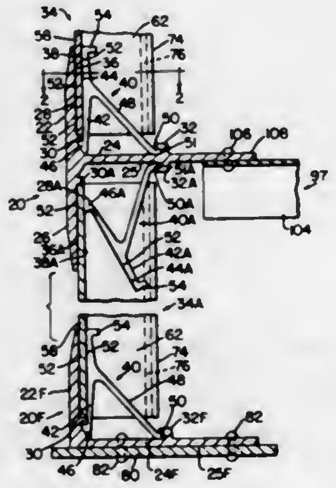


1. A structural unit for a suspended ceiling system comprising a pair of parallel horizontal main beam members,
said members each C-shaped in transverse section with a horizontal bottom wall and two vertical side walls connected thereto,
the upper edges of said side walls having inwardly oriented horizontal top flanges connected thereto,
a pair of parallel horizontal cross beam members normal to the main beams and laterally spaced from one another,
said cross beams in transverse section like the main beams, including bottom and side walls and top flanges,

a continuous slot in each cross beam adjacent each end thereof extending across the bottom wall and up a portion of the side walls,
the main beam side wall top flanges relieved at desired cross beam engagement zones with the main beam side walls thereat also vertically slotted downwardly from their top edges,
said cross beams each engaged with an adjacent side wall of each of said main beams by means of said slots to form a rectangular structural unit,
a rectangular ceiling tile received on the upper surfaces of adjacent horizontal flanges of said main and cross beams whereby tile side edges overlie the beam bottom walls between side walls,
and means mounted on upwardly facing portions of said beams engaging side edges of said tile aiding in fixing its position on said unit.

3,310,923
SNAP LOCK CONSTRUCTIONS

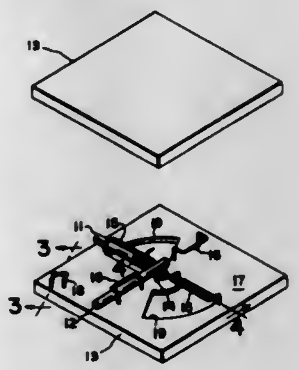
Ernst J. De Ridder, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Continuation of abandoned application Ser. No. 109,438, May 11, 1961. This application Feb. 4, 1966, Ser. No. 533,756
6 Claims. (Cl. 52—502)



1. In combination: a frame member having two angularly joined first and second frame flanges, said first frame flange having a partition receiving frame surface and a hook receiving ledge means adjacent said partition receiving frame surface, said hook receiving ledge means being substantially perpendicular to said first frame flange and parallel to said second frame flange while having a flat free end, said second frame flange having a fulcrum receiving ledge; a partition having one partition side adjacent said partition receiving frame surface and having the other partition side exposed for engagement by a locking member, said partition having an end engaging said ledge means and having said other partition side coplanar with said free end of said ledge means; and a locking member having a partition engaging plate with its engaging plate side engaging said other partition side and with a hook edge engaging and hooking said hook receiving ledge means, said locking member having a fulcrum edge engaging said fulcrum receiving ledge, said locking member to be forcibly deformed into locking engagement with said frame member and partition by first having its fulcrum edge engaging said fulcrum receiving ledge so as to fulcrum thereagainst in order to cause said hook edge to be forced into hooking engagement with said hook receiving ledge means and lock therewith while said plate compresses said partition against said partition receiving frame surface to lock said partition to said frame member, said hook edge having a cam surface for initially camming along said other partition side and onto said free end of said ledge means with a smooth transition therebetween whereby said hook edge can then hook with said ledge means after further fulcruming of said locking member.

3,310,924
PARTITION CONSTRUCTION WITH BLOCKS SUPPORTED BY A WIRE LATTICE

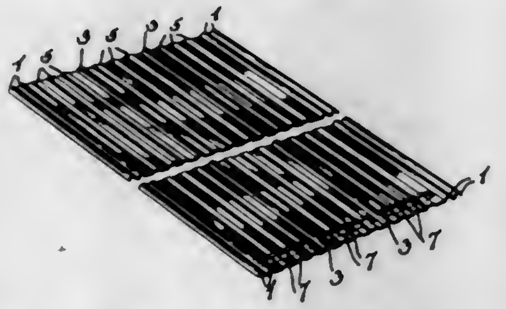
George V. Boynton, 910 Rockefeller Place., Sunnyvale, Calif. 94087
Filed Aug. 4, 1964, Ser. No. 387,278
7 Claims. (Cl. 52—565)



1. Apparatus for constructing walls and partitions which comprises a supporting structure formed by a first and a second group of parallel wire rods, said first and said second group of parallel wire rods lying in adjacent parallel plans and interconnected at right angles; blocks suitable for attachment to said supporting structure at one face of said blocks, said blocks each including a first pair of wire spring steel fasteners anchored in each of said blocks and protruding from said block face, said fasteners being in alignment adjoining one wire rod of the group in the plane closest said face, said fasteners being formed with a substantially right angle bend relative to that portion of said fastener anchored in said block, said right angle bend at sufficient height from said block face to clamp one of said rods of the group in the closest plane between said block face and said right angle bend, said blocks further including a second pair of wire steel spring fasteners anchored in each of said blocks and protruding from said block face, said second pair of fasteners being in alignment with one wire rod of the group in the plane furthest from said face and at right angles to said first pair of wire spring steel fasteners, said second pair of fasteners being formed with a substantially right angle bend relative to that portion of said fastener anchored in said block with said right angle bend at sufficient height from said block face to contain therebetween said one wire rod of said furthest group and a first pair of fasteners of a similar block attached on the opposite side of said supporting structure, each of said blocks further including a wire spring steel clip anchored therein and protruding therefrom, said clip being formed with a substantially right angle bend, said right angle of said clip at a height which will permit cooperative clamping with a similar clip attached to a similar block on the opposite side of said supporting structure, each of said blocks further defining a pair of depressions in said block face, said depressions located in said face of said block beneath said first pair of fasteners, each of said depressions having a depth sufficient to receive one of said second fasteners of a block attached to the opposite side of the structure and having a width sufficient to permit blocks on opposite sides of the supporting structure to be nested together and twisted into place.

3,310,925
CORRUGATED SHEET WITH MEANS ACCOMMODATING DIMENSION VARIATION

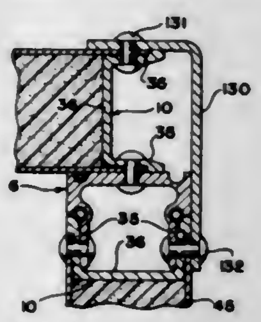
Leon Le Brun, Montreal, Quebec, Canada, assignor to Montreal Roofing Mfg. Co. Ltd., Montreal, Quebec, Canada
Filed Mar. 4, 1965, Ser. No. 437,080
Claims priority, application Canada, Sept. 12, 1964, 911,568, Patent 709,124
1 Claim. (Cl. 52—573)



A roofing or siding sheet comprising a body of sheet metal formed with a pair of arcuate sidelapping ribs extending fully along each of two parallel side edges of said body; two spaced intermediate arcuate ribs between said pairs of ribs, extending the full length of said body; a plurality of contiguous trapezoidal extension and contraction crimps extending the full length of said body parallel to and between, on the one hand, said sidelapping ribs and said intermediate ribs and, on the other hand, between said intermediate ribs, and stiffening cross ribs formed between said sidelapping and intermediate ribs and between said intermediate ribs, said stiffening cross ribs intersecting and extending over said crimps, the said cross ribs being triangular in cross-section and projecting on the same side of the sheet as the sidelapping and the intermediate ribs.

3,310,926
PANEL CONSTRUCTION

Franklin B. Brandreth, Akron, and Jimmy D. Moles, Tallmadge, Ohio, assignors, by mesne assignments, to Air Enterprises, Inc., Barberton, Ohio, a corporation of Ohio
Filed Apr. 8, 1964, Ser. No. 358,295
5 Claims. (Cl. 52—582)



1. In combination, a frame member with parallel flanges extending therefrom and a mullion with parallel extending flanges located within said flanges of the frame member, mechanical fastening means joining each flange of the frame member with a flange of the mullion and a gasket in sealing relation between each flange of the frame member and a flange of the mullion.

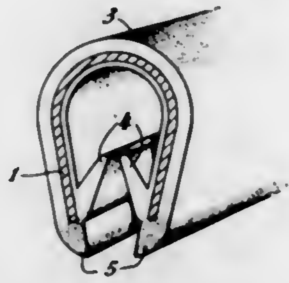
3,310,927
WINDOW CONSTRUCTION

Sven Eric Persson, Stow, Ohio
(Box 20034, Malmo 20, Sweden)
Filed July 31, 1964, Ser. No. 386,705
9 Claims. (Cl. 52—656)

1. A frame for a building opening formed of strips of sheet material, each strip forming one of the top, bottom, or side members of the frame, and comprising a body portion defining the inner peripheral surface of the frame and lying in a plane perpendicular to the plane of the frame, said body portion having a channel-like groove in said inner peripheral surface, and flanges at the opposite edges of the body portion extending from the frame in planes parallel to the plane of the frame, each strip having portions extending towards each other from the outwardly extending flanges and lying parallel to the body portion, said portions terminating short of each other to provide a slot and being reversely bent back on themselves perpendicularly and extending towards the body portion to provide spaced angled flanges bordering the slot, all of said flanges being integral with said body portion and being formed by bending and rebending said strip.

3,310,928
TRIMMING MEMBER

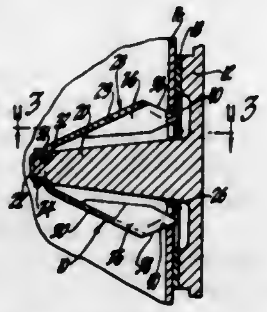
Erich Weimar, Viersen, Rhineland, Germany, assignor to Bright Manufacturing Company Limited, Warwickshire, England, a British company
Filed Dec. 1, 1964, Ser. No. 415,008
3 Claims. (Cl. 52—716)



1. A trimming member for frictionally engaging a supporting flange, comprising an elongated strip of thermoplastic material, an elongated resilient clip strip bonded in said first strip and encompassed thereby, said clip strip comprising a plurality of longitudinally spaced parallel ribs, a pair of spaced parallel connector ribs extending between adjacent pairs of parallel clip ribs, said thermoplastic strip and clip strip being bent along a line extending longitudinally thereof midway between said connector ribs so that the clip strip is substantially U-shaped in cross section, defining a plurality of pairs of opposed legs, said connector ribs being positioned substantially midway of the length of said legs, the portion of said thermoplastic strip on the interior of each of said legs having an inwardly and upwardly directed projection adjacent the free end of each leg.

3,310,929
MOLDING AND CLIP ASSEMBLY

Louis P. Garvey, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,152
4 Claims. (Cl. 52—717)



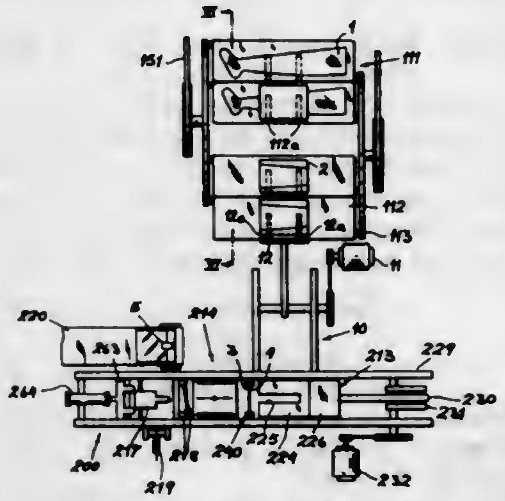
2. An assembly for fastening a molding strip to a panel capable of compensating for misalignment of the molding strip and the panel comprising:

a stud formed integrally with and extending from said molding strip through an opening in said panel, said opening in said panel being larger than said stud to allow said molding to vary in position relative to said panel, said stud having an end portion at a distance from said molding, the length of said stud being at least as great as the size of said opening in said panel;

and a U-shaped spring clip loosely retained on the said end portion of said stud and having clearance from the remainder of said stud so that it can pivot freely relative to said stud to compensate for misalignment between said molding strip and said panel, said spring clip including a pair of wing-shaped legs biased into said opening between said panel and said stud to secure said molding strip to said panel, and the end portion of said stud being upset to hold said spring clip on said stud and to force said molding strip against said panel.

3,310,930
PACKAGING MACHINE FOR STOCKINGS AND THE LIKE

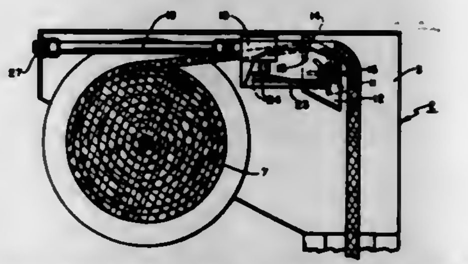
Christian Korch, Frankfurt am Main, Gerhard Manfred Wuesthoff, Eschborn, and Johannes Ziegs, Frankfurt am Main, Germany, assignors to Wüsthoff & Co. Industriebedarfs OHG., Frankfurt am Main, Germany, a German company
Filed Aug. 17, 1964, Ser. No. 390,780
Claims priority, application Germany, Aug. 16, 1963, W 35,095; Sept. 27, 1963, W 35,331
20 Claims. (Cl. 53—117)



1. A packaging machine for flexible flat articles, comprising an assembling unit, a wrapping unit and a transfer mechanism between said units, said assembling unit including first automatic means for forming a series of parcels from said articles and stiffening inserts therefor, said wrapping unit including second automatic means for folding a foil of flexible plastic material about a parcel delivered to said wrapping unit from said assembling unit by said transfer mechanism, sealing tthe lateral edges of the foil about said parcel to form an open-ended bag about said parcel, and discharging the resulting package.

3,310,931
AIR FILTER CONTROL APPARATUS FOR CONTROLLING MOVEMENT OF FILTER MEDIUM THROUGH A GAS-TREATING SECTION

Alan E. Revell, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed July 1, 1963, Ser. No. 291,724
4 Claims. (Cl. 55—354)



1. In a web advance control system for air filter apparatus wherein advance of a web of filter material in a filter housing from a supply zone through an air filtering zone to a rewind zone is effected by rewinding said material on a rewind spool driven by a motor in a power circuit including switch means cooperating with metering means responsive to movement of the filter material, an improved switch and metering arrangement comprising:

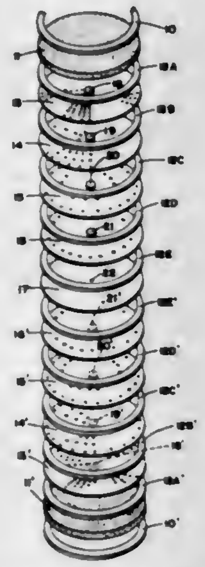
(a) a metering reel shaft means constructed and arranged in said filter housing for responding to the movement of said filter material and having a cam member positioned at one end thereof;
(b) a U-shaped bracket having a plunger-responsive switch mounted between the sides thereof;
(c) an actuator arm means pivotally mounted between the sides of said U-shaped bracket for cooperating with said plunger-responsive switch;
(d) open-end slot means in the sides of said U-shaped bracket extending to the edges thereof at one end thereof and adjacent an extremity of said actuator arm for positioning said bracket to engage said metering reel shaft and for spanning said cam with an extremity of said actuator arm immediately below said cam so that the pivot axis of said actuator arm is always at a fixed preselected distance from the rotational axis of said metering reel shaft to assure accurately sequenced actuation of said switch through said cam and said actuator arm; and
(e) means to position said bracket in a preselected position relative said filter housing after it has engaged said metering reel shaft, said means including a stop-pin member fixed to a side of said U-shaped bracket and a plate member fixed to said filter housing, said plate member having a slot therein positioned to receive said pin member.

3,310,932
GAS CHROMATOGRAPHIC COLUMNS

Frank W. Melpolder, Wallingford, Pa., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 14, 1964, Ser. No. 417,985
3 Claims. (Cl. 55—386)

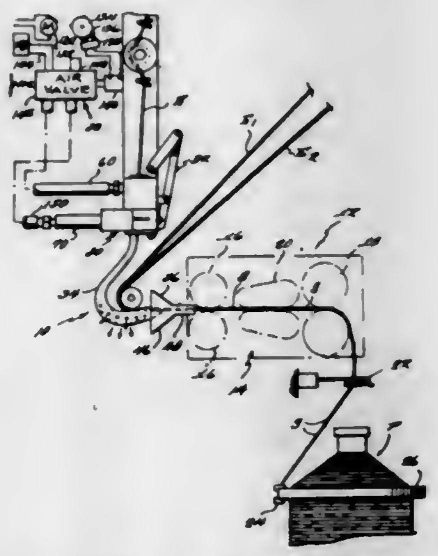
1. In a column for the chromatographic separation of a gas sample flowing through the column, the combination comprising a plurality of sections filled with packing material, each of said packing sections separated from

the one following by a disc-shaped gas collecting, mixing and distributing section, said latter section being free of said packing material and having a diameter approximating the inside diameter of the column with flat surfaces in planes perpendicular to the longitudinal axis of the column, said collecting, mixing and distributing section being adapted to receive gas from a preceding packed section, to mix and direct gas transversely across the column and to distribute gas substantially uniformly to a succeeding packed section, said collecting, mixing and distributing section comprising a central gas mixing plate provided with only one hole, said hole located at the center of said plate, at least one gas collecting plate upstream of said mixing plate and at least one gas distributing plate downstream of said mixing plate, each of said gas collecting plates and said gas distributing plates being provided with perforations located toward the outer periphery of said plates and offset from said hole in said gas mixing plate with no perforations located other than toward said outer periphery to provide non-axially aligned gaseous flow passages between said mixing plate and said adjacent gas collecting plate and between said mixing plate and said adjacent gas distributing plate.



3,310,933
METHOD AND APPARATUS FOR MAKING A DECORATIVE YARN WITH SLUBS THEREIN

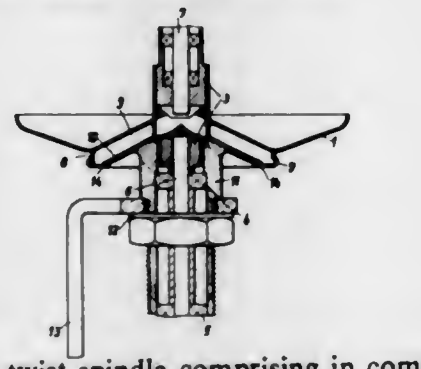
Raymond D. Joy, Clarksville, Va., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed June 18, 1965, Ser. No. 465,137
20 Claims. (Cl. 57—36)



10. In a slubbing apparatus for use with a frame having back rolls for spinning yarn, the improvement comprising: a trumpet guide having a flared inlet converging into a reduced outlet portion terminating adjacent the nip of said back rolls of the frame, said trumpet guide being arranged to receive at least two continuous ends converging toward each other and to direct the continuous ends in side by side generally contiguous relationship to the nip of the back rolls; and a slub dispensing tube having an inlet arranged to receive slubs and air for conveying the slubs therethrough and a slub discharge outlet positioned adjacent the flared inlet of said trumpet guide and between the converging continuous ends whereby slubs delivered from the slub discharge outlet of said tube are positioned between the continuous ends converging in the trumpet guide, the slubs being positioned with their length in a plane generally parallel to the direction of travel of and between the continuous ends passing through the trumpet guide.

3,310,934
DOUBLE TWIST SPINDLE

Gustav Franzen, Neersen, Germany, assignor, by mesne assignments, to Palitex Project-Company, G.m.b.H., Krefeld, Germany, a company of Germany
Filed July 8, 1964, Ser. No. 381,014
Claims priority, application Germany, July 13, 1963, N 23,460
9 Claims. (Cl. 57—58.84)



1. A double twist spindle comprising in combination a revolvable plate and a gathering disc carried by the said plate and having a radial outlet for the yarn, and comprising a bearing sleeve with a stationary head forming with the revolvable plate and disc a yarn passage, the upper surface of said head forming the bottom of the said yarn passage.

3,310,935
METHOD FOR PREPARING YARN FROM FIBERS

Otto B. Wurzburg, Whitehouse Station, and Herbert C. Olsen, Berkeley Heights, N.J., and John F. Fitzgerald, Scarsdale, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 2, 1963, Ser. No. 269,867
7 Claims. (Cl. 57—156)

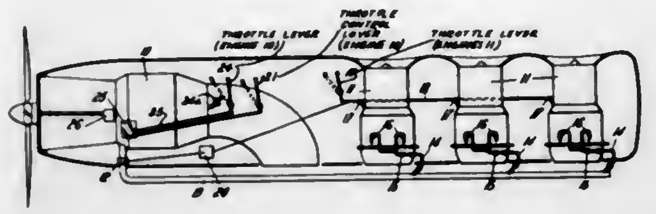
1. In a method for preparing yarn from fibers, the step which comprises adding to the fibers prior to the assembling of said fibers, by carding, into a continuous strand, a finely powdered, free flowing starch product, and thereafter subjecting the resulting strand to a spinning operation for producing the yarn from said strand.

3,310,936
POWER PLANTS

Alexander Stewart, Breadsall, and Kenneth Arnold Basford, Alvaston, England, assignors to Rolls-Royce Limited, Derby, England
Filed May 10, 1965, Ser. No. 454,595
Claims priority, application Great Britain, June 5, 1964, 23,528/64
2 Claims. (Cl. 60—39.14)

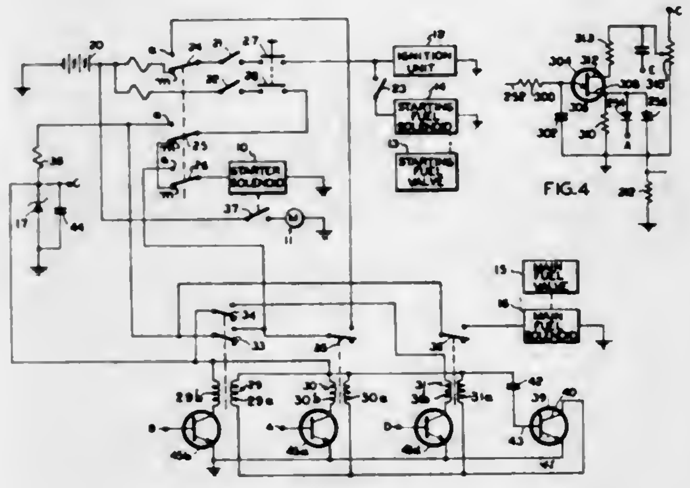
1. In a power plant for an aircraft having a forward propulsion propeller-turbine engine including an air compressor means and at least one vertical propulsion gas-turbine engine, including means responsive to compressed air for starting purposes, and duct means for conveying compressed air from the propeller-turbine engine to said vertical propulsion engine, the improvement comprising:

a throttle lever means connected to throttle means associated with said vertical propulsion engine and to a valve means in said duct means, said throttle lever means having a first position wherein said associated throttle means is partly opened and said duct is fully opened, whereby said vertical propulsion engine can be started by the compressed air flowing from the propeller-turbine engine and through said duct means, and wherein said throttle lever means further has a second position which opens further said associated throttle means while simultaneously closing said duct means.



3,310,937
AUTOMATIC STARTING CONTROL SYSTEM FOR GAS TURBINE ENGINES

Emile G. Smith, Bridgeport, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware
Filed Aug. 20, 1965, Ser. No. 481,373
21 Claims. (Cl. 60—39.14)



1. In a system for automatically controlling the starting of a gas turbine engine, said system having a plurality of accessories including a starter solenoid for controlling the energization of a starter motor for rotating the compressor shaft of the engine, a starting fuel solenoid actuated valve for controlling the flow of fuel into a combustion chamber, an ignition system for igniting said fuel in said combustion chamber, and a main fuel solenoid actuated valve for controlling the flow of fuel into said combustion chamber, a source of energization for said accessories, each of said accessories being in an initial energization state wherein said starter motor and ignition unit are de-energized and said valves are closed, the combination comprising:

switch means for selectively establishing connections between said source and said accessories whereby the state of energization of each of said accessories may be selectively changed;

first means controlling said switch means for establishing connections between said source and said accessories to change the energization state of each of said accessories to a second state, whereby said starter motor and ignition unit are energized and said valves are open;

means responsive to a first engine parameter for generating a first control voltage;

second means controlling said switch means, said second means being responsive to said first control voltage above a predetermined level, said level representing a successful start of said engine, for changing the energization states of said starting fuel solenoid, said ignition unit, and said starter solenoid to their respective initial energization states,

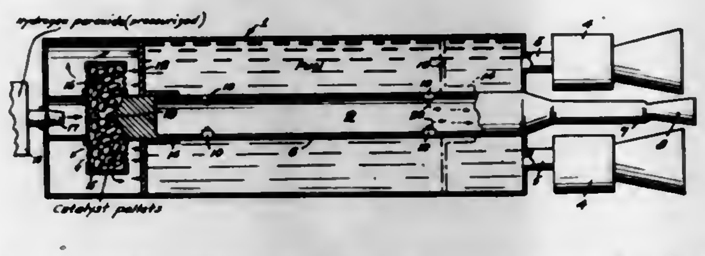
means responsive to a second engine parameter for generating a second control voltage;

third means controlling said switch means, said third means being responsive to said second control voltage above a predetermined level, said level representing an abnormal engine condition, for changing the energization state of said starting fuel solenoid, said main fuel solenoid, and said ignition unit to their respective initial energization states;

said third means including additional means, operative after a predetermined delay period following the change of energization state of said main fuel solenoid, for controlling said switch means to change the energization state of said starter solenoid to its initial state, whereby an attempted start is aborted.

3,310,938
ROCKET MOTOR FUEL FEED

Adolphus Samms, Box 3377, Yuma Proving Ground, Yuma, Ariz. 85364
Filed Oct. 7, 1964, Ser. No. 402,362
2 Claims. (Cl. 60—39.48)



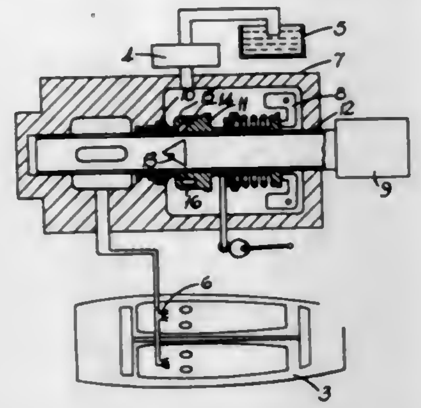
2. A rocket motor fuel feed including in combination, a rocket motor, a tank in fluid connection with said rocket motor, said tank having a fuel area and a compression area, a shaft axially secured in said tank, there being a passageway in said shaft and through its rearward end, a plate slidably mounted on said shaft and separating said fuel area from said compression area, a steam generator beyond said plate in said compression area whereby steam generated thereby will impinge on said plate to pressurize a fuel when in said fuel area and a series of relief valves in said shaft whereby excessive steam pressure in said tank will be relieved through said passageways.

3,310,939
VARIABLE FLOW METERING DEVICES

John Patrick Stewart Curran, Burnley, and Leslie Holliday, Blackburn, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Sept. 28, 1965, Ser. No. 490,956
5 Claims. (Cl. 60—39.28)

1. A variable flow metering device for fluids and comprising a fixed outer sleeve, an axially movable outer sleeve, and an inner tube in sliding engagement with the interiors of both the outer sleeves, the inner tube having at least one opening in its wall, said opening having

opposite edges diverging in an axial direction of the inner tube, one of the outer sleeves having a passageway inclined to the axial direction of the inner tube and sleeves, said one outer sleeve overlapping a portion of the other outer sleeve to determine the proportion of the passageway which is open for permitting flow of fluid therethrough.

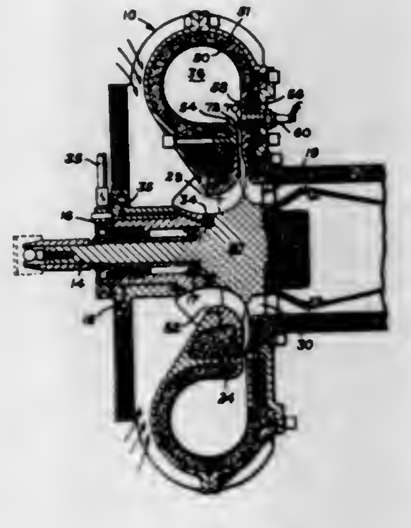


3,310,940
GAS TURBINES

Otto Oetliker, Essexville, Mich., assignor to The Stalker Corporation, Essexville, Mich., a corporation of Michigan

Filed Oct. 7, 1965, Ser. No. 493,855

10 Claims. (Cl. 60—39.36)



9. In combination in a gas turbine, a rotor mounted for rotation about an axis, said rotor comprising a hub and a plurality of radial blades spaced peripherally about said hub, alternate adjacent pairs of said blades extending radially inward to opposite sides of said hub defining peripherally alternate compressor flow and turbine flow passages, and a heating chamber means having a portion thereof disposed annularly about said rotor, said compressor upon rotation discharging air into said chamber, and means to heat said air providing a motive gas discharging therefrom into said turbine passages radially inward thereof in streams peripherally alternated with said radially outward flows from said compressor passages.

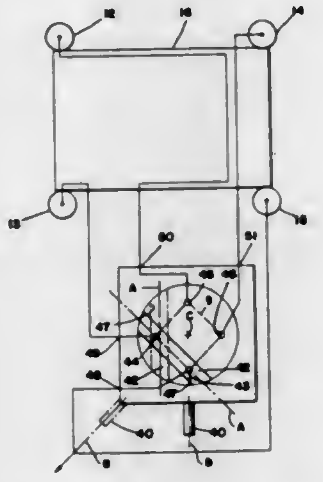
3,310,941
HYDRAULIC JACK MEANS

Frank S. Pearne, San Gabriel, Calif., assignor to Pearne and Lacey Machine Company, Inc., Los Angeles, Calif., a corporation of California

Filed July 15, 1964, Ser. No. 382,736

2 Claims. (Cl. 60—52)

1. A fluid pressure jack assembly for selectively supplying fluid to the cylinders of one or a plurality of jacks, comprising a pump cylinder, a piston reciprocally mounted in said cylinder, a block defining a fluid distributing chamber, fluid passage means connecting said pump cylinder and said fluid distributing chamber, a flow control valve in said passage means permitting fluid flow from said pump cylinder to said fluid distributing chamber, a plurality of fluid ports in said block communicating with said fluid distributing chamber, conduit means connecting each of said ports respectively to a corresponding one of the plurality of jack cylinders, a selector means in said chamber to selectively open and close said ports so that any one port or a predetermined plurality of ports may be opened while the remaining ports are closed, operating means including position indicating means for moving said selector means to selectively open and close said ports, said block and indicating means having design configurations such that their relative positions are determinable by the sense of touch, and said block being oriented relative to the location of the several jack cylinders so that the position of the indicating means relative to said block indicates the jack or plurality of jacks being supplied with fluid pressure.

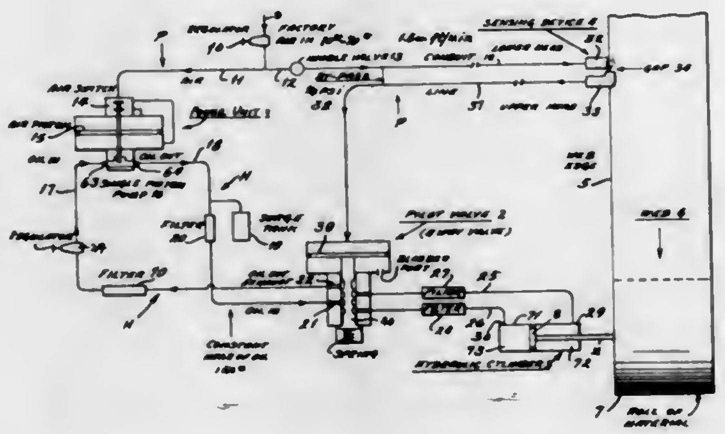


3,310,942
AIR PUMP DEVICE

William T. Stanford, Salem, Ill., assignor to Wood Newspaper Machinery Corporation, Plainfield, N.J., a corporation of Virginia

Filed July 26, 1965, Ser. No. 474,707

6 Claims. (Cl. 60—52)



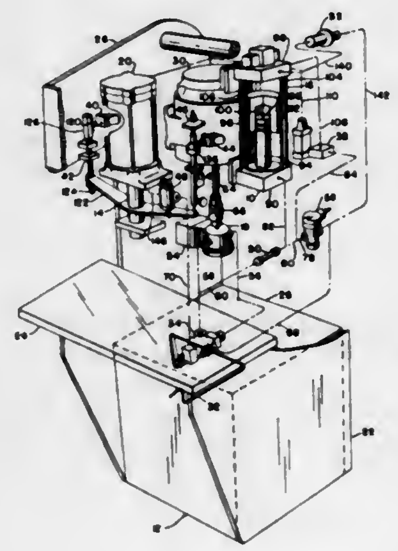
1. A system for moving a workpiece comprising a source of air, a conduit connecting said source of air to a sensing device for sensing the proper position of said workpiece, a pilot valve and operating means therefor, a line from said sensing device to said operating means of said pilot valve, a by-pass between said conduit and said line, said pilot valve and its operating means translating the signal from said sensing device into direction and magnitude of the movement of said workpiece, a hydraulic cylinder connected to said pilot valve for receiving oil to cause said workpiece to move, and a hydraulic power source for supplying oil under pressure to said pilot valve, the oil in said system being non-circulating and being pumped only when said workpiece is required to be moved by said hydraulic cylinder, said oil being pumped by pneumatic means.

3,310,943
HYDRAULIC TRANSFORMER

John R. Horetzke, Royal Oak, Mich., assignor to Grand Steel & Manufacturing Co., Clawson, Mich., a corporation of Michigan

Filed June 15, 1965, Ser. No. 463,993

16 Claims. (Cl. 60—54.5)



1. Hydraulic actuating apparatus for a hydraulic press including a press ram and a ram piston and ram cylinder for moving the press ram, said actuating apparatus comprising a source of hydraulic fluid, a pump connected to the source of hydraulic fluid, a motor connected to drive the pump to provide hydraulic fluid at the output thereof at a high pressure and low rate, a hydraulic transformer connected between the pump and ram cylinder operable to receive hydraulic fluid from the pump at the high pressure and low rate and to supply hydraulic fluid to the ram cylinder at a high rate and low pressure in response thereto, means responsive to the position of the ram for bypassing hydraulic fluid from the pump around the hydraulic transformer and directly to the ram cylinder and hydraulic means for returning the ram to a predetermined position including a piloted pump bypass valve and pilot valve means operable in response to the position of the press ram for actuating the piloted pump bypass valve to limit the return movement of the ram.

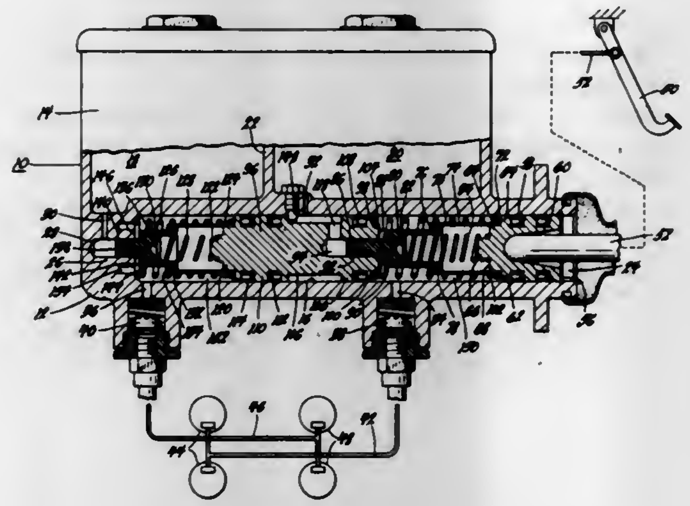
3,310,944
MASTER CYLINDER

Robert H. Bauman, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 3, 1965, Ser. No. 452,643

6 Claims. (Cl. 60—54.6)

2. A master cylinder having a pressure generator body with a bore formed therein,
first and second fluid pressurizing means and first and second normally open compensating valve means alternately positioned in axial alignment in said bore to provide tandem arranged first and second fluid pressurizing chambers, pressurized fluid outlets for each of said fluid pressurizing chambers,
first compressively yieldable force-transmitting means intermediate and mechanically interconnecting said first fluid pressurizing means and said first valve means, and second compressively yieldable force-transmitting means intermediate and mechanically interconnecting said second fluid pressurizing means and said second valve means, said first and second compressively yieldable force-transmitting means actuable upon respective pressurizing movements of said first and second fluid pressurizing means to exert forces on said first and second valve means to respectively close said valve means.

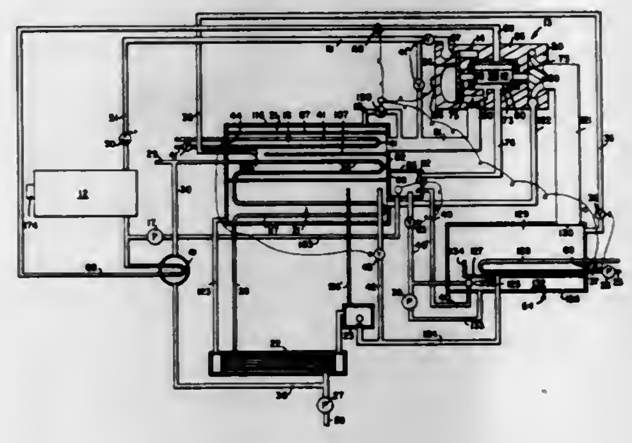


3,310,945
REFRIGERATION SYSTEM

Louis H. Leonard, Jr., Dewitt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Original application June 23, 1964, Ser. No. 377,313, now Patent No. 3,276,218, dated Oct. 4, 1966. Divided and this application May 24, 1965, Ser. No. 471,781

4 Claims. (Cl. 60—105)



1. A method of regulating the operation of a steam turbine comprising the steps of, supplying substantially constant pressure steam to the turbine for driving the turbine, confining the steam discharge from the turbine in a steam condenser, reducing the turbine power output below its maximum output by blanketing a condensing portion of the steam condenser with another fluid to suppress the condensing rate of the confined steam and raise the discharge pressure of the turbine, and regulating the turbine power output by selectively regulating throughout a range,

the quantity of the other fluid effective to blanket said condensing portion.

3,310,946
METHOD FOR MINIMIZING COMBUSTION INSTABILITY

Richard A. Dobbins, Providence, R.I., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Oct. 5, 1965, Ser. No. 493,276
2 Claims. (Cl. 60—219)

1. In a method for decreasing the combustion instability occurring during the burning of a propellant fuel within the combustion chamber of a rocket motor, which stability is due to the excitation of acoustic wave energy of a predominant frequency f within the combustion chamber, the step of

introducing into the combustion chamber refractory particulate material that is chemically inert, fully oxidized and that remains dimensionably stable during the burning process,

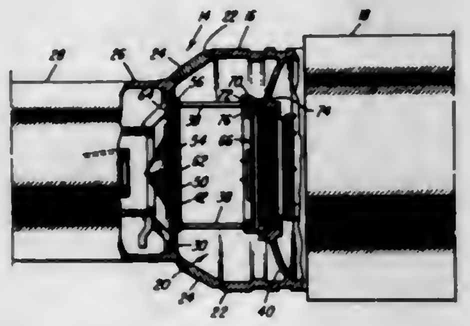
said material having an average diameter in centimeters equal to

$$\left(\frac{9}{\pi}\frac{\mu}{f\rho'}\right)^{\frac{1}{2}}$$

where μ (poise) is the dynamic viscosity of the gas in which the particles are suspended, ρ' (gms. per cm.^{3}) the density of the material of which the particles are composed, and f the frequency in cycles per second of the predominant acoustic wave energy which is excited within the combustion chamber.

3,310,947
SAFETY APPARATUS FOR TANDEM-CONNECTED ROCKETS

George F. Shryock, Cumberland, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 10, 1965, Ser. No. 513,062
6 Claims. (Cl. 60—225)



1. A safety device for preventing the complete ignition of tandem-connected rockets due to the accidental ignition of one rocket comprising

adapter means for connecting a pair of rockets in fore and aft tandem formation and having a plurality of vent ports therein;

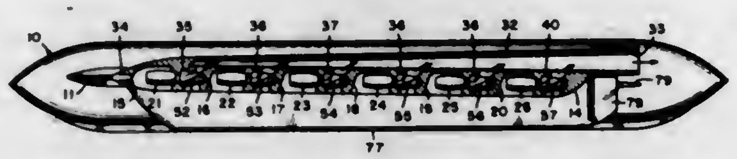
a deflector plate movable along a guided path within the adapter from a first to a second position;

said deflector plate in the first position being forward of the vent ports in the adapter, whereby the flames and gases occasioned by an accidental ignition of the aft rocket will be diverted through the vent ports and into the atmosphere; and

said deflector in the second position being aft of the vent ports, whereby the flames and gases occasioned by an accidental ignition of the forward rocket will be diverted through the vent ports into the atmosphere.

3,310,948
VARIABLE THRUST PROPULSION SYSTEM FOR AIRCRAFT

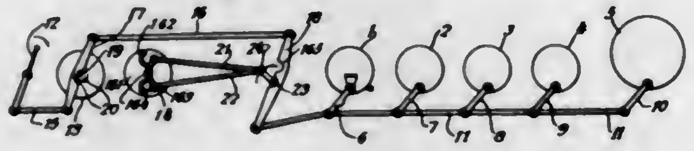
John F. Culp, Rte. 1, Box 163, Bell City, Mo. 63735
Filed Nov. 17, 1965, Ser. No. 508,239
11 Claims. (Cl. 60—229)



1. A variable thrust propulsion system for a jet-powered aircraft, comprising:
(a) an elongate power tube,
(b) a plurality of jet engine units mounted in the power tube and located in adjacent relation with their intakes orientated in one longitudinal direction and their exhausts orientated in the opposite longitudinal direction,
(c) an elongate thrust tube extending longitudinally adjacent to the power tube, the thrust tube having a discharge port directing efflux rearwardly, and
(d) control means selectively directing the efflux of the engine units from the power tube into the thrust tube for forward thrust or downwardly from the power tube for lift.

3,310,949
GROUP THRUST COMPENSATOR

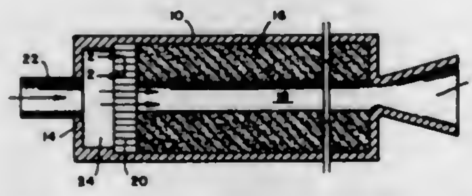
Stephen Pallis, Bluebell Hill, near Rochester, and John Rilett, Ickleton, England, assignors to Elliott Brothers (London) Limited, Lewisham, London, England
Filed June 1, 1964, Ser. No. 371,694
Claims priority, application Great Britain, June 7, 1963, 22,687/63
10 Claims. (Cl. 60—243)



1. A group thrust compensator comprising first means for automatically varying the engine throttle openings of a group of jet engines in response to disturbance of lift thrust caused by deterioration of operation of at least one engine, a manual throttle control and second means operated by said first means to provide magnification of a manual throttle displacement signal to at least one unaffected engine to compensate for deterioration of operation of another engine.

3,310,950
HYBRID INJECTOR

Donald R. Matthews, San Jose, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 29, 1965, Ser. No. 443,723
4 Claims. (Cl. 60—251)

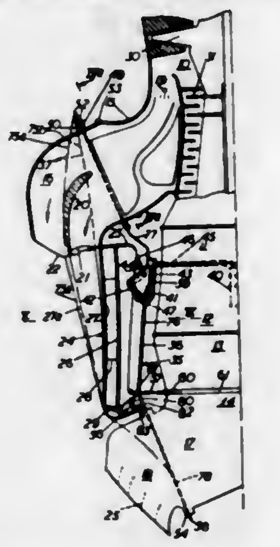


1. In a hybrid bi-propellant rocket motor of the type wherein one of the propellants is a solid cylindrical grain having a central port extending between opposite ends thereof and the other propellant is a liquid adapted to be

injected axially of the port, the improvements, in combination, comprising:
(a) A circular nozzle disk abutting the annular end surface at the front end of the grain having apertures extending therethrough, spaced throughout its entire area, a plurality of which communicate with said port at the commencement of combustion and the surrounding remainder are blocked from communication by the annular end surface of the grain, said remainder adapted to progressively communicate with the port as it enlarges in diameter as the annular surface reduces in area, whereby the number of apertures communicating with said port continuously increases substantially in proportion to the increase in the cross sectional area of said port,
(b) a space of constant size disposed adjacent said disk forming a manifold communicating with all of the apertures at all times during the combustion, and
(c) means for delivering the liquid propellant to said manifold for axial flow of the liquid through the apertures as they are progressively unblocked by the decreasing annular end surface of the grain.

3,310,951
JET PROPULSION ENGINES FOR AIRCRAFT

Francis Charles Ivor Marchant, Bristol, England, assignor to Bristol Siddeley Engines Limited, Bristol, England, a British company
Filed July 19, 1965, Ser. No. 473,054
Claims priority, application Great Britain, July 21, 1964, 29,449/64
3 Claims. (Cl. 60—271)

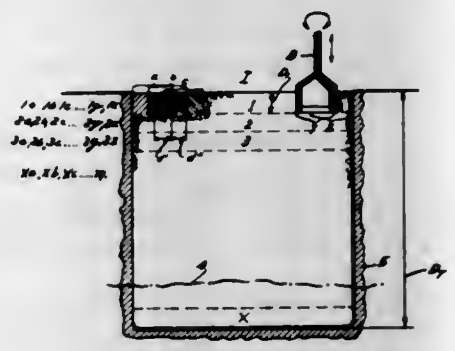


1. A jet propulsion engine for aircraft comprising a duct projecting from a side of the engine, a propulsion nozzle connected to receive gas from the duct, a support member extending rearward from the duct, means securing the support member to the duct, means linking the rear end of the support member to the side of the engine in rear of the duct, a movable ramp arranged to guide the flow of gas rearward from the nozzle and carrying an obturator which masks the nozzle outlet to an extent determined by the position of the ramp, means pivotally mounting the ramp on the support member, and mechanism, mounted on the support member, for moving the ramp.

3,310,952
METHOD FOR THE CONSTRUCTION OF A WALL IN THE GROUND

Christian Veder, Milan, Italy, assignor to I.C.O.S., Impresa di Costruzioni Opere Specializzate, Milan, Italy
Filed Mar. 7, 1957, Ser. No. 644,556
8 Claims. (Cl. 61—35)

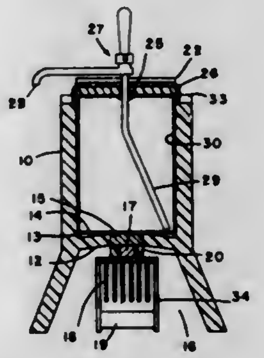
1. A method of making a horizontally elongated vertical wall excavation comprising the steps of excavating substantially vertically a bore hole until a desired initial depth has been achieved, making a series of similar overlapping bore holes extending horizontally to form an initial zone of predetermined depth, simultaneously, as the excavating proceeds, circulating therein a thixotropic fluid in order to cause consolidation of the vertical walls



upon penetration of the thixotropic fluid therethrough, thereafter repeating the excavation to a greater depth in order to form a second zone while maintaining the excavation full of thixotropic fluid, and repeating the steps until the final depth has been reached.

3,310,953
PORTABLE REFRIGERATOR FOR BEVERAGE CONTAINERS AND THE LIKE

Joseph M. Rait, 95 Huxley Drive,
Snyder, N.Y. 14226
Filed Oct. 23, 1965, Ser. No. 503,098
6 Claims. (Cl. 62—3)



1. A portable electric refrigerator for a beverage container and the like comprising:
(a) a molded compartmented casing having substantially rigid walls of low thermal conductivity for housing and thermally insulating said refrigerator,
(b) an upper compartment of said casing open at the top for receiving said container, having walls generally conforming to the shape of said container and holding it with a close fit, said walls having means in their upper edge for accommodating a dispenser,
(c) a transverse wall compartmenting said casing and forming the floor of said upper compartment, said floor having its outermost perimeter lower than the central portion,
(d) a thermally conductive metal plate mounted in said transverse wall being of sufficient thickness to support said container without buckling and having an upper surface corresponding in size to a substantial portion of the bottom of said container, said lower outermost perimeter of said floor adapting bottom of said container to rest firmly on said plate,
(e) a thermoelectric refrigerating unit comprising a thermoelectric module attached to said metal plate, a heat sink adapted to absorb heat from said module, and means for providing the module with direct current of low voltage,
(f) blower means for dissipating the heat from said heat sink,

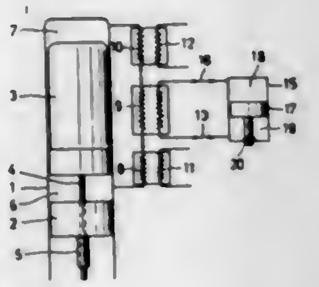
(g) a lower compartment enclosing both said refrigerating unit and blower means, being vented by a protected opening in its side wall for dissipating the heat from said heat sink and having a roof formed by said transverse wall, the lower face of said plate forming a substantial part of said roof,

(h) a cover for the top of said container having groove and hole means cooperating with said wall means to accommodate dispensing means for the contents of said container.

3,310,954
ARRANGEMENT FOR CONVERTING MECHANICAL ENERGY INTO CALORIC ENERGY OR CONVERSELY

Sytse Sijtstra, Drachten, and Jan Dirk Mello, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 2, 1965, Ser. No. 484,643
Claims priority, application Netherlands, Sept. 11, 1964, 64/10576
10 Claims. (Cl. 62—6)



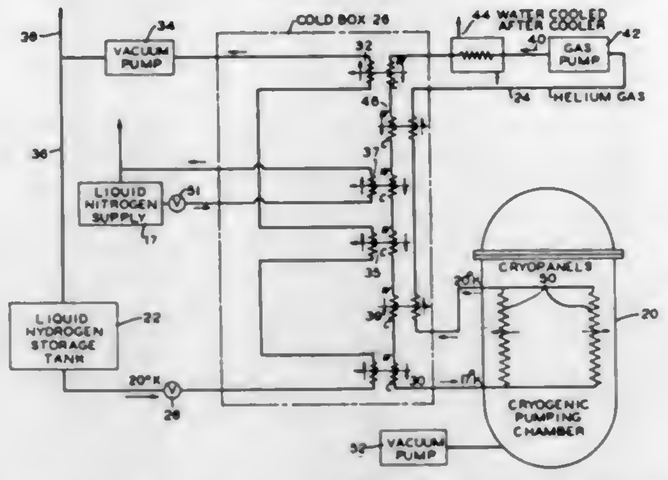
1. An apparatus for converting mechanical energy into caloric energy or vice versa comprising at least one space having a variable volume at a comparatively high mean temperature during operation of said apparatus, at least another space having a variable volume at a comparatively low mean temperature during operation of said apparatus being connected to said one space, the connection between the said spaces including at least one heat exchanger through which a working medium can flow in both directions on its way from one space to the other to give off heat during flow in one direction and to absorb heat during flow in the other direction, said heat exchanger being a recuperator and comprising at least two sets of ducts, one set of ducts having the working medium flowing therethrough, the other set of ducts for another medium which is adapted to traverse said other set of ducts alternately in opposite directions, and means for reversing the direction of flow of the other medium at least substantially at the same time with the reversal of the direction of the flow of said working medium.

3,310,955
LIQUID HYDROGEN REFRIGERATION

George K. Sneden, Jr., Spotswood, Irwin Rowe, North Plainfield, and Jorgen Holm, Tenafly, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 12, 1965, Ser. No. 447,143
3 Claims. (Cl. 62—45)

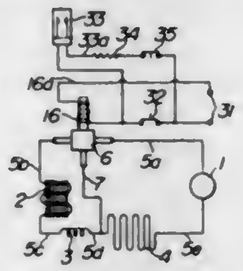
1. The method of supplying refrigeration in the temperature range below 77° K. which comprises the steps of evaporating liquid hydrogen in a heat exchanger assembly remote from a location of a utilization device in which the said refrigeration is to be utilized, circulating gaseous helium in a closed circuit extending between the location of said assembly and the location of said utilization device by impressing thereon an operating pressure, said operating pressure remaining substantially constant throughout the circuit, transferring refrigeration from said evaporating hydrogen to said helium gas by means of said heat exchanger assembly, said closed circuit thereby transporting refrigerated helium gas to the location of the utilization device and returning warmed helium gas to the location of the heat exchanger assembly.



3,310,956
DEFROSTING DEVICE FOR REFRIGERATION UNIT

Juichi Honda, 482–2 Tomita, Ohiracho, Schimotsuga-gun, Tochigi-ken, Japan

Filed May 21, 1965, Ser. No. 457,712
8 Claims. (Cl. 62—196)



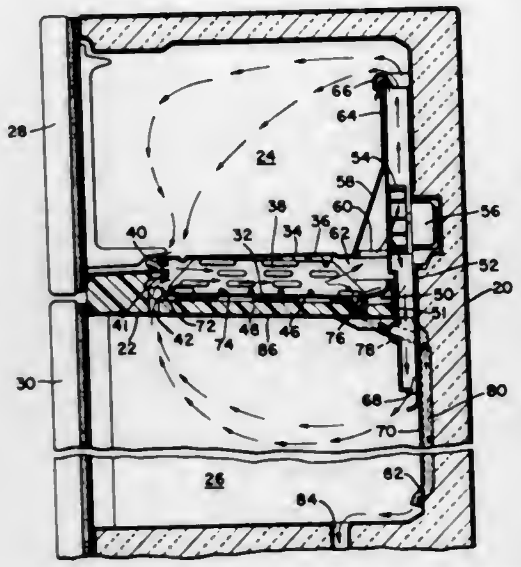
1. A defrosting device in combination with a refrigerating unit including a compressor, condenser, capillary tube and evaporator in fluid communication, comprising bimetal switch means operatively closed in response to the temperature of the evaporator of the refrigerating unit, a solenoid valve assembly connected with said compressor, a bypass conduit connected at one end thereof to said solenoid valve assembly and at the other end thereof to the upstream side of the evaporator; said solenoid valve assembly including a solenoid coil associated with said bimetal switch means, an armature arranged in said solenoid coil and reciprocably moved by said solenoid coil, a needle element carried by said armature for operatively opening and closing said bypass conduit, said solenoid valve assembly being designed to produce when said bimetal switch means is closed a magnetic force with an intensity insufficient to actuate said armature and sufficient to hold the armature in an actuated position; and switch means associated with said solenoid coil and independently rendering said solenoid coil operable to produce an additional magnetic force sufficient to actuate the armature in said solenoid coil.

3,310,957
KEEPING INSULATION DRY

Orson V. Saunders, Dayton, and Louis D. Benasutti, Fairborn, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 14, 1966, Ser. No. 527,222
8 Claims. (Cl. 62—273)

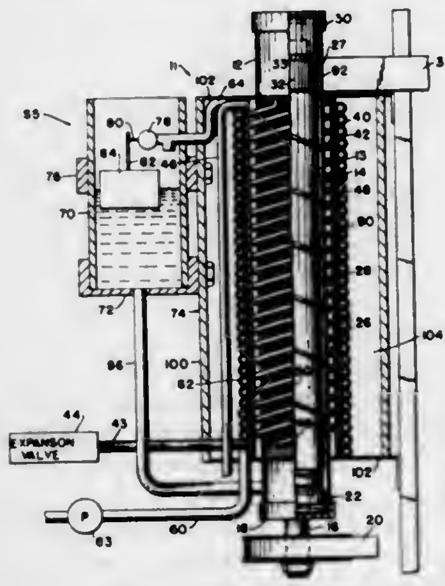
1. A refrigerator including insulating means enclosing a compartment to be cooled, means forming a duct communicating with said compartment, said duct having a bottom wall surface, a refrigerant evaporating means located in said duct, a drain pan within said duct beneath said evaporating means spaced above the bottom wall surface of said duct to provide an air circulating space between said pan and bottom wall surface, fan means for circulating air from said compartment through said duct into heat transfer with said evaporating means and returning the air to said compartment, and means for directing a portion of said circulating air through said air circulating space beneath said drain pan.



3,310,958
SALT WATER ICE MAKING MACHINE

Leonard A. Stiller, Fort Lauderdale, Fla., assignor to Lasco Industries, Inc., Fort Lauderdale, Fla., a corporation of Florida

Filed Jan. 10, 1966, Ser. No. 519,741
6 Claims. (Cl. 62—348)

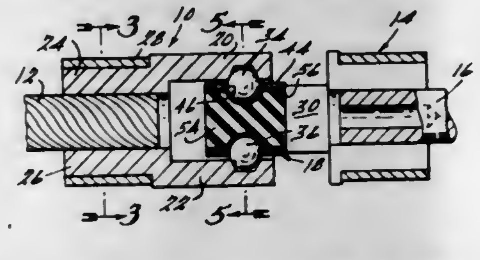


1. An ice making machine comprising a cylinder defining therein a cylindrical freezing chamber, means for introducing water into said chamber, refrigerating means extending about said cylinder throughout a substantial axial extent of the latter for chilling said chamber to form ice on the wall thereof, said water introducing means including a helical water pre-cooling tube encircling said refrigerating means throughout at least a portion of its length, said refrigerating means including an outer cylinder surrounding said first-mentioned cylinder in coaxial radially spaced relation, an inlet for introducing a coolant into the space between said cylinders and an outlet spaced axially from said inlet for the discharge of coolant from said space, said pre-cooling tube encircling said outer cylinder, a pre-cooled water reservoir, an outlet from said pre-cooling tube leading to said reservoir, an outlet from said reservoir leading into said chamber, an ice outlet from said chamber, auger means in said chamber for removing ice from said chamber wall and discharging the same through said ice outlet, and circumferentially extending fins on the outer surface of said first-mentioned cylinder to enhance the heat transfer characteristics thereof.

3,310,959
UNIVERSAL JOINT

William L. Sheppard, Romulus, Mich., assignor of one-half to Edwin J. Lukas, Dearborn, Mich.

Filed Mar. 29, 1965, Ser. No. 443,573
18 Claims. (Cl. 64—17)

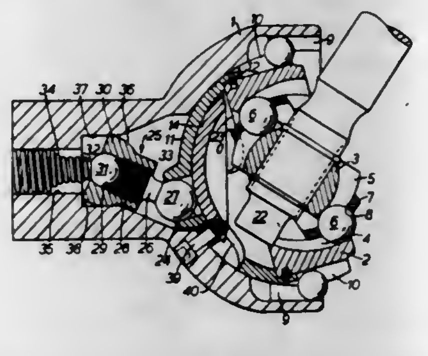


1. A universal joint comprising a pair of torque transmitting members, two pairs of torque transmitting elements associated in torque transmitting relation with individual ones of said torque transmitting members, a cage having two pairs of diametrically opposed sockets, each socket accepting one of said torque transmitting elements, and resilient means within said cage for continuously exerting a force in a direction tending to move each of said torque transmitting elements in a direction towards its individual torque transmitting member.

3,310,960
UNIVERSAL JOINTS

William Cull, Hest Bank, near Lancaster, England, assignor to Birfield Engineering Limited, London, England

Filed Oct. 2, 1964, Ser. No. 401,181
Claims priority, application Great Britain, Oct. 3, 1963, 38,905/63
8 Claims. (Cl. 64—21)



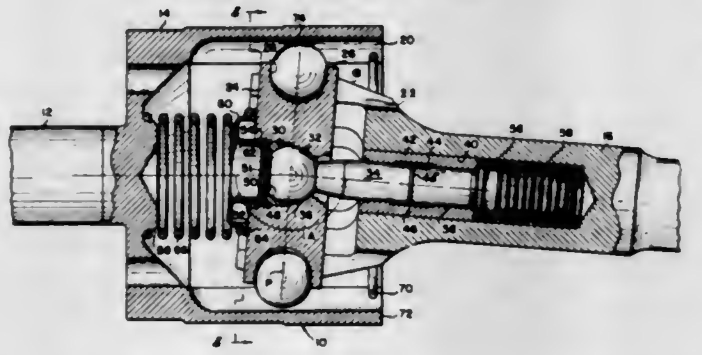
1. A torque-transmitting joint comprising a bell-shaped outer joint member with an internal part-spherical surface formed with ball tracks, an intermediate joint member with internal and external part-spherical surfaces each of which is formed with ball tracks, an inner joint member with an external part-spherical surface formed with ball tracks, said joint members being arranged concentrically for relative articulation one within the other, a series of torque-transmitting balls engaging the ball tracks of the outer member and the external ball tracks of the intermediate member to provide an outer component universal joint, a further series of torque-transmitting balls engaging the ball tracks of the inner member and the internal ball tracks of the intermediate member to provide another component universal joint, a part-spherical shell member attached to the inner side of the intermediate member remote from the open bell mouth of the outer joint member, a part-spherical cup member fixed in the outer joint member within the shell member, the shell member having a part-spherical inner surface

which slides on an outer part-spherical surface of the cup member, and a spring-loaded member mounted in the outer joint member on the inner side of the shell member, the spring-loaded member engaging the shell member to urge the latter to a central non-articulated position within the outer joint member whereby to restrain the outer component universal joint from articulation until the inner component universal joint has articulated to its maximum angle.

3,310,961
CONSTANT VELOCITY UNIVERSAL JOINT

Theodore F. Ristau, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 27, 1965, Ser. No. 483,284
8 Claims. (Cl. 64—21)

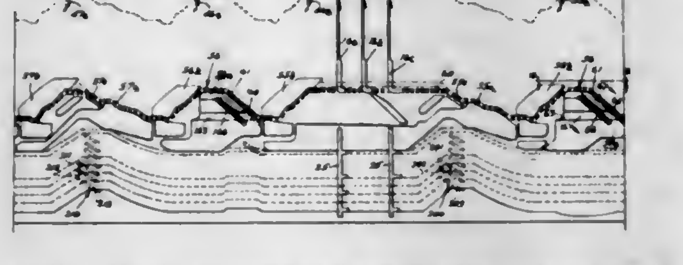


1. In a universal joint an outer member connected to a first shaft and having a plurality of longitudinal inner flutes, an inner member connected to a second shaft and having a plurality of longitudinal outer flutes, an intermediate member disposed within said outer member and receiving said inner member, a plurality of rotatable members received within said flutes and said intermediate member, a ball stud member having the ball portion thereof retained within said intermediate member, a guide bushing having an annular slot and being disposed within said inner member and snugly slidably receiving the stud portion of said ball stud member, a stop ring on said stud portion being disposed within said annular slot to limit axial movement of said ball stud with respect to said guide bushing, a first spring within said inner member biasing said stud and said intermediate member to a neutral position, a second spring engaging said outer member and biasing said intermediate member against the force of said first spring, and a stop member secured to said outer member limiting relative axial movement between said inner and outer members.

3,310,962
CIRCULAR KNITTING MACHINE

Peter A. Mahler and Samuel R. Martin, both of High Point, N.C., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed May 6, 1964, Ser. No. 365,288
4 Claims. (Cl. 66—42)

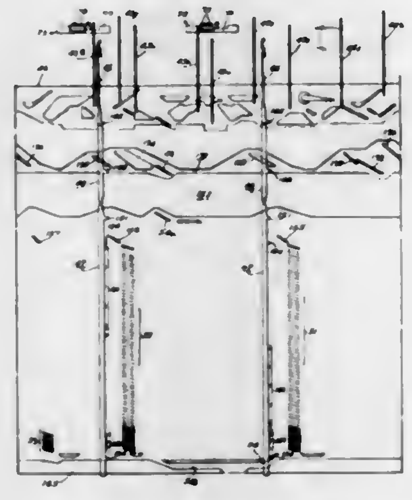


1. For a circular knitting machine comprising an axially slotted needle cylinder mounting a plurality of radially butted needles therein, a cam box circumscribing said cylinder and positioned to engage the butts of the needles, and means to cause relative movement between said cam box and said cylinder thereby effecting axial movement of said needles to at least one of three levels: stitch clearing, tuck and stitch draw; a riser cam in said box having a body portion and a needle rising surface for engagement with the butts of said needles, said needle rising surface being of sufficient length to raise said needles to at least a clearing height, said rising surface having a gap below the tuck level, and a needle butt groove extending from said gap through said body portion, said gap and needle butt groove having an axial height at least equal to the axial height of the needle butts, a radially-movable first slide cam dimensioned and normally positioned to bridge said gap so as to provide in conjunction with said rising surface a smooth, uninterrupted needle rising surface, a second radially-movable slide cam having a needle camming surface and positioned substantially parallel to said first slide and intersecting said needle butt groove, said second slide having a length along its cam surface sufficient to raise needles to a tuck level.

3,310,963
KNITTING SYSTEM FOR CIRCULAR KNITTING MACHINES

Peter A. Mahler and Kerwin R. Boyer, High Point, N.C., assignors to The Singer Company, New York., N.Y., a corporation of New York

Filed Apr. 27, 1964, Ser. No. 363,025
11 Claims. (Cl. 66—50)

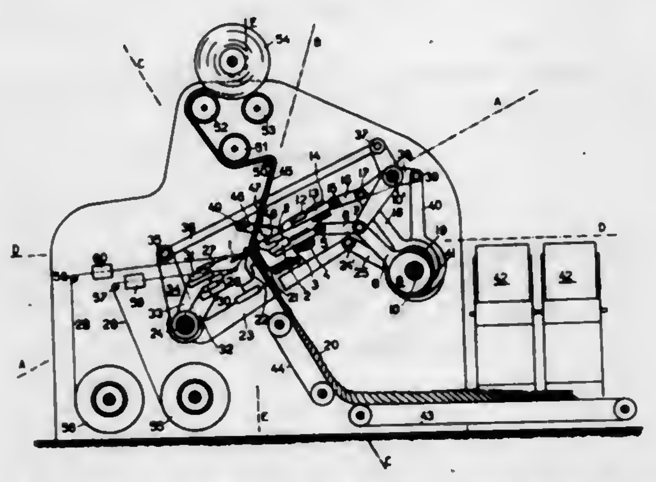


1. A knitting system for a circular knitting machine having a needle cylinder with needles, lifter jacks, and selector jacks mounted therein for independent elevation therein, a cam system surrounding said cylinder for engaging the butts of said needles, lifter jacks, and selector jacks, and means to rotate said cylinder relative to said cam system, said cam system including a needle cam box having cams operable on the needle butts, a lifter cam track operable on the butts of said lifter jacks, and an array of radially displaceable selector slides operable on pattern butts of the selector jacks, said selector slides and selector jack pattern butts being disposed at a plurality of levels, each selector slide, when displaced into the path of the butts, operable to engage under the butt at the corresponding level on any selector jack and to elevate the selector jack from its normal position, a predetermined distance to an intermediate position, said selector jacks having a drive butt thereon, and a fixed drive cam disposed out of the path of the drive butts on the jacks in the normal position and in the path of the drive butts on the jacks in the intermediate position, said drive cam operable to engage under said intermediately positioned drive butts and elevate the selector jacks from said intermediate position to an elevated position, said elevation of the selector jack elevating the associated lifter jack from a normal position to an intermediate position, the lifter cam track including a lift cam disposed out of the path of the butts of the lifter jacks in the normal position and in the path of the butts of the lifter jacks in the intermediate position, said lifter cam operable to engage under said intermediately positioned lifter jack butts and elevate the lifter jacks to an elevated position, said elevation of the lifter jack operable to lift the associated needle to a selected position in said needle cam box.

3,310,964
QUILTING AND KNITTING MACHINE

Erwín Peschl, Alois Rataj and Antonín Danhel, Brno, and Josef Zmatlík and Jaromír Sedlecky, Prague, Czechoslovakia, assignors to Vyskumny Ustav Bavlnarsky, Ustinnad Orlici, Czechoslovakia

Continuation of application Ser. No. 166,577, Jan. 16, 1962. This application Mar. 8, 1966, Ser. No. 540,133
Claims priority, application Czechoslovakia, Nov. 28, 1961, 7,031/61
21 Claims. (Cl. 66—85)



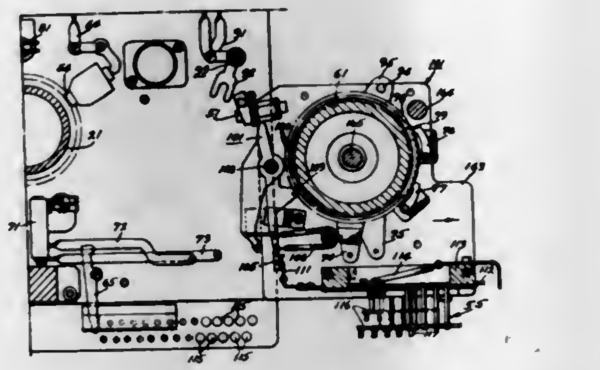
1. A quilting and knitting machine, comprising, in combination, a set of needles including movable latches and having downwardly directed needle points, and being located in a first oblique plane defining angles smaller than 90° with vertical and horizontal planes extending upwardly and rearwardly from the region of said needle points; guide means for guiding a sheet past said needles and extending in a second oblique plane transverse to said first oblique plane and intersecting the same in the region of said needle points, said guide means being adapted to be penetrated by said needles; feeding means for moving the sheet along said guide means and past said needles; and operating means for reciprocating said needles and said latches in said first oblique plane so that said needles pierce the sheet for quilting the same.

3,310,965
REMOVABLE PATTERNING ASSEMBLY

Peter A. Mahler and William A. Gunkel, High Point, N.C., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 27, 1964, Ser. No. 363,023
6 Claims. (Cl. 66—156)

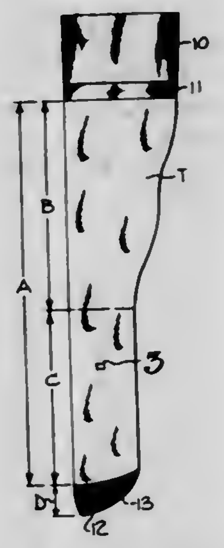
1. A circular knitting machine for knitting a patterned fabric comprising a frame mounting a rotatable needle cylinder therein, knitting instrumentalities including axially slidable needles mounted on said cylinder, pattern control mechanism selectively indexed in timed relation relative to the rotation of the needle cylinder to control the sequential operation of said knitting instrumentalities, a pattern selector assembly comprising a pair of spaced bed plates mounting a pattern selector drum therebetween, said pattern selector drum operable to select needles for patterning the fabric knit thereon, a control mechanism mounted on said assembly between said bed plates, said pattern selector drum having a plurality of patterns stored thereon, a group of slides arranged in sets, each set separately operable by said control mechanism and corresponding to the patterns stored on said drum, quick-break coupling means connecting said assembly to said frame and another quick-break coupling means interconnecting said control mechanism and said pattern control mechanism, whereby disconnecting said quick-break coupling means facilitates easy removal of said assembly and subsequent remounting of said assembly without retiming said drum to said cylinder.



3,310,966
LADIES' STRETCH TUBE STOCKING

Clyde A. Berry, Valdese, N.C., assignor to Pilot Research Corporation, Valdese, N.C., a corporation of North Carolina

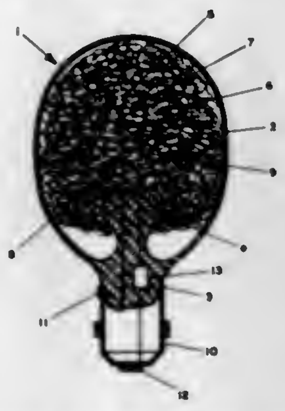
Filed Mar. 2, 1966, Ser. No. 531,248
6 Claims. (Cl. 66—178)



1. A ladies' boarded sheer seamless stretch tube stocking adapted to fit a wide range of foot and leg sizes, said stocking comprising an open upper end having a welt formed thereon, a closed lower toe end, and a heelless tubular portion therebetween, said tubular portion including an alternating pattern of courses of thermoplastic monofilament yarns having sufficient torque in opposite directions to cause the stitch loops to distort and incline in directions corresponding to the torque in the yarns and to impart substantial stretchability to the fabric of the tubular portion, at least that lower portion of said tubular portion adapted to fit the foot, heel and ankle being heelless and of substantially the same width throughout, and the stitch loops of said lower portion being heat-set in uniformly distorted condition to provide a substantially high degree of uniform stretchability to the fabric throughout said lower portion.

3,310,967
PHOTOGRAPHIC FLASH BULB

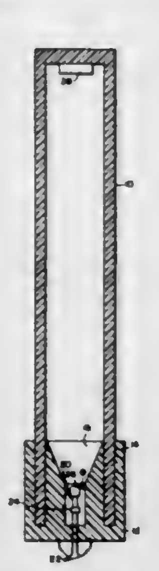
John B. Toomey, Jr., and William F. Frizzell, Alexandria, Va., assignors to Value Engineering Company, Alexandria, Va., a corporation of Virginia
Filed Mar. 4, 1965, Ser. No. 437,215
4 Claims. (Cl. 67—31)



1. A photo flash bulb adapted to be ignited electrically and comprising a glass envelope capable of transmitting light and having a molded glass base portion, a substance within said envelope adapted to be ignited electrically and burned to radiate actinic light, means within said envelope for igniting said substance, a base enclosing said base portion of the envelope and having a pair of spaced electrically insulated contacts thereon, a first lead electrically connecting said igniting means and one of said contacts, and an electrochemical source of energy imbedded in said base portion capable of supplying a quantity of electrical energy sufficient for igniting once said substance and electrically connected between said igniting means and the other of said contacts whereby closing a circuit across said contacts will enable said electrochemical source to ignite the photo flash bulb.

3,310,968
PHOTOFLASH LAMP

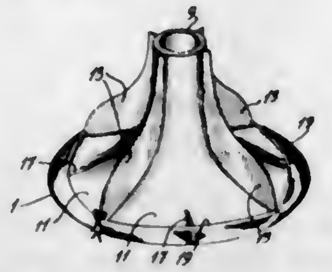
Bruce T. Buzalski, Caldwell, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 27, 1965, Ser. No. 516,652
9 Claims. (Cl. 67—31)



1. A photoflash lamp comprising:
(a) a radiation transmitting sealed plastic envelope having a flash producing material disposed therewithin;
(b) a preformed plastic base having a central cavity portion and a filament mount including a primer charge mounted in the central cavity of said base;
(c) said base including a deep annular slot adapted to receive one end of said plastic envelope; and
(d) means for sealing said one end of said plastic envelope within said deep annular slot.

3,310,969
LINT COLLECTOR FOR WASHING MACHINES

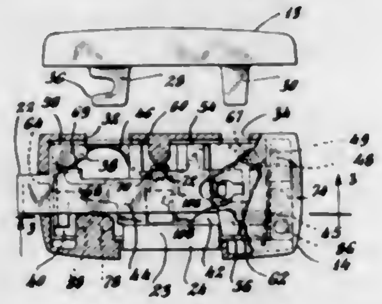
John Charles Vrana, 175 Bienville, Longueuil, Quebec, Canada
Filed Apr. 14, 1965, Ser. No. 447,988
8 Claims. (Cl. 68—18)



1. A lint collector for the lower circular edge of a bell-shaped washing machine agitator, comprising:
(a) an elongated strip of fabric having spaced edges and woven to arrest lint during passage of wash water therethrough; said strip formed as an annulus to fit over said circular edge;
(b) tightening means along the elongated parallel edges of said strip to tighten said strip above and below said circular edge to retain it against said agitator, and
(c) spacer means mounted at spaced intervals along the elongated parallel edges.

3,310,970
LUGGAGE LOCKS

John B. Humphries, Stamford, Conn., assignor to The Excelsior Hardware Company, Stamford, Conn.
Filed Oct. 30, 1964, Ser. No. 407,825
16 Claims. (Cl. 70—70)

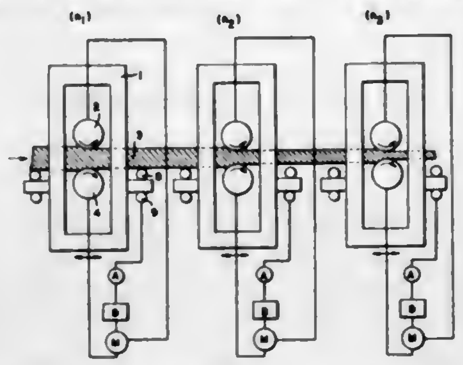


1. A luggage lock comprising, in combination:
(A) a first push bar, spring biased to move along a first substantially linear path;
(B) a second push bar, spring biased to move along a second substantially linear path,
  (a) said first and second paths lying in substantially parallel planes;
(C) interlocking means on said first and second push bars causing them to interlock to establish two interlocking stable positions for said push bars;
(D) a bolt mounted on one of said push bars; and
(E) manually accessible means on each of said push bars for moving same against its bias from one stable position to the other.

3,310,971
APPARATUS FOR CONTINUOUS STEEL ROLLING AND HAVING MOVABLE ROLL STANDS

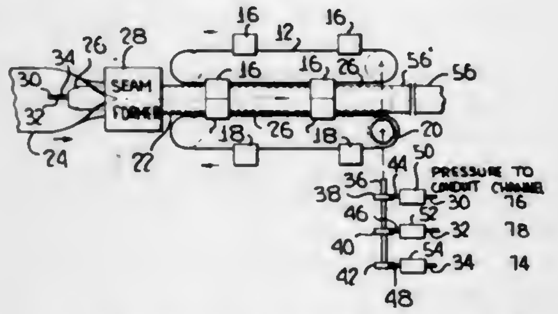
Noriyasu Motomatsu and Tamotsu Ichikawa, Kitakyushu, Fukuoka, and Katsuyoshi Tanaka, Kasuya-gun, Fukuoka, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Dec. 2, 1963, Ser. No. 327,429
Claims priority, application Japan, Dec. 7, 1962, 37/55,533
3 Claims. (Cl. 72—21)

1. A rolling apparatus comprising a rolling mill in a rolling mill line for rolling material, means movably supporting said rolling mill for free longitudinal movement along the mill line, the movement of said rolling mill along the mill line being caused by the tensile or compressive force produced in the material being rolled during operation of the rolling mill, driving means coupled to the rolls of said rolling mill, and detecting means coupled to said driving means and detecting the distance which the rolling mill moves in response to the force in the material being rolled and controlling the speed of the rolls in a manner for reducing the force in the material.



3,310,972
MOVING HYDRAULIC IMPULSE METAL FORMING DEVICE

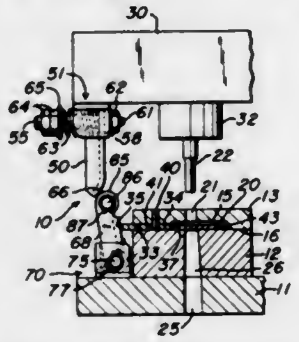
Paul M. Erlandson, Palos Park, and Donald J. Roth, Chicago Heights, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 10, 1964, Ser. No. 410,833
32 Claims. (Cl. 72—55)



1. A container forming device comprising means for advancing tubular container material, means for forming material positioned about the material and advanceable with said means for advancing, and means positioned within the material and advanceable therewith for forming the material by causing an engagement of the container material with said means for forming material.

3,310,973
STOCK PUSHER

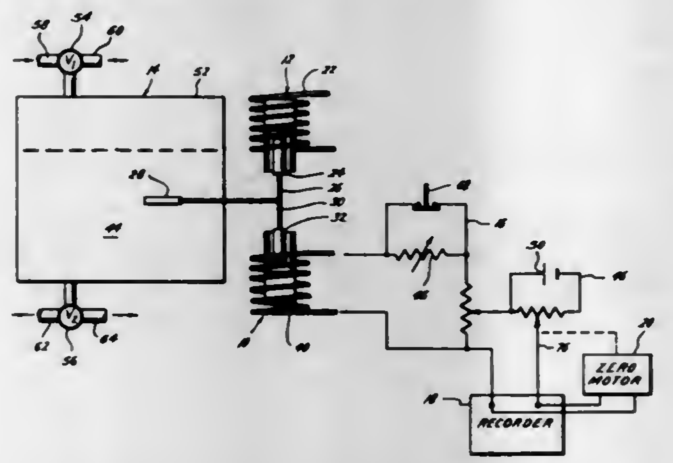
Arthur F. Leis, % A. F. Leis Co., Inc., 611 Ewing St., Dayton, Ohio 45404
Filed Mar. 3, 1965, Ser. No. 436,796
10 Claims. (Cl. 72—420)



1. A stock pusher of the character described adapted to be mounted on a metal forming press which includes stationary and movable die shoes, the stationary die shoe including a reference surface against which the metal stock is urged by a pusher plate for proper alignment in the die shoes, said stock pusher comprising a first arm member mounted on said stationary die shoe and having a contact surface for engaging the pusher plate to urge the metal stock toward the reference surface, said first arm member having a pivot connection on said stationary die shoe for pivotal movement about an axis spaced below the pusher plate so that said contact surface engages the pusher plate generally perpendicular to the plane of said pusher plate, a spring biasing said first member away from engagement with the pusher plate, a second arm member mounted on said movable die shoe for engaging said first member to move the said first arm member against the bias of said spring into engagement with the pusher plate, and spring means on said second arm member which allows said second member to apply only a preset force to said first arm member and the pusher plate to urge the metal against the reference surface.

3,310,974
APPARATUS FOR CALIBRATING A MEASURING APPARATUS

William B. Banks, Houston, Tex., assignor to Automation Products, Inc., Houston, Tex., a corporation of Texas
Filed Nov. 27, 1964, Ser. No. 414,176
5 Claims. (Cl. 73—1)



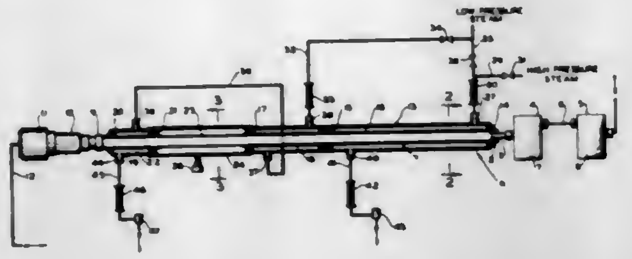
1. In an apparatus for calibrating a measuring apparatus which normally measures a particular characteristic of a first fluid by measuring the same characteristic of a known reference fluid which has a value outside the range being measured comprising,
timer means for periodically calibrating said apparatus,
valve means actuated by said timer means to periodically flow said reference fluid to said measuring apparatus,
an attenuating circuit actuated by said timer means to modify the output signal from said measuring apparatus to cause the measurement of the reference fluid to fall within the range of values being measured.

3,310,975
CONSTANT VOLUME CONVERSION METER

Don E. Carter, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware
Filed Oct. 24, 1963, Ser. No. 318,647
14 Claims. (Cl. 73—19)

1. The method of measuring the amount of a solid in admixture with a gas which is maintained above its critical temperature to prevent condensation thereof, said method comprising trapping a sample of said mixture and maintaining said sample in a constant volume media, causing a temperature change across the sample while maintaining the gas in the mixture above its critical temperature, measuring the pressure change resulting from

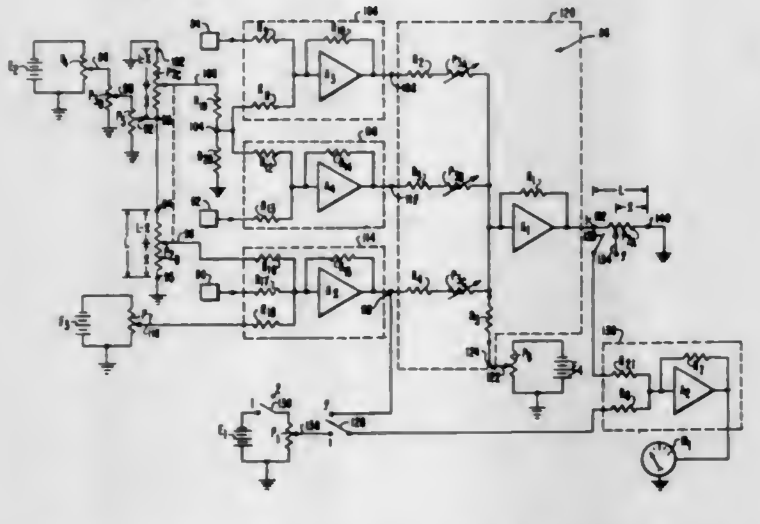
the temperature change, and correlating the pressure change for the given temperature differential with a percentage of one of the components of the sample from standard equation of state data.



8. A device for quantitatively measuring the degree of monomer to polymer conversion in a polymer producing system, wherein a charge containing the monomer and polymer is drawn from the effluent of the polymer producing system and the monomer is a non-ideal gas, said device comprising a tubular sampling chamber having inlet and outlet ports, valve means on said inlet and outlet ports, three axially spaced heating devices surrounding said sampling chamber, one of said heating devices being operable at a first temperature, the other two heating devices being operable at a second temperature which is appreciably different from said first temperature, and pressure sensitive means interposed between the two heating devices operable at said second temperature and being operatively mounted on said chamber for indicating the pressure within the chamber at various temperatures thereof.

3,310,976
AIRCRAFT WEIGHT AND CENTER OF GRAVITY APPARATUS

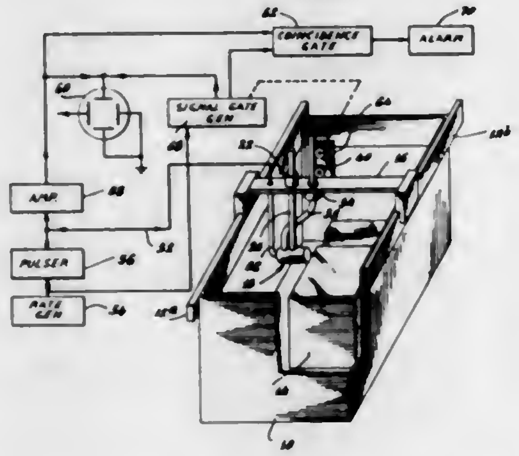
Bertram Bussell, 1533 Midvale Ave., Los Angeles, Calif. 90024, and Jack A. Elfenbein, 2601 Summit Ridge Road, Beverly Hills, Calif. 90210
Filed Oct. 17, 1963, Ser. No. 317,025
25 Claims. (Cl. 73—65)



25. A combined weight and center of gravity indicator for an airplane having port and starboard landing gears and a third landing gear in longitudinally spaced relation to a line connecting said port and starboard landing gears, comprising a computing circuit, said computing circuit designed to indicate the weight of the airplane and its center of gravity when voltages proportional to the weight carried by each landing gear are fed into the circuit, said circuit having a transducer associated with each landing gear for causing a voltage related to the weight carried by each landing gear, said circuit having first means for converting the average lift on the airplane caused by wind blowing over its aerodynamic surface into an electrical potential, said circuit having second means for obtaining electrical potentials proportional to the effect of said lift on each landing gear, the voltage generated by each transducer added to the electrical potential proportional to the lift on each associated landing gear for providing a corrected voltage more nearly proportional to the weight carried by each landing gear, said corrected voltage for each landing gear introduced into the circuit whereby the weight and center of gravity of the airplane can be determined by the computing circuit.

3,310,977
ULTRASONIC INSPECTION APPARATUS USING VARIABLE FOCUS AND GATE

William C. McGaughey, New Fairfield, Conn., assignor to Automatic Industries, Inc., El Segundo, Calif., a corporation of California
Filed Apr. 7, 1964, Ser. No. 357,960
12 Claims. (Cl. 73—67.9)

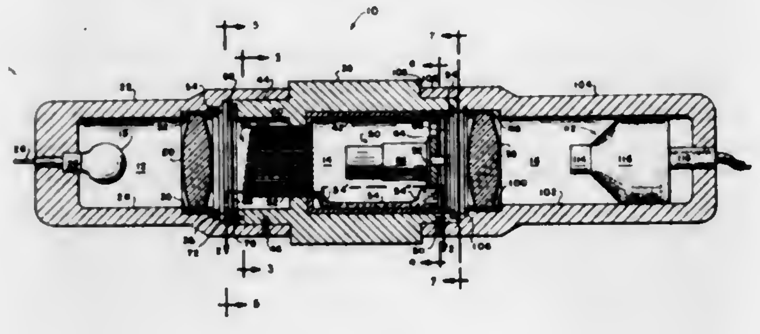


1. Ultrasonic inspection apparatus including the com bination of
a variable focus ultrasonic search unit,
focusing means connected to said search unit and effective to vary the focus of said search unit,
amplifier means coupled to the search unit and effective to receive and amplify electrical signals produced by said search unit,
gating means coupled to the amplifier means and effective to pass said electrical signals occurring during a gating interval and to reject said electrical signals occurring outside the gating interval, said gating means being coupled to the focusing means and responsive to the variations of the focus of said ultrasonic search unit to synchronize the gating interval with the focus of the ultrasonic search unit, to pass electrical signals corresponding to ultrasonic signals emanating from the focus of said search unit, and
utilization means connected to receive a selectively passed electrical signal and produce a physical response therefrom.

3,310,978
FIBER OPTIC VIBRATION TRANSDUCER AND ANALYZER

Alonza J. Davis, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 21, 1964, Ser. No. 405,630
17 Claims. (Cl. 73—70.2)

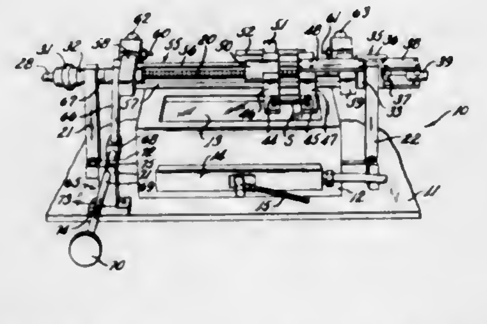
1. A fiber optic vibration responsive instrument for detecting vibration within a predetermined frequency band, comprising:
(a) support means;
(b) a plurality of illumination conducting vibratory elements mounted through said support means and suspended in a cantilever manner from at least the first surface thereof,
each of said vibratory elements being adapted to resonate at a different frequency within said predetermined frequency band;
(c) illuminating means mounted adjacent the free end of the cantilevered portion of said vibratory elements;
(d) masking means positioned between said illuminating means and said free ends of said vibratory elements,
said masking means being adapted to shield said free ends from said illuminating means when said vibratory elements are at rest;
(e) illumination sensing means operatively associated with the other ends of said vibratory elements for sensing and producing an output signal when illumination is transmitted therethrough from said free ends thereby giving an indication as to when said vibratory elements are being subjected to a vibration of the frequency to be detected and are thus vibrating; and



(f) commutator means operably associated with said illumination sensing means for selectively coupling the illumination transmitted by the various ones of said vibratory elements to said illumination sensing means whereby information as to the condition of individual ones of said vibratory elements is obtainable in the coded output signal from said instrument.

3,310,979
TENSILE TEST APPARATUS

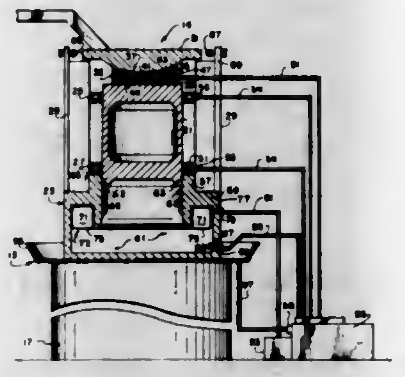
George L. Hall, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Oct. 31, 1963, Ser. No. 320,361
5 Claims. (Cl. 73—95)



1. Apparatus to determine properties of test samples, comprising, a tank, a bath of molten liquid in said tank, a rotatable shaft (**20**) having a screw threaded medial portion mounted above said tank and bath, a first arm (**46**) mounted on the threaded portion of said shaft, a second arm (**47**) mounted in relatively fixed axial relation to one end portion of said shaft, a carriage assembly (**55**) to rotate said arms and a test sample carried between said arms into said bath, and drive means (**25**) to rotate said shaft and move said first arm away from said second arm to elongate to rupture a test sample immersed in said bath.

3,310,980
HYDRAULIC SUPPORT FOR DYNAMIC TESTING

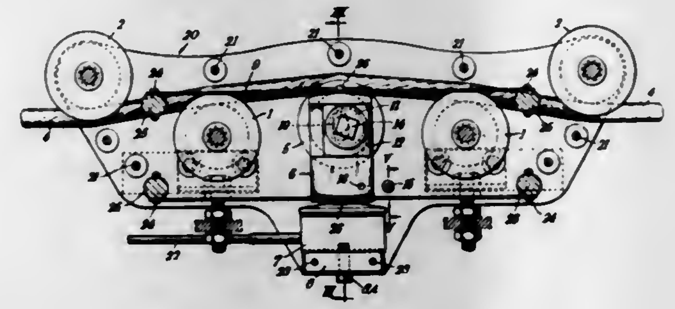
George Landwehr von Pragenau, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed June 24, 1964, Ser. No. 377,780
3 Claims. (Cl. 73—116)



1. A hydraulic support, comprising:
(a) a housing having an upper cylinder ring and a bottom portion defining an oil compression chamber;
(b) a piston telescoped within said cylinder ring so as to form a capillary seal area between their two contiguous surfaces, said seal area having sufficient clearance between the piston and the cylinder ring to allow oil to leak therethrough with a high flow resistance;
(c) means for producing a continuous flow of oil into said oil compression chamber so that the oil will build up pressure beneath the piston and leak through the capillary seal area;
(d) air chamber means within said compression chamber which allows the total volume of the oil and air within the compression chamber to change rapidly in response to oscillatory loads on the piston.

3,310,981
DYNAMOMETERS

Brian George Nixon, Kew Gardens, Surrey, and Roy Cooper Preston, Kingston-upon-Thames, Surrey, England, assignors to Weighload Limited, Kingston-upon-Thames, Surrey, England, a British company
Filed Oct. 8, 1964, Ser. No. 402,414
Claims priority, application Great Britain, Oct. 16, 1963, 40,904/63
5 Claims. (Cl. 73—144)



1. A dynamometer for measuring the tension in a rope or the like, comprising a framework, a pair of spaced outer guides mounted on the framework and serving to engage the rope at one side, a pair of spaced inner guides which are mounted on the framework and which project into the gap between the outer guides and serve to engage the rope at the other side, a sensing member which is situated between the inner guides and which is effec-

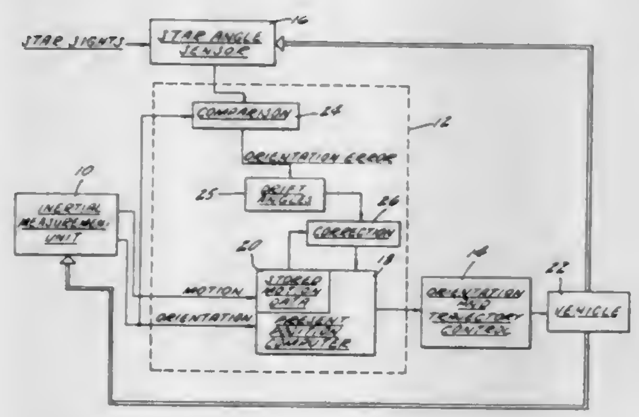
tive to bear against the rope at the same side as the inner guides and to sense the tension in the rope, a support for the sensing member, two pairs of thin parallel metal strips connected at their ends to the framework and connected intermediately of their length to the support, said strips permitting the support to move in response to the tension in the rope in a direction perpendicular to the run of the rope and restraining the support from movement in relation to the support in all other directions, means for adjusting the sensing member in relation to the support in a direction towards and away from the rope and a device for measuring the load exerted by the rope on the sensing member and tending to move the sensing member and the support away from the rope.

3,310,982
NAVIGATION SYSTEM WITH VEHICLE MOTION SIGNALS MODIFIED BY DRIFT ANGLE SIGNALS

Joseph Yamron, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Aug. 31, 1961, Ser. No. 135,358

2 Claims. (Cl. 73—178)



1. In a navigational system for a space vehicle launched from a known position and having known reference axes orientation at launch in a selected coordinate system, said navigational system comprising

- a plurality of accelerometers connected with said vehicle for producing signals indicative of vehicle motion,
- gyro means for producing signals indicative of vehicle orientation relative to said launch reference axes,
- means acting upon said vehicle motion and orientation signals and producing therefrom data indicative of vehicle velocity and position in said coordinate system,
- additional means for storing said vehicle motion signals at selected times during flight,
- and stellar sensor means connected with said vehicle for producing from selective star sights during flight data indicative of said reference axes orientation,

the improvement comprising

- means for comparing said reference axes orientation data produced from said star sights with said launch reference axes orientation and producing an error signal indicative of coordinate system rotation during flight,
- means for producing from said error signal a plurality of drift angle signals corresponding to the times at which said vehicle motion signals were stored,
- means for modifying said stored vehicle motion signals in response to said drift angle signals,
- and means for producing updated vehicle velocity and position signals from said modified vehicle motion signals.

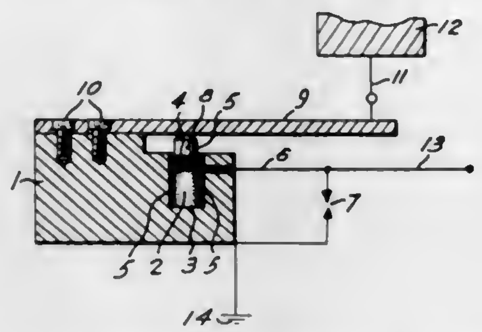
3,310,983
HOT BEARING ALARM APPARATUS

Jean Edouard Paul Boulais, Louis Georges Desrochers, and William George Richardson, Brownsburg, Quebec, and Robert Albert Tanguay, Montreal, Quebec, Canada, assignors to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Mar. 4, 1965, Ser. No. 437,032

Claims priority, application Great Britain, Mar. 26, 1964, 13,052/64

7 Claims. (Cl. 73—358)



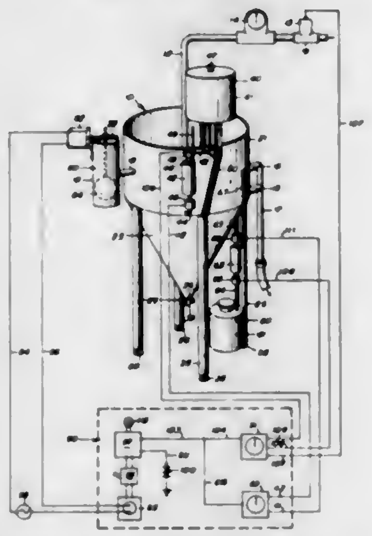
1. A device for detecting and signaling the heat condition of a machine element comprising in combination an actuating means in indirect heat-conductive contact with said machine element; a fusible retaining means adapted to hold said actuating means in a non-actuating position and in direct contact with said machine element in heat-conductive relationship; and electrical energy generating means in contact with said actuating means and actuated thereby; a radio frequency energy generating means connected to said electrical energy generating means; and a radio frequency signal transmitting means connected to said radio energy generating means; and being adapted to transmit its signal to a receiving means remote therefrom.

3,310,984
AUTOMATIC PLANKTON SAMPLING SYSTEM

George A. Swanson, Yankton, S. Dak., assignor to the United States of America as represented by the Secretary of the Interior

Filed Nov. 17, 1964, Ser. No. 411,948

7 Claims. (Cl. 73—421)



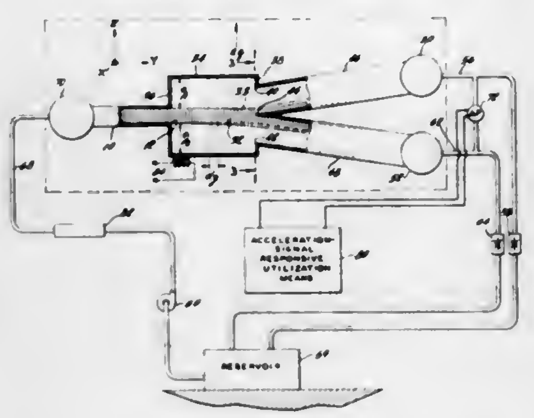
1. An automatic apparatus for sampling substances of varied sizes from a stream of fluid comprising a tank, a plurality of screening devices spatially arranged in a superimposed vertical relationship within a lower portion of said tank, means operable in a timed sequence to deliver predetermined samples of the fluid of said stream into said tank above said screening devices, and further means allowing said fluid to discharge from said tank below said screening devices, and an arrangement of mechanisms made operable in a timed relationship in respect to the operation of said means to deliver, to add a predetermined quantity of a further fluid to said tank for conditioning the matter constituting said substances, at the same time a like quantity of fluid is withdrawn from said tank.

3,310,985
ACCELEROMETER APPARATUS

Charles A. Belsterling, Norristown, Pa., and Robert L. Colcord, Grabill, Ind., assignors to The Franklin Institute, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 7, 1964, Ser. No. 357,951

11 Claims. (Cl. 73—515)



1. Accelerometer apparatus comprising: a fluid medium; jet-launching means for ejecting a main jet of fluid under pressure into and through said medium, said fluid of said jet having a mass density differing substantially from that of said fluid medium, said jet having a substantially straight-line, undeflected form in the absence of relative acceleration between said jet-launching means and particles of said jet but departing progressively farther from said straight-line form in response to increases in components of said relative acceleration transverse to said jet; apertured barrier means in the path of said jet and defining an aperture positioned to pass a progressively changing fraction of the cross-section of said jet as said departure of said jet from said straight-line form changes in response to said relative acceleration components; means responsive to said jet to produce output signals representative of the magnitude of said fraction of said cross-section of said jet by said aperture; acceleration-signal utilization means having acceleration-signal input means and operable in response to signals indicative of said relative acceleration applied to said input means; means for supplying said output signals to said input means to operate said utilization means; and means for applying a pressure substantially greater than ambient pressure to opposite sides of said jet at least in the initial portion of said trajectory thereof.

3,310,986
THREE AXIS NAVIGATIONAL APPARATUS

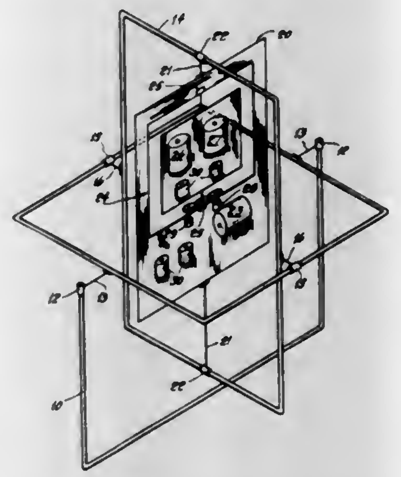
Bernard J. Baecher, Sea Cliff, N.Y., assignor to the United States of America as represented by the Secretary of the Navy

Filed May 26, 1964, Ser. No. 370,379

9 Claims. (Cl. 74—5.34)

1. A three axis inertial navigation system comprising:

(a) a first member,
(b) first means supporting said first member for freedom about a pitch axis,
(c) a second member,
(d) second means supporting said second member from said first member for freedom about a roll axis,
(e) a sensitive platform supported by said second member with freedom about an azimuth axis,
(f) an auxiliary platform supported by said sensitive platform for independent rotation about said azimuth axis,
(g) motive means for rotating said auxiliary platform independently of said sensitive platform,
(h) means for measuring the azimuth angular displacement between said auxiliary and sensitive platforms,
(i) a Z gyro having its sensitive axis aligned in azimuth and its frame affixed to said sensitive platform,
(j) servo means coupled with said Z gyro for stabilizing said sensitive platform in azimuth,
(k) an X gyro having its sensitive axis perpendicular to the sensitive axis of said Z gyro and having its frame affixed to said auxiliary platform,



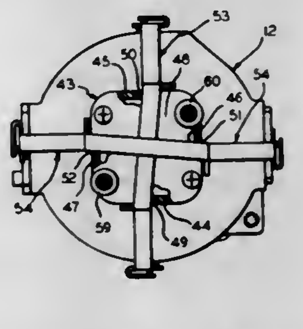
(l) a Y gyro having its sensitive axis mutually perpendicular to the sensitive axes of said X and Y gyros and its frame affixed to said auxiliary platform,
(m) whereby said auxiliary platform may be slewed at a rapid rate about said azimuth axis from its original orientation by said motive means, for calibration and resetting of said X and Y gyros without having to precess said Z gyro and thereafter returned it to its original orientation.

3,310,987
PNEUMATIC GYRO

Martin Huizinga, Wyoming, and Lee C. Verduin and James R. Kuiper, Grand Rapids, Mich., assignors to R. C. Allen Business Machines, Inc., Grand Rapids, Mich., a corporation of Michigan

Filed Sept. 14, 1964, Ser. No. 396,304

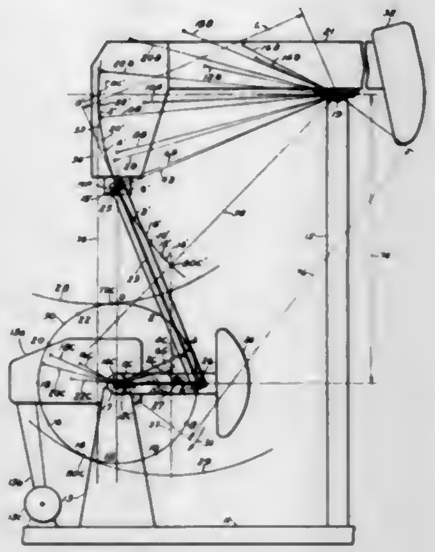
12 Claims. (Cl. 74—5.43)



1. In a pneumatic gyro for aircraft having an air driven rotor rotatable in a pivotally mounted rotor housing, an air inlet for said housing, and gravitationally responsive means for maintaining the spin axis of said rotor erect, said means including at least one pair of horizontally aligned and spaced air exhaust and erection ports on said rotor housing, erection jets issuing from said ports to exert erecting torques on said rotor housing, an erector vane pendulously mounted on said rotor housing and having tabs coacting with said erector jets to control said erecting torques in accordance with the attitude of the gyro, and resilient stops mounted on said rotor housing capable of absorbing vibration forces at opposite extreme positions of the vanes and thereby eliminate vibration of said vanes.

3,310,988
PUMPING UNIT DESIGN

Robert H. Gault, Midland, Tex., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed May 13, 1964, Ser. No. 367,162
11 Claims. (Cl. 74—41)

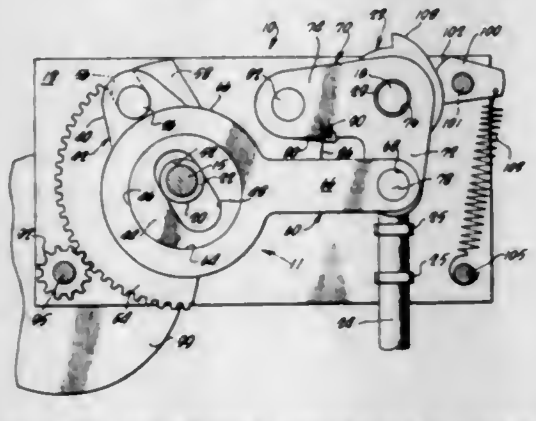


1. In a pumping unit embodying
- a walking beam pivotally connected to a Samson post by means of a saddle bearing,
- a crank rotatably mounted on a crank shaft and having a counterbalance attached thereto, and
- a rigid pitman having one end pivotally connected to said walking beam by means of a tail bearing and the other end pivotally connected to said crank by means of a wrist pin,

the improvement comprising
- (a) said crank shaft located within the area defined by vertical lines through the end points of the segment of a circle subtended by said tail bearing during oscillation of said walking beam, the same segment of a circle being followed by said tail bearing during upward and downward movement of said tail bearing,
- (b) means for driving said crank shaft,
- (c) said means arranged to drive the crank shaft in a clockwise direction when the midpoint of said segment of a circle is located below a horizontal line through said saddle bearing and in a counter-clockwise direction when the midpoint of said segment of a circle is located above said horizontal line.

3,310,989
ACTUATOR AND TIMER

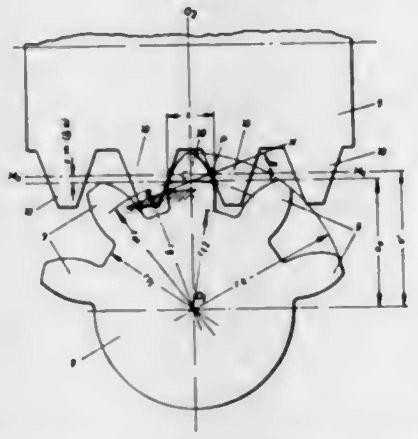
James E. Ward, Glendora, Calif., assignor to Relton Corporation, Pasadena, Calif., a corporation of California
Filed July 9, 1965, Ser. No. 473,565
31 Claims. (Cl. 74—117)



1. An actuator mechanism comprising a rotatable output shaft, a plurality of ratchet means connected to the output shaft each operable to index the output shaft angularly in response to a substantially reciprocatory input thereto along a predetermined line and arranged for indexing the output shaft in a common direction, a corresponding plurality of link members each connected at one end thereof to a respective ratchet means, constant displacement means coupled to the other ends of the link members operable for reciprocating the link members along said predetermined lines, and selectively operable means operatively coupled to each link member for varying independently of the other link members the stroke of each link member reciprocably along the predetermined line associated therewith.

3,310,990
BACKLASH ELIMINATING GEARING FOR STEERING GEAR ASSEMBLIES

Albert Zettel, Schwabisch Gmund, Germany, assignor to Zahnradfabrik Friedrichshafen Aktiengesellschaft, Friedrichshafen, Germany
Filed Aug. 17, 1964, Ser. No. 389,977
Claims priority, application Germany, Aug. 17, 1963, Z 10,298
6 Claims. (Cl. 74—409)

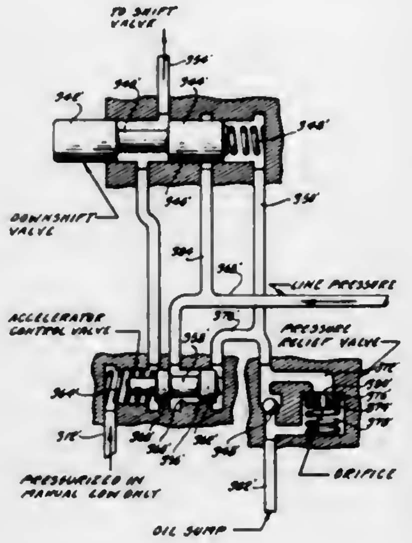


1. In a steering gear assembly having meshing gears with involute teeth profiles, at least one of said gears having teeth which vary in profile width along the rotational axis of the one gear, said gears meshing with backlash varying from zero at a neutral position between end meshing positions thereof said backlash being zero at a neutral position, said one gear having at least one tooth with a flank surface zone to which contact with the other gear is confined as the gears approach said neutral position between said end positions, said flank surface zone having a deviation from the profile curvature thereof as defined on all other flank surfaces of the teeth of said one gear, said deviation corresponding to a difference in pitch radii between said one tooth and the other teeth of said one gear limited to said flank surface zone only.

3,310,991
AUTOMATIC POWER TRANSMISSION CONTROL SYSTEM WITH RATE SENSITIVE SPEED RATIO DOWNSHIFTS

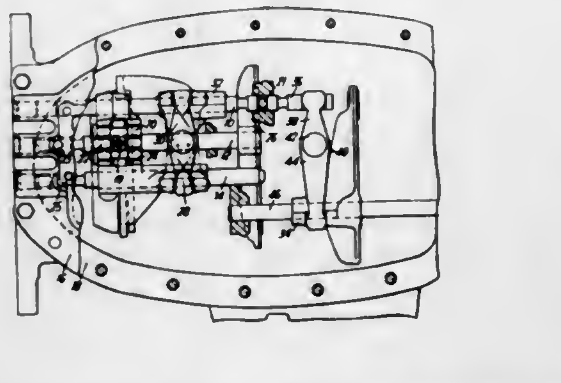
Richard L. Leonard, Farmington, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 2, 1964, Ser. No. 407,975
12 Claims. (Cl. 74—472)

1. In an operator controlled valve system for controlling a power transmission mechanism capable of delivering driving torque from a driving member to a driven member, gear elements cooperating to define plural torque delivery paths between said driving member and said driven member, fluid pressure operated servo means for controlling the relative motion of said gear elements to establish each of several driving speed ratios, a fluid pressure source, conduit structures interconnecting said pressure source and said servo means, fluid pressure distributor valve means disposed in and partly defining said conduit structure for selectively distributing control pressure from said source to each of said servo means, a source of a pressure signal that is related in magnitude to an operating variable, passage means for distributing said signal to said distributor valve means to actuate the same, and downshift valve means for overruling the automatic action of said distributor valve means in response to the rate at which accelerating torque is demanded by the operator, said downshift valve means comprising a personally operable fluid piston, a fluid cylinder receiving said piston and defining therewith a pressure cavity, an accelerator control valve, a control pressure conduit communicating with and partly defined by said accelerator control valve and extending to said pressure source, a fluid connection between said cavity and said accelerator control valve to distribute to the latter an actuating pressure and to shift the same from a pressure conduit blocking position to a pressure conduit opening position as the pressure in said cavity is increased upon movement of said piston.



3,310,992
MOTOR VEHICLE GEAR SELECTOR MECHANISMS

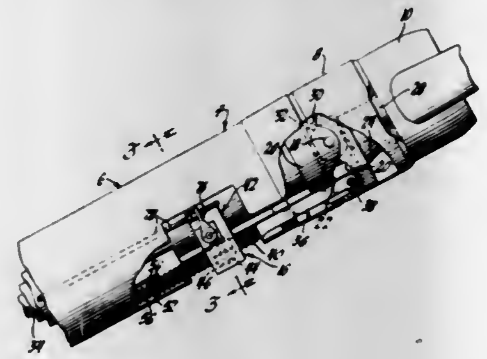
Thomas Charles Felix Stott, Harpenden, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 15, 1964, Ser. No. 374,965
Claims priority, application Great Britain, June 20, 1963, 24,539/63
5 Claims. (Cl. 74—473)



1. A motor vehicle gear selector mechanism comprising a gear shift lever, a plurality of slidably mounted actuator abutments, said lever being movable to select any one of said actuator abutments and being subsequently movable to effect sliding movement of any selected actuator abutment, a plurality of slidably mounted striker members for effecting sliding movement of corresponding ratio-engagement members in a stepped-ratio gearbox, a reversing link constituting an interconnection between one of said actuator abutments and one of the striker members for a pair of forward gear ratios such that sliding movement of said last mentioned actuator abutment in one direction causes sliding movement of the cooperating striker member in the opposite direction, and a second reversing link constituting an interconnection between another of said actuator abutments and another of said striker members for another pair of ratios, said last-mentioned striker member responding to movement of said last-mentioned actuator abutment in one direction by sliding in an opposite direction.

3,310,993
PROGRESSIVELY ADJUSTABLE STEERING ASSEMBLY

Dan R. Kimberlin, Saginaw, and Joseph A. Stearns, Bridgeport, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,217
13 Claims. (Cl. 74—493)



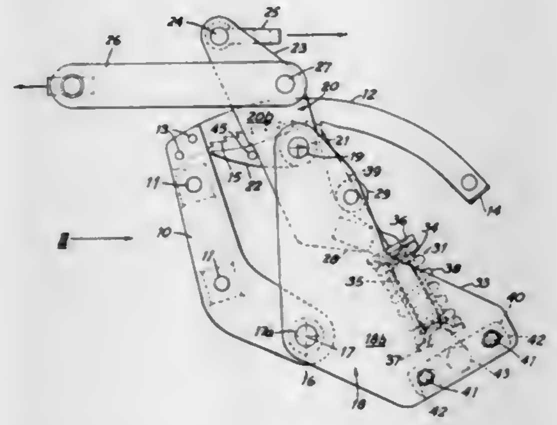
9. An adjustable steering assembly comprising, a fixed lower column section, an upper column section operatively connected to said lower section for movement in a defined path relative thereto, a rotatable nut, a cage formed on one of said sections surrounding said nut, a nonrotatable rod connected at one end to the other section and extending through said nut, said nut and rod being connected together by mating threads of sufficiently high lead so that axial displacement of said rod relative to said nut induces rotation of the latter in said cage, and means associated with said cage for selectively enabling and preventing rotation of said nut.

3,310,994
TENSIONING LEVER MECHANISM FOR BRAKE LINKAGES

Hans O. Schröter, Munich, Germany, assignor to Stopfix-Bremse Schroter & Co., Munich, Germany
Filed Dec. 24, 1964, Ser. No. 420,934
9 Claims. (Cl. 74—516)

9. An actuating device interposed between an input member and an output member comprising; a stationary frame having a first pivot axis, lever means comprising a main lever pivotally supported on said first pivot axis, a second pivot axis on said main lever spaced from said first pivot axis, said lever means comprising a floating lever pivotally mounted on said second pivot axis, said input member being connected to said floating lever at a point spaced from said second pivot axis and operable when actuated to urge said floating lever to rotate in one direction on said second pivot axis, spring means acting between said levers and urging said floating lever to rotate in the other direction on said second pivot axis, cooperating elements of abutment means on said levers to halt said floating lever in a predetermined position on

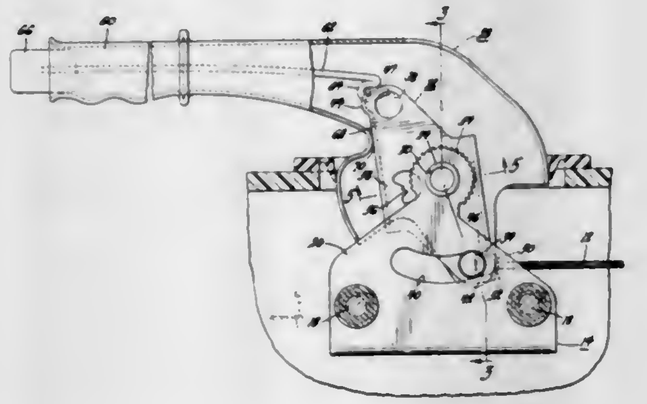
said main lever in the said other direction of rotation of said floating lever, said spring means providing for rotation of said lever means as a unit about said first pivot axis upon actuation of said input member until a predetermined tension is developed on said input member whereupon said spring means will yield and said main lever will halt while said floating lever continues to rotate on said second pivot axis, cooperating elements of ratchet means on said main lever and said frame operable when effective to prevent rotation of said main lever on said first pivot axis in a direction opposite to the direction in which it is urged by actuation of said input member, and connecting means connecting said output member to said lever means so that rotation of said lever means by actuation of said input member will actuate said output member, said connecting means providing for a predetermined substantially constant drive ratio from said input member to said output member during movement of said lever means as a unit and a constantly increasing drive ratio from said input member to said output member as said floating lever rotates on said second pivot axis.



3,310,995
HAND BRAKE MECHANISM

Robert M. Buchwald, Berkley, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 29, 1964, Ser. No. 421,889
7 Claims. (Cl. 74—535)

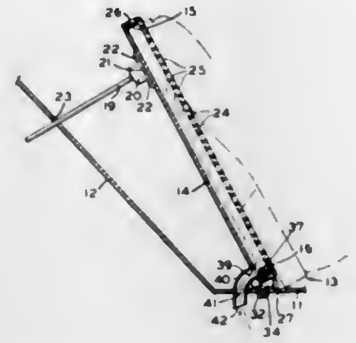


1. A hand brake for a motor vehicle comprising: first means carried by a fixed portion of the vehicle; second means pivotally carried by said first means and adapted tto have a manual force exerted thereon; and third means pivotally carried by the second means and engaged by a cable to vehicle brakes, said third means being cammable by the second means in response to a force from said second means during a pivotal movement thereof to energize vehicle brakes, said third means and said first means being selectively engageable to hold vehicle brakes energized.

3,310,996
ACCELERATOR PEDAL

Samuel J. Sirianni, 5245 Reuter, Dearborn, Mich. 48126

Filed July 12, 1965, Ser. No. 471,033
6 Claims. (Cl. 74—560)

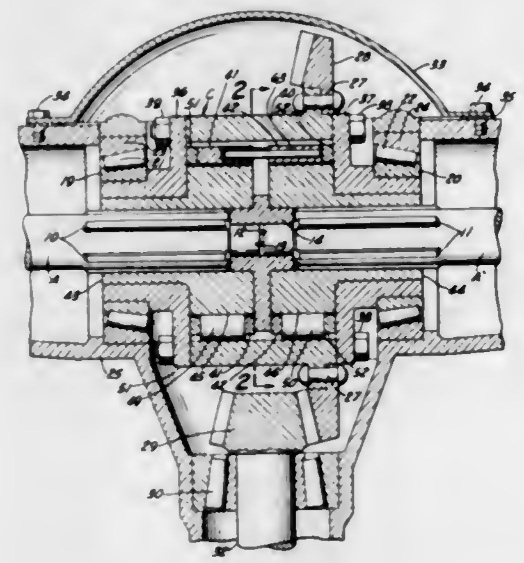


1. An accelerator pedal comprising:
(a) a hollow elongated member;
(b) said elongated member being provided with a plurality of openings on the upper side thereof on which the foot of the driver of the vehicle is disposed for operating the accelerator pedal; and,
(c) means connected to the hollow interior of the pedal for draining moisture from the pedal which flows into the pedal through said openings.

3,310,997
POWER TRANSMISSION ASSEMBLY

Paul D. Biddle, 47th and City Line Ave., Apt. 1306, Philadelphia, Pa. 19113

Filed Feb. 17, 1964, Ser. No. 345,182
3 Claims. (Cl. 74—650)

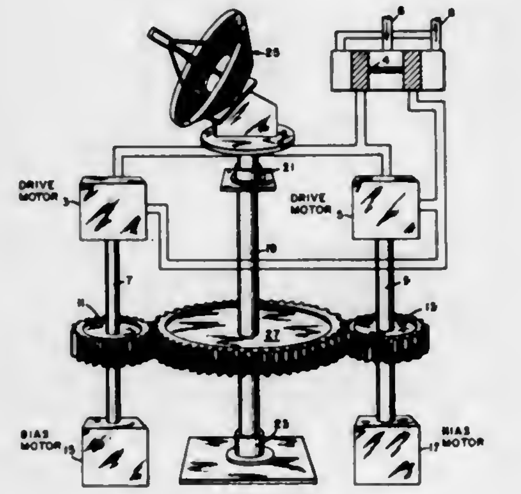


1. In a power transmission, the combination comprising: two separate beam load bearing axles disposed in end-to-end relation; a fixed structure; a housing rotatable on said fixed structure, said housing surrounding the mutually adjacent ends of said axles; a plate braced in said housing; alignment means on said plate extending around each of said mutually adjacent axle ends to hold said ends thereof in a position such that the axis of one of said axles lies in alignment with the axis of the other one thereof, the clearance between said means and an axle being sufficiently large to permit said axle to rotate about its axis relative to said means; and clutch means between said housing and both of said axles holding the slowest one of said axles stationary relative to said housing, said clutch means including a hollow, splined clutch cylinder on the said splined end on each of said axles, a cage around each cylinder, and a set of rollers in each cage to become wedged between the slowest cylinder and said housing.

3,310,998
SCHEME FOR PRELOADING POWER GEAR TRAINS

Wayne A. Harmening, Cherry Hill, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 24, 1964, Ser. No. 377,785
1 Claim. (Cl. 74—661)



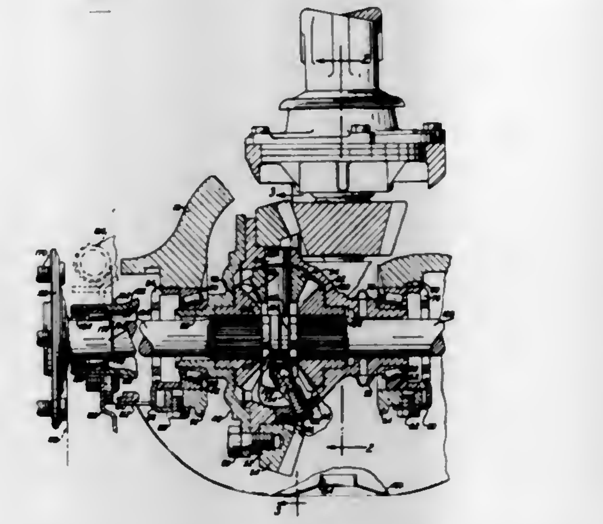
Apparatus for applying torque to a load in either direction with minimum backlash, said apparatus comprising:
(a) a pair of drive shafts oriented in a predetermined spaced parallel relationship;
(b) a first hydraulic motor which controls the application of torque to one drive shaft in either direction;
(c) a second hydraulic motor which controls the application of torque to the other drive shaft in either direction;
(d) a pinion gear mounted on each drive shaft;
(e) an output shaft oriented substantially parallel and equidistant from the pair of drive shafts;
(f) means for coupling the output shaft to the load;
(g) a third hydraulic motor which applies a constant torque on the one drive shaft in one direction;
(h) and a fourth hydraulic motor which applies a constant torque on the other drive shaft in the opposite direction, the constant torque developed by the fourth hydraulic motor being equal and opposite to the torque developed by the third hydraulic motor.

3,310,999
DIFFERENTIAL GEARING AND AXLE ASSEMBLY FOR AN AUTOMOTIVE VEHICLE DRIVELINE

Bain Griffith, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed June 9, 1965, Ser. No. 462,592
9 Claims. (Cl. 74—710)

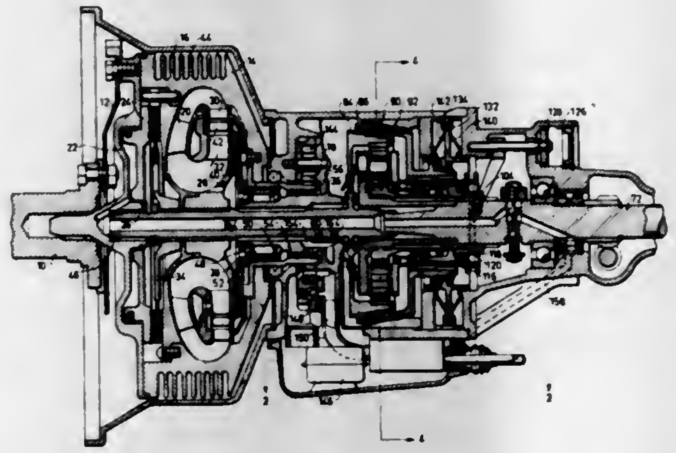
1. In a geared differential assembly, a carrier housing, a ring gear carried by said carrier housing, a driving pinion engageable with said ring gear, a pair of differential side gears in said carrier housing, differential pinions in said carrier housing in meshing engagement with said differential side gears, said side gears being disposed coaxially in juxtaposed relationship, separate driven axle shafts drivably connected to each side gear and extending through said carrier housing, means for journalling said carrier housing for rotation about the axes of said axles shafts, an adjustable locking element within said carrier housing at a location intermediate said side gears, said locking element and the adjacent ends of said axle shafts within said carrier housing having interengageable parts, an adjusting element supported by said carrier housing and extending outwardly therefrom, inward portions of said adjusting element being connected mechanically to said locking element whereby said locking element may be withdrawn out of engagement with the cooperating engageable parts of said axle shafts and adjusted into locking engagement with the same by appropriately adjusting said adjusting element.



3,311,000
TRANSMISSION, PREFERABLY FOR VEHICLES

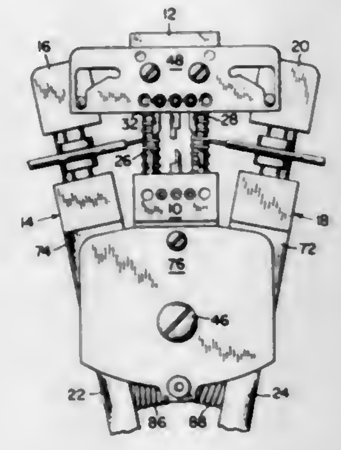
Karl Gustav Åhlen, Stockholm, Sweden, assignor, by mesne assignments, to S.R.M. Hydromekanik Aktiebolag, Stockholm, Sweden, a joint-stock company of Sweden

Filed Sept. 19, 1963, Ser. No. 310,075
Claims priority, application Sweden, Sept. 21, 1962, 10,148/62
24 Claims. (Cl. 74—763)



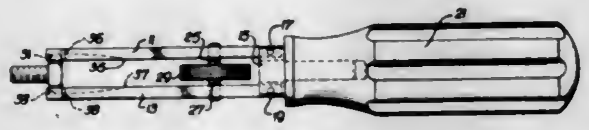
1. A transmission for providing multiple forward drives and a reverse drive from an input shaft to an output shaft, said transmission comprising a three element planetary gearing having a ring gear, planet, and sun gear elements, said ring gear element being connected to the same one of said shafts in all drives, clutch means for connecting the other one of said shafts selectively to one or the other of the remaining elements of said planetary gearing, and clutch-brake means for selectively connecting the one or the other of said remaining elements, whichever is disconnected from said other one of said shafts in a first condition to a stationary member to permit rotation of the transmission elements relative to each other and in a second condition to said ring gear element to lock the transmission elements against rotation relative to each other.

3,311,001
WIRE STRIPPER
Warren L. Gallagher, 505 Oxnard Road, and Robert B. Gunyan, 1721 Saratoga St., both of Oxnard, Calif. 93030
Filed Feb. 28, 1966, Ser. No. 532,540
10 Claims. (Cl. 81—9.5)



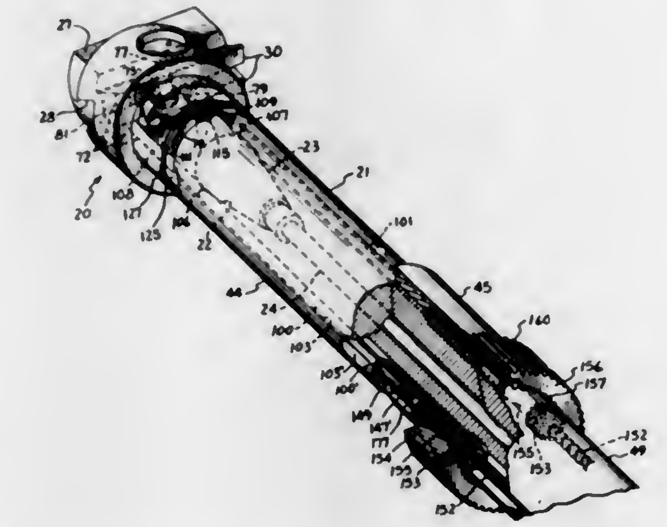
1. In a hand tool for cutting insulated wire and stripping insulation therefrom, the combination of:
an elongate body assembly including a medial component lying substantially along the longitudinal axis thereof and side components disposed on opposite sides of said axis and in a common plane with said medial component, said medial and said side components being designed to receive an insulated wire to be gripped, cut and stripped;
wire cutting elements on said medial body component;
insulation piercing and stripping elements on said medial body component;
wire gripping elements on each of said side components;
said side components being mounted for coordinated movement toward and away from the medial component;
actuating means including manually engageable handles for said medial and side component mounted elements to cause them to successively grip, cut and strip a wire received by said components; and
locking means interconnecting said medial components and side components for common longitudinal movement during the wire cutting operation, said locking means releasing the side components for lateral movement to thereby pull the wire ends through the insulation piercing and stripping elements and strip the insulation therefrom.

3,311,002
ADJUSTABLE WRENCH
William E. Van Hoose, 4117 Brompton Ave., Bell, Calif. 90201
Filed Mar. 15, 1965, Ser. No. 439,589
11 Claims. (Cl. 81—118)



1. An adjustable wrench comprised of a handle, a pair of protruding jaws each hingedly attached to one end of said handle and extending from said handle substantially in alignment with the longitudinal axis of said handle, said jaws each having matching recessed double-faceted, gripping faces which are opposite from each other on the ends of the jaws remote from the ends where the jaws are hingedly attached to the handle, said jaws each having an aligned oppositely threaded hole which has an axis that extends from the interior surface of the jaw to the exterior surface thereof in the direction of the handle so as to be slightly tilted from a substantially perpendicular position said axis makes with the longitudinal axis of each jaw, and jaw adjusting means positioned between each of said jaws comprising a pair of axially aligned oppositely threaded shanks protruding from opposite sides of a rotary turning knob, one of each of said shanks being threadably engaged in the threaded holes of each of said jaws so that rotation of said turning knob will cause the gripping portions of the jaws to move.

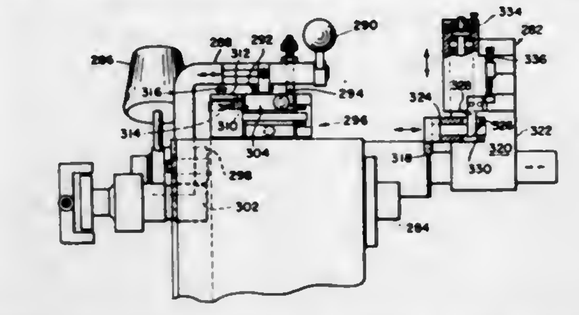
3,311,003
FACING HEAD ATTACHMENT AND DRIVE MECHANISM THEREFOR
Jesse Daugherty, Fond du Lac, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Continuation of abandoned application Ser. No. 344,930, Feb. 14, 1964. This application Apr. 21, 1966, Ser. No. 544,314
7 Claims. (Cl. 82—2)



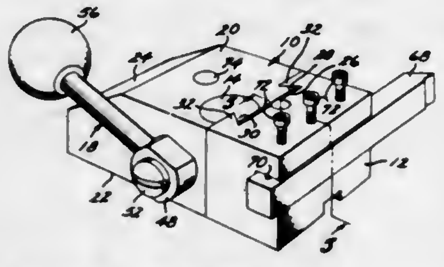
5. In a machine tool having a headstock: the combination of a tool head including a socket for receiving a power drawbolt, a tool slide, and actuating means connected to said slide; and a machine tool spindle supported for powered rotation and axial translation in said headstock, said spindle including a power drawbolt mounted along the axis of said spindle and engageable in said tool head socket for attaching said tool head to the free end of said spindle, and drive means for said tool slide movably mounted within said spindle offset from the axis thereof for cooperatior with said actuating means in said tool head, said drive means in said spindle being engageable with said actuating means in said head upon attachment of the head by said drawbolt to said spindle, for moving said tool slide radially simultaneously with rotation and axial translation of the spindle.

3,311,004
MODULAR LATHES
Peter D. George, 156 Crabtree Road, Quincy, Mass. 02169
Original application May 15, 1964, Ser. No. 367,720. Divided and this application June 27, 1966, Ser. No. 560,654
5 Claims. (Cl. 82—5.5)

5. A lathe, comprising a base, and threading module mounted thereto, said base including a lead screw, power means for rotating said lead screw, an arbor rotatably and slideably mounted to said base parallel to said lead screw, means mounting a cutting tool to one end of said arbor, an arm extending out from said arbor, a lead screw follower rotatably mounted to said arm and engageable with said lead screw, said follower being formed with a plurality of concave arcuate sectors, said sectors being formed with threads of different pitch whereby said arbor together with said tool may be moved axially at a selected speed by tilting said arm to engage a selected arcuate sector with said lead screw, said tool mounting means including a support, a horizontally movable slide for carrying said tool, said slide being formed with a diagonally extended groove, a pusher mounted for reciprocation through a path normal to said slide, said pusher being operatively engaged with said groove and means for reciprocating said pusher to reciprocate said slide and said tool and means for reciprocating said slide support through a vertical plane.



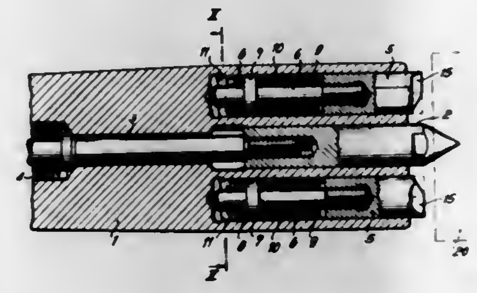
3,311,005
TOOL HOLDER
Uthal L. Nix, 25014 Pennsylvania Ave., Lomita, Calif. 90717
Filed Dec. 7, 1964, Ser. No. 416,511
5 Claims. (Cl. 82—36)



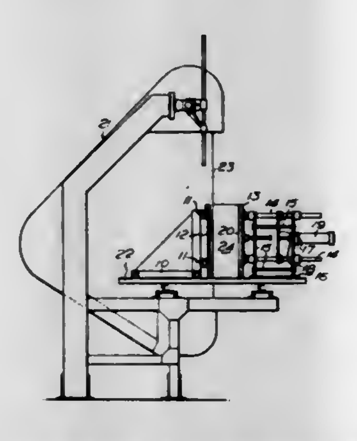
1. A tool holder comprising:
a base having a slide-way adapted to mount a slide for movement along a slide axis;
a cam mounted to said base for rotation about an axis parallel to said slide axis and including a face defining a portion of said slide-way and adapted to engage the complemental face of said slide upon rotation of said cam in one direction, said cam further including a pair of oppositely disposed flats;
means carried by said base and operative against one of said flats to rotate said cam in said one direction;
and bias means carried by said base and engaged upon the other of said flats to tend to rotate said cam in a direction opposite said one direction.

3,311,006
LATHE CENTER
Karl E. Seltter, Thielenbrucher Allee 36, Cologne-Dellbruck, Germany
Continuation of abandoned application Ser. No. 731,198, Apr. 28, 1958. This application Jan. 23, 1964, Ser. No. 339,697
4 Claims. (Cl. 82—40)

1. A lathe center for driving a workpiece, comprising a housing, a center slidably mounted for substantially free longitudinal movement within a bore provided in said housing, means acting upon said center to urge said center in a forward direction, a plurality of work-driving dogs including piston means, cylinder means within said housing for slidingly receiving therein said piston means, connecting means interconnecting said cylinder means to provide a common hydraulic system hermetically sealed against said bore and adapted to be hermetically sealed against the outside, said common hydraulic system effectively providing interconnected pressure chambers disposed rearwardly of said piston means to thereby urge said work-driving dogs in said forward direction in the presence, within said pressure chambers, of a hydraulic fluid under pressure, seal means provided with annular grooves effectively forming lip portions within said pressure chambers in sealing abutment against the end surfaces of said piston means exposed to the corresponding pressure chamber so as to urge said lip portions radially into sealing engagement with the walls of said cylinder means when acted upon by the hydraulic fluid under pressure within said pressure chambers, and yieldable means operatively associated with said common hydraulic system for continuously maintaining under pressure the hydraulic fluid within said pressure chambers to subject said piston means to a predetermined hydraulic prestress condition and simultaneously effecting thereby a tight self-sealing action by said seal means.



3,311,007
FORMING OF FOAMED MATERIAL ARTICLES
Robert McGee, Cheadle Hulme, Cheshire, England, assignor to Vitafoam Limited, a corporation of Great Britain, Isle of Man, and Northern Ireland
Filed Sept. 22, 1965, Ser. No. 489,355
1 Claim. (Cl. 83—1)

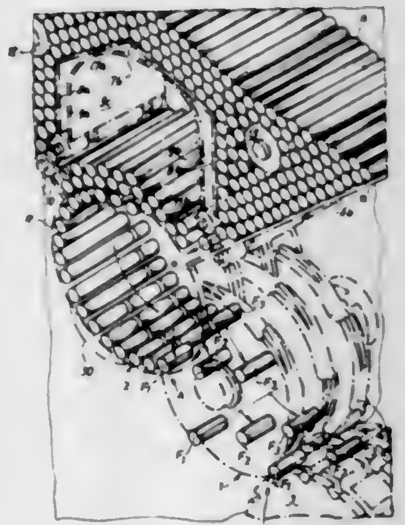


Apparatus for producing a contoured surface on a foamed material pad, said apparatus comprising a band knife including a table and a power operated knife adjacent to said table, a stationary male former having a contoured surface mounted on said table and closely adjacent to said knife, a framework mounted on said table, slidable rods mounted in said framework, a female former carried by said slidable rods for movement toward and away from said male member and for cooperatively holding a pad to be cut with said male former, fluid operated ram means mounted on said framework and attached to said rods for sliding the latter and consequently the female former in said directions toward and away from said male former, whereby a pad to be cut is held compressed between said formers for cutting by said knife and means supporting the table for movement transversely to the direction in which said female former is slidable.

3,311,008
PROCESS OF SEVERING ROD-LIKE ARTICLES AND ARRANGING THE SEVERED ARTICLES IN A ROW

Bernhard Schubert, Hamburg-Lohbrugge, Germany, assignor to Hauni Werke Körber & Co., KG, Hamburg, Germany

Filed Nov. 14, 1963, Ser. No. 323,694
Claims priority, application Germany, Nov. 17, 1962, H 47,424
11 Claims. (Cl. 83—27)



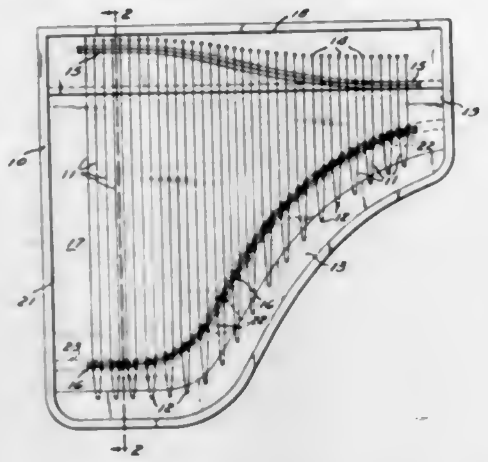
4. A process for staggering an array of rod-like sections wherein the sections are disposed in a plurality of rows of equidistant sections and wherein each section of one row is axially aligned with one section of each other row, comprising the steps of moving a row of elongated parallel rods in a direction at right angles to their axes and simultaneously severing each rod into a plurality of sections whereby the sections form said array of sections; moving said array of sections in a first path at right angles to their axes and at a first speed; consecutively transferring the foremost axially aligned sections seriatim into separate paths at such intervals that all axially aligned sections are transferred before a section of any given row covers in said first path a distance equal to the distance between two consecutive sections whereby the thus transferred sections are transversely staggered with reference to each other, each of said separate paths having a portion overlapping a portion of said first path in the region where the sections are transferred from the first path; moving the thus staggered sections in the respective separate paths at right angles to their axes through different distances and at identical speeds exceeding said first speed; transferring the sections seriatim into a further path and moving the sections in said further path at right angles to their axes and at identical speeds so that the sections remain staggered; and shifting the sections axially with reference to each other while the sections move in said further path to form a single row of sections in which all sections are arranged in a single file.

3,311,009
PIANO SOUNDBOARD

Howard K. Graves, 6633 Somerset Drive, Cleveland, Ohio 44141

Filed Feb. 21, 1966, Ser. No. 528,908
7 Claims. (Cl. 84—192)

1. A stringed musical instrument comprising:
a frame,
a plurality of strings tensionally supported by said frame,
bridge means coupled to said strings,
sound radiator means coupled to said bridge means, said sound radiator means being acoustically relatively tightly coupled to said frame, and

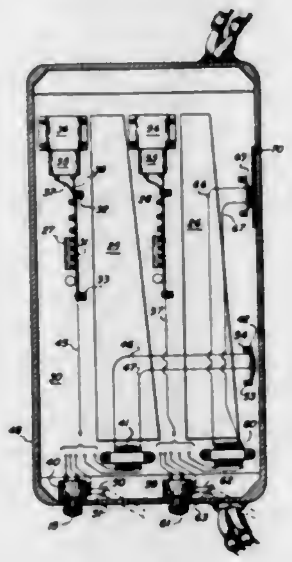


stiffening means coupled between said bridge means and said frame,
whereby the acoustical stiffness at said bridge means is produced primarily by said stiffening means.

3,311,010
SELF-CONTAINED AUDIO AMPLIFIED MUSICAL INSTRUMENT

Samuel W. Ward, 7 Old Albany Post Road, Ossining, N.Y. 10562

Filed June 10, 1964, Ser. No. 373,933
6 Claims. (Cl. 84—376)



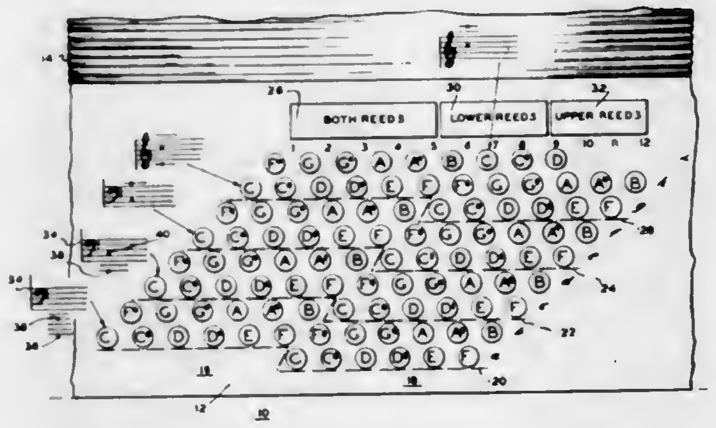
1. A portable musical instrument including an audio amplifier in the interior thereof, said musical instrument including:
a substantially enclosed expandable and contractable section,
air intake valves,
air exhaust valves,
a wall having interior and exterior surfaces forming one part of said expandable and contractable section,
a bellows forming another part of said expandable and contractable section,
tone valves mounted in said wall between the interior and exterior surfaces,
means for actuating the tone valves individually so that air may pass through the tone valves and produce musical tones,
a grill covering the tone valves on the exterior surface of said wall and forming an exterior part of the instrument, and having a space between the grill and the exterior surface of said wall,

a frame substantially around the periphery of said wall and extending in to said enclosed section and providing a sounding board effect for musical tones produced by said tone valves,
a transducer mounted on said interior surface of said wall, and positioned adjacent said frame for receiving musical tones from said frame,
a solid state component audio amplifier mounted on said interior of said wall including,
a power source mounted on said wall and electrically coupled to said amplifier for driving said amplifier,
means coupling said transducer to said audio amplifier for conducting audio frequency signals to said amplifier,
switch means for controlling said audio amplifier mounted on said frame with a portion of said switch means extending beyond said frame so the switch may be manually operated from the exterior of said instrument,
a second transducer mounted within the space between said grill and the exterior surface of said wall, and
means for coupling said second transducer to said audio amplifier for conducting audio frequency signals to said second transducer.

3,311,011
KEYBOARD FOR FREE BASS ACCORDIAN

William F. Kuehl, 117 Lake Court, Hoffman Estates, Roselle, Ill. 60172

Filed May 5, 1965, Ser. No. 453,901
7 Claims. (Cl. 84—376)

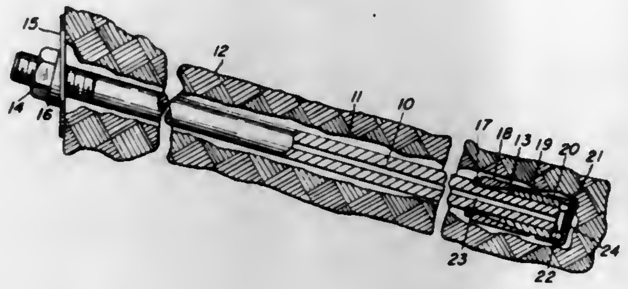


1. The bass keyboard for an accordian comprising a plurality of buttons each adapted to control at least one single tone producing reed, each of said buttons being operative to allow air to vibrate its associated reed by reason of depression of said button, said buttons being arranged in transverse rows extending from an edge of the accordian adapted to be held by the lefthand of the player toward the bellows of the accordian, said rows being arranged to form keyboard halves, a first half of the keyboard having at least two rows of six buttons, said buttons in a first row of said first half being arranged with the interval between tones produced by the reeds controlled by the buttons being in minor seconds, the two rows of buttons being operative to control their associated reeds to produce a full octave, said second half of the keyboard having at least two rows of six buttons, said buttons in the first row of said second half being aligned with the buttons in the second row of said first half and being arranged with minor seconds intervals between tones produced by the reeds controlled by the buttons in said first row of said second half, the two rows of buttons in said second half operatively controlling reeds within the same full octave as are controlled by the buttons in the first and second rows of said first half, the rows of buttons extending, in numerical order, from said free edge of said accordian.

3,311,012
PRESSURE-ACTUATED EXPANDING ANCHOR

Chester L. Williams, 347 Greenbriar SE., Grand Rapids, Mich. 49506

Filed Mar. 11, 1965, Ser. No. 438,881
8 Claims. (Cl. 85—65)

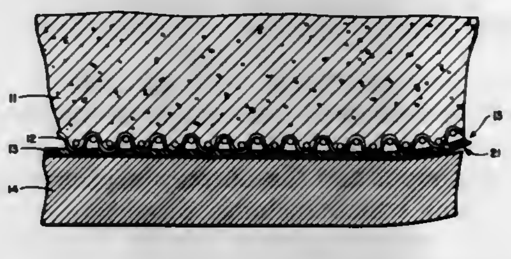


1. A pressure-actuated expanding anchor including in combination with a tubular bolt rod having an axial passage throughout the length thereof, an anchor device for engaging the wall of a hole in a rock formation, comprising:
a cone member having an externally tapered portion and an expansible shell member surrounding at least a portion of said cone member and having an internally tapered portion receiving the externally tapered portion on said cone member, said shell member being axially restrained by radially projecting means on said bolt rod, one of said members being normally axially fixed with respect to said bolt rod, and the other axially movable with respect thereto;
means forming a cylinder fixedly mounted on and extending axially with respect to said bolt rod, said rod having a radially extending port communicating between the interior of said rod and said cylinder;
piston means having a portion received in said cylinder and adapted to induce relative axial movement between said members in cooperation with said cylinder to expand said shell member, said piston means being mounted on said rod and defining an integral extension of said cone member with the portion thereof which is received in said cylinder being normally axially spaced from said shell member, said cylinder and piston means together forming portions of an actuator, one of said portions being axially fixed with respect to said bolt rod; and
a plug closing the inner end of the axial passage in said bolt, said plug being dischargeable upon exceeding a predetermined pressure within said bolt rod.

3,311,013
PROPELLANT LINER

Arthur L. Phipps, Fair Oaks, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Jan. 9, 1963, Ser. No. 250,735
7 Claims. (Cl. 86—20)

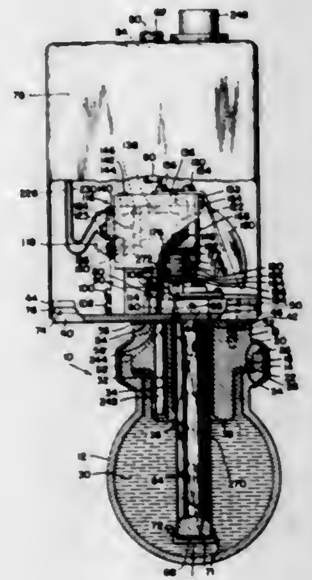


1. A method of providing an effective bond between the internal surface of a chamber and a filler to be solidi-

fied in the chamber comprising adhering fiber liner means which includes pile means on one face thereof to the internal surface of the chamber with the pile means extending inwardly of and away from the internal surface of the chamber, coating the pile means with a stiffening agent, and casting the filler within the lined chamber so as to embed the stiffened pile means within the filler.

3,311,014
REFRACTOMETER FOR INDICATING THE INDEX OF REFRACTION OF A FLUID STREAM

Walter Witt, Philadelphia, and Thomas H. Lotze, Warminster, Pa., assignors to Honeywell Inc., a corporation of Delaware
Filed Sept. 8, 1961, Ser. No. 136,938
8 Claims. (Cl. 88—14)

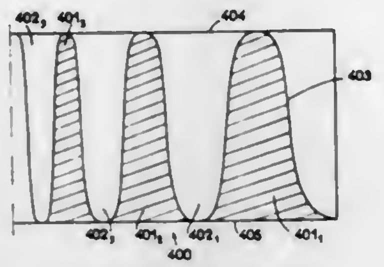


5. A light to electrical signal transforming apparatus to produce continuously an electrical signal for transmission whose magnitude is proportional to the index of refraction of a fluid under measurement, comprising a light transmitting rod, a light emitting optical means to focus the apex of a cone of light rays against an edge portion of a flat end surface of one end of the rod and thence against a peripheral side wall surface of the rod, an inclosed reflecting coating on the opposite end of the rod, and a light sensing means positioned to receive light emitted from the remaining flat surface portion of the first-mentioned end surface of the rod to thereby generate an electrical signal proportional to the intensity of the light refracted therefrom.

3,311,015
SPECTROMETRIC APPARATUS AND RADIATION GATE THEREFOR

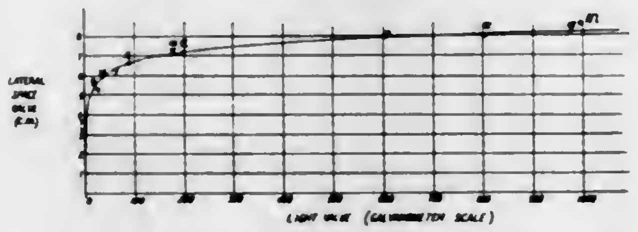
André Jean Girard, Chatillon-sous-Bagneux, Seine, France, assignor to Office National d'Etudes et de Recherches Aerospatiales, Chatillon-sous-Bagneux, Seine, France, a corporation of France
Filed Apr. 11, 1962, Ser. No. 186,812
Claims priority, application France, May 6, 1961, 861,006
16 Claims. (Cl. 88—14)

1. A device adapted for use as a radiation gate in spectrometric apparatus having a pair of such gates disposed at the input and the output, respectively, of a projection system which includes dispersion means adjustable to cast upon the output gate the image of the input gate as projected with a predetermined wavelength of incident radiation; said device comprising a supporting plate bearing a generally rectangular pattern which is nonrepetitive in longitudinal direction and composed of a multiplicity of radiation-controlling zones adjoining one another in at least one row extending longitudinally of the rectangle, said zones belonging alternately to a first and a second series of zones of respectively high and low transmissivity for impinging radiation, the distribution of said zones along one longitudinal edge of the pattern being different from their distribution along the opposite longitudinal edge.



3,311,016
PRINTING PROCESSES

David Guy Kindersley, Dales Barn, Barton, Cambridge, England
Filed Jan. 20, 1964, Ser. No. 338,714
4 Claims. (Cl. 88—14)



1. A method of determining the lateral space value of each printing character of a set of characters which comprises the steps of:

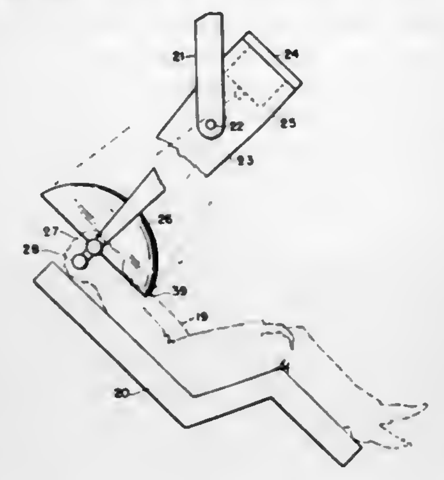
(a) measuring the amount of light which passes through a transparent image of each character of a sample set of printing characters having known individual lateral space values, whereby a light value for each character is obtained,
(b) recording the relation of the measured light value to the lateral space value for each character of said set of printing characters,
(c) measuring the amount of light which passes through the transparent image of a printing character of unknown lateral space value, which image is substantially proportional to a corresponding image of a character of said sample set of printing characters, whereby a light value for said printing character is obtained, and
(d) comparing the measured light value corresponding to said unknown lateral space value with the recorded light values of said sample set of printing characters, whereby proportional light values for the characters of known and unknown lateral space values indicate equal lateral space values for those characters.

3,311,017
PROJECTION-SCREEN SYSTEM

Robert J. Eckholm, 505 Grand St., New York, N.Y. 10002
Filed Mar. 3, 1964, Ser. No. 349,115
7 Claims. (Cl. 88—24)

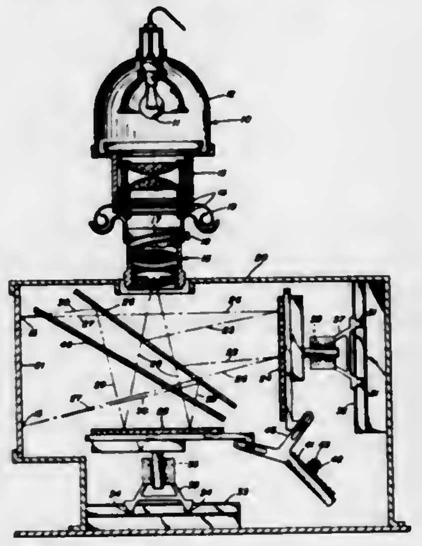
1. The process of presenting a visual image comprising the steps of rear projecting an image having increasingly radially compressed portions toward its edges onto a concave screen disposed in front of a viewer with the screen and the rear projected image extending at least

substantially within a 90° cone of vision of the viewer, viewing the screen from substantially the center of curvature of the screen, and projecting the more compressed edge portions of the image on the more rearwardly sloping edges of the screen.



3,311,018
VARIABLE CONTRAST INTERFERENCE VIEWER

Robert S. Neasham, 1910 W. Surrey Ave., Phoenix, Ariz. 85029
Filed Apr. 23, 1965, Ser. No. 450,554
6 Claims. (Cl. 88—24)

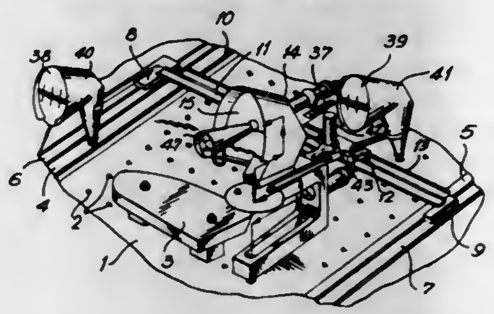


1. An improved viewing system for increasing the range of the gray scale of a photographic medium possessing image intelligence comprising:

an enlarger type illumination system for projecting an image to be viewed,
a viewing screen for observation by an observer,
a projection lens system for providing a sharply focused image of the intelligence contained by the photographic medium upon the viewing screen, the improvement comprising;
an interferometer device interposed between said projection lens system and said viewing screen in a manner whereby the optical beam of intelligence carrying light is split by a beam-splitting device thereof,
a first light beam reflection surface so disposed with respect to said beam-splitting device as to reflect the reflected beam from a beam-splitting device which beam is impinging thereon back through a second portion of said beam-splitting device thence onto said viewing screen,
a second light reflecting surface so disposed with respect to said beam-splitting device as to reflect the transmitted beam from said beam-splitting device and which is impinging on said second reflecting surface, back toward and onto the reverse side of said beam-splitting device for subsequent reflection by said reverse side of said beam-splitting device and onto said viewing screen, and in substantial registration with the beam of light reflected onto and back from said first beam reflecting surface.

3,311,019
PROJECTION DEVICE FOR DETERMINING COORDINATES OF EQUIDISTANT CURVE CONSTITUTING THE CONTOUR OF A WORKPIECE

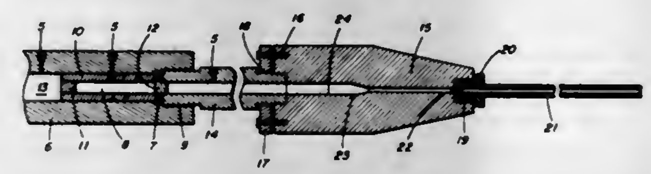
Alexei Gavrilovich Valikov, Obolensky Pereulok 9, Korpus I, Kv. 53, Moscow, U.S.S.R.; Valentin Mikhailovich Eliseev, Kutuzovsky Prospect 43, Kv. 100, Moscow, U.S.S.R.; and Vasily Alexandrovich Busygin, Oktyabrsky Proezd 15, Kv. 18, Serpukhov, Moskovskoi Oblasti, U.S.S.R.
Filed May 3, 1965, Ser. No. 452,802
3 Claims. (Cl. 88—24)



1. A projection device for determining coordinates of the equidistant curve constituting the contour of a workpiece, preferably in checking workpieces machined on programme-controlled metal-cutting machine-tools, comprising: an optical system serving the purpose of projecting the image of the workpiece under check onto a screen; means for moving said optical system in three mutually perpendicular directions with respect to the workpiece being checked; means for measuring said movements of said optical system; a device for reproducing on said screen an image corresponding to the profile of a cutting tool, in the form of a master circle; an auxiliary optical system provided with an additional screen and serving to project a portion of the contour from said main screen onto said additional screen.

3,311,020
MULTIPLE PISTON TWO-STAGE LIGHT GAS LAUNCHER

Robert Piacesi and Robert H. Waser, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 11, 1965, Ser. No. 439,109
4 Claims. (Cl. 89—8)



1. A multiple piston two-stage gas launcher including:

(a) a barrel to engage a projectile to be fired therefrom,
(b) a pump tube joined to one end of said barrel,
(c) a piston chamber joined to one end of said pump tube,
(d) said pump tube and said piston chamber being maintained under fluid pressure,
(e) a first piston slidably disposed within said chamber and located at one end of said chamber adjacent the juncture of said piston chamber with said pump tube,
(f) a second piston slidably disposed within said piston

chamber at the other end thereof and spatially separated from said first piston as a result of the fluid pressure within said piston chamber,

(g) means including an explosion chamber adjacent one end of said piston chamber adjacent said second piston for driving said second piston toward said projectile thereby also driving said first piston toward said projectile creating a first compression wave resulting from movement of said first piston that initiates projectile movement in the barrel and a second compression wave resulting from movement of said second piston that further increases the velocity of said projectile,

(h) said spatially separated pistons having an axial segment thereof with a diameter larger than the diameter of the pump tube through which they travel whereby said axial segment acts as a seal during travel down said pump tube,

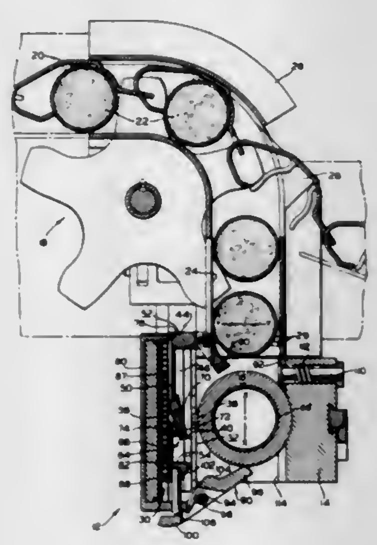
(i) the gas pressure in said explosion chamber is greater than the gas pressure in said piston chamber,

(j) an annular seal between said piston chamber and said pump tube, and

(k) said axial segments of said pistons extending into engagement with sections of said piston chamber and seal respectively, said last named sections having an inside diameter greater than the inside diameter of said piston chamber and said pump tube whereby said pistons are restrained from movement toward said projectile before firing.

3,311,021
FEED MECHANISM

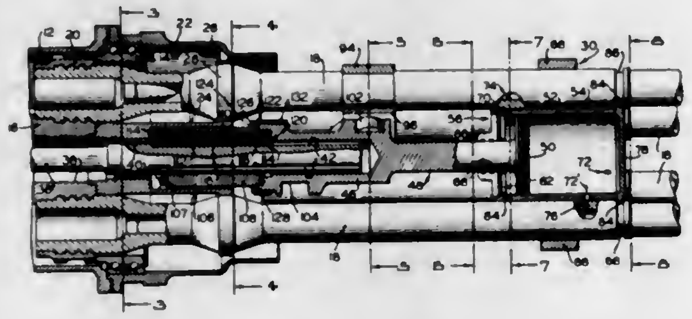
Frederick P. Reed, Ludlow, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 30, 1965, Ser. No. 452,412
9 Claims. (Cl. 89—33)



1. In a machine gun having a receiver, a barrel supported by the receiver for reciprocation in forward and rearward strokes between a forward loading position and a rearward battery position, means for delivering a cartridge with a case to a pickup station outside the receiver and an extractor for removing the fired case of the cartridge from the barrel during the forward stroke thereof, a feed mechanism including a feed pawl device for transferring the cartridge from the pickup station to an indexed position in the receiver forward of the extractor and in axial alignment with said barrel, other pawl devices cooperating with said feed pawl device to releasably hold the cartridge in the indexed position for envelopment by the barrel during the recoil stroke thereof to the battery position, cooperating means on said feed pawl device and said other pawl devices to effect displacement thereof out of interference with the barrel during envelopment of the cartridge thereby, an ejector device arranged to eject the fired case from the receiver, means for slidingly mounting said feed pawl device in the receiver to contact the cartridge at the center of gravity thereof, and means for mounting said ejector device in the receiver to contact the fired case at the center of gravity thereof.

3,311,022
GAS DRIVE FOR AUTOMATIC GUN WITH ROTATING BARREL CLUSTER

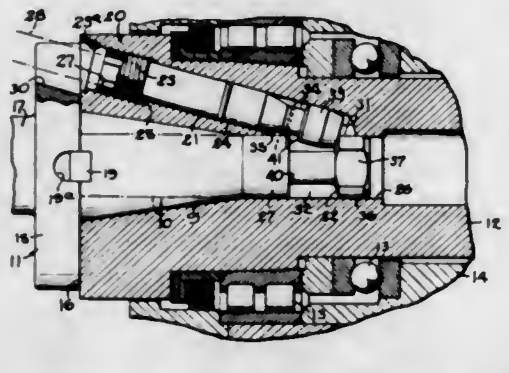
Robert R. Bernard, Essex Junction, Robert E. Chiabrandy, Burlington, Gerard H. Donovan, Essex Junction, and James Seemann, South Burlington, Vt., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Dec. 1, 1965, Ser. No. 511,306
7 Claims. (Cl. 89—126)



1. In an automatic gun having a plurality of barrels radially grouped for rotation about a common axis, a self-powered gas drive comprising a gas cylinder fixedly secured to the barrels for rotation therewith within the central opening defined by the radial grouping thereof, a longitudinal shaft fixed to the rear end of the gun for axial passage therethrough into the area adjacent the breech ends of the barrels, a gas piston slidably mounted on the forward end of said shaft and having an enlarged head extending into said gas cylinder, a plurality of gas passages formed in said gas cylinder for successively directing the discharge gases exiting from the barrels against opposite faces of said piston head for imparting longitudinal reciprocation thereto, and cam means on said gas piston for converting the longitudinal reciprocation thereof to rotation of the barrels.

3,311,023
CUTTER SHANK TIGHTENER

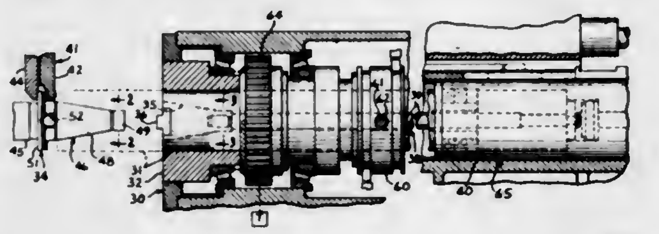
Karl B. Kaiser, Rockford, Ill., assignor to The Ingersoll Milling Machine Company, Rockford, Ill., a corporation of Illinois
Filed Nov. 12, 1964, Ser. No. 410,425
6 Claims. (Cl. 90—11)



1. The combination of, a hollow rotary spindle having an outwardly opening recess in one end, a shank fitting into said recess and projecting beyond the end of said spindle to support a cutter, a hole in said spindle extending inwardly along the spindle axis while converging toward the axis with its inner end intersecting said recess short of the inner end thereof, an annular groove around the said shank short of the inner end thereof and in the plane of the inner end of said hole, said groove being defined by axially spaced and oppositely facing first and second walls, a rod journaled in and slidable along said hole, a head on the inner end of said rod having oppositely and axially facing annular end surfaces with arcuate side portions thereof projecting within said groove for abutment with said first and second walls, said end surfaces being axially spaced apart a distance somewhat less than said groove walls, and means coupling the outer ends of said rod and spindle and selectively operable to advance said rod and push one end surface of said head against said first wall to draw said shank inwardly or alternatively retract the rod to pull the other end surface of said head against said second wall and pull the shank outwardly relative to the spindle.

3,311,024
ROTARY ACTUATOR POWER DRAWBOLT FOR MACHINE TOOL SPINDLES

Jesse Daugherty, Fond du Lac, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 431,368, Feb. 9, 1965. This application Aug. 1, 1966, Ser. No. 569,532
9 Claims. (Cl. 90—11)



1. A power drawbolt assembly for releasably securing a tool in the socket of a machine tool spindle, the tool having a toolholder with a bore therein and breech block type threads in the bore, the combination comprising a drawbolt disposed longitudinally of the spindle and having an outer end portion projecting into the socket, said outer end portion having breech block type threads engageable with those of the toolholder, a first rotary fluid actuator connected with said drawbolt and adapted to effect rapid engagement of said threads on said drawbolt and the toolholder, a second rotary fluid actuator connected with said drawbolt and adapted to tension the same axially to seat the toolholder in the spindle socket, and means for interlocking said first and second actuators for operation in sequence.

3,311,025
FEED RATE MODIFIER

Frank Zankl and Richard E. Stobbe, Milwaukee, Wis., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Sept. 16, 1965, Ser. No. 487,833
23 Claims. (Cl. 90—21)

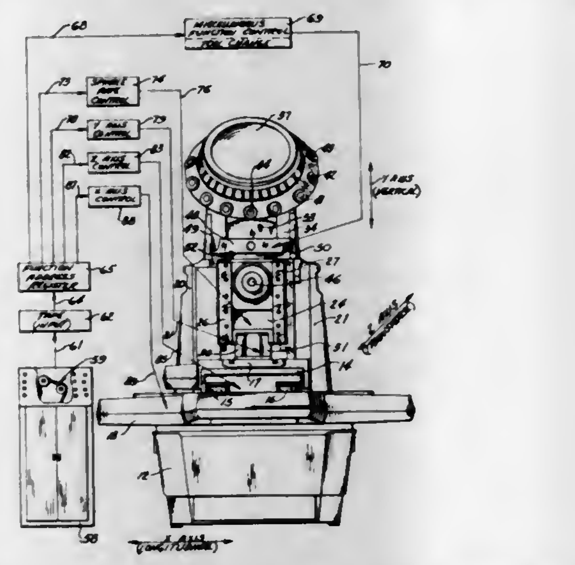
1. In a machine tool having a rotatable tool spindle and a relatively movable work support;

a variable speed hydraulic drive system operative to rotate said spindle at a preselected rate;

a variable speed feed drive mechanism operative to move said work support at a preselected feed rate for moving a workpiece carried by said work support into cutting engagement with a cutter carried by said tool spindle;

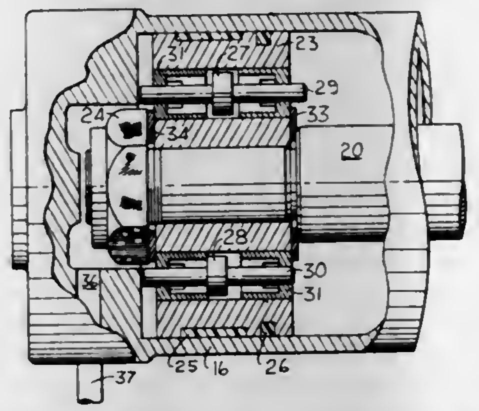
a pressure switch interconnected in said hydraulic drive system for said spindle said switch being open during a normal machining operation, but being preset for actuation upon the occurrence of an abnormal load on said spindle drive system, and

a feed rate controller separate from said drive systems and operative to reduce the preselected feed rate of said variable feed drive mechanism upon being connected by said pressure switch for reducing the load on said spindle by effecting relative feeding movement of said work support at a predetermined reduced rate.



3,311,026
BYPASS VALVE FOR HYDRAULIC JACKS

Chester A. Crisp, Wilmington, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 27, 1965, Ser. No. 516,619
2 Claims. (Cl. 91—401)



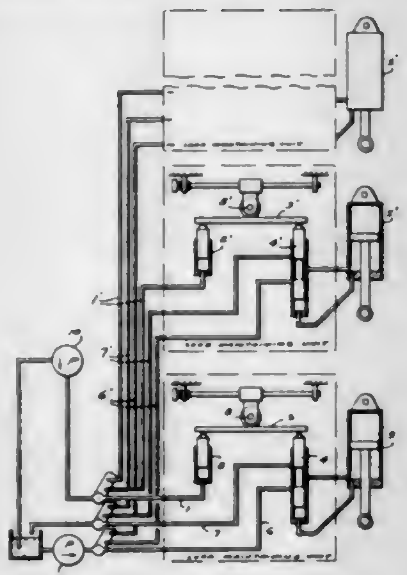
1. In a hydraulic jack having a piston rod and piston and check valves in the piston which are closed by pressure on either side of the piston and having stems projecting from the piston for engagement with the end of the cylinder at the opposite side of the piston to reduce shock when the piston approaches the end of its stroke, the improvement which comprises means for opening one of said check valves prior to opening others to modulate the escape of pressure through the piston and reduce the shock occurring at the end of its stroke.

3,311,027
LOAD MAINTAINING UNIT FOR HYDRAULIC FATIGUE LOADING MACHINES

Ernst Kindlimann, Lucerne, Switzerland, assignor to Eidgenossisches Flugzeugwerk Emmen, Emmen, Lucerne, Switzerland, a company of Switzerland
Filed Feb. 17, 1964, Ser. No. 345,519
Claims priority, application Switzerland, Feb. 20, 1963, 2,226/63
4 Claims. (Cl. 91—414)

1. An arrangement of the character described comprising, in combination, a plurality of hydraulic working load generators; a single source of liquid under pressure; a plurality of pressure conduits respectively connecting said single source of liquid under pressure with said working

load generators, respectively, for feeding liquid under pressure from said single source into the respective hydraulic working load generators; a drain conduit for each working load generator for discharging pressure liquid therefrom; valve means in each pressure conduit and the corresponding drain conduit and including a valve member movable from an equilibrium position, in which said valve member closes said pressure conduit and the corresponding drain conduit, in a first direction to a feed position connecting the respective pressure conduit with the respective working load generator, and movable from said equilibrium position in a second direction to a discharge position connecting the respective drain conduit with said working load generator; means for transmitting the fluid pressure in said working load generator to said valve member, said means being constructed and arranged so as to tend to move the latter in said second direction; and adjustable control means connected to said valve member and applying to the latter a force tending to move said valve member in said first direction, said control means comprising a single source of control fluid under pressure, a plurality of control cylinders, one for each valve member, and communicating with said single source of control fluid, a control piston in each control cylinder and subjected to the fluid pressure of said single source of control fluid, and transmisison means between each control piston and the corresponding valve member for transmitting the pressure exerted on said control piston to said valve member and including a lever tiltable about pivot means and engaged at points spaced from said pivot means by said control piston and said valve member, respectively, and means for changing the position of said tilting means relative to said points.



3,311,028
ROLLING DIAPHRAGM DEVICE WITH ROLLING DIAPHRAGM HAVING CLAMPING BEAD AND RESILIENT CLAMPING MEANS FOR THE BEAD

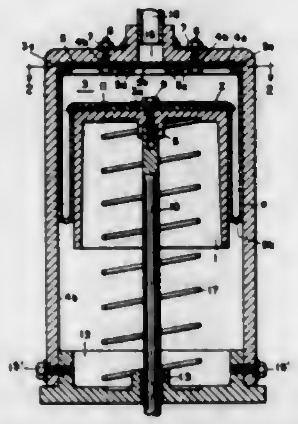
John F. Taplin, 15 Sewall St.,
West Newton, Mass. 02165
Filed July 26, 1966, Ser. No. 568,069
5 Claims. (Cl. 92—99)

1. A rolling diaphragm device comprising:

(a) a cylinder body having a longitudinal axis and having an internal cylindrical lateral wall surface and having an internal substantially flat inner end surface, said internal cylindrical lateral wall surface and said substantially flat inner end surface defining a substantially circular edge at the locus of intersection thereof;

(b) a reciprocable piston coaxially arranged inside said cylinder body having an external cylindrical lateral wall surface spaced from said internal cylindrical lateral wall surface of cylinder body, said lateral wall surface of said cylinder body and said lateral wall surface of said piston defining a toroidal space;

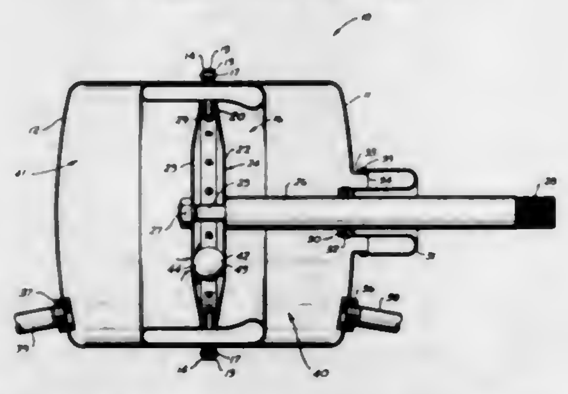
(c) a rolling diaphragm having a radially inner portion secured to said piston, a rolling wall forming a convolution arranged inside said toroidal space and an annular clamping bead arranged substantially at said circular edge at said locus of intersection of said lateral surface of said cylinder body and said end surface thereof; and



(d) resilient cantilever-type clamping means for said annular clamping bead of said rolling diaphragm extending substantially parallel to said flat inner end surface of said cylinder body, said clamping means being fixedly secured to said substantially flat inner end surface of said cylinder body at points relatively close to said longitudinal axis thereof and having radially outer flexible ends cooperatively engaging said annular bead of said rolling diaphragm and being flexed relative to said flat inner end surface of said cylinder body by virtue of the thrust imparted to said radially outer flexible ends of said clamping means by said annular bead of said rolling diaphragm.

3,311,029
DIFFERENTIAL FLUID PRESSURE OPERATED MECHANISM

Thomas E. Kimble, Pataskala, Ohio, assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 18, 1965, Ser. No. 465,029
1 Claim. (Cl. 92—100)



A differential fluid pressure operated mechanism, comprising:

a casing having a hollow interior of substantially cylindrical configuration for receiving and containing fluid therein,

a piston formed of a pair of concentric, annular, metal discs having concentrically aligned, circular valve seats formed therein, said piston being mounted for lineal displacement in the casing interior, the internal diameter of the casing interior being greater than the outer diameter of said piston,

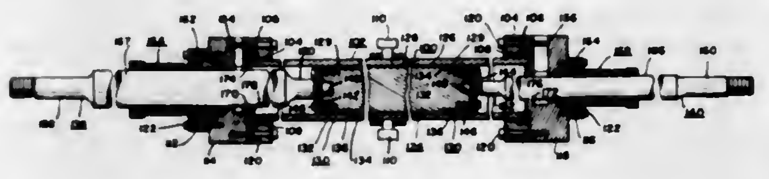
a flexible tubular annulus interposed between said piston and the casing interior, said annulus having an inner radially apertured, annular lip sealed to and clamped, along an inner peripheral surface between adjacent peripheral surfaces of said concentric, annular, metal discs of said piston and being sealed along an outer peripheral surface to the casing interior, said piston and annulus thereby separating said casing into first and second pressure-tight chambers,

a fluid conveying passage formed in said piston and communicating with the interior of said annulus through the radial apertures in the annular lip of said annulus and communicating with both of said chambers, and

a pressure-responsive valve having a ball, mounted for minute movement, solely between the concentrically aligned, circular valve seats in the annular metal discs of said piston and being positioned in said passage, said valve being actuated by a pressure differential between said first and second chambers for blocking the flow of fluid through said piston and for opening said passage to fluid flow from the chamber at the greater pressure.

3,311,030
SELF-ALIGNING PACKING GLAND ARRANGEMENTS

Fred E. Halstead, Rochester, Pa., assignor to Halstead Metal Products, Inc., Zelienople, Pa., a corporation of Pennsylvania
Filed Feb. 9, 1965, Ser. No. 431,278
3 Claims. (Cl. 92—118)

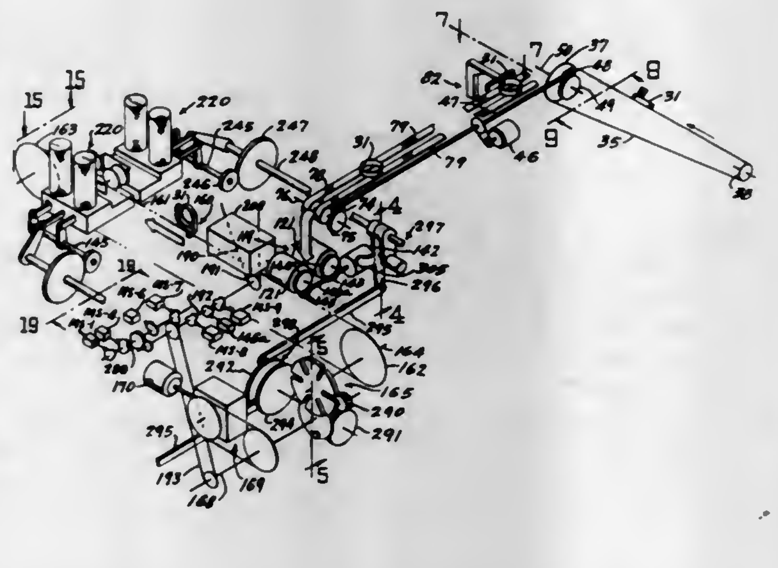


1. In a piston and cylinder arrangement, the combination of an elongated cylinder housing, a self-aligning packing gland carried at one end of said cylinder housing and having a spherically-shaped surface rotatable within a cooperating stationary spherically-shaped recess carried on said one end of said housing, a longitudinal opening extending through said packing gland, a piston reciprocable within said cylinder housing, a piston rod connected to the piston and extending through the opening in said packing gland, and stationary trunnion means for pivotally supporting said cylinder housing along a pivotal axis extending substantially normal to the anticipated plane of angular displacement of said piston rod and said packing gland relative to said cylinder housing in order to minimize bending stresses at the junction of said piston rod and said piston.

3,311,031
APPARATUS FOR ASSEMBLING SPOOLS

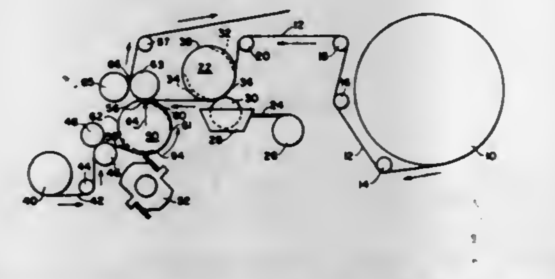
Luther E. Sevison and Kenneth L. Sevison, Toledo, Ohio, assignors to S. H. Davis Paper Box Company, Toledo, Ohio, a corporation of Ohio
Filed Feb. 3, 1964, Ser. No. 342,296
12 Claims. (Cl. 93—1)

9. A header mechanism for an apparatus for the assembly of spools, each of said spools consisting of an open ended tubular core and two head discs of diameter greater than said core and adhered on the ends thereof, said apparatus comprising means for applying glue on the ends of said cores and conveyor means for serially presenting said cores at uniformly spaced times and at a heading position with the ends thereof exposed and lying in vertical planes, said header mechanism comprising, in combination, a vertical tubular magazine adapted to hold a stack of head discs, a selector slide forming a bottom for said magazine, said slide having a disc recess in its upper surface and being reciprocal between a first position with said recess at the bottom of said magazine and a second position with said recess removed from beneath said magazine, means for reciprocating said slide between said positions, a transfer head having a head disc contact face and means for centering a head disc thereon, means mounting said transfer head for movement between a pick-up position overlying the recess in said slide at the removed position thereof and an assembly position adjacent one end of a core in heading position, and drive mechanism actuated in timed relationship to the movement of said conveyor means for reciprocating said selector slide and transfer head between their positions for serially selecting individual head discs, moving said discs out of said magazine, picking up said discs and applying said discs to the ends of successive cores.



3,311,032
TEAR TAPE FOR PLASTIC PACKAGING MATERIALS

Malcolm B. Lucas, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 24, 1964, Ser. No. 420,974
3 Claims. (Cl. 93—1)



1. A method for applying tear tapes at predetermined spaced intervals to a continuous web of plastic packaging material comprising the steps of:

(a) withdrawing a continuous web of tear tape material from a supply roll and severing the web into a plurality of successive tear tapes having a predetermined and substantially uniform length,

(b) withdrawing a continuous web of grained plastic packaging material from a supply roll such that its direction of grain orientation corresponds to its direction of movement,

(c) heating a hot-melt adhesive to a temperature of from about 375° F. to a temperature which will not cause damage to any of the components comprising the adhesive, the plastic packaging material and the tear tape material,

(d) applying successive elongated stripes of the hot-melt adhesive in narrow areas at spaced intervals on the web of plastic packaging material such that both the width and length of each adhesive area is less than the corresponding width and length of the tear tapes, said adhesive being applied such that successive stripes are in longitudinal alignment,

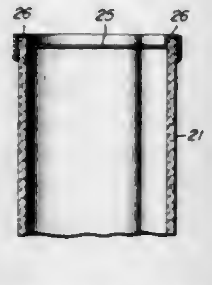
(e) adhering a tear tape to each successive stripe of adhesive such that one end of the tear tape coincides with one end of the adhesive stripe thereby leaving the other end of the tear tape free to form a pull tab.

3,311,033
CELLULOSE FIBER CANS

Joseph B. Felton, Jr., Mount Pleasant, John F. Turner, North Charleston, and Archie D. Duncan, Jr., and William J. Funderburk, Charleston, S.C., and Roger Bart, Weston, Conn., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Original application Nov. 12, 1963, Ser. No. 322,705. Divided and this application Sept. 30, 1965, Ser. No. 498,189

15 Claims. (Cl. 93—39.1)



1. The method of producing cans suitable for packaging of thermal processed foods which comprises impregnating a non-woven cellulose fiber web with a thermosetting resin, curing under pressure the resin in at least one such resin impregnated web while in a flat state to produce a unified sheet having from 15 to 60% thermoset resin dispersed throughout said sheet, said sheet having a specific gravity of at least 1.05 and which after conditioning in a saturated steam atmosphere at 212° F. for five minutes will have a modulus of elasticity in flexure of at least 500,000 which is in excess of 65% of the original modulus of elasticity in flexure prior to such conditioning, forming said cured resin impregnated sheet into a cylindrical shape adhesively securing opposite edges of the sheet together to form a cylindrical can body, and attaching a can end to said can body.

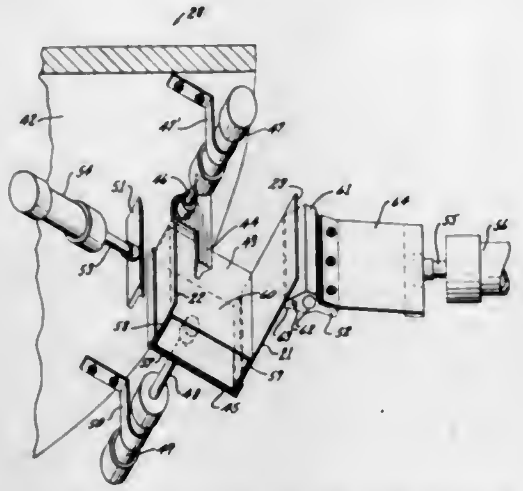
3,311,034
METHOD AND APPARATUS FOR MAKING A CIGARETTE PACKAGE CONSTRUCTION OR THE LIKE

William C. Whitaker, Chesterfield County, and J Paul Krupp, Jr., Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Mar. 16, 1964, Ser. No. 352,084

16 Claims. (Cl. 93—44.1)

1. Apparatus for making a receptacle from a blank comprising a pair of folding means, means for moving said folding means toward each other to fold the opposed ends of said blank in overlapping relation, one of said folding means including a heating means to heat seal said overlapping ends together by engaging the outer overlapping end, and means to hold said overlapping ends together until said ends are secured together, said one folding means and said holding means being so constructed and arranged that the same are adapted to simultaneously engage the exterior of the overlapping end at an overlapping portion thereof during the heat sealing of said overlapping ends.



3,311,035
METHOD OF MAKING HEAT-RESISTANT MATS

Hubert J. Poskey, Sulphur Springs, and Gerald F. Thomas, Arlington, Tex., assignors to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware

No Drawing. Filed Dec. 18, 1964, Ser. No. 419,577

2 Claims. (Cl. 94—22)

1. The rapid method of preparing a landing mat for VTOL aircraft comprising the steps of mixing 35–70% by weight of ethylene glycol-chlorendic acid-fumarate type polyester resin with 25–40% by weight of boric acid and 3–10% by weight of antimony trioxide to disperse said boric acid and said antimony trioxide throughout said resin,

dispersing glass fiber on the ground over an area selected for a landing site,

adding a peroxide catalyst to said mixture in an amount required for curing said resin, and

applying said mixture onto said glass fiber immediately after adding said catalyst.

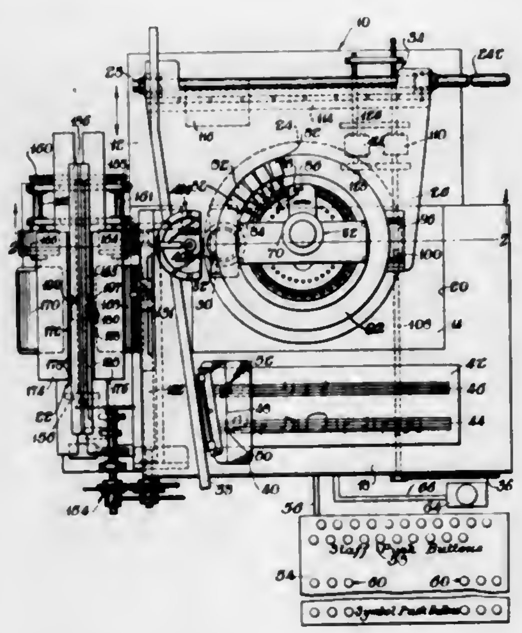
3,311,036
APPARATUS FOR COMPOSING MUSIC COPY

Henry Blake Wilson, Shipley Heights, Wilmington, Del., and Allen W. Mickel, Chadds Ford, Pa., assignors to Kaumagraph Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 4, 1965, Ser. No. 423,040

8 Claims. (Cl. 95—4.5)

1. An apparatus for composing musical copy comprising a stationary frame, a table mounted upon said frame for supporting a sheet of light sensitive material, movable support means connected to said frame, a symbol magazine incorporating light passing images of a variety of musicals symbols connected to said support means, a source of light mounted upon said support means for directing light upon the light sensitive material, an exposure station on said support means positioned in front of said source of light, symbol image feeding means connected to said magazine for selecting a predetermined symbol image and disposing it at said exposure station between said light source and the light sensitive material, translating means reacting between said exposure station and said table through said frame for varying the vertical and lateral orientation of said exposure station relative to the sheet disposed upon said table, auxiliary symbol mounting means on said support plate for selectively disposing an auxiliary light passing image of a musical symbol at said exposure station, a musical staff symbol light passing image in said mounting means for imprinting a musical staff upon the light sensitive material when said symbol image is disposed at said exposure station, said auxiliary symbol mounting means including a symbol supporting bar disposed under said support means and above said light sensitive material, rotating means being connected to said bar for selectively disposing auxiliary musical symbols at said exposure station, a fixed plate being secured on said support means, said rotating means comprising a shaft extending through said plate and connected at one end to said bar, a handle being connected at the opposite end of said shaft above said plate for controlling the rotation of said bar, stop means being on said handle and said fixed plate for selectively maintaining said bar accurately positioned with each end disposed at said exposure station and for maintaining said bar in an inactive position with both of said ends of said bar disposed away from said exposure station.



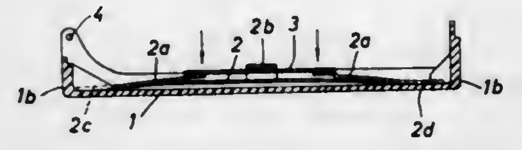
3,311,037
PRESSURE PLATE ASSEMBLY FOR CAMERAS

Alfred Winkler, Munich, Dieter Engelsmann, Unterhaching, Munich, and Siegfried Zobel, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany

Filed Dec. 18, 1964, Ser. No. 419,294

Claims priority, application Germany, Dec. 20, 1963, A 21,076

10 Claims. (Cl. 95—11)



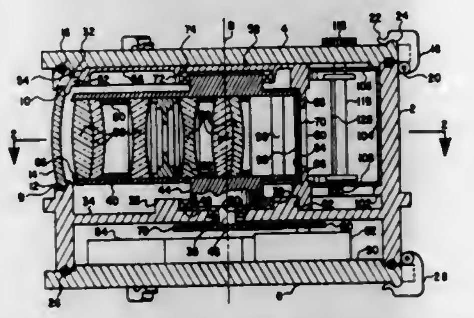
1. In a camera, in combination, a rear wall having an inner surface; leaf spring means located next to said inner surface of said rear wall, said leaf spring means having a concave surface directed toward said inner surface of said rear wall and having a pair of opposed ends engaging said inner surface of said rear wall, and said leaf spring means having a pair of arms spaced in the direction of film movement in said camera and tending to move away from said rear wall; and a pressure plate located in front of and adjacent to said leaf spring means so that the latter is situated between said pressure plate and said rear wall, said arms engaging said pressure plate at portions thereof spaced from each other in said direction of film movement and at a surface thereof which is directed toward said rear wall for urging said pressure plate away from said rear wall and reducing the tendency of said pressure plate to tilt relative to said direction of film movement.

3,311,038
PANORAMIC CAMERA WITH OFF-AXIS LENS

James B. Cummins, Silver Spring, Md., assignor to Photogrammetry, Inc., Rockville, Md.

Filed Oct. 16, 1964, Ser. No. 404,216

16 Claims. (Cl. 95—16)



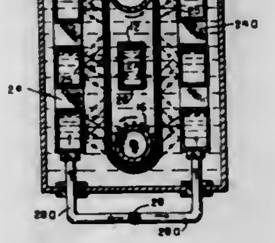
1. In a camera, a housing, an in-line lens system mounted within said housing and including a plurality of lens elements mounted within a lens barrel, said lens system having spaced front and rear nodal points and said lens barrel being mounted for rotation about an axis disposed perpendicular to the principal axis of said lens system and spaced between said nodal points, and means for altering the distance from the axis of rotation to the focal surface of the camera by a distance equal to the distance between said rotational axis and said rear nodal point.

3,311,039
PHOTOGRAPHIC FLUID PROCESSING APPARATUS

Christopher Lucas, Long Branch, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed July 9, 1964, Ser. No. 381,599

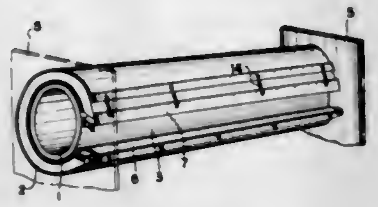
2 Claims. (Cl. 95—94)



1. A processing apparatus for photographic film, or the like, comprising a tank having therein a processing solution, a conveyor means for said film including an endless porous belt carried by a pair of spaced rotatable rollers within said tank, a vacuum manifold disposed within the area defined by said belt, at least one pressure spray manifold within the tank and spaced from one of the elongated side surfaces of said belt, a length of tubing between said vacuum manifold and said pressure spray manifold, and means intermediate said tubing for extracting the liquid processing solution from said vacuum manifold and directing said solution into said pressure spray manifold and onto said film to maintain said film on said belt in its travel.

3,311,040
HEAT-DEVELOPING APPARATUS FOR POSITIVE PICTURE COPIERS

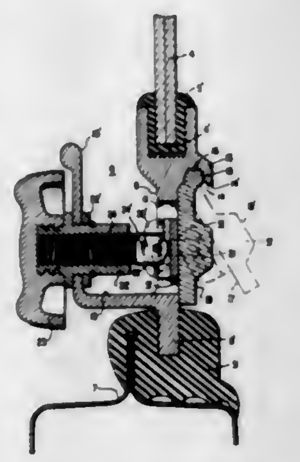
Toshio Ishikawa, Kadoma, Osaka, Japan, assignor to Minolta Camera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Aug. 28, 1964, Ser. No. 392,892
Claims priority, application Japan, Apr. 8, 1964, 39/27,343
1 Claim. (Cl. 95—94)



Heat-developing apparatus for positive picture copiers, characterized in that a shrinking and heat insulating, lagging material cylinder is fitted outside a rotary developing cylinder which in turn encloses therein a heat source and temperature controlling means, a heat-resistant sliding cloth inserted between said two cylinders, said sliding cloth being secured at one end to a hanging beam arranged opposite an opening of said lagging material cylinder while its other end constitutes a free end, and a clamping band is arranged around the outer periphery of said lagging material cylinder, one end of said band being secured to the hanging beam while its other end is secured through a tension spring to another hanging beam arranged opposite an opening of said lagging material cylinder.

3,311,041
VENTILATING ARRANGEMENT FOR MULTI-PASSENGER VEHICLES

Hermann H. Fr. Ahrens, Stuttgart-Vaihingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Mar. 26, 1965, Ser. No. 442,973
7 Claims. (Cl. 98—2)



1. Ventilating arrangement for vehicles, particularly buses, provided with seating spaces for accommodating passengers, windows adjacent said seating spaces and frame members supporting said windows in the vehicle superstructure, comprising:

insert means provided between one edge of a vehicle window and a frame member extending over the entire width of said window,

sealing means for sealing said insert means along the entire periphery thereof to said window and said frame member, and

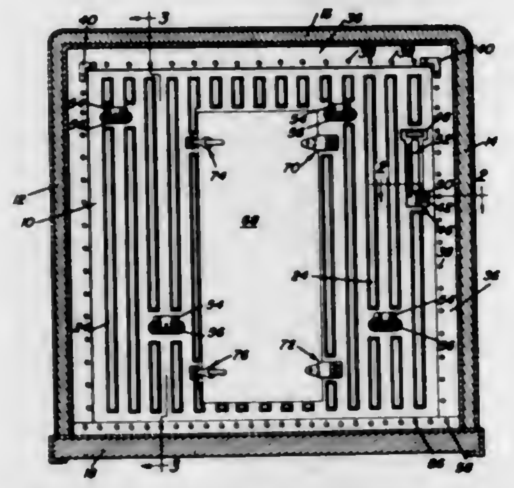
selectively closeable aperture means in said insert means manually adjustable from within said vehicle for regulating the degree of opening of said aperture means,

said aperture means further including a pivotable closure member associated with each opening and capable of being adjusted as to position with respect to said opening from within the vehicle,

said insert means including an extension forming an open channel on the inside of the vehicle in proximity to said one edge of said window, and adjusting means mounted on said extension for controlling actuation of said pivotable closure member.

3,311,042
BULKHEAD

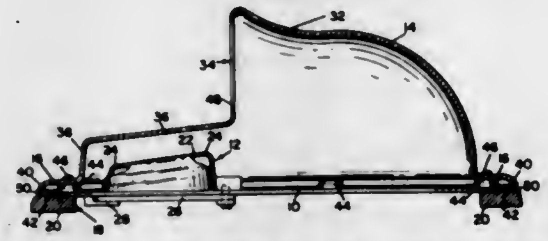
Sylvester B. Severson, Rice Lake, Wis., assignor of fifty percent to J. Charles Peterson, Rice Lake, Wis.
Filed Sept. 8, 1965, Ser. No. 485,848
15 Claims. (Cl. 98—6)



1. A partition for dividing an article storage chamber formed by enclosing wall surfaces comprising a generally flat member having upper, lower and side peripheral edges, expansible means on the upper and side edges of the member adapted to be expanded into sealing and frictional engagement with said surfaces whereby the chamber is divided into two sections substantially sealed from one another, substantially flat channel means on said bottom peripheral edge, said channel means being covered by a resilient protective covering and said expansible means covered by a flexible protective covering whereby said surfaces will be protected from marring or scratching, said expansible means being disposed in a groove formed in said upper and side peripheries of said flat member, said flat member including a pair of spaced reinforced plastic sheets having an insulation panel extending between the sheets, each of said sheets including a flange which is arcuate in cross section, said flanges being disposed in an internesting relationship to form said groove.

3,311,043
VENTILATING SKYLIGHT

Herbert J. Atkinson, % Sudbury Laboratory, Sudbury, Mass. 01776
Filed Apr. 13, 1965, Ser. No. 447,789
1 Claim. (Cl. 98—37)



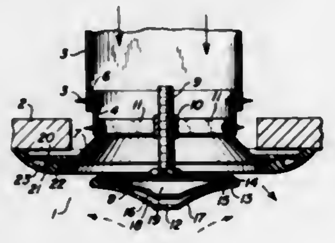
A ventilating skylight construction comprising two main members,

one of said members comprising a generally flat plate adapted to cover an opening, an air intake opening in said plate to one side of the center thereof, and a wall rising from the plate about the opening,

the other member comprising a dome member having substantially a one-half portion thereof substantially flat and continuous and located directly over the air intake opening in the plate, said dome member including a semi-dome having a substantially flat face portion with an opening therein, the flat face portion being located substantially normal to said plate and closer to the center of the plate than the air intake opening, a circumferential flange on said dome member, means securing said flange to the edge portion of said bottom plate, and washers interposed between the flange and bottom plate holding the flange and bottom plate in slightly spaced relation thereto providing a water outlet circumferentially of the skylight, the extreme edge of the flange in the dome member extending outwardly beyond the extreme edge of the bottom plate, and being rounded and extending downwardly slightly toward the edge of the plate, whereby a minimum of water will enter the skylight between the flange and the bottom plate but water in the skylight will run out at all circumferential points thereof.

3,311,044
AIR SUPPLY DIFFUSERS

Lawrence W. Marino, 4020 New York Ave., Seaford, N.Y. 11783
Filed Jan. 21, 1965, Ser. No. 426,902
6 Claims. (Cl. 98—40)



1. An air supply diffuser assembly adapted to pass conditioned air from a conditioned air supply duct into a room through an opening in the ceiling of said room, said air supply diffuser assembly comprising:

(a) a metallic housing adapted to be connected through the opening in the ceiling of said room to said conditioned air supply duct and mounted adjacent the underside of said ceiling, said metallic housing having a central opening therethrough communicating with an opening in said conditioned air supply duct,

(b) thermally insulating gasket means mounted to the periphery of said metallic housing and interposed between said metallic housing and the ceiling of said room,

(c) a metallic diffuser element mounted in said metallic housing along the longitudinal axis of said central opening in said metallic housing,

(d) an annular air passage between said metallic housing and said metallic diffuser element and communicating with said room,

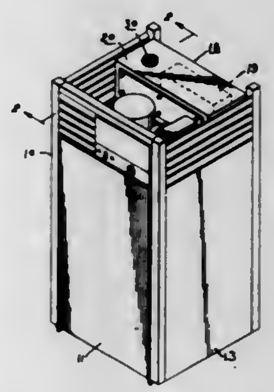
(e) said metallic diffuser element being adapted to deflect conditioned air entering said metallic housing through the opening in said conditioned air supply duct radially of said metallic diffuser element into said annular air passage,

(f) thermal insulation means interposed between said metallic diffuser element and said room and mounted to the bottom of said metallic diffuser element and exposed to non-conditioned room air,

(g) whereby non-conditioned room air is thermally isolated from said air supply diffuser assembly to prevent condensation of moisture in said non-conditioned room air thereon.

3,311,045
VENT BREATHER FOR REFRIGERATOR

Anthony R. Costantini, Lafayette Hill, and Anthony Di Angelus, Manoa, Pa., assignors to Victory Metal Manufacturing Company, Plymouth Meeting, Pa., a corporation of Pennsylvania
Filed Oct. 13, 1964, Ser. No. 403,617
3 Claims. (Cl. 98—51)



1. A vented refrigerator structure comprising in combination:

(a) a refrigerator having a cooled storage compartment with an access door thereto by means of which articles to be cooled may be placed into and removed from the compartment,

(b) a duct extending transversely through one wall of said refrigerator with the inner end of said duct in atmospheric communication with said storage compartment and with the outer end of said duct being openable to the atmosphere external to said refrigerator through a venting device, and

(c) a pressure responsive venting device across said duct carried by said one wall of said refrigerator, said venting device including pressure responsive means effective to automatically open said duct to atmosphere only whenever the internal pressure in said storage compartment drops below the atmospheric pressure external to said refrigerator and to otherwise close said duct against air flow between said storage compartment and said atmosphere.

3,311,046
SMOKE CONTROL APPARATUS

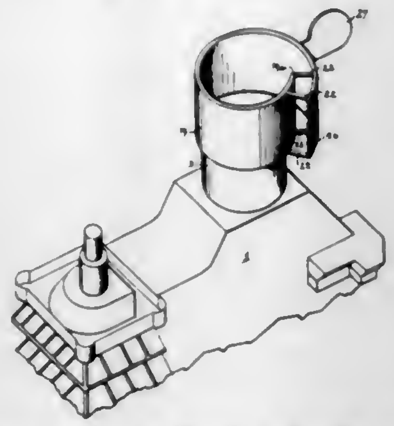
Friedrich O. Ringleb, Woodbury Heights, N.J., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 17, 1965, Ser. No. 480,529
4 Claims. (Cl. 98—60)

1. Apparatus for controlling the discharge of a fluid from an open flue, said apparatus comprising:

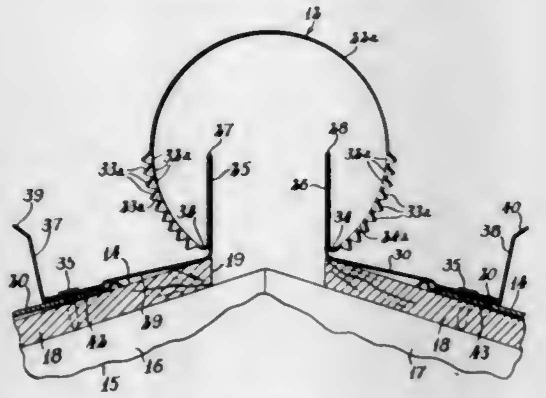
(a) a tubular conduit having a slit which extends along the full length of one side thereof, the juxtaposed lateral edges of the slit tubular conduit being respectively spiralled inwardly and outwardly from one another, the top and bottom of the slit tubular conduit between overlapping portions of its spiralled upper and lower edges being left substantially open;

(b) means for rotatably mounting the spiralled tubular conduit on the open end of the flue with the longitudinal axis of the inner convolution of the conduit in substantial alignment with the longitudinal axis of the flue;

(c) and means for orienting the opening between the outer lateral edge of the spiralled tubular conduit and the juxtaposed surface of the tubular conduit into the direction of external fluid flow about the flue and conduit.



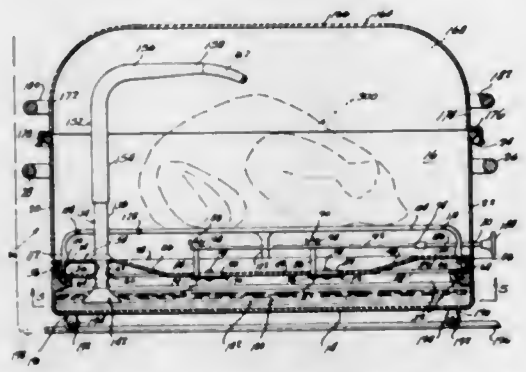
3,311,047
ROOF VENTILATORS
Lester L. Smith, Peoria, Ill. (P.O. Box 68, Princeville, Ill. 61559), and Frank E. Randall, Peoria, Ill.; said Randall assignor to said Smith
Filed Apr. 12, 1965, Ser. No. 447,182
7 Claims. (Cl. 98—42)



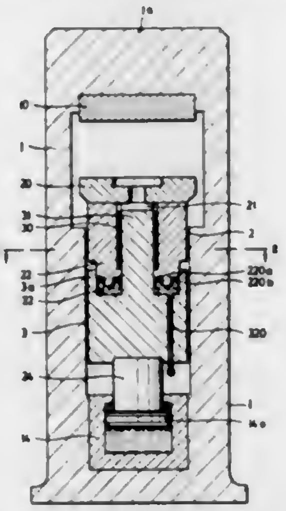
1. A roof ventilator adapted to integral production from strip stock as a roll formed section and to mounting over a slot of predetermined width extending along the ridge of a roof, said ventilator comprising, in combination, an imperforate top having a width greater than that of said slot and side portions extending outwardly and downwardly on opposite sides of a longitudinal central plane, side wall portions integrally adjoined to the outer lateral extremities of the top and extending downwardly and inwardly therefrom to positions spaced apart approximately the width of said slot, said side wall portions having integrally louvered vent openings therein, flashing portions extending outwardly at the lower ends of said side wall portions and adjoined thereto through double thickness baffles which extend upwardly and have adjacent planar parts in face-to-face relationship to one another and adjacent edge regions integrally adjoined respectively to said side wall portions and flashing portions, said baffles being disposed between the side walls in spaced and opposed relationship to one another and in spaced relationship to the louvered vent openings.

3,311,048
COOKING UTENSIL WITH BASTING APPARATUS
John J. Pickering, 102 Barrett Ave., North Providence, R.I. 02904
Filed Oct. 12, 1965, Ser. No. 495,099
6 Claims. (Cl. 99—346)

1. A roasting pan adapted to receive a basting liquid therein and apparatus disposed in said pan for basting foods being roasted therein, said pan comprising a normally horizontal bottom wall having an endless side wall projecting upwardly from the peripheral marginal edge thereof, an endless flange fixedly secured to and projecting inwardly from said side wall into said pan, said flange being disposed in vertically spaced relation relative to said bottom wall and marking the upper maximum level for said basting liquid, a grill disposed in said pan, means supporting said grill on said flange in vertically spaced relation relative to said bottom wall, a normally upright substantially hollow conduit disposed in said pan and having opposed open lower and upper ends, means disposed in said pan supporting said conduit in its upright position with said lower end of said conduit extending below said flange for immersion in said liquid, said upper end of said conduit extending above said food, and nozzle means at the upper end of said conduit discharging said liquid downwardly on said food as said liquid expands under heat and rises in said conduit.

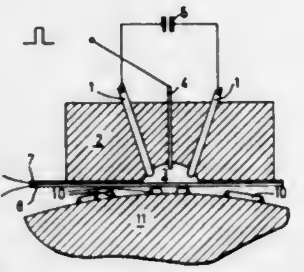


3,311,049
HYDRAULIC PRESS
Wilfried Hügi, Hechtengraben 2, Postfoch 76, Brunnen, Switzerland
Filed Oct. 18, 1965, Ser. No. 497,112
Claims priority, application Switzerland, Oct. 16, 1964, 13,494/64
10 Claims. (Cl. 100—269)



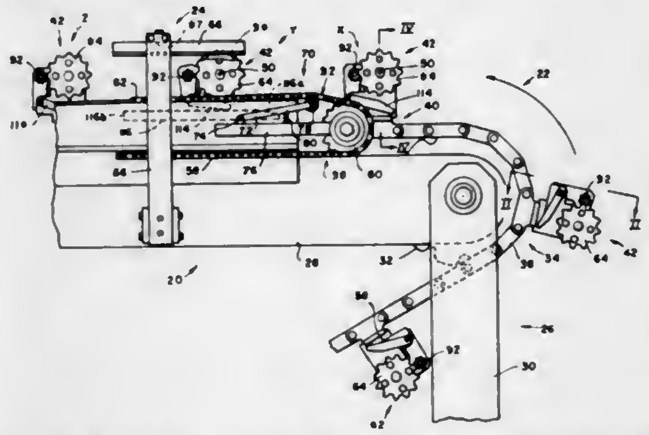
1. A hydraulic press, comprising a frame; a carrier fixedly mounted in said frame; a ram assembly including a first slide reciprocable in said frame toward and away from said carrier and a second slide disposed between said carrier and said first slide; centrally located first guide means provided on said slides for movably supporting said second slide so that the latter is movable with reference to said first slide toward and away from said carrier; a first cylinder and piston unit for moving said assembly with reference to said frame; a second cylinder and piston unit for moving said second slide with reference to said first slide; and second guide means for guiding said assembly with reference to said frame, including at least three external surfaces provided on said assembly and extending in parallelism with the direction of movement of said slides, and complementary surfaces provided on said frame, each of said external surfaces abutting against and being slidable along one of said compleemntary surfaces.

3,311,050
PRESSURE WAVE ACTUATING MEANS FOR TYPE HAMMERS IN HIGH SPEED PRINTERS
Siegfried Schmidt, Hamburg, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,665
Claims priority, application Germany, Nov. 13, 1963, P 32,973
7 Claims. (Cl. 101—1)



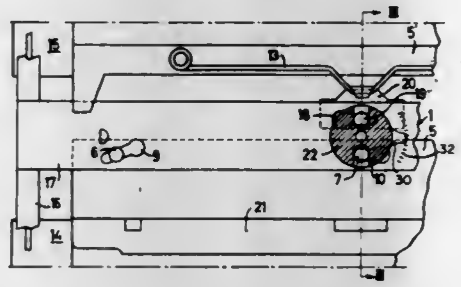
1. In high speed printing apparatus the improvement comprising means defining spaced juxtaposed surfaces, the space between said surfaces not being substantially greater than the thickness of an element to be marked and which is received in said space, said means having a concavity opening into the space between said surfaces, electrode means terminating within said concavity, a hammer, and means mounting said hammer within said cavity having a surface bounding the said space whereby discharge of said electrode means generates a shock wave in said concavity which is shaped by said cavity and impinges on said hammer.

3,311,051
WORKPIECE SUPPORTING AND REGISTERING APPARATUS FOR BOTTLE DECORATING APPARATUS
Rome R. Rudolph, Gibsonia, and Carl Strutz, Jr., and Frank C. Strutz, Mars, Pa., assignors to Carl Strutz & Co., Inc., Valencia, Pa., a corporation of Pennsylvania
Filed Mar. 31, 1964, Ser. No. 356,198
14 Claims. (Cl. 101—40)



11. In a bottom chuck adapted to cooperate with a neck chuck for supporting a generally cylindrical workpiece for rotation about its central axis during decoration by means of cooperating squeegee and decorating screen elements, said neck chuck and said bottom chuck being mounted for simultaneous movement along a path of travel, and said workpiece having a lug disposed at a predetermined point on its side wall, the improvement comprising: a support block; a pair of gear means journaled to said support block; one of said gear means being connected with said workpiece for rotating the same about its central axis; drive means for driving the other of said gear means; shaft means journaled to said support block, said shaft means being spaced apart from said central axis and parallel therewith; an arm secured to said shaft means for arcuate movement therewith; means resiliently urging said arm means toward said support block; connecting gear means journaled to said arm and engaged with said pair of gear means for transmitting power from said drive means to said workpiece; means for pivoting said arm temporarily away from said support block to disconnect said pair of gear means from said connecting gear means whereby said workpiece is freely rotatable about its central axis; stop means resiliently supported at that end of said shaft means adjacent to said workpiece and in the path of travel of said lug, said stop means being displaced into engagement with the periphery of said workpiece when said arm is pivoted away from said support block; and means for rotating said workpiece when engaged by said stop means until said lug is rotated into engagement with said stop means, said workpiece being stopped at a predetermined position with respect to the decorating screen.

3,311,052
DEVICE FOR ALIGNING A STENCIL IN DUPLICATING MACHINES
Karl Gustav Zeuthen, Gentofte, Denmark, assignor to Zeuthen & Aagaard A/S, Glostrup, Denmark, a company of Denmark
Filed May 28, 1964, Ser. No. 370,774
Claims priority, application Denmark, June 4, 1963, 2,651/63
2 Claims. (Cl. 101—116)

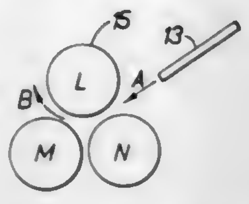


1. A device for aligning a stencil in duplicating machines comprising a substantially rectangular ink-penetrable underlay to be mounted on a carrier running in a closed path around two rollers, means for mounting a stencil on said underlay, a transverse carrying bar mounted on said carrier, a rotatable adjustment member mounted on said transverse bar, pins at one end of said underlay engaging and controlled by said adjustment member to entail displacement of said pins to opposite sides of a longitudinal centre line through the axis of rotation of said adjustment member.

3,311,053
METHOD OF FORMING A CURVED PRINTING PLATE
Roy Clifford Blackmore, Esher, Surrey, England, assignor to Rotary Plates Limited, London, England, a British company
Filed July 6, 1964, Ser. No. 380,402
Claims priority, application Great Britain, July 10, 1963, 27,395/63
9 Claims. (Cl. 101—401.1)

2. A method of bending a relief printing plate, which comprises forming an assembly of the relief printing plate having a printing face, and an independent, complementary member by compression moulding a thermosetting resin on said printing face in such a manner that the complementary member is in intimate contact with the whole of the printing and non-printing areas on the printing face and all of the non-printing areas are filled, and

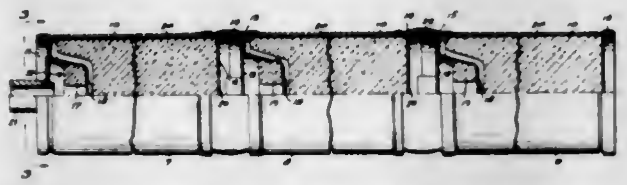
the back of the printing plate in the assembly is substantially parallel to the back of the complementary member, passing the assembly through a machine effective to curve



printing plates, and separating the complementary member from the curved printing plate as the assembly leaves the said machine.

3,311,054
SMOKE MARKER ARRANGEMENT

John E. Foster, Timonium, and Mitchell G. Angelos, Cockeysville, Md., assignors, by mesne assignments, to the United States of America, as represented by the Secretary of the Army
Filed June 21, 1965, Ser. No. 465,811
1 Claim. (Cl. 102—6)



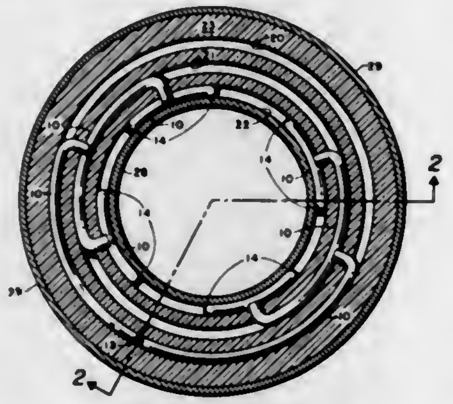
A smoke marker comprising in combination, a cylindrical container, a closure for each end of said container, there being smoke exit holes in one of said closures, each exit hole having a sealing tape thereon, a plurality of axially aligned smoke grenades arranged in abutting relation within said container, each said grenade having a smoke producing charge therein, a lid closing each end of each grenade, there being smoke exit holes in all but one of said lids whereby the smoke from the burning of each succeeding grenade will exit through the preceding grenades when burned out, an igniting charge for igniting said smoke charges supported in each grenade, a sheet of heat insulating material having a width substantially equal to the length of and wrapped about each grenade, and a strip of pressure-resistant tape wrapped about the abutting ends of said grenades, its edges underlying a portion of the adjacent sheets of heat insulating material whereby heat from combustion of one grenade will be prevented from escaping from between the grenade ends to cause pre-ignition of the succeeding grenade.

3,311,055
TOROIDAL BOOSTER WITH CYLINDRICALLY SYMMETRICAL OUTPUT

Richard H. Stresau, Jr., and Raymond L. Degner, Spooner, Wis., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 23, 1965, Ser. No. 451,699
1 Claim. (Cl. 102—22)

A booster for initiating a symmetrical detonation wave, comprising:

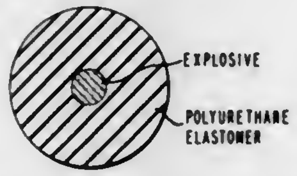
(a) a toroidal housing having a chamber therein,
(b) a main booster charge in said chamber,
(c) an annular sub-booster charge adjacent said booster charge,
(d) a plurality of concentric ring shaped grooves in a wall of said housing,
(e) said grooves being connected by passageways therebetween,
(f) a plurality of metal cased explosive lengths in said concentric grooves to form explosive paths, all remaining space in said grooves and passages not occupied by said lengths of metal cased explosive being completely filled with a potting compound thus potting the explosive paths,
(g) a common point of initiation in the outermost of said concentric grooves at which one end of each of a first pair of said metal cased explosive lengths are initiated,
(h) the other ends of said first pair of metal cased explosive lengths passing through the passageways between the outermost concentric groove into the next inner groove,
(i) said other ends being spliced to other lengths of metal cased explosive midway along their length in said next inner groove forming a T-junction of metal cased explosive,
(j) the end of said other lengths of metal cased explosive in turn passing through the passageways to following inner grooves in turn and also in turn being spliced at T-junctions to the lengths of metal cased explosive in the innermost concentric groove terminating at a plurality of output points symmetrically positioned about and opening onto said sub-booster charge,



(k) said spliced lengths of metal cased explosive forming a plurality of equal length paths from said common point of initiation to said plurality of output points for initiating said sub-booster charge simultaneously at each of said plurality of output points, said metal cased explosive lengths detonating at a uniform rate upon initiation causing simultaneous multiple point detonation of said sub-booster which in turn uniformly detonates said main booster charge, said metal cased explosive lengths and sub-booster using relatively little explosive and weight in proportion to said main booster charge,
(l) said metal casing of the metal cased explosive lengths absorbing and attenuating the radial output of the explosive therein on detonation thus reducing any undesirable effects upon the booster charge, on detonation of said main booster spherically expanding detonation wave fronts join to approach a cylindrically symmetrical detonation wave.

3,311,056
NON-RUPTURING DETONATING CORDS

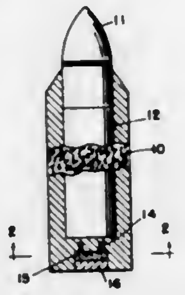
George A. Noddin, Mantua, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,772
4 Claims. (Cl. 102—27)



1. Non-rupturing detonating cords comprising a core of cap-sensitive detonating high explosive and a sheath of polyurethane elastomer, the ratio of the amount of explosive in grains per foot to sheath thickness in inches being about from 10 to 1 to 130 to 1.

3,311,057
COMBUSTIBLE CASELESS AMMUNITION

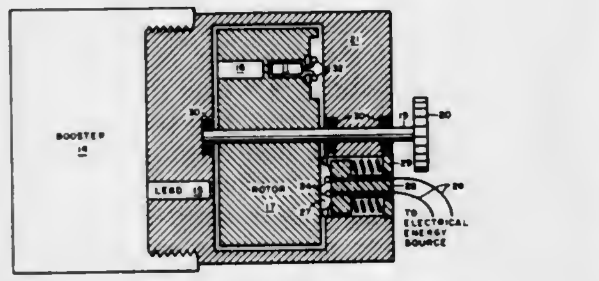
Joseph B. Quinlan, Philadelphia, Pa., and John J. Scanlon, Jr., Willingboro, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Aug. 3, 1965, Ser. No. 477,047
8 Claims. (Cl. 102—38)



1. An integrated, caseless molded small arms round comprising a molded mass having a forward recess and a rearward recess, a projectile secured in said forward recess, said rearward recess having a base containing a plurality of bores, said bores extending forward short of said forward recess, a primer mix located in said bores and in part of said rearward recess, and a propellant disc provided in the remaining part of said rearward recess.

3,311,058
RF SHIELDED SWITCH FOR SAFETY-ARMING DEVICES

Ernest F. Fohrmann and Maurice H. Brown, Riverside, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 22, 1965, Ser. No. 441,939
3 Claims. (Cl. 102—70.2)

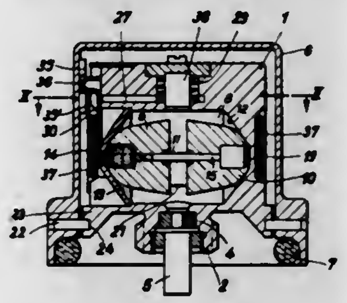


1. A rotary switch to provide complete RF shielding for the electrical initiator components of an explosive train in a warhead system for preventing deleterious effects due to electromagnetic radiation sources in the vicinity thereof; comprising:

(a) a metal housing member having a cylindrical cavity therein,
(b) a metal rotor assembly adapted to fit within said housing cavity and rotatably mounted therein,
(c) a metal shaft and drive means for rotating said rotor,
(d) said housing, rotor and shaft means all being in metal to metal contact with each other so as to be completely RF conductive,
(e) a plurality of explosive train components mounted in said housing and rotor,
(f) an electrical initiator having two electrical contacts connected thereto mounted in an off-center cavity in said rotor,
(g) a spring loaded electrical contact assembly which is connected to an external source of electrical energy mounted adjacent to said rotor in a passage in said housing,
(h) an RF shielding conductive spring means mounted at the end of said spring loaded contact assembly adjacent to said rotor and being in intimate contact therewith,
(i) said explosive train components, electrical initiator and spring loaded electrical contact assembly being out-of-line when said rotor is in safe position and being in-line when said rotor is rotated to armed position, when in said out-of-line safe position said RF conductive spring means being in contact with both said rotor and said housing thereby preventing any RF energy from reaching the electrical initiator in said rotor,
(j) said electrical initiator being completely RF shielded by metal components when in safe position and substantially shielded when in armed position.

3,311,059
DOUBLE FUZE FOR HAND GRENADES

Fritz Berger, Dusseldorf, Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed Dec. 8, 1964, Ser. No. 416,760
Claims priority, application Germany, Dec. 18, 1963, R 36,833
6 Claims. (Cl. 102—74)



1. A double fuze for a hand grenade comprising in combination, a fuze body, a setting device removably attached to the body and having one position for delay ignition and a different position for impact and delay ignition, a releasable safety band wound round said body, a cylindrical recess disposed in said fuze body transversely of the longitudinal axis of said fuze body, two mirror image percussion pieces located symmetrically in spaced manner in said cylindrical recess, an impact needle mounted on one of said percussion pieces and a primer capsule mounted on the other percussion piece, a spacer pin located in part between said percussion pieces so as normally to hold said pieces in spaced relationship, said pin being retained in position by said band, a striker movably mounted on said fuze body, a delay ignition system located in said fuze body and operated by said striker on release thereof, a locking member for normally holding said striker against movement, said locking member also being held in position by said safety band, an auxiliary locking means for holding said striker against movement, and means for releasing said auxiliary locking means when said grenade is thrown.

3,311,060
MECHANICAL FUZE OF THE STATOR-ROTOR TYPE WITH PIVOTED SAFETY WEIGHTS AND DETONATOR CARRIER

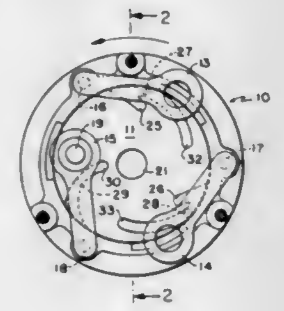
George T. Keller, Richmond, and Ronald F. Barker, Centerville, Ind., assignors to Avco Corporation, Richmond, Ind., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,607
3 Claims. (Cl. 102—79)

1. In a mechanical fuze the combination of a rotor having a plurality of locking and positioning formations and

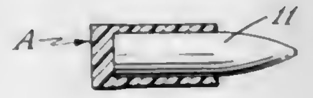
a holding and positioning formation, energy storage means urging the rotor in one angular direction;

a stator;

a plurality of swingable centrifugal-force responsive safety elements mounted on the stator and formed to engage the locking portions of the locking and positioning formations on the rotor and to restrain the rotor against angular motion in said direction until a threshold of centrifugal force is attained, a detonator, a swingable centrifugal-force-responsive detonator-carriage element mounted on the stator and formed to engage the holding portion of the holding and positioning formation to continue to hold the rotor against movement in that direction even after said threshold is attained, the attainment of such threshold swinging the safety elements sufficiently to disengage them from the locking portions and to engage them with the positioning portions of the locking and positioning formations, whereupon the carriage element continues to engage the holding portion of the holding and positioning formation to hold the rotor until the centrifugal force diminishes to such an extent as to permit the rotor to begin to turn in said direction whereupon the safety elements and carriage element are positioned radially inwardly by their respective positioning formations to place the detonator in armed position.



3,311,061
SABOT
Elroy C. Roehrdanz, 108 San Jose Ave., San Francisco, Calif. 94110
Filed June 25, 1964, Ser. No. 377,884
9 Claims. (Cl. 102—93)



1. A sabot for use in a gun having a rifled barrel of predetermined inner barrel groove diameter, said sabot including:

(a) a body of generally cylindrical shape having a generally cylindrical axial socket of predetermined internal diameter in one end thereof,

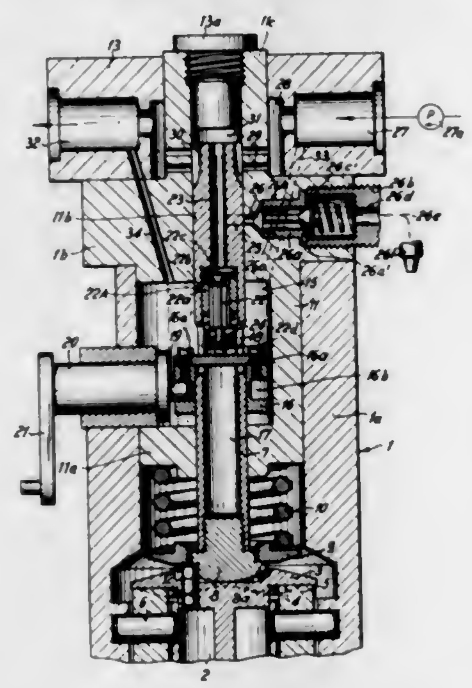
(b) a generally cylindrical bullet in said socket, and having an outer diameter slightly less than the internal diameter of said socket,

(c) said body having a predetermined external diameter slightly greater than said groove diameter of the barrel,

(d) the difference being sufficient to temporarily radially compress said body to grip the bullet as the sabot is fired through the gun barrel,

(e) said body being formed of a plastic having sufficient springback properties to return said body toward said predetermined internal diameter upon ejection from the barrel to permit air friction to smoothly release said sabot after leaving the gun barrel.

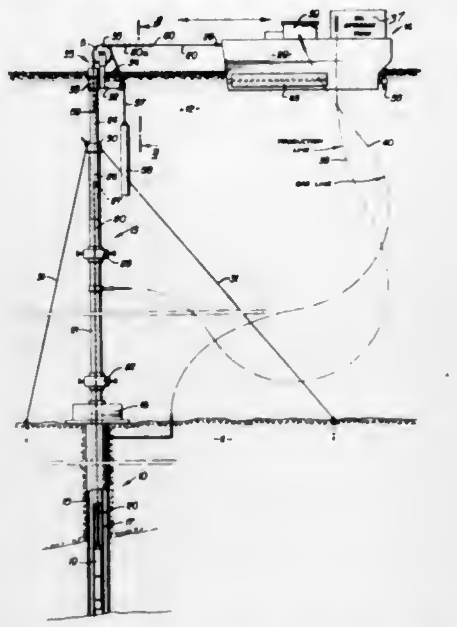
3,311,062
FUEL INJECTION PUMP
Heinrich Knapp, Leonberg-Silberberg, and Joachim Heiser, Bernhausen, Kreis Esslingen, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed June 2, 1965, Ser. No. 460,740
Claims priority, application Germany, July 10, 1964, B 77,613
7 Claims. (Cl. 103—2)



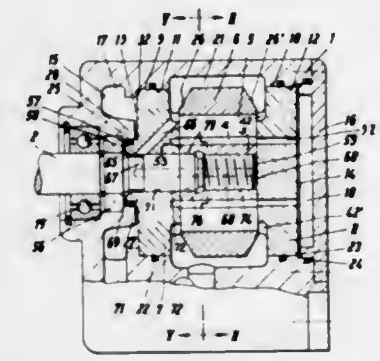
1. In a fuel injection pump, a housing defining a pump chamber and an overflow chamber, said housing having a bore connecting said chambers, two inlets each communicating with and arranged to supply fuel to one of said chambers, and a plurality of discharge ports communicating with said bore; a rotary distributor received in said bore and having an axially extending channel communicating with said chambers and outlet port means communicating with said channel; means for feeding fuel to said two inlets through which the fed fuel is supplied to both chambers; a drive for rotating and for simultaneously reciprocating said distributor so that the latter performs alternating working and suction strokes and said outlet port means is in short-lasting communication with each discharge port during each revolution thereof; a metering valve provided in said distributor to control the flow of fuel through said channel in a first direction from one of said chambers toward the other chamber and in a second direction from said other chamber toward said one chamber; and adjustable regulating means arranged to open said valve for intervals of variable length, each such interval including the last part of each suction stroke and the first part of the next working stroke so that said distributor expels fuel during the remainder of each working stroke and while said outlet port means communicates with one of said discharge ports.

3,311,063
METHOD OF PUMPING WELLS DRILLED BELOW WATER
Donovan B. Grable, Long Beach, Calif., assignor of one-third to K. L. Bourdo, Phoenix, Ariz., and one-third to C. R. Summers, Houston, Tex.
Filed Dec. 10, 1965, Ser. No. 512,954
12 Claims. (Cl. 103—43)

1. The method of operating a pump within a well below a body of water by vertical reciprocation of a rod string connected to the pump, that comprises connecting the rod string with a barge on the water by a flexible line leading to the barge from a guide location, and reciprocally moving the barge in relation to said location to vertically reciprocate the rod string.

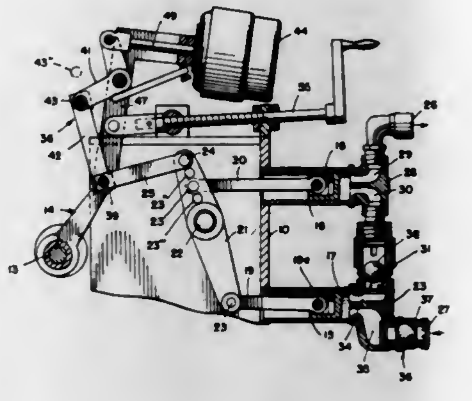


3,311,064
VANE-TYPE ROTARY PUMPS
Erich Eichele, Strassdorf, and Paul von Weichs and Georg Kehrer, Schwabisch Gmund, Germany, assignors to Zahnradfabrik Friedrichshafen Aktiengesellschaft, Friedrichshafen, Germany
Filed July 6, 1964, Ser. No. 380,433
Claims priority, application Germany, July 5, 1963, Z 10,213
9 Claims. (Cl. 103—136)



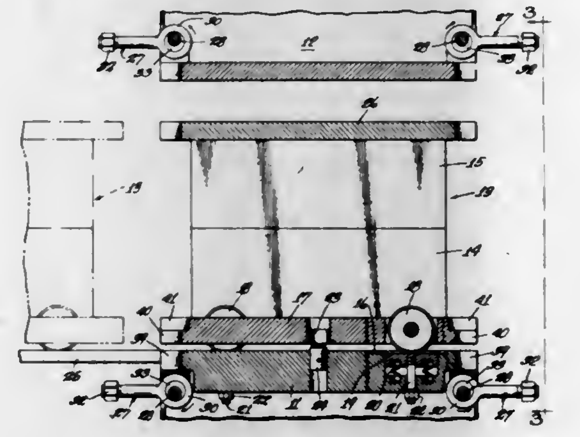
1. In a pump of the kind described, a housing having an inlet and an outlet, a stator ring in said housing and having a rotor therein and said rotor and stator ring having axial freedom, said stator ring having walls surrounding said rotor and effecting pump chamber means therefor, and means rotatively mounting said rotor, a sealing plate on each side of said rotor and stator ring within said housing, said plates being independently axially movable relative to said rotor and stator and each plate having a side contiguous with said rotor and said stator ring, a pressure chamber means on each of the other sides of said plates and said pressure chamber means being connected to said housing outlet passages connecting the pump chamber means with said pressure chamber means whereby fluid pressure is exerted on said plates to press said plates against said rotor and stator ring for sealing of said pump chamber means in said stator ring, and shoulder means in said housing against which one of said plates abuts, and means for providing a differential bias on said plates to effect a force against said rotor and stator ring to said one plate to effect abutment thereof against said shoulder means.

3,311,065
PUMPING APPARATUS
Robert E. Hager, Park Forest, Ill., assignor to Plastering Development Center, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 15, 1964, Ser. No. 404,109
1 Claim. (Cl. 103—167)



In a mechanism for operating tandem cylinders, a frame, a pair of cylinders mounted on said frame, first linkage means pivotally mounted on said frame and coupling said cylinders for tandem operation, crank means rotatably mounted on said frame, second linkage means coupling said crank means and first linkage means, and clutch means releasably and adjustably fixing said second linkage means, said clutch means including a superstructure pivotally secured to said frame, a first pivot rod mounted on said superstructure, an idler link pivotally mounted on said first rod, a second rod constituting said pivot and carried by said idler link and floatingly related to said superstructure, and a clutch link connecting said second rod, and means for immobilizing said second rod relative to said superstructure.

3,311,066
APPARATUS FOR USE WITH PRESSES AND THE LIKE
Robert Soman, Warren, Ohio, assignor to The McKay Machine Company, Warren, Ohio
Original application July 11, 1962, Ser. No. 209,151, now Patent No. 3,229,791, dated Jan. 18, 1966. Divided and this application Feb. 9, 1965, Ser. No. 438,150
2 Claims. (Cl. 104—172)



1. A transfer device for a press having a bed formed with a first track extending crosswise of said bed and aligned with a second track disposed at one side of said bed, a wheeled carriage to which a section of the press die is attached, said carriage being wheeled along said tracks between a position outside of said bed wherein

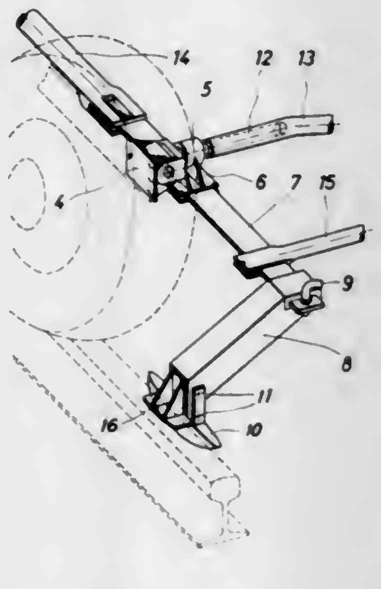
said press die section may be repaired or changed, to a position within said press wherein said press die section is held in operating alignment with a complementary die section carried by the ram of said press, said first track having depressible portions vertically aligned with said carriage wheels when said carriage is in said operating alignment and operable to permit said carriage to be lowered relative to said bed, locking means engaged when said carriage is lowered to lock said carriage in said operating alignment, a chain movable about spaced sprockets which are rotatably carried by said bed, said chain having a reach adjoining one side of and being parallel to said first track, means for driving said chain in opposite directions, said carriage having an abutment and said chain having spaced lugs which are engageable with said abutment when moved along said chain reach, in one direction of chain movement one lug engaging one side of said abutment to drive said carriage in said one direction, and in the opposite direction of chain movement the other lug engaging the opposite side of said abutment to drive said carriage in said opposite direction.

3,311,067

WHEELED VEHICLES FOR TRAVEL ON STREETS AND RAILWAYS

Herbert Gretzschel, Jahnstr. 30, Lochham, Germany; Theodor Schmauder, Kaiserblickstr. 10, Schlossberg, Germany; and Hans-Peter Sinz, Hauptstr. 1a, Witzhelden, Germany

Filed Aug. 5, 1964, Ser. No. 387,722
4 Claims. (Cl. 104—242)



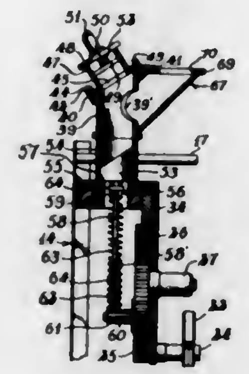
1. In a vehicle adapted to travel on streets and railways, in combination, a vehicle body; two pairs of wheels respectively situated at opposite sides of said vehicle body to support the latter for travel on streets, said wheels being spaced from each other by a distance equal to the distance between rails of a railway so that said wheels can also ride on railway rails; main guide means carried by said vehicle body and having operative position adjacent said wheels and in the immediate vicinity of railway rails in the space normally occupied by rims of conventional rail wheels to cooperate with rails for guiding and maintaining said vehicle wheels thereon, said main guide means being displaceable away from said operative positions thereof to locations where said main guide means will have no influence on normal travel of the vehicle on streets; and auxiliary guide means carried by said main guide means for vertical movement relative thereto and extending downwardly beyond said main guide means to an elevation lower than the top surface of rails on which said wheels travel.

3,311,068

DOUGH DIVIDING APPARATUS

Harold T. Atwood, Chicago, and Walter Jaeger, Blue Island, Ill., assignors, by mesne assignments, to The Atwood Corporation, Dolton, Ill., a corporation of Illinois

Filed Oct. 13, 1964, Ser. No. 403,484
9 Claims. (Cl. 107—4)



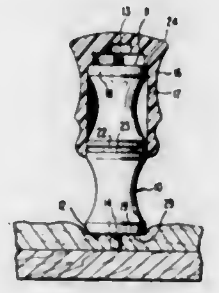
2. A dough dividing apparatus comprising a hopper for holding a supply of dough, an open top tubular cylinder adjacent said hopper, a piston movable in said cylinder to create suction for moving dough from said hopper into said cylinder, an inverted scaling cup having an open end positioned in a plane above the open top of said cylinder, means for moving said scaling cup into and out of registration with said cylinder, means for moving said piston upwardly to push dough from said cylinder into said scaling cup when said scaling cup is in registration with said cylinder, a conveyor adjacent said cylinder, said first mentioned means moving said scaling cup over said conveyor, means for discharging dough from said scaling cup onto said conveyor, and adjustable means positioned above said conveyor for engaging dough discharged from said scaling cup and rolling it into ball shape.

3,311,069

METHOD AND DEVICE FOR SECURING UNIFORMITY IN THICKNESS OF A COOKIE DOUGH SHEET

James T. Underwood, San Diego, Calif., assignor of one-half to H. H. Renneker Co., Inc., San Diego, Calif., a corporation of California

Filed Oct. 1, 1964, Ser. No. 400,698
10 Claims. (Cl. 107—47)



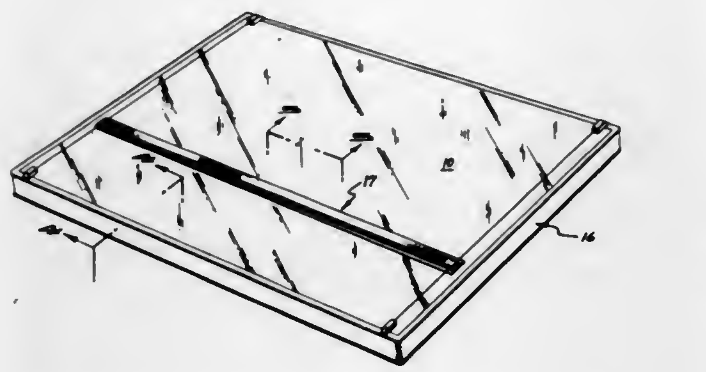
1. The method of preparing dough sheets of predetermined thickness, which comprises rolling out a sheet of dough on a supporting surface to a thickness slightly greater than said predetermined thickness, forming at spaced points in such dough sheet depressions the bottoms of which are all spaced from the supporting surface a distance equal to said predetermined thickness, and then rolling the dough sheet to reduce it in thickness until all of the depressions just disappear.

3,311,070

LIGHT TABLE

Verl N. Barzee, 708 Knickerbocker Drive 94087, and Joseph J. Harapat, 1105 W. Iowa Ave. 94086, both of Sunnyvale, Calif.

Filed Nov. 15, 1965, Ser. No. 507,812
7 Claims. (Cl. 108—23)



1. A light table and drafting board comprising:

a rigid light transmitting planar sheet;

a translucent closed cell plastic foam planar sheet positioned below, contiguous to and in face to face relation with said rigid sheet and having sufficient thickness to substantially insulate said rigid sheet from the heat of a light source;

means positioning said sheets relative to one another;

a light source mounted adjacent said translucent sheet directly lighting said rigid sheet; and

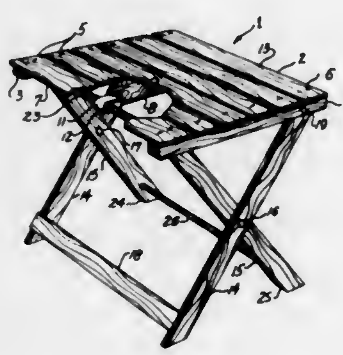
said translucent sheet diffusing the rays from said light source to present a uniform non glare lighting at the surface of said rigid sheet.

3,311,071

FOLDING CAMP STOOL

James D. Cook, 406 Pleasant Drive, Monett, Mo. 65708

Filed Apr. 25, 1966, Ser. No. 544,724
1 Claim. (Cl. 108—119)



A folding stool comprising:

(a) a seat portion having sides and front and rear edges and including side rails depending from said sides,

(b) a spacer plate secured to the underneath side of said seat portion extending parallel with said side rails near the front edge thereof,

(c) a strap member secured to said plate and having a hook portion facing the rear edge of said seat portion,

(d) inner and outer pairs of legs of substantially equal lengths, each pair of legs crossing each other and pivotally secured together at substantially their respective centers when said stool is in unfolded position,

(e) means pivotally securing the upper ends of the outer pair of legs to said side rails near the rear edge of said seat,

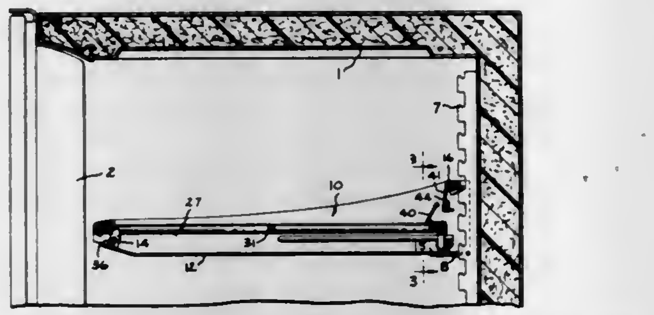
(f) a dowel pin connecting the upper ends of the inner pair of legs, said dowel pin being adapted to engage in said hook portion under the seat so that the stool will be held in upright position for use, the inside curvature of said hook being substantially equal to the external curvature of said dowel pin and the axis of the hook curvature is symmetrically positioned on the opposite side of the unfolded stool's vertical centerline from the outer legs' pivot point.

3,311,072

CANTILEVER SLIDE-OUT SHELF

Wesley S. Pattison, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Apr. 1, 1966, Ser. No. 539,447
3 Claims. (Cl. 108—143)



1. A cantilever-supported sliding shelf structure comprising:

a generally rectangular frame including longitudinally extending sheet metal side members each having an inwardly extending horizontal flange at the bottom edge thereof,

a plurality of cross bars interconnecting said side members including a front cross bar and a lower rear cross bar above and spaced from said flanges and an upper rear cross bar above and spaced from said lower rear cross bar,

means on the rear corners of said frame for supporting said frame in a horizontal position,

a sliding shelf supported on said frame for movement between a normal and an extending position including the side members slidably supported on said lower front cross bar and a leg adjacent each rear corner of said shelf adapted normally to ride on the rear portion of one of said flanges,

said shelf including a shelf guard extending upwardly from the rear edge thereof;

said frame including a decorative strip supported on upper rear cross bar and extending downwardly therefrom in overlapping relationship with the upper edge of said shelf guard when said shelf is in its normal position.

3,311,073

WALL SHELF

Gary C. Colledge, West Covina, Calif., assignor to Empire Showcase & Fixture Co., Azusa, Calif., a corporation of California

Filed Apr. 4, 1966, Ser. No. 539,922
4 Claims. (Cl. 108—149)

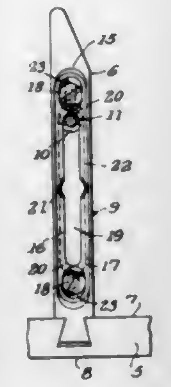
1. A shelf for mounting on a wall, a surface of which is provided with two horizontally aligned, transversely spaced bolts having heads that project from said surface, said shelf comprising:

(a) an elongated horizontal board having a rear edge,

(b) two vertical members affixed and perpendicular to one surface of said board and having rear edges substantially flush with the rear edge of the horizontal board and having underflush seats,

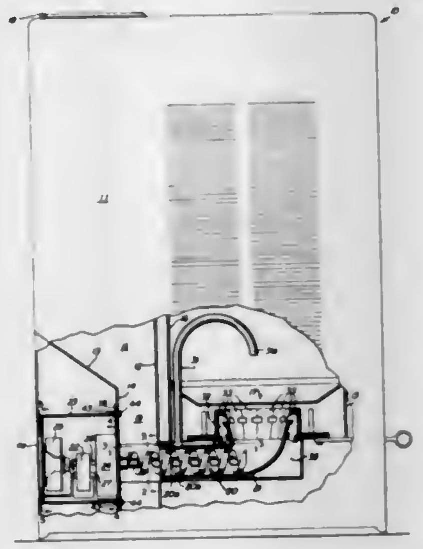
(c) a vertically disposed plate set into the seat in the rear edge of each vertical member inward of said edge,

(d) each plate having an elongated vertical slot therein with an enlargement in said slot intermediate the ends thereof,



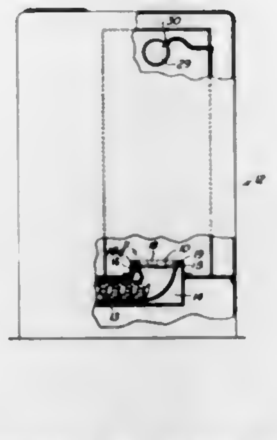
(e) said slots being spaced according to the spacing of the bolts, whereby the bolt heads project into the slot enlargement and behind the plate when the same are brought into register, and the bolts, upon lowering of the shelf, engage the upper end of the plate slot to hang the shelf against said wall surface.

3,311,074
STOKER-FIRED, COAL-BURNING HEATER
John L. Margetts, 2182 Berkley Ave.,
Salt Lake City, Utah 84109
Filed July 6, 1965, Ser. No. 469,813
6 Claims. (Cl. 110—45)



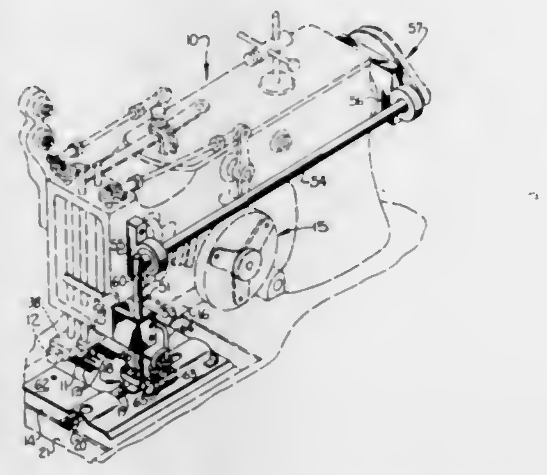
1. A stoker-fired, coal-burning heater, comprising
- a housing;
- partition walls within said housing defining a hopper for coal to be burned;
- a firebowl within said housing remote from the hopper;
- a coal feed tube extending from the hopper to the firebowl:
- feed means for moving coal through said tube from the hopper to the firebowl;
- a motor;
- drive means connecting the motor with the said feed means, whereby said motor operates said feed means;
- a fan, driven by the motor;
- duct means for carrying air from the fan to the firebowl; and
- means arranging the fan to discharge air against the motor before passage into the duct means.

3,311,075
IGNITER ASSEMBLY FOR STOKER-FIRED HEATERS AND FURNACES
John L. Margetts, 2182 Berkley Ave.,
Salt Lake City, Utah 84109
Filed Oct. 11, 1965, Ser. No. 494,841
8 Claims. (Cl. 110—45)



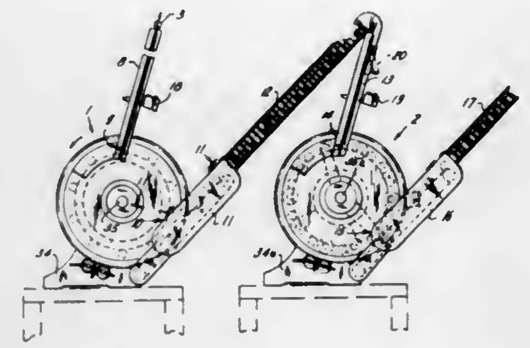
1. An igniter assembly for stoker-fired heaters and the like comprising a shell of heat conducting, long wearing and fire resistant material, said shell having means thereon adapted to interlock it between tuyeres of a heater; a layer of insulating material on each side of the shell that is adapted to be in engagement with an adjacent tuyere; and an electrically energized heating element extending into said shell.

3,311,076
TRIMMING ATTACHMENT FOR SEWING MACHINES
George W. Farabee, Mooresville, N.C., assignor to Cannon Mills Company, a corporation of North Carolina
Filed July 30, 1964, Ser. No. 386,259
6 Claims. (Cl. 112—129)



2. In a sewing machine having a stationary frame, stitch forming instrumentalities, a laterally movable bed plate, a laterally movable presser foot, and a cam mechanism attached to the presser foot and the bed plate for laterally moving the presser foot and the bed plate relative to the stitch forming instrumentalities; the improvement of a cutting attachment comprising a cutter member secured to the stationary frame, a reciprocating hammer member associated with said cutter member and adapted to actuate said cutter member, and means associated with said cutter member for effecting lateral movement of the material with respect to said cutter member and said hammer member when it is passing through said cutting attachment.

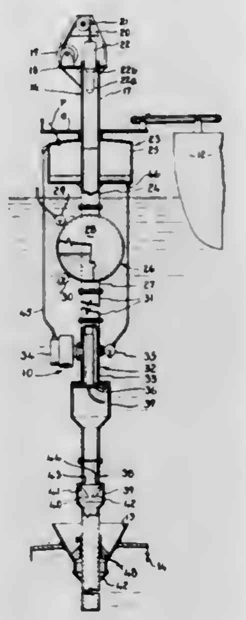
3,311,077
MACHINE FOR MAKING NON-PILFERABLE BOTTLE CAPS
Charles Andrew, Brooklyn, Frank Waitkens, Jamaica, and Finn D. Michaelsen, Amityville, N.Y., assignors to Andrew-Waitkens Machine Co., Inc., New York, N.Y., a corporation of New York
Filed July 24, 1963, Ser. No. 297,465
10 Claims. (Cl. 113—1)



4. In a machine for finishing cup-like metallic closures for bottles or other containers, the closures having embossed matter on their skirt portions, a stationary circular support having gear teeth throughout the periphery, constituting a sun gear, a carriage mounted for rotation adjacent the support, a plurality of spindles in equally spaced position around the carriage and mounted for rotation thereon, each of the spindles carrying pinion teeth, gearing interconnecting each of the spindles and the sun gear, the spindles each having at their front ends and projecting over the periphery of the support an expansion mandrel for carrying a closure, means for rotating the carrier to cause the spindles and mandrels to rotate and to move in a circular path adjacent the circular support, means for feeding and positioning closures on the successive mandrels at a predetermined point in the circular path of the mandrels, means for causing the successive mandrels to engage and secure the respective closures thereto so that the closures rotate with the mandrels, a die member mounted in fixed position on the circular support, said member having an arcuate outer surface from which a series of cutting teeth project into the path of the surfaces of the successive closures as they are carried by the mandrels around the periphery of the circular support, the interconnecting gearing being arranged to rotate the spindles in a direction opposite to the movement of the mandrels in their circular path an, causing the extremities of the embossed matter to be shaved off, and means for disengaging and removing the closures from the mandrels.

3,311,078
PRESSURE TUBE SALVAGE APPARATUS AND METHOD
Gilbert D. Hendry, 35 Burcrest Drive,
Toronto, Ontario, Canada
Filed May 7, 1965, Ser. No. 453,987
7 Claims. (Cl. 114—50)

1. In apparatus for use in the salvaging of a sunken vessel, the combination comprising, tube means including tubular members secured in end to end engagement to extend from a surface structure to a location within a sunken vessel; charge delivering means located at the upper end of said tube means operative to deliver preformed charges of buoyant material down said tube means and into said sunken vessel; said tubular members including a pump section comprising a tube having a submersible pump means attached thereto and communicating therewith, a gate member pivotally mounted within said tube and operative to close said tube to permit the submersible pump to pump out water from a portion of the tube means above said gate member to facilitate loading of the preformed charges into the tube means; controlled buoyancy means connected to said tube means and operable to stabilize said tube means in submerged operative position.



3,311,079
STEERING SYSTEM FOR DYNAMICALLY POSITIONING A VESSEL
Jean Berne, Vernouillet, France, assignor to Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, Seine-et-Oise, France
Filed July 22, 1965, Ser. No. 474,128
Claims priority, application France, July 22, 1964, 982,700
7 Claims. (Cl. 114—144)

1. A manually controlled mechanical steering system for dynamically positioning a floating installation provided with at least two propulsion units of adjustable thrust direction located at points remote from the center of gravity of said installation, said steering system comprising in combination:

(a) a displacement control lever having a socket member provided at its lower end;

(b) a yoke-shaped member having two arms pivotally mounted on said socket member;

(c) a first transmission shaft integral with said yoke-shaped member and extending on the side thereof which is opposite to the arms of said yoke-shaped member, said first transmission shaft having its axis in the symmetry plane of said two arms of said yoke-shaped member;

(d) at least two bearings whereon said first transmission shaft is pivotally mounted;

(e) a lower sleeve pivotally mounted on said first transmission shaft between said bearings and rigidly connected with an upper sleeve for pivotal movement of said upper sleeve on the axis of said first transmission member;

(f) a heading control member for controlling said pivotal movement of said upper sleeve;

(g) a second transmission shaft splined along at least one portion of its length;

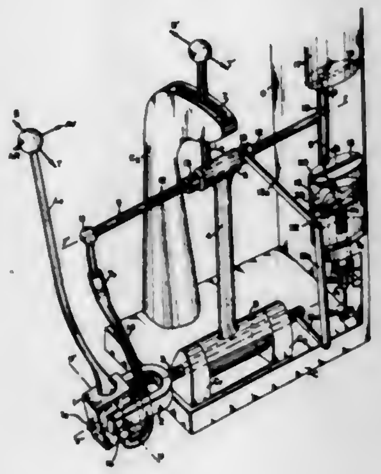
(h) an internally splined sleeve rotatably mounted within said upper sleeve and slidably mounted on said second transmission shaft;

(i) a connecting rod having a curved lower end portion pivotally mounted on an axis within said socket member for free pivotal movement in a direction transverse to the axis of said first transmission shaft, said connecting rod extending upwardly between the arms of said yoke member and being movable by rocking movement of said axis through movement of said displacement control lever in the vertical plane of said first transmission shaft;

(j) a universal joint connecting one end of said second transmission shaft to the upper end of said connecting rod for free rotational movement of said second transmission shaft with respect thereto;

(k) means for transmitting rotational movement of said first transmission shaft to said internally splined sleeve for rotation of said second transmission shaft in response to rotational movement of said first transmission shaft;

(l) two radially directed arms mounted on the other end of said second transmission shaft, each of said arms being provided with a bore in the outer end thereof;



(m) two drums for controlling the respective propulsion units, each of said drums being mounted adjacent the ends of said radially directed arms on an axis substantially perpendicular to the axis of said second transmission shaft, each of said drums having a diametrically disposed longitudinal slot provided in the end face thereof which is disposed adjacent the outer ends of the respective radially directed arms;

(n) an annular guide member mounted for vertical movement within each of said drums;

(o) a connecting sleeve fixedly secured to each of said annular guide members and extending outwardly therefrom through the other end faces of the respective drums for free sliding movement through openings provided therein;

(p) a stem member mounted axially within each drum and serving to mount the respective sleeve for guided movement of said annular guide members;

(q) a bell-crank lever mounted within each of said drums and being pivotally secured on the end of the respective axial stem therein, said bell-crank lever having one arm operatively engaging said annular guide member for controlling vertical movement thereof and having an axial bore provided in its second arm;

(r) an articulated connecting member disposed between each of said radially directed arms and the second arm of the respective bell-crank lever provided in the adjacent drum, the opposite ends of the respective connecting members being slidably received for telescopic movement within the bores provided, respectively, in the ends of the said radially directed arms and said second arms;

(s) means for controlling the direction of thrust exerted by each of the respective propulsion units in response to the position of rotation of the drum associated therewith;

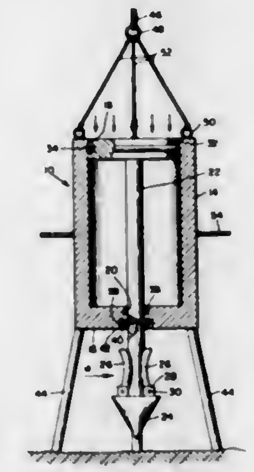
(t) means for controlling the magnitude of thrust exerted by each propulsion unit in response to the position of sliding movement of the axial sleeve associated with the corresponding drum.

3,311,080
PRESSURE ACTUATED ANCHOR

Victor C. Anderson and Frederick H. Fisher, San Diego, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Sept. 28, 1965, Ser. No. 491,065

3 Claims. (Cl. 114—206)



1. A pressure actuated anchor comprising:
a piston cylinder having a bottom and an open top, said bottom having a centrally located opening;
a piston rod slidably extending through the cylinder bottom opening and adapted at its bottom end to anchor in the ocean bed;
means between the cylinder bottom opening and the rod for sealing the interior of the cylinder from sea pressure at anchor depth;
a piston slidably disposed within the piston cylinder and connected to the top of said rod;
means between the piston and the cylinder for sealing the interior of the cylinder from sea pressure at anchor depth;
means connected to the piston cylinder for retaining the piston and rod in an upward position within the cylinder until the anchor reaches anchor depth and then releasing the piston and rod so as to allow sea pressure to act on the piston and drive the anchor end of the rod into the ocean bed;
the retaining and releasing means including:
  said rod and the bottom of the cylinder at said opening each having an annular groove which are located below the first mentioned sealing means, the cylinder bottom opening being counterbored below the annular groove; and
  a soluble plug disposed within the counterbore and the annular grooves;
means connected to the cylinder for supporting the anchor on the ocean bed with the anchor end of the rod above the ocean bed;
cable means connected to the cylinder for connecting the anchor to a support ship; and
an annular dampening plate connected to the exterior of the cylinder for dampening upward movement of the cylinder when the piston and rod are released.

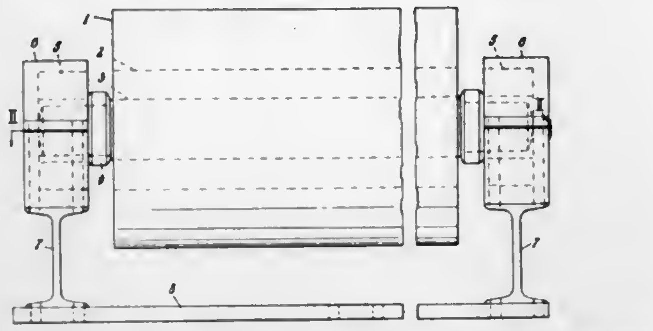
3,311,081
DOCK AND LIKE FENDERS

Wilfred Samuel Parker, Wombourne, England, assignor of one-half to Edge and Sons Limited, Shifnal, England

Filed Nov. 25, 1964, Ser. No. 413,809

Claims priority, application Great Britain, Dec. 5, 1963, 48,051/63

5 Claims. (Cl. 114—220)



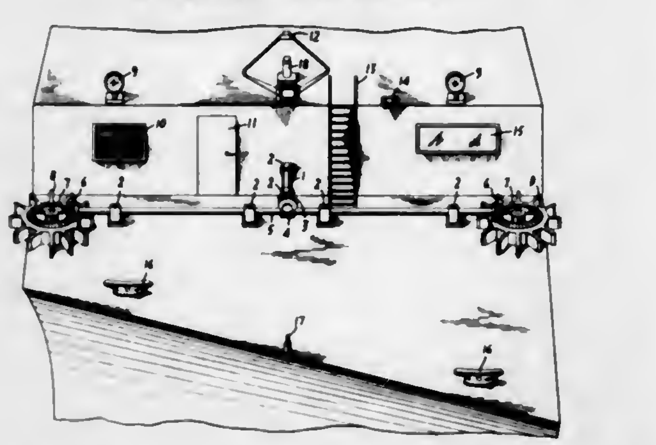
1. A fender for protecting structures such as dock walls, ship's hulls and like structures comprising rigid housing means attachable to the structure, non-metallic shell-bearing means resiliently mounted in the said rigid housing means, a resilient roller comprising an inner rigid shaft rotatably mounted in the said shell bearing means a layer of soft resilient material and an outer sleeve of hard resilient material, and resilient housing means encircling the shell bearing means to provide the resilient mounting therefor and to enable the shell-bearing means to yield resiliently to loads applied at any angle.

3,311,082
TRACK PROPULSION FOR FERRIES

Bert J. O'Neill, 210—20 53rd Ave., New York, N.Y. 11364

Filed Dec. 29, 1964, Ser. No. 421,955

5 Claims. (Cl. 115—8)



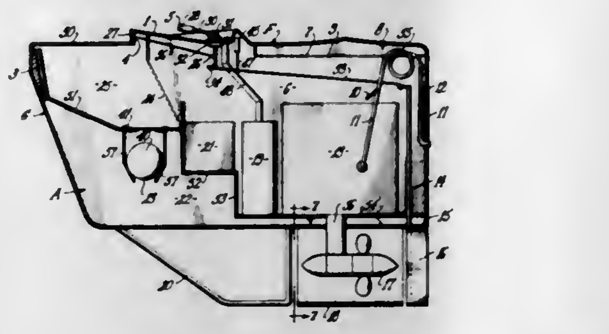
1. A water transportation system comprising a water vessel and guide means for said water vessel, said water vessel comprising a hull, drive means disposed at opposed ends of said hull, each of said drive means being adapted to be operatively connected to a prime mover and comprising a pair of paddle wheels rotatably mounted at opposed sides of the hull in a horizontal plane with their peripheries extending outwardly from said opposed sides, said guide means comprising at each side of the vessel a series of horizontally spaced vertical members mounted in fixed position relative to the floor of the body of water in which the vessel is floating, said series of vertical members being positioned to be engaged by said paddle wheels, said paddle wheels of each of said pairs of paddle wheels being operatively interconnected to rotate in opposite directions, said paddle wheels at each of the sides of the vessel being driven in opposite directions and said paddle wheels being adapted to be driven only one of said pairs at a time by a prime mover, whereby when one of said pairs of paddle wheels is driven said one pair of paddle wheels drives said vessel in one direction by engaging said vertical members and when the other of said pairs of paddle wheels is driven said other pair of paddle wheels drives said vessel in the other direction by engaging said vertical members.

3,311,083
AQUATIC SPORT VEHICLE

Kenneth B. Carlson, 10849 Blucher Ave., Granada Hills, Calif. 91344

Filed May 13, 1965, Ser. No. 455,479

11 Claims. (Cl. 115—70)



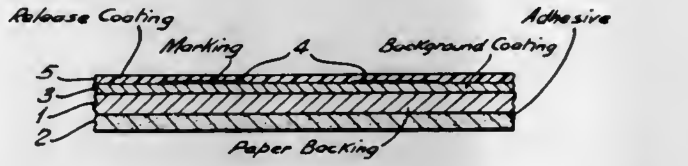
1. An aquatic sport vehicle comprising: a buoyant hull having a closed deck including a rider's seat and of proportions such that it can be ridden astride; bulkhead means within said hull defining a water ballast tank in the lower forward portion thereof, said tank having an elevated vent; means defining a ballast passage extending along the bottom of the hull from the rear end of the ballast tank and through the rear end of the hull, for discharge of ballast water from the tank by aspirating action in response to forward movement of the vehicle in the water; and motor driven propeller means for forward propulsion of the vehicle.

3,311,084
INDICATOR TAPE

Martin I. Edenbaum, Somerset, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Filed Dec. 24, 1964, Ser. No. 420,864

5 Claims. (Cl. 116—114)



1. A heat cured pressure-sensitive adhesive sheet suitable for use as a sterility indicator comprising a backing, a pressure-sensitive adhesive coating dry heat cured on one side of said backing and being resistant to flow at temperatures up to 275° F., and a heat modifiable marking on the other side of said backing said heat modifiable marking being stable to dry heat at temperatures up to at least about 325° F. and changing in color when said tape is subjected to the conditions of steam sterilization.

3,311,085
APPARATUS FOR COATING OBJECTS

Millard F. Smith, Westport, Conn. (P.O. Box 295, Saugatuck, Conn. 06880)

Filed May 10, 1965, Ser. No. 477,987

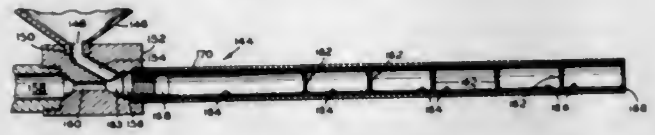
4 Claims. (Cl. 118—59)

1. Apparatus for projecting a flowing mixed stream of gas and fusible powdered coating material toward a heated object to be coated comprising in combination

(A) means forming a mixing chamber having a gas feed passage and a powder feed passage opening therein along axes angularly displaced by an acute angle;

(B) means forming an elongated passageway having an input end opening into said chamber and an open output end facing toward the surface of the object to be coated;

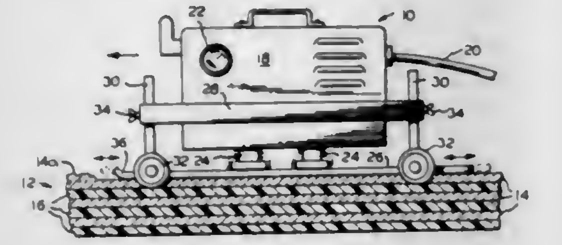
(C) and a plurality of transverse flow straightening means spaced apart longitudinally along said passageway between said ends and anchored in fixed positions spanning said passageway;



(D) an exhaust hood in the vicinity of and beyond said object to be coated and positioned to receive excess coating material passing beyond said object without adhering thereto;

(E) and a powder return system connecting said exhaust hood with said powder feed passage and returning excess powder coating material to said powder feed passage.

3,311,086
APPARATUS FOR TROWELING
William A. Kaier, 151 T Whitesville Road, Toms River, N.J. 08753
Filed Nov. 4, 1963, Ser. No. 321,158
2 Claims. (Cl. 118—120)



1. A troweling apparatus for smoothly layering a pasty mix comprising a housing having drive posts projecting downwardly therefrom, a substantially planar troweling plate secured to said posts, said plate including a central elongated portion underlying said housing and transverse laterally extending portions at one end thereof to define a substantially T-outline, a plurality of wheels for supporting said housing, means mounting said wheels for vertical adjustment relative to said housing and plate to determine ultimate thickness of the pasty mix, said means locating said wheels on opposite sides of said plate central portion and within the path of said transverse plate portions, and means for driving said drive posts to impart cyclical translational movement to said plate in the plane thereof, whereby as said apparatus is propellel along the pasty mix, said troweling plate will level and smooth the same and said transverse portions thereof will level and smooth the mix to erase the wheel tracks therein.

3,311,087
POULTRY CAGE ROW SUPPORT SYSTEM
Jewel Graves, Holland, Mich., assignor to Big Dutchman, Inc., Zeeland, Mich., a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 499,914
5 Claims. (Cl. 119—18)

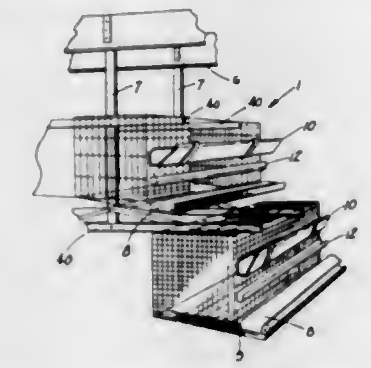
1. A poultry enclosure comprising:

an elongated wire mesh cage row forming a plurality of individual cages and formed of a plurality of vertically and horizontally arranged wire members;

cage row supports engaging the horizontally arranged wire members at the top portion of said cage row at spaced intervals along the length thereof and suspending said elongated cage now in elevated fashion;

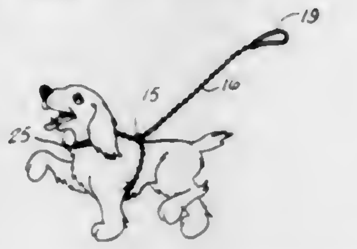
a relatively rigid supply trough running the length of said cage row along one side thereof;

a plurality of trough hangers affixing said trough to said cage row at points in proximate vertical alignment with said cage row supports so that the weight of said trough is supported substantially by vertically arranged wire members located in approximate vertical alignment with said cage row supports whereby said last mentioned vertically arranged wire members are in tension, said cage providing the only support for said trough;



and a plurality of support means spaced between said trough hangers, said support means having a portion for engaging the trough and having another portion engaging said wire members whereby said elongated cage row at points between said trough hangers is supported by said trough to prevent sagging between said cage row supports.

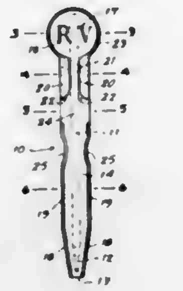
3,311,088
TRAINING AND WALKING LEASH
Henry Peterlin, 120 Harrington Road, Clifton, N.J. 07012
Filed Feb. 21, 1966, Ser. No. 528,738
2 Claims. (Cl. 119—109)



1. Training and walking leash comprising, in combination, a pair of chain portions, a ring secured to one end of each of said chain portions for connecting said portions together, a snap hook secured to the free end of one chain portion, said snap hook adapted to be removably attached to a dog's collar, a handle secured to the free end of the other chain portion, said ring having an internal diameter greater than the width of said other chain portion and said handle, said training and walking leash in operative use adapted to have the snap hook secured to said dog's collar, said chain portions adapted to be placed around the body of said dog, with said handle and the free end portion of the other chain being inserted through said ring to make a loop around said dog's body and to provide a leash means.

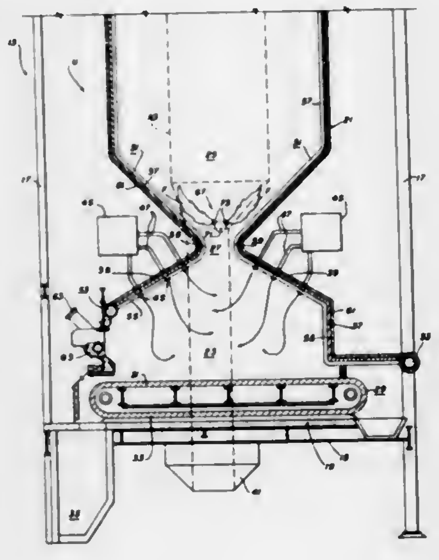
3,311,089
WRITING INSTRUMENT
Rudolf Vogel, 1140 Laurel Ave., Bridgeport, Conn. 06604
Filed Sept. 14, 1964, Ser. No. 396,329
17 Claims. (Cl. 120—42.03)

1. A writing instrument comprising a cartridge including an elongated tube and a writing tip at the forward end of said tube, and an elongated casing of pliable material defining a passage in which said cartridge is received, said casing including a first part in which said cartridge is received in relatively fixed relation, a second part open at its forward end, and an intermediate axially flexible part connecting said first and second parts whereby through contractual flexing of said intermediate part



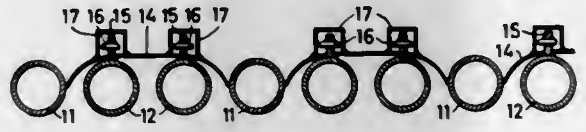
said second part is adapted to have axial movement relatively to said first part from a projected to a retracted position, said second part adapted to receive said cartridge with its writing tip disposed inwardly of said open end in concealed relation in said projected position and extended and exposed through said open end in said retracted position.

3,311,090
BOILER APPARATUS FOR COMPLETE COMBUSTION OF FUEL
James G. Lee, Savannah, Tenn., assignor to Tennessee River Pulp & Paper Company, Counce, Tenn.
Filed Nov. 26, 1965, Ser. No. 509,780
4 Claims. (Cl. 122—2)



1. In a steam-generating boiler utilizing wood waste material fuel, the apparatus for obtaining complete combustion of the wood waste fuel comprising lower wall means, upper wall means, and intermediate wall means defining respectively a lower chamber, an upper chamber, and a substantially short, narrow throat passageway interconnecting said lower and said upper chambers; grate structure arranged across the bottom of said lower chamber for receiving said wood waste fuel; said lower wall means including vertically directed side wall means and substantially horizontally directed top wall means defining substantially the side and top bounds of said lower chamber; the interspatial horizontal extension of said lower chamber being substantially greater than the interspatial vertical extension of said lower chamber; primary air supply means including conduit means for directing an upward flow of air through said grate structure and for combustion of said waste fuel material; secondary air supply means including conduit means having a plurality of downwardly directed air outlets disposed respectively along the underside of said top wall means for causing a plurality of downwardly directed currents of air; water-bearing tube means arranged along the underside of said top wall means for absorbing heat from said waste fuel material and for generating steam; and auxiliary combustion means including fuel burner means arranged substantially directly above said throat passageway and disposed in the lower portion of said upper chamber for burning a high-energy fuel other than the wood waste material fuel and for further combustion of said waste fuel material.

3,311,091
TUBE WALL FOR FLUID HEATING DEVICES, AND A METHOD OF PRODUCING SUCH TUBE WALL
Vagn Kollerup, Copenhagen, Denmark, assignor to Aktieselskabet Burmeister & Wain's Maskin-OG Skibsbyggeri, Copenhagen, Denmark, a company of Denmark
Filed Jan. 10, 1966, Ser. No. 519,653
Claims priority, application Denmark, Jan. 13, 1965, 172/65
4 Claims. (Cl. 122—6)

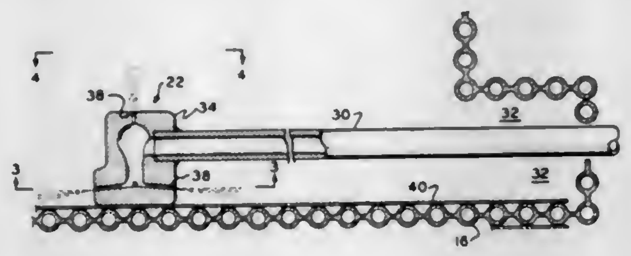


1. A tube wall adapted to form a boundary wall of a furnace chamber in a tubulous vapor generator, comprising a plurality of parallel tubes all extendnig in a common plane and exposed to heat from said furnace chamber, said heated tubes consisting of a first group of tubes and a plurality of secondary tube groups each located between two successive tubes of said first tube group and comprising at least one tube, a plurality of plate members extending in the longitudinal direction of said parallel tubes, each of said plate members being disposed behind the tubes of the secondary tube group located between two successive tubes of said first tube group as viewed from the furnace chamber, said plate members having a concave curvilinear cross-section as viewed from the furnace chamber and being welded to two successive tubes of said first tube group at the free longitudinal edges of said plate member, and connecting means effecting a gas-tight connection between each tube of said secondary group and the associated plate member.

3,311,092
TYPE SOOTBLOWER FOR CLEANING THE TUBES OF FURNACE WALLS
Thomas E. McMahon, West Hartford, and Henry E. Burbach, Avon, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 514,781
4 Claims. (Cl. 122—392)

1. In combination, a furnace in which combustible matter is burned, wall means associated with said furnace upon which ash or slag resulting from the combustion adhere, sootblower means associated with said wall means for periodically removing deposits of ash or slag from the wall means, said sootblower means comprising a tube through which a cleaning medium flows, means for moving the tube forward and backward in a direction parallel to the plane of the wall means, head means connected to the tube, said head means containing first nozzle means

positioned so as to direct cleaning medium in a direction towards the wall means, said head means containing second nozzle means positioned so as to direct cleaning medium in a direction away from the wall means, the

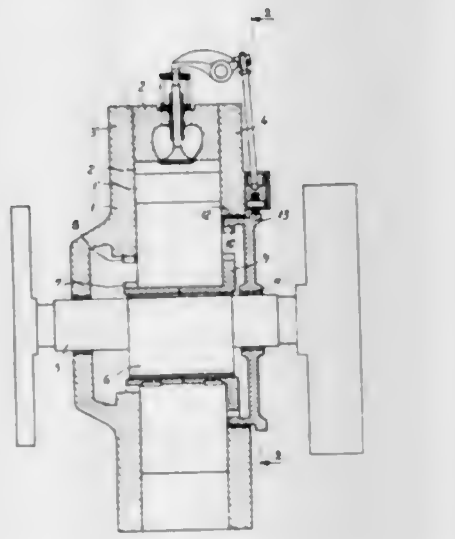


direction and size of the first and second nozzle means being such that the forces created by the cleaning medium flowing therethrough maintain the head means in continuous contact with the wall means.

3,311,093
ROTARY ENGINE TIMING-GEAR

Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France

Filed Nov. 30, 1964, Ser. No. 414,589
Claims priority, application France, Dec. 24, 1963, 958,309, Patent 1,418,786
3 Claims. (Cl. 123—8)

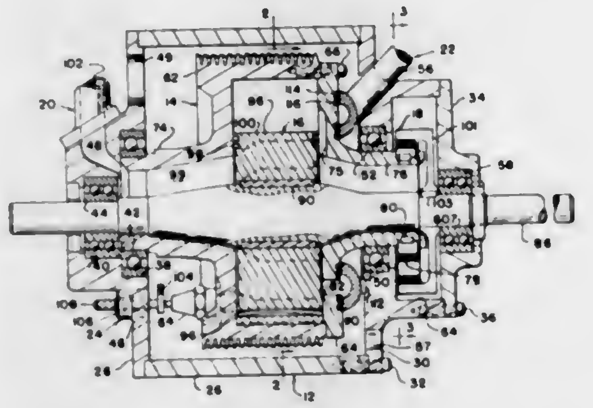


1. An improved timing-gear for a rotary engine comprising a stator having $2n+1$ lobes, an eccentric rotor having $2n$ lobes rotatably mounted within said stator, a plurality of inlet and exhaust valve means debouching into working chambers formed by said lobes on the inner periphery of said stator, an engine shaft having an eccentric portion with said rotor being mounted on said eccentric portion, first gear means mounted on said rotor engaging with second gear means fixedly mounted on said stator a cam-plate having a single cam track thereon, a plurality of tappet means operatively contacting said cam-plate and said valve means for controlling the latter, an epicyclic gear train rotating said cam-plate, said gear train comprising a pinion rigidly connected to said rotor, a ring-gear meshing with said pinion, said cam-plate being rigidly connected to said ring-gear concentric with said engine shaft and being provided with a journal bearing rotating in said stator, said cam-plate being driven in the opposite direction to said engine shaft, the tappets associated with the exhaust valves being placed ahead of the tappets associated with the inlet valves, with respect to the direction of rotation of said engine shaft, and said cam-plate having a plurality of cam surfaces thereon sufficient in number to operate said valve means.

3,311,094
ROTARY ENGINE

Henry Kehl, 3283 Byng Road, Windsor, Ontario, Canada

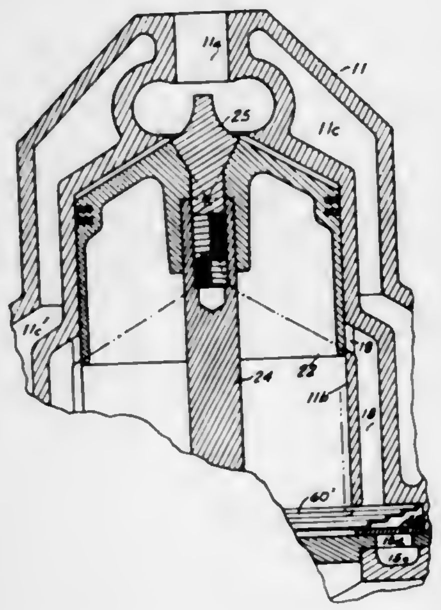
Filed Aug. 18, 1964, Ser. No. 390,385
7 Claims. (Cl. 123—12)



1. Rotary internal combustion engine structure comprising a stationary outer housing, a motor shaft, bearing means mounting the motor shaft for rotation in the stationary outer housing, an inner rotor mounted on said motor shaft centrally thereof for rotation therewith having a plurality of lobes, fuel intake and exhaust passages passing axially through the inner rotor radially outwardly of and extending parallel to the motor shaft, an outer rotor having a plurality of internal cavities therein receiving the inner rotor and including axially extending hollow cylindrical end portions of greater diameter than the diameter of the motor shaft, bearing means for rotatably securing the end of the outer rotor in the stationary housing for rotation about the motor shaft and relative thereto with the axis of rotation of the outer rotor displaced from the axis of rotation of the motor shaft transversely thereof approximately half the difference in the diameter of the cylindrical end portions of the outer rotor and the drive shaft at the bearing means mounting the outer rotor, a ring gear, means for securing the ring gear to the motor shaft for rotation therewith, a planet gear, means securing the planet gear to one end of the outer rotor for rotation therewith in mesh with the ring gear at one side thereof whereby on rotation of the motor shaft the ring gear is rotated to rotate the planet gear and the rotors are consequently rotated in a fixed relation to each other and the lobes on the inner rotor and the cavities in the outer rotor form a plurality of combustion chambers between the inner and outer rotors, an exhaust passage extending axially outwardly through the outer rotor, an annular exhaust manifold slidably positioned against the outer rotor so as to always be in communication with the exhaust passage therethrough on rotation of the outer rotor and extending outwardly through the stationary housing, a fuel input conduit connected to the stationary housing, a passage extending through the stationary housing from the fuel input conduit to the space between the other end of the outer rotor and the motor shaft, said fuel passage through the inner rotor aligning with the space between the ends of the outer rotor and the motor shaft on relative rotation of the inner and outer rotors and an axially extending radial recess on the interior of the outer rotor for connecting the space between the outer rotor and motor shaft with the chambers formed between the inner and outer rotors on relative rotation thereof whereby fuel is passed through the inner rotor into the chambers to cool the inner rotor and heat the fuel, axially extending passages though the ends of the stationary housing and fins on the exterior of the outer rotor for forcing air between the outer rotor and stationary housing to cool the outer rotor, sparking means secured to and carried by the outer rotor for providing a spark in the chambers to ignite fuel compressed therein, and means carried by the stationary housing for providing sparking energy to the sparking means at predetermined locations.

3,311,095
RECIPROCATING PISTON ENGINES

John L. Hittell, Livonia, Mich.
(305 Linnwood Drive, Biloxi, Miss. 39531)
Original application Feb. 15, 1963, Ser. No. 260,607, now Patent No. 3,258,992, dated July 5, 1966. Divided and this application Sept. 20, 1965, Ser. No. 498,185
1 Claim. (Cl. 123—74)

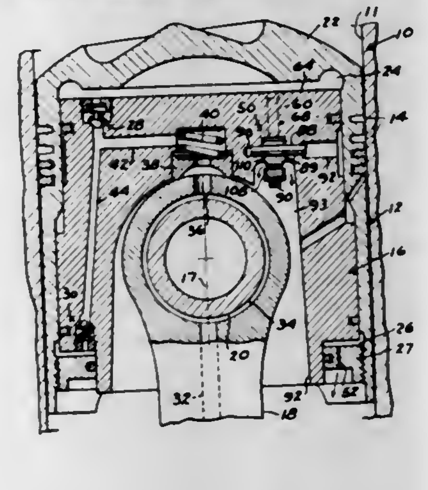


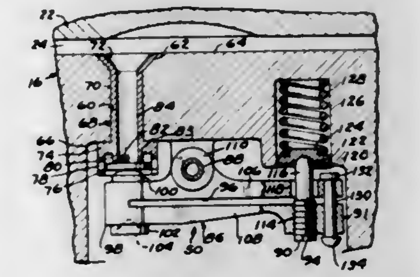
In a fluid displacement machine for compressible fluids, a crankcase, a crank space therein, a shaft rotatably mounted in said crank space, a cylinder on said crankcase with its axis transverse of the said shaft, a diaphragm positioned between said cylinder and said crankcase and separating said crank space from the space within the cylinder, a piston reciprocable in the said cylinder, a rod affixed to the said piston, a guide in the said diaphragm reciprocably supporting said rod and sealing thereagainst thereby completing a charge measuring chamber, means for interchanging reciprocating motion of said rod and rotary motion of said shaft, means for cyclicly timed exhaust from the said cylinder, a flat washer-shaped inlet valve seating on the cylinder side of the said diaphragm, an annular valve-space in said cylinder adjacent the said diaphragm and of a larger bore than the said cylinder, a generally conically formed spring with a plurality of annular corrugations and positioned between said valve and the opposite end of said valve-space to thereby seat the said valve, walls in the said crankcase forming a plurality of inlet passages isolated from said crank space, a plurality of apertures on the said diaphragm intermittently covered by the said valve, aligned ports in said crankcase connecting the said plurality of apertures with the said inlet passages, transfer ports in the said cylinder uncovered by the said piston as it approaches the said diaphragm, and walls in said cylinder to form a passage connecting said transfer ports with the said annular valve space and said charge measuring chamber.

3,311,096
VARIABLE COMPRESSION RATIO PISTON AND VALVE

Carl F. Bachle, Grosse Pointe Farms, and Roswell E. Carney, Grosse Pointe Woods, Mich., assignors to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia

Filed July 7, 1965, Ser. No. 470,008
13 Claims. (Cl. 123—78)





12. An internal combustion engine piston having first and second parts movable relative to one another in response to reciprocation of the piston in an engine cylinder between a combustion chamber and crankcase of the engine, a pressure fluid chamber within said piston which varies in internal volume in response to said relative movement and to variations in the quantity of pressure fluid therein, means for supplying pressure fluid to said chamber, one of said parts including means forming a fluid flow discharge passage communicating with said chamber, a valve member carried by said one part movable to open and close said discharge passage for controlling discharge of fluid therethrough to thereby vary the quantity of fluid in said chamber and biasing means including a lever for yieldably biasing said valve member toward closed position to thereby regulate the pressure of the fluid in said chamber.

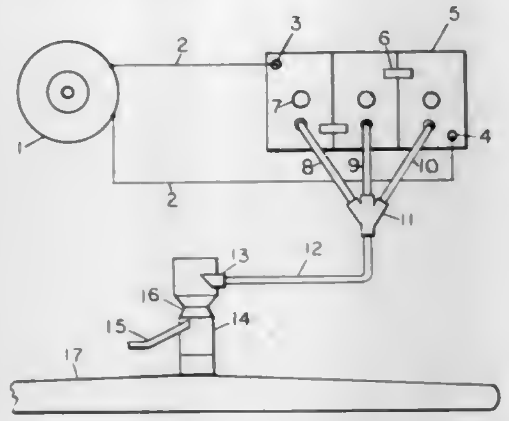
3,311,097
HYDROGEN-OXYGEN DEVICE IN COMBUSTION ENGINES

Georg S. Mittelstaedt, 274 73rd St., Brooklyn, N.Y. 11209

Filed Nov. 24, 1964, Ser. No. 413,505
4 Claims. (Cl. 123—119)

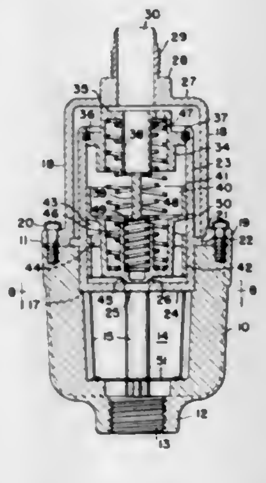
1. In a combustion engine having an intake-combustion-exhaust line and an electric system including a generator and a battery for normal automotive use, an extra electric generator connected to an extra electric cell comprising a vessel containing an electrolyte, positive and negative electrodes disposed in the electrolyte, a cell cover and a tube leading from the space over the electrolyte beneath the cell cover to any part of the intake-combustion-exhaust line of the engine; the electric current from

the extra generator passing through the electrolyte in the extra electric cell decomposing water and liberating hydrogen and oxygen gases, said tube conveying the liberated gases to the intake-combustion-exhaust line of the engine.



3,311,098
ENGINE RECTIFIER

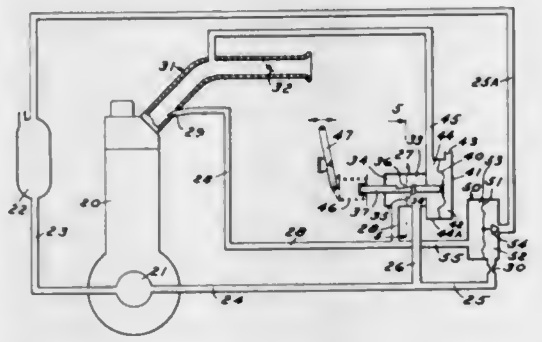
Jesse O. Drake, 759 Caroline Ave., West Palm Beach, Fla. 33404
Filed Dec. 18, 1964, Ser. No. 419,489
6 Claims. (Cl. 123—119)



1. A rectifier device for use in connection with internal combustion engines having a fuel inlet and an oil containing crank case, the rectifier being mounted adjacent to the engine and with the rectifier having a tube connected to its lower end and also to the crank case above the level of the oil therein, the rectifier also having a tube connected to the fuel inlet side of the engine, the rectifier embodying upper and lower cylindrical housings that are bolted togehter, the upper housing having a closed end that is provided with a threaded coupling for connection to the tube leading to the fuel inlet of the engine, the lower housing having a threaded opening in its bottom for threaded connection to the tube leading to the crank case, the upper housing at its lower end being provided with a circumferential flange that is apertured to receive bolts that are connected to threaded openings in the lower housing and whereby the housings are fixedly bolted together, the upper housing being provided with a cylinder that is closed at its lower end and open at its upper end, the cylinder being provided at its lower end with a circumferential rib that is clamped between the housings, the cylinder being co-axial to the housings and spaced from side walls of the upper housing, the bottom of the cylinder being provided with a central opening that is beveled to constitute a seat for a check valve, a piston operable in the cylinder and with the piston centrally thereof provided with a beveled valve that seats upon the bevel of the opening of the cylinder, the cylinder at its upper end being provided with a cup-shaped cylindrical member and means for retaining the cup shape member against upward movement with respect to the cylinder, the said piston being biased downwardly by a spring that seats against the piston and also seats within the cup-shaped member to bias the piston downwardly, the cup-shaped member upon its upper surface being provided with spacing lugs whereby the cup-shaped member is held in spaced relation to the top of the upper housing, the said piston being provided with a partition that is apertured at spaced apart points and the cylinder also being provided with staggered rows of apertures that communicate with the apertures of the piston, the upper housing being provided with a tubular opening passing through the threaded coupling and communicating with the interior of the upper housing, the said piston being biased upwardly by a vacuum that is created in the tube leading to the fuel inlet side of the engine and whereby to open the valve in the bottom of the cylinder and to permit the suction of gases from the crank case, the said gases passing through the apertures of the piston and through the apertures of the cylinder to flow upwardly to be discharged to the inlet side of the engine to be subsequently burned and to lubricate the upper cylinder structure of the engine.

3,311,099
FUEL INJECTION SYSTEMS

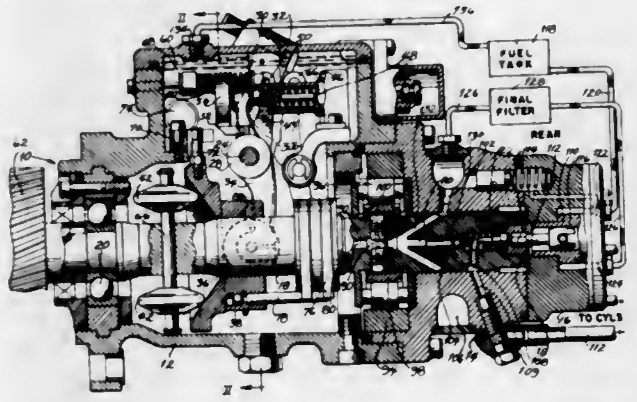
Wallace E. Beaber, 30527 Jeanine Ave., Livonia, Mich. 48152
Continuation of application Ser. No. 296,596, July 22, 1963. This application Oct. 22, 1965, Ser. No. 502,667
9 Claims. (Cl. 123—139)



3. In a charge forming system for an internal combustion engine having a throttle controlled air passage leading to said engine and a continuous flow fuel feeding system including a fuel pump of the positive displacement type driven from said engine, a passage supplied with fuel at pump pressure, a charging fuel circuit supplied with fuel at pump pressure and delivering fuel to said air passage, a variable area fuel metering restriction in said fuel passage and a pressure regulating means to maintain across said orifice a pressure drop of a predetermined amount including a bypass fuel circuit supplied from said passage, means for establishing a fuel flow at the delivery end of said bypass circuit proportional to engine speed, a fuel flow regulating valve controlling the pressure of fuel downstream of said variable area restriction and regulated by oppositely acting fuel pressures through connections with said charging fuel circuit and the delivery end of said bypass circuit, the improvement comprising means for positioning said variable area fuel metering restriction in a flow increasing direction by a force proportional to air pressure downstream of said throttle biased against a yielding force decreasing with throttle opening and directly connected to said throttle.

3,311,100
TEMPERATURE COMPENSATED FUEL INJECTION PUMP

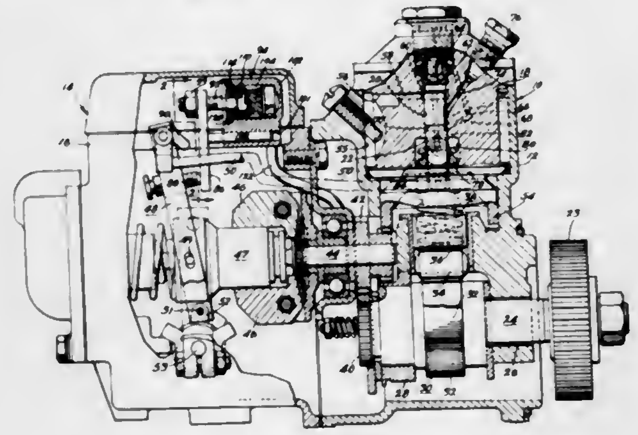
Raymond J. Maddalozzo, Chicago, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 411,999
7 Claims. (Cl. 123—140)



1. Fuel control mechanism for providing different fuel settings for an engine, said mechanism comprising:
first and second cooperating parts between which an operative gap is maintaind for adjustment purposes and which control the fuel setting in accordance with the amount of gap maintained;
one of said parts carrying an associated bolt member capable of limited threaded adjustment with respect thereto and engageable with the means on the other part to control the amount of gap; and
a spiral, bimetal spring strip to adjust the amount of gap and having a fixed outer end anchored to said one part and having a free inner end drivingly connected to the associated bolt member to rotate the bolt member and change the gap;
said spring strip having at least approximately four coil turns, and winding and unwinding as the fuel temperature changes, in a manner to adjust the axial position of the bolt member for changing the gap to permit movement in a fuel increasing direction when the fuel temperature increases, and vice versa.

3,311,101
EXCESS FUEL STARTING DEVICE FOR FUEL INJECTION ENGINES

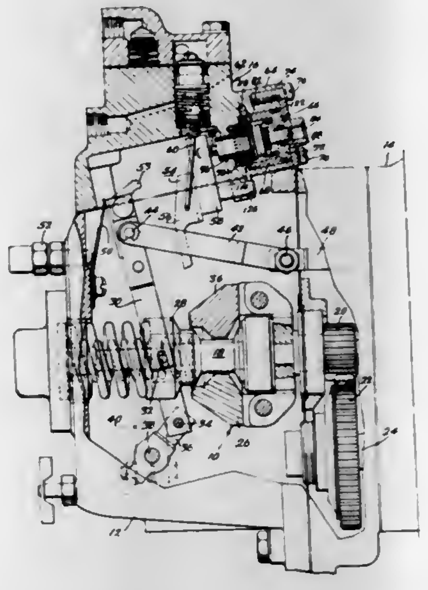
Arthur E. Huse, Springfield, Mass., assignor to American Bosch Arma Corporation, Springfield, Mass., a corporation of New York
Filed Nov. 10, 1964, Ser. No. 410,183
4 Claims. (Cl. 123—179)



1. An excess fuel starting device for a fuel injection engine having a full load stop coacting with the engine throttle linkage to limit the fuel input thereto comprising, a hydraulic actuator operatively connected to the full load stop for movement thereof from a normal operating full load position to an excess fuel starting position, said actuator comprising a housing on the engine having a cylindrical bore therein, a piston slidably disposed within said bore, and a piston rod extending from said bore and operatively connected with the full load stop, a spring in said bore urging said piston and full load stop into the excess fuel position, a fluid inlet in said housing opening into said bore for introducing pressurized fluid into said bore to move said piston against the force of said spring into the normal operating full load position, a fluid conduit for connecting said fluid inlet with a fluid source pressurized by and only during operation of the engine, said spring being adapted upon engine stoppage to move said piston and full load stop to the excess fuel starting position, means permitting an initial introduction of fluid to both sides of said piston during the starting of the engine to briefly inhibit movement of said piston, and means for venting fluid from one side of said piston following starting of the engine to permit a rapid movement of the actuator into the normal operating full load position and to maintain the full load position with a minimum pressure of said fluid.

3,311,102
EXCESS FUEL STARTING DEVICE FOR FUEL INJECTION ENGINES

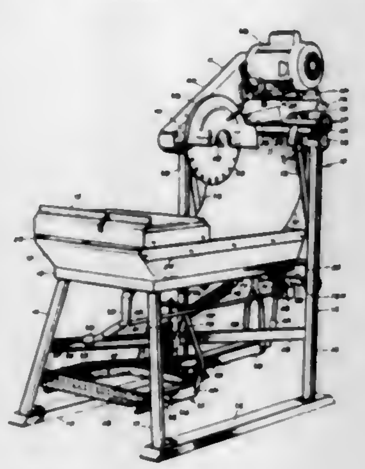
Max H. Voigt, Chicopee Falls, Mass., assignor to American Bosch Arma Corporation, Springfield, Mass., a corporation of New York
Filed Nov. 10, 1964, Ser. No. 410,184
1 Claim. (Cl. 123—179)



An excess fuel starting device for a fuel injection engine having a full load stop coacting with the engine throttle linkage to limit the fuel input thereto comprising, a hydraulic actuator operatively connected to the full load stop for movement thereof from a normal operating full load position to an excess fuel starting position, said actuator comprising a housing on the engine having a cylindrical bore therein, a piston movably disposed within said bore, and a piston rod extending from said bore and operatively connected with the full load stop, a spring in said bore urging said piston and full load stop into the excess fuel position, a fluid inlet in said housing opening into said bore for introducing pressurized fluid into said bore to move said piston against the force of said spring into the normal operating full load position, and a fluid conduit for connecting said fluid inlet with a fluid source pressurized by and only during operation of the engine, said fluid source comprising the engine lubricating oil, said spring being adapted upon engine stoppage to move said piston and full load stop to the excess fuel starting position.

3,311,103
MASONRY SAW

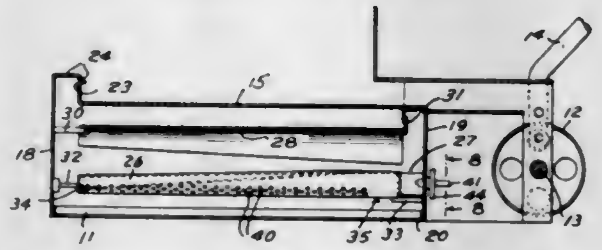
Bruce E. Simpson, Culver City, Calif., assignor to Felker Manufacturing Company, Torrance, Calif., a corporation of California
Filed Aug. 29, 1963, Ser. No. 305,458
7 Claims. (Cl. 125—13)



1. A masonry saw comprising
(a) an elongated saw assembly adapted to carry an abrasive saw at one end for rotation about a horizontal axis and to carry a drive motor at the other end,
(b) a supporting frame having a horizontal table on which masonry can be carried for movement perpendicular to the saw axis, the frame having and end member extending upwardly above the table at the rear end thereof,
(c) a bellcrank connected at the fulcrum to the end member for pivotal movement about an axis parallel to and spaced from the saw axis and connected at one end to the intermediate portion of the saw assembly for pivotal movement of the assembly about an axis parallel to and spaced from the saw axis,
(d) a means for pivoting the saw assembly relative to said bellcrank, and
(e) an adjusting rod attached to the other end of the bell-crank to move said one end selectively to a position in front of said end member and to a position in the rear of said end member. whereby the saw assembly is adjusted vertically and horizontally over a wide range relative to the table.

3,311,104
INFRA-RED BURNER

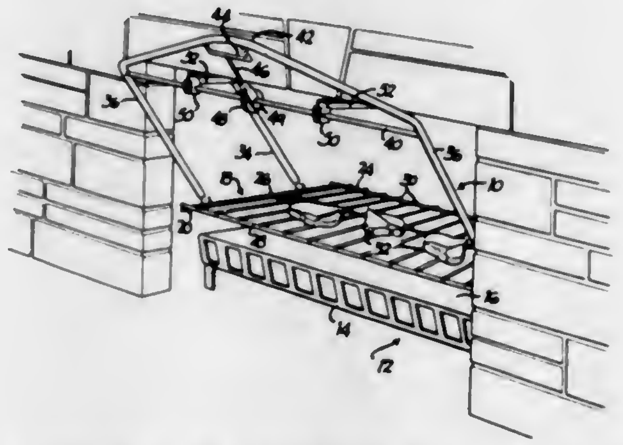
Paul Wollner, North Bergen, and Alexander Quayle, Ridgewood, N.J., assignors to Aeroil Products Company, Inc., South Hackensack, N.J., a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,107
4 Claims. (Cl. 126—92)



1. In an infra-red burner an elongated hollow shell, said shell when horizontally disposed having a lower perforated surface of uniform circumference and cross-section the entire longitudinal length thereof and having a longitudinal channel formed in a portion of its top surface, the depth of said channel progressively increasing along said portion thereof thereby producing along a substantial portion of the length of said shell a progressive reduction in its cross-sectional area without altering the circumference of said perforated surface, and a burner connected with said shell for projecting a flame therein.

3,311,105
BARBECUE GRILL

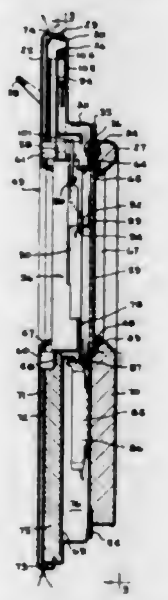
James A. Bergel, 1663 N. Gulley Road, and Theodore R. Kuriluk, 1555 N. Gulley Road, both of Dearborn Heights, Mich. 48128
Filed Aug. 12, 1965, Ser. No. 479,153
6 Claims. (Cl. 126—137)



1. A removable and replaceable grill for a fireplace having a chimneyed roof area and a back wall, a pair of spaced apart grill guiding rails secured in the chimneyed roof area of the fireplace and terminating at the back wall thereof, comprising a substantially flat grid structure, laterally spaced front and rear pairs of grid supporting arms pivotally mounted on the grid structure, a laterally extending rod interconnecting the laterally spaced arms of one of said pairs of arms, laterally spaced grill supporting rails operably connected to the front and rear grid supporting arms and adapted to engage the grill guiding rails, a handle operably connected to the front grid supporting arms, and locking means to clampingly secure the grill in angularly adjusted positions.

3,311,106
WINDOWED OVEN DOOR

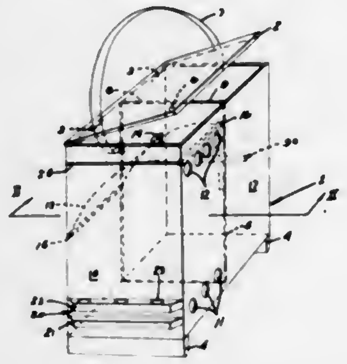
Howard B. Baughman and Kermit B. Keeling, Sr., Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed Dec. 23, 1965, Ser. No. 515,910
9 Claims. (Cl. 126—200)



1. A door construction for a high temperature oven having an oven cavity formed by a box-like oven liner and a front-opening access door; the invention comprising a door having an outer door panel with a first window opening, a double-pane window assembly covering said first window opening, an inner door liner attached to and spaced inwardly from said outer door panel, a second window opening formed in said inner door liner, a glass pane covering said second window opening, a movable shutter interposed between said double-pane window assembly and said glass pane, said shutter having at least one handle along one side thereof, and slot means formed in the inner door liner for receiving a portion of the handle therethrough, whereby the position of the shutter may be adjusted manually when the door is open between a lower window open position and an upper window closed position, a door latch keeper carried by said door, a movable closure plate positioned on the door and biased to a position to disable said keeper, and said shutter movable to engage and operate said closure plate away from said position to enable said keeper to lock said door when said shutter is closed over said window assembly and so that said door may not be latched until said shutter is in its closed position.

3,311,107
ICE FISHING UNIT

James Vander Jagt, 15702 Pruin St., Spring Lake, Mich. 49456
Filed Oct. 6, 1965, Ser. No. 493,446
8 Claims. (Cl. 126—204)

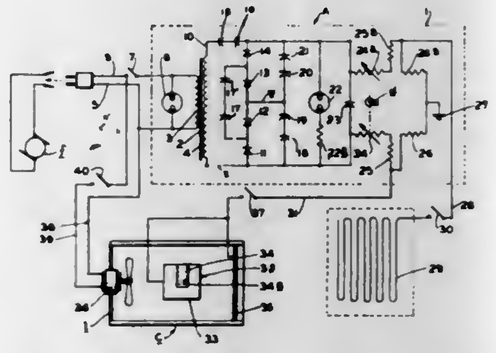


1. A fishing and hunting heating box comprising:
an enclosure having a bottom and a plurality of sides;
a lid for said enclosure;
means for removably affixing said lid to said enclosure;
a cold air intake vent positioned at the lower section of one wall of said enclosure, said intake vent forming an air passage whereby cold air enters said enclosure;
a warm air outlet vent positioned at the upper section of said one wall of said enclosure, said outlet vent forming an air passage whereby warm air escapes said enclosure; and
an arcuate air baffle of approximately the same width as said enclosure extending in an upward direction from an intermediate section of the wall opposite said one wall to a section of said one wall above said outlet vent.

3,311,108
MEANS FOR ARTIFICIALLY PRODUCING AND CONTROLLING ELECTRIC POWER FIELD STRENGTHS AND FREELY SUSPENDED IONS IN THE ATMOSPHERE

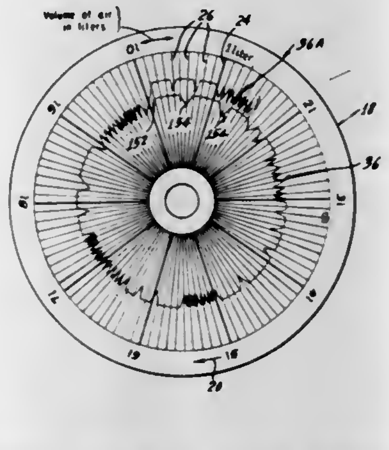
Cristjo Cristofv and George N. Cristofv, both of 2649 Lawndale Ave., Evanston, Ill. 62242
Filed Feb. 26, 1962, Ser. No. 175,419
2 Claims. (Cl. 128—190)

1. Means for improving psychomotor performance and performing selective biochemical changes in human beings located within an enclosure; said means comprising an enclosure, an anode electrode located on the ceiling of the enclosure, a metal capsule located close to the floor of the enclosure, a charge of radioactive material in said caspule, means associated with said capsule for emitting radioactive particles from said capsule, a transformer having a primary and a secondary, said primary being adapted to be connected to a source of alternating current, a series of at least four diodes connected across the terminals of the secondary, a pair of first condensers interposed between one terminal of the secondary and one of said diodes, a series of second condensers shunting at least two diodes in the middle of said series of diodes, a series of third condensers connected in parallel with said series of diodes, a fourth condenser connected across the terminals of the series of third condensers, variable resistor means connected across the poles of said fourth condenser, first conductor means connecting said variable resistor means to said anode electrode, and second conductor means connecting said variable resistor means to said capsule, said first conductor means being positively biased with respect to said second conductor means.



3,311,109
SPIROMETER

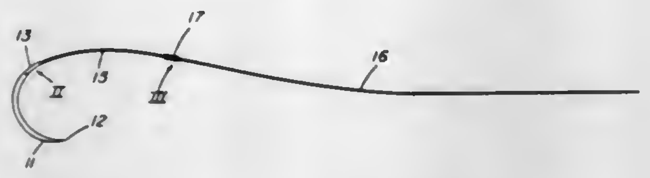
William Gruen, New York, and Burt B. Orden, Bronx, N.Y., and William E. Hovemeyer, Convent Station, N.J., assignors to Instrumentation Associates Inc., New York, N.Y., a corporation of New York
Filed June 5, 1964, Ser. No. 372,822
6 Claims. (Cl. 128—2.08)



1. A spirometer having a stylus, means to move a recording chart relative to said stylus in response to the exhalation of air into the spirometer for marking a line on said chart in accordance with the volume of said air, and means to reciprocably move said stylus at fixed time intervals transversely of said line, said last mentioned means including means to effect an initial transverse movement of said stylus substantially simultaneously with the commencement of such exhalation, said last mentioned means being an oscillator timing circuit having a discharge circuit which is biased to a predetermined voltage in the absence of exhaled air in said spirometer and which biased voltage is discharged in immediate response to said commencement of exhalation.

3,311,110
FLEXIBLE COMPOSITE SUTURE HAVING A TANDEM LINKAGE

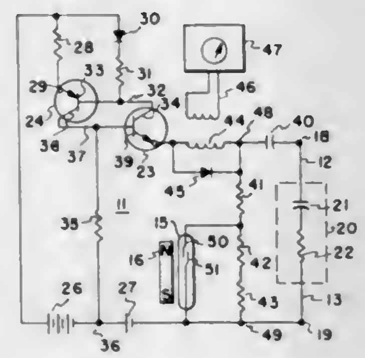
Sol Singerman, Norwalk, David Kaufman, Newtown, and Arthur Glick, Danbury, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed July 15, 1964, Ser. No. 382,877
4 Claims. (Cl. 128—335.5)



1. A needled surgical suture comprising:
(a) a flexible suture leader, having a front and back end,
(b) an eyeless surgical needle, having inserted and crimped in the butt end thereof the front end of said flexible suture leader,
(c) a stiff, relatively brittle, metallic surgical suture, having a diameter of at least 0.006 inch, having a front and back end,
(d) a connector sleve crimped to and joining the back end of said flexible suture leader to the front end of said suture,
(e) the said leader having such length that the exposed portion between said needle and said sleeve is about ⅛ inch, and the order being the needle, the leader, the connector, and then the suture.

3,311,111
CONTROLLABLE ELECTRIC BODY TISSUE STIMULATORS

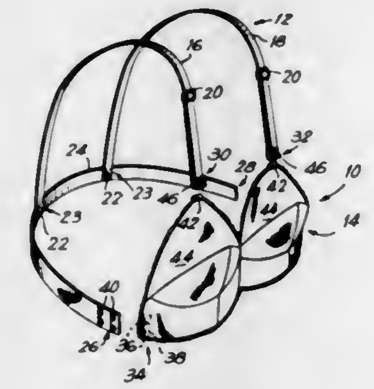
David L. Bowers, Milwaukee, Wis., assignor to General Electric Company, a corporation of New York
Filed Aug. 11, 1964, Ser. No. 388,758
1 Claim. (Cl. 128—422)



A body implantable artificial cardiac Pacemaker comprising:
(a) a body compatible implantable insulating encapsulation container,
(b) an electric pulse producing oscillator in said encapsulation,
(c) an electric battery in said encapsulation and connected with the oscillator for energizing it,
(d) a time constant control circuit including a capacitor means and discharge series resistors connected with said oscillator to govern the characteristics of the pulses therefrom,
(e) a reed switch having two stable states and two magnetically susceptible contacts one of which is connected at a juncture intermediate two of said resistors and the other of which is in circuit at a juncture beyond one of said resistors to by-pass the same when the contacts are in a closed state,
(f) a permanent biasing magnet adjacent the reed switch the magnet field of which biasing magnet passes along the path established by said contacts and is of insufficient field strength to attract the contacts together in the absence of an auxiliary magnetic field but is of sufficient strength to maintain the contacts in one stable state when the contacts have been acted on by said auxiliary magnetic field, and
(g) manually positionable auxiliary magnet means which may be located externally in aligned proximity with said biasing magnet to thereby supplement or nullify the biasing magnet field to transfer the reed switch to a different stable state.

3,311,112
BRASSIERE AND DETACHABLE SHOULDER HARNESS

Jean Murray, Brant Beach, N.J., assignor to Perfect Brassiere Company, Inc., Jersey City, N.J., a corporation of New Jersey
Filed Mar. 25, 1965, Ser. No. 442,721
1 Claim. (Cl. 128—425)

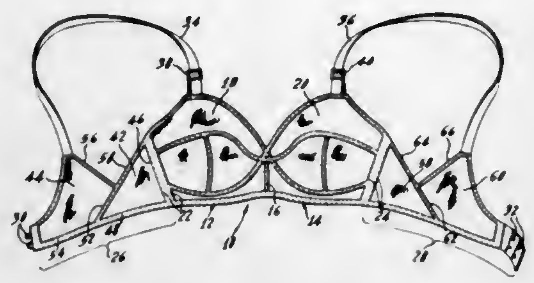


A brassiere comprising a shoulder harness including a back strap adapted to extend across the back of the upper torso of a wearer and shoulder straps each connected at one end medially of said back strap and adapted to extend over the shoulders of said wearer, a brassiere front adapted to be worn across the front upper torso of said wearer and detachably supported by said shoulder harness on said respective free ends of said back strap, and shoulder straps, said free ends of said straps and said brassiere front, at locations aligning with said strap free ends, respectively carrying cooperating attaching means for detachably making connection therebetween and permitting detachment of said brassiere front from said shoulder harness and the substitution of other brassiere fronts for use with said same shoulder harness, said attaching means including cooperating hook and eye means at least on said back strap and at said brassiere front aligning locations.

3,311,113
BRASSIERE

Lillian H. Sayers, New York, N.Y., assignor to Kops Bros., Inc., New York, N.Y., a corporation of New York
Filed Apr. 2, 1965, Ser. No. 445,159
3 Claims. (Cl. 128—425)

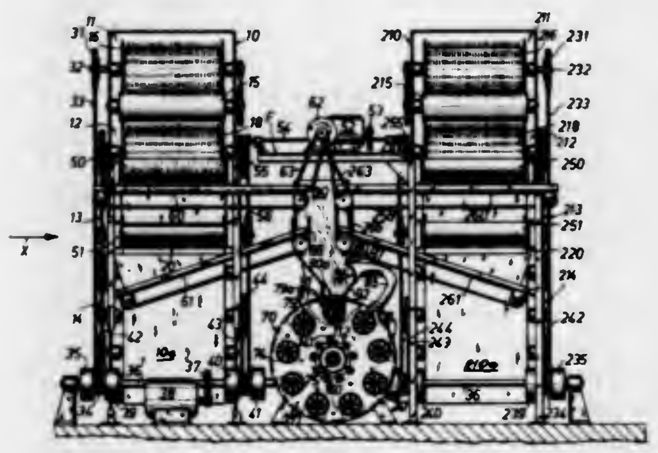
1. A brassiere comprising:
a pair of bust cup carrying front portions secured together in side-by-side relation;
a side band connected to and extending from the outer edge of each front portion and terminating in a free end;
fastening means provided at said free ends, respectively, for releasable securement to each other;
each of said side bands comprising an inner section and an outer section secured to each other in generally abutting relation along a securing line intermediate the associated front portion and the free end of the side band;
said side band having an upper edge forming a V, the legs of which are defined, respectively, by the upper edges of said pair of sections;



said securing line extending downwardly from the apex of said V and co-linearly with the V-leg defining edge of the inner side band section;
said V-leg defining edge of said inner band section being generally continuous with the adjoining upper contour edge of the associated front portion;
said side band sections being stretchable in a direction circumferentially of the wearer.

3,311,114
APPARATUS FOR TRANSFERRING TOBACCO TO TOBACCO PROCESSING MACHINES

Hubert Schlossmacher, Hamburg-Bergedorf, Germany, assignor to Hauni-Werke Korber & Co. K.G., Hamburg-Bergedorf, Germany
Filed Jan. 3, 1962, Ser. No. 164,125
Claims priority, application Germany, Jan. 4, 1961, H 41,381
16 Claims. (Cl. 131—109)



1. An apparatus for consecutively transferring metered quantities of tobacco to a plurality of tobacco processing machines, comprising at least one source of tobacco; a distributor having stator means formed with intake opening means and intermittently rotating rotor means rotatably received in said stator means, said rotor means having a plurality of radially outwardly opening tobacco-receiving chambers arranged to be aligned in sequence with said intake opening means in response to intermittent rotation of said rotor means; a plurality of pneumatic conveyers, one for each tobacco processing machine, said conveyers being communicatively connected with said stator means; means for intermittently withdrawing metered quantities of tobacco from said source and for transferring such metered quantities of tobacco through said intake opening means and into the momentarily aligned chamber to fill the same; and means for intermittently rotating said rotor means so as to align filled tobacco-containing chambers with said conveyers preparatory to transfer of tobacco to the respective tobacco processing machines.

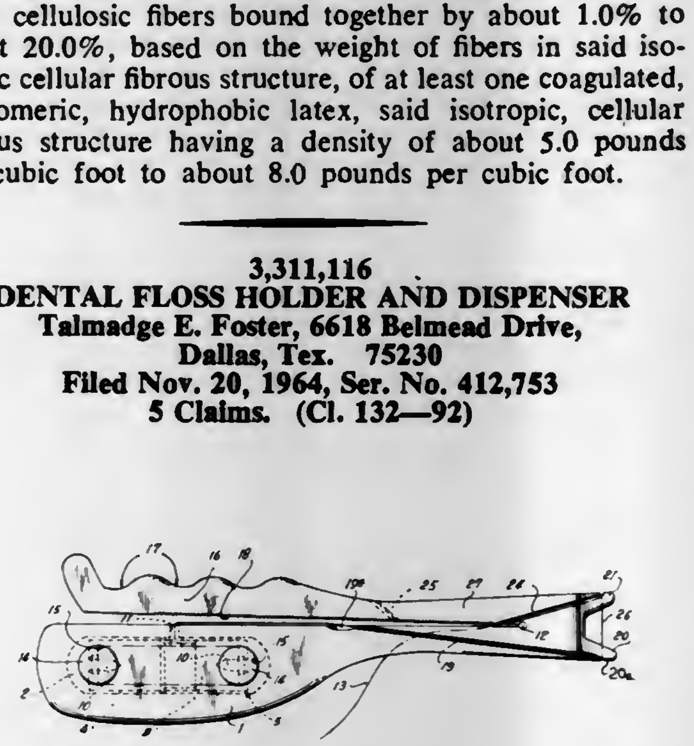
3,311,115
LOW DENSITY AEROSOL FILTER

William Anton Mueller, Donald Frederick Maskey, and George Nathan Ferguson, Memphis, Tenn., assignors to The Buckeye Cellulose Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 29, 1963, Ser. No. 319,777
7 Claims. (Cl. 131—266)

1. An isotropic, porous cellular foamed fibrous structure, useful in the filtration of aerosol suspensions, which is composed of at least a substantial proportion of fibrillated cellulosic fibers bound together by about 1.0% to about 20.0%, based on the weight of fibers in said isotropic cellular fibrous structure, of at least one coagulated, elastomeric, hydrophobic latex, said isotropic, cellular fibrous structure having a density of about 5.0 pounds per cubic foot to about 8.0 pounds per cubic foot.

3,311,116
DENTAL FLOSS HOLDER AND DISPENSER

Talmadge E. Foster, 6618 Belmead Drive, Dallas, Tex. 75230
Filed Nov. 20, 1964, Ser. No. 412,753
5 Claims. (Cl. 132—92)



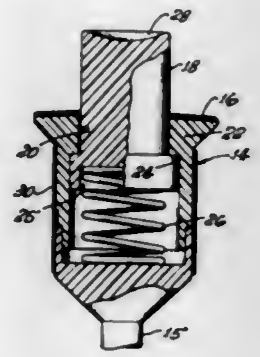
1. In a device of the class described, a body including a head portion with first and second handle portions extending therefrom; a cavity formed in the first handle portion; a separable capsule removably inserted in said cavity; a dental floss passage through the inner wall of the first handle communicating with the cavity; a dental floss passage through the wall of the capsule communicating with the passage through the wall of the first handle; a pair of spaced parallel inwardly directed prongs on the end of the head portion; a first diagonally disposed channel extending along the outer surface of the body and terminating at the inner edge of the first handle portion; aligned slots on the inner ends of the prongs; a second diagonally disposed channel extending along the outer surface of the body and terminating at the inner edge of the second handle portion, each of said channels communicating with one of the slots in the ends of the prongs; spring means normally urging the handle portions apart so that the handles may be moved together to grippingly engage dental floss extended through the

channels and slots and between the handle portions, and when released will move apart by spring action to release the dental floss.

3,311,117

MANICURING DEVICE

**Eugene H. Thompson, 5204 N. Baldwin Ave.,
Temple City, Calif. 91780
Filed July 6, 1964, Ser. No. 380,288
7 Claims. (Cl. 132—73.6)**

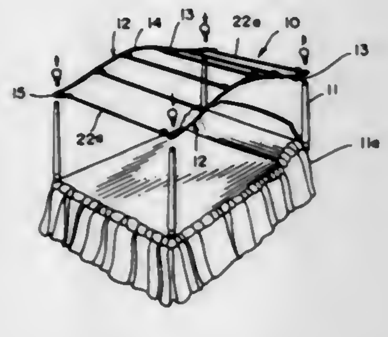


1. In a device of the character described for abrasively processing a portion of an object for example for processing the fingernail of a finger, the combination of:
- a rotatable head having an end face and an axial bore;
- a rest for contact with a portion of the object in the form of a plunger slidingly mounted in said bore and extending axially from the end face and retractable axially inward from an outer limit position;
- resilient means normally yieldingly urging the plunger towards its outer limit position; and
- an annular abrasive means mounted on the end face and surrounding the plunger there being a high degree of freedom for relative rotation between the head and the plunger to permit the plunger to be held against rotation by frictional contact with the object.

3,311,118

KNOCK-DOWN CANOPY SUPPORT FOR BEDS

**Kenneth H. Gutner, 591 Roger Williams,
Highland Park, Ill. 60035
Filed Apr. 28, 1965, Ser. No. 451,595
9 Claims. (Cl. 135—5.2)**

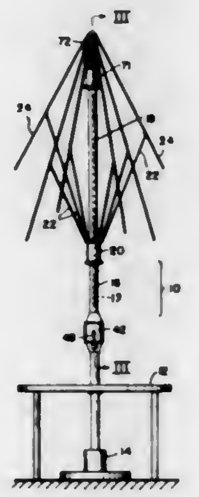


9. A knock-down canopy support for beds comprising four generally S-shaped rods adapted to be secured together in pairs to form the longitudinal sides of a canopy support and providing thereby a centrally arched portion, the ends of each secured pair of rods being folded to provide eyes for mounting said rods on the posts of a bed, a plurality of clips on each pair of rods, and a plurality of transverse members releasably clamped by said clips, each clip projecting from its associated pair of rods toward the other pair of rods and having a clamp portion spaced from its associated pair of rods to permit about 1" axial movement between outermost clamping positions on its associated lateral member whereby said support is adjustable both longitudinally and laterally to accommodate different size beds.

3,311,119

AUTOMATICALLY TILTABLE BEACH UMBRELLA

**Morton Pearlstine, Cynwyd, Pa.
(1419 Old Welsh Road, Huntingdon Valley, Pa. 19001)
Filed Apr. 22, 1965, Ser. No. 449,961
6 Claims. (Cl. 135—20)**

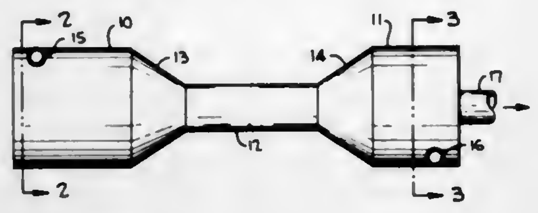


1. In a beach umbrella or the like having a substantially vertically positioned main tubular support, a plurality of generally radially arranged fabric-supporting ribs, each mounted at one end on the top of the tubular support, an equal number of rods, each connected to a rib and to a rod collar, said rod collar being mounted for vertical movement on the main tubular support from a bottom position when the fabric-supporting ribs are closed to a top position when the ribs are fully opened, apparatus for raising and lowering the rod collar and for moving the ribs into a desired inclined position comprising
- an axial slot formed in the wall of the main tubular support and extending a portion of its length,
- a threaded shaft mounted axially within the tubular support for independent rotation therein,
- an internally threaded member threadedly mounted on the shaft and having a portion extending through the axial slot, said extended portion thereby preventing the member from rotating with the shaft but allowing the member to move vertically within the tubular support when the threaded shaft is rotated,
- means connected to the threaded shaft and located on the outside of the tubular support for causing the shaft to rotate,
- a top tubular support pivotally joined to the main tubular support at a point adjacent to one of their ends so that the top tubular support is free to rotate into inclined position within an arc extending in one direction from the vertical position while the main tubular support remains in substantially a vertical position, and
- hinged means connecting the extended portion of the threaded member and the rod collar so that when the threaded member is raised to a certain height on the shaft, the rod collar is thereby raised from an initial lower position on the main tubular support and progressively moves over the pivotal point and then onto the top tubular support and thereby causes the top support to rotate around the pivotal point placing the fabric-supporting ribs into an inclined position.

3,311,120

FLUID VORTEX OSCILLATOR

**Rocco Richard Palmisano, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed July 6, 1964, Ser. No. 380,717
4 Claims. (Cl. 137—1)**

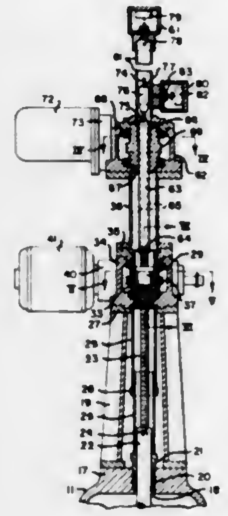


1. A pure fluid vortex oscillator having a substantially noise-free and stable fluid output signal comprising:
- (a) means for generating a first vortex having a first sense of rotation,
- (b) means for separately generating a second vortex in close proximity to said first vortex, said second vortex having a second sense of rotation different from that of said first vortex and having an axis coinciding with the axis of said first vortex, and
- (c) means connected to said first and second vortex generating means to mix said first and said second vortex to produce a fluid output.

3,311,121

AUTOMATIC REGRINDING VALVE SYSTEM

**James N. Morrell, Piney Point, Tex. (% E-I-M Company, Incorporated, P.O. Box 8, Pike Road, Missouri City, Tex. 77459)
Original application June 18, 1963, Ser. No. 288,679, now Patent No. 3,220,431, dated Nov. 30, 1965. Divided and this application Sept. 20, 1965, Ser. No. 488,441
6 Claims. (Cl. 137—15)**

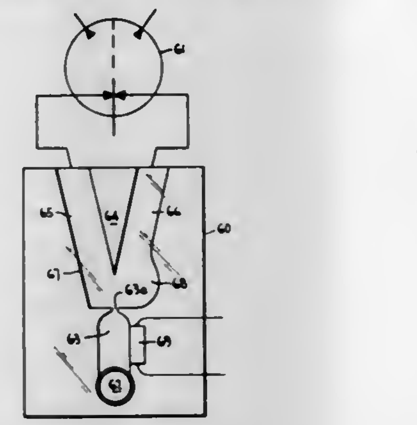


1. In an automatic regrinding valve system and the like, the steps comprising, in combination, axially moving without rotation a valve stem and disc for a regrinding valve and the like in a closing stroke toward closing engagement with its valve seat, causing said axial movement by translating rotational movement into linear movement in a predetermined closing direction, rotating said valve stem and disc without changing the direction of said translating rotational movement when said valve disc is within a predetermined distance of said seat in said closing stroke, selecting the respective directions and speed of said translating rotational movement and of the rotation of said valve stem respectively to provide a predetermined slowdown in the axial approach movement of said valve disc toward said seat in a closing stroke when said valve stem and disc are rotating, and stopping said stem rotation and axial movement at the end of said closing stroke of said valve stem and disc after a predetermined engaging force between said valve disc and said valve seat is attained.

3,311,122

ELECTRO-FLUID TRANSDUCER

**Richard N. Gottron, Kensington, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 13, 1964, Ser. No. 337,508
6 Claims. (Cl. 137—81.5)**

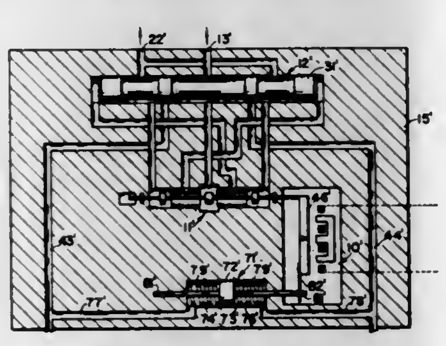


1. A fluid control device comprising:
- (a) nozzle means for producing a fluid power jet,
- (b) a plurality of output channels downstream of said nozzle means for receiving said jet, and
- (c) means for controlling the position of said jet between said plurality of output channels including means for producing acoustic signals upstream of said nozzle means.

3,311,123

ELECTROHYDRAULIC SERVO VALVE

**Vee Chang Tsien and John W. Meulendyk, Kalamazoo, Mich., assignors, by mesne assignments, to Pneumo-Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Apr. 27, 1959, Ser. No. 809,271
1 Claim. (Cl. 137—85)**



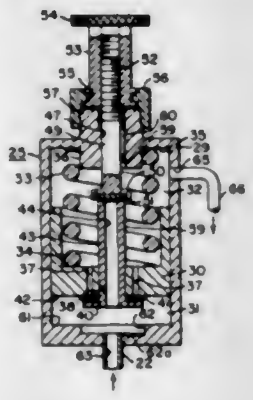
An electric hydraulic valve comprising a valve body formed with a valve bore, inlet and return ports open to said bore, two controlled ports open to said bore, a spool slidable in said bore controlling fluid flow through said ports, said body and spool cooperating to define a chamber at each end of such spool, a pilot valve plunger connected to said chambers and said inlet and return ports operable to change the pressures in said chambers and shift said spool, an electric torque motor including an armature having first and second operative ends and a central electro-responsive portion, said armature pivoted at said central portion for movement from a neutral position in response to electrical signals and pivotally connected at said first end to operate said pilot valve plunger upon such movement, a pressure responsive output device in fluid communication with said controlled ports, and a resilient connection between said output device and said second end of said armature, said output device being operable in response to differences in pressures between said controlled ports to vary the position of said armature and to return said armature to said neutral position when moved therefrom in response to an electrical signal applied to the torque motor.

3,311,124
PRESSURE REGULATING APPARATUS

Ralph W. Le Gates, Thornbury Township, and Gilbert F. Hyde, Brookhaven Township, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 9, 1964, Ser. No. 381,504

5 Claims. (Cl. 137—110)



1. A hydraulic pressure regulator comprising

a housing,

a movable abutment disposed in said housing and dividing the latter into first and second chambers,

means for admitting a pressurized fluid into said first chamber,

means for discharging fluid from said second chamber to a region of lower pressure,

spring means for biasing said movable abutment toward said first chamber,

said movable abutment having a port providing a first fluid communication between said first and second chambers,

a valve member having a cup valve portion disposed in said first chamber and cooperatively associated with said port to regulate the fluid pressure in said first chamber by controlling flow of fluid to said second chamber from said first chamber,

said valve member having a portion slidably received in said movable abutment and having a passage extending therethrough providing a second fluid communication between said chambers,

a blocking member disposed in said second chamber and arranged to block flow of fluid through said passage, and

means for adjustably positioning said blocking member.

3,311,125
FLOW-RESPONSIVE VALVE FOR SUPPLYING PRESSURE SIGNAL

Noel F. Beasley, Santa Monica, Calif., assignor to Bennett Respiration Products, Inc., Santa Monica, Calif., a corporation of California

Filed July 20, 1964, Ser. No. 383,610

10 Claims. (Cl. 137—117)

1. A valve comprising:

a valve body;

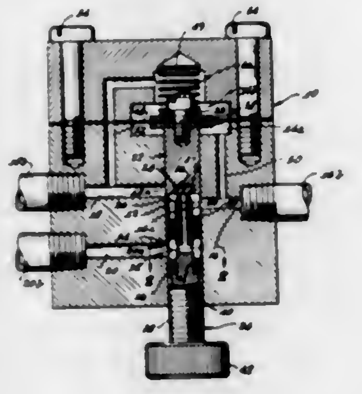
means on said body forming inlet, outlet and signal passages;

means on said body forming a primary flow path between said inlet and outlet passages;

means on said body forming a secondary flow path between said inlet and signal passages;

valve means mounted on said body for movement toward and away from a limit position and cooperable therewith to provide a variable orifice in said primary flow path, the size of said orifice varying in accordance with movement of said valve means;

means on said body and associated with said valve means for blocking flow through said secondary flow path when said valve means is in its limit position;



means on said body for urging said valve means to its limit position; and

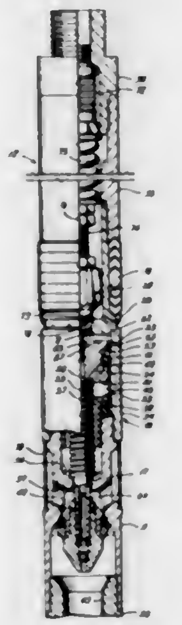
means on said body responsive to a pressure differential across said orifice for moving said valve means away from its limit position to permit flow through said secondary flow path and to vary the size of said orifice.

3,311,126
GAS LIFT VALVE

William A. Dudley, Garland, Tex., assignor to Merla Tool Corporation, Dallas, Tex., a corporation of Texas

Filed Dec. 18, 1963, Ser. No. 331,576

5 Claims. (Cl. 137—155)



1. A gas lift valve, comprising

a tubular housing,

a main gas passageway through said housing,

a valve seat surrounding said passageway,

a pressure responsive power assembly mounted in said housing,

a seal assembly adapted to engage said valve seat to control flow through said passageway,

means slidably connecting said seal assembly to said power assembly to move said seal assembly into engagement with said valve seat,

said seal assembly being free to move into engagement with said seat independent of said power assembly,

a pilot gas passageway connecting to said power assembly,

pilot valve means mounted in the housing and controlling flow through said pilot gas passageway,

a bleed passageway connecting the main gas passageway downstream of said valve seat with said power assembly, and

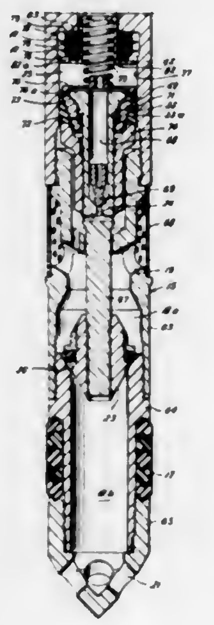
an excess flow valve mounted in said bleed passageway to prevent excess flow through said bleed passageway to said power assembly.

3,311,127
GAS LIFT VALVE HAVING PARTICULAR PISTON SEAL

William A. Dudley, Dallas, Tex., assignor to Merla Tool Corporation, Garland, Tex., a corporation of Texas

Filed Aug. 31, 1964, Ser. No. 393,179

2 Claims. (Cl. 137—155)



1. In a gas lift valve comprising;

a housing having a passageway therethrough;

a main valve member and seat controlling flow through the housing;

and a pilot valve for changing the pressure differential across a motor to open and close the main valve, said motor comprising,

a cylinder in the housing,

a piston rod connected to the valve member and movable in the cylinder,

a stop on said rod,

a wedge member having a frusto-conical periphery slidable on the rod and having its large diameter end engageable with said stop,

seal means between the wedge and rod,

an annular seal member formed of polytetrafluoroethylene with an inner frusto-conical wall to conform to the periphery of the wedge member and an outer cylindrical wall to conform to the wall of the cylinder,

said wedge member at its largest diameter section in engagement with the seal being substantially less in diameter than the diameter of said cylinder, said seal member having its small area end unsupported to permit the seal to slide along the wedge member and be wedged between the wedge member and cylinder,

a seal support on said stem limiting movement of said seal member away from said stop,

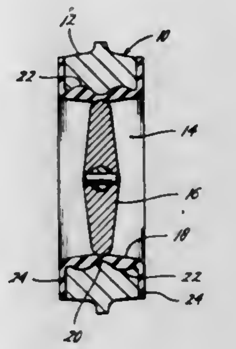
and means urging said wedge toward said seal support.

3,311,128
BUTTERFLY VALVE

Joseph W. Taylor, Houston, Tex., assignor to Daniel Orifice Fitting Company, Houston, Tex., a corporation of California

Filed Feb. 25, 1964, Ser. No. 347,240

2 Claims. (Cl. 137—383)



1. In a butterfly valve having a valve body with a passageway therethrough, a disc-shaped valve member rotatably supported in said passageway for opening and closing said passageway upon rotation, the improvement in a sealing structure coacting with the valve member to seal the passage comprising,

an annular ridge on said valve body directed inwardly and positioned in a transverse plane to the passageway and directed through the axis of the valve member,

said body having an annular valley on each side of the ridge sloping smoothly inwardly to the ridge,

an annular sealing member positioned on and covering the inside of the body and being slidable on said ridge and in said valleys for longitudinal movement in the passageway so that the seal is forced by pressure onto said ridge and between said valve member to increase the sealing force in said valve,

an annular supporting flange connected to the seal on each end of the valve body for longitudinally supporting the seal and enclosing the inner surfaces of the valve body, and

a lubricant between the annular seal and the valleys and ridge.

3,311,129
SELF-LEVELING DRAIN INLET

Burton A. Binder, Detroit, Mich., assignor to Binder & Lark Building Company, Livonia, Mich., a corporation of Michigan

Filed Oct. 12, 1964, Ser. No. 403,197

1 Claim. (Cl. 137—578)

A temporary, self-leveling drain inlet for passing liquid, but substantially blocking the flow of solid foreign materials carried by the liquid, into an established, vertically elongated, drainpipe opening, comprising:

a vertically arranged, resilient, accordian-pleated, axially collapsible and expandable tube having a drain opening formed at its upper end for receiving liquid;

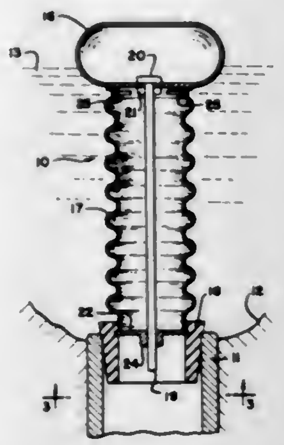
a float secured to and covering the upper open end of the tube;

a plug-shaped, tubular collar secured to the lower end of the tube, the collar being formed of a resilient material and being dimensioned for being snugly fitted into and frictionally held within the upper open end of a drainpipe;

long relatively heavy guide rod fitted within and centrally aligned with the axis of the tube, with the upper end of the rod secured to the float;

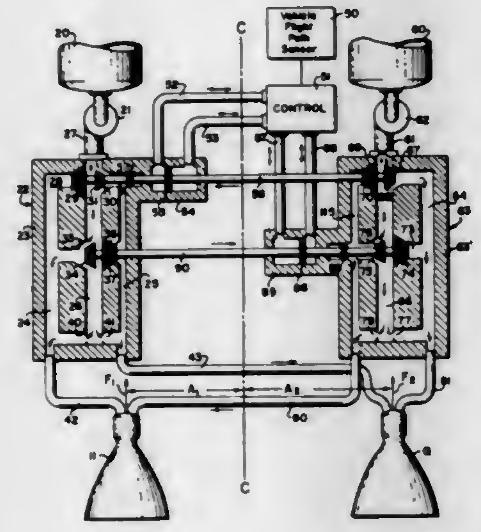
a journal bearing centrally secured within the collar, and said rod being slidably received within and guided by said journal bearing for extending downwardly

into said drainpipe with passages formed around the bearing, through the collar for passing liquid thereto into the drainpipe;
wherein the float will float at the liquid surface, above the drainpipe, with the tube self-adjusting its length to extend between the float and the collar, so that liquid near the liquid surface only will flow into the tube and downwardly through the collar into the drainpipe and wherein the rod exerts, due to gravity, a downward pull upon the float to thereby collapse the tube downwardly, as the liquid level lowers and thus, overcomes the resistance against collapsing due to accumulations of solid materials upon the tube.



3,311,130
THRUST VECTORING SYSTEM AND CONTROL VALVE THEREFOR

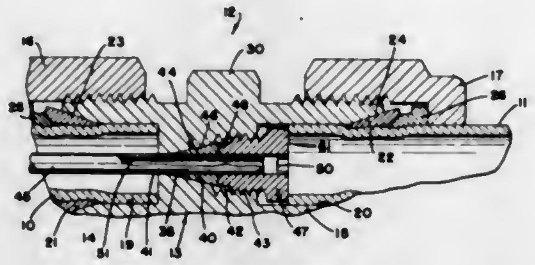
William I. Caldwell, Canoga Park, Calif., assignor to The Marquardt Corporation, Van Nuys, Calif., a corporation of California
Filed Nov. 27, 1963, Ser. No. 318,911
3 Claims. (Cl. 137—608)



1. A control valve for controlling the flow of a fluid to two separate locations comprising:
a valve housing;
a central passage and two side passages in said housing;
separate fluid openings connecting the entrance end of said central passage with said side passages;
separate conduits connecting an intermediate portion of said central passage with said side passages;
separate orifices continually connecting the terminal end of said central passage with said side passages; and
valve elements for selectively controlling said fluid openings and said fluid conduits to supply equal amounts of fluid to said side passages or to supply a fixed differential of fluid to said side passages.

3,311,131
RESTRICTING ORIFICE

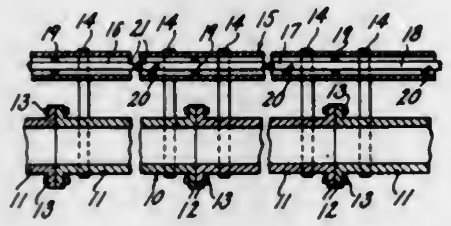
Emery J. Zahuranec, Solon, Ohio, assignor to Crawford Fitting Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 4, 1964, Ser. No. 342,395
5 Claims. (Cl. 138—44)



4. A restricting orifice assembly for use in fluid lines comprising a main body portion having an aperture therethrough,
means at opposite ends of the body to effect a fluid-tight grip of said lines,
said aperture having a tapered bore terminating in a cylindrical portion,
an orifice tube in said tapered bore and extending through said cylindrical portion,
a ferrule having a frusto-conical exterior cooperating with said tapered bore to grip said tube fluid-tightly, and
driving means provided to force said ferrule axially into said tapered bore.

3,311,132
LIQUID CONVEYING PIPES

John J. McWilliams, Leamington Spa, England, assignor to The North British Rubber Company Limited, Edingburgh, Scotland, a corporation of Scotland
Filed Oct. 31, 1963, Ser. No. 320,387
2 Claims. (Cl. 138—111)



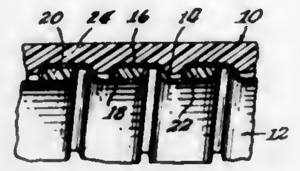
1. An air pipe adapted to be associated with a liquid conveying pipe for the purpose of floating or submerging the latter as desired, comprising: a plurality of independent compartments along the length of said pipe; a hose positioned within said pipe and extending the length of said pipe through each of said compartment; inlet and discharge air lines in each of said compartments connecting said hose with the interior of said compartments; and valve means for controlling the flow of air to and from said compartments through said air lines.

3,311,133
FLEXIBLE CONDUIT

Harold W. Kinander, Roselle, Ill., assignor to Electri-Flex Company
Filed Jan. 22, 1964, Ser. No. 339,449
8 Claims. (Cl. 138—136)

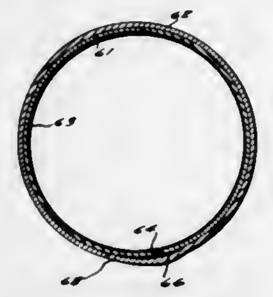
1. A flexible metal conduit having an outer impervious coating which comprises: a spiroid formed of a continuous metal strip having a generally S-shaped cross-sectional configuration, the convolutions of said spiroid being spirally interlocking with a portion of each of the upper

nodes of the S communicating with a portion of each of the adjacent lower nodes of the S; a continuous generally elastomeric strand parallelly disposed with respect to said convolutions and located therein; and a seamless generally resilient material tightly surrounding said spiroid to provide an impervious coating.



3,311,134
COMPOSITE TUBULAR PRODUCTS AND METHOD OF MAKING SAME

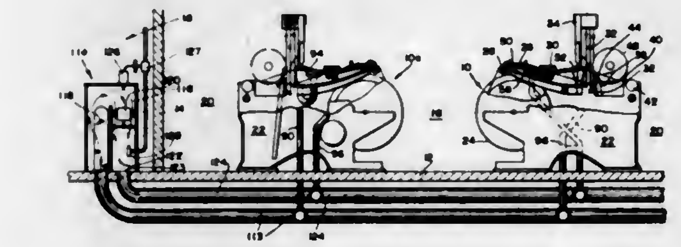
Darwin R. Howard, 140 Melrose, Kenilworth, Ill. 60043
Filed Dec. 30, 1963, Ser. No. 334,520
2 Claims. (Cl. 138—142)



1. A composite tubular article comprising a pair of paperboard plies of the same transverse dimension secured together in overlapping relation, the inner face of the inner ply having a metallic foil secured thereto, said foil having opposed end portions folded over the transverse edges of said inner ply and being secured to the outer face of said inner ply, said plies being formed in the shape of a tube with the said end portions of said foil being welded together to form a gas tight seam.

3,311,135
LINT COLLECTING ENCLOSURE

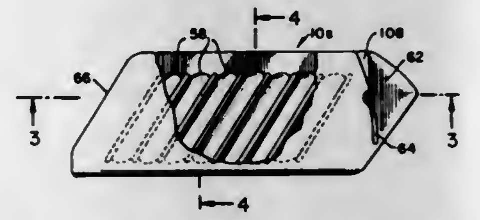
Philip F. Maguire, Jr., Providence, and Lionel A. J. Sousa, Coventry, R.I., assignors to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed June 24, 1965, Ser. No. 466,653
36 Claims. (Cl. 139—1)



1. The combination of—
(I) a textile loom having:
  (A) warp beam and cloth roll ends,
  (B) heddles between said ends,
  (C) a plurality of warp strands which: (1) extend from said heddles toward one of said loom ends, (2) form at least one warp sheet which:
    (a) lies generally in a plane,
    (b) extends from said heddles toward one of said loom ends,
    (c) has a substantial area defined in part by opposite edges,
(II) a warp strand enclosure having:
  (A) a bottom wall which: (1) is located on the underside of said sheet, (2) is coextensive with at least a substantial portion of said sheet area,
  (B) side walls which: (1) are located along said sheet opposite edges, (2) have lower portions joining said bottom wall, (3) have upper portions,
  (C) a top wall which (1) is located on the upperside of said sheet, (2) joins said side wall upper portions,
  (D) a first opening which: (1) is presented away from said heddles, (2) passes said sheet,
  (E) a second opening which: (1) is presented toward said heddles, (2) passes said sheet,
(III) means connected to said enclosure for removing lint therefrom.

3,311,136
SHUTTLE FOR A LOOM

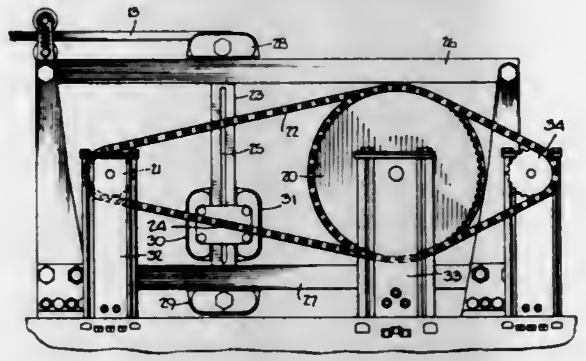
Rudolf H. Rossman, Zugspitzstrasse 48, Gauting, near Munich, Germany
Original application Nov. 23, 1962, Ser. No. 239,677, now Patent No. 3,263,705, dated Aug. 2, 1966. Divided and this application Aug. 19, 1965, Ser. No. 489,094
5 Claims. (Cl. 139—12)



1. An elongated, flat shuttle for picking a weft thread across a shed, comprising a top cover, a bottom cover, said top and bottom covers being disposed in a substantially overlapping relationship having a common long edge, and an overlapping portion, said portion forming a part of said bottom cover, and is formed to bend around to said top cover around a short edge thereof, disposed at a composite acute angle to said long edge.

3,311,137
SHUTTLE-LESS LOOM RECIPROCATING MECHANISM

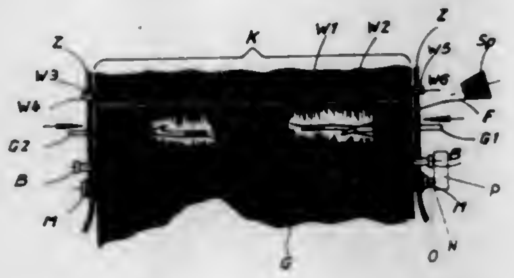
Francisco Miangolarra, San Isidro, a San Julian 5, Caracas, Venezuela
Filed Oct. 23, 1964, Ser. No. 405,934
1 Claim. (Cl. 139—122)



In a weaving loom, apparatus to introduce weft yarn into a shed formed by warp yarns and comprising a first arm for pulling weft yarn into said shed to a midpoint therein and a second arm to which said weft yarn is transferred at said midpoint for conveyance across the remaining half of said shed to lay in said weft yarn, and mechanisms for reciprocating said first and second arms, each mechanism including first and second sprocket wheels mounted for rotation at positions spaced from each other and an endless chain intercoupling said wheels, a carriage operatively coupled to said arm and slidable on a horizontal trackway, said carriage having a vertically extending slot therein, and a follower pin attached to said chain and extending into said slot to cause said carriage to reciprocate as said pin travels the orbital path formed by said chain, said mechanism being arranged to operate concurrently to cause said arms alternately to move toward and away from each other with respect to said midpoint, said wheels being of different diameter to cause the transfer period during which said arms are at said midpoint to be shorter than the changeover period during which said arms are retracted, and means actuated during the changeover period to sever the end of the laid-in weft yarn thereby to complete a weaving cycle, said loom further including a second set of first and second sprocket wheels and an endless chain intercoupling said wheels, said follower pin being also attached to the endless chain of said second set, said second set being disposed in parallel relationship to the first set of sprocket wheels, said horizontal trackway being disposed between said parallel sets whereby said carriage runs therebetween.

3,311,138
METHOD OF AND MEANS FOR FORMING A SELVAGE ON FABRIC WOVEN ON A SHUTTLELESS LOOM

Nikolaus Kokkinis, Eriskirch, Germany, assignor to Lindauer Dornier Gesellschaft m.b.H., Lindau, Germany
Filed Sept. 9, 1964, Ser. No. 395,120
Claims priority, application Germany, Sept. 12, 1963, L 45,842
9 Claims. (Cl. 139—124)



1. A method of forming a selvage on fabric woven on a shuttleless loom having gripper systems, comprising the steps of:

providing a plurality of main warp threads;

pulling weft threads from relatively stationary spools, and cutting the weft threads at predetermined lengths;

inserting weft threads from one side, of said main warp threads, into sheds formed by said main warp threads to form weft loops on said one side and weft thread ends on said other side;

inserting weft threads from the other side, of said main warp threads, into sheds formed by said main warp threads to form weft loops on said other side and weft thread ends on said one side;

providing a first plurality of additional warp threads on said one side of said main warp threads completely outside of the weft loops on said one side;

providing a second plurality of additional warp threads on said other side of said main warp threads completely outside of the weft loops on said other side;

closing the shed of said first plurality of additional warp threads simultaneously opening the shed of said second plurality of additional warp threads, and simultaneously receiving and binding only the weft thread ends projecting from said other side into the shed formed by said second plurality of additional warp threads;

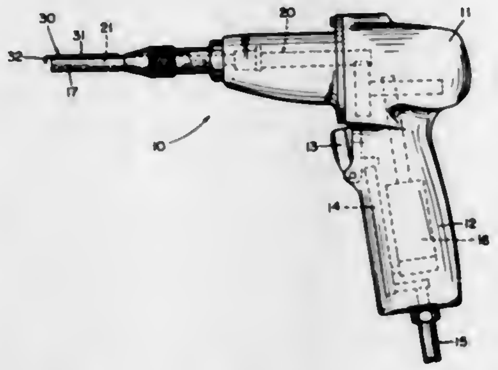
closing the shed of said second plurality of additional warp threads, simultaneously opening the shed of said first plurality of additional warp threads and simultaneously receiving and binding only the weft thread ends projecting from said one side into the shed formed by said first plurality of additional warp threads;

cutting the weft thread ends between said main warp threads and each of said pluralities of additional warp threads;

and removing the additional warp threads with the weft thread ends bound by the additional warp threads.

3,311,139
HAND TOOL WIRE WRAPPERS

Edward L. Allen, Bradford County, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 6, 1964, Ser. No. 401,911
12 Claims. (Cl. 140—115)



1. In a wire wrapper tool having a fixed sleeve, and a bit rotatable in the sleeve with a bore along its axis of rotation to receive a terminal to be wrapped and an axially disposed peripheral groove for the wire to be wrapped on a terminal in the bore, means for engaging the wire as the bit rotates for wrapping, comprising:

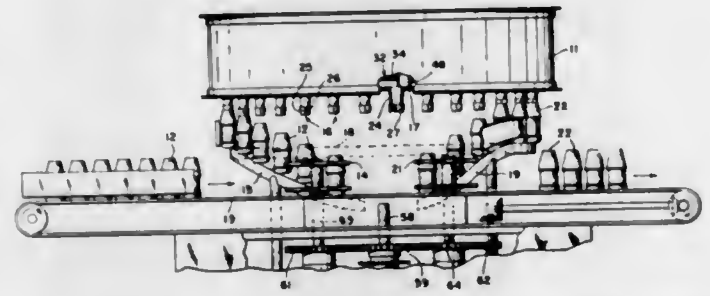
(a) an elongated resilient member disposed axially along the sleeve;

(b) the elongated member being attached at one end to the sleeve and having a plate member at its other end extending radially toward the axis of rotation of the bit and terminating in a free edge disposed radially outward of the bore in the bit; and

(c) the plate member having a slot fo passing wire therethrough open at the free edge and extending across the path of the groove as the bit rotates.

3,311,140
CONTAINER FILLING APPARATUS

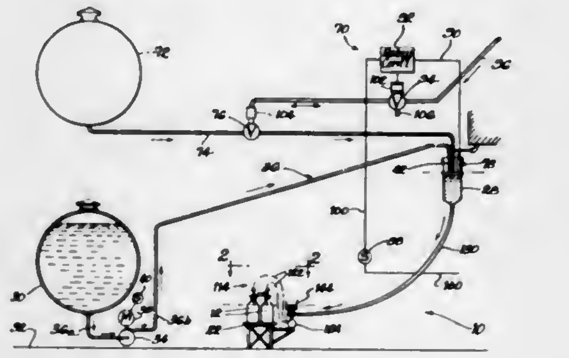
Harley R. Hughes, Summit, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Nov. 5, 1964, Ser. No. 409,214
19 Claims. (Cl. 141—144)



1. Apparatus for filling moving containers with fluent material comprising a first movably mounted member providing a row of open bottom measuring flasks movable along a path in a selected direction, means for simultaneously filling a plurality of adjacent moving flasks over a predetermined part of said path comprising means providing a reservoir of said material having its lower end slidably engaged and closed by said moving first member and being of such size as to extend over a consecutive plurality of said flasks, a movably mounted lower discharge control member providing a row of discharge openings movable along a related path in the same general direction and slidably engaged with the lower ends of said flasks, means for associating a series of moving containers to be filled with said discharge openings over a predetermined part of the path of movement of said openings, and means for continuously moving both of said members in the same direction in such synchronism that during the part of said movement, when said flasks are being filled, said lower member closes the lower ends of said flasks and during subsequent movement each of said flasks moves with its lower end in operative material discharging alignment with an associated one of said openings during said part of the path of movement of said openings wherein the containers are in position to receive said material therefrom.

3,311,141
BOTTLE FILLING APPARATUS

Chauncey M. Bell, 105 W. Kinzie, Chicago, Ill. 60610
Filed Feb. 3, 1964, Ser. No. 341,924
10 Claims. (Cl. 141—244)



5. In an apparatus for filling a plurality of containers or the like simultaneously,

the combination comprising an elevated measuring tank,

selectively operable means for filling said tank with a predetermined quantity of liquid,

said tank having its upper end in communication with the atmosphere,

a conduit connected to the lower end of said measuring tank and extending downwardly therefrom,

a manifold disposed substantially below the level of the lower end of said measuring tank,

a filler member movable vertically relative to the containers to be filled,

a plurality of spigots extending downwardly from said filler member for insertion into the containers to be filled,

a plurality of tubes connected between said spigots and said manifold,

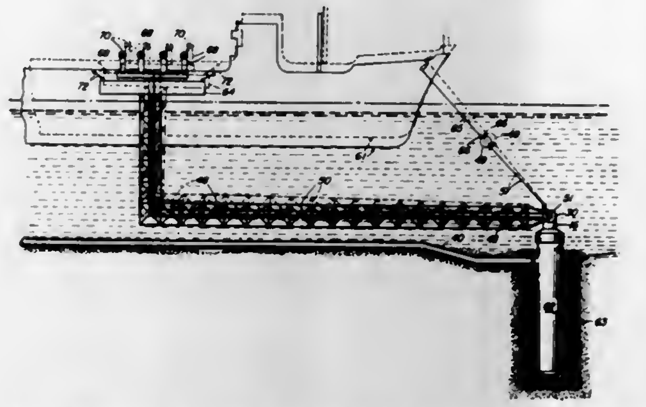
said spigots and said tubes being substantially below the level of the lower end of said tank,

and a master valve for connecting said conduit to said manifold whereby the liquid will flow from said measuring tank solely by gravity through said manifold and said spigots into the containers to fill the containers to a predetermined level which is substantially below the level of the lower end of said measuring tank,

said manifold being lower than said predetermined level whereby said manifold will remain filled with liquid so that the levels of the liquid in said containers will equalize by siphonic action.

3,311,142
TANKSHIP MOORING AND LOADING SYSTEM

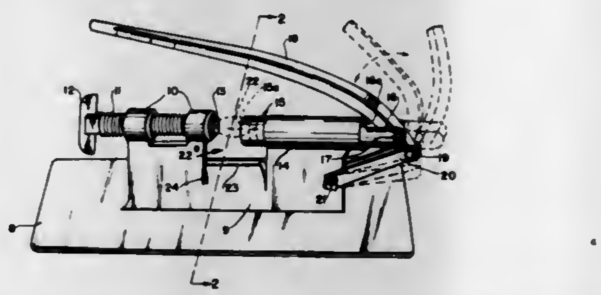
Eric V. Bergstrom, Byram, Conn., assignor to Mobil Oil Corporation, a corporation of New York
Filed Apr. 30, 1964, Ser. No. 363,844
6 Claims. (Cl. 141—388)



1. An offshore mooring and ship loading and unloading system, suitable for the transfer of a liquid between shore facilities and a moored vessel, which comprises as elements in combination (1) a swivel joint located on sea bottom and comprising a fixed conduit, a movable conduit having an open bottom end and rotatable about a vertical axis, a substantial length of which is located within said fixed conduit, a fixed sheath located within said fixed conduit and substantially concentric with said movable conduit, said sheath adapted to receive a substantial length of said movable conduit, said sheath being partially filled with and adapted to retain mercury to provide a continuous seal between said liquid and seawater, said fixed conduit and said movable conduit adapted to be in liquid communication, said fixed and movable conduits being closed in a manner to exclude seawater from the interiors thereof, and means to substantially prevent vertical movement of said movable conduit; (2) a submarine line extending from and operatively connecting said shore facilities to said fixed conduit of said swivel joint; (3) a horizontally rotatable, vertically pivoted submerged boom attached to and extending radially from said movable conduit component of said swivel joint; (4) a vertical support located at the outboard end of said submerged boom and extending upwardly above water; (5) a loading platform supported above water by said vertical support; (6) a flexible loading line extending from and connecting said movable conduit component of said swivel joint to connecting means upon said loading platform, said loading line being adjacent and supported by said submerged boom and said vertical support, said connecting means adapted to effect liquid communication between said moored vessel and said flexible loading line.

3,311,143
NUT CRACKER OR THE LIKE

George Vetter, R.R. 1, Benton, Mo. 63736
Filed Oct. 7, 1964, Ser. No. 402,085
6 Claims. (Cl. 146—16)



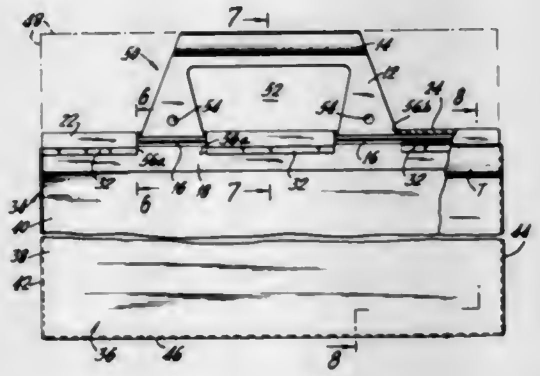
1. A nut cracker or the like comprising in combination a base, a functionally integral flange rising from said base and providing a top edge, spacedly opposed first and second bearings fixedly carried by and rising above the

top edge of said flange, said bearings being axially aligned with said flange and with each other, the spacement of said bearings providing a nut-receiving area therebetween above the top edge of the intermediate portion of said flange, cooperating nut cracking members axially shiftable in the respective first and second bearings and having opposed and recessed inner ends movable into said nut-receiving area to engage a nut therein, one of said nut cracking members being a screw member threaded into the first bearing and having finger piece at its outer end, the other cracking member comprising a slide bar working in the second bearing and having a slot-providing bifurcation at its outer end which bifurcation is always disposed at the outer end of said second bearing, an operating lever for said slide bar and providing an inner end portion extending through the bifurcation-provided slot of said slide bar and toward said base, a pivot pin carried by said bifurcation and extending across said slot, said inner lever end portion having a bearing hole through which said pivot pin extends, whereby said lever is movable about said pivot pin, floating link means pivoted at one end to said flange below and inwardly of the plane of outer sides of said second bearing, a pivot connection between the other end of said floating link means and the lower end of said lever below and spaced from the bifurcated portion of said slide bar.

3,311,144

COMBINED HANDLE AND CLOSURE MEMBER

Donald C. Lindley, Greenlawn, N.Y., assignor to Cellu-Craft Products Corp., a corporation of New York
Filed Apr. 6, 1965, Ser. No. 445,928
8 Claims. (Cl. 150—3)

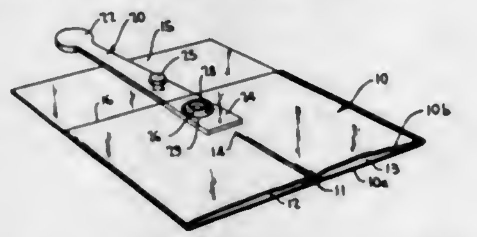


1. A container with integral closure means comprising:
(A) a thin film plastic bag having two opposed plane areas joined on three marginal, continuous edges to define a container having an open end along the fourth marginal edge;
(B) a first plastic closure member heat-sealed to one of the two opposed plane areas of said bag proximate the open end thereof;
  (a) said first closure member being solid in cross section and comprised of two opposed, substantially vertical faces and two opposed substantially horizontal faces extending the length thereof;
(C) first locking means integral with said first closure means, said locking means extending the length of said first closure member;
(D) a second plastic closure member heat-sealed to both plane areas of said bag proximate the open end thereof, and in opposition to said first closure member, said second closure member adapted to releasably grip said first closure member on at least three sides thereof,
  (a) said second closure member being hollow and adapted to encompass at least three sides and a portion of the fourth side of said first closure member whereby said first closure member is resiliently and releasably nested within said second closure member; and
(E) second locking means integral with said second closure member in mating opposition to said first locking means.

3,311,145

CONTAINER AND CLOSURE STRUCTURE

Mark N. Zalk, 2425 Brentwood Road 43209, and Ralph A. Welch, 2470 Lane Road 43221, both of Columbus, Ohio
Filed Aug. 30, 1965, Ser. No. 483,449
11 Claims. (Cl. 150—7)

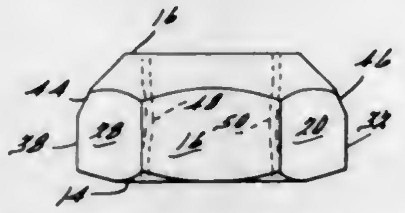


1. A container and closure structure comprising a bag including a front wall and a rear wall, said rear wall extending beyond said front wall at the closure end of the bag to provide an extended flap adapted to fold along a transverse fold line over said front wall to provide a closure for the mouth of the bag; a closure fastener member extending longitudinally of the bag and secured along both the flap extension and the adjacent body portion of said rear wall and adapted to be itself folded transversely along substantially the same line of fold as the flap when the closure is effected; and interengageable snap fastener parts on said member one upon either side of said transverse fold line and adapted to snap into engagement with each other when the closure flap and the attached fastener member are folded to closed position.

3,311,146

LOCK NUT

Harold A. Storch, Birmingham, Mich., assignor to Federal Screw Works, Detroit, Mich., a corporation of Michigan
Filed Mar. 1, 1965, Ser. No. 452,042
1 Claim. (Cl. 151—21)

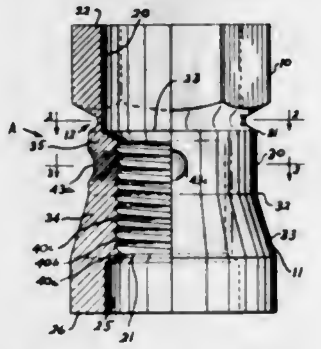


A lock nut comprising a nut body having a threaded bore extending between the opposite ends thereof, an even number of contiguous outer flat side walls of equal width converging along axial edges extending parallel to the thread axis and spaced equally from the thread axis, an annular end surface at the upper end thereof contiguous to said side walls and inclined with respect to said side walls and the thread axis, a plurality of symmetrically spaced indentations each of which is disposed in a location generally centered with respect to a radial plane including one of said edges, each of said indentations being located at one end of one of said edges and being defined on its outer surface by a generally planar indentation surface which is inclined with respect to said side walls and to the thread axis but which is disposed at a lesser angle of inclination relative to the thread axis than is said end surface, said indentation surface having at least one-half of its axial extent located beneath said end surface and being bounded at its lower extremity by a pair of edges which intersect at the adjacent one of said axial edges and diverge upwardly away from one another toward said end surface, and said indentations being defined on their radially inner sides by thread areas of said bore which are displaced radially inwardly of the normal thread diameter.

3,311,147

PRELOADED NUT

Richard A. Walker, Warrington, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed May 20, 1966, Ser. No. 551,787
3 Claims. (Cl. 151—21)



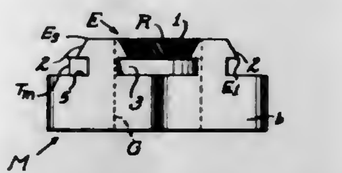
1. In a prevailing torque type lock nut assembly including a driving section having tool engaging surfaces thereon, an internally threaded body section and a breakneck in the form of an external annular groove positioned between the driving and body sections wherein the driving section is adapted to be sheared off at the breakneck and separated from the body section under predetermined torque conditions, said nut body section having a cylindrical lock locating section of uniform wall thickness and of circular cross section aligned co-axially with the nut axis and extending toward the bearing face from the innermost edge of the breakneck groove, the wall thickness in said lock locating section being substantially greater than the minimum wall thickness of the breakneck and substantially less than the wall section portions surrounding the threads in the remaining portions of the body section, said assembly having a counterbore in the driving section that is generally coaxial with the axis of the nut threads and slightly greater in diameter than the major diameter of the nut threads, said counterbore extending from the outermost end of the driving section to a point within the nut body section inwardly of the breakneck and generally aligned with the end portion of the lock locating section immediately adjacent the breakneck, said lock locating section having a prevailing torque thread lock applied thereto, said lock being characterized in that the thread is radially inwardly distorted and the distortion is localized in small areas disposed symmetrically about the nut circumference and the primary distortion is localized and limited to the threaded portions that are at least 1.5 thread pitches inwardly of the first full thread turn adjacent the breakneck.

3,311,148

CONICAL COLLAR NUTS HAVING SPACED FLATS

Kajetan Leitner, 187 Waal 8939, Germany
Filed Mar. 8, 1965, Ser. No. 437,673
5 Claims. (Cl. 151—41.73)

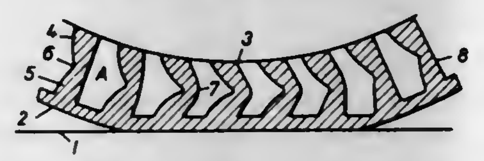
1. A nut adapted for mounting in a bore of a deformable part, said nut having a non-circular base including a plurality of flat side walls, a neck portion corresponding substantially to the shape of the deformable part bore and projecting from the base, an internally threaded bore, and a generally frusto-conical collar centered on the neck portion, said collar having its larger diameter adjacent to the neck portion and larger than the undeformed bore of the deformable part, and the smaller diameter of the collar being equal to or less than the diameter of the deformable part bore, alternate portions of the collar periphery being formed with flats defined by projection of the side walls of the base which, on insertion of the neck and the collar axially into the deformable part bore, do not deform the part, and other alternate portions of the collar serving, upon relative rotation of the collar in the part, to be forced circumferentially into the wall of the deformable part bore and anchor the nut therein, the periphery of the frusto-conical collar being formed with an external screw thread, the inclination of which is opposite to that of the thread of said internally threaded bore.



3,311,149

HOLLOW ELASTIC WHEEL TIRE

Alf Ivar Francis Mathiesen, Kittel Nielsens Vei 61, Nordstrandshogda, Oslo, Norway
Filed June 16, 1965, Ser. No. 464,432
8 Claims. (Cl. 152—7)



1. In a hollow elastic wheel tire having an outer periphery with treads running therearound and side walls having cells therebetween, the improvement comprising, a plurality of transverse walls defining said cells integral with said side walls and spaced about the circumference of said tire such that each of said transverse walls are radially disposed about the circumference relative to the axis of rotation of said wheel, each of said transverse walls having a forward moving face relative to the direction of rotation of said wheel and a complementary rearward face, each of said forward moving faces being provided with a substantially sharp recess intermediate the top and bottom of said transverse walls which run parallel with the axis of said wheel across the side walls of said tire, whereby when the tire is subjected to a load during the rotation of said wheel on a surface, energy stored during compression of the tire is released in the form of a forward push during the rolling of the wheel on said surface.

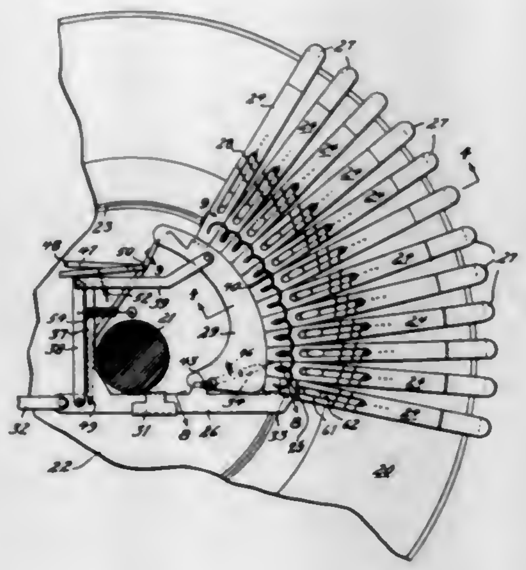
3,311,150

TRACTION DEVICE WHEELED VEHICLES

Norman Lowell Wykoff, Elizabethtown, Pa.
(Box 376, Hanover, Pa. 47234)
Filed May 10, 1965, Ser. No. 454,508
2 Claims. (Cl. 152—214)

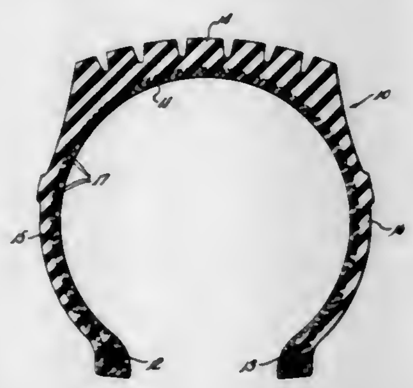
1. A traction device in combination with a vehicle wheel comprising, a plurality of traction arms, a circular guiding member mounted adjacent to and about the axis of said wheel, said traction arms being slidably mounted on the guiding member and extending radially outward therefrom to the edge of and over the tread surface of the wheel, means for urging the arms radially inward into contact with the tread surface, a shoe engaged with the inner ends of said arms, said shoe keeping the arms out of contact with the tread surface, means for successively releasing said traction arms from engagement with said shoe while the wheel is rotating allowing the arms to move radially inward to contact the tread surface in spacial relationship and rotate with it thereby assuming an op-

erative position, said means selectively bringing the shoe back into engagement with said arms thereby taking them out of contact with the tread surface to reassume an inoperative position, wherein the arms are interconnected at their inner radial ends with a cable and are collectively stacked adjacent one another along the guiding member while in an inoperative position, said releasing means allowing the first arm of the stack to fall into engagement with the tread surface, the remaining arms in the stack being successively pulled off the shoe and into engagement with the tread surface by reason of the interconnecting cable.



3,311,151
PNEUMATIC TIRE

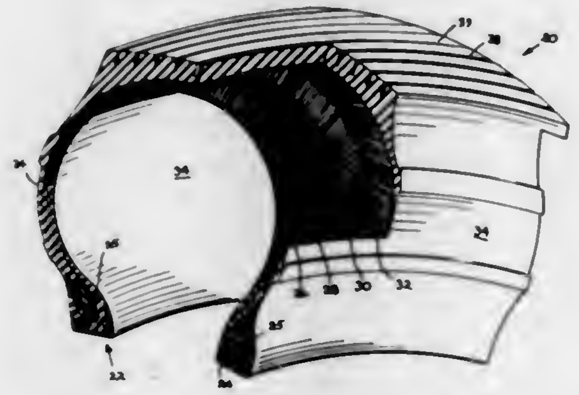
James M. Willis and Ronald L. Denecour, both of Akron, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed May 23, 1966, Ser. No. 559,654
16 Claims. (Cl. 152—330)



1. In a pneumatic tire comprising a vulcanized rubber body portion including reinforcing elements embedded therein and terminating at its two edges in two inextensible beads, a vulcanized rubber tread portion over-lying and bonded to said body portion, and a pair of integral vulcanized rubber sidewall portions extending from respective edges of the tread portion along the body portion to which they are bonded to the respective beads, the improvement which comprises at least one of said rubber portions formed from a blend of an elastomeric terpolymer including polymer units derived from ethylene, propylene and a non-conjugated diene and a butyl rubber, said terpolymer including propylene in an amount ranging from about 30 to about 70 mole percent, the balance being ethylene and the non-conjugated diene, said terpolymer having a Mooney viscosity of at least about 50 (ML–4/212° F.).

3,311,152
TIRE CONSTRUCTION EMPLOYING NOVEL REINFORCING SYSTEM

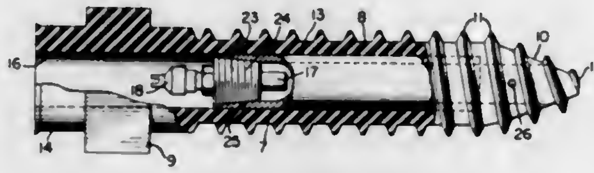
Alfred Marzocchi, Cumberland, and Frank J. Lachut, Pawtucket, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Apr. 30, 1965, Ser. No. 452,096
20 Claims. (Cl. 152—359)



1. In a tire construction comprising two spaced annular beads, a toroidal carcass connecting said beads and an outer peripheral tread supported by said carcass, the improvement which includes a plurality of bias plies defining said carcass and extending from bead to bead, said plies each including a plurality of mutually parallel cords each composed of a plurality of essentially continuous glass fibers assembled together, said cords defining a bias angle with the circumferential centerline of the tire ranging from 27–38°, said cords each being embedded in an elastomeric matrix substantially precluding contact between adjacent cords, said elastomeric matrix and glass being present in a relative volume ratio ranging from at least about 1.0/1.0 to not more than 3.0/1.0.

3,311,153
VALVE MEMBER AND METHOD OF USE

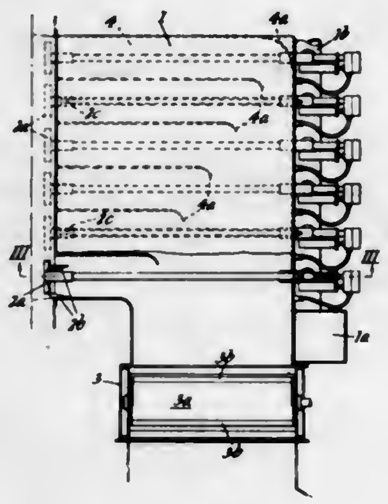
Merritt W. Wolfe, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 4, 1964, Ser. No. 394,480
2 Claims. (Cl. 152—429)



1. A valve member comprising an elongated cylindrical hollow section having a helical ridge on its surface and having a taper at one end and a wrenching means on the other end, said cylindrical section having a valve assembly sealed axially within the hollow thereof but positioned a sufficient distance away from the wrenching means to permit the wrenching means to be cut away after the wrenching means has been used to insert the valve member in a hole of a wall of a tire to leave the new end of the cylindrical section formed by the cutting away of the cylindrical section substantially even with the wall of the tire, said helical ridge extending over the length of the cylindrical section from about the tapered end to thereby provide means for securing the valve member in said hole.

3,311,154
FUEL BURNERS

David George Henry Sumpter, Drayton, England, assignor to Associated British Combustion Limited, Portchester, Hampshire, England, a British company
Filed May 20, 1965, Ser. No. 457,305
Claims priority, application Great Britain, May 25, 1964, 21,429/64
3 Claims. (Cl. 158—4)

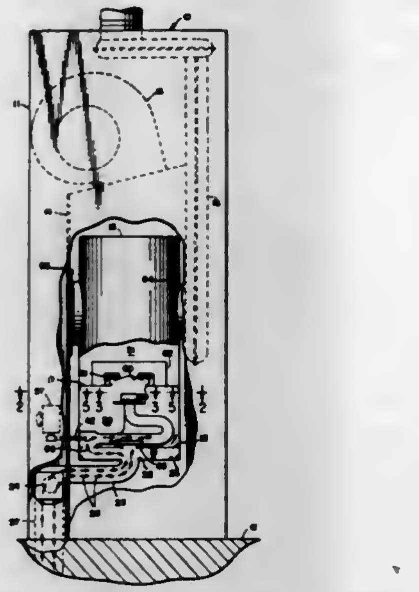


1. In a fuel burner construction, a burner cell comprising a rectangular casing including a front wall, an end wall, a partial base wall parallel to the said end wall and remote from the front wall and spaced side walls including parallel portions and converging portions defining a slot along the center line of the casing, said slot having substantially less transverse dimension than the corresponding dimension of the casing, a plurality of burners extending into the casing in superposed relation along the vertical center line thereof, means mounting the burners in the front wall, each burner having a delivery and extending through said slot, vertically spaced horizontally arranged dividers extending between the side walls in alternating arrangement with said burners and cooperating with said end wall, said side walls and partial base wall to define a rectangular passage around each burner, said dividers increasing in length from said base wall toward said end wall, and valve controlled conduit means communicating with said casing between said front wall and partial base wall for introducing air into said casing whereby it is distributed by said dividers to flow through said slot around the respective burners.

3,311,155
SEALED COMBUSTION GAS FURNACE

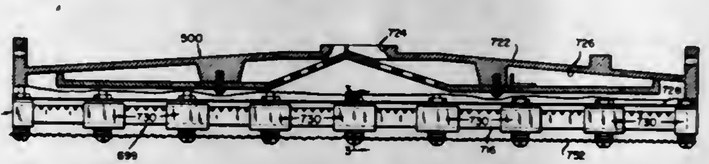
Gerald L. Hershey and Frank A. Lowe, Wichita, Kans., assignors to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed July 12, 1965, Ser. No. 471,048
18 Claims. (Cl. 158—7)

1. In a relatively noiseless sealed combustion gas furnace, a vertically-elongated casing having a generally horizontal partition dividing the casing's interior into a lower air pressurization chamber and an upper expansion chamber, said lower chamber having an inlet for the inflow of air under pressure, blower means communicating with said inlet for delivering air under pressure to said lower chamber, said partition having an opening therethrough for the flow of secondary air directly from said lower chamber to said upper chamber and having an orifice spaced from said opening for the flow of primary air, an elongated mixing tube disposed within said upper chamber, said mixing tube having a Venturi section communicating with the orifice in said partition and having an upper section terminating in a burner in the upper portion of said upper chamber, and a gas discharge nozzle disposed in the lower Venturi section of said tube for discharging gas axially into said tube and for drawing primary air upwardly through said orifice, whereby, both primary and secondary combustion air are supplied from said pressurization chamber to said mixing tube and said upper expansion chamber respectively, the secondary air passing into said upper chamber being free to expand therein at a level substantially below said burner.



3,311,156
HEATING APPARATUS AND METHOD

John J. Fannon, Jr., Grosse Pointe Park, Mich., assignor, by mesne assignments, to Fostoria-Fannon, Inc., a corporation of Ohio
Original application Aug. 18, 1960, Ser. No. 50,421, now Patent No. 3,228,113, dated Jan. 11, 1966. Divided and this application Aug. 25, 1965, Ser. No. 482,477
8 Claims. (Cl. 158—99)



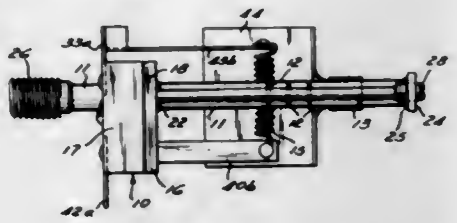
1. In an infrared generator of the combustion type:
(a) a housing defining a supply plenum for a combustible mixture of fuel and air, one side of said housing being open;
(b) a perforate radiant wall adapted to be heated to incandescence by combustion of the fuel-air supplied from said plenum thereadjacent; and
(c) means for so supporting said radiant wall from said housing that said wall spans the open side of said housing, comprising frame means extending around said wall and supporting the wall by the edge portions thereof, support means embracing said wall supporting frame means, fastening means fixing said support means to the housing, and insulating means between said support means and said housing to thermally isolate said housing from said radiant wall.

3,311,157
THERMAL PROBE AND PILOT BURNER

Charles S. Mertler and Truman H. Cline, both of Mansfield, Ohio, assignors to Stevens Manufacturing Company, Inc., a corporation of Ohio
Filed July 9, 1964, Ser. No. 381,419
4 Claims. (Cl. 158—125)

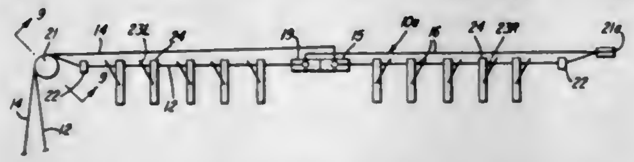
1. A burner ignition unit comprising a housing having a recess therein and an opening leading into said recess,

an elongated pilot burner attached to said housing and projecting therefrom,
an ignition coil positioned to ignite the pilot burner,
terminals attached to said housing and rigidly supporting said ignition coil and providing electrical connections thereto,
a support member attached to the end of said pilot burner away from said housing,
an adjusting screw threaded in said support member and having a recess,



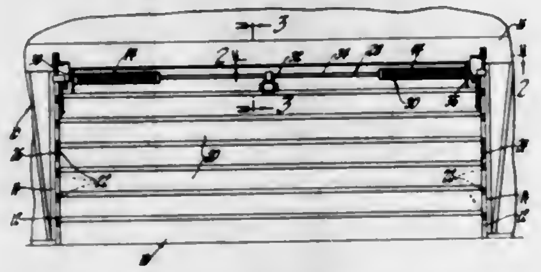
a thermal probe supported at one end in said adjusting screw recess and extending therefrom toward said housing and having a free end slidably disposed in said opening in the housing, said thermal probe being positioned to be heated by the pilot burner and having a thermal expansion substantially greater than that of said pilot burner,
and a switch in said housing recess positioned to be operated by said thermal probe as the latter expands longitudinally relative to said pilot burner.

3,311,158
DRAW DRAPE ASSEMBLY WITH PLEATS FOLDABLE SUCCESSIVELY OUTWARDLY
Thomas T. Mason, 3830 Daphne, Houston, Tex. 77021, and Ben A. Mason, Jr., 154 Harrison, San Antonio, Tex. 78204
Filed Jan. 16, 1964, Ser. No. 338,087
3 Claims. (Cl. 160—126)



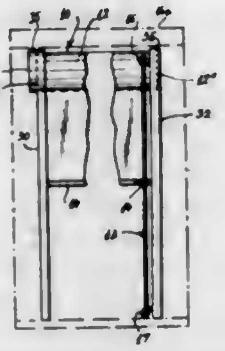
2. A draw drape assembly including a horizontally extending track, a pair of slides slidably mounted on said track, a pair of pleated drapes, each with innermost pleat connected to a respective slide and with outermost pleat connected to a respective track end, a carrier connected to each pleat and slidable in said track, each carrier being provided with cord receiving notch means facing rearwardly of said track and also being provided with clutch bar slot means and with a clutch bar having cord clutching means therein, said clutch bar extending horizontally, longitudinally outwardly through the respective carrier provided clutch bar slot means in respective track end direction, a first and second pulley means mounted in respective ends of said tracks, an opening pull cord extending over the pulley means in one track end and inserted through the notch means of successive clutch bars and of their respective carriers and connected to the nearest slide and thence extending without said track and over the pulley means of the other track end and back to be inserted through the notch means of successive slide bars and of their respective carriers and connected to the other slide, and a closing pull cord extending over said first pulley means and within said track and tied to said other slide, said clutch bar notch means and said slot means being constructed to permit said clutch bars to slide longitudinally outwardly with relation to said carriers to clutch the respective cord therethrough thereby to latch said carriers to such cord upon said closing pull cord being pulled, and to permit said clutch bars to slide back into their respective carriers upon contacting a preceding carrier whereby to permit said respective pleats to fold and said opening pull cord to be pulled outwardly through said retracted clutch bar and its respective carrier, whereby said pleats fold successively from outermost to innermost pleat.

3,311,159
GARAGE DOOR HARDWARE
Robert F. Stansberry, Beverly Hills, Mich., assignor to Taylor Garage Doors, Detroit, Mich.
Filed Dec. 7, 1964, Ser. No. 416,579
6 Claims. (Cl. 160—189)



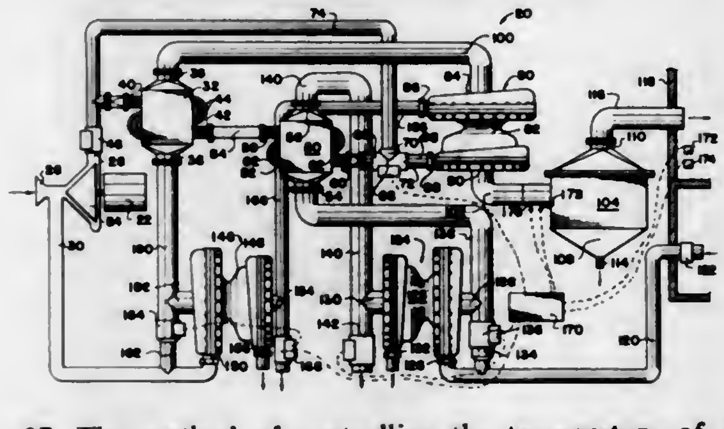
4. An overhead opening garage door, comprising:
sectional panels hinged together along top and bottom edges and including guide track means receptive of the ends thereof and extending vertically beside and rearwardly over the opening to be closed thereby,
cable drum means provided on one of said panels and cable means provided along the rearwardly extending section of said guide track means and having turns wound on said cable drum means,
torsion spring means provided on one of said panels and engaged to said cable drum means for counterbalancing the weight of said sectional panels at least in part,
and means operatively engaged with said torsion spring means for winding said spring proportionally tighter as the weight carrying panels are vertically disposed and relieving the added tension imposed thereon as the panels are horizontally disposed and carried on said guide tracks.

3,311,160
WINDOW SHADE CONSTRUCTION
Edward Barbour, 91—16 34th Ave., Jackson Heights, N.Y. 11372
Filed Dec. 8, 1965, Ser. No. 520,297
1 Claim. (Cl. 160—242)



A window shade assembly comprising a generally rectangular pliable plastic sheet coiled into a spiral roll and having a permanent coil set, the roll being unreelable into flat sheet form while being held under tension, whereby the sheet will elastically roll up into coil form when released, a stiffener rib attached to the outer free end of the coil, vertical grooved members slidably engaging lateral edges of an unrolled portion of the roll, cylindrically curved elements enclosing and rotatably supporting said roll at opposite ends thereof, upper ends of said members being open to said elements, whereby said roll rolls itself up into a coil in said elements when said unrolled portion is raised in the grooved members, at least one of said elements being an arcuately curved leaf spring which yields elastically to permit disengaging said roll from said elements, the other of said elements having an axial depth which is greater than the depth of the grooves in said members to permit said roll to be shifted axially into said other element and facilitate disengagement of the roll from said elements, said grooved members being separate channel bars attachable to opposite sides of said window, said elements being cylindrical heads integral with said bars, and integral perforated tabs on the channel bars for attaching the bars to supporting surfaces.

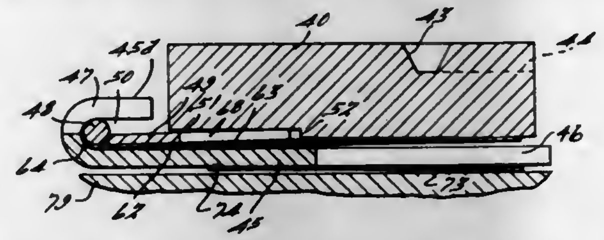
3,311,161
CABIN AIR CONDITIONING SYSTEMS FOR AIRCRAFT
Donald L. Glaspie, New Orleans, La., assignor to The Boeing Company, Wichita, Kans., a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,399
38 Claims. (Cl. 165—1)



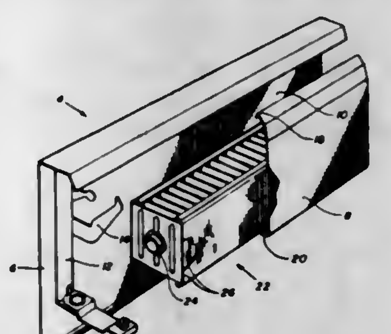
37. The method of controlling the temperature of a fluid in an aircraft cabin or the like comprising the steps of, passing high pressure fluid through the high pressure side of heat exchanger means while simultaneously passing relatively cool fluid through the low pressure side thereof to thereby cool the high pressure air, mixing the resulting high pressure fluid with other fluid in response to the temperature in the cabin to be conditioned, compressing the resulting mixture of fluids, directing the resulting compressed fluid through the high pressure side of second heat exchanger means for cooling therein, mixing the resulting cooled fluid with other high pressure fluid in response to temperature conditions in the cabin to be conditioned, expanding the resulting fluid to reduce the temperature and pressure thereof, directing the resulting cooled fluid into the cabin or the like to be conditioned, and exhausting fluid from the cabin through the low pressure side of one of the heat exchanger means to cool high pressure air therein.

3,311,162
REGENERATOR SEAL WITH CROSS ARM
William I. Chapman, Birmingham, James H. Whitfield, Madison Heights, Clinton P. Atwood, Warren, and William A. Ziemke, Jr., Livonia, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Oct. 7, 1963, Ser. No. 314,467
21 Claims. (Cl. 165—9)

1. In a seal for the regenerator of a gas turbine engine, rubbing means having an inner sealing surface adapted to engage a mating surface of said regenerator to define a seal between high and low pressure gases, base means confronting an outer side of said rubbing means opposite said sealing surface and being movable toward and from the same, diaphragm sealing means interposed between said base means and rubbing means and engaging said rubbing means in fluid sealing relationship, said sealing means extending from said rubbing means in the direction toward the low pressure gases, bridge means having one edge pivotally engaging said rubbing means at a location overlapped by said sealing means, said bridge means extending in juxtaposition with said sealing means from said one edge to a swinging edge to comprise a backing for said sealing means, said sealing means having a portion welded to said base means to effect a fluid tight seam extending longitudinally of said seal, the latter portions and juxtaposed portion of the base means being formed around said swinging edge of said bridge means, said base means and sealing means comprising a bellows type seal open to said high pressure gases to enhance said fluid sealing relationship, and a leaf spring interposed under tension between said base means and sealing means and engaging the latter longitudinally of said seal to maintain said fluid sealing relationship between said sealing means and rubbing means.



3,311,163
HEAT EXCHANGER
Nathan B. Owen, Minneapolis, Minn., assignor to Twin Temp Inc., Minneapolis, Minn., a corporation of Minnesota
Filed June 25, 1965, Ser. No. 467,051
1 Claim. (Cl. 165—55)

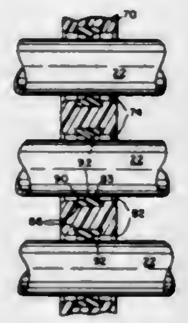


A baseboard convector heat exchange member, comprising a metallic tube adapted to convey a heat exchange fluid, a multiplicity of rectangular metallic fins spacially affixed to the outer surface of said tube and extending transversely to said tube, each of said fins formed with parallel vertically extending embossing therein, a pair of partial covers formed of a metal having a greater coefficient of expansion than said metallic tube, and an adhesive material flexibly bonding said partial covers on the opposite lateral sides of all of said fins and integrating the assembly into a unified structure in which there is no independent movement of parts during a substantial temperature change of the fluid conveyed within said tube.

3,311,164
HEAT EXCHANGER WITH EXPANSIBLE TUBE SEAL
Joseph H. Cox, Solvay, and William C. Martin, Jr., Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 335,248
12 Claims. (Cl. 165—95)

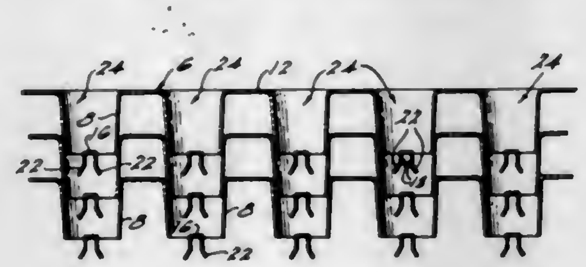
10. In a heat exchanger the combination of an enclosure, partition means in said enclosure, said enclosure defining first, second, and third compartments, means communicating said first compartment with heat exchange

medium in a predetermined first condition, means communicating said second compartment with said heat exchange medium in a predetermined second condition, plural heat exchanger tubes communicating said first compartment with said third compartment, said tubes passing through said second compartment to bring heat exchange medium in said first predetermined condition into heat exchange relationship with heat exchange medium in said second predetermined condition, and elastomeric sealing means between each of said heat exchanger tubes and said partition means initially operable to impede the flow of heat exchange medium between the outer periphery of said heat exchanger tubes and said partition means, said elastomeric sealing means comprising a material operable through contact with said medium to expand to establish a fluid-tight seal between said first and second, said material being substantially unaffected by temperature conditions of said medium and said second and third compartments.



3,311,165
HEAT EXCHANGER

John Karmazin, 3776 11th St., Wyandotte, Mich. 48192
Filed Mar. 9, 1965, Ser. No. 438,278
5 Claims. (Cl. 165—109)



1. A heat exchanger including a plurality of integral tube and fin members having their tubes arranged in nested relationship, at least some of said tubes having a terminal portion provided with a transverse strip of material and openings at the sides of said strip, and a pair of vanes connected to said strips and extending therefrom in diverging directions inclined to the axis of the tube sections so as to direct fluid flowing along said tubes in a radially outward direction aganst the walls of the adjacent tubes, the vanes of said tubes being spaced from the vanes of the tubes adjacent thereto to create turbulence in the fluid flowing through said tubes.

3,311,166
HEAT EXCHANGER

Donald L. Southam, Cleveland Heights, Ohio, assignor to TRW Inc., a corporation of Ohio
Filed July 2, 1964, Ser. No. 379,882
2 Claims. (Cl. 165—166)

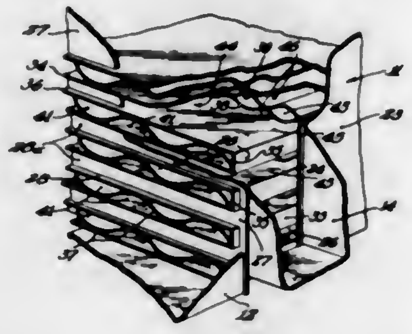
1. A counter-current heat exchanger comprising:

a core having flat parallel top and bottom walls and flat parallel side walls,

a plurality of heat exchanger units in said core each of which comprises:

an elongated duct shaped rectangularly in transverse cross-section and having flat spaced parallel top and bottom walls, only one corrugation within said duct winding up and down transversely across the width of said duct into engagement with said top and bottom walls and extending longitudinally the full length of said duct to provide a plurality of longitudinally extending internal flow passages within said duct each of which is completely separated from adjacent flow passages across the entire width of said duct, and

a pair of external corrugations mounted respectively on the outside surfaces of said top and bottom walls and extending longitudinally a distance less than the length of said duct to provide land areas at both ends of said duct adjacent said external corrugations, the longitudinal crests of said external corrugations mounted on said top wall being directly opposite the longitudinal crests of the external corrugations mounted on said bottom wall,



said heat exchanger units being arranged in stacked relation so that the crests of the external corrugations of adjacent heat exchanger units contact each other to provide a plurality of longitudinally extending external flow passages outside of said ducts, each of which is completely separated from adjacent flow passages across the width of said units, and so that said land areas between each of said ducts extend substantially across the entire transverse extent thereof to define internal headers for the distribution of fluid flow within the flow passages of said corrugations,

a pair of header plates located respectively at the ends of said units enclosing said internal headers at the ends of said core,

first transition duct means mounted on the side walls of said core adjacent the ends thereof and in communication with said internal headers, and

second transition duct means mounted at the ends of said core and in communication with said internal flow passages.

3,311,167
SECONDARY RECOVERY TECHNIQUE

Leo J. O'Brien and Le Roy W. Holm, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Nov. 21, 1963, Ser. No. 325,439
10 Claims. (Cl. 166—9)

1. A method for recovering oil from a petroleum reservoir penetrated by an injection well and at least one spaced production well, which comprises:

injecting an aqueous surfactant solution through said injection well and into said reservoir, said solution having a surfactant content sufficient to produce a stable foam on being contacted by a gas;

injecting about 0.05 to 0.5 pore volume of drive gas through said injection well and into said reservoir;

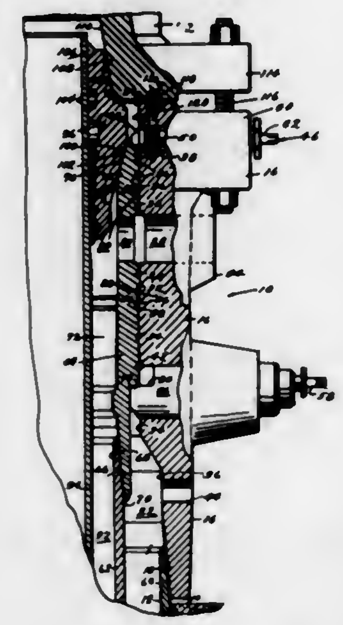
thereafter injecting a slug of liquid solvent which is miscible with both oil and water;

driving said solvent through said reservoir by the injection of flood water; and

recovering oil from said production wells.

3,311,168
WELL HEAD ASSEMBLY WITH MEANS FOR EFFECTING A PRELOADED SEAL

Elwood K. Pierce, Jr., Houston, Tex., assignor to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed Dec. 4, 1964, Ser. No. 416,072
19 Claims. (Cl. 166—89)

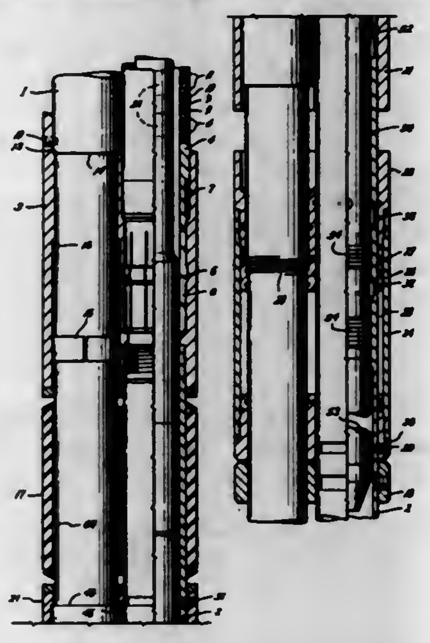


1. A well head assembly including a housing having means defining a longitudinal throughbore therein; means defining a lateral outlet in said housing communicating with the throughbore intermediate the ends thereof; means defining a first upwardly facing shoulder in said throughbore above the juncture of said outlet therewith; means defining a second upwardly facing shoulder in said throughbore below the juncture of said outlet therewith; a hanger received in said housing throughbore and at least partially supported on said first and second shoulders, said shoulders being so spaced and configured that said hanger begins to engage said first shoulder before engaging said second shoulder as said hanger is received in said throughbore whereby a predeterminable portion of the load resulting from the weight of the hanger is transferred to the housing at said first shoulder.

3,311,169
RETRIEVABLE AND HYDRAULICALLY ACTUATED WELL PACKER

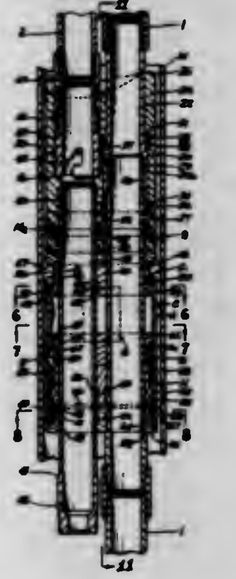
Phillip R. Hefley and Gilbert H. Tausch, Houston, Tex., assignors to Camco, Incorporated, Houston, Tex., a corporation of Texas
Filed Aug. 10, 1964, Ser. No. 388,443
8 Claims. (Cl. 166—120)

1. In a well bore packer assembly, a mandrel having an upper packing collar abutment body, a deformable packing collar surrounding the mandrel below said body, a lower collar abutment and cylinder barrel slidably sleeved on the mandrel and co-operating therewith in forming a piston enclosing chamber, a piston positioned within the chamber and partitioning the same into upper and lower sections so that a higher fluid pressure within the upper section will push the lower abutment barrel toward the upper packing collar abutment body and a production tubing section extending from said body and having connection with the piston by which the position of the piston is fixed relative to said abutment body.



3,311,170
MULTIPLE PIPE STRING TWO-WAY ANCHOR-AND-SEAL PACKER

Cicero C. Brown, % Brown Oil Tools, Inc., P.O. Box 19263, Houston, Tex. 77024
Filed Oct. 29, 1964, Ser. No. 407,351
19 Claims. (Cl. 166—120)

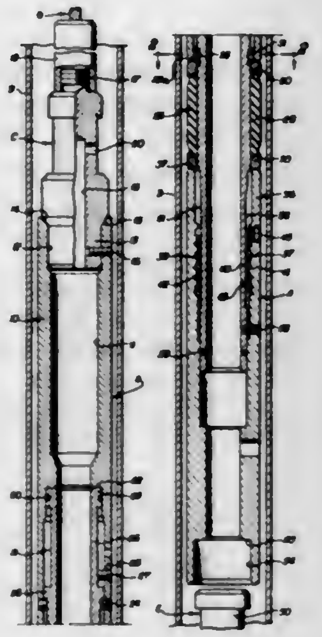


19. A multiple pipe string two-way well packer, including, a packer body comprising longitudinally spaced upper and lower body sections having axially registering parallel first and second bores extending longitudinally therethrough, first and second tubular mandrels having their upper ends secured respectively in the first and second bores of the upper body section and extending slidably through the registering bores in the lower body section, a seal-and-anchor assembly mounted about both mandrels between said body sections, said assembly including a resilient seal element disposed in abutting relation to the lower end of said upper body section for radial expansion by end-wise compression thereagainst, upper and lower longitudinally spaced slip expander members disposed beneath said seal element and longitudinally slidable on said mandrels, a slip cage having angularly spaced openings therein disposed about said expander members for limited longitudinal sliding movement relative thereto, pipe-gripping slips mounted in said openings for radial movement therein and having upper and lower end portions disposed for wedging engagement respectively with said upper and lower expander members whereby axial movement of said expander members toward each other will urge said slips outwardly into pipe-gripping position, fluid pressure-operated actuating means disposed about the mandrels between the lower expander member and said lower body section, and means for supplying pressure fluid from said second mandrel to said actuating means.

3,311,171
RETRIEVABLE WELL PACKER

Luis F. Castro, Houston, Tex., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California

Filed June 29, 1964, Ser. No. 378,796
14 Claims. (Cl. 166—196)



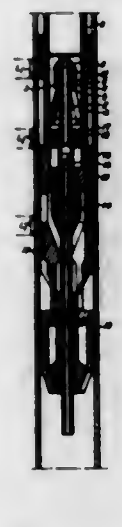
2. In a well packer: an outer body member; an inner body member extending into said outer member; initially retracted packing means on said inner member engageable at one end by said outer member; retainer means releasably coupled to said inner member and engageable with the opposite end of said packing means whereby said inner member can telescope relatively inwardly within said outer member and shift said retainer means relatively toward said outer member and expand said packing means laterally outwardly; lock means retaining said inner member within said outer member in the position to which it has been telescoped; and releasable means on said inner member engaging and holding said retainer means coupled to said inner member and movable from engagement with said retainer means to permit uncoupling of said retainer means from said inner member.

3,311,172
ANCHOR FOR TUBINGLESS DEEP WELL PUMPING

Solomon Iljich Shapiro and Vjacheslav Alexeevich Milovsky, both of Baku, U.S.S.R., assignors to Mashinostroitelny Zavod imeni F.E. Dzerzhinskogo, Baku, Amiradzhany, U.S.S.R.

Filed Sept. 23, 1964, Ser. No. 398,677
1 Claim. (Cl. 166—212)

An anchor for tubingless deep well pumping with the help of pipe stems, said anchor embodying a housing, with a cylindrical part, said housing being connected to the end of said pipe stems, said anchor also containing slips with the serrated operating part, said slips being used to fix the anchor in the casing string, a spreading conical element used to press said slips to the casing string, lugs on said housing, said lugs interacting with the upper face of said conical element during lowering of said pipe stems in order to use the weight of said pipe stems for reliable pressing of said slips to the casing string, a shoulder on said housing, said shoulder assisting in lifting said slips when lifting the stems during removal of the anchor out the well, a thrust head with the lower face having the shape of a frustum with its apex facing the inside of the head, a piston housed in said cylindrical part of said housing, said piston being connected to said thrust head and conical element through hollow rods, a collet clamp fixed to said housing, a ring, freely located between said thrust head and said collet clamp, said ring being capable of sliding along the hollow rod by gravity, which couples said thrust head with said piston, the upper and the lower faces of said ring having the shape of frustums, the upper face cone angle corresponding to the cone angle of said thrust head lower face and interacting with the latter during lowering of said piston, under the force of a column of liquid filling up said hollow stems, said collet clamp having chamfers at the internal and external ends of its plates, the chamber at the internal side interacting with the cone at the lower face of said ring being used to assist in moving the collet plates apart by means of the ring, when said ring is pushed by said thrust head through said collet clamp, said chamfer at the external side interacting with the cone of the lower face of said thrust head after dropping of said ring when lifting the hollow rods, thus reliably gripping said thrust head.

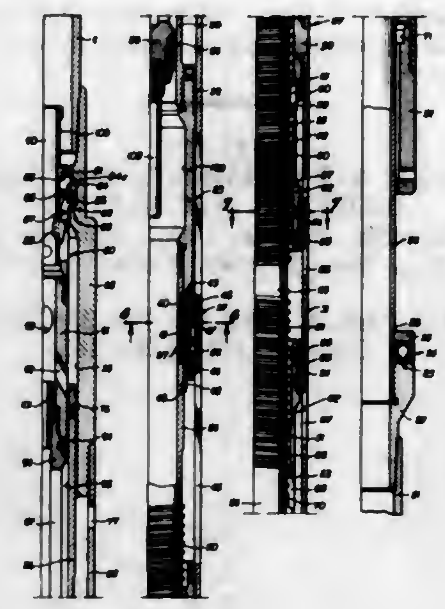


3,311,173
WELL BORE TESTING APPARATUS

Waldo W. Henslee, Jr., and Darryl W. Cockrell, Houston, Tex., assignors to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California

Filed June 30, 1964, Ser. No. 379,125
28 Claims. (Cl. 166—226)

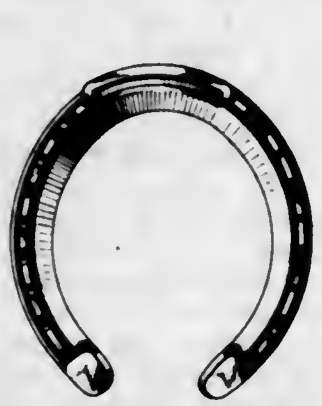
17. In valve apparatus adapted to be disposed in a well bore: inner and outer telescopically related members having a passage establishing communication between the interior of said members and the well bore externally thereof; coengageable means on said members closing said passage when said members are in one relative telescopic position and opening said passage when said members are in another relative telescopic position; means providing a threaded interconnection between said members responsive to relative rotation between said members to place said members in one of said telescopic positions, said interconnection comprising ratchet means permitting telescopic movement without rotation between said members from said one of said telescopic positions to the other of said telescopic positions.



3,311,174
PROCESS OF TREATING NYLON RACE TYPE HORSESHOES

Thomas Castillo, New Orleans, La., assignor to Balanz Racing Plate Corporation, New Orleans, La., a corporation of Louisiana

Filed Apr. 14, 1965, Ser. No. 448,912
2 Claims. (Cl. 168—24)



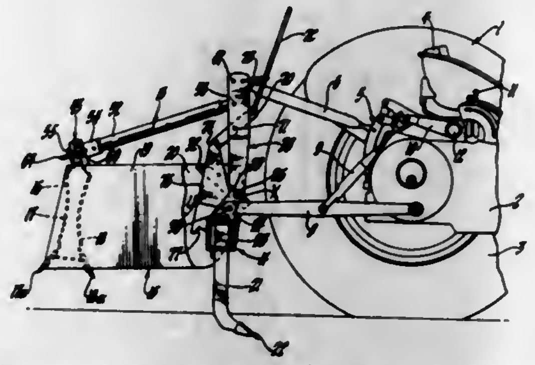
2. The process of moisturizing a nylon horseshoe comprising the step of boiling the shoe in a salt water solution for at least 24 hours.

3,311,175
MULTIPURPOSE IMPLEMENT

Clarence B. Richey, Fresno, Calif., assignor to Massey-Ferguson Inc., Detroit, Mich.

Filed Jan. 21, 1965, Ser. No. 427,018
5 Claims. (Cl. 172—136)

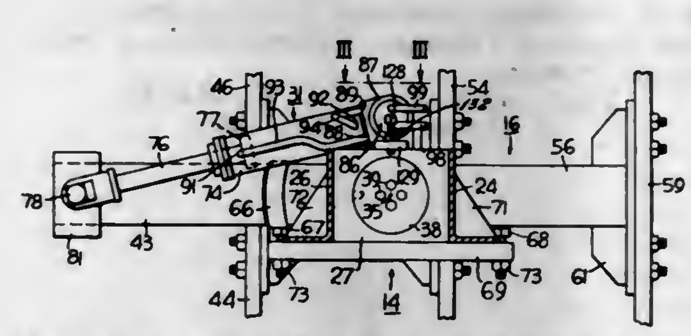
1. A multipurpose earthworking implement comprising vertically movable support means, an upright frame, a first earthworking tool pivotally connected to said frame and to said support means about separate, spaced, parallel axes, a second earthworking tool connected with said first earthworking tool about the pivotal axis between said first earthworking tool and said frame, a link pivotally connecting said second earthworking tool with said frame at a point spaced from the connection between said first earthworking tool and said frame such that the weight of the second earthworking tool biases the first earthworking tool to rotate to an inoperative position in which the second tool projects below the first tool when said tools are held above the ground by the support means, the weight of the first tool biasing the first tool to rotate from its inoperative position toward an operative position in which it projects below the second tool when the second tool rests on the ground or other support to remove its weight from the first tool, and engageable and disengageable elements on said first tool and said frame selectively engageable for locking said first tool against movement from either of its operative or inoperative positions, said interengageable elements being unconnected with each other when disengaged so as to offer no restraint to movement of the first tool relative to the frame, support means and second tool.



3,311,176
SPINNER PLOW

Donald E. Cleland, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Apr. 28, 1964, Ser. No. 363,185
8 Claims. (Cl. 172—225)



6. In a two-way plow of the type wherein a support and a roll-over frame mounting right and left-hand plow bottoms are rotatably interconnected on a longitudinal turning axis, the combination of a double acting hydraulic ram having piston rod and cylinder elements in telescopically movable relation to each other; pivot means operatively connecting one of said ram elements with said frame and the other with said support at predetermined radial distances, respectively, from said turning axis so that consecutive telescopic movements of said ram elements in opposite directions will rotate said frame in one direction about said turning axis from one predetermined plowing position into another; and fluid distributing means including a rotary valve element secured to said other ram element concentrically with the pivot connection between the latter and said support, for effecting said consecutive telescopic movements of said ram elements.

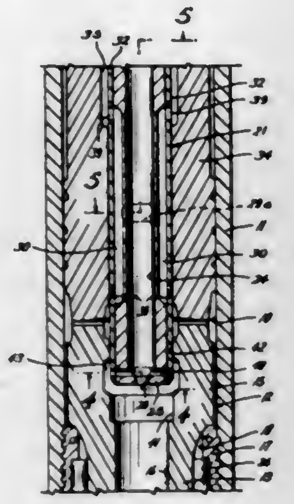
3,311,177
PERCUSSION DRILLING TOOL

Samuel L. Collier and Marvin E. Schindler, both of Houston, Tex., assignors to Mission Manufacturing Company, Houston, Tex., a corporation of Texas

Filed Aug. 3, 1966, Ser. No. 575,212
8 Claims. (Cl. 173—133)

5. An anvil device for use with a percussion drilling tool of the type having a casing, an axial tube for pressured working fluid, and a blowing port in the forward extremity

of said tube, comprising a body for slidable reception in the forward end of the casing, an exhaust duct extending through said body, and a recess in the wall of said duct, there being wall portions of said duct forwardly and rearwardly of said recess shaped to snugly receive said tube portion during normal on-bottom operation of the tool, said recess being shaped to connect said port and said duct when the tool is supported off bottom.

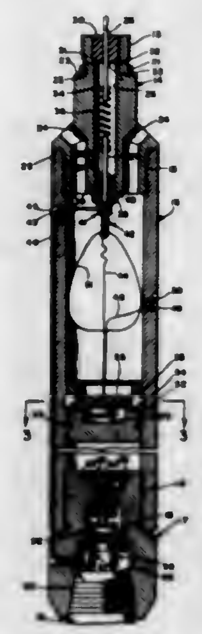


3,311,178
APPARATUS FOR PERFORMING WELL OPERATIONS

John B. McElheny, Anaheim, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Aug. 9, 1965, Ser. No. 482,987

4 Claims. (Cl. 175—4.54)



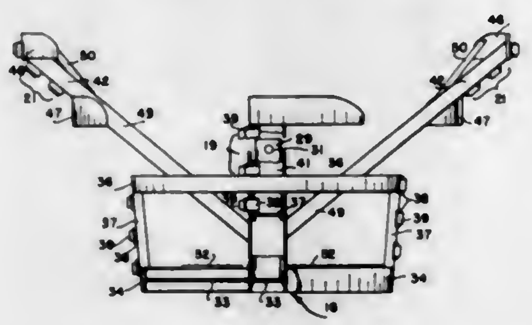
1. A combination tool comprising:
an elongated hollow body having an elongated hollow space therein;
fluid-tight closure means spaced a distance large in comparison to the maximum transverse dimension of said hollow space from the opposite end thereof;
means for opening said closure means;
passageway means through said body at said closure means to admit liquid to said hollow space when said closure means is opened, said passageway means having a total cross-section of a substantial size in comparison with that of said hollow space; and
means responsive to opening of said closure means for time delay controlled closing of an electrical circuit adapted to fire a perforator explosive charge when said hollow space is nearly filled by admitted liquid.

3,311,179
REAMER ATTACHMENTS FOR EARTH DRILLING APPARATUS

John A. Meredith, Denver, Colo., assignor to Meredith Drilling Co., Inc., Denver, Colo., a corporation of Colorado

Filed Jan. 6, 1964, Ser. No. 335,850

4 Claims. (Cl. 175—263)



1. A reamer attachment for earth drilling apparatus adapted for enlarging the diameter of pilot holes or openings that have been previously drilled to substantially the full torque capacity of the drilling apparatus through use of conventional auger attachments carried and rotated by the kelly bar of such earth drilling apparatus, comprising a vertically disposed kelly socket for the reception of the kelly bar of such earth drilling apparatus, a cross frame joined to said kelly socket, guide members circumferentially disposed on the outer extremities of said cross frame and adapted to engage the walls of said previously drilled pilot holes or openings, cutter bits disposed adjacent said guide members in non-following position each with respect to the cutter bit circumferentially next adjacent thereto for slightly enlarging the bore diameter of said pilot hole and to provide a guide bore in said earth structure, extension arms extending radially outwardly past said first cutter bits at circumferentially spaced positions, and cutters on said extension arms disposed for cutting and reaming an opening of substantially increased diameter, said cutters being likewise disposed in non-following position each with respect to the cutters circumferentially next adjacent thereto whereby each of said cutter bits and cutters will engage, cut and remove a portion of earth wall to progressively ream and enlarge said original pilot opening and guide bore.

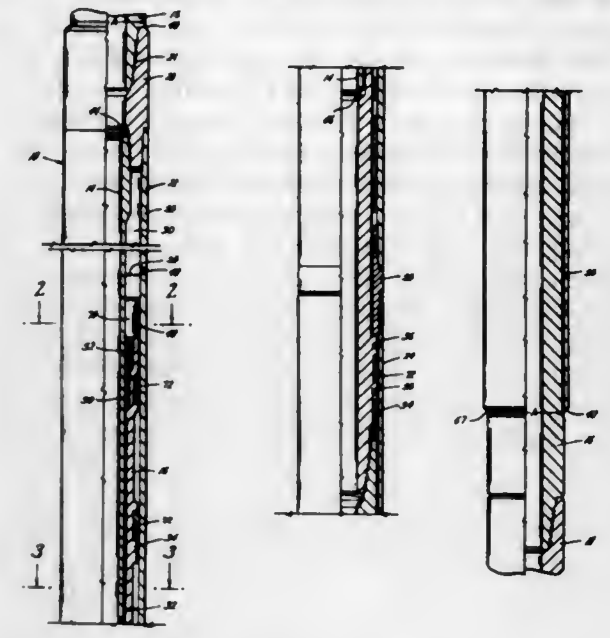
3,311,180
HYDROSTATICALLY BALANCED BUMPER SUB

Lafayette E. Gilreath and Eddie C. McGarrahan, Houston, Tex., assignors to Houston Oil Field Material Company, Inc., Houston, Tex., a corporation of Delaware

Filed Mar. 30, 1964, Ser. No. 355,836

9 Claims. (Cl. 175—293)

1. A hydrostatically balanced bumper sub for use in a drilling string comprising,
a housing adapted to be connected in the drilling string,
a washpipe connected to and positioned inside of the housing,
a supporting stem telescoping in and nonrotatably engaging the housing and the lower end of which is adapted to be connected in the drilling string,
the horizontally disposed surfaces of said housing, and wash pipe, when the sub is connected in a drilling string, and which are exposed to hydrostatic pressures inside and outside of the drilling string, having areas which are substantially equal in an upward and a downward direction whereby the forces generated by the pressures acting thereon would be substantially balanced.

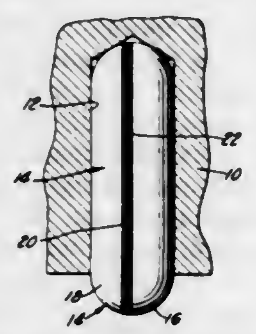


3,311,181
BI-METAL DRILLING TOOTH

John B. Fowler, 1446 Malvern Ave., Los Angeles, Calif. 90006

Filed May 4, 1964, Ser. No. 364,427

5 Claims. (Cl. 175—410)



1. The combination with a rotary drill bit matrix having tooth-receiving socket means therein and adapted for working rotation in a predetermined direction, of a drill tooth with a following working section and a leading holding section with portions thereof secured in said socket means and other portions thereof extending from said socket means and the matrix, said holding section having a lesser degree of hardness than said working section.

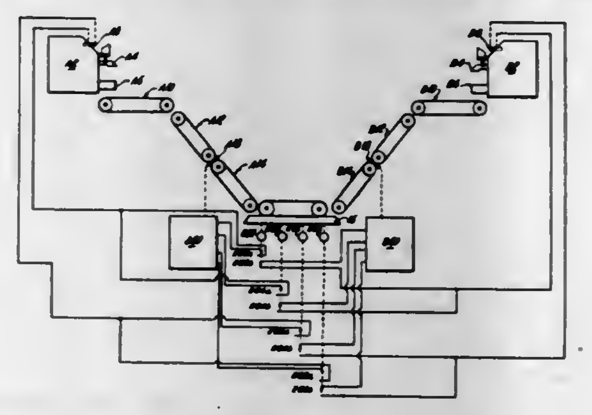
3,311,182
WEIGHT CONTROL FOR BAG PACKING MACHINES

Michael E. Rusnack, Hammond, and Joseph M. Kulesa, Schererville, Ind., assignors to American Maize-Products Co., a corporation of Maine

Filed Feb. 26, 1965, Ser. No. 435,619

6 Claims. (Cl. 177—45)

1. An automatic system for adjusting packing apparatus in order to maintain substantially constant weight of each filled package comprising means for conveying the filled packages from the packing apparatus, a weighing scale for receiving each package from said conveying means, a switch positioned to be closed by a package on said conveyor means when the package passes a predetermined location, a time delay control circuit including said switch, a reversible motor adapted when energized in one direction to adjust the packing apparatus to decrease the weight of material packed by the apparatus of an amount dependent upon the period of energization of the motor and when energized in the other direction to adjust the packing apparatus to increase the weight of material packed by an amount dependent upon the period of energization, a first, second, third and fourth relay, means for energizing said first relay when the weight of a filled package is more than a predetermined amount over a desired value, means for energizing said second relay when the weight of the filled package is more than said desired value but not more than said predetermined amount, means for energizing said third relay when the weight of the filled package is less than the desired value but by not more than said predetermined amount, and means for energizing said fourth relay when the weight of the filled package is less than the desired value by more than said predetermined amount, said first relay when energized coupling said motor to said control circuit for energizing said motor for a given period of time and in a direction to adjust the packing apparatus to decrease the weight of material packed in the next package, said second relay when energized coupling said motor to said control circuit for energizing said motor in the same direction and for a shorter period of time, said third relay when energized coupling said motor to said control circuit for energizing said motor in the other direction for such shorter period of time, and said fourth relay when energized coupling the motor to said control circuit for energizing said motor in the other direction for said predetermined period of time.

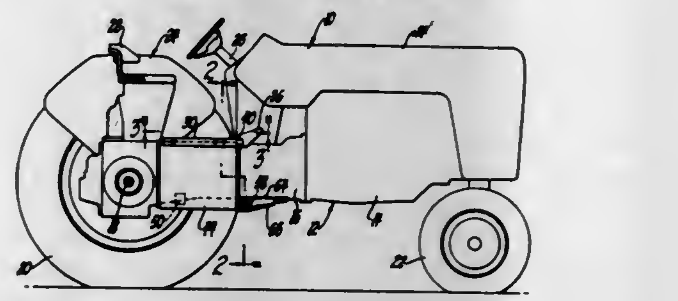


3,311,183
TRACTOR HAVING SADDLE GAS TANKS

Harold J. Phillips, Ferndale, Mich., assignor to Massey-Ferguson Incorporated, Detroit, Mich., a corporation of Maryland

Filed May 13, 1963, Ser. No. 279,789

7 Claims. (Cl. 180—1)

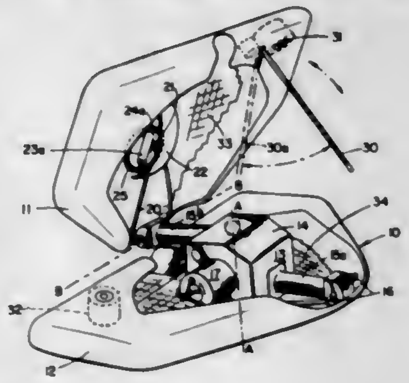


1. In a tractor of the type comprising a longitudinally extending rigid housing member enclosing a drive mechanism and including a rearward portion supporting an operator's station and drive axle means below said station and extending laterally from said housing member between a pair of drive wheels which are disposed on opposite sides of said housing member, the improvement comprising a pair of fuel tanks respectively fixedly mounted directly between and substantially within the

peripheral confines of said drive wheels on opposite sides of said housing member immediately forwardly adjacent said axle means and beneath said operator's station.

3,311,184
EXPLORATORY VEHICLE

David W. Beck, Lakewood, Calif., assignor to Space-General Corporation, El Monte, Calif., a corporation of California
Filed Dec. 24, 1963, Ser. No. 333,131
15 Claims. (Cl. 180—7)

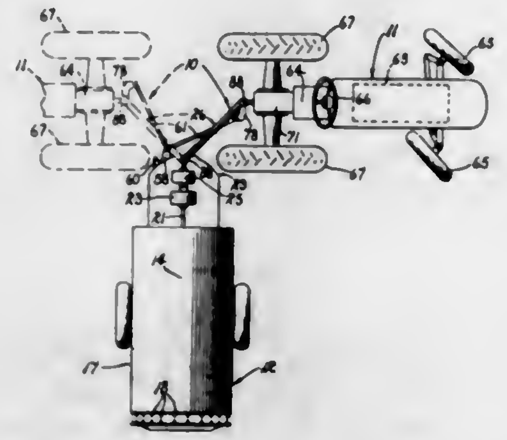


1. A vehicle comprising:
a central body;
a motor carried by said body;
first and second relatively rigid tread members for sequentially supporting said body and other tread member;
means pivotally connecting said first and second tread members to said body about axes generally coinciding with opposite extremities of said body; and
means driven by the motor for raising said body and first tread by pivoting said body about the connection with the supporting second tread to a position where the vehicle tumbles onto the first tread thereby advancing the vehicle.

3,311,185
SYMMETRIZING BIPIVOTAL COUPLING DEVICE

James H. Duncan, Gilroy, and Chauncey J. Kraus, Modesto, Calif., assignors to Air-O-Fan Products Corp., a corporation of California
Filed Jan. 25, 1965, Ser. No. 427,562
1 Claim. (Cl. 180—14)

In a power-operable apparatus having a longitudinal axis and forward and rearward ends, said apparatus being adapted to be moved by a powered prime mover having a longitudinal axis and forward and rearward ends, a bipivotal coupling comprising an elongated rigid drawbar having a longitudinal axis, opposite first and second ends respectively, and a mid-point, said first end having a tongue providing a substantially vertical hole, said second end having a roller adapted for substantially frictionless rotation about an axis aligned with the longitudinal axis of the drawbar, said drawbar having an intermediate substantially vertical hole disposed between the second end and said mid-point in spaced relation to said roller; a bearing housing mounted on the forward end of the apparatus having a pair of bearing plates disposed in substantially horizontal spaced relationship and adapted to accommodate the second end of said drawbar therebetween with the roller in rolling engagement with one of said plates, said bearing housing supporting a substantially upright pivot pin disposed between the plates at the forward end and on the longitudinal axis of the apparatus, said second end of the drawbar being disposed between the plates with said pivot pin disposed through the intermediate hole in the drawbar to secure said drawbar for pivotal movement thereabout in a substantially horizontal plane; a first pivot pin pivotally connecting the first end of the drawbar on the rearward end of the prime mover for free pivoted movement thereabout, a second pivot pin disposed laterally adjacently of the first pin on the rearward end of the prime mover rearwardly thereof and at a lower elevation than said first pin; a bracket mounted on the forward end of the apparatus adjacently of the bearing-housing pivot pin and laterally oppositely thereof from the second pivot pin, said bracket supporting a substantially upright pivot pin disposed forwardly of the bearing-housing pin laterally thereof and at a lower elevation than said bearing-housnig pin; an elongated auxiliary coupling bar, said auxiliary bar being pivotally mounted between said second pivot pin and said bracket, said auxiliary bar being disposed beneath said drawbar and in spaced relation thereto; mechanical power-takeoff means mounted on the rearward end of the prime mover on the longitudinal axis thereof and adapted to transmit power from the prime mover to a rotatable shaft; mechanical power-receiving means mounted on the forward end of the apparatus on the longitudinal axis thereof and adapted to receive power from a rotatable shaft connected to the power-takeoff means of the prime mover; a power-takeoff shaft having a central elongated portion and opposite ends, said opposite ends being connected respectively to the power-receiving means on the apparatus and the power-takeoff means on the prime mover, said opposite ends being connected respectively to the central portion by means of universal joints, said universal joints being disposed substantially in elevational alignment above the bearing-housing pivot pin and the first pivot pin respectively, said power-takeoff shaft being adapted to transmit power from the prime mover to said apparatus incident to operation thereof, said drawbar and said auxiliary bar cooperating during movement of the apparatus by the prime mover to maintain the respective longitudinal axes of the prime mover and the apparatus in horizontally substantially symmetrical relation to the power-takeoff shaft.



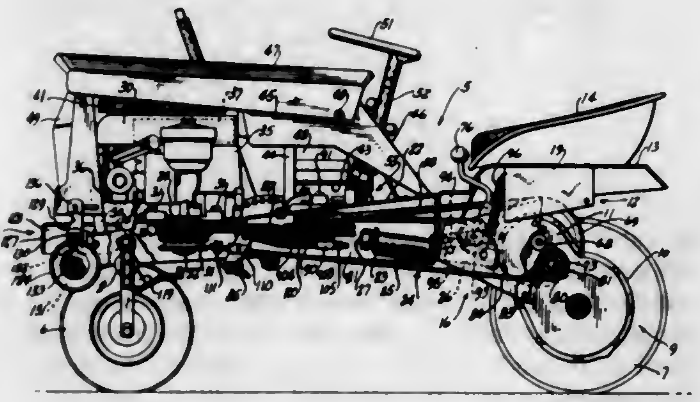
3,311,186
RIDING TRACTOR

Igor Kamlukin, Fox Point, Wis., assignor to Simplicity Manufacturing Company, Port Washington, Wis., a corporation of Wisconsin
Filed Sept. 9, 1963, Ser. No. 307,382
11 Claims. (Cl. 180—70)

1. A tractor of the type that is characterized by a chassis which comprises an elongated frame extending fore and aft of the tractor, a front axle structure having wheel means supporting the front portion of the frame, and a rear axle structure from which the rear portion of the frame is supported, said rear axle structure including a pair of coaxial drive wheels at opposite sides of the chassis, and said tractor being further characterized by:

A. a prime mover mounted on the frame at the front portion thereof;

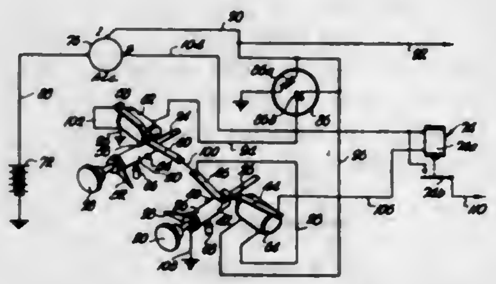
B. a prime mover driven power member disposed at the underside of the frame and rotatable about an axis fixed with respect to the frame;
C. housing means providing part of the rear axle structure, said housing means being located between the drive wheels and having an upper portion disposed a distance above the axis of the drive wheels, and said housing means containing
  (1) drive mechanism including reversible torque transmitting means drivingly connectable with the drive wheels, and



  (2) an input shaft carried by the housing means for rotation about a horizontal axis located at a level below the top of the rear portion of the frame forwardly of and above the axis of the drive wheels, said input shaft being connected with said drive mechanism and having an end portion projecting from the housing means;
D. torque transmitting means extending fore and aft of the frame, entirely at the underside thereof, to drivingly connect said end portion of the input shaft with the power member; and
E. cooperating elements on said upper portion of the housing means and on the rear portion of the frame supporting the latter from the rear axle structure and providing a pivotal connection therebetween by which the frame can rock relative to the rear axle structure from side to side about an axis that extends fore and aft of the chassis.

3,311,187
DRIVER CAPABILITY TESTER AND VEHICLE ANTI-THEFT DEVICE

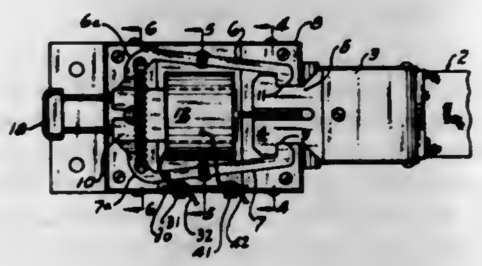
William R. Haggard, Jr., 5113 E. Barry Road, Kansas City, Mo. 64156
Filed June 18, 1964, Ser. No. 376,077
9 Claims. (Cl. 180—82)



1. Protective apparatus for preventing operation by unauthorized or incapacitated persons of a vehicle having electrical power supply means and an operating circuit, said apparatus comprising:
a first electrical switch for controlling said operating circuit;
first mechanically shiftable structure movable to a number of different positions and disposed to operate said first switch when said first structure is shifted to one of said positions;
means operably associated with said first structure for indicating the position thereof;
first manually shiftable means,
first electrically responsive means for coupling said first shiftable means with said first structure to effect controlled positioning of the latter by said first shiftable means during manual movement thereof;
a second electrical switch for coupling said first electrically responsive means with said power supply means;
second mechanically shiftable structure movable to a number of different positions and disposed to operate said second switch when said second structure is shifted to one of said positions thereof;
means operably associated with said second structure for indicating its position;
second manually shiftable means;
second electrically responsive means for coupling said second shiftable means with said second structure to effect controlled positioning of the latter by said second shiftable means during manual movement thereof; and
circuit means for coupling said second electrically responsive means with said power supply means, whereby the operator of the vehicle is required to adjust the second and the first shiftable means, in that order, to set the second and the first structures at the one position of each in order to operate the vehicle.

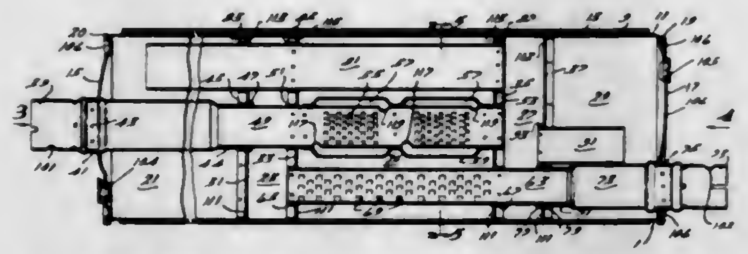
3,311,188
AUTOMATIC OPENING SEAT BELT FASTENER

James G. Gutshall, 103 W. Marshall Ave., Phoenix, Ariz. 85013
Filed Aug. 19, 1965, Ser. No. 481,152
3 Claims. (Cl. 180—82)



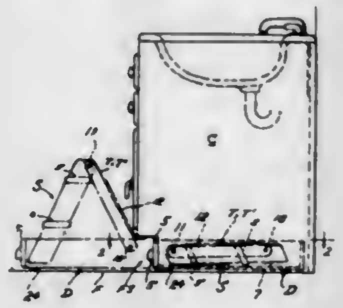
1. A safety belt for vehicles comprising a belt strap adapted to extend over the shoulder of a passenger and fasten at one end to the upper part of the seat and having a notched tongue at tthe other end, a buckle latch to receive said tongue comprising a case with a slot to receive the tongue, hooks pivotally supported in said case to engage the notches on said tongue, means in said case for resiliently holding said hooks in engagement with the notches on said tongue, means for slideably releasing said hooks from said notches, a solenoid coil in said case having an armature slideably operative in said solenoid, projections on said armature to engage said hooks and release them from said notches when said armature is slid lengthwise, manual means for sliding said armature lengthwise, means for engaging said solenoid to give said armature longitudinal movement and release said hooks; switch means for closing an electrical circuit through said solenoid and opening said circuit when said car is upset by an accident.

3,311,189
CERAMIC COATED MUFFLER WITH DRAINAGE OPENINGS
Walter H. Powers, Racine, Wis., assignor to Walker Manufacturing Company, a corporation of Delaware
Original application Oct. 28, 1960, Ser. No. 65,767, now Patent No. 3,082,841, dated Mar. 26, 1963. Divided and this application Dec. 4, 1962, Ser. No. 242,305
4 Claims. (Cl. 181—35)



1. A muffler of the type having an elongated casing closed by header means and internal gas passages and partition means dividing the casing into a plurality of chambers, an internal tube having spaced louvered sections, a chamber formed about each of said louvered sections, and at least two drainage openings provided in said tube within the confines of each chamber to enable ceramic slip or the like when applied internally to coat all interior parts of the chambers.

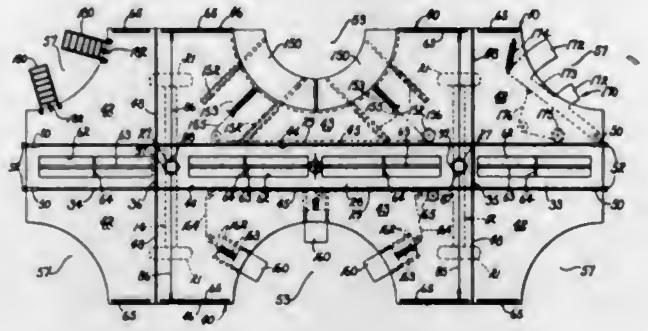
3,311,190
CHILD AIDS FOR LAVATORIES AND THE LIKE
Douglas E. Naumann, 131 W. Broadway, Medina, Ohio 44256
Filed July 21, 1965, Ser. No. 473,586
6 Claims. (Cl. 182—129)



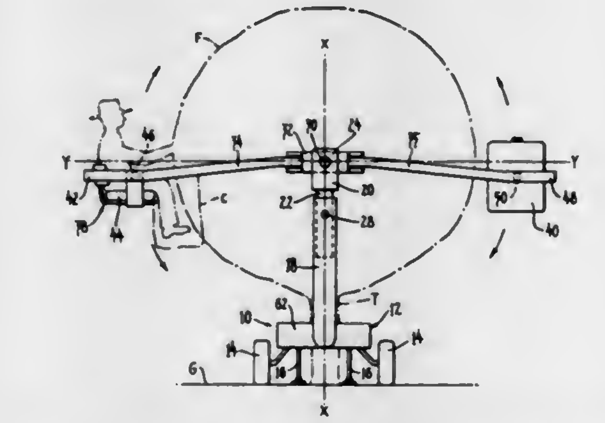
1. An adjunct for cabinet type lavatories or the like, wherein a generally horizontally movable drawer or base in the cabinet contains a step device enabling access to necessary parts etc. by children too short normally to reach them, and wherein the step device includes a step-support member or assembly and, pivotally articulated therewith on a horizontal axis, a strut member or assembly, one of the members or assemblies being fixedly pivotally attached to the drawer or base adjacent a back portion thereof and the other member or assembly being proportioned detachably to abut a front wall portion of the drawer or base incident to being subjected to vertically applied forces on the device when erected for use as described, the step device being thereby arranged to be folded into a stowed-away position for storage within the cabinet.

3,311,191
COLLAPSIBLE SCAFFOLD
Kazuo Hiyama, 8184 E. Adams, Fowler, Calif. 93625
Filed July 19, 1965, Ser. No. 473,124
11 Claims. (Cl. 182—131)

1. A collapsible scaffold comprising an elongated mobile frame; a support platform borne by the frame having a plurality of hinged sections movable between substantially coplanar operating positions and angularly related retracted positions; a main harvesting platform having a plurality of hinged sections pivotally mounted on said support platform for planar unitary elevational swinging movement relative to the support platform between a substantially upright retracted position, a downwardly extended retracted position and a workman support position outwardly extended from the support platform in overhanging relation to the frame; and means hingably releasably interconnecting adjacent sections of the support platform and the harvesting platform to permit folding of said sections of the harvesting platform about substantially upright axes when the harvesting platform is in said upright retracted position to dispose the platform in compact collapsed condition entirely within the frame.



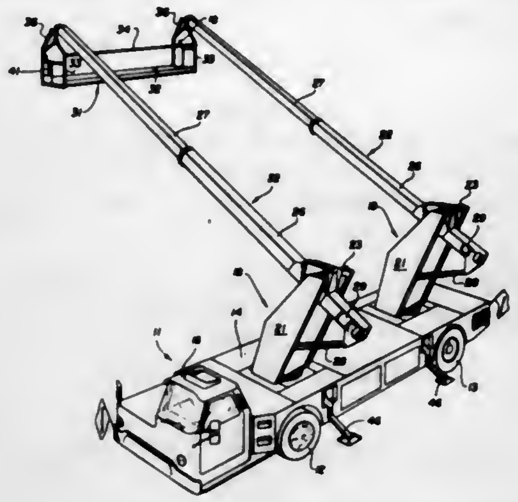
3,311,192
TREE WORKING PLATFORM
Clarence B. Richey, Fresno, Calif., assignor to Massey-Ferguson Inc., Detroit, Mich.
Filed Mar. 2, 1966, Ser. No. 531,267
10 Claims. (Cl. 182—141)



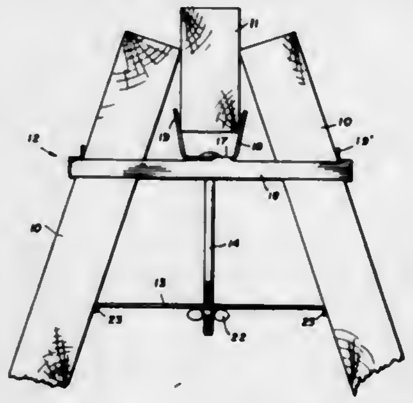
1. A tree working platform comprising: a base member adapted to be supported on the ground adjacent to the base of the tree, a carrier for supporting a worker, and a frame supporting the carrier on the base member for selective rotation about two perpendicular axes, the first of which is vertical and is generally coaxial with the longitudinal axis of the tree trunk to permit the carrier to move around the tree and the second of which is horizontal and is disposed above the ground to permit the carrier to move in a vertical curved path around the periphery of the three between the ground and top of the tree.

3,311,193
MULTIPLE BOOM APPARATUS
Jay M. Eitel, Los Altos, Calif., assignor to Telsta Corporation, San Carlos, Calif., a corporation of California
Filed Sept. 20, 1965, Ser. No. 488,688
5 Claims. (Cl. 182—148)

1. In a multiple boom apparatus, a platform, first and second lifting equipments mounted upon the platform and spaced from each other, each of said lifting equipments having an elongate boom structure with its outer end adapted to be raised and lowered about a horizontal axis, rotated about a vertical axis and extended and retracted, controls for controlling the movement of the outer end of the boom structure and a horizontal walkway connected to the outer ends of the boom structures of the first and second lifting equipments.



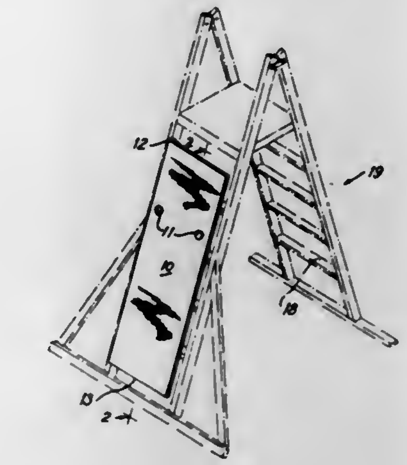
3,311,194
SAW-HORSE BRACKET
Donald D. Kriplen, 3450 W. 56th St., Indianapolis, Ind. 46208
Filed Mar. 25, 1966, Ser. No. 537,442
7 Claims. (Cl. 182—226)



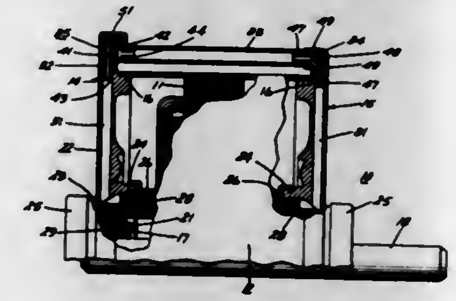
1. A bracket for use in forming a saw-horse or like structure having a horizontally extending head and downwardly diverging legs, said bracket comprising a restrainer plate provided with two openings adapted to receive loosely a pair of legs, said openings being separated by a bridge, a spreader engageable at its ends with the opposed surfaces of downwardly diverging legs received in the openings of said plate, and a bolt passing through said bridge and spreader for drawing the spreader and plate toward each other, said bridge being provided with upwardly projecting bridge-stiffening tongues providing a seat for a head to be gripped between the upper ends of the legs as said bolt is tightened.

3,311,195
SAFETY GUARD FOR POOL LADDER
Murray Singer, Massapequa, N.Y.
(4626 N. 28th Court, Hollywood, Fla. 33023)
Filed Oct. 12, 1965, Ser. No. 495,142
1 Claim. (Cl. 182—230)

As an article of manufacture, a safety guard for swimming pool ladders comprising a flat smooth planar board of a length to cover several ladder steps and of substantially the width of the ladder, handle means disposed on the front surface of said board adjacent the top edge thereof and a plurality of spaced-apart Z-shaped spring hooks, each hook having a top suitably sloped apertured flat portion adapted to fixedly engage the board in planar relationship, said top portion being integral with a flat middle portion of a length substantially equal to the width of a ladder step and adapted to engage said step in planar relationship, said middle portion being integral with a flat suitably curved depending spring portion adapted to be disposed in snap lock relationship behind said ladder step with the curved portion seizingly engaging the step with extension beneath said step thereby providing a safety lock thereto.



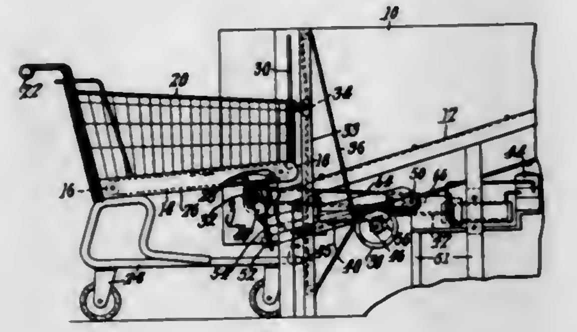
3,311,196
DYNAMOELECTRIC MACHINE LUBRICATION SUPPLYING ARRANGEMENT
Donald M. Niles, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Mar. 2, 1964, Ser. No. 348,670
6 Claims. (Cl. 184—65)



1. A dynamoelectric machine including a housing having a pair of end frames for rotatably supporting a shaft at spaced apart locations, a lubricant reservoir carried by each end frame for storing lubricant, first passageway means located within a first of said end frames and communicating between the exterior of the housing and one reservoir, a single lubricant fitting for admitting lubricant to both reservoirs from a common location mounted to said means, said fitting comprising a body section having first and second separated passages therethrough, said passages each including an entrance at an outer surface of said body section, cover means for closing the passages at said outer surface, the termination of said passages remote from said entrances being disposed in angularly spaced apart relation, means for mounting one of said terminations on the outer end of said first passageway means, and second passageway means having at least a portion within the other of said end frames and connecting the other passage termination of said fitting to the other reservoir, said terminations each being capable of connection with either the first or second passageway means thereby permitting the use of the same fitting for all-angle support of the machine.

3,311,197
AUTOMATICALLY ACTUATED SHOPPING CART

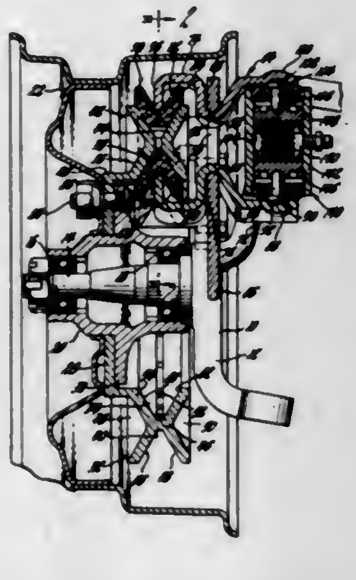
Armand A. Lachance, % American Metal Products Co., Southbridge St., Auburn, Mass., and Harlan W. Hilton, Dudley, Mass.; said Hilton assignor to said Lachance
Filed Mar. 14, 1966, Ser. No. 534,166
6 Claims. (Cl. 186—1)



1. The combination of an automatically discharging shopping cart and a checkout counter, wherein the cart includes a basket having a front gate and a conveyor bottom, a power operated device adapted to drive said conveyor when the conveyor is in proper position relative to the checkout counter, a support for said power operated device movable to position the power operated device in operative and inoperative positions selectively, and a cam under control of the operator to move said power operated device between operative and inoperative positions.

3,311,198
DISC BRAKE

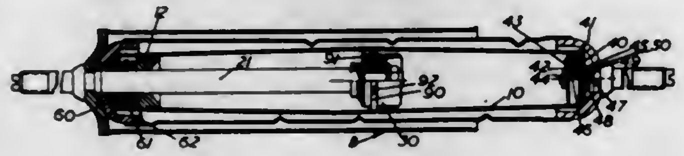
William E. Rise, Grosse Point, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 28, 1965, Ser. No. 490,836
8 Claims. (Cl. 188—75)



8. A groove-and-wedge disc brake assembly comprising:
a rotatable disc to be braked having opposed grooves providing friction braking surfaces;
a brake caliper having a scissors-like brake apply unit including wedge-like opposed shoes arranged to engage the friction braking surfaces of said disc formed by said opposed grooves;
and brake force apply means acting on said caliper for forcibly engaging said shoes with said disc friction braking surfaces, said disc having a plurality of circumferentially spaced apertures extending therethrough and connecting said opposed grooves, said disc friction braking surfaces forming, in a radial cross section, an X-configuration, said friction braking surfaces being radially inwardly and outwardly divergent facing surfaces defining said grooves as radially spaced grooves.

3,311,199
HYDRAULIC TELESCOPIC DAMPING DEVICES, PARTICULARLY FOR MOTOR VEHICLES

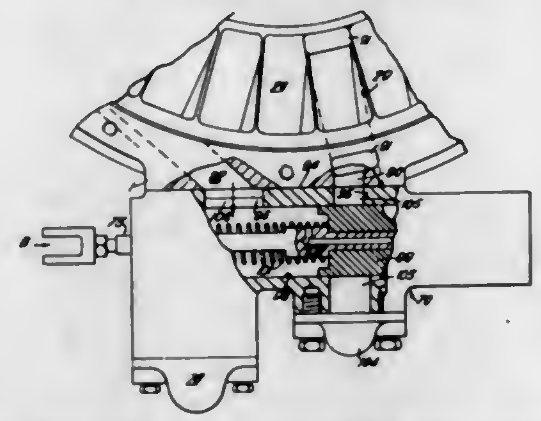
Edwin Kiefer, Russelsheim (Main), Germany, assignor to General Motors Corporation, a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 496,002
Claims priority, application Germany, Oct. 22, 1964, O 10,458
1 Claim. (Cl. 188—88)



A hydraulic shock absorber comprising an outer reservoir tube, closure means for sealing ends of said reservoir tube, a second tube located interiorly of said reservoir tube and extending throughout the length of said reservoir tube, said second tube having a varying cross-sectional area diminishing from the center thereof toward either end of said tube, piston means relatively reciprocal in said second tube including centering means thereon for slidably centering said piston means during travel thereof throughout the total length of said second tube, said centering means including means for bleeding fluid from one side of said piston means to an opposite side thereof during travel of said piston means in said second tube proportionally to the cross-sectional area of said second tube at the point said piston means is traveling with respect to said second tube, said bleed means including a split ring of resilient material having a gap therein acting as a variable orifice for diminishing fluid flow across said split ring as said piston means traverses a relatively narrower diameter portion of said second tube and which provides a larger variable bleed orifice as said piston means traverses a relatively larger diameter portion of said second tube.

3,311,200
HYDRODYNAMIC BRAKE

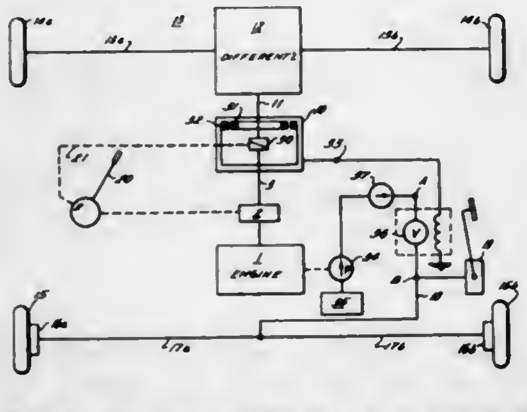
William J. Hayward, Peterborough, England, assignor, by mesne assignments, to F. Perkins Engines Limited, London, England, a British company
Filed Dec. 18, 1963, Ser. No. 331,451
Claims priority, application Great Britain, Dec. 27, 1962, 48,675/62
4 Claims. (Cl. 188—90)



1. A hydrodynamic brake comprising; a brake chamber, an inlet into said chamber, a source of fluid under pressure in communication with said inlet, an outlet from said chamber, a reaction member disposed inside said chamber, a rotor adapted to impel fluid towards said reaction member, and control means including a selectively movable valve, means connecting said inlet and said outlet with said valve, and biasing means continuously biasing said valve toward a first position in which said inlet is closed and said outlet is open, said valve movable between said first position and a second position in which said inlet is completely open and said outlet is completely open to meter flow through said inlet and thereafter movable between said second position and a third position to meter flow through said outlet as said inlet is maintained completely open said valve being movable in a single linear direction from said first position to said second position and then to said third position, and vice versa.

3,311,201
AUTOMOBILE BRAKING SYSTEM

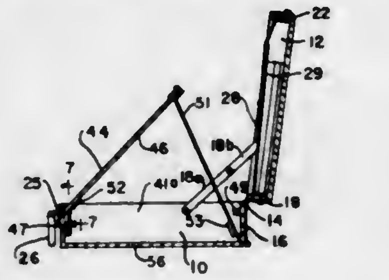
Stephen H. Frishauf, 209 W. 8th St., New York, N.Y. 10024
Filed Oct. 23, 1965, Ser. No. 503,738
8 Claims. (Cl. 188—134)



1. In a braking system for a motor vehicle having an engine, forward wheels driven by said engine and having free running rear wheels, brakes effective on said rear wheels, and means actuating said rear wheel brakes including a supply of brake fluid under pressure, and a brake fluid line interconnecting said supply of brake fluid and said rear wheel brakes only, said system comprising means sensing the direction of transfer of power between said engine and said forward driven wheels; and a valve controlled by said sensing means in said brake fluid line to said rear wheels only, said controlled valve admitting brake fluid under pressure to said rear wheel brakes upon sensing of transfer of power from the forward wheels to the engine by said sensing means.

3,311,202
ATTACHÉ CASE

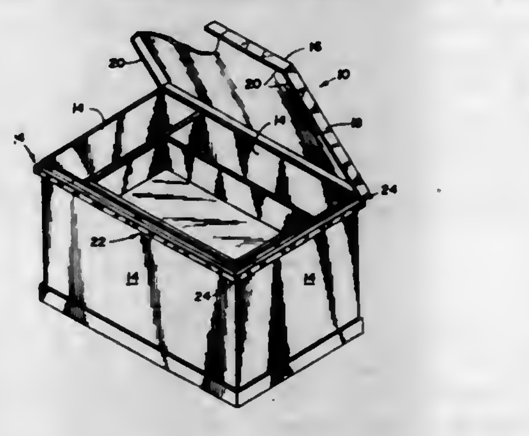
Horace R. Schell and Clarence F. Schell, Cincinnati, and Deo F. Umbenhauer, Dayton, Ohio, assignors to Schell Leather Goods Co., Inc., Cincinnati, Ohio, a corporation of Ohio
Filed July 28, 1965, Ser. No. 475,390
6 Claims. (Cl. 190—16)



1. A case which comprises an upwardly opening box-shaped lower section, a downwardly opening box-shaped upper section, means for hinging the sections together at adjacent edges of rear walls thereof, an easel panel, means for hinging a lower edge of the easel panel to a front wall of the lower section spaced below an upper edge thereof, a support leg hinged to a rear face of the easel panel, a rib attached to the rear wall of the lower section of the case, a lower edge of the support leg being receivable alternately upon the rib, upon the rear wall of the upper section and upon a bottom wall of the lower section to support the easel plate at various raised positions, and a flexible strap attached to a front wall of the upper section and extending rearwardly therefrom, an upper edge of the easel panel being engageable by the strap to hold the easel panel at a further raised position, there being V-shaped slots at upper and lower edges of the easel panel formed between the easel panel and the front wall of the lower section and the strap respectively for receiving lower and upper edges of a display, the upper edge of the easel panel being adapted to rest on the rib when in a lowered position.

3,311,203
DUST SEALS FOR TRUNKS

Edgar C. Pickard, 1797 Mount Royal Blvd., Glenshaw, Pa. 15116
Filed Dec. 29, 1965, Ser. No. 517,268
4 Claims. (Cl. 190—19)

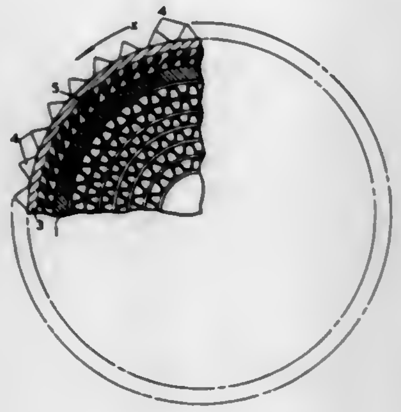


1. In a trunk having a bottom wall, upstanding side walls, and a lid hinged to one of said side walls and including a skirt which overlaps said side walls when said lid is in a closed condition, and means cooperating with said skirt for sealing said trunk against the ingress of dust, the improvement in said sealing means comprising: a continuous sealing member extending completely around the periphery of said trunk and secured to said side walls, said sealing member being spaced below the upper edges of said side walls and positioned for engagement by said skirt, said sealing member comprising a length of metal tubing having notches cut therein at preselected locations along its length, said metal tubing being bent in the region of said notches to form corners corresponding with the corners of said trunk.

3,311,204
TORQUE-TRANSMITTING MEANS PERMITTING RELATIVE RADIAL EXPANSION AND CONTRACTION BETWEEN A PAIR OF COAXIAL DRIVEN AND DRIVING MEMBERS

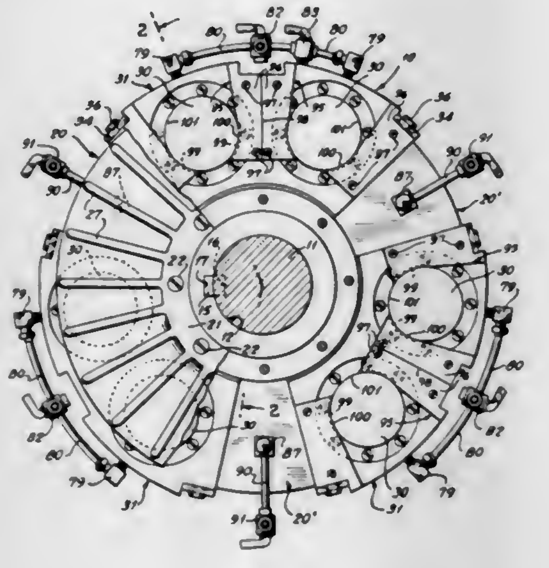
Mark C. S. Barnard, Solihull, England, assignor to The Rover Company Limited, Solihull, England
Filed Nov. 12, 1964, Ser. No. 410,449
Claims priority, application Great Britain, Nov. 27, 1963, 46,804/63
1 Claim. (Cl. 192—41)

A rotary regenerative heat exchanger including a rotor and means for rotating said rotor, said means comprising an annular driving member of a material having a considerably higher coefficient of expansion than that of the material of the rotor and arranged substantially coaxially around the rotor, there being an annular groove in at least one of the adjacent circumferential surfaces of the rotor and the driving member, and torque-transmitting means positioned within said annular groove, wherein the improvement comprises the torque-transmitting means being an annulus formed from at least one portion of resilient strip material of substantially uniform thickness and of width, in the axial direction of the rotor, substantially equal to the axial width of the groove and formed throughout the length of the strip with transverse corrugations, of which the radially-inner and outer crests engage the outer circumferential surface of the rotor and the inner circumferential surface of the driving member, each corrugation being so inclined to the truly radial direction that the radially-inner crest thereof precedes the next adjacent radially-outer crest in the intended direction of rotation of the rotor.



3,311,205
FRICTION COUPLING MECHANISM

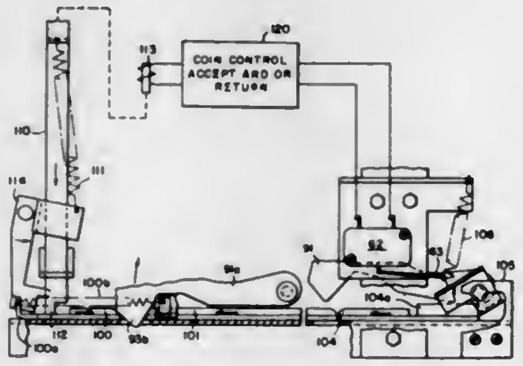
Donald F. Suppes, Wyckoff, and Edwin J. Montalvo, Hackensack, N.J. (both % Montalvo & Co., Inc., 379 Union St., Hackensack, N.J. 07606)
Filed Feb. 15, 1966, Ser. No. 527,578
6 Claims. (Cl. 192—70)



1. A mechanism for selectively frictionally coupling two relatively rotatable bodies, comprising two parallel friction plates fixedly connected to a first one of said bodies transverse to the axis of relative rotation of said bodies, means connected to the second of said bodies and carrying at least two sets of separate friction members, the friction members of one of said sets being angularly spaced about, and spaced radially outwardly of, said axis, and confronting a face of one of the friction plates, the friction members of the other of said sets being angularly spaced about, and spaced radially outwardly of, said axis, and confronting a face of the other of the friction plates, means for simultaneously thrusting the friction members into contact with the faces of the friction plates which they confront, and means on the second of said bodies for positively engaging and guiding the friction members for travel toward and away from the friction plates.

3,311,206
VENDING MACHINE AND CHECK CONTROL APPARATUS THEREFOR

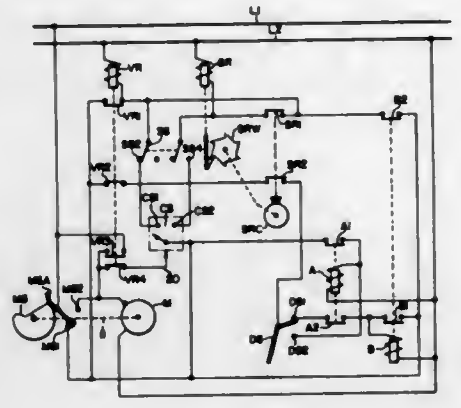
Raymond R. Hamel, West Springfield, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 28, 1965, Ser. No. 451,580
6 Claims. (Cl. 194—2)



1. A check controlled vending machine comprising, check receiving and returning control means, a magazine having a plurality of respective article storage column structures, a plurality of respective article vending release mechanisms for each of said column structures mounted on said magazine to be operated to release a stored article from respective ones of said column structures, a plurality of aligned interlock slides mounted on said magazine and having normal positions and slidably movable in either of two opposite directions from their normal positions along a path in bridging relation to all of said release mechanisms, a plurality of interlock slide operating levers each associated with a respective one of said release mechanisms and mounted on said magazine to be movable upon operation of each release mechanism to engage selected ones of said slides to move one or more of said slides in one of said opposite directions and simultaneously move the remainder of said slides in the other of said opposite directions, the arrangement of said levers and said slides together with said release mechanisms being such as to prevent movement of more than one lever and operation of more than one mechanism so long as the slides are moved from their normal positions upon operation of any one of said release mechanisms, means responsive to the movement of at least one of said slides from the normal position to a selected one of said opposite directions to operate said check control means to return checks deposited while any one of said release mechanisms are operated, latch means mounted on said magazine to have a normal position preventing movement of said slides in the other one of said opposite directions to thereby prevent operation of any of said release mechanisms, means controlled by said check control means to move said latch means to an operated position to permit movement of said slides to the other one of said opposite positions and thereby allow operation of one of said release mechanisms, and means responsive to movement of one of said slides to the other one of said opposite positions to return said latch means to its normal position.

3,311,207
VENDING MACHINE

Knud J. Helsing, Longmeadow, and John E. Kalista, Chicopee Falls, Mass., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 29, 1965, Ser. No. 505,718
10 Claims. (Cl. 194—10)

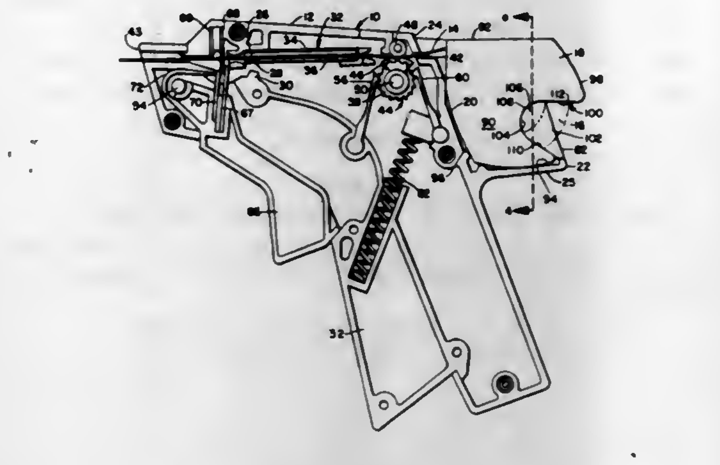


1. A coin controlled vending machine for vending an article upon collection of a first coin amount and for vending a predetermined plurality of articles upon collection of a second coin amount comprising, a source of electric power, an electric motor driven vending means operable through a cycle of operation to vend a single article, a coin responsive switch movable from a normal position to a first position upon collection of a first coin amount and to a second position upon collection of a second coin amount, a vend relay connected in circuit with said source and said motor to energize said motor for a cycle of operation each time said vend relay is energized, circuit means responsive to the operation of said motor for each cycle to deenergize said vend relay, first circuit means including said coin switch and said vend relay for energizing said vend relay when said coin switch is moved to said first position and for returning said coin switch to its normal position whereby to operate said motor for a single cycle to vend a single article, and second circuit means including said coin switch and said vend relay for energizing said vend relay when said coin switch is moved to said second position and for returning said coin switch to normal and for thereafter repeatedly reenergizing said vend relay after the completion of each cycle of operation of said motor for a predetermined number of cycles to thereby vend a predetermined number of articles.

3,311,208
MOUNTING MEANS FOR MAGAZINE SUPPLY IN EMBOSSING TOOLS

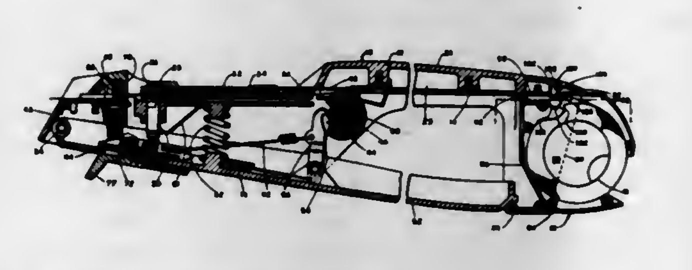
Dane H. Pedersen, Moraga, Calif., assignor to Dymo Industries, Inc., Emeryville, Calif., a corporation of California
Filed June 7, 1965, Ser. No. 461,751
4 Claims. (Cl. 197—6.7)

1. In combination, a tool for embossing strip material wherein a strip of embossable material is advanced along a fixed path through the body of the tool from a strip supply located in the body toward embossing means in the body, a socket in the body, a magazine containing said supply and received within the socket, said magazine including at least one slot extending from an open mouth to an arcuate root, at least one protuberance extending from the body into said socket and having an arcuate shoulder complementary to said root for passing through said mouth and being seated at said root for cooperatively engaging the root to locate and secure the magazine within the socket, said socket having a configuration complementary to the configuration of the magazine and the magazine being rotatable between an intermediate position wherein threading of the strip material into the body is facilitated and a final operating position while secured within the body with the protuberance being seated at the root in each of the intermediate and final positions.



3,311,209
EMBOSSING TOOLS AND MAGAZINE SUPPLIES THEREFOR

Dane H. Pedersen, Moraga, Calif., assignor to Dymo Industries, Inc., Emeryville, Calif., a corporation of California
Filed Aug. 3, 1965, Ser. No. 476,918
9 Claims. (Cl. 197—6.7)



1. In a combination including

a tool for embossing strip material wherein a strip of embossable material is advanced through the body of the tool from a coiled strip supply located in the body along a fixed path generally perpendicular to the axis of the coiled strip supply toward embossing means in the body and is selectively retracted back into the supply; and

a magazine containing said supply and received within socket means in the body;

means for precluding inadvertent removal of the magazine from the socket means as a result of the advancement and retraction of the strip material, said means comprising

means defining at least one slot in the magazine extending from an open mouth past a constricting means and then past an enlarged seat and finally to a root defined by a cut-out area at the portion of said enlarged seat which is furthest from said mouth, said constricting means being resiliently dilatable in a direction generally perpendicular to the axis of the coiled strip supply by virtue of the cut-out area forming the root and the spacing of the constricting means from the root; and

means defining at least one protuberance extending into the socket means from the body to an extremity and extending into the slot and including an enlarged portion complementary to the configuration of said seat and having a width greater than said constricting means for being admitted through said mouth and said constricting means into said seat by dilation of said constricting means in said direction generally perpendicular to the axis of the coiled strip supply, said enlarged portion of said protuberance contacting said seat along the perimeter thereof, and the extremity of said enlarged portion of the protuberance being spaced from said root by the area of said cut-out area defining said root to thereby locate and secure the magazine within the socket means.

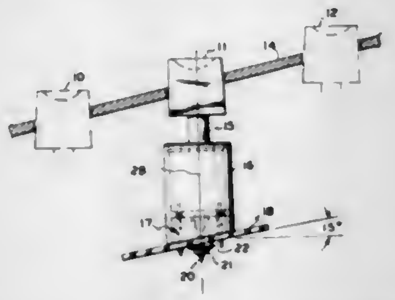
3,311,210

SLOPING PANEL KEYBOARD MOUNT

Peter A. Peroni, Pottstown, Pa., assignor to Navigation Computer Corporation, Norristown, Pa., a corporation of Pennsylvania

Filed Oct. 12, 1965, Ser. No. 495,229

2 Claims. (Cl. 197—98)



1. An assembly comprising in combination, an elongated housing encompassing a switch manually operable by a member moving axially within the housing, a bottom portion on the housing slanted at an angle in the order of 15° from the axis of the housing, a stud extending axially beyond the bottom portion of the housing, a further alignment lug extending from the bottom portion of the housing, a panel with apertures therein registering with the stud and alignment lug of each of a plurality of said housings permitting the stud to extend therethrough and having further alignment apertures for each housing assembly, a mounting washer with a rectangular planar metal member having a wedge-like member bent therefrom substantially normally at a distance corresponding with the slope of said housings to engage said panel and hold the planar member normal to the axis of said housing, said washer having an aperture in registration about said stud, and a further alignment finger extending from said planar member into registration with one of said further apertures in said panel to hold the washer conjointly with said stud and said wedge member in an immovable position, and a fastener about said stud holding said lug in place on the opposite side of said panel from said housing wherein the panel is a printed circuit board including a conductor positioned for receiving said washer alignment finger in conductive engagement, and a conductive connector in said keyswitch is connected to said stud, to thereby provide one conductive connection between said switch and the conductor on said panel.

3,311,211

KEYBOARD SEQUENCE DISCRIMINATOR WITH DIFFERENT CODES FOR UPPER AND LOWER CASE

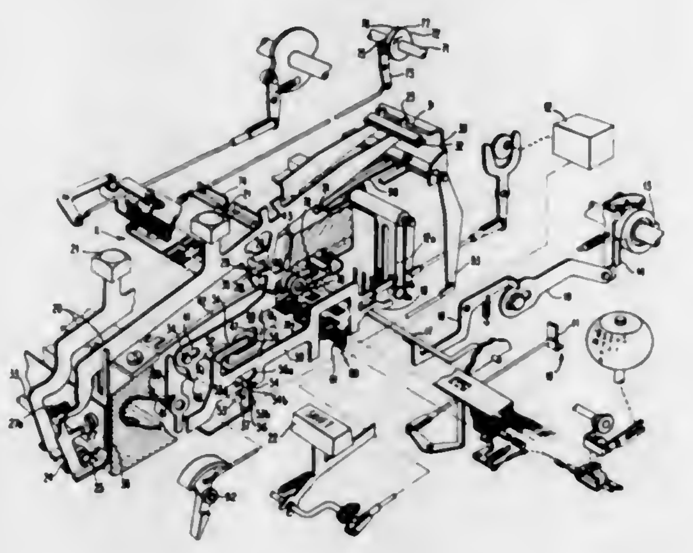
John O. Schaefer, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 14, 1966, Ser. No. 520,774

10 Claims. (Cl. 197—98)

1. In a keyboard for entering data into a cyclically operable data utilization mechanism comprising: a plurality of manually operable keybuttons movable individually from a normally non-operative position to an operative position, an input control mechanism associated with each keybutton for transferring keybutton data to the utilization mechanism, each control mechanism comprising: a control link, means supporting the link for movement along two substantially different ordinates, means normally retaining the link in a non-operative position, the link being normally operatively connected to its associated keybutton for movement along one of the ordinates to an operative position upon operation of said associated keybutton, means for latching the link in its operative position upon movement thereto, the latching means being releaseable upon predetermined movement of the link along the other of the ordinates, and means operative at a predetermined time in the cycle of the utilization mechanism for moving an operative link along the other ordinate and including force transfer means between the utilization mechanism and each of the links comprising:

an independent elongated leaf spring extending substantially in the direction of the other ordinate, said leaf spring being cyclically moveable along a path extending lengthwise thereof, and
a projecting corner portion formed on the control link defining a force receiving edge surface that is substantially normal to the other ordinate, said corner portion lying normally out of the path of said leaf spring when the link is in its non-operative position and lying in the path of said leaf spring when the link is in its operative position.



3,311,212

ELECTRIC FEED DEVICES

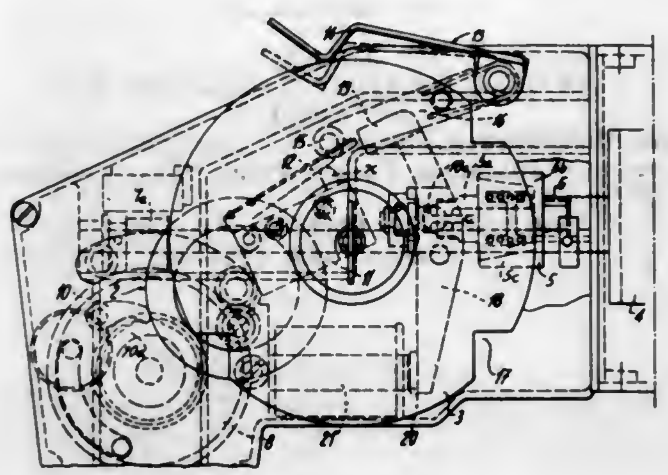
Erik Anders Gustav Hedenström, Bromma, Stockholm, Sweden, assignor to SIS S.A., Geneva, Switzerland, a corporation of Switzerland

Filed July 13, 1964, Ser. No. 382,296

Claims priority, application Sweden, July 22, 1963, 8,091/63

2 Claims. (Cl. 197—133)

1. In a web-manipulating machine, the combination of electrically operated means including web-feeding means for feeding the web lengthwise past an operating station, a control circuit for said electrically operated means, a rotary program disc having at least one recess in the periphery thereof, feeler means, means for rotating the disc past said feeler means in synchronism with the feeding of the web whereby said recess arrives at the feeler means at intervals corresponding to the feeding of a corresponding length of the web past the operating station, a switch cooperating with said feeler means, said switch having a contact and having an operating member for moving said contact between open and closed switch positions, said switch being provided in the control circuit and operable in dependence on the movement of the feeler means into the recess to stop the feed, a rocker arm which in one position maintains said operating member in its position in which the feed is stopped and which in another position releases said operating member, spring means urging the rocker arm toward said one position, and an electromagnet disposed in the control circuit and acting opposite to said spring means, when energized, with a force great enough to move the rocker arm to said another position.



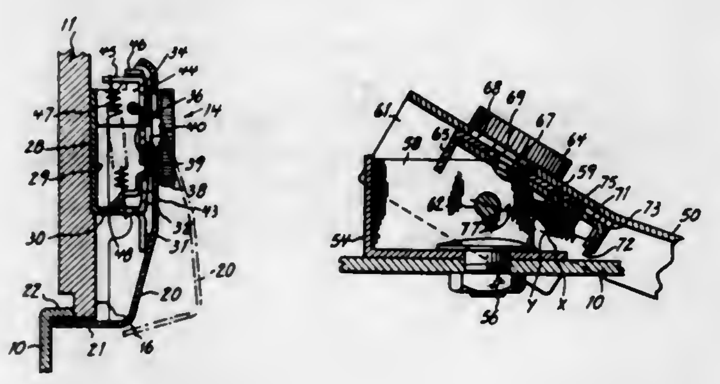
3,311,213

LATCH DEVICES

Alfred E. Amos, Fairfield, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 28, 1964, Ser. No. 348,216

7 Claims. (Cl. 197—186)



1. A latch device of the class described comprising
(a) a support member,
(b) a lever pivotally mounted on said support member for movement between operative and inoperative positions,
(c) a latch plate slidably mounted for movement with movement of said lever,
(d) stop means for said latch plate,
(e) spring means urging said latch plate into engagement with said stop means to maintain said lever in operative position,
(f) means for releasing said latch plate to provide for movement of said latch plate out of engagement with said stop means to allow said lever to move to said inoperative position,
(g) means for connecting said release means to said latch plate,
(h) a lug member operably associated with said connecting means, and
(i) a flange on said support member,
(j) said lug member being movable in one direction by said release means into engagement with said flange in said operative position of said latch plate to prevent slidable movement of said release means to release said latch plate.

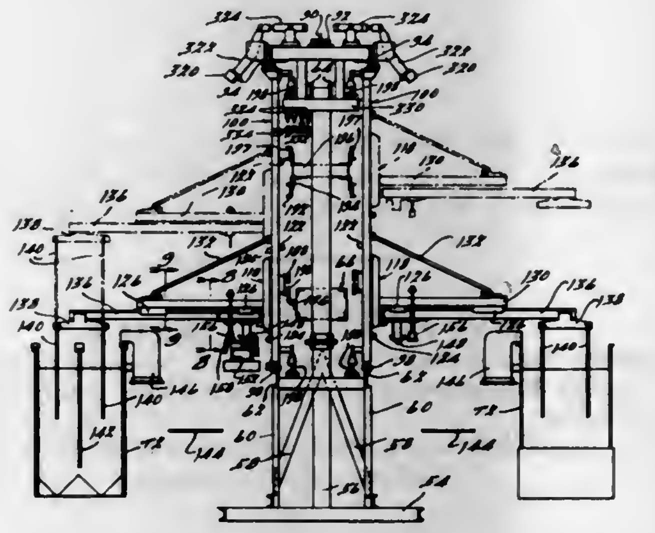
3,311,214

CONVEYING MACHINE

John V. Davis, Grosse Pointe Farms, Guy A. Cummings, Jr., Dearborn, Richard C. Kayser, Mount Clemens, and Giacomo R. Zambon, Warren, Mich., assignors to The Udylite Corporation, Warren, Mich., a corporation of Delaware

Filed Oct. 6, 1964, Ser. No. 401,836

19 Claims. (Cl. 198—19)



1. A conveying machine comprising a frame, a pair of vertically spaced rails on said frame, a plurality of work carriers guidably mounted and independently movable along said rails, each of said work carriers including a carriage frame extending between said rails and movably mounted thereon, a carriage movably and guidably mounted on said carriage frame for movement therealong between a raised position and a lowered position, and a work-supporting arm on said carriage and extending laterally therefrom; an elevator chassis movably mounted on said frame for movement to and from a raised position and a lowered position, coacting means on said chassis and each said carriage for engaging and moving certain ones of the carriages to and from said raised and said lowered position in response to up and down movement of said chassis, reciprocable pusher means for engaging and intermittently and independently advancing said work carriers along said rails when said chassis is in said raised position, and locking means coacting with said pusher means for engaging and locking each of said work carriers in a fixed position along said rails at the completion of the advancing movement thereof.

3,311,215

ARTICLE LOADING ASSEMBLY

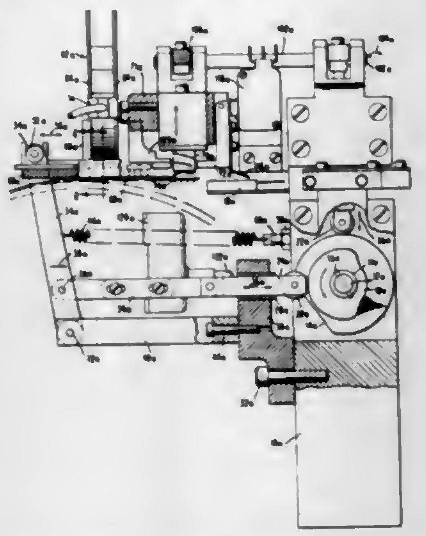
Kendall Clark, Poughkeepsie, and Frank L. De Turris, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 27, 1965, Ser. No. 459,384

6 Claims. (Cl. 198—24)

1. An article loading assembly comprising, in combination, a perforated conveyor belt, chute means for successively loading pin loaded articles onto a support member, pusher means cooperatively associated with said support member for successively pushing said pin loaded articles in the direction of said perforated conveyor belt, article holding and positioning means for retaining each

of said moving pin loaded articles and positively pushing each of said pin loaded articles onto said perforated conveyor belt with the pins being inserted through the perforations in said perforated conveyor belt, and driving means for operating both said pusher means and said article holding and positioning means in synchronism.

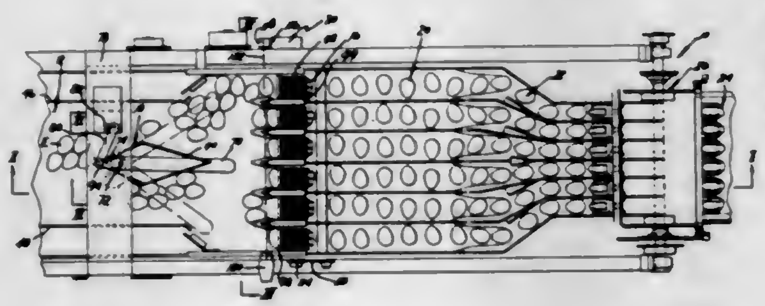


3,311,216
EGG PACKING APPARATUS

Leonard Max Jones, Ottumwa, Iowa, assignor to Barker Poultry Equipment Co., Ottumwa, Iowa, a corporation of Iowa

Filed Oct. 4, 1965, Ser. No. 492,529

7 Claims. (Cl. 198—30)



1. In an egg packing apparatus having an infeed conveyor and a group advancement conveyor, an egg grouping means operable therebetween, comprising: a plurality of a predetermined number of egg receiving chambers; egg passage controlling gate means for said chambers; power means operably connected to operate said gate means; photoelectric trigger means operatively associated with said power means to trigger actuation thereof; a plurality of egg sensors for said chambers, shiftable with egg entry; and a plurality of photobeam blocking elements individually operated by respective ones of said sensors, and when all operated, allowing actuating of said trigger means for opening said gate means by said power means, causing simultaneous passage of the predetermined number of eggs.

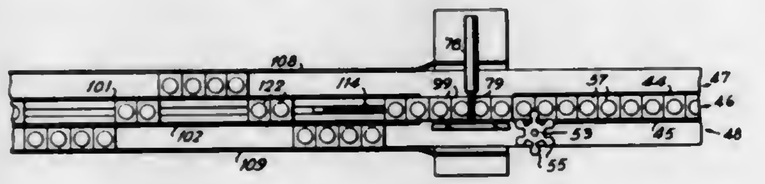
7. In an egg handling apparatus, egg conveyor means including egg accumulator means positioned to receive eggs from upstream portions of said conveyor means, and egg row forming means positioned generally transversely with respect to said conveyor means and said accumulator means to receive eggs generally from said egg accumulator means and including a predetermined number of egg receiving pockets; egg distributor means adjacent said accumulator means and said egg row forming means to distribute accumulated eggs transversely to said pockets; said distributor means comprising an elongated egg pushing arm oriented generally along said conveyor means, transversely centrally thereof, and pivotally mounted on a vertical axis on its upstream end; means to sweep said arm in an oscillatory path back and forth of said accumulator means to distribute eggs laterally to all of said pockets; an egg guard fixedly mounted above said arm; said arm having a diamond shaped configuration, with two legs convergent upstream and two legs convergent downstream with respect to said conveyor means to prevent egg crushing during arm oscillation.

3,311,217
ARTICLE-HANDLING METHOD AND APPARATUS

Fred Muhlenbruch, Flushing, N.Y., assignor to Dairy Conveyor Corporation, College Point, N.Y., a corporation of New York

Filed Sept. 23, 1965, Ser. No. 489,584

3 Claims. (Cl. 198—31)



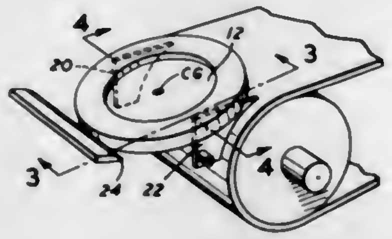
1. Article-handling apparatus comprising a conveyor mounted for movement along a predetermined path and having a longitudinally extending primary section and a longitudinally extending side section alongside said primary section, sensing means adjacent to said conveyor for sensing articles passing along the primary conveyor section, displacing means adjacent to said conveyor downstream of said sensing means and movable laterally across said primary section to displace a quantity of articles laterally from said primary section to said side section, and operating means connected between said sensing means and said displacing means for operating the latter resposive to the passage of a predetermined number of articles past said sensing means, said displacing means being sized to laterally displace a quantity of articles less than the number sensed by said sensing means.

3,311,218
LID ORIENTATION MECHANISM

George H. Lederer, 75 Gordon Road, Willowdale, Ontario, Canada

Filed July 15, 1965, Ser. No. 472,198

2 Claims. (Cl. 198—33)



1. Means for selectively handling circular articles having wide opposite sides relative to the thickness thereof and having an asymmetric distribution of raised and lowered portions on said opposite sides, comprising:

means for causing such articles to travel on one or the other of said sides in a direction along a path, said direction and path defining a down travel end and for supporting such articles during travel along said path;

a pair of supports located at the down travel end of said path and spaced transversely to the travel direction;

each support extending in the down travel direction to down travel ends arranged so that the line joining said ends defines the discharge end of said path;

said travel causing means and said supports being arranged so that such articles are free to tip under gravity when the centre of gravity of such articles passes said line;

said supports being arranged and shaped to contemporaneously support an article approaching the discharge end of said path;

with each support arranged and shaped to contact such article at spaced locations during such contemporaneous support where the spaced locations have different relative displacement in the thickness direction on opposite sides of such article;

whereby such article will assume differing vertical levels and orientations as the centre of gravity passes said line depending on which of said opposite sides is downwardly facing;

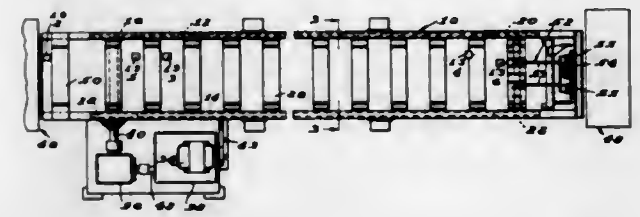
and means located to discriminate between lids of such different orientation whose centre of gravity has passed said line.

3,311,219
SHUTTLE CONVEYOR

Walter G. Boehm, Birmingham, Mich., assignor to Jervis B. Webb Company, a corporation of Michigan

Filed Mar. 14, 1966, Ser. No. 534,050

10 Claims. (Cl. 198—110)



1. A shuttle conveyor for accumulating a bank of workpieces and successively delivering workpieces to a work station comprising:

a plurality of workpiece supports;

conveying means on which the workpiece supports are mounted in spaced relation;

reversible driving means aperatively connected to the conveying means for moving the conveying means and workpiece supports in a forward direction from a loading station to an unloading station, and in a reverse direction toward the loading station;

control means including:
  - (a) a loading station sensing element responsive to the presence of a workpiece on a workpiece support at the loading station,
  - (b) an unloading station sensing element responsive to the presence of a workpiece at the unloading station,
  - (c) a back station sensing element responsive to the presence of a workpiece on a workpiece support immediately adjacent the loading station,
  - (d) a forward station sensing element responsive to the presence of a workpiece on a workpiece support immediately adjacent the unloading station;

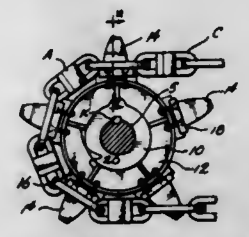
and means connecting the sensing elements and the driving means to cause movement of the conveying means in the forward direction in response to the absence of a workpiece at the unloading station sensing element (b) and the presence of a workpiece at one of the loading station sensing element (a), the back station sensing element (c), and the forward station sensing element (d) until the workpiece is present at the unloading station; and, movement of the conveying means in the reverse direction in response to the presence of a workpiece at the unloading station sensing element (b), the presence of a workpiece at the forward station sensing element (d), and the absence of a workpiece at the back station sensing element (c) until a workpiece is present at the back station sensing element (c).

3,311,220
ADJUSTABLE-PITCH SPROCKET WHEEL

Thomas I'Anson, Bellevue, Wash., assignor to I'Anson Industries, Inc., Seattle, Wash., a corporation of Washington

Filed Nov. 25, 1964, Ser. No. 413,749

12 Claims. (Cl. 198—168)



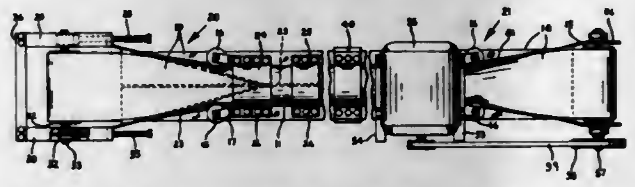
1. A sprocket wheel construction especially adapted for use with a conveyor chain, to maintain said chain during use in predetermined relation to the pitch circle of the teeth of the sprocket wheel, said wheel comprising a disk having sprocket teeth formed integrally therewith, a shoulder outstanding at the sides of each tooth, and a separate wear pad supported upon the radially outer surface of each shoulder for engagement by the chain, the chain-engaging surface whereof is thereby located in predetermined relation to the designed pitch circle of the sprocket wheel's teeth.

3,311,221
TUBE CONVEYOR

Harold H. Burkitt, Portland, and Raymond N. Mickelson, Milwaukie, Oreg., assignors to Plaslastic, Inc., Portland, Oreg., a corporation of Oregon

Filed Sept. 17, 1965, Ser. No. 488,012

3 Claims. (Cl. 198—191)



1. A conveyor comprising a tube, a tail asesmbly comprising collar means clamped on one end of said tube, a tail bracket on said collar maens extending beyond said end of said tube, a flat belt pulley mounted on said bracket, a belt on said pulley, said belt having an upper reach trained through said tube and arranged to slide in the bottom of said tube in trough shape and having a lower return reach underneath said tube, troughing rollers for said belt mounted on said collar means, a motor mount on said collar means on the upper side of said tube, a motor on said mount for driving said belt pulley, a head assembly comprising collar means clamped on the opposite end of said tube, troughing rollers for said belt mounted on said last collar means, a head bracket on said last collar means extending beyond said opposite end of said tube, and a flat idler pulley for said belt mounted on said head bracket.

3,311,222
CONVEYOR

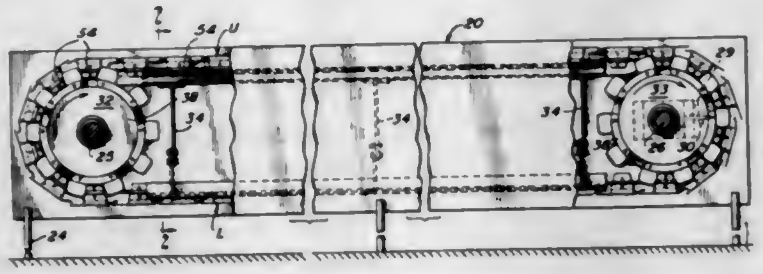
Louis L. Crawford, Chicago, and Thor E. Christensen, Maywood, Ill., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

Filed May 20, 1965, Ser. No. 457,335

9 Claims. (Cl. 198—196)

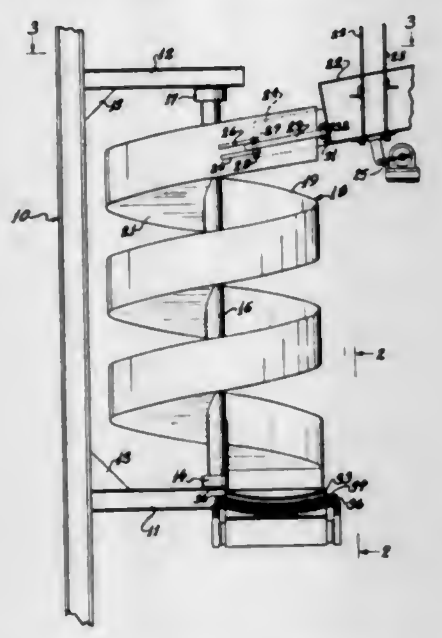
1. In a conveyor: a frame, sprockets rotatably mounted at each end of said frame, each sprocket having an annular groove, a continuous cable trained over said opposed sprockets at each side of said frame in their respective grooves, upper and lower longitudinally extending supports at each side of said frame, an upper support in a generally central zone between said upper side supports, each of said supports having a wear strip at its upper

surface, said wear strips each having a relatively low coefficient of friction, load carrying members extending transversely of said frame, each load carrying member having a planar portion and having a marginal portion underlying an adjacent load carrying member, each of said marginal portions including a first flange having a planar upper surface which supports an adjacent load carrying member, a first web joining said first flange and said planar portion and being dimensioned so that the upper surface of adjacent planar portions lie in a plane, a



second flange having a lower surface in a plane generally parallel to and below the plane of said upper surface of said first flange for slidable engagement with said wear strips of said upper support in said generally central zone, a second web joining said first and second flanges, and brackets secured to the undersides of said load carrying members and said cables, each bracket including a flange having a bearing surface for sliding over said wear strips of said lower and upper side supports, respectively, said brackets being profiled to engage said teeth of said sprockets.

3,311,223
MATERIAL HANDLING APPARATUS
Davis B. Robbins, P.O. Box 2664, Birmingham, Ala. 35202
Filed Oct. 23, 1965, Ser. No. 503,809
1 Claim. (Cl. 198—220)



In apparatus for transferring materials from one elevation to a lower elevation,

(a) a generally vertical support member mounted for oscillating movement about a vertical axis,

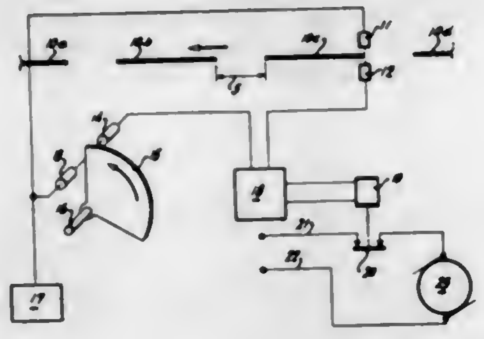
(b) a vertically extending helical conveyor carried by said support member in position for the upper end of said helical conveyor to receive materials at said one elevation and for the lower end of said helical conveyor to discharge materials at said lower elevation,

(c) a reciprocatory conveyor disposed to deliver materials to the upper end of said helical conveyor,

(d) an arm operatively connected at one end to said helical conveyor outwardly and radially of the vertical axis about which said helical conveyor oscillates,

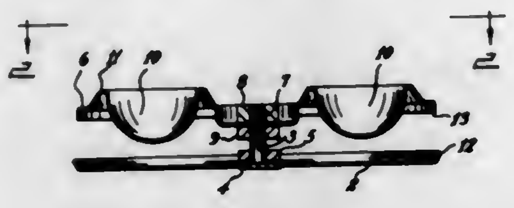
(e) means operatively connecting the other end of said arm to said reciprocatory conveyor to impart reciprocatory motion to said helical conveyor in a horizontal plane about said vertical axis to convey materials down said helical conveyor to said lower elevation.

3,311,224
ARTICLE-SPACING INSPECTION SYSTEM
Harold K. King, Los Angeles, Calif., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Nov. 29, 1963, Ser. No. 326,748
20 Claims. (Cl. 198—232)



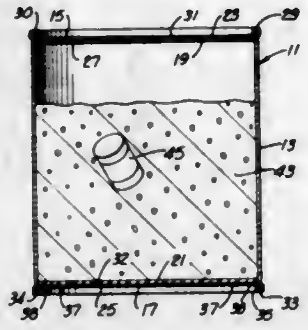
1. A method for inspecting the spacing between adjacent articles of a plurality thereof being advanced in spaced-apart succession along a predetermined path to detect any significant change from a predetermined norm in the spacing between such adjacent articles, comprising the steps of measuring the spacing between adjacent articles as they are advanced along such path, comparing such measured spacing between adjacent articles with a predetermined reference standard to determine the existence of any deviation of each such measurement from such standard, and controlling the advancement of the articles in response to such comparisons so as to terminate article advancement whenever there is a significant deviation of a measured spacing between adjacent articles from such reference standard.

3,311,225
PACKAGE AND DISPENSER ASSEMBLY
Rollo J. Kidd, 3662 Lewis Road, Cleveland, Ohio 44124
Filed Feb. 27, 1964, Ser. No. 347,747
4 Claims. (Cl. 206—44)



1. A combination package and dispenser assembly comprising a cover plate with a central, oversized, fixed slit stud projecting therefrom, a second plate with a central opening removably mounted in locking engagement on said stud, and a plurality of container receptacles in said second plate, said second plate being capable of being mounted on said stud with either surface thereof adjacent said cover plate, whereby said container receptacles can be alternatively presented in a dispensing or packaged position.

3,311,226
ADVERTISING DISPLAY CAN
Wesley H. Oliver, 319 S. 2nd St., Las Vegas, Nev. 89101
Filed Feb. 16, 1965, Ser. No. 433,111
7 Claims. (Cl. 206—47)



1. In an advertising display container for a novelty item and pourable material and adapted to admit light to display the novelty item, the combination of:

side walls forming an enclosure with first and second opposed open ends for enclosing the novelty item and the pourable materials;

a first flat opposed end wall secured to said first opposed open end and having an inner surface, said first opposed end wall having a minute, generally centrally positioned peephole and being imperforate and completely closing said first opposed open end except for said peephole;

a second flat opposed end wall secured to said second opposed open end to form a lateral edge and having an inner surface, said second opposed end wall having a plurality of substantially evenly spaced, small, light-admitting apertures located slightly inwardly from said lateral edge, each of said apertures being positioned inwardly from said lateral edge a substantially equal distance;

a first flat, transparent, plastic sheet completely covering said peephole and adhesively secured to the inner surface of said first opposed end wall in contiguous sealing relation therewith; and

a second flat, transparent, plastic sheet completely covering said plurality of light-admitting apertures and adhesively secured to the inner surface of said second opposed end wall in contiguous sealing relation therewith, whereby rotating said container light will pass through at least some of said light-admitting apertures, said second and first flat transparent plastic sheets, and said peephole to render at least a portion of the novelty item visible through said peephole at some rotational position of said container.

3,311,227
UNITIZED STAMP SET
Paul A. David, 8845 Pierce Drive, Buena Park, Calif. 90620, and Herman L. Lenz, 930 S. State College Blvd., Anaheim, Calif. 92805
Filed Feb. 1, 1966, Ser. No. 524,236
1 Claim. (Cl. 206—47)

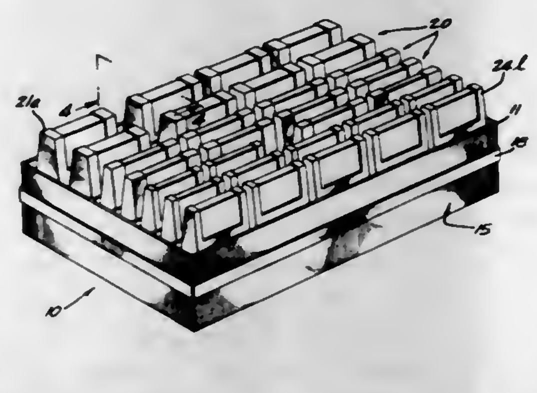
A unitized stamp set comprising, in combination:

an integrally formed, substantially rectangular box including a horizontal bottom wall, upstanding end and side walls, and a plurality of divider walls rising vertically from said bottom wall to the same height as said end and side walls, said divider walls being interconnected with said end and side walls and with each other so as to provide a plurality of separate, substantially rectangular stamp-holding compartments, at least one of said compartments extending the full length of said box and being of sufficient width to accommodate only a single row of stamps;

a plurality of flexible ink reservoir pads, one disposed in the bottom of each of said compartments;

a plurality of stamps, at least one being disposed in each of said compartments, each of said stamps having a print-bearing portion on its lower extremity which normally rests upon the corresponding one of said ink reservoir pads;

each of said stamps being of a substantially rectangular block configuration and having sloping side walls which incline towards each other so that the upper portion of said stamp is narrower than the bottom portion, and having recesses on the upper portions of said side walls so as to provide a finger grip, the height of said divider walls, the thickness of said ink reservoir pads, and the height of said stamps below said recesses being such that said finger grips are disposed above the tops of said divider walls;



and an integrally formed lid having downwardly depending side and end walls whose vertical height is approximately equal to the height of said box walls and divider walls, said lid having an interior shoulder formed on the periphery of its side and end walls which is adapted to engage the side and end walls of said box when the same is closed by said lid, said shoulder of said lid being also adapted for engaging the peripheral edge of the undersurface of said bottom wall of said box when said lid is inverted and placed beneath said box for supporting the same;

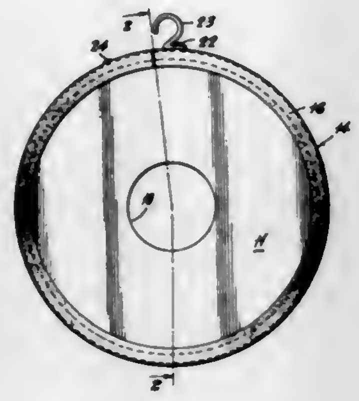
said plurality of stamps including stamps of different widths, and said box having compartments of different widths which receive respective ones of said stamps;

said one compartment of said box receiving a row of identical stamps which are of such width as not to permit convenient finger gripping of the stamp within the divider walls of said one compartment, but being conveniently removable by use of said finger grips.

3,311,228
TAPE REEL PROTECTIVE CLOSURE AND LATCH
Thomas S. Kulka, 200 Film Bldg., 2188 Payne Ave., Cleveland, Ohio 44114
Filed Oct. 11, 1965, Ser. No. 494,791
7 Claims. (Cl. 206—52)

1. A tape reel protective closure and latch for application to a conventional tape reel having a hub and spaced flanges for retaining tape wound on the hub, said closure and latch comprising a strap of flexible yieldable material and of a length to extend around the periphery of the flanges of said reel, said strap having a body portion of a width to be tightly received between said flanges, inwardly projecting radial flanges on opposite side edges of said strap, said radial flanges being spaced from said body portion to provide grooves for receiving the peripheral edges of said reel flanges, said body portion having a longitudinal opening therein at least at

one end of said strap, a projecting tab on the opposite end of said strap of a length and size to be received in said opening when said strap is disposed on a reel, said tab being of relatively stiff material, and cooperating means on said strap and tab for releasably securing said strap on a reel, said radial flanges being bevelled to facilitate application of said closure to a reel, one of said radial flanges projecting inwardly a greater distance than the other radial flange to further facilitate application of said closure to a reel.

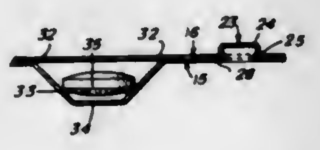


3,311,229
TABLET PACKAGE

John H. Troll, Waban, Mass., and Leonard A. Kaufman, Brooklyn, N.Y., assignors to National Patent Development Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 21, 1965, Ser. No. 426,851

4 Claims. (Cl. 206—56)



1. A package for tablets or the like, comprising two sheets of material having uniform width, at least one of said sheets having a plurality of regularly spaced rows of depressions formed therein for receiving tablets, at least one of said sheets being provided with a plurality of spaced protuberances formed therein, the other of said sheets being provided with means for snap engagement with each of said protuberances for releasably securing said sheets in face to face relationship, both of said sheets being provided with coincidental spaced transverse lines of weakening disposed between rows of said tablet receiving depressions and defining discrete areas of the sheets, at least two of said protuberances being located in each said area to permit separation of predetermined lengths of said sheets while maintaining said face to face engagement.

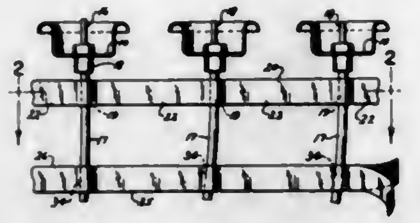
3,311,230
TAPED AEROSOL VALVE ASSEMBLY

Roman Francis Wonneman, 9621 Harding Ave., Baltimore, Md. 21234

Filed Oct. 22, 1965, Ser. No. 500,561

6 Claims. (Cl. 206—56)

1. A bulk article of aerosol container closures comprising, in combination: a chain assemblage of aerosol closures each comprising a container closure cup having an upper axially superposed valve body and a lower axially pendant pliable plastic dip tube arranged upright in spaced apart relation in a row with an upper portion of each dip tube between two strips of adhesive tape extending longitudinally along the row, and a portion of one strip adhesively joined together in a single plane with a portion of the other strip in intermediate spaced on diametrically opposite sides of each one of the tubes longitudinally of the row and with semicircular loops of each strip partially surrounding and adhesively holding a diametrical half of the portion of each one of the dip tubes between them.

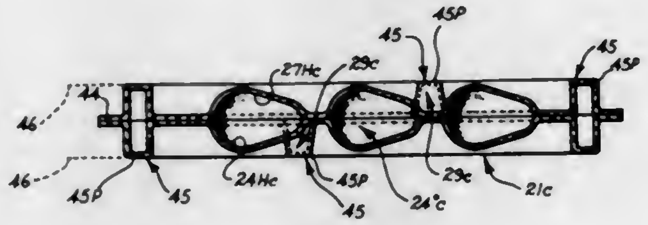


3,311,231
PROTECTIVE PACKING APPARATUS, AND FASTENER MEANS, FOR EASILY DAMAGED OBJECTS

Edgar English, Jr., Edwards, Calif.
(% P.O. Box 169, Rosamond, Calif. 93560)

Filed Oct. 18, 1965, Ser. No. 497,366

10 Claims. (Cl. 206—65)



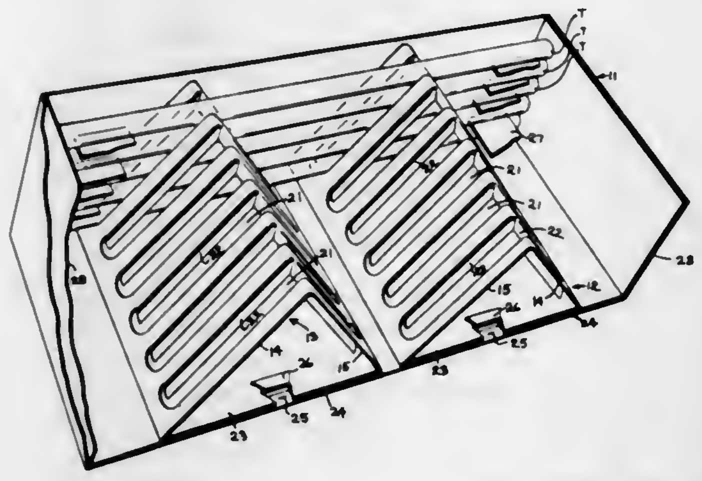
1. Protective packing apparatus, and fastener means, for easily damaged objects, comprising: container means taking the form of at least two closely adjacent area-coextensive protective pad and cover means having at least one pair of opposed mating aligned recess means portions formed therein, said opposed mating recess means portions cooperating with each other to define at least one complete recess means, with said recess means being adapted to receive and physically protectively support therein a substantially similarly shaped and sized, easily damaged object, with said mating recess means portions being in surface contact with at least parts of the surface area of said easily damaged object in a manner such as to firmly and protectively support same within said recess means in nested relationship with respect to the exterior of said container means, a first one of said protective pad and cover means comprising a corresponding wall portion of said container means, a second one of said protective pad and cover means comprising a corresponding oppositely positioned wall portion of said container means, said protective pad and cover means being provided with controllably disengageable positioning and effective support means normally engaging corresponding portions of the opposite protective pad and cover means and effectively maintaining said protective pad and cover means in properly positioned, and supported, aligned registration relationship with respect to each other, with said mating recess means portions in said opposed recess means-defining relationship; and fastening and locking means cooperable with said protective pad and cover means for firmly locking them together in said aligned registration relationship; each of said protective pad and cover means comprising a blank of plastic material formed from an initial sheet thereof into a configuration having a medial-plane, surrounding edge flange and having both exteriorly and interiorly formed portions comprising and defining said recess means portions and having exterior contact surface means effectively defining portions of a flat contact surface plane, each of said protective pad and cover means being formed of a compressible expanded-cell type of foam plastic material comprising a high-efficiency combination thermal insulation means and vibration and shock isolation means.

3,311,232
CONTAINER AND INNER PACKING ELEMENT THEREFOR FOR ELONGATE FRAGILE ARTICLES

John R. Howell, Vineland, N.J., assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed June 3, 1966, Ser. No. 562,035

10 Claims. (Cl. 206—65)



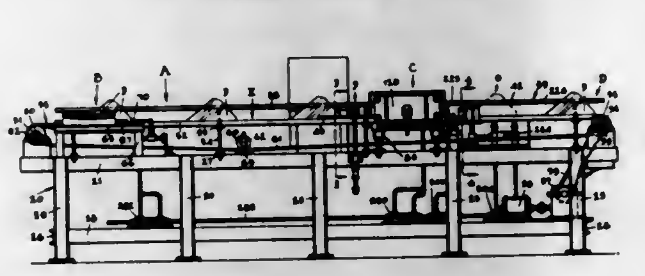
6. A container for elongate fragile articles comprising, in combination: wall means forming a parallelepiped carton; first and second inner packing elements disposed within said carton, each of said elements comprising first and second panels foldably connected along juxtaposed edges spaced above the bottom of the carton and extending from said edges at an angle with respect to one another toward the bottom of said container, a plurality of spaced apart cuts in each of said first and second panels extending generally normally to said juxtaposed edges from spaced apart points therealong through said first and second panels toward the opposite edges thereof, fold lines on opposite sides of each of said cuts and parallel thereto and forming with said cuts a plurality of spaced apart slots in each of said panels and a pair of flanges on opposite edges of said cuts, each of said flanges being folded along said fold line to a position at an angle with respect to the respective panel and extending from that side of the respective panel that faces toward the bottom of the container; means for maintaining the angular relationship between the first and second panels of each of said elements comprising a third panel foldably attached to an opposite edge of one of said first and second panels and extending therefrom to the opposite edge of the other of the first and second panels, a fourth panel foldably attached to the opposite edge of the other of said first and second panels and extending therefrom toward the opposite edge of the one of said first and second panels, said third and fourth panels being disposed parallel and closely adjacent to one another and forming a triangularly shaped tubular body with said first and second panels, said fourth panel extending past the opposite edge of the other of said first and second panels and terminating adjacent a wall of said carton; a fifth panel foldably connected to the edge of the fourth panel along juxtaposed edges and folded along said edges to a position parallel to a plane bisecting the angle between the first and second panels, extending from that side of the fourth panel that faces the juxtaposed edges of the first and second panels and lying closely adjacent to said wall of said carton.

3,311,233
APPARATUS FOR GLASS INSPECTION AND SORTING HAVING CONTOUR SENSING MEANS

William L. Helmbrecht, Toledo, Robert H. Welker, Perrysburg, and Arthur E. Krieger, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Aug. 19, 1964, Ser. No. 390,519

11 Claims. (Cl. 209—73)



1. In an apparatus for inspecting sheets, a pair of aligned checking members having facing surfaces complementary to the surface contours desired on opposite sides of a sheet to be inspected, means for locating said sheet between said surfaces, means for creating relative movement between said members and to resiliently urge one of said facing surfaces toward the other, and means actuated when said movement is less than a predetermined distance to indicate a lack of conformity between a surface of said sheet and the complementary facing surface on one of said members, said indication including the application of a selected color to an area of said sheet.

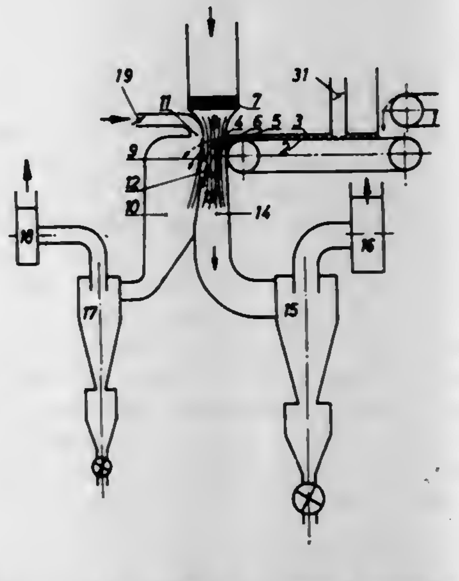
3,311,234
PROCESS AND APPARATUS FOR PNEUMATICALLY SEPARATING SOLID PARTICLES

Hans Rumpf, 12 Hansjakobstr., Karlsruhe, Germany, and Kurt Leschonski, Forchheim, Germany; said Leschonski assignor to said Rumpf

Filed Dec. 17, 1964, Ser. No. 419,013

Claims priority, application Germany, Dec. 20, 1963, R 36,854

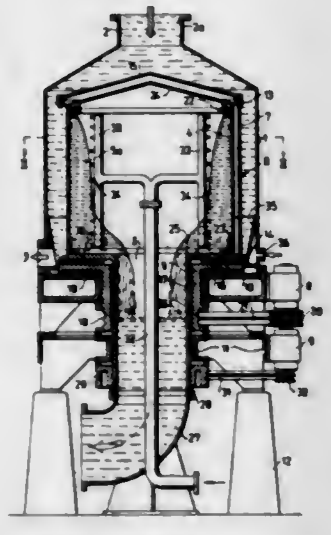
22 Claims. (Cl. 209—137)



12. A device for shifting granular material in a transverse current, comprising, in combination, a projecting device for introducing all the particles of said material

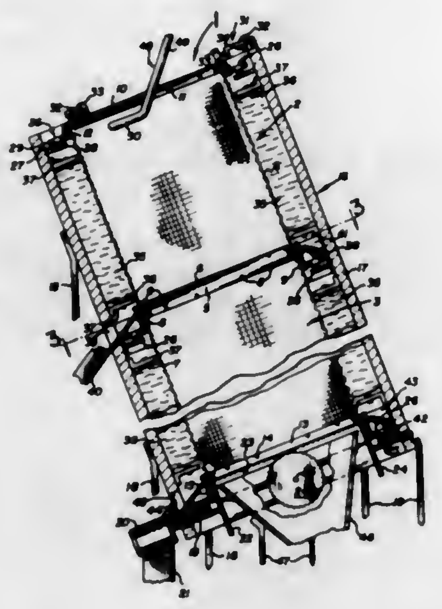
in a thin layer and at a predetermined forwarding velocity into a gaseous current, a flow duct for introducing said current, in the form of a laminar flow core, into a shifting zone where it entrains said particles, at least one coarse-material withdrawal duct which opens upwardly to said sifting zone below said flow duct and in front of said projecting device, said current having a zone of turbulence at the area of said core between said sifting zone and said coarse material withdrawal duct, at least one blade at the inlet edge of said coarse-material duct, said blade being adjustable parallel to the direction of stream lines of said current, and a secondary inlet for introducing additional gas into said zone of turbulence and into said coarse-material duct, said secondary inlet being situated laterally of said flow duct and approximately parallel thereto and having an outlet directed toward said coarse-material duct.

3,311,235
MECHANICAL STRAINERS
Sten E. E. Ahlfors, Asgatan 65, and Bengt O. Lundh, Norrbygatan 6, both of Hedemora, Sweden
Filed Aug. 23, 1966, Ser. No. 574,362
Claims priority, application Sweden, July 16, 1962, 7,928/62
8 Claims. (Cl. 209—270)



1. An apparatus for screening, classifying, dewatering or the like of suspensions of solid particles, such as fibres, comprising in combination a casing, a screen drum having a smooth outer and inner mantle surface mounted in said casing with its axis in a vertical position for rotation about said vertical axis, said screen drum having a central opening at its lower end, inlet means formed by said casing and being operable for supplying suspension to be treated to the outer side of the screen drum at one end thereof, first outlet means formed by said casing and being operable for removing rejected suspension at the opposite end of the screen drum on the same side thereof, second outlet means comprised by said casing and being operative for removing screened suspension from the interior of the screen drum through said central opening, a pulsating member mounted for rotation in said casing coaxially with the screen drum, said pulsating member comprising a plurality of vanes extending substantially axially along the outer side of the drum, first drive means operable for rotating said screen drum at a speed sufficient to create a rotating ring of screened suspension on the inside of the drum, and second drive means operative for rotating said pulsating member with respect to said casing and to said screen drum, setting up periodically in the suspension adjacent the outer surface of the drum suction forces at consecutive longitudinal zones of the screen surface, thereby to generate a periodic back-flow of suspension through the screen.

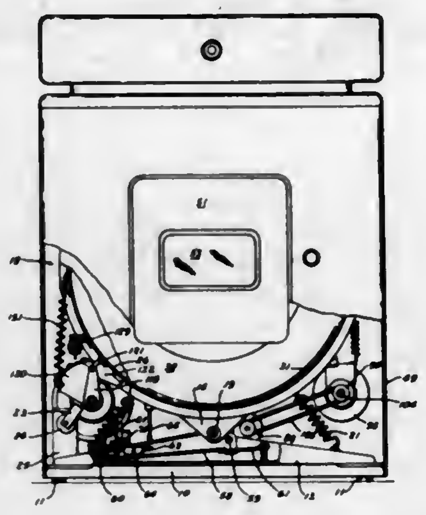
3,311,236
METHOD AND APPARATUS FOR SCREENING SOLIDS
Horace C. Hurst, 321 Malzahn St., Saginaw, Mich. 48602
Filed July 31, 1963, Ser. No. 298,837
19 Claims. (Cl. 209—292)



13. Screening apparatus comprising a generally cylindrical screen member having a smooth inner surface and having openings of predetermined size therein; means mounting said screen member for rotation about an axis inclined to the vertical; means for introducing onto the inner surface of said screen member adjacent its upper end particulate material at least some of which is of such size as to pass through said openings; means for rotating said screen member about said axis at such speed with relation to the particle weight of said material as to cause said material to traverse the inner surface of said screen member in a helical path about said axis whereby the material of such size as to pass through said openings may do so; a tubular member enclosing said screen member for receiving material passed through said openings; and collecting means in communication with said screen member and with said tubular member respectively for collecting the material retained within said member and the material passed through said openings.

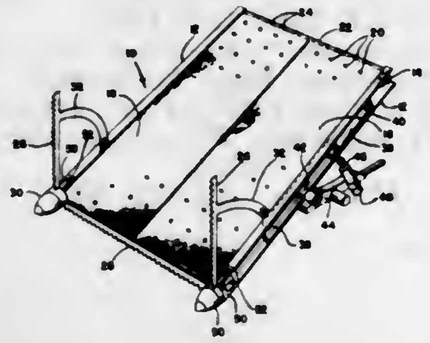
3,311,237
FLUID EXTRACTOR SPEED CONTROL
Richard P. Bergeson and Charles T. Bergman, Newton, Iowa, assignors to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed May 31, 1966, Ser. No. 554,034
7 Claims. (Cl. 210—144)

1. In a laundry apparatus operable through an extraction operation for centrifuging fluid from fabrics, the combination comprising: a support; a casing movably mounted on said support; a fabric container revolubly mounted within said casing on a non-vertical axis and adapted to receive said fabrics; drive means for rotating said container at a plurality of speeds including a tumble speed for tumbling said fabrics, a low extraction speed for arranging and holding the fabrics against the inner periphery of said container, and a relatively high speed for effecting centrifugal fluid extraction; means for controlling said drive means to selectively effect acceleration of said container toward said high speed rotation; sensing means actuatable responsive to predetermined unbalanced forces within said container during either said extraction speeds for operating said controlling means to return said container to said tumble speed; and time delay means responsive to actuation of said sensing means for operating said controlling means to interrupt operation of said container at said tumble speed and to initiate operation at said low extraction speed after a first predetermined time delay



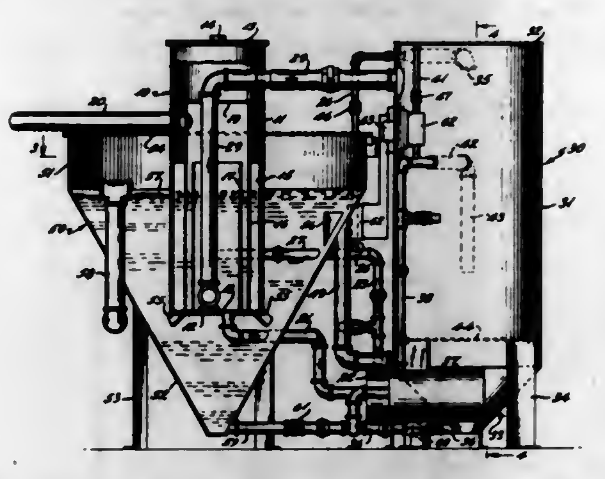
following actuation of said sensing means and then to operate said controlling means to interrupt operation of said low extraction speed and to initiate operation at said high speed after a second succeeding predetermined time delay.

3,311,238
SUCTION ROLLER APPARATUS
Major Walter Huff, West Vancouver, British Columbia, Canada, assignor to Pacific Kelp Company Ltd., Vancouver, British Columbia, Canada, a British Columbia corporation
Filed Dec. 29, 1965, Ser. No. 517,376
6 Claims. (Cl. 210—160)



1. A suction roller apparatus for conveyor means, comprising: (a) a generally rectangular conveyor table means with main side frame members adapted to be mounted at an angle and having a pervious, continuous conveyor belt thereon, said belt being disposed about a first roller located at the upper end of said conveyor table and a second roller located at the lower end of said table, (b) said conveyor side frame members having openings therein coinciding generally with the ends of said second roller, (c) said second roller being generally cylindrical and open at the ends and also being rotatably mounted and having a plurality of slots therein to permit passage of fluid through said slots, and (d) power driven impeller means mounted in said side frame member openings for drawing fluid through said pervious belt, through said slots to the inside of said second roller to be discharged out the sides of said conveyor through said openings in said side frame members.

3,311,239
AEROBIC WASTE TREATMENT SYSTEM
Joe M. Valdespino, 5023 Golf Club Parkway, Orlando, Fla. 32808
Filed July 22, 1966, Ser. No. 567,188
11 Claims. (Cl. 210—195)

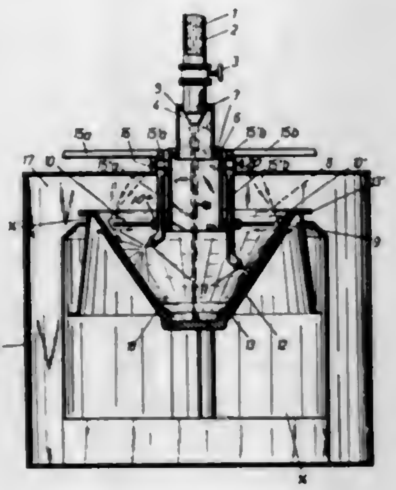


1. An aerobic waste treatment system for use with facilities having limited capacity comprising a disintegrator tank having a generally cylindrical wall structure, a series of roughened perforated concentric rings located within said disintegrator tank, an influent line for introducing waste matter into said disintegrator tank between certain of said rings, a pump connected to said disintegrator tank and adapted to remove material from said tank and to return the material to said tank under pressure through a first return line, a first venturi type aspirator located in said first return line, a first air line connected to said first return line adjacent to the downstream side of said aspirator, means for discharging liquid and particulate matter from said disintegrator tank, an aeration tank receiving the liquid and particulate matter from said disintegrator tank, said aeration tank including a generally cylindrical body having a top and a bottom providing an airtight chamber, said first air line extending into said aeration tank adjacent to the top thereof, a second pump for removing liquid and particulate matter from said aeration tank and for returning the liquid and particulate matter to said aeration tank under pressure through a second return line, a second venturi type aspirator located within said second return line, a second air line connected at one end to said second return line adjacent to the downstream side of said second aspirator, the opposite end of said second air line being open to the atmosphere, said first air line adapted to create a partial vacuum within said aeration tank, a settling tank, means connecting said settling tank and said aeration tank for discharging relatively clear liquid from said aeration tank into said settling tank, means for returning particulate material which has settled to the bottom of said settling tank to said aeration tank, and means for removing clear liquid from said settling tank, whereby waste material which is introduced into said disintegrator tank will be comminuted, then treated aerobically and thereafter relatively clear liquid will be discharged from the unit.

3,311,240
CENTRIFUGE
Wolfram Hirsch, Monheim, Rhineland, Germany, assignor to Hein, Lehmann & Co. Aktiengesellschaft, a corporation of Germany
Filed Apr. 10, 1964, Ser. No. 358,863
Claims priority, application Germany, Apr. 11, 1963, H 48,820
2 Claims. (Cl. 210—212)

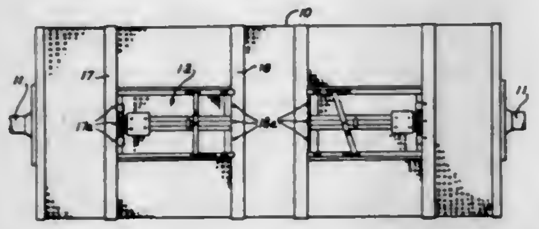
1. A centrifuge comprising a central vertical pipe, a nozzle carried by the lower end of said pipe, a tube air-tightly enclosing said nozzle, a second pipe air-tightly connected to the lower end of said tube and extending below

said tube, an annular cover disc fixed to the lower end of said second pipe, a rotary centrifuging drum having a perforated conical side wall and a closed bottom, said side wall enclosing and being uniformly spaced from the outer circumference of said disc to form an annular slit between said disc and said drum side wall, an inner wall forming an annular liquid-receiving chamber enclosing said drum and communicating with the perforations thereof, means forming an outer solids-receiving chamber enclosing said inner wall and communicating with said slit, at least one spraying nozzle extending into said drum for delivering a fine mist of wash liquid against the drum side wall, and means causing a flow of air through said annular slit in a direction towards the closed bottom of the drum for preventing the wash liquid mist from flowing upwardly and out of the drum through the annular slit.



3,311,241
SIDE DOOR FOR THE ROTARY CYLINDER OF A WASHER-EXTRACTOR

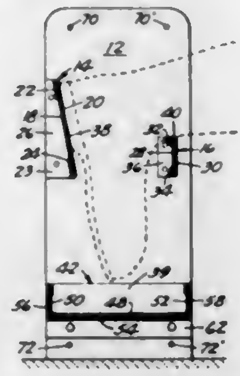
William Courtney Files, Cincinnati, Ohio, assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Sept. 30, 1964, Ser. No. 400,385
6 Claims. (Cl. 210—360)



1. A door for a side opening in the rotary cylinder of a washer-extractor, comprising a metal plate having a contour conforming to the profile of said opening, a plurality of channel bars secured to the outer face of said metal plate and extending lengthwise of the door, a hinge between one end of the door and said cylinder for permitting the door to be swung between open and closed positions, coupling means between said door and said hinge permitting longitudinal movement of the door relative to the cylinder for enabling the door when in a closed position to be moved to bring a far end portion of the door into locking relationship with an adjacent portion of said cylinder, said coupling means including a pair of slide members secured to and extending from said hinge, a pair of bearing members on said door slidably mounted on said slide members, spring means mounted on said slide members and pressing against said bearing members for biasing said door outwardly from said hinge into a position for locking engagement with a portion of said cylinder bordering said opening, and including means on said door for shifting the door on said slide members against the force of said spring means to unlock the door, and releasable means for latching said shifting means to hold said door unlocked.

3,311,242
OVERSHOE RACK

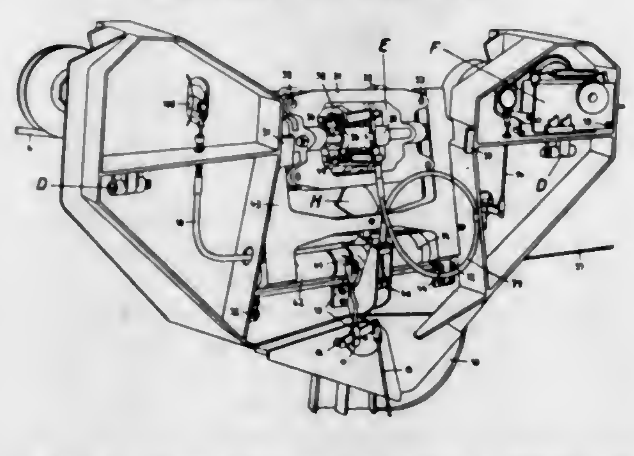
John Miklya, 529 11th Ave. N., South St. Paul, Minn. 55112
Filed Mar. 11, 1965, Ser. No. 438,859
2 Claims. (Cl. 211—37)



1. A rack for supporting overshoes and the like comprising opposed end supports, a heel support and a shoe-top support facing each other and extending between and supported by said end supports, said heel support being inclined with the surface facing said shoe-top support tilted upwardly slightly from the vertical, the upper edge of said shoe-top support being below the upper edge of said heel support, said heel and shoe-top supports adapted to accommodate an overshoe with the heel resting against said surface of said heel support and the overshoe top extending over, bearing against and supported by the upper edge of said shoe-top support, and a tray removably positioned between said end supports below said heel and shoe-top supports for collecting drainage from overshoes placed in said rack.

3,311,243
CRANE CABLE WAY FOR SLOPES WITH A SINGLE PULLING AND HOISTING CABLE PASSING THROUGH THE TROLLEY

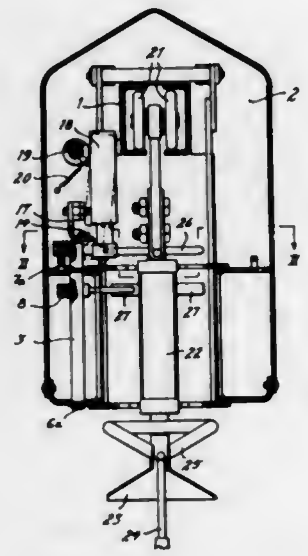
Marcel Bachmann, % Bachmann & Co. A.G., Steffisburg, Bern, Switzerland
Filed Aug. 16, 1965, Ser. No. 479,833
Claims priority, application Switzerland, Mar. 16, 1965, 3,738/65
12 Claims. (Cl. 212—87)



1. In a hoisting-and-conveying cableway for loads, the combination with a supporting cable, a trolley mounted on the latter and a power-driven cable winch positioned adjacent said cable, of a single pulling-and-hoisting cable extending from the winch to the trolley and passing through the latter and terminating in a load hook, said trolley being stressed in operation by the load hanging therefrom and by forces applied thereto through said pulling-and-hoisting cable, said pulling-and-hoisting cable being adapted to move the trolley in both directions along the supporting cable, load-hook holding-and-lowering means pivotally mounted on the trolley, clamping means mounted on the trolley for locking same to the supporting cable at any desired point thereof, said clamping means being adapted to bring about a preliminary clamping stage and a main clamping stage of the trolley on the supporting cable, a mechanical control device mounted on the trolley and adjustable for setting said clamping means to the preliminary clamping stage, the preliminary clamping stage being trippable by said control device and said main clamping stage being brought about by the load and by said forces acting on the trolley, means for moving and holding the clamping means clear of the supporting cable when the trolley is in motion, and a mechanical sequence switch mounted on the trolley and operatively connected to the control device and the load-hook holding-and-lowering means and those parts of the clamping means which bring about the preliminary clamping stage; said switch being adapted to coercively attain an appropriate sequence of the functions necessary for the clamping and unclamping actions.

3,311,244
UNLOADING STATION FOR CONVEYOR

Hans-Georg Fromme and Friedrich Stillger, Wetzlar, Germany, assignors to Fromme Forderanlagen G.m.b.H., Wetzlar, Germany, a corporation of Germany
Filed Sept. 22, 1965, Ser. No. 489,360
Claims priority, application Germany, Sept. 29, 1964, F 26,748
9 Claims. (Cl. 214—60)

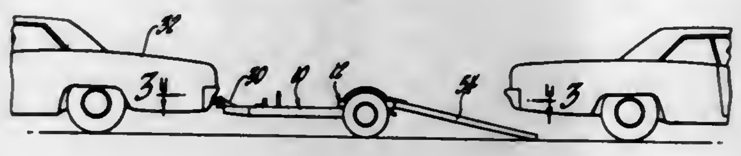


1. For use with a conveyor having a traveling carrier with a pair of arms projecting on a side thereof and an unloading station for said carrier, the apparatus comprising:

- a station housing for said carrier wherein said carrier is unloaded,
- a pair of vertically disposed rotatable shafts supported within said housing at said side of said carrier by means attached to said housing,
- a pair of projecting arms mounted on said shafts, said arms projecting horizontally from said shafts toward said side of said carrier and means to hold said arms in fixed positions relative to said shafts and to permit pivotal displacement about different pivot points, said arms being long enough to engage the arms on said carrier,
- a lever-like arm extending between said projecting arms on said shafts, means for moving said lever-like arm transversely toward said carrier upon rotation of said shafts by said pair of projecting arms on said shafts, and means linking the opposite ends of said lever-like arm to different ones of said projecting arms on said shafts for eccentric movement about their pivot points, displacement of at least one projecting arm causing transverse displacement of said lever-like arm.

3,311,245
TOWING TRAILER

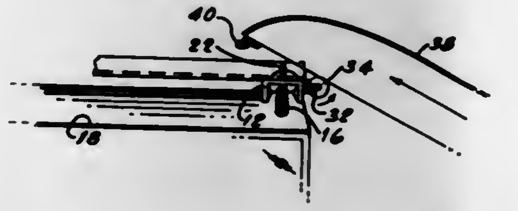
Floyd C. Galey, 359 N. Eton, Apt. B, Birmingham, Mich. 48008
Filed Feb. 1, 1965, Ser. No. 429,568
20 Claims. (Cl. 214—85)



1. A towing trailer of the type for supporting either the front or back pair of wheels of an automobile or the like comprising; a trailer frame adapted to be connected to a towing vehicle, a pair of trailer wheels rotatably attached to said trailer frame, a support frame rotatably mounted on said trailer frame for cradling any one of various pairs of automobile wheels which may have any one of various different distances therebetween, said support frame being rotatably mounted and disposed between said trailer wheels to provide stability of the trailer as an automobile is being towed thereby, and means disposed on said trailer frame adjacent each trailer wheel for said support frame to bear against and to guide said support frame over said trailer frame as said support frame rotates relative to said trailer frame.

3,311,246
CAR TOP BOAT LOADER

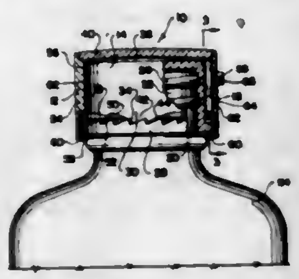
David E. Jones, Sr., P.O. Box 222, Keyes, Calif. 95328
Filed Oct. 18, 1965, Ser. No. 497,005
3 Claims. (Cl. 214—450)



1. Apparatus for loading boats and the like on top of an automobile and the like, said apparatus comprising first and second parallel horizontal members securable to said automobile top adjacent the front and rear respectively of the said top and extending transversely of the longitudinal direction of the said top, a channel extending horizontally between the midpoints of said transversely extending member parallel to said longitudinal direction, one end of said channel terminating at the rear one of said members, the other end extending beyond said front one of said members, said channel in cross section having the shape of a U, four separate mounting bolt and spring units, each unit being secured to an adjacent end of one of said transversely extending members, means securing said units to said top, a first pair of spaced apart horizontal rollers rotatable about a common axis parallel to said transversely extending members and secured to the rear side of the front one of said transversely extending members, and a second pair of spaced apart horizontal rollers rotatable about a common axis parallel to said transversely extending members and secured to the rear side of the rear one of said transversely extending members.

3,311,247
LOCKABLE CONTAINER CLOSURE

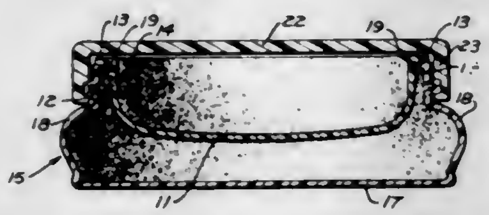
Herbert W. Rigor, 685 Quartz Way,
Broomfield, Colo. 90020
Filed Oct. 1, 1965, Ser. No. 492,199
5 Claims. (Cl. 215—9)



1. In a container closure of the type including an inner cup-shaped screw-on cap bordered by an annular flange having a notch therein, an outer cap mounted on the inner cap for independent relative rotation, and latch means mounted for reciprocating movement inside the outer cap between an unlocked position riding above the annular flange and a locked position passing into the notch to form an operative connection between said inner and outer caps, the improvement which comprises: a vertically-disposed slot within the outer cap opening onto said latch means, latch unlocking means accessible from the outside of the outer cap and connected to the latch means through said vertically-disposed slot, said unlocking means being operative upon manual manipulation to move the latch means to unlocked position and provide an external visual indication of said position.

3,311,248
INSULATED JAR

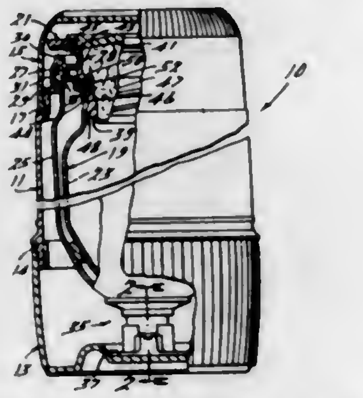
Paul A. Marchant, Kansas City, Mo., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,169
1 Claim. (Cl. 215—13)



An insulated plastic jar assembly having nested outer and inner plastic shells which may be assembled in nested relationship by snapping the inner shell outside the outer shell, said outer shell being blow molded and said inner shell being injection molded; said outer shell having rigid bottom and side walls with a top extremity having a continuous, inwardly directed flange defining an open top; said inner shell having rigid, non-collapsible side and bottom walls and an open top, the inner shell being removably inserted into the open top of the outer shell to a nesting position within the outer shell, the external surface of the side and bottom walls of the inner shell being completely enclosed by the wall of the outer shell when the shells are in nested position and the side walls of the inner and outer shells being spaced from each other along their entire surfaces; and outwardly extending continuous rim integral with the periphery of said open top of the inner shell, said rim extending outward to overlie said continuous, inwardly directed flange on said outer shell when the shells are in nested position; lug means integral with and extending outwardly from the outside surface of the inner shell side walls, said lug means being located a distance below said rim substantially equal to the thickness of the flange on the outer shell, said lug means being snapped into engagement beneath said flange when the shells are assembled into nested position to maintain the inner shell within the outer shell; said flange being in snug engagement with the external surface of the side wall of the inner shell and being tightly gripped between said rim and said lug means to prevent relative rotation between the shells, and a closure comprising a cover portion overlying the open top and rim of the inner shell, with a depending peripheral flange releasibly engagable with the outer surface of the outer shell.

3,311,249
VACUUM WARE

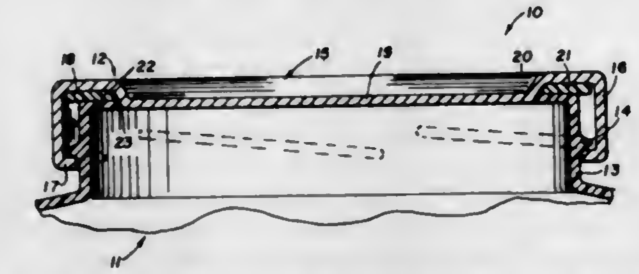
Vernon D. Bell, Westerly, R.I., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Filed Aug. 23, 1965, Ser. No. 481,819
18 Claims. (Cl. 215—13)



15. A shock absorber mechanism for use in vacuum ware or the like, comprising a casing and a fragile filler contained therein, said shock absorber mechanism including a first portion adapted to be secured to one end of said filler, a second portion receiving said first portion and adapted to engage said casing, said first and second portions having slidably disposed surfaces at the outer and inner circumference thereof, respectively, cooperable stop means on said first and second portions and without said first portion limiting the relative sliding movement of said portions in one direction, resilient means normally biasing said first and second portions in said one direction relative to each other, said first and second portions being movable in a second direction relative to each other opposite to said first direction.

3,311,250
CLOSURE COMBINATION FOR DEFORMABLE CONTAINER FINISH

William F. Lodding, Orland Park, Mindaugas J. Klygis, Chicago, and Charles N. Foster, Oak Park, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 14, 1965, Ser. No. 448,130
10 Claims. (Cl. 215—40)

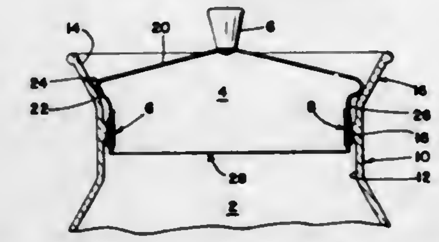


1. A closure assembly comprising in combination a plastic container having a finish forming a relatively wide mouth, said container finish being relatively deformable in response to forces normally developed in capping, spaced lug means on said container finish adapted for co-operation with a closure cap, said closure cap having a top panel portion and a skirt portion, said skirt portion being equipped with co-operating spaced lug-type means engaging said spaced lug means on said container, and rigid means formed on said closure cap and engageable with said container to prevent deformation of the container finish when said lug means on said closure cap is in tight engagement with said lug means on said finish.

2. The closure assembly of claim 1 wherein sealing means is carried in the top panel portion of said cap and is shaped to receive a terminal portion of said container finish to form a hermetic seal therewith.

3,311,251
FASTENING DEVICES

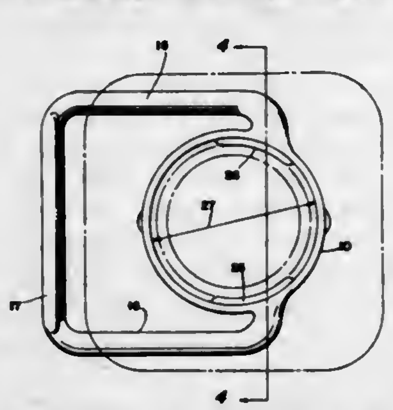
Robert J. Holton, Cleveland, and Albert T. Buttriss, Westlake, Ohio, assignors to Tinnerman Products, Inc., a corporation of Ohio
Filed May 11, 1964, Ser. No. 366,369
7 Claims. (Cl. 215—82)



1. In a fastening assembly including an open top vessel or the like, a cover disposed within said vessel, said cover having a top and an endless generally vertically extending defining side wall, said side wall having a plurality of oppositely disposed slots and an aperture disposed above and in alignment with each of the respective of said slots, and a plurality of fastening clips attached to said side wall and disposed in snap-fastening relation with said vessel, each of said clips comprising, a base having an elongated opening therein disposed adjacent an interior surface portion of said side wall, a flexible tongue extending from one end of said base and generally longitudinally relative to said opening, said tongue having an upturned bent portion adjacent its free end thereof disposed in interlocking coacting engagement with a marginal edge portion of said side wall, and a flexible finger extending angularly outwardly from the other end of said base, said finger projecting laterally through one of the respective slots in said side wall and disposed in snap-fastening relation with an interior surface portion of said vessel for retaining said cover in mounted position in said vessel.

3,311,252
HANDLE DEVICE

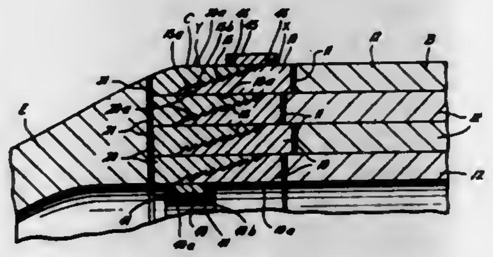
Ira T. Swartwood, 548 Edinborough Drive, Bay Village, Ohio 44140, and Rudolph A. Sampson, 191 Kensington Oval, Rocky River, Ohio 44116
Filed Aug. 14, 1964, Ser. No. 389,812
4 Claims. (Cl. 215—100)



1. A handle for use in carrying a container of the type including a reduced diameter neck having a bumper roll, said handle being made from an elastomeric material and comprising an endless band adapted to encircle the neck of the container below the bumper roll thereof, a bail made integral with said band and providing a unitary structure therewith, the bail having a pair of arms made integral at one end with said band and joined together at their other end by a cross-piece which defines a finger grip portion, the bail extending normally laterally of the band when mounted on the container and adapted to be pivoted into a generally vertically oriented position for carrying said container, and at least one pair of oppositely disposed, generally arcuate projections made integral with and extending radially interiorally of the band, each of said projections being disposed adjacent the respective connecting juncture of the arms with said band and adapted for abutting engagement with the confronting surface of the neck portion of said container immediately below the bumper roll, whereby upward pivotal movement of the bail flexes the band and urges the projections into a tight gripping engagement with the confronting surfaces of the neck of said container.

3,311,253
RELEASABLE VESSEL COUPLING

Raymond E. Pechacek, Houston, Tex., assignor to Hahn & Clay, Houston, Tex., a corporation of Texas
Filed Mar. 24, 1965, Ser. No. 442,362
6 Claims. (Cl. 220—3)



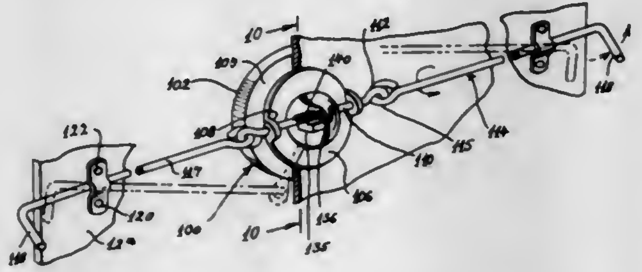
1. A releasable coupling for a vessel or the like having a pair of parts each of which has an annular end portion, comprising:

(a) a first coupling assembly having a plurality of concentric annular coupling sections of different diameters on the end of one of said parts of the vessel,
(b) a second coupling assembly having a plurality of concentric annular coupling sections of different diameters on the end of the other of said parts of the vessel,
(c) each of said coupling sections in the first and second assemblies having a plurality of circumferentially spaced coupling segments with a space between adjacent segments,
(d) the width of the space between the segments being sufficient to receive the segments on the opposite part prior to a relative rotation of the two assemblies to align the segments in locking position,
(e) interlocking projections and recesses on the segments of the two assemblies for releasably locking the assemblies and the two parts of the vessel together when the segments are aligned in locking position,
(f) the projections and recesses on the annular coupling sections of the first coupling assembly being disposed on the outer surfaces of each such section,
(g) the projections and recesses on the annular coupling sections of the second coupling assembly being disposed on the inner surfaces of each such section,
(h) the inner surfaces of each annular coupling section of the first coupling assembly being substantially cylindrical,
(i) the outer surfaces of each annular coupling section of the second coupling assembly being substantially cylindrical, and

(j) the inner surfaces of the first coupling assembly and the outer surfaces of the second coupling assembly which are adjacent to each other being disposed substantially in contact with each other when said interlocking projections and recesses are locked together, whereby bending moments on the coupling sections are substantially balanced out except at the innermost coupling section and outermost coupling section.

3,311,254
COLLAPSIBLE GROCERY TOTE BOX

Bruce Beh, Huntington, N.Y. (% Beh & Company, 1150 Broadway, New York, N.Y. 10001)
Filed July 14, 1965, Ser. No. 471,979
3 Claims. (Cl. 220—6)

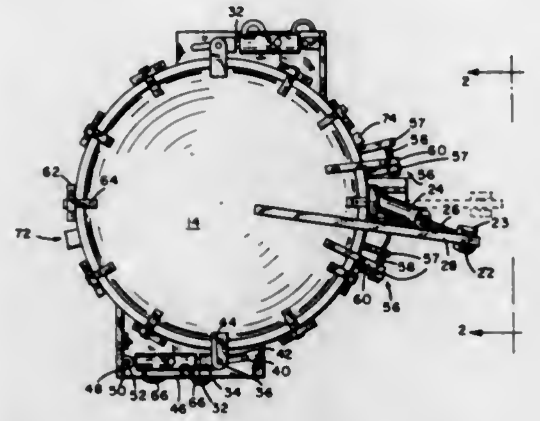


1. A collapsible tote box for bags of groceries and the like, comprising a generally rectangular hollow body defined by a vertical front panel, two opposing vertical side panels, a vertical back panel and a horizontal bottom panel, each of said panels being a rigid rectangular flat member, handle means at the side panels, each of said panels having a plurality of pairs of slots formed therein, flexible strap hinges removably engaged in said slots and joining the panels together, and detachable latch means engaging adjacent edges of the side panels and front panel, whereby said body is a rigid structure with open top for inserting articles therein, and whereby said front panels can be pivoted to a horizontal position away from the side panels by disengaging said latch means to open the front of said body for removing said articles through said open front, and whereby said panels can be folded upon each other in a compact pile to collapse said body when certain ones of said hinges are disengaged from the panels, said side panels having further slots located near outer edges thereof, said latch means comprising a knob rotatably mounted on the front panel, a rod carried by said knob and rotatable therewith, latch arms hinged to opposite ends of said rod, said latch arms being generally L-shaped with laterally extending fingers engageable in said further slots in the side panels, and means carried by said knob for rotating said latch arms axially for clearing said further slots when said latch arms are withdrawn therefrom by rotation of said knob.

3,311,255
HYDRAULIC OPERATED LID FOR CANNING RETORT

Marion W. Loveless, 419 S. Allegheny, Tulsa, Okla. 74112
Filed Dec. 17, 1964, Ser. No. 419,075
2 Claims. (Cl. 220—36)

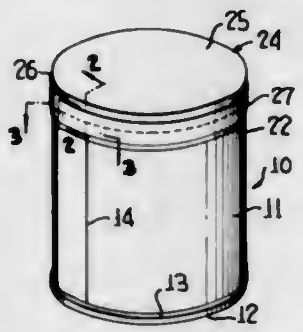
1. A canning retort comprising, in combination:
an upright tubular body closed at the lower end thereof and having an open upper end;
a lid pivotally attached to said tubular body to cover said open upper end;
hinge means affixed to said tubular body adjacent said open upper end and affixed to the periphery of said lid whereby said lid is pivotable about said hinge means in substantially a vertical plane and rotatable about said hinge means through a horizontal arc;
hydraulic means for pivoting said lid in the vertical plane to fully expose the upper open end of said tubular body;
a plurality of spaced locking arms affixed at the periphery of the upper open end of said tubular body, each locking arm having a substantially horizontally extending portion;



a plurality of spaced substantially radially extending pins affixed to the upper peripheral surface of said lid, one of said locking pins positioned adjacent each of said locking arms whereby, when said lid is in the closed position, said lid may be rotated to move said locking pins beneath said horizontally extending portions of said locking arms; and
hydraulic means of rotating said lid.

3,311,256
SEALING LAP ON TAPED SEALED CANS

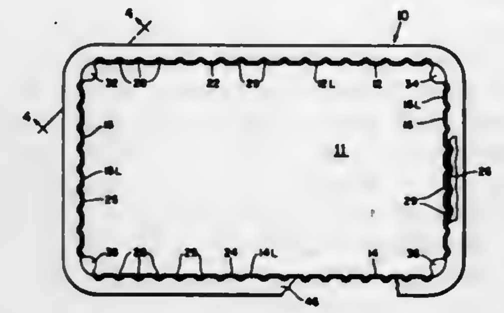
Daniel J. Dowling, Chicago, and Burton L. Gamble, Hinsdale, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 1, 1964, Ser. No. 393,532
3 Claims. (Cl. 220—53)



1. A tape sealed container comprising a container body having an extreme end portion of a reduced cross section as compared to an adjacent end portion thereof, said container body having a body seam of which at least that portion extending across said adjacent end portion is of a lapped construction resulting in an outwardly projecting part of said container body, a closure having a skirt portion telescoped over said container body extreme end portion, a sealing tape extending about the exterior of said container and bridging a line of juncture between said container body and said closure with said sealing tape being bonded to said closure skirt portion and said container body intermediate portion, said sealing tape being spaced from said container body immediately adjacent said outwardly projecting part, and a fillet forming filler positioned between said container body immediately adjacent said outwardly projecting part and said tape and filling the space therebetween to complete the seal between said container body and said tape, said filler having adhesive properties compatible with said container body and said tape and being bonded thereto.

3,311,257
STACKABLE TOTE BOX

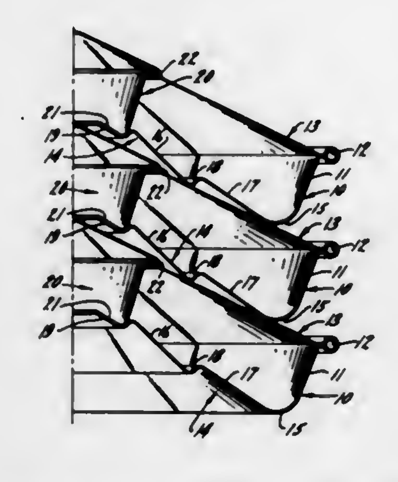
José R. Puente, Rochester, N.Y., assignor to Leaming Industries, Inc., Canandaigua, N.Y., a corporation of New York
Filed Nov. 29, 1963, Ser. No. 326,724
4 Claims. (Cl. 220—97)



1. In a stackable, open-top tote box formed of a synthetic plastic material and having a bottom, generally vertical side and end walls that are united to each other and to said bottom, and a continuous peripheral lip projecting outwardly of said box about its top edge, the improvement comprising: said side and end walls being laterally and outwardly offset near said top edge to form a generally horizontal, planar ledge for supporting a superjacent box; said side and end walls being formed to provide an inwardly projecting shoulder at each corner of said box, each of said shoulders being in the plane of said ledge to provide additional support for the said superjacent box; and said side and end walls being formed to provide a series of upright internal grooves and corresponding external ridges extending from top to bottom of said walls, the portions of said internal grooves extending above said ledge being adapted to receive the lower portions of external ridges of said superjacent box.

3,311,258
NESTABLE CONTAINER

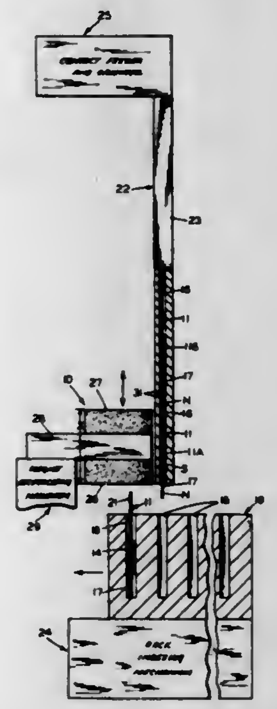
Richard L. Craig, Grayslake, Ill., assignor to Ekco Containers, Inc., a corporation of Illinois
Filed Dec. 18, 1964, Ser. No. 419,318
3 Claims. (Cl. 220—97)



1. A polygonal shaped nestable container comprising, in combination, a dish portion formed with a bottom wall having an obliquely extending side wall thereabout, said bottom wall being recessed inwardly in steps, the inner one of which terminates in a relatively shallow central portion, a cover portion having a peripheral edge adapted to be sealingly engaged with said dish portion and extending upwardly from said peripheral edge in tiered fashion, terminating at an apex, said cover being so constructed as to nest within the recess formed in the dish portion so as to permit nesting stacking of successive sealed containers, and a smaller, inner cup having a bottom portion adapted to rest within said receptacle upon said shallow central portion, and having side walls extending upwardly so as to engage the inner peripheral edge of the upper tier of said cover, whereby said cup is held securely within said nestable container when said cover is in place, the contents thereof being sealed within said cup by said cover.

3,311,259
METHODS AND APPARATUS FOR DISPENSING PARAMAGNETIC ARTICLES

Ford J. Brown, Kutztown, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 10, 1966, Ser. No. 533,172
8 Claims. (Cl. 221—1)



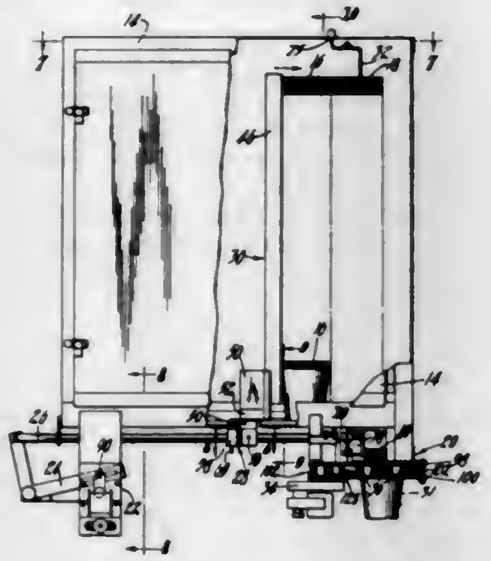
1. The method of dispensing paramagnetic articles, which comprises:
advancing the articles in a single-file line along a nonmagnetic trackway;
magnetically attracting and holding the leading article against the trackway to stop the advancement of articles therealong, while inducing a magnetic pole of one polarity at the trailing end of the leading article;
magnetically attracting and holding the next following article against the trackway, while inducing a magnetic pole of the same polarity at the leading end thereof; and
releasing the leading article, whereupon the following article repels the leading article to permit it to be dispensed from the trackway.

3,311,260
CUP DISPENSING APPARATUS

Alfred William Kinney, Syracuse, N.Y., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 26, 1965, Ser. No. 450,729
4 Claims. (Cl. 221—11)

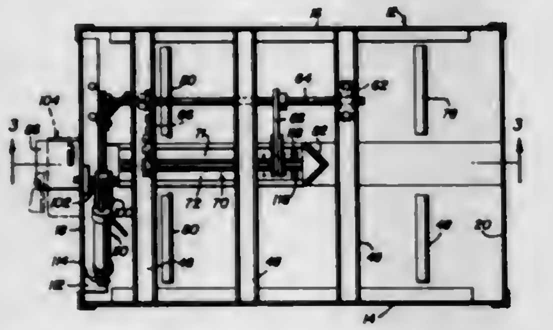
1. Apparatus for storing and dispensing nesting disposable cups comprising:
a cup separator positioned and arranged to support the cups in a first cup stack and to separate and dispense the bottom cup when required;
a rack for slidably supporting each of a plurality of additional cup stacks in a column adjacent to the first cup stack;

a switch positioned to be opened by the presence of a supply of cups in said first stack and operable to close upon the depletion of the cups in the first stack;
a cup stack advancing mechanism connected for operation in response to the closure of said switch;
said cup stack advancing mechanism including a cup stack pushing device for pushing the entire column of cup stacks along said rack toward said first stack position;



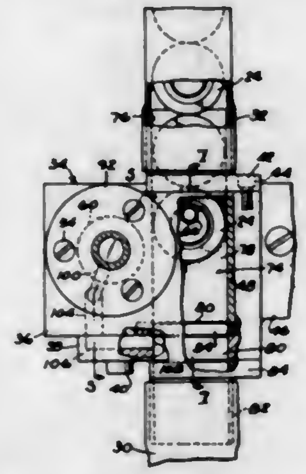
means for driving said pushing device including an elongated member;
motor means connected for imparting a reciprocatory movement to said elongated member; and
a one-way friction clutch connected between said stack pushing device and said elongated member for driving said stack pushing device in the stack advancing direction only.

3,311,261
AUTOMATIC DISPENSING MACHINE FOR GOLF BALLS
Gene Venzke, Reading, Pa., assignor to Reading Golf Equipment & Supply Co., Inc., a corporation of Pennsylvania
Filed Mar. 30, 1966, Ser. No. 538,719
5 Claims. (Cl. 221—179)



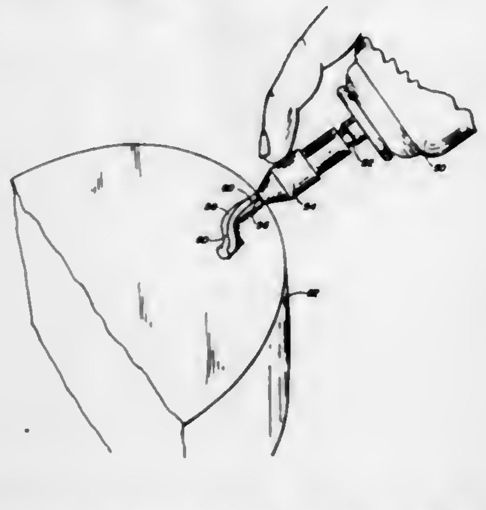
1. A machine for dispensing golf balls, said machine comprising a hollow housing including an elongated bottom wall having a section thereof inclined downwardly toward one end and also toward one longitudinal marginal edge portion, said housing including ball engaging means adapted to engage a plurality of balls rolling down an upper portion of said section by gravity and guide a predetermined number of said balls into aligned position along said one longitudinal marginal edge portion, an elongated receptacle generally paralleling said edge portion in juxtaposed relation thereto and mounted from said machine for vertical movement relative to said section between a first lowered position and a second raised position, said receptacle including an upstanding side adjacent said marginal edge whose upper edge is disposed generally coplanar with the adjacent portions of said marginal edge when said receptacle is in said first position, said receptacle including means defining an inclined track extending along and inwardly of said side down which balls rolling laterally into said receptacle are adapted to roll, an outlet receiver in said housing above the lower end of said track when said receptacle is in its lowered position and registered with the lower end of said track when said receptacle is in its upper position, said receptacle including portions defining an upstanding fence along said marginal edge portion when said receptacle is in its raised position, and means operative to selectively raise and lower said receptacle, said machine including a ball storage compartment therein disposed above said bottom wall and means operative to deliver balls from said compartment by gravity to the upper end portion of said section in a manner insuring a constant supply of balls on the uper end portion of said section without excessively crowding said upper end portion, said ball storage means including a second bottom wall in said housing spaced above said bottom wall and inclined downwardly toward the upper end of said section and spaced above the latter at its lower end, said housing including an upstanding wall spaced slightly between the lower end of said second wall and defining a throat between said second bottom wall and said upstanding wall communicating the ball storage area above said second bottom wall with the ball dispensing area disposed between said bottom walls through which balls from said storage area are adapted to pass into said dispensing area at a controlled rate.

3,311,262
PLURAL TRANSVERSELY ACTING CONTROLLERS FOR RELEASING ARTICLES
Murdo A. MacDonald, Bloomfield Hills, Mich., assignor to Tru-Tork, Inc., Birmingham, Mich., a corporation of Michigan
Filed July 19, 1965, Ser. No. 472,841
10 Claims. (Cl. 221—299)



1. Apparatus for feeding one at a time from a source to a delivery point a series of articles each having surface portions by engagement with which said article is orientable in a predetermined attitude, said apparatus comprising,
a track, and means operable to introduce said articles into said track in a predetermined attitude,
means defining a guideway having an upper end portion positioned for reception of an article from said track,
said guideway extending downwardly to a lower end portion so that a received article passes gravitationally therethrough,
a flexible tube having a passageway therein extending to said delivery point, means mounting said tube so that said passageway is positioned to receive an article from said lower end portion of said guideway,
said track, guideway, and passageway having control surfaces which are operative by engagement with said surface portions of said articles to maintain said articles in substantially the same predetermined attitude with respect to their direction of travel,
finger means mounted for movement to an advanced position for engagement with an article adjacent said upper end portion of said guideway and to a retracted position for disengaging the article,
said finger means in said advanced position providing an obstruction to movement of the engaged article through said guideway,
gate means below said finger means mounted for movement to an advanced position for closing said guideway and to a retracted position for opening said guideway,
motor means operable to move said finger means and gate means to said advanced and retracted positions thereof respectively in alternate sequence so that said finger means and gate means cooperate to form an escapement which admits articles one at a time to said passageway, and said gate means forms a transitional support for articles in said guideway,
means operable when said gate means is in said advanced position to introduce air under pressure into said guideway below said gate means and to discontinue said pressure when said gate means is in said retracted position thereof,
said gate means in said advanced position thereof forming a pneumatic closure for the guideway so that said air under pressure is contained for propelling an article through said passageway to said delivery point.

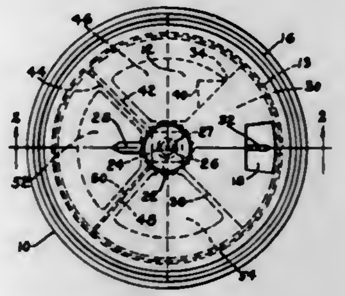
3,311,263
METHOD AND APPARATUS FOR STRIPING AND COLORING EXTRUDED MATERIALS
James V. Harmon, New Brighton, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed June 11, 1965, Ser. No. 463,095
9 Claims. (Cl. 222—1)



1. A method for coloring the surface of a paste as it is extruded through an aperture with a solid dye comprising providing soluble dye formed from a solid material at circumferentially spaced locations adjacent the aperture, forcing the paste through the aperture into contact with the solid dye to disperse said dye on said paste and extruding the paste through the aperture to produce an extruded band having a preformed shape with colored areas thereon corresponding to the locations of the dye on the aperture.

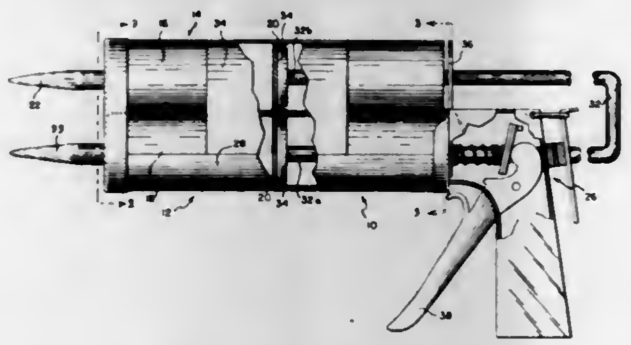
2. An apparatus for producing striped, extruded paste comprising a supporting member with a plurality of circumferentially spaced circularly arranged solid coloring elements thereon soluble in the paste, a means for extruding a paste to contact the coloring elements with the coloring elements abutting the surface of the paste as the paste is extruded thereby to form colored areas on the surface of the paste at circumferentially spaced locations corresponding to the relative spacing between the elements.

3,311,264
MEASURING AND DISPENSING DEVICE
Arthur W. Cayer, 23½ Jackson St., Taunton, Mass. 02780
Filed Dec. 14, 1964, Ser. No. 418,240
9 Claims. (Cl. 222—25)



1. A dispensing valve in combination with a circular cover for a container, said cover having a top and a side, actuating means centrally located on and extending outside said cover and rotatably connecting said valve to said cover, said cover having a discharge opening adjacent the periphery thereof and spaced from said means peripherally outward, said valve embodying a closure portion having a pusher member adjacent a side extremity thereof and extending towards said cover top and having an open portion next to said closure portion that is greater in area than and that registers with said discharge opening in discharging position, said cover discharge opening being in the path of circumferential movement of said pusher member, said open portion and said pusher member extending radially inward to said actuating means.

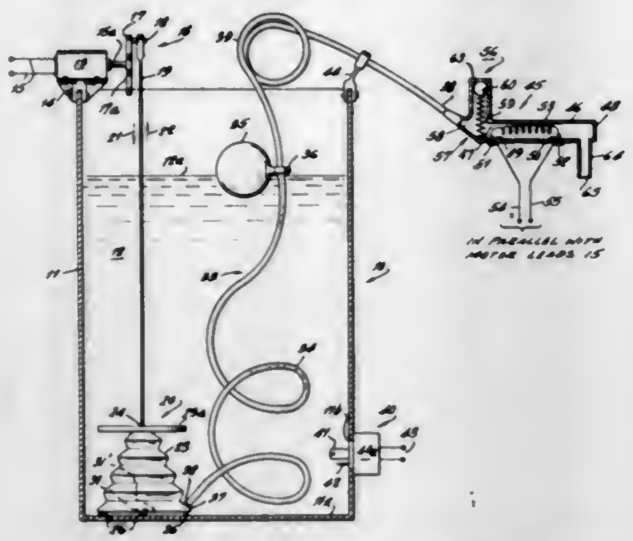
3,311,265
DOUBLE-BARRELED DISPENSING GUN
Albert M. Creighton, Jr., Manchester, and William D. Devaney, Methuen, Mass., assignors to Chemical Development Corporation, Danvers, Mass., a corporation of Massachusetts
Filed June 3, 1965, Ser. No. 460,970
2 Claims. (Cl. 222—137)



1. In a viscous substance dispensing apparatus the combination of a dispensing gun comprising a pistol grip, dual piston actuating assembly and a semi-cylindrical barrel secured to said assembly, said barrel having a slotted face plate mounted on the distal end thereof and, two rigid, substantially cylindrical, viscous substance filled containers each having axially movable means for sealing one end and a dispensing spout at the other end, said containers being removably held in said gun in side-by-side, contacting relation with said pistons positioned within the containers for reciprocatory movement therein and with said dispensing spouts extending through and beyond said slotted faceplate.

3,311,266
LIQUID DISPENSING MEANS

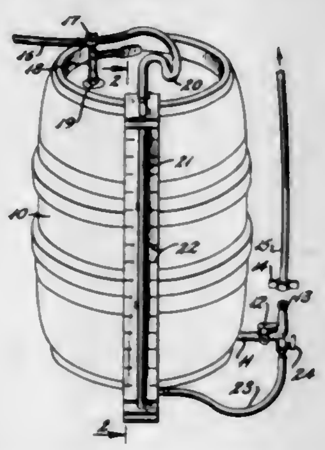
Wallace W. Ward, 28 Long Hill Lane, Chatham Township, Chatham, N.J. 07928
Filed Apr. 12, 1965, Ser. No. 447,173
15 Claims. (Cl. 222—146)



1. Liquid dispensing means for use in automatic vending machines, said means comprising container means for housing a liquid; pump means positioned within said container; delivery hose means connected between said pump means and a beverage mixing station located exterior of said container; said pump means comprising means for pumping liquid through said delivery hose means to the beverage mixing station; said delivery hose means having a portion thereof submerged in said liquid; said submerged portion being substantially longer than the maximum height attainable by the liquid in said container means; float means secured to a point near the upper end of said delivery hose means submerged portion to retain the liquid within said delivery hose means submerged portion in the liquid contained in said container means.

3,311,267
MEASURING ATTACHMENT FOR BEER KEG OR THE LIKE

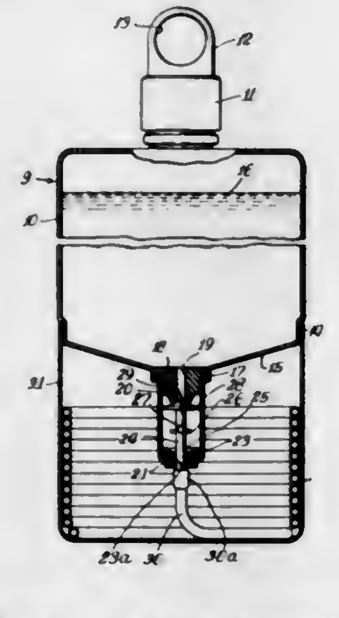
Ryals E. Lee, 420 Plantation Road 32303; James E. Honston, Rte. 4, Box 463 32301; and George M. Norman, 3308 Lake Shore Drive 32303, all of Tallahassee, Fla.
Filed June 29, 1966, Ser. No. 561,438
7 Claims. (Cl. 222—155)



1. An attachment for measuring the amount of liquid in a pressurized keg having means at one end thereof for receiving fluid pressure thereto and an outlet at the other end of the keg from which the liquid is dispensed under pressure, said attachment comprising:
- an elongated sight gauge having an elongated tubular portion adapted to be secured in position alongside of the keg,
- first means connected to the upper end of the sight gauge and adapted to be connected to the inside of the upper end portion of the keg and to its source of fluid pressure whereby the same pressure supplied to the keg is supplied to said upper end of the sight gauge,
- second means for connection to the lower end portion of the keg for the dispensing of liquid therefrom,
- third means including an adjustable flow valve connected to the lower end of the elongated sight gauge and to said second means whereby when said valve is adjusted to a liquid open flow position relative to said sight gauge the pressure in the sight gauge will be substantially equal to the pressure in the keg and cause the liquid in the sight gauge to attain the same level as the level of the liquid in the keg, and when said valve is thereafter adjusted to a closed position relative to said sight gauge, said attained liquid level in said sight gauge will be maintained until said valve is again adjusted to said liquid open flow position relative to said sight gauge.

3,311,268
INTRAVENOUS FEED BOTTLE

Mack R. Fields, Lighthouse Point, Fla., assignor to Roehr Products Company, Inc., a corporation of Delaware
Filed Nov. 16, 1964, Ser. No. 411,516
15 Claims. (Cl. 222—159)



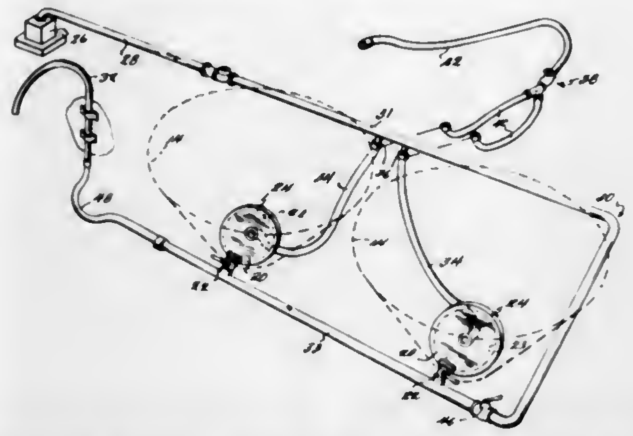
15. Liquid dispensing apparatus comprising:
- wall means defining a space for containing a liquid;
- means defining a drip count chamber;
- inlet means for conducting liquid from said space to fall into said chamber in drop form and form a pool of said liquid in the lower portion of the chamber;
- outlet means for conducting the liquid from said lower portion of the chamber;
- baffle means in said chamber for effectively precluding the forming of air bubbles in the liquid as a result of the delivery of the liquid drops to said pool; and
- means for adjustatbly positioning said baffle in said chamber.

3,311,269
ALL-PURPOSE COMMODITY PNEUMATIC TRAILER

Charles E. Mendez, P.O. Box 426, Tampa, Fla. 33601
Filed Nov. 30, 1965, Ser. No. 510,589
10 Claims. (Cl. 222—176)

1. Apparatus for transporting and discharging solid or liquid materials comprising:
- a mobile hopper for containing the material to be transported and discharged, said hopper having side walls and a bottom,

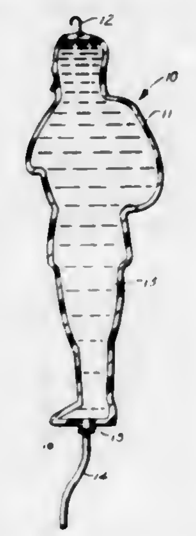
- a first discharge outlet leading from one side of the bottom of said hopper for conveying fluidized pulverulent materials and liquids out of the hopper, and valve means for opening and closing said first discharge outlet,
- a second discharge outlet on an opposed side of said hopper bottom for discharging non-pulverulent material by gravity, said second discharge outlet including a door means for opening and closing said second discharge outlet, and



- fluidizing means carried by said door means for admitting pressurized air into said hopper through said door means, whereby pulverulent material can be fluidized for discharging through said first discharge outlet when said apparatus is used for transporting and discharging pulverulent material.

3,311,270
AUTOMATIC WATER DISPENSER FOR CHRISTMAS TREE STANDS

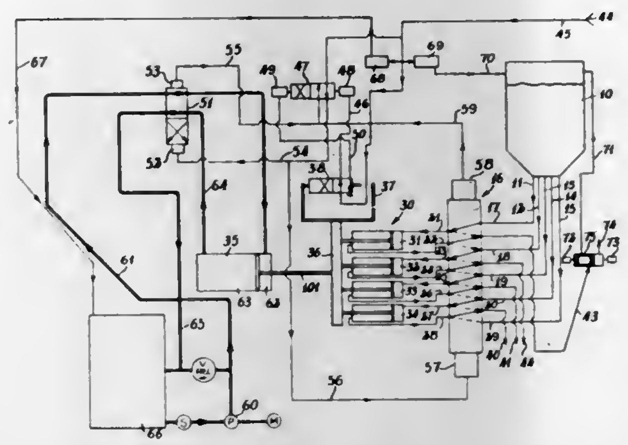
Gerald E. Juergens, 6227 Garden Lane, Fort Wayne, Ind. 46804
Filed June 7, 1965, Ser. No. 461,687
2 Claims. (Cl. 222—181)



1. An automatic water dispenser for Christmas tree stands and the like, comprising
- a hollow, sealed, rigid ornament adapted to contain a supply of water,
- a hook for suspending said ornament,
- the base of said ornament having a threaded opening,
- a threaded connector adapted to interfit with said threaded opening,
- said connector being secured to a hollow and flexible tube, said tube being adapted to depend downwardly into a water receptacle of a tree stand such that when the level of the water in said receptacle drops by evaporation or is used or consumed by the trunk of said tree within said stand, the water automatically flows from said ornament through said tube until the level of the water reaches over the end of said tube and thus said water automatically stops flowing from within said ornament.

3,311,271
MULTI-CHANNEL METERING SYSTEM

Frederic H. Middleton, Madison, Wis., assignor to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 8, 1965, Ser. No. 446,576
8 Claims. (Cl. 222—330)



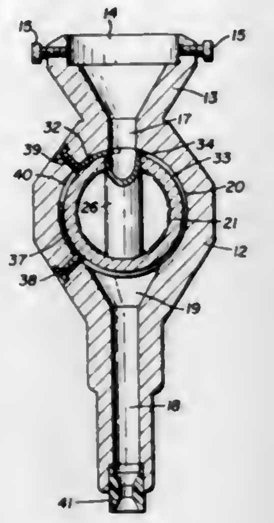
1. A metering system for use in supplying a flowable material in a continuous manner through multiple channel delivery means under uniform delivery pressure conditions, said system comprising material supply means provided with multiple channel outlet means, a plurality of positive displacement and multiple stage pump means, motor means to motivate said multiple stage pump means to simultaneously accumulate material therein and discharge accumulated material therefrom at a uniform rate, multiple channel delivery means for said pump means to obtain a continuous supply of material therefrom, and selectively operable control valve means for interconnecting said outlet means with selected stages of said pump means while simultaneously interconnecting said delivery means with the remaining stages of said pump means, whereby material is continuously supplied to said pump means for accumulation in said selected stages thereof while said pump means is continuously delivering material accumulated in said remaining stages to said delivery means.

3,311,272
POWDER MEASURING DISPENSERS

John W. Westbrook, Englewood, Colo., assignor to Trueline Instruments, Inc., Littleton, Colo.
Filed Feb. 18, 1966, Ser. No. 528,561
6 Claims. (Cl. 222—355)

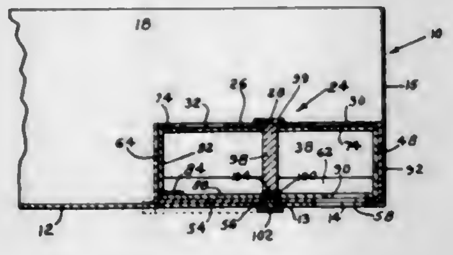
1. A powder measuring dispenser, of the type having a housing, a vertical powder feed passage in said housing, a powder discharge passage below said feed passage, a cylindrical, cup-shaped drum rotatably mounted in said housing intermediate said feed and discharge passages, a measuring tube fixedly and diametrically mounted in said drum so positioned as to present an open extremity which can be alternately aligned with said feed passage and with said discharge passage in consequence of reciprocal rotation of said drum, having:
- (a) a slide groove of rectangular cross-section circumferentially surrounding said drum in the plane of said open extremity;
- (b) an arcuate slide member corresponding in radius and cross-section to said slide groove slidably and circumferentially inset therein with its forward extremity forming a trailing edge on said open extremity;

(c) resilient means resiliently urging said slide member forwardly in said slide groove to resiliently close said powder feed passage so that should further forward movement of said slide member be obstructed at said feed passage said drum may continue to rotate forwardly; and



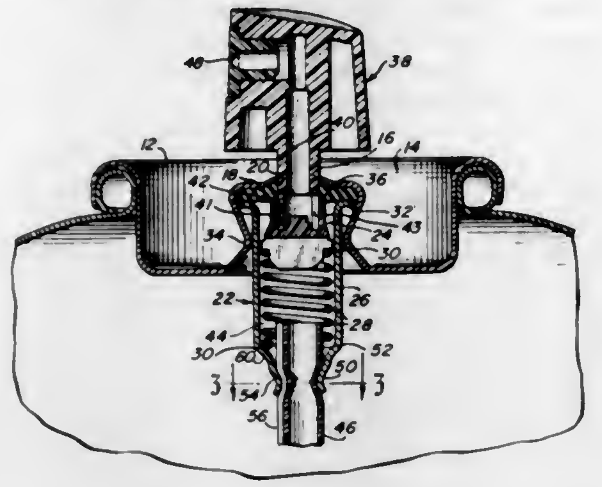
(d) means projecting from said drum positioned to contact and move said slide member rearwardly against the bias of said resilient means to open said feed passage when said drum is rotated rearwardly.

3,311,273
MEASURING AND DISPENSING DEVICE
Arthur W. Cayer, 23½ Jackson St.,
Taunton, Mass. 02780
Filed June 3, 1965, Ser. No. 460,924
14 Claims. (Cl. 222—362)



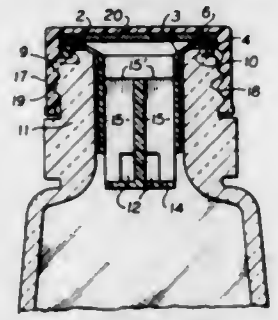
1. A measuring and dispensing device in combination with a container having a discharge hole at the bottom, said device comprising a receiver positioned at one side of said container and spaced from the side opposite thereto and having a bottom, a top spaced therefrom and four sides integral with said top and extending angularly to said top and bottom, one of said sides being integral with and connecting said top and bottom, said receiver top having an entrance hole and said receiver bottom having a discharge hole in alinement with said container discharge hole, a valve in, and movable relative to said receiver, said value having a top, a bottom and spacer means extending between said latter top and bottom, said valve top having an entrance hole normally alined with said receiver top entrance hole to receive material therethrough and adapted to be moved out of alinement therewith, said valve bottom having a discharge hole normally out of alinement with said receiver bottom discharge hole and adapted to be moved into alinement therewith, and actuating means extending outside of said container attached to said valve and adapted upon actuation to move said valve into discharge position or non-discharge position.

3,311,274
VALVE HOUSING AND DIP TUBE ASSEMBLY
Edward Howard Green, 11 Army Trail Road,
Addison, Ill. 60101
Filed Oct. 20, 1965, Ser. No. 498,626
6 Claims. (Cl. 222—402.18)



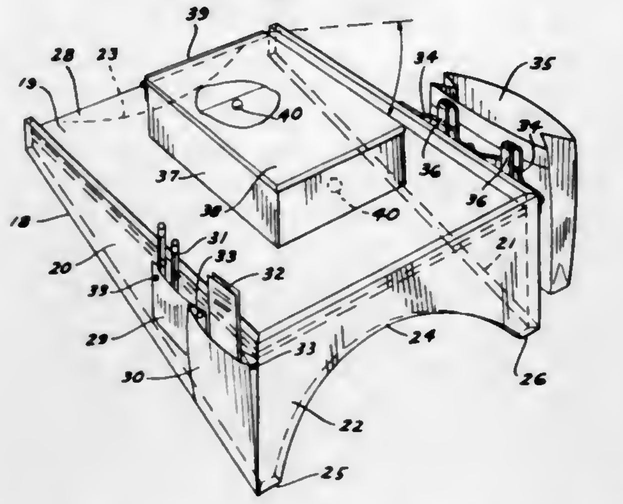
1. An aerosol dispenser valve construction which includes a hollow valve housing having an internal chamber and a valve assembly reciprocal in said chamber along the longitudinal axis of said housing, said valve housing having a coaxial entrance at the lower end thereof and a dip tube secured to said entrance in an otherwise sealed juncture therewith with the bore of the tube communicating with said internal chamber through said entrance, said tube and lower end of the housing having mating surface portions defining a conduit exterior of the bore of said tube enclosed on all sides thereof through said juncture into said chamber from exterior of said housing, said conduit extending in the same general direction as the axis of said housing and comprising a longitudinally extending groove in a circumferential surface of the tube closed at said surface and said conduit being inwardly spaced from said mating surface portions.

3,311,275
POURING DEVICES FOR BOTTLES AND OTHER LIQUID CONTAINERS
Royal H. Gibson, Rumson, N.J., assignor to Gibson Associates Incorporated, Cranford, N.J.
Filed Oct. 15, 1965, Ser. No. 496,540
4 Claims. (Cl. 222—567)



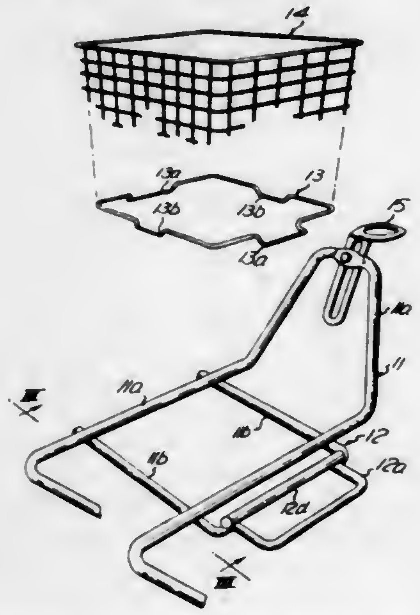
1. A pouring device for bottles and liquid containers comprising a cylindrical tubular member, an annular flange on the upper end of said tubular member and extending outwardly therefrom and having a depending skirt for engagement with the neck of a bottle or liquid container, the cylindrical wall of said tubular member being provided with a plurality of apertures adjacent the lower end thereof, said apertures being spaced by legs forming parts of the cylindrical wall, a disk mounted on said legs and closing the lower end of said tubular member, and a plurality of baffles mounted within said tubular member, which said baffles extend radially from the center to the inside wall of said tubular member.

3,311,276
PORTABLE CONSOLE FOR MOTOR VEHICLE
Walter Otto Fromm, 8276 Whitcomb,
Detroit, Mich. 48220
Filed June 30, 1965, Ser. No. 468,246
3 Claims. (Cl. 224—29)



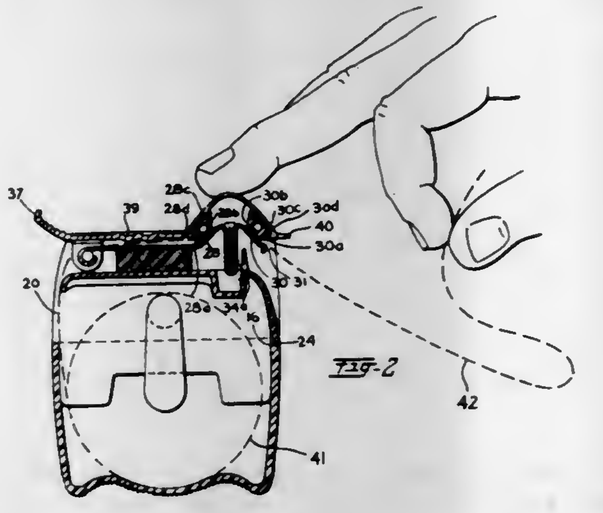
1. A portable console for a motor vehicle body having a seat, a fire wall, and a floor with an elevated area for accommodating a transmission housing comprising in combination a flat, horizontal tray member substantially co-extensive with the elevated area between the seat and the fire wall, and having at least one edge resting on top of said elevated area, an end member and two side members depending from said horizontal tray member, said end member and said side members having upward extensions forming a guard rail around a substantial portion of said horizontal tray member, said end member having a cut out portion for receiving said elevated area and said end member, and said side members having portions resting on said floor, the said horizontal tray member having received thereon a removable receptacle.

3,311,277
VEHICLE LUGGAGE CARRIER
John McGregor Gordon, Nuthall, Nottingham, England, assignor to Raleigh Industries Limited, Nottingham, England
Filed Aug. 25, 1965, Ser. No. 482,352
Claims priority, application Great Britain, Sept. 4, 1964, 36,308/64
9 Claims. (Cl. 224—35)



1. A luggage carrier having means for releasably securing a basket-like structure thereto which means includes a guide formation on the carrier, and a displaceable locking means in sliding engagement with the said guide formation, the said locking means being adapted to receive and locate a co-operating means on the basket-like structure, in which the displaceable locking means includes a part arranged in telescoping engagement with an element of the carrier and a spring means is provided which is arranged to urge the said part into an engaged position, the carrier having a transverse element thereto, and the said part is in telescoping engagement therewith the said displaceable locking means includes a bar located substantially in the plane of the support surface of the carrier, the said bar being adapted to co-operate with the said means on the basket-like structure.

3,311,278
DISPENSER AND CUTTER AND THE LIKE
Richard N. Brandon, Warren, Ohio, assignor to Auzvill Jackson, Jr., Richmond, Va.
Filed Oct 12, 1965, Ser. No. 500,481
12 Claims. (Cl. 225—93)



1. In an aluminum foil household wrap dispenser having a self-contained cutting device for cutting wrap of a thickness less than .006 inch.

(a) a box-like container having three sides and two ends and being of a length not less than that necessary to accommodate a roll of aluminum foil of about 7 inches in length nor greater than that necessary to accommodate a roll of aluminum foil of about 18 inches in length and having a width to accommodate the roll of aluminum foil whose diameter is not greater than one-third its length,

(b) a locking means on said container,

(c) a polypropylene cover for covering the open side of said container having a wrap dispensing slot, a blade support, and a supporting surface on each side of said blade support,

(d) a polypropylene blade having scalloped teeth mounted integrally on said blade support and molded as one piece at the same time as said blade support and cover,

(e) two polypropylene projecting arms molded as one piece with said cover and hingedly connected thereto and having locking means for cooperating with said locking means on said container to removably attach said cover to said container,

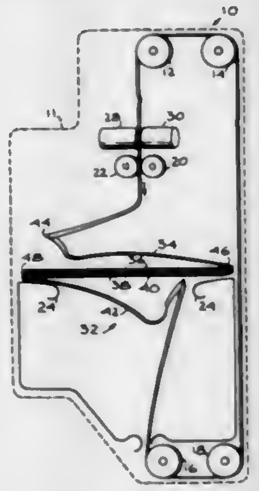
(f) an elongated resilient vinyl open-celled foam strip adhesively attached to said supporting surfaces on said cover and being of a height equal to about the height of said blade,

(g) a thin, flexible soft plastic inner clamp adhesively mounted to the top surface of said foam strip and having a blade receiving slot and a serrated clamping surface on each side of said slot, said clamping surface normally being level with or slightly higher than said blade, and

(h) a polypropylene outer clamp molded as one piece at the same time as said cover and hingedly connected thereto along a line parallel to the longer direction of said container, said outer clamp having a hump normally overlying said blade, a serrated clamping surface on each side of said hump, and a lifting projection, said outer clamp substantially covering the entire cover so as to keep the inside of the dispenser unexposed and sanitary.

3,311,279
RECORDING MEDIA

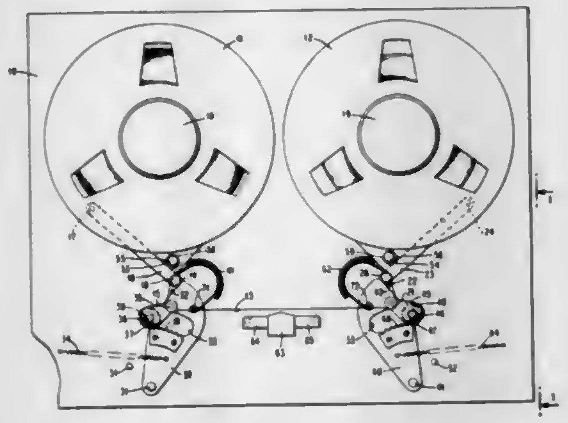
Andrew S. Yeiser, Woodland Hills, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Apr. 24, 1963, Ser. No. 275,460
23 Claims. (Cl. 226—118)



1. An elongated tape defining a series of connected alternately inverted tape sections, each of said sections having a permanently set nonplanar cylindrical configuration.

3,311,280
MAGNETIC TAPE TRANSPORT MACHINE

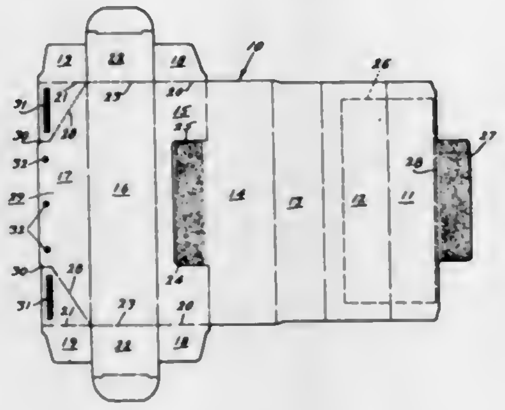
Harold A. Larson and Frederick A. Schultz, Poughkeepsie, N.Y., Leonard H. Thompson, Lexington, Ky., and Jack F. Wells, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 3, 1965, Ser. No. 452,831
9 Claims. (Cl. 226—195)



1. A positioning arrangement for a movable buffer arm in a tape drive comprising:
- a movable plate formed with an arm-engaging side,
- said buffer arm having a portion engageable with said side in locking engagement,
- and biasing means directly connected between said buffer arms and said movable plate, whereby said biasing means co-acts with said arm engaging side to enable said locking engagement.

3,311,281
TUBULAR CARTON WITH COUPON AND DISPLAY TAB

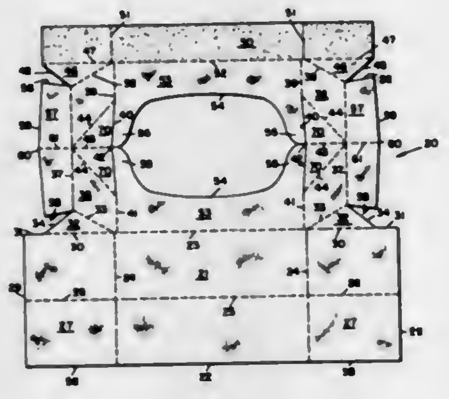
Larry Eisman, Philadelphia, Pa., assignor to Downingtown Paper Company, Downingtown, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1965, Ser. No. 503,581
3 Claims. (Cl. 229—16)



1. A tubular carton comprising in combination; four edge-connected inner side panels forming when erected a four-sided inner tube, and first and last outer side panels wrapped about at least some of said inner side panels, the first of said outer side panels being edge connected to the fourth inner side panel, the first outer side panel having a display tab cut out on all sides except at the edge connection of said first outer panel with said fourth inner panel and left integral with said fourth inner panel to stand up therefrom when the carton is erected, the lifting of the display tab leaving a window in the first outer panel overlying the first inner panel, a glue tab edge connected to the edge of the first inner panel opposite the edge connection with the second inner panel, said glue tab being secured to the face of said display tab, said last outer side panel being adhesively secured to one of said inner side panels, and a coupon sheet partially overlying at least said first inner side panel beneath the window in said first outer side panel, said coupon being exposed for removal from said carton upon tearing of said carton.

3,311,282
FOLDING CRADLE-TYPE CONTAINER

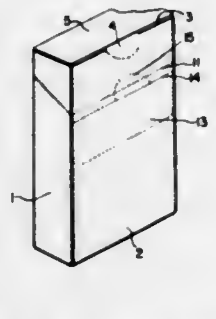
Frank H. Burgess, Landis Mill Road, R.D. 1, Telford, Pa. 18969
Filed Dec. 27, 1965, Ser. No. 516,457
8 Claims. (Cl. 229—16)



1. A folding cradle-type container fabricated of foldable sheet material and comprising a bottom wall having a longitudinally extending fold line, a pair of outer end walls extending from and hingedly connected to opposite ends of said bottom wall for upward swinging movement relative thereto, said outer end walls having longitudinal fold lines in alignment with the longitudinal fold line of said bottom wall for simultaneous longitudinal folding of said bottom and outer end walls, a pair of side cover walls extending from and hingedly connected to opposite sides of said bottom wall, said side cover walls being configured remote from their hinged connections for conforming engagement with an article on said bottom wall, and an inner end wall on each outer end wall extending between and hingedly connected to the side edges thereof, said inner end walls each being of a greater lateral extent than the adjacent outer end wall and having a longitudinal fold line for folding simultaneously with the adjacent outer end wall, said inner end walls each being formed with a pair of additional fold lines extending oblique from a region of the respective longitudinal fold line longitudinally inwardly and laterally outwardly to the inner edge of the associated inner end wall, whereby upon upward swinging of said outer end walls the inner end walls are displaced inward from the outer end walls and the lower longitudinal fold-line portion of each inner end wall is foldable outward toward the adjacent outer end wall to form an inner-end-wall recess for receiving an adjacent portion of an article on said bottom wall.

3,311,283
CARTON HAVING AN AUTOMATICALLY OPENABLE COVER

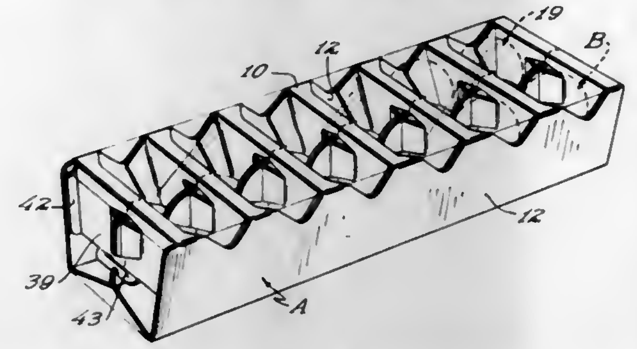
Katsuji Shimada, 31 Uchid Midoriga Oka-cho, Ashiya-shi, Japan, and Katsuyuki Shimada, 5–9 Mitsuga Minami-dori, Osaka-shi, Japan
Filed Nov. 30, 1964, Ser. No. 414,784
Claims priority, application Japan, June 19, 1964, 39/34,930
3 Claims. (Cl. 229—20)



1. A carton having an automatically opening cover, said carton comprising an outer sleeve-like casing having an unapertured rear panel which extends the full length of the outer casing, a tab attached to the edge of the rear panel at the upper edge thereof and bent downwardly along the inside surface of the rear panel, an inner casing slidable within said outer casing and having a top panel, and at least a cover rear panel and cover side panels depending therefrom, the cover rear panel being hinged to the upper edge of the rear panel of the inner casing, and an actuating member hingedly secured to the rear edge of the cover top panel and extending downwardly between the rear panels of the inner and outer casings, said actuating member having an aperture therein at a point spaced below the edge thereof hinged to said cover top panel and in which said tab engages to stop upward movement of said inner casing relative to said outer casing when the inner casing is urged upwardly, said actuating member lying entirely within said outer casing when said inner casing is within said outer casing with the cover closed and the cover top panel level with the upper edge of the rear panel of the outer casing, whereby the cover is pivoted rearwardly on further upward movement of said inner casing relative to said outer casing.

3,311,284
EGG CARTON

Ralph P. Blais, Duluth, Minn., assignor to Van Vick Paper Box Company, St. Louis County, Minn., a corporation of Minnesota
Filed July 19, 1965, Ser. No. 473,058
14 Claims. (Cl. 229—28)



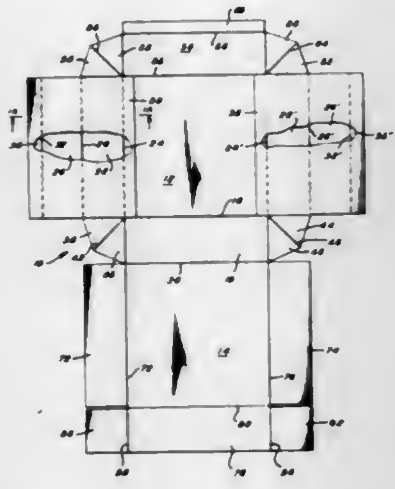
1. A carton for eggs and the like including:
- a top panel,
- side walls hinged to opposite edges of said top panel and extending downwardly therefrom,
- bottom walls hinged to the lower edges of said side walls and extending inwardly therefrom,
- center divider panels intermediate said side walls hinged to the inner opposed edges of said bottom walls and secured in face contact,
- a series of substantially equally spaced transverse fold lines extending across said top panel,
- a transverse partition hinged to said top panel along each said fold line and folded downwardly between said side walls,
- each said partition being defined by a generally U-shaped cut line terminating at opposite ends of a corresponding one of said fold lines,
- each of said partitions having a pair of opposed, substantially end abutting locking tabs arranged with their ends at the longitudinal center line of said partitions,
- said locking tabs being spaced from the lower ends of said partitions to provide a connecting strap between said tabs and the lower end edges of said partitions, and
- said divider panels having slots therein having a substantially arcuate upper edge with the center of arcuation at the upper edges of said divider panels and adjacent the lines of fold extending across said top panel,
- said slots having a width at least substantially equal to the width of said straps and adapted to accommodate the strap of a corresponding partition, and
- said locking tabs being frictionally engaged with opposite sides of said divider panels when said straps are engaged in said slots.

3,311,285
CONTAINER AND BLANK THEREFOR

Abraham L. Korr, 8712 Hickory Drive, Philadelphia, Pa. 19135
Filed Apr. 5, 1965, Ser. No. 445,570
5 Claims. (Cl. 229—31)

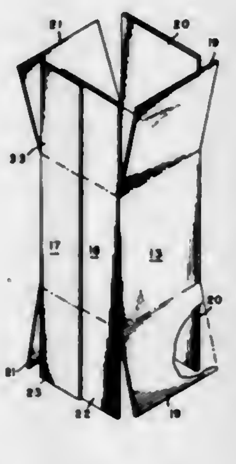
1. A tray-like container wherein food may be heated comprising a bottom panel, a first pair of upstanding oppositely disposed side panels, a second pair of upstanding oppositely disposed side panels, means joining adjacent edges of said first and second pairs of side panels, flaps connected to said first pair of side panels at the respective upper edges thereof and overlying said means joining the adjacent edges, a cover for said container, said cover being connected to the upper edge of one of said second pair of side panels, said bottom panel, said side panels and said cover being constructed of electrically non-conductive material, and layers of electrically conductive ma-

terial overlying at least portions of said flaps in communication with the interior of the container and overlying portions of said second pair of panels in communication with the exterior of the container so that said layers of electrically conductive material extend from within the container to the exterior thereof, and said layers of electrically conductive material being out of electrical contact with each other so that application of an electrical potential to the layers of material is effective to pass current through the interior of the container, thereby heating the contents thereof.



3,311,286
COMBINATION WRAP CONTAINER

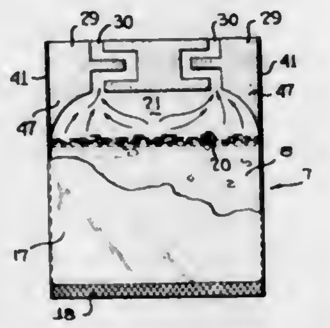
Charles S. Giacoppe, 490 Wanoosnoc Road, Fitchburg, Mass. 01420
Filed July 29, 1965, Ser. No. 475,725
2 Claims. (Cl. 229—37)



1. A wrapper for use as a container, the wrapper being formed from a single, rectangular blank of flexible, industrial paper of predetermined thickness and composition, the blank having a plurality of adjacent wall panels joined along vertical score lines, a foldable end flap at at least one end of each wall panel joined to each respective wall panel along a horizontal score line, vertical cuts separating adjacent end flaps, the lateral wall panels being of reduced width, the central and lateral end flaps being of the same width as their respective adjacent wall panels, means for securing the margins of said lateral wall panels and said lateral end flaps together to effect setting up of a container, said end flaps being of rectangular shape to completely overlap each other and span the end opening of the container when the end flaps are closed to form the cointainer, and means for retaining said end flaps in closed position.

3,311,287
FLEXIBLE CONTAINER FOR MICROWAVE STERILIZATION OF FOODSTUFFS THEREIN

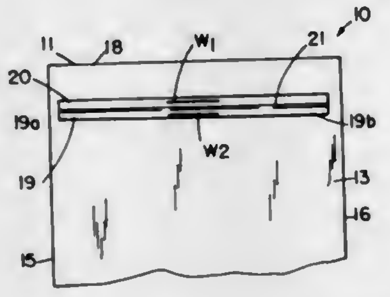
Florren E. Long, La Grange, and Fred B. Shaw, Hinsdale, Ill., and Harvey C. Lisle, New Knoxville, Ohio, assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Aug. 30, 1963, Ser. No. 305,750. Divided and this application Feb. 21, 1966, Ser. No. 529,111
4 Claims. (Cl. 229—53)



1. A pouch particularly adapted for formation into a package for products which are sterilized by steam generated in the pouch and vented to atmosphere through a passage which is subsequently hermetically sealed comprising a generally tubular body wall having a closed end portion and an oppositely heat-sealed end portion, said heat-sealed end portion being defined in part by a free edge and adjacent side edges, said heat-sealed end-portion having at least a single unsealed tortuous portion forming a passage from an interior chamber of said pouch to the exterior thereof, said tortuous portion including heat sealable means for subsequently closing said passage under the application of heat and pressure thereto, said chamber being defined in part by said heat-sealed end portion, and an edge portion of said heat-sealed end portion extending angularly from said passage to one of said side edges whereby steam generated in said chamber is gradually guided toward the passage by said edge portion and any bacteria therealong are destroyed by the steam.

3,311,288
ENVELOPE ASSEMBLY

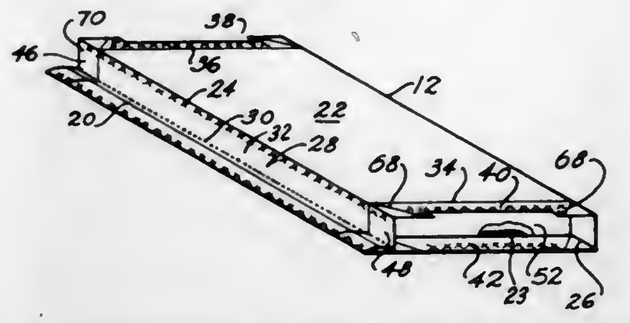
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08056
Filed Apr. 27, 1964, Ser. No. 362,868
7 Claims. (Cl. 229—65)



1. A packaging assembly comprising a bag made of thin sheet material and having flexible side walls, said bag adapted to be opened at the top for dispensing of material therefrom, closure means for said bag comprising a thin elongated flexible member defining a tie-strip said strip being bonded to a wall of said bag near the upper end thereof so as to removably retain the end portions of said strip against the wall of said bag, said bonding being easily rupturable by lifting said end portions of said strip off the wall of said bag whereby both ends of said strip are free to wrap around the neck of said bag and attach to each other to effect closure of said bag by tying the walls of the bag together.

3,311,289
PREFABRICATED WRAPPER FOR CONTAINERS

Paul French 4715 Allencrest Road, Dallas, Tex. 78204
Filed Feb. 21, 1966, Ser. No. 534,950
3 Claims. (Cl. 229—87)



1. A prefabricated wrapper especially adapted for wrapping containers of parallelepiped configuration and of predetermined size, said wrapper comprising:

an open ended flat tubular member formed from a generally quadrilaterally shaped sheet of wrapper material having two opposed ends of the material secured together in overlapping relation to form a seam that extends longitudinally of said member,

said member defining creased marginal side edges that extend longitudinally thereof, and top and bottom sides separated by said side edges,

said side edges each being formed by the adjacent portions of said bottom and top sides along the respective side edges being folded flat,

one of said creased side edges defining an outfold crease line,

said member being coated with a pressure sensitive adhesive on the exterior surface of one side thereof and throughout an area bordering and coextensive with the other of said side edges,

said member also being coated on said surface of said one side thereof with a pressure sensitive adhesive throughout a second area paralleling said first area and having its inner margin spaced from said outfold crease line approximately the width of the container size to be wrapped,

said member being proportioned so that said inner margin of said second area is spaced from said other edge thereof a distance approximating twice the height of the container size to be wrapped,

said seam being located within the last mentioned distance,

said member at either end thereof having said side thereof of indented inwardly of the other side thereof,

said member being coated with a pressure sensitive adhesive on said surface of said one side thereof at either end thereof and throughout an area at either end thereof that borders the respective indentations,

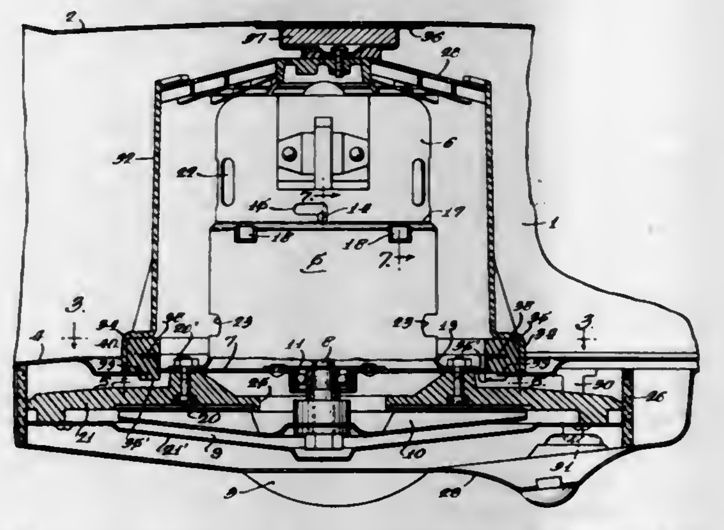
said member being further coated with a pressure sensitive adhesive on the interior surface of said other side thereof at either end thereof throughout an area at either end thereof that underlies the respective indentations of said one side thereof,

said member sides each being formed with an end flap forming fold line at either end of said member, with said end flap forming fold lines of each side of said member extending transfersely thereof and being spaced apart approximately the length of the container size to be wrapped,

whereby, when said member is opened by separating said sides thereof to receive the container to be wrapped, on positioning one longitudinally extending corner edge of the container in interfitting engagement with said outfold crease line and centering the container between said adhesive coated areas at the ends of said member, the portion of said member between said other edge thereof and said inner margin of the second mentioned adhesive coated area of said one side thereof may be doubled over flat against the adjacent side of the container using as a center the longitudinally extending corner edge of the container that is diagonally opposite said one corner edge thereof, with the end flaps of said one side of the member being turned against the respective ends of the container and the end flaps of said other side of the member being turned against the respective said one side end flaps to provide a hidden seamed uniform appearing gift wrapped container in which all exposed portions of the wrapper are free from decoration marring discontinuities.

3,311,290
MOTOR

Eugene B. Szymczak, Chicago, and Julius P. Wied, Oak Park, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 4, 1965, Ser. No. 492,504
10 Claims. (Cl. 230—117)



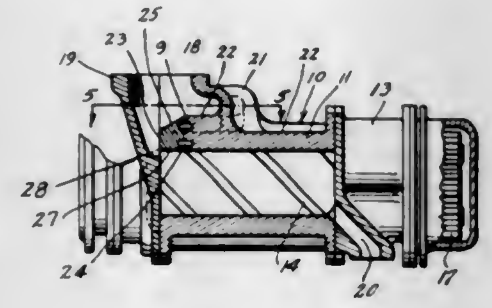
10. In an electric motor, a cylindrical motor housing, an annular stator core nested in said housing, means fixing said core in said housing, said fixing means comprising slots formed in the sides of said housing adjacent one end of said core, lengthwise extending through openings formed in said core, L-shaped fastening members positioned in said openings, the bent ends of said fastening members extending into said slots, and core-to-housing clamping means on the other ends of said fastening members, and a mounting assembly for said motor, said assembly comprising a mounting plate positioned beneath said housing perpendicular to the axis thereof, a circular opening in said mounting plate, a circular flange connected to the bottom of said housing, said opening and flange having overlapped crenelated edges which will pass each other upon partial rotation of said edges with respect to each other, the flange crenelated edge being positioned above the mounting plate crenelated edge, a resilient material ring disposed between said crenelated edges, the flange crenelated edge being embedded in said ring, and a rigid annular member fixed to said mounting plate, said rigid annular member being concentric with said circular opening and closely surrounding said ring.

3,311,291
HELICAL SCREW COMPRESSORS

Charles J. Surdy, 181 Woodland Drive, York, Pa. 17402
Filed Sept. 16, 1965, Ser. No. 487,832
3 Claims. (Cl. 230—143)

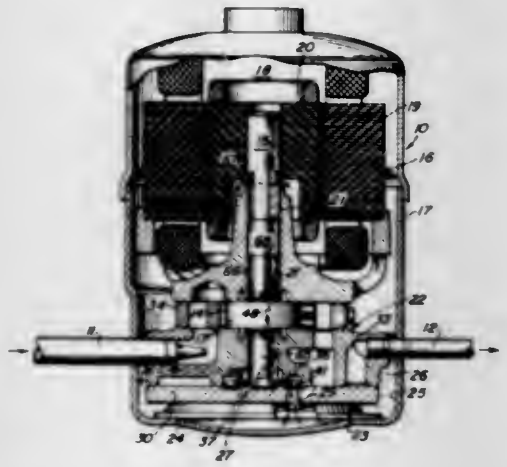
1. In a rotary compressor, a housing with a pair of cylindrical intersecting chambers, each adapted respectively to receive intermeshing helically lobed male and helically grooved female rotors cooperating with each other and the housing to form chevron shaped pockets

that progress from one end of the housing to the other end during rotation of the rotors, gas intake and discharge ports in opposite end portions of said housing, said intake port normally exposing a substantial portion of the intermeshed helically lobed male and helically grooved female rotors, the normal rotational speed of said rotors being sufficient to produce a centrifugal pressure equivalent to at least 1,000 microns of mercury above inlet gas pressure and contra inlet flow, the improvement which comprises a deflector element having arcuate walls embracing respective portions of said male and female rotors and providing a running fit with said rotors and being located with respect to said rotors and the intake opening of said housing to restrain radially outward gas flow by centrifugal pressure exerted by said rotors, and means for removably securing said deflector element to said housing, said deflector element being insertable through said intake port for use when centrifugal pressure exerted by said rotors exceeds 1,000 microns of mercury above intake pressure, and said deflector element being removable from said intake port for compressor operation at rotational speeds producing centrifugal pressure substantially less than 1,000 microns of mercury above intake pressure.



3,311,292
COMPRESSOR LUBRICATION DURING REVERSE ROTATION

Ralph F. Connor, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,483
9 Claims. (Cl. 230—207)



1. In a rotary compressor having a lubricating oil supply and means requiring lubrication, apparatus for providing oil from the supply to said means, comprising:

wall means defining a pump chamber having first and second contiguous portions, said wall means defining in said first chamber portion an annular channel opening toward said second chamber portion, said channel having a first portion and an inlet from said supply opening to said channel at a second portion diametrically opposite said first channel portion;

means defining an outlet to said lubrication requiring means communicating with said channel radially inwardly of said first channel portion;

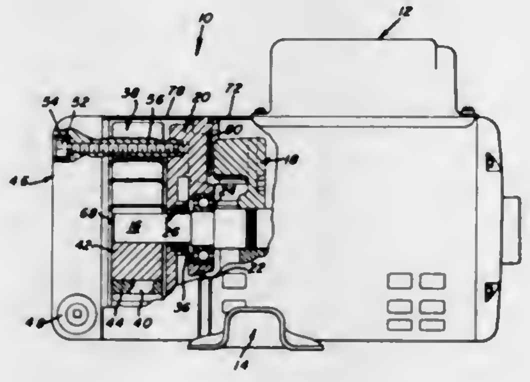
fluid impeller means in said second chamber portion;

means for rotating said impeller means about a fixed axis in either of opposite directions of rotation for causing oil entering said channel through said inlet opening to fill said chamber and move in either annular direction through said channel to said first channel portion; and

deflection means in said first channel portion for directing lubricating oil radially inwardly to said outlet as an incident of flow thereof in either annular direction from said inlet to said first channel portion.

3,311,293
INTEGRAL VACUUM PUMP AND AIR COMPRESSOR

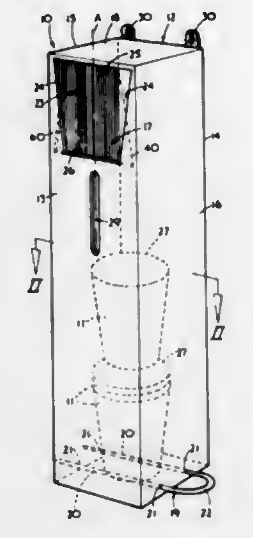
Robert Alexander Moffatt, St. Joseph, Mich., assignor to Gast Manufacturing Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Aug. 6, 1965, Ser. No. 477,737
24 Claims. (Cl. 230—209)



1. An integral vacuum pump/air compressor apparatus comprising in combination: a drive shaft; motor means for driving said shaft; a fan structure mounted on said shaft for rotation therewith; a support structure located adjacent said fan structure on the opposite side of said motor means, said support structure secured relative to said motor means and having portions extending toward and generally surrounding said drive shaft to form a hub structure thereabout; a bearing means retained in position by said hub structure and supporting said shaft in desired alignment; a stator body forming a cylindrical cavity about said drive shaft; said stator body positioned adjacent and secured relative to said support structure opposite said fan structure and motor means; a rotor structure mounted upon said shaft for rotation therewith within said cavity formed by said body; and an end cap structure positioned on the end of said body opposite said support structure and secured relative to said support structure for enclosing the end of said body; said drive shaft having an over-hanging end extending substantially through said rotor structure and cavity and being unsupported thereat; said support structure and hub having a seal support means adjacent said rotor and cavity and a bearing support portion spaced axially therefrom toward said motor means thereby spacing said bearing means from said rotor and cavity for heat isolation purposes; and said fan structure when rotated by said drive shaft drawing a current of air into proximity with said hub and bearing means to provide cooling for the same; said cap structure when removed affording an unobstructed and easy service access to said rotor structure.

3,311,294
RECEIVERS FOR HOLLOW ARTICLES OF CONVERGENT FORM

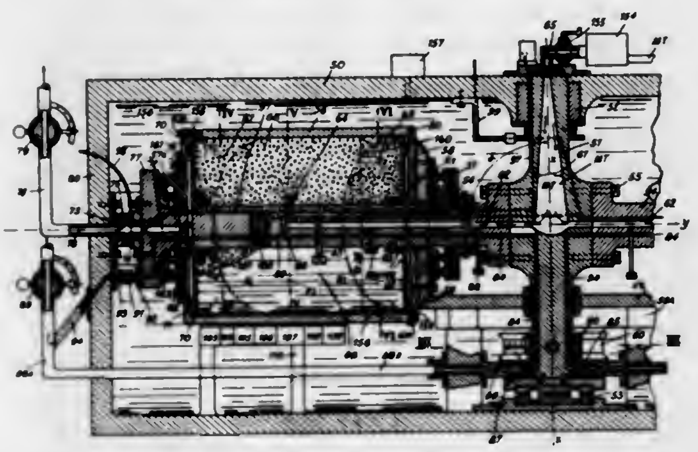
Joseph Dennis Ward, 92 Compton Road W., Wolverhampton, Stafford, England
Filed Apr. 13, 1966, Ser. No. 542,348
Claims priority, application Great Britain, Apr. 14, 1965, 15,977/65
9 Claims. (Cl. 232—43.1)



1. A receiver for hollow articles of convergent form, such as disposable cups, comprising a container having vertical side wall means defining an upright passage to receive said articles, article support means adjacent the bottom of said passage, an opening for said articles in said side wall means and leading into said passage adjacent said top thereof, said opening being defined by opposite, convergent side edges having a convergence complementary to that of said articles to guide the latter so that their axes of convergence are vertical as the articles pass through said opening, and guide means of said passage to restrict tipping of the articles as they fall towards the bottom of said passage to cause the articles to accumulate in a stack in nested relation on said support means.

3,311,295
GYROFUGATION METHOD AND MEANS THEREFOR

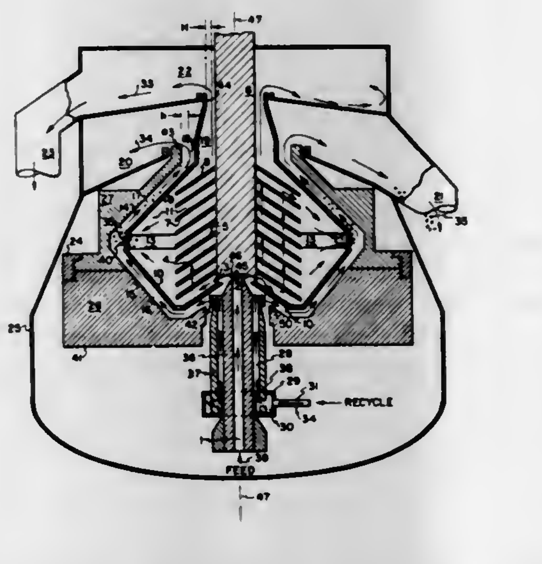
George A. Rubissow, 420 Riverside Drive, New York, N.Y. 10025
Filed Feb. 16, 1961, Ser. No. 101,597
20 Claims. (Cl. 233—1)



1. A gyrofuge for segregation of a material to be treated by subjecting it to gyrofugation, said material being composed of at least two different specific weight components, a heavier specific weight component and a lighter specific weight component, said gyrofuge comprising a frame, a first shaft-like member which is rotated around a first axis of rotation XX being rotatably mounted on said frame, a second shaft-like member being rigidly mounted in respect to said first shaft-like member, means to rotate said first shaft-like member in respect to said frame, a hermetically sealed from the atmosphere closed container for said material being rotatably mounted on said second shaft-like member and rotating around a second axis YY of rotation, means to rotate said container in respect to said second axis YY of rotation, said container thus being simultaneously rotated around said second axis YY and around said first axis XX, thus exercising gyrofugation forces upon said material, an inlet valve means, conduits means provided in said first shaft-like member and communicating with a first channeling means provided in said second shaft-like member to channel said material into the inner closed space of said container where it is subjected to the action of said said gyrofugation forces, at least one first channeling discharge means for said heavier component being provided in the area of maximum values of said gyrofugation forces, to conduct it through a first conduit and a first valve means to a recipient of said heavier component and at least one second channeling discharge means for said lighter component being provided in the area of minimum values of said gyrofugation forces to conduct it through a second conduit means and a second valve means to a recipient of said lighter component, said container, said inlet valve means, said conduit means, said first channeling means, said first channeling discharge means, said first valve means, said second channeling discharge means, said second conduit means, and said second valve means of said second channeling discharge means all forming a hermetically sealed system controlled by the operation of said valves.

3,311,296
SEPARATION APPARATUS

Leonard Barry Torobin, Newark, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Nov. 12, 1963, Ser. No. 322,734
7 Claims. (Cl. 233—29)



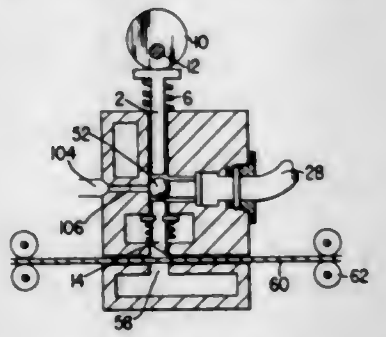
1. A centrifuge comprising a bowl shell rotatably mounted about an axis having a separating chamber, comprising an inner separating chamber, comprising frusto conical disc stack, an outer separation chamber comprising a cylindrically shaped annular volume extending about horizontally outward from about the outer edge of the topmost disc and from the outer edge of the bottom most disc to a point inward of the continuous vertically disposed inner wall of the sides of the centrifuge bowl, the uppermost limit of the chamber consisting of the outward horizontal extension of the bottom side of the super-imposed conical shaped dividing cone placed above

the disc stack and the bottom most limit of the chamber consisting of the horizontal extension of the bottom super-imposed conical shaped member, the outward extension of the top and bottom members terminating at a point inward of the inner wall of the sides of the centrifuge, means for introducing a feed to be separated, separate means for removing the liquid and solids, separate means for introducing a heavy wash liquid, and means for controlling the rate of introduction of the feed and wash liquid and means for removing the wash liquid.

3,311,297
SELECTIVE PUNCHING MECHANISM

Robert G. Williamson, Norwalk, Conn., and Edwin R. Phillips, Rosemont, Pa.; said Williamson assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 6, 1965, Ser. No. 445,970
21 Claims. (Cl. 234—114)



1. In a selective punching mechanism having a punching member movable within a guide means and a cyclically operated punch drive means for transmitting motion to said punching member through a selectively inserted interposer so that said punching member moves from a neutral position to a punching position when said interposer member is inserted between said punch drive means and said punching member, the combination comprising:

an interposer drive member;

a fluid drive means for driving said interposer drive member from a first position to a second position and back to said first position when said punching member is in said neutral position;

an interposer member located in the path of said interposer drive member and movable with said interposer drive means, said interposer drive member being adapted to insert said interposer between said punching member and said punch drive means when said punch member is in said neutral position;

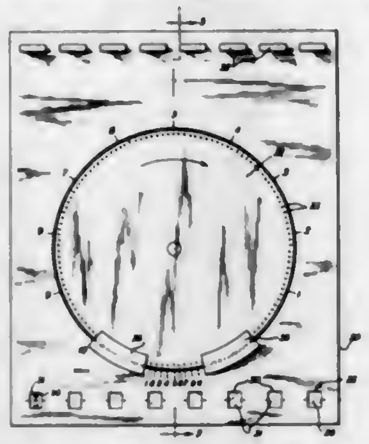
and means for causing an adherence between said interposing member and said interposer drive member that is sufficient to cause said interposer member to follow said interposer drive member back to said first position but insufficient to resist motion of said punch drive means as it moves from said neutral position to said punching position.

3,311,298
PORTABLE CALCULATING DEVICE

Robert S. Barr, 604 Ripley St., Alexandria, Va. 22304

Filed Dec. 24, 1958, Ser. No. 782,802
26 Claims. (Cl. 235—71)

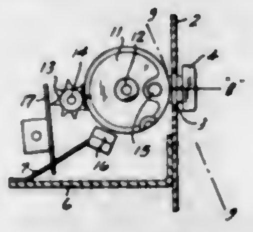
1. A readily portable mechanical calculating device comprising a housing, an actuating member rotatable on said housing, said actuating member having a series of exposed index marks and movable relative to said housing, means within said housing for totalizing the number of said marks corresponding to the relative movement of said member with respect to said housing including at least two relatively movable tapes having scaled numerical indicia thereon, connecting means operatively connecting one of said relatively movable tapes with said actuating member to provide therebetween a continuous drive connection operable to cause said one relatively movable tape to move in unison with and in proportion to said actuating member at all times upon movement of said actuating member, and individual selectively engageable connecting means for each of said other relatively movable tapes between said actuating member and each of said other relatively movable tapes for individually operatively connecting any one of said other tapes with said actuating member independently of one another to move each selectively actuated other tape upon movement of said actuating member simultaneously with the movement of said one tape.



3,311,299
COUNTER WITH ZERO-SETTING DEVICE

Erich Stautmeister, Marburg, Germany, assignor to Alfred Engelmann Zahlerfabrik, Wennebastel, Hannover, Germany

Filed May 21, 1965, Ser. No. 457,869
13 Claims. (Cl. 235—144)



1. In a counter, a rotary element rotable about a substantially horizontal axis and having a center of gravity spaced from said axis; support means supporting said rotary element for rotation about said axis with such minimal friction between said element and said support means as to enable the gravitational force acting on said element to overcome said friction and turn said element into an angular position in which said center of gravity is located at a level below said axis; drive means for rotating said element about said axis; means for disengaging said drive means from said element so as to allow for rotation of said element into said angular position; and magnetic means for arresting said element in a predetermined position, said magnetic means comprising a magnetizable portion of said element and a stationary magnet arranged at a level below the axis.

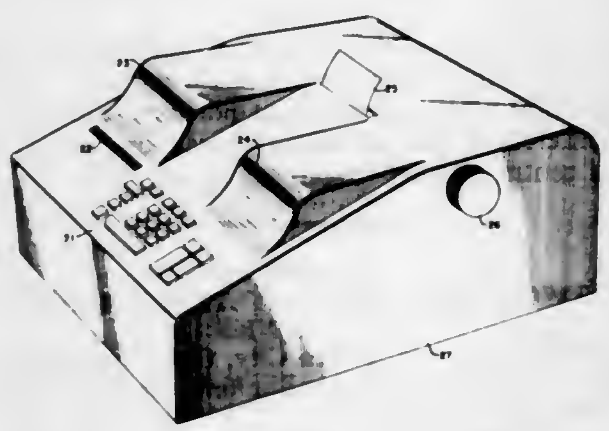
3,311,300
CALCULATING MACHINES

Francis J. Caldwell, West Carrollton, Richard D. Joyce, Dayton, and Clarence L. Coleman, Tipp City, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed July 22, 1964, Ser. No. 384,367
16 Claims. (Cl. 235—201)

1. In a printing hydraulic calculating apparatus capable of performing addition, subtraction, multiplication, and division operations, the combination including

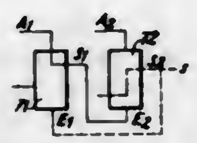
- (a) a ten-key keyboard having a plurality of amount and control keys each generating, when actuated, a plurality of fluid pressure signals representing a predetermined binary digit, said control keys including an add key;
- (b) a source of fluid pressure signals;
- (c) keyboard, memory, and accumulating shift registers each having a plurality of digit stages composed of fluid pressure relays capable of being orientated to store fluid pressure signals representing binary digits;
- (d) printing means adapted for printing the decimal equivalent of the binary digits stored in said shift registers;
- (e) a binary adder having a plurality of digit stages whose signals are connected to said accumulating register and to either of said memory or keyboard registers and whose outputs are connected to the accumulating register;
- (f) first logic circuit means controlled by operation of said add key for generating fluid pressure timing signals for operating said printing means and said shift registers;
- (g) and second logic circuit means controlled by operation of said add key for coupling said accumulating shift register to said printing means and said memory shift register, and said keyboard shift register to said binary adder whereby binary information in the form of fluid pressure signals generated by operation of said amount keys and stored in said keyboard register is added to said accumulating register and printed by said printing means.



3,311,301
FLUID ACTUATED LOGICAL DEVICES

Henri Chabrier, Lyon (Rhone), and André Saint-Joanis, Sainte-Foy-les-Lyon (Rhone), France, assignors to Societe d'Electro-chimie, d'Electro-metallurgie et des acieries electriques d'Ugine, a corporation of France

Original application Apr. 29, 1963, Ser. No. 276,565, now Patent No. 3,242,946, dated Mar. 29, 1966. Divided and this application Aug. 26, 1965, Ser. No. 482,880
Claims priority, application France, May 4, 1962, 896,501
8 Claims. (Cl. 235—201)

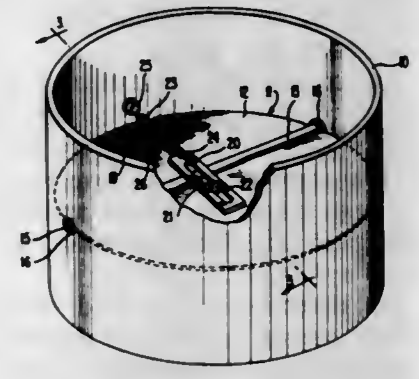


1. A fluid-actuated binary logical device including at least first and second valve structures, each of said valve structures performing the NOT function and having a hollow body provided with a chamber therein, said chamber comprising at least first, second, third and fourth serially connected chamber portions arranged for allowing fluid passage along a predetermined path from any chamber portion to the adjacent chamber portions, each of said chamber portions having, in the walls thereof, first, second, third and fourth passageways, respectively; said first and fourth passageways being fluid inlet passageways, said second passageway being an outlet passageway; means, in communication with said third passageway, delivering a binary zero fluid pressure level; means, in communication with at least one of said inlet passageways, delivering a binary one fluid pressure level, at least three seatings arranged substantially normally to said path, at least one of said seatings separating said third and fourth chamber portions from each other; at least first and second valve closing members movable in said chamber and adapted to seat against said seatings for closing the communication between the respective chamber portions, said first valve closing member being adapted to close the communication between said first and second chamber portions and between said second and third chamber portions, said logical device further comprising means connecting the second passageway of said first valve structure to at least one of the fluid inlet passageways of said second valve structure, whereby the operation of the second valve structure is controlled by the outlet pressure of the first valve structure.

3,311,302
TWO-WAY DAMPER WITH ADJUSTABLE SENSITIVITY

Claude O. Merckle, Hagerstown, Md., assignor to The Danzer Metal Works Co., Inc., Hagerstown, Md., a corporation of Maryland

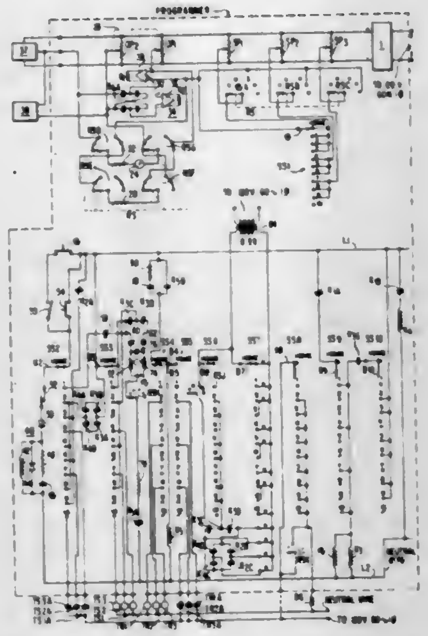
Filed Mar. 1, 1965, Ser. No. 436,186
4 Claims. (Cl. 236—45)



1. A two-way active damper comprising a damper blade adapted to be mounted in an upright sleeve section, a rocker shaft pivotally supporting the damper blade in the bore of the sleeve section for tilting movement on an axis which is offset from the geometrical center of the damper blade, adjustable counterbalancing means on the damper blade to permit the damper blade to assume a level bore closing position, said damper blade having a radial slot formed therethrough, an adjusting slide plate on one face of the damper blade and having an adjusting slot lengthwise of the first-named slot and at right angles to said axis, means to clamp the slide plate in a selected adjusted position upon the damper blade, and a retractile spring adjacent the first-named slot and adapted to pass through the slot whenever the damper blade tilts in either direction upon said axis, said spring having one end secured to said slide plate and its opposite end secured to the sleeve section, said spring, damper blade and slide plate all lying substantially, in a common plane when the damper blade is in the level bore closing position.

3,311,303
PROGRAMMER

Leroy C. Noyes, Topsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Sept. 28, 1965, Ser. No. 490,993
6 Claims. (Cl. 236—46)

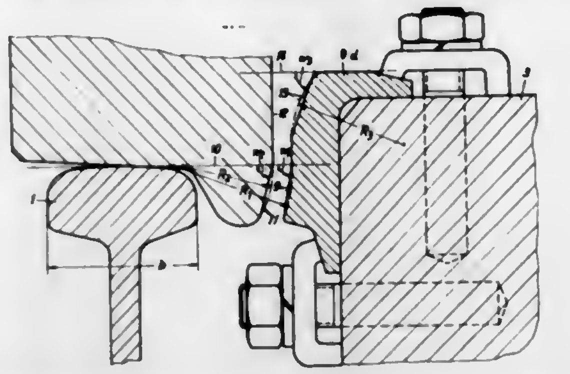


1. In a programmed control system for driving the system to successive condition levels in a predetermined sequence, a programmer comprising:
- (a) first variable voltage means for generating signals proportional to each of a plurality of condition levels to be successively reached by the programmer,
- (b) second variable voltage means sequentially connected to said first variable voltage signal generating means,
- (c) means connected to said second variable voltage means for driving said second variable voltage means to a signal level of said first variable voltage signal generating means corresponding to the first of the programmed condition levels,
- (d) means for connecting said second variable voltage means to means for controlling the condition level of the system to drive the system to the first of the programmed condition levels as the second variable voltage means is driven to the signal level corresponding to the first programmed condition level,
- (e) means for detecting when said second variable voltage means arrives at the signal level of the first variable voltage signal generating means corresponding to the first programmed condition level and interrupting said driving means in response thereto,
- (f) means for detecting when the system arrives at the desired first condition level for initiating a subsequent one of the programmed condition levels such that initiation is precluded until the first condition level is reached by the system.

3,311,304
ARRANGEMENT FOR PREVENTING DERAILING OF RAIL VEHICLES

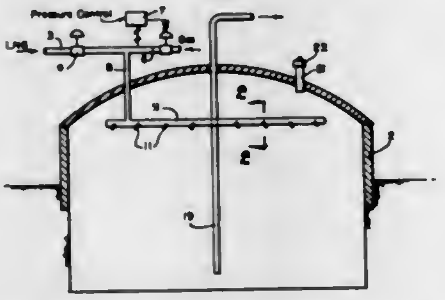
Paul Becker, Cologne-Mulheim, and Gottfried Groche, Essen-Margarethenhohe, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany
Filed Mar. 15, 1965, Ser. No. 439,776
Claims priority, application Germany, Mar. 18, 1964, B 75,955
9 Claims. (Cl. 238—17)

2. In an arrangement for protecting rail vehicles from derailing: Two railway track rails each having a rail head, and two guard rails arranged between and substantially parallel to said track rails and respectively adjacent and in spaced relationship to said track rails, the upper edge of each of said guard rails being located at a level higher than the top surface of the respective adjacent track rail, the outwardly facing surface of each guard rail being subdivided into three superimposed portions of which the uppermost and the lowermost portions respectively taper at different angles in upward direction toward the vertical central plane between said track rails.



3,311,305
TWO-PHASE SPRAY SYSTEM FOR FILLING TANKS

Carl F. Crownover, Ponca City, Okla., assignor to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company
Filed Mar. 10, 1965, Ser. No. 438,702
3 Claims. (Cl. 239—200)



1. Means for filling a liquefied gas reservoir comprising
- (a) a generally horizontal header within the reservoir,
- (b) means for supplying pressure gas to the header at constant pressure,
- (c) means for supplying fluid to the header at various rates of flow over a limited range,
- (d) a tubular element passing through the wall of the header,
- (e) a spray nozzle at the end of the tubular element exterior of the header, said nozzle being below the level of liquid in the header,
- (f) the portion of the tube within the header extending to above the level of liquid in the header, said portion having restricted fluid passage means through the tubular wall thereof, said passage means extending along the length of the tube from below the liquid level to above the liquid level to provide restricted access of fluid and gas under pressure, from the header to the interior of the tube and thence to the nozzle.

3,311,306
MONOSTABLE HOT GAS VALVE

Burton A. Jones, North Palm Beach, Fla., and Larry E. Fidler, Lakeside, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 4, 1965, Ser. No. 453,896
6 Claims. (Cl. 239—265.27)

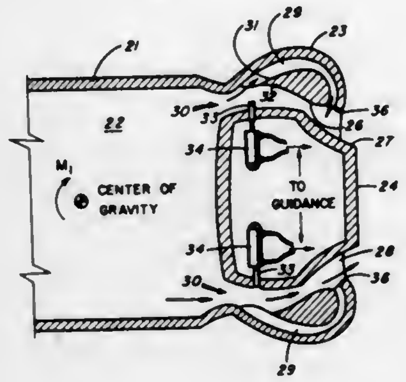
1. A thrust vector control system for a rocket motor having a thrust nozzle comprising

means defining a plurality of secondary flow passages communicating between an upstream, higher pressure portion of said exhaust nozzle and a downstream lower portion thereof,

means defining a plurality of monostable valves, one at the upstream end of each of said secondary passages, each of said valves having an inlet portion arranged to project flow into said thrust nozzle, the corresponding secondary flow passage extending at an angle to said thrust nozzle, the adjacent surfaces of the secondary flow passage and the thrust nozzle intersecting to form a flow divider,

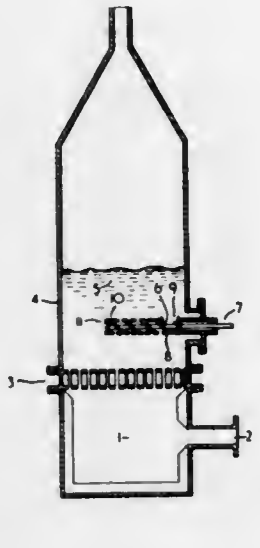
means for selectively actuating said valves to deflect exhaust fluid into selected ones of said secondary flow passages for steering purposes, and

means on the side of said thrust nozzle opposite said secondary flow passage for deflecting the fluid stream toward said flow divider and into said secondary flow passage.



3,311,307
FLUIDIZED BEDS

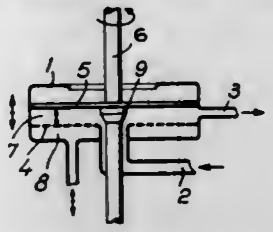
Edwin Burton Lopker, Fort Lauderdale, Fla., assignor to Electric Reduction Company of Canada, Ltd., Toronto, Ontario, Canada, a corporation of Canada
Filed Dec. 30, 1964, Ser. No. 422,203
Claims priority, application Great Britain, Jan. 10, 1964, 1,170/64
9 Claims. (Cl. 241—16)



1. The method for treating agglomerative materials in a fluidized bed which comprises suspending particles of said material in a gaseous stream and mechanically grinding a portion of said particles between solid surfaces.

3,311,308
PROCESS AND APPARATUS FOR THE REFINING OF FIBERS USED IN THE MANUFACTURE OF PAPER

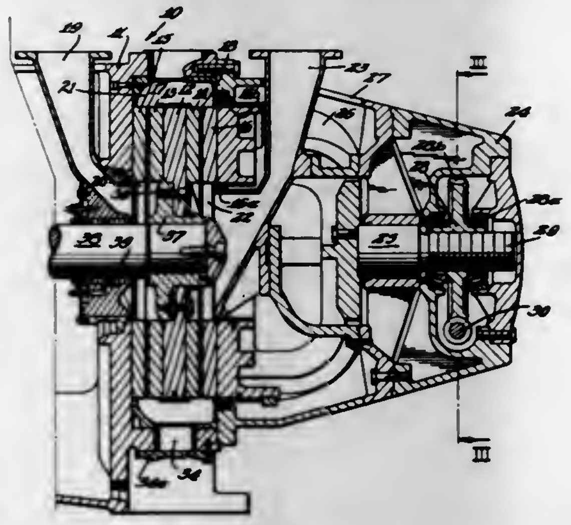
Guy Jacquelin, Grenoble, France, assignor to Centre Technique de l'Industrie des Papiers, Cartons et Celluloses, Grenoble, France
Filed July 14, 1964, Ser. No. 382,540
Claims priority, application France, July 24, 1963, 942,539
10 Claims. (Cl. 241—28)



1. The process of refining fibers in a liquid suspension comprising:
- (a) introducing a volume of suspension in a work area at least one wall of which is porous to permit the passage of suspension liquid;
- (b) decreasing the volume of said work area to force said liquid through said porous wall and to cause the fibers to form a layer on said wall;
- (c) bringing a second wall of said work area in contact with said fiber mass;
- (d) causing said second wall to move unidirectionally with respect to said porous wall to effect a rubbing action on said fiber layer;
- (e) retracting said second wall to produce a decompression in said work area, said decompression causing said suspension liquid to pass back through said porous wall and to return said treated fibers into suspension; and
- (f) evacuating said suspension of treated fibers from said work area.

3,311,309
METHOD AND APPARATUS FOR LOCKING A PAPER PULP REFINER DISC

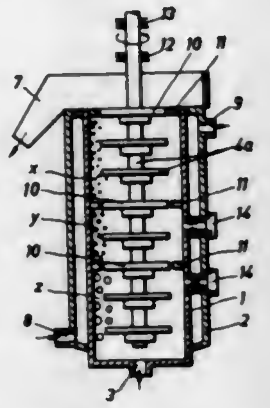
Vincent W. Cancilla, Pittsfield, Mass., assignor to E. D. Jones Corporation, Pittsfield, Mass., a corporation of Delaware
Filed July 21, 1964, Ser. No. 384,057
19 Claims. (Cl. 241—30)



16. The method of operating a paper stock refiner having opposed non-rotating refiner plates with rotating plates therebetween which comprises the steps of locking the position of the rotor intermediate the non-rotating plates while starting up and during times when hydraulic pressures on the plates are unbalanced due to initial incoming flow of stock and until stable running operation is reached.

3,311,310
STIRRING MILL

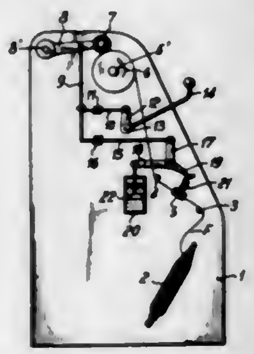
Kaspar Engels, Mannheim-Waldhof, and Herbert Dürr, Beerfelden, Odenwald, Germany, assignors to Draiswerke G.m.b.H., Mannheim-Waldhof, Germany
Filed Oct. 16, 1964, Ser. No. 404,358
Claims priority, application Germany, June 20, 1964, D 44,734
15 Claims. (Cl. 241—153)



4. In a stirring mill comprising a grinding container and a stirring mechanism mounted for rotation therein and including a stirring shaft having stirring elements, auxiliary grinding bodies such as sand, beads or the like adapted to be contacted by material passing through said container for eliminating solids primarily in liquids, a plurality of disk elements mounted in spaced relation upon said shaft, said disk elements having outer portions defining annular surfaces, and a plurality of counter rings, one for each disk, mounted on said container each presenting an annular surface and cooperating with the annular surface of an adjacent disk element to define a gap for separating material being treated from said auxiliary grinding bodies, and succeeding cooperating disks and counter rings defining zones in said container with preceding disks and counter rings, and at least one aperture defined in said container to provide access to at least one said zone and a closure plug adapted to close said at least one aperture.

3,311,311
YARN-PACKAGE WINDING MACHINE

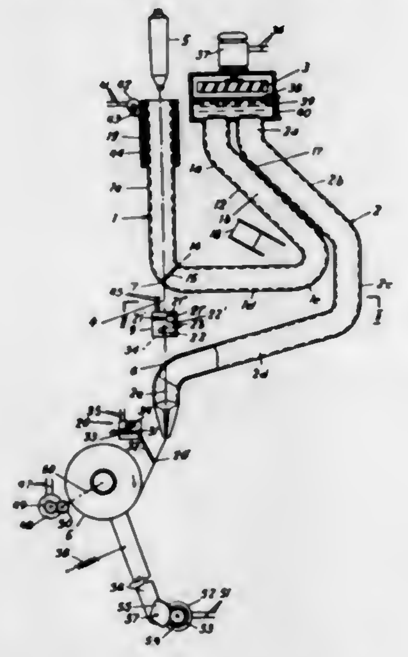
Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed July 21, 1964, Ser. No. 384,211
Claims priority, application Germany, July 22, 1963, R 35,736, R 35,737
8 Claims. (Cl. 242—18)



1. A yarn-package winding machine comprising wind-up means for revolving a tubular core to wind the yarn thereupon, yarn guide means defining a yarn path and having a yarn reciprocating guide member adjacent said wind-up means for reciprocating the oncoming yarn along the core, controllable yarn-tensioning means disposed at said path for engaging the yarn and normally applying substantially constant tension thereto, said yarn-tensioning means having control means cooperating with said wind-up means for temporarily increasing the normally substantially constant yarn tension during initial winding of a package so as to increase frictional adherence of the initial yarn turns to the core.

3,311,312
PNEUMATIC APPARATUS FOR FEEDING TWO ENDS TO A KNOTTER

Tobias Hauri, Arth, Schwyz, Switzerland, assignor to Aktiengesellschaft Fr. Mettler's Sohne, Maschinenfabrik, Arth, Schwyz, Switzerland
Filed Sept. 17, 1964, Ser. No. 397,234
Claims priority, application Switzerland, Sept. 17, 1963, 11,435/63
6 Claims. (Cl. 242—35.6)

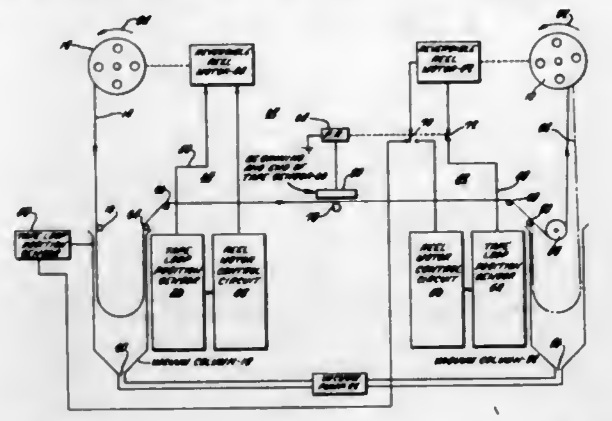


1. Pneumatic apparatus for feeding two thread ends to a knotter, comprising a fan, a tube structure comprising a pair of tubes, each having a first end connected to said fan and each associated with one of two thread ends, said first ends having portions disposed adjacent each other, each of said tubes having another end disposed along a common ideal axis which constitutes the axis along which the thread is normally fed, a knotter disposed proximate said first ends and presenting at least two notches, each of said tubes having a longitudinal slit extending along one side thereof each proximate a different one of said notches in a manner that each thread end when drawn in by the air of said fan is guided in the slit in the tube with which it is associated to its respective notch.

3,311,313
TAPE REWIND SYSTEM

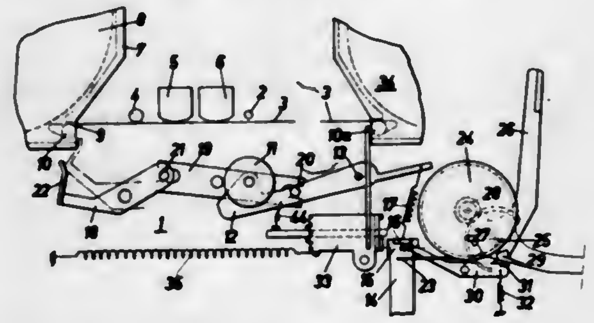
Harry F. Rayfield, Arcadia, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 22, 1963, Ser. No. 296,848
6 Claims. (Cl. 242—55.12)

1. In a tape transport apparatus having first and second tape reels between which tape is driven through an operational zone, first and second vacuum columns for normally forming loops in the tape respectively between the first reel and the operational zone and the second reel and the operational zone, apparatus comprising first servo means for controlling the rotation of the first reel in response to variations in the loop length in relation to a first position in the first vacuum column, second servo means for controlling the rotation of the second reel in response to variations in the loop length in relation to a first position in the second vacuum column, third servo means for controlling rotation of the second reel in response to variations in the loop length in relation to a second position in the first column, rewind control means for selectively disconnecting the second servo and connecting the third servo to drive the second reel during a rewinding operation, the third servo controlling the second reel to wind tape on to the second reel at a maximum speed when the loop in the first column is intermediate said first and second positions and to reduce the speed of the second reel as the loop moves closer to the second position, whereby the tape is withdrawn from the second vacuum column by the second reel during the rewinding operation.



3,311,314
MAGNETIC TAPE DICTATING MACHINE OF THE SELF-THREADING TYPE

Friedrich Louzil, Vienna, Austria, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 23, 1963, Ser. No. 318,425
Claims priority, application Austria, Nov. 27, 1962, A 9,286/62
5 Claims. (Cl. 242—55.13)



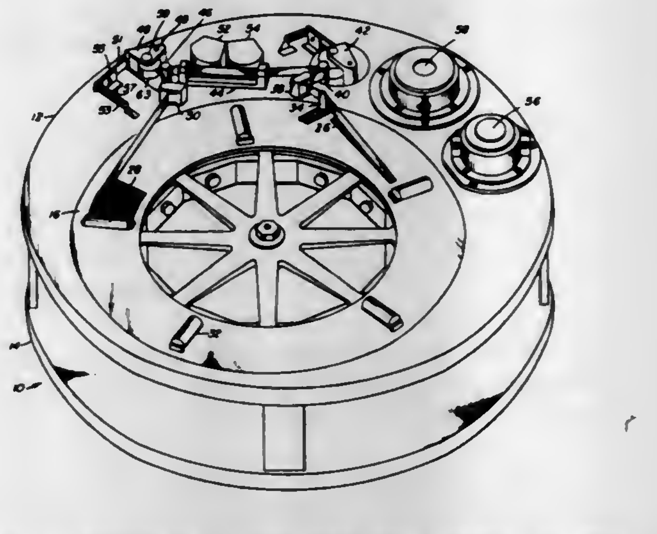
2. The combination with a magnetic tape recorder/reproducer having a separate supply magazine and a take-up magazine comprising a tag at each end of said magnetic tape, movable means for engaging the tag at the leading end of said tape for moving said tag and tape from said supply magazine to said take up magazine, a capstan and movable pressure roller means for driving said tape, and blocking means operatively connected with said pressure roller means for blocking emergence from the supply magazine of the tag at the trailing end of said tape when said pressure roller is positioned adjacent said capstan and a second blocking means operatively connected with said pressure roller means for blocking movement of said movable means when said pressure roller is positioned adjacent said capstan and said movable means is positioned adjacent said supply magazine.

3,311,315
ENDLESS TAPE TRANSPORT MECHANISM

Kenneth W. Stark, Hyattsville, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 29, 1963, Ser. No. 319,892
2 Claims. (Cl. 242—55.19)

1. A tape transport mechanism for an endless-loop tape recorder comprising:

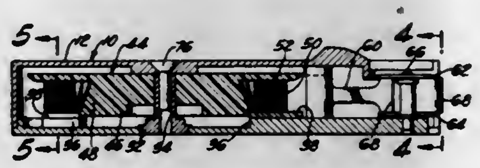
a base plate;
an annular support plate mounted on said base plate;
said support plate having a circular opening eccentrically formed therein defining a peripheral support surface of varying width;
a tape cartridge mounted in said opening;
said tape cartridge including a tape cover plate mounted flush with the upper surface of said support plate and having first and second slots formed therein;
first and second capstans mounted in the widest portion of said peripheral support surface;
first and second transducer heads mounted on said peripheral support surface between said first and second capstans;
a motor mounted on said peripheral support surface;



a pulley arrangement connecting said motor to said first and second capstans;
said pulley arrangement applying an equal rotational force originating from said motor to each of said capstans;
said first capstan being of slightly lesser diameter than said second capstan whereby a slightly greater speed is imparted to said tape by said second capstan to tension said tape as it passes the transducer heads; and
an endless loop of at least 1000 feet of magnetic recording tape spirally wound on said cartridge with the innermost convolution of said tape drawn through said first slot by said capstans, past said transducer heads, and returned to the outer periphery of the spiral winding through said second slot.

3,311,316
ENDLESS LOOP TAPE CARTRIDGE

Richard A. Williams, Sepulveda, Calif., assignor to Stori-Corder Company, Santa Monica, Calif., a corporation of California
Filed Jan. 8, 1964, Ser. No. 336,427
7 Claims. (Cl. 242—55.19)



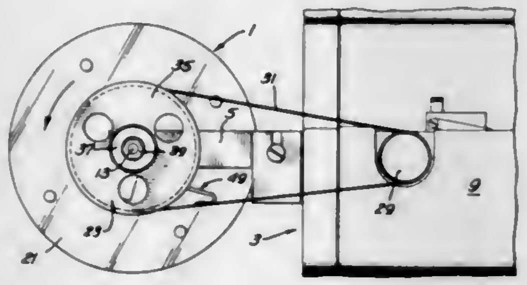
1. An endless loop tape cartridge comprising: a housing having a base portion and a cover portion; a shaft vertically mounted on said base portion; a plurality of radial ribs formed on said base portion around said shaft, the inner ends of said ribs being spaced from said shaft; and a turntable having a base portion and a hub portion and having said endless loop tape wound thereon, said turntable being rotatably mounted on said shaft with said

hub portion downward and said base portion upward, a portion of said hub portion being positioned between the inner ends of said ribs and closely adjacent thereto; said base portion of said turntable and said ribs restraining said tape against movement other than rotational movement around said turntable and sliding movement on said ribs toward said hub portion.

3,311,317
AUTOMATIC TAPE WINDER

William A. Nichols, 5617 Hawthorne, and Ralph E. Simpson, 9815 Monte Vista Ave., both of Montclair, Calif. 91763

Filed Nov. 23, 1964, Ser. No. 412,969
11 Claims. (Cl. 242—67.1)

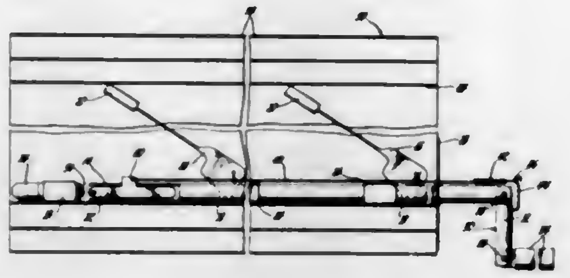


1. A tape winding device for automatically threading and winding perforated tape, comprising, in combination:
(a) weighted hook means having at least one hook tip;
(b) a shaft;
(c) means securing the weighted hook means to said shaft in freely swinging relationship therearound whereby it is suspended in a fixed position relative to the shaft when the latter is horizontally disposed;
(d) a plurality of reel pins spaced outwardly from and around said shaft;
(e) means maintaining said reel pins in their outwardly spaced orientation, and in orbital relationship, with respect to the axis of the shaft, which means together with the reel pins form a reel structure;
(f) means maintaining said weighted hook means at least partially within said reel structure whereby said reel pins are in peripherally surrounding relationship thereto;
(g) the direction and speed of orbital movement of said reel pins, the positional orientation of said one hook tip on said weighted hook means and the path of inbound tape movement during functioning of the winding device being so correlated that when said device is placed in service the end of the inbound tape enters said reel structure beneath said hook tip and above an orbiting reel pin which thereafter contacts the underside of said tape and conveys it upwardly and into eventual contact with the hook tip, as a result of which the tip slips into a perforation in the tape to hook it and pull it taut over said orbiting reel pin;
(h) the weighted hook means thereafter riding freely around said shaft, pulled by the hooked tape looped over and kept under pulling tension by said orbiting reel pin;
(i) whereby the moving perforated tape is caused to wind around the plurality of reel pins, the end of the tape being held under winding tension by the hook tip caught in its end;
(j) means for receiving energy from a source of same and applying it to said reel structure in such a way as to cause orbiting of said reel pins about the axis of said shaft; and
(k) means for maintaining said device in proper locational and positional orientation relative to the path of said moving perforated tape to receive the tape for threading and winding purposes.

3,311,318
APPARATUS FOR ROLLING DRAWINGS

George W. Blonn, Sr., Downers Grove, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 1, 1963, Ser. No. 320,877
6 Claims. (Cl. 242—72)

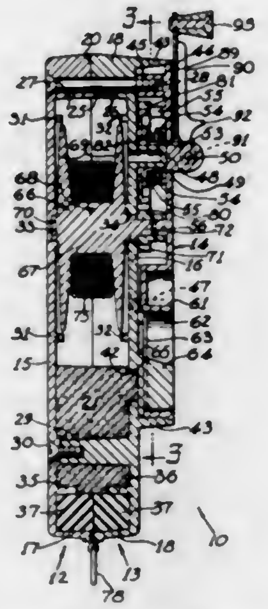


5. Apparatus for rolling material comprising, an elongated rotatable member, a plurality of longitudinally aligned fingers pivotally mounted on said member for movement between a position generally adjacent to said member and to a position extending outwardly therefrom, said member being insertable within a loosely coiled roll of material while said fingers are in said adjacent position, means for moving said fingers to said extending position to engage the inner surface of said material, crank means for operating said moving means and for rotating said member to tightly coil said roll of material, and spring means for retracting said fingers to said adjacent position after said material is tightly coiled about said member and fingers to free said fingers from the roll and permit withdrawal of said member from the roll.

3,311,319
CHALK LINE REEL

Robert K. Campbell, Costa Mesa, Calif., assignor to R. K. Campbell Enterprises, Inc., a corporation of California

Filed Apr. 8, 1965, Ser. No. 446,653
4 Claims. (Cl. 242—100)

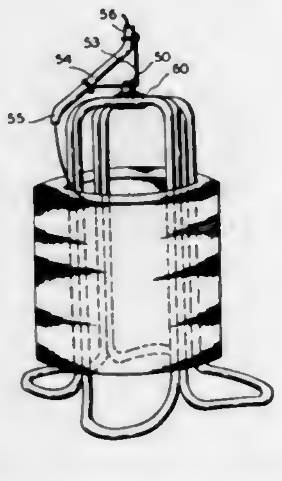


1. In a chalk line reel, the combination of: a line reeling spool; a box confining said spool, providing bearings therefor and confining a body of powdered chalk, there being an aperture in said box through which a line may be payed out as it is unwound from said spool; external crank means for rotating said spool to wind up said line on said spool; means for locking said crank means against rotation to prevent said line being payed out; and clutch means connecting said crank means to said spool and optionally operable while said crank means is locked against rotation to temporarily disconnect said spool from said crank means to free said spool for rotation for the rapid paying out of said line, without causing said crank means to rotate.

3,311,320
DISPENSING DEVICE

William Taylor, Jr., 2215 W. Indiana Ave., Elkhart, Ind. 46514

Filed Aug. 25, 1966, Ser. No. 580,140
15 Claims. (Cl. 242—128)

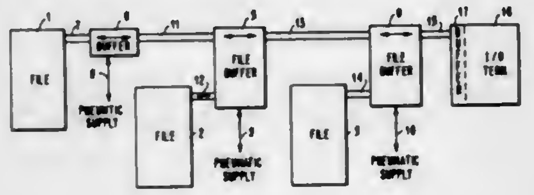


1. A dispensing package for coiled material which comprises at least two substantially identical elements, each of said elements having at least one vertical member each having a substantially horizontal inwardly disposed member integrally joined to the upper portion thereof, a substantially U shaped, outwardly directed substantially horizontal base member, one end of said base member being integrally attached to said vertical member, the other end of said base member being joined to the next adjacent identical element along its vertical member at a point substantially above the horizontal base plane, said horizontal inwardly disposed members being commonly attached at their innermost extremities.

3,311,321
CELL STORAGE AND PNEUMATIC TRANSPORT SYSTEM

Henry G. Hoehmann, Los Gatos, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 1, 1965, Ser. No. 492,085
11 Claims. (Cl. 243—1)

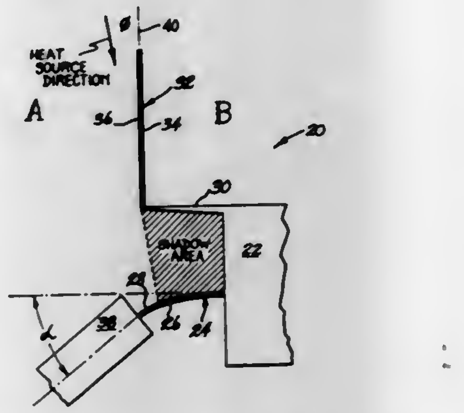


1. In a storage and retrieval system wherein carriers containing data are stored in files, a transport system for transporting selected carriers from said files to a terminal comprising:
a file buffer connected by pneumatic tubing to each of said files;
a pneumatic supply operative through said pneumatic tubing for transporting selected carriers from said files into their associated file buffers; and
means for transporting said selected carriers to said terminal from said file buffers.

3,311,322
SERVOMECHANISMS RESPONSIVE TO A HEAT SOURCE

Ward H. Zimmerman, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Sept. 17, 1964, Ser. No. 397,217
15 Claims. (Cl. 244—1)



1. A radiant heat source orientation device comprising:
(a) a base member;
(b) actuating means carried by said base member including a portion responsive to energy from a radiant heat source, said responsive portion producing a movement of said actuating means when exposed to a heat source;
(c) fixed shadow means carried by said base member so as to shadow the responsive portion of said actuating means from a radiant heat source when said heat source is in a first position relative to said device and to expose said responsive portion of said actuating means to said heat source when said heat source is in a second position relative to said device; and
(d) deflectable shadow means carried by said base member having a portion responsive to energy from a radiant heat source, said responsive portion of said deflectable shadow means producing a movement of said deflectable shadow means so as to shadow the responsive portion of said actuating means when said heat source is in said second position relative to said device.

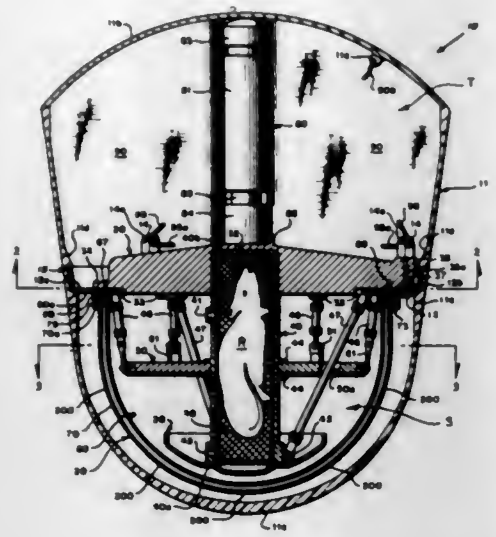
3,311,323
BALLISTIC RECOVERABLE SPACE BIO-PROBE

Klaus L. Cappel, Marlton, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Mar. 31, 1965, Ser. No. 444,468
16 Claims. (Cl. 244—1)

1. A recoverable ballistic space vehicle for providing life support for small animals and positionable within the nose cone of a launching vehicle comprising:
a pressure-tight life cell including
  a structural support member,
  a first pressure shell secured to said structural support member,
  a second shell surrounding said first shell and spaced therefrom for providing heat insulation therefor, said second shell attached to said structural support member through heat insulation means,
  means secured to said structural support member and extending within said life cell for housing a small animal, and
  means within said cell and supported by said structural support member for providing life support for the small animal;
a closed, heat-resistant re-entry capsule enclosing said life cell in spaced relationship therewith, said capsule having mounting means therein; and

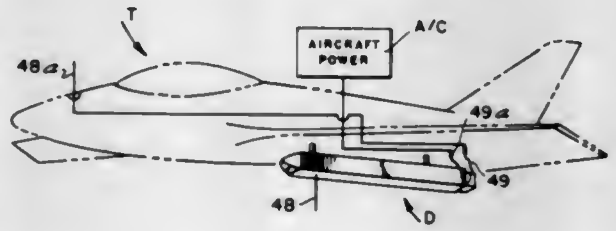
said structural support member attached to said mounting means with means therebetween for inhibiting the conduction of heat from said capsule to said life cell.



3,311,324
DESTRUCT SYSTEM FOR TARGET AIRCRAFT

Lloyd J. Holt, Ridgecrest, and Harry L. Myers and Gordon F. Zurn, Jr., China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed June 25, 1965, Ser. No. 467,153
6 Claims. (Cl. 244—1)



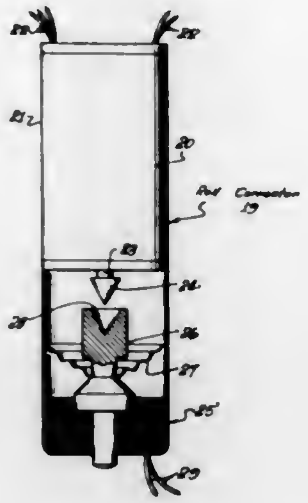
1. In a target-aircraft flight-termination system of a type having separable components for facilitating separate storage and flight-line assembly and adapted to be mounted along the main spar of one wing of a selected target and subsequently activated, through remote command signals while the target is in flight, for thereby effecting a severance of one wing from the target, means comprising in combination:

- an elongated shaped charge having an elongated V-shaped groove extending the length of one side thereof adapted to be detonated for thereby establishing an elongated explosive jet;
- an electrically armed and initiated fuze connected with said shaped charge adapted to arm and subsequently detonate said charge in response to voltages selectively applied thereto;
- control means adapted to selectively apply a plurality of voltages to said fuze in response to command signals transmitted from a remotely disposed transmitter; and
- packaging means retaining said device as a single unit including coupling means adapted to couple said system to an external surface of one wing of the selected target in a manner such that the groove of the shaped charge is caused to face the surface of the wing in transverse alignment with the main spar thereof, whereby explosive jets established at the detonation of said shaped charge may be employed for severing said spar.

3,311,325
ROLL CORRECTOR BRAKE MECHANISM

Cyril C. Miller, Claremont, Calif., assignor to General Dynamics Corporation, a corporation of Delaware

Filed Feb. 1, 1966, Ser. No. 523,988
5 Claims. (Cl. 244—3.1)



1. A roll corrector adapted for controlling the launch and flight path of an air vehicle comprising: a housing; a receiving synchro and a brake mechanism operatively located with respect to said housing; said receiving synchro including means adapted for electrically connecting said synchro receiver with associated components, and a rotatable shaft member, said shaft member being provided with a tapered end portion; said brake mechanism including an electric solenoid, said solenoid including leads adapted to be connected to a power source, a plunger member, said plunger member being movable in alignment with said shaft member, said plunger member being provided with a tapered concavity configured so as to cooperate with said tapered end portion of said synchro receiver shaft member, and a resilient diaphragm means operatively connected to said solenoid plunger member and to said housing; whereby said shaft member of said synchro receiver is allowed to rotate freely and is locked by said solenoid plunger member when said solenoid selectively receives suitable signals due to the cooperation between said tapered end portion of said shaft member and said tapered concavity in said plunger member caused by the tension of said diaphragm means.

3,311,326
FORCE DIRECTION INDICATOR AND APPARATUS AND METHOD EMPLOYING SAME

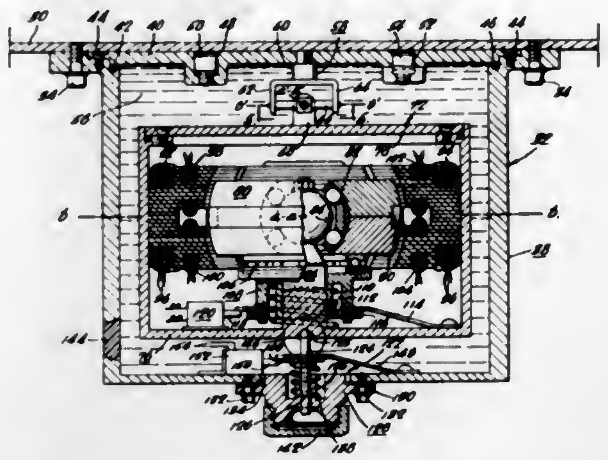
Dominick P. Scotto, Plainview, and Theodore J. Newman, Forest Hills, N.Y., assignors to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York

Filed July 17, 1964, Ser. No. 383,425
4 Claims. (Cl. 244—3.20)

1. A system for maintaining the net thrust on a vehicle along a predetermined direction in space, comprising:

- a pendulum support on said vehicle providing first and second pendulum pivot axes at right angles to each other and fixed with respect to said vehicle;
- a pendulum suspended from said support and comprising a pendulous member and a free gyro thereon, said free gyro including an inertia wheel having its spin axis oriented along said predetermined direction in space;
- pick-off means acting between said wheel and said pendulous member for producing control signals indicative of angular deviations between said wheel and an axis fixed in said member about a pair of axes perpendicular to said spin axis and to each other;

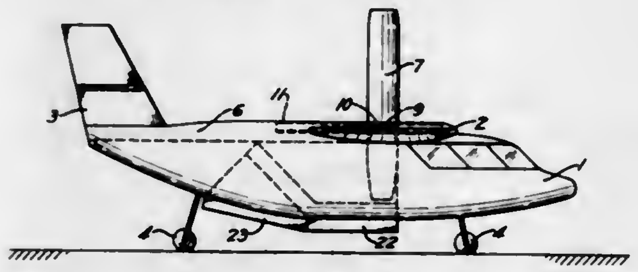
- means for applying to said vehicle a force of controllable magnitude and direction; and
- control means responsive to said signals for controlling said force-applying means to turn said vehicle in a direction to align said spin axis parallel to said axis in said pendulous member.



3,311,327
VERTICAL TAKE-OFF AND LANDING AIRPLANE

Thomas A. Greulich, 144 Spring House Lane, Pittsburgh, Pa. 15238

Filed June 17, 1965, Ser. No. 464,681
6 Claims. (Cl. 244—12)



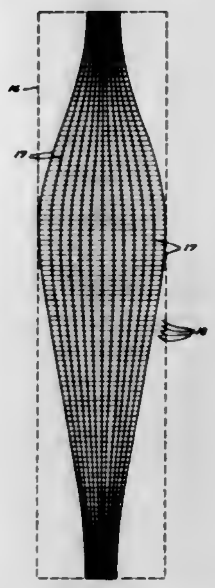
1. A vertical take-off airplane comprising a fuselage, wings projecting from opposite sides of the fuselage, a pair of parallel jet engines normally extending along the top of the fuselage between the wings, means pivotally connecting the engines to the fuselage on a transverse axis, means for tilting the engines on said axis to swing their rear ends in a curved path down into the fuselage until the engines are substantially vertical, pivoted control vanes mounted in the fuselage in rows extending from beneath the vertical position of the engines rearwardly behind said path, some of the vanes being mounted on axes transverse to the fuselage and others of the vanes being mounted on axes transverse to said first-mentioned axes, the bottom of the fuselage being open below said vanes while the engines are vertical and rotating toward normal position, and means for adjusting said vanes on their axes while the exhaust from said engines is flowing down across them, whereby to control the attitude of the airplane.

3,311,328
TAILORED WOVEN GORES FOR HEAVY LOAD BALLOON

Richard J. Slater, Northfield, Minn., assignor to G. T. Schjeldahl Company, Northfield, Minn., a corporation of Minnesota

Filed Apr. 19, 1965, Ser. No. 449,204
7 Claims. (Cl. 244—31)

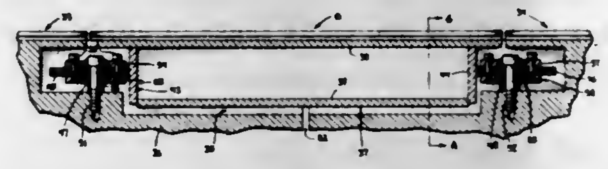
1. In a balloon comprising a plurality of gores, each having a longitudinal axis extending from one end thereof to the other and being secured together one to another along a line adjacent the lateral edges thereof to define an enclosure structure, each of said gores having a plurality of discrete reinforcing fibers bonded to a surface thereof at spaced points therealong and consisting of a plurality of fill fibers and a plurality of warp fibers, said warp fibers extending generally parallel to the longitudinal axis of said gore and being bonded to the surface of said gore substantially continuously along the extent of the length of each of said warp fibers, the number of said warp fibers secured to said surface at spaced points between said lateral edges being constant along the extent of said longitudinal axis, each of said warp fibers extending continuously from one end of said gore to the other.



3,311,329
FLEXIBLE TRACK SECTION FOR EXPANSION JOINT

Edward P. Lakitsky, Brookhaven, Pa., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 16, 1965, Ser. No. 514,412
4 Claims. (Cl. 244—114)



1. A pivotal track section for spanning an expansion joint on an aircraft carrier deck comprising:

- a platform having parallel top and bottom plates and two end plates,
- first and second support plates attached one each to each said end plate and extending outwardly therefrom parallel with said top plate,
- first and second ball elements stationarily attached to said aircraft carrier deck,
- separate means for pivotally attaching said support plates one each to eah said ball element, and
- track means attached to said top plate for constraining a slidable member.

3,311,330
AIRCRAFT EJECTION SEAT SYSTEM

James E. Hofferberth, Worthington, and John B. Morris, Reynoldsburg, Ohio, assignors to North American Aviation, Inc.

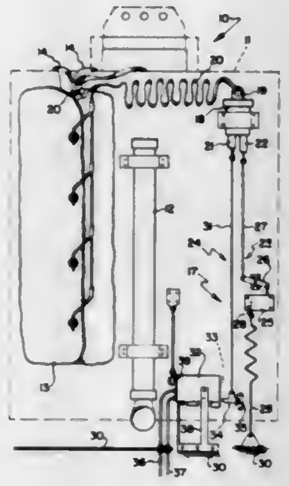
Filed June 22, 1965, Ser. No. 466,025
4 Claims. (Cl. 244—141)

1. In an ejection seat system for aircraft and the like and to be supported by and within aircraft structure, in combination:

(a) seat structure supported by said aircraft structure and combined with means for forcibly ejecting said seat structure and the occupant thereof from said aircraft structure into an environmental airstream,

(b) personnel parachute means,

(c) dual parallel parachute deployment initiator means one of which deploys said personnel parachute means with a fixed-time clearance delay when actuated and the other of which deploys said personnel parachute means with a fixed-time deceleration delay that is substantially greater in duration compared to said clearance delay, and



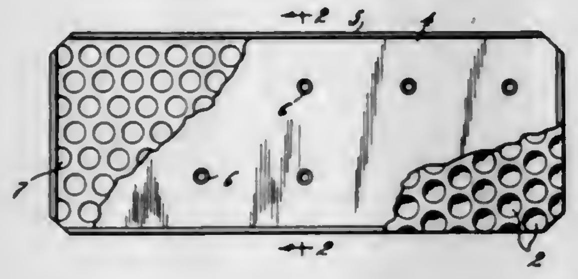
(d) pressure-sensing and pressure-responsive selector means for selectively actuating said one parachute deployment initiator means having a fixed-time clearance delay in override relation to said other parachute deployment initiator means having a fixed-time deceleration delay of greater duration,

said other parachute deployment initiator means being actuated as said seat structure is initially moved relative to said aircraft structure throughout an entire range of aircraft airspeeds, and said selector means actuating said one parachute deployment initiator means when sensing a dynamic pressure condition associated with the lower airspeeds portion of said entire range of airspeeds.

3,311,331
VIBRATION ABSORBING COMBINATION

Lawrence E. Steimen, Topsfield, Mass., assignor to Lowell Industries, Inc., Boston, Mass., a corporation of Massachusetts

Filed Oct. 7, 1965, Ser. No. 493,782
4 Claims. (Cl. 248—22)

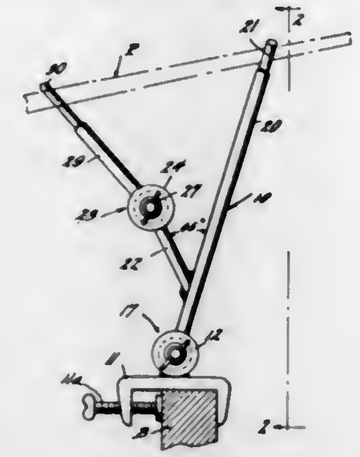


1. For absorbing vibration of a machine having a base, the combination of a vibration-absorbing pad, and means to interlock the pad with the base, characterized in that the pad comprises a slab of yielding material having recesses on its upper side and said means comprises a plate and upwardly projecting parts interfitting with the base to keep the base from creeping off the plate, the plate having downwardly projecting protuberances extending into said recesses to keep the plate from creeping off the slab.

3,311,332
FOLDING HOLDER FOR FISHING POLE

Alphonse John Takus, 1834 Kem Road, Marion, Ind. 46952

Filed Apr. 29, 1966, Ser. No. 546,424
5 Claims. (Cl. 248—42)

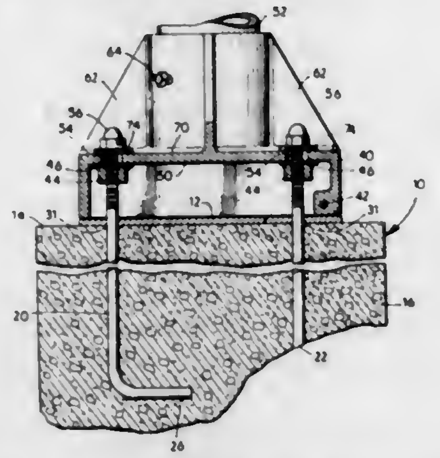


1. A fishing pole holder comprising the combination of a base member adapted to be fixed to a suitable support, an upstanding main post, means mounting said post for angular adjustment about a horizontal axis on said base member, a forward cradle member disposed at the upper end of said main post, an arm extending from said main post in a rearward direction, an elongated rod member, means mounting said rod member for angular adjustment about a horizontal axis at the end of said arm, said rod member extending in substantially the same rearward direction as said arm, and an inverted hook carried by the end of said rod member, whereby said fishing pole can be securely positioned between said cradle and said hook at a selected angle of inclination by angular adjustment of said main post and said rod member.

3,311,333
POLE BASE ASSEMBLY

William H. Galloway, 326 Arcadia Court, Fort Wayne, Ind. 46807

Filed May 17, 1965, Ser. No. 456,369
8 Claims. (Cl. 248—44)

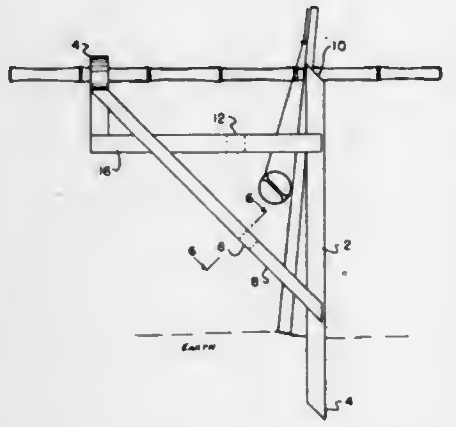


1. A pole base assembly for a standard comprising, in combination: a base plate having a plurality of spaced anchor bolts secured thereto, a mounting base having a socket for receiving one end of the standard therein, means for clamping the standard within the socket, a base plate and mounting base connecting means including a hinge pin and a number of journal members having openings for receiving the hinge pin so that the mounting base is movable vertically with respect to the base plate, said anchor bolts having a threaded portion on their exposed ends for receiving securing nuts, said mounting base having spaced oversize openings for permitting the threaded portion of the anchor bolts to pass therethrough to effect a direct connection between the mounting base and the anchor bolts, and adjustment means mounted on the anchor bolts between the base plate and mounting base for leveling the mounting base.

3,311,334
SUPPORT FOR UNATTENDED FISHING GEAR

Glenn Adron Wimberley, 1019 Usener St., Houston, Tex. 77009

Filed May 31, 1966, Ser. No. 554,055
9 Claims. (Cl. 248—44)



1. Apparatus for supporting an unattended fishing rod, said apparatus comprising

an angular shaped vertical support member having one beveled end adapted to be driven into the surface of the earth and having another beveled end forming a notch,

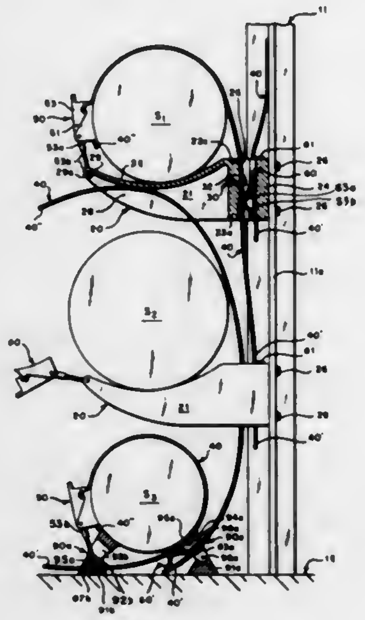
a horizontal support member perpendicularly attached at one end to said vertical support member, and

a retaining member perpendicularly attached at one end to the other end of said horizontal support member and having its other end in substantial alignment with the said beveled end of said vertical support member forming a notch.

3,311,335
SHIPPING SUPPORT WITH TIE-DOWN MEANS

Carl A. Damm, Upper Black Eddy, Pa., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 25, 1965, Ser. No. 467,148
10 Claims. (Cl. 248—119)



1. A supporting and clamping bracket for use with perforated, precurved, tie-down straps in the vertical storage and handling of loads of varying sizes comprising:

a bracket member;

a recess extending downwardly through said bracket member;

a strap extending into said recess;

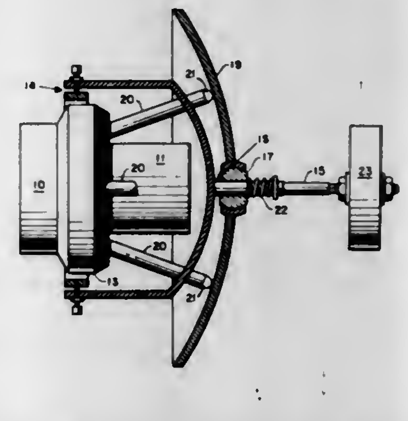
anchor lug means for engaging said strap and extending into said recess;

spring means in said recess and secured to said bracket member, said spring means including a strap-receiving guide and spring fingers for urging said strap against the side of said recess.

3,311,336
SPHERICALLY TRAINED PLATFORM

Olav Okland, Riverside, and Harold W. Haight, Corona, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Oct. 28, 1964, Ser. No. 407,266
5 Claims. (Cl. 248—163)



1. A spherically trained platform assembly for tracking about a spherical surface while maintaining the platform axis perpendicular to the spherical surface, comprising:

(a) a spherical dish,

(b) a first gimbal arrangement mounted in the center of the surface of said spherical dish,

(c) a rod extending through and being supported by said first gimbal arrangement,

(d) a platform having three supporting legs which movably bear against the inner surface of said spherical dish and which always maintain the central axis of said platform perpendicular to the spherical surface of said dish,

(e) a second gimbal arrangement,

(f) said platform being attached by means of said second gimbal arrangement to the end of said rod extending inside the spherical dish,

(g) said platform being movable in both horizontal and vertical directions while maintaining its central axis always perpendicular to the spherical surface of said dish by appropriate non-axial forces against the other end of said rod which extends outside said spherical dish.

3,311,337
PARALLEL MOTION MECHANISM

Heinz-Günther Müller vom Hagen, Uslar, Hannover, Germany, assignor to Ilse-Werke KG, Uslar, Hannover, Germany

Filed Jan. 19, 1965, Ser. No. 426,628
Claims priority, application Germany, Feb. 14, 1964, J 12,418
3 Claims. (Cl. 248—188.5)

1. A piece of furniture comprising

(a) two substantially parallel, elongated pillars, each pillar defining an axial bore,

(b) a first transverse strut rigidly interconnecting the two pillars,

(1) the pillars and strut constituting a first bridge system;

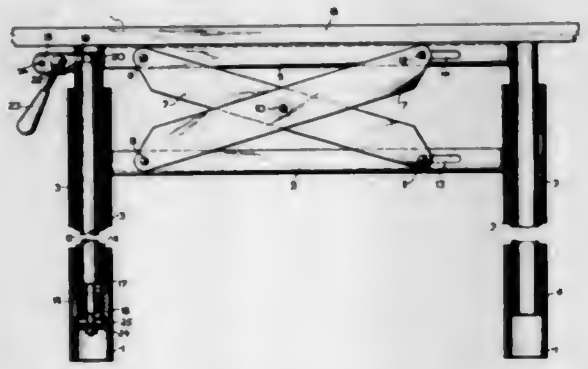
(c) two elongated supporting columns mounted for reciprocating movement in said axial bores,

(d) a part of a piece of furniture carried by said supporting columns for reciprocation in respect of said pillars,

(e) a second transverse strut rigidly interconnecting the two supporting columns and parallel to the first strut,

(2) the supporting columns and the second transverse strut constituting a second bridge system;

(f) a parallel motion linkage means interconnecting the first and second bridge systems;



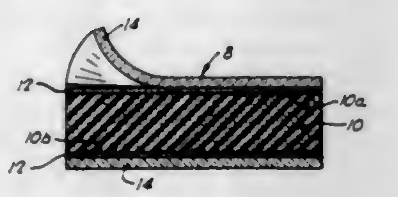
(g) brake means mounted on a single one of the supporting columns for permitting temporary retention of said one column at a desired vertical level upon engagement of the brake means and reciprocating movement of said column upon release of the brake means;

(h) means for actuating the brake means from outside said one column, said means including

(3) a rotatable operating handle positioned below said part of the piece of furniture, whereby release of the brake means by the operating handle causes reciprocating movement of said column; and

(i) roller bearings interposed between the telescoping pillars and columns.

3,311,338
ADHERENT CUSHIONING SUPPORT
Theodore P. Culley, 809 Lead Ave. SW., No. 1, Albuquerque, N. Mex. 87102
Filed Feb. 1, 1966, Ser. No. 523,990
1 Claim. (Cl. 248—205)



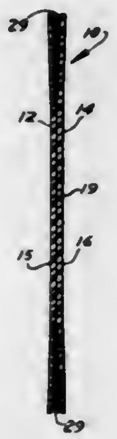
An article supporting pad for supporting and nonpermanently adhering one object having a substantially monoplanar surface to a second object having a substantially monoplanar surface, said pad comprising

a circular body of open celled, springy live latex foam rubber having a monoplanar, natural skin upper surface, and a monoplanar, natural skin lower surface extending substantially parallel to said upper surface and spaced therefrom by from about ⅛ to about ¼ inch, and further including a cylindrical side extending between said monoplanar surfaces, said latex foam rubber having a grade number of from RU–11 to RU–35 as defined by the American Society for Testing and Material in Standard D 1055–62, and having a bulk density of from about 0.002 to about 0.006 pound/cubic inch, said springy, live latex foam rubber having a resiliency and elastic memory, and a flexibility and softness, such that its upper and lower natural skin surfaces will deform under low pressure to conform during such deformation to minute cracks, depressions and discontinuities in a surface against which said natural skin surfaces are pressed, and will immediately snap back and recover their original shape upon release of pressure therefrom;

a film of pressure-sensitive, low tack convention badge adhesive gum uniformly covering each of said parallel natural skin surfaces, said convention badge gum being characterized by a nonpermanent tack and being removable from a surface to which said pad is adhered without leaving stains or other deleterious marks; and

a protective, continuous, unperforated release paper sheet superimposed on, and nonpermanently adhered to, each of the films of low tack convention badge adhesive gum, each of said release paper sheets lying in a single plane and completely covering one of the monoplanar, natural skin surfaces of said body of latex foam rubber and the low tack gum thereon whereby said gum is protected from exposure to air until said release paper sheets are removed, and whereby said springy, live latex foam rubber is unconfined and exposed on its cylindrical side and can thus expand in a radial direction upon compression between two objects bearing against the monoplanar upper and lower surfaces of said body of latex foam rubber.

3,311,339
SELF-HOLDING DEVICE
Bruce J. Frye, 1806 Longview Drive, New Brighton, Minn. 55112
Filed Feb. 7, 1966, Ser. No. 533,758
14 Claims. (Cl. 248—205)



1. A self securing article holding device comprising in combination:

a flexible body portion of relatively thin sheet material, said body portion having a perimeter and two outwardly disposed adhesive major faces,

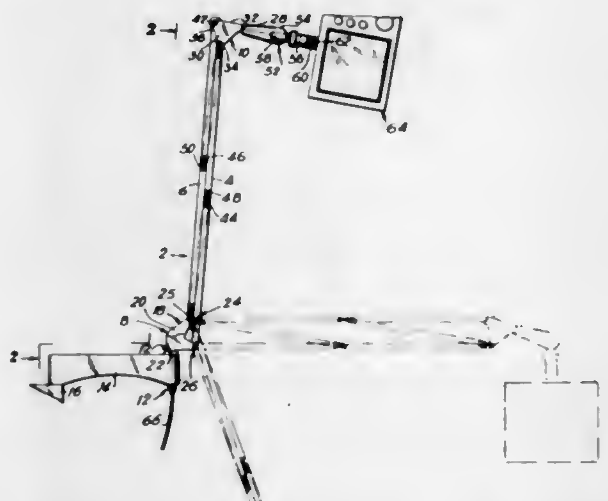
said body portion having coplanar non-adhesive areas adjacent a substantial portion of said perimeter,

at least one major face of said body portion being naturally self adhesive,

the other major face of said body portion having an adhesive material applied substantially centrally thereof and extending therealong, and

said non-adhesive areas extending about the marginal portions along said other major face of said body portion having said adhesive material therebetween.

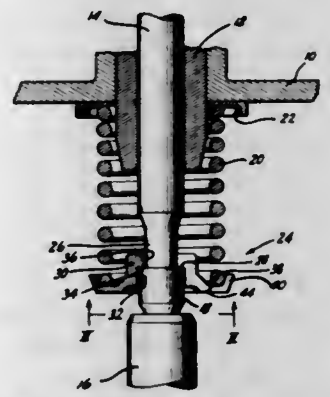
3,311,340
EQUIPOISE MECHANISM PARTICULARLY FOR SUPPORTING LAMPS AND SMALL TELEVISION SETS
John B. Rils, Riverside, Conn., assignor to Luxo Lamp Corporation, Port Chester, N.Y., a corporation of New York
Filed July 23, 1965, Ser. No. 474,334
3 Claims. (Cl. 248—284)



1. In an equipoise mechanism of the character described, the combination of, a pair of parallel arms of substantially the same length and comprising a first arm and a second arm, an arm-supporting bracket assembly comprising an elongated pivot and an arm-supporting bracket, first pivot means pivoting said arms on said arm-supporting bracket respectively upon a pair of parallel axes which are spaced from each other at a predetermined distance axially with respect to said elongated pivot, a supported bracket which is positioned at the ends of said arms opposite said arm-supporting bracket and which is adapted to provide support for an object, said supported bracket comprising a pair of interconnected metal plate portions positioned in spaced parallel relationship upon the opposite sides of adjacent ends of said arms, second pivot means forming a pair of pivots connecting said plate portions to the respective ends of said arms with axes spaced from each other said predetermined distance axially of said elongated pivot, whereby a linkage assembly is provided by which said supported bracket is maintained in a predetermined relationship with respect to said elongated pivot axis when it is moved during the swinging action of said arms, a first pair of coil springs positioned in parallel relationship upon the opposite sides of said arms with one end of each of the springs being attached to said supporting bracket at the pivot for said first arm and with the other end of each of said springs being attached to said second arm, a second pair of coil springs positioned respectively upon the opposite sides of said arms and substantially parallel to each other, one end of each of said second pair of springs being attached to said supported bracket at the pivot of said second arm and having its other end attached to said first arm, said springs cooperating to provide balanced and equalized forces at the pivots to counterbalance the weight of a supported object.

3,311,341
VALVE SPRING RETAINING MEANS
Italo D. Vironda and Leland W. Kirkpatrick, Battle Creek, Mich., assignors to Federal-Mogul Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 3, 1965, Ser. No. 517,498
6 Claims. (Cl. 251—337)

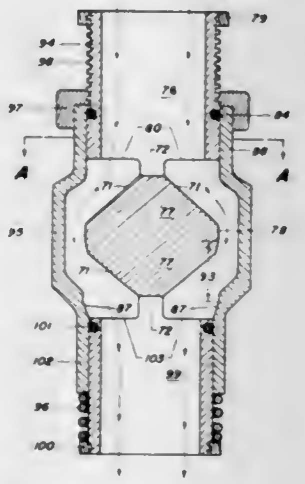
1. In a valve assembly having an elongated valve stem terminating in a cylindrical tip, said stem having a reduced diameter portion extending to said tip and defining an abutment shoulder on same normal to the longitudinal axis of said stem, a compression spring about said stem, and a valve spring retainer removably and rotatably mounted on said shoulder and compressibly engaged by one end of said spring, said valve spring retainer having an axially extending central body portion terminating in an outwardly extending annular flange, said body portion having an axial dimension in the direction of the axis of the valve stem substantially greater than the thickness of said flange in the direction of said axis of the valve stem, and having a pocket in the form of an inner, downwardly opening, axial cylindrical bearing portion substantially surrounding more than one-half of the circumference of said stem tip and extending the greater porttion of said axial dimension of said body portion, said bearing portion conforming to the outer surface of said stem tip in a close but free fit which stabilizes said valve spring retainer normal to said valve stem but permits free relative rotation, said bearing portion extending a substantial portion of the length of said tip, said central body portion of said valve spring retainer including an upper abutment flange portion normal to said cylindrical bearing portion and terminating in an arcuate edge and overlying said cylindrical bearing portion, said abutment flange portion engaging said stem abutment shoulder and said arcuate edge engaging one side of said reduced diameter portion of said stem, said annular flange having an upper surface to seat the lower end of said compression spring, said annular flange being normal to said cylindrical bearing portion of said body portion and disposed in axially spaced relation from said abutment flange engaged on said stem shoulder and engaged by one end of said compression spring, said annular flange being disposed under operating conditions in a plane intermediately of said stem tip, said annular flange including an outer annular peripheral shoulder portion extending axially upwardly and outwardly away from the direction toward which said cylindrical bearing opens so as to stabilize said valve spring relative to said valve spring retainer, said valve spring retainer including a portion defining a radial slot having parallel side walls uniformly spaced apart slightly more than the reduced diameter portion of said stem and extending from said arcuate edge continuously outward through one side of said central body portion, annular flange and peripheral shoulder, said retainer being held substantially tilt-free by the close but free fit of said stem tip in said cylindrical bearing portion of said spring retainer through all attitudes of operation while encouraging relative rotation of said stem with respect to said retainer and minimizing stem breakage in the reduced diameter portion of said stem.



3,311,342
SLEEVE-TYPE LINE VALVE
Jorgen D. Bering, Occidental, Calif. 95465
Filed Jan. 26, 1966, Ser. No. 523,132
3 Claims. (Cl. 251—344)

1. A sleeve-type valve comprising a first conduit having a first cylindrical exterior and an end terminus, a plug fixed relative to said first conduit having a first valve

seat on the exterior of said plug, a first spacer fixed to said first conduit and to said plug spacing said plug away from said end terminus of said conduit; a sleeve having a first end slidable over said first cylindrical exterior, an enlarged internal diameter central portion and a second end of diameter less than said central portion and formed with an internal second seat cooperable with said first seat to close said valve when said sleeve is moved toward said first conduit and to open said valve when said sleeve is moved away from said first conduit, said plug having an enlarged diameter substantially equal to the exterior of said first conduit and said sleeve being internally dimensioned so that the space between said plug and the interior of said sleeve on the side of said seats toward said conduit is substantially as great as the internal area of said conduit; a second conduit having a second cylindrical exterior axially aligned and spaced from said first conduit, a second spacer fixed to said second conduit and to said plug spacing said second conduit from said plug, said plug having surfaces slanted distally outward relative to said conduits in directions away from said conduits, said sleeve formed with a second end slidable over said second cylindrical exterior, said sleeve longitudinally slidable and non-rotative relative to said conduits and said plug, said sleeve at all times sealing both said conduits from communication with atmosphere, an abutment on the exterior of said second conduit opposite said plug, the end of said first conduit opposite said end terminus being externally threaded; said seats being of stainless steel; a nut on the threaded exterior of said first conduit, one end of said sleeve bearing against but non-rotative relative to said nut, and a spring around said second conduit bearing against said sleeve and said abutment.

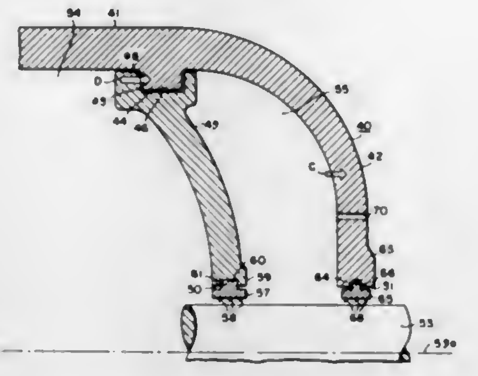


3,311,343

ELASTIC FLUID APPARATUS

Lewis J. Miller, Wallingford, and Donald N. Tapper, Media, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 14, 1965, Ser. No. 425,586
6 Claims. (Cl. 253—39)

1. An elastic fluid turbine casing structure comprising
a generally tubular external wall portion and an external end wall portion,
said tubular wall portion and said end wall portion jointly defining, in part, a space subject to elastic fluid pressure,
said end wall portion having a first opening through which a rotatable shaft is adapted to extend,
first sealing means disposed in said opening,
an internal end wall member disposed in said space and having a peripheral marginal portion in sealing abutment with one of said wall portions,
said internal end wall and said external end wall portion jointly defining an annular chamber,
said internal end wall having a second opening in registry with said first circular opening through which said shaft is adapted to extend,
second sealing means in said second opening for minimizing flow of pressurized elastic fluid from said space to said chamber,

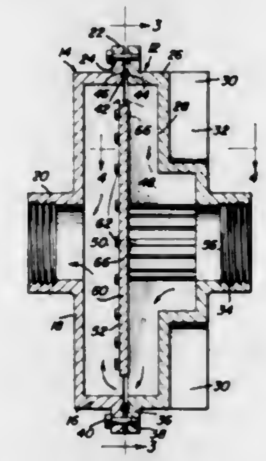


said first sealing means being effective to minimize flow of pressurized fluid from said chamber, and
means for connecting said chamber to a region of lower pressure than said space, whereby the fluid pressure level in said chamber is maintained at a lower value than in said space.

3,311,344

TURBINE WHEEL

John V. Yost, 2233 Riverside, Trenton, Mich. 49084
Filed Dec. 8, 1964, Ser. No. 416,723
10 Claims. (Cl. 253—39.15)

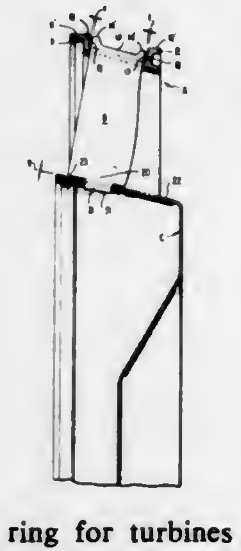


1. A turbine wheel including a pair of axially separable sections joined together, at least one of said sections defining a generally circular concentric recess opening axially toward the other section and defining a central cavity in said wheel between the opposite sides thereof, said sections including means defining centrally disposed inlet and outlet openings opening into said cavity, generally circular partition means disposed in said cavity intermediate its opposite ends and between said openings and including outer peripheral portions spaced inwardly of corresponding portions of the outer periphery of said central cavity, said partition means being supported from at least one of said sections and defining, together with said sections, a tortuous passage communicating said inlet and outlet openings, the portion of said cavity disposed between the end of said cavity through which the inlet opening opens and the opposing side of said partition means having generally radially extending and circumferentially spaced vanes disposed therein stationarily supported from one of said sections and the portion of said cavity on the other side of said partition means being free of such radially extending vanes, said turbine wheel including outer turbine blades mounted on said wheel in good heat transfer relation with at least some portions of the inner surfaces of said sections defining said cavity.

3,311,345

VANE CONSTRUCTION

Hans Krebs, Stuttgart-Zuffenhausen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed Sept. 27, 1965, Ser. No. 490,260
Claims priority, application Germany, Oct. 2, 1964, D 45,544
1 Claim. (Cl. 253—78)

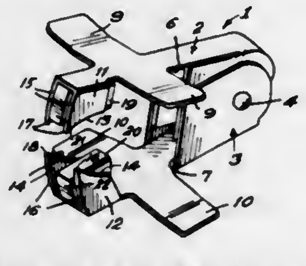


A guide blade ring for turbines and compressors of gas-turbine drive units comprising:
a plurality of guide blades,
inner and outer support ring means for securing the individual guide blades, said blades having inner and outer ends,
said outer support ring means being provided with outer apertures, said outer ends of said blades being inserted in fixed positions in said outer apertures,
said inner support ring means being provided with ends of said blades being radially adjustable in said inner apertures,
said outer support ring means comprising two collars having inner sides and outer edges,
said outer ends of said blades being U-shaped and extending approximately to the radial height of said outer edges,
the leading and trailing edges of said outer ends on the one hand and said inner sides on the other defining gaps and a welded seam of varying radial height securing said outer ends to said outer support ring means including said inner sides at said gaps, the radial height of said welded seam being greatest within said gaps.

3,311,346

STAPLE EXTRACTOR

Lathan C. Almond, Jr., 1427 E. Waverly St., Tucson, Ariz. 85719
Filed May 6, 1966, Ser. No. 548,326
5 Claims. (Cl. 254—28)

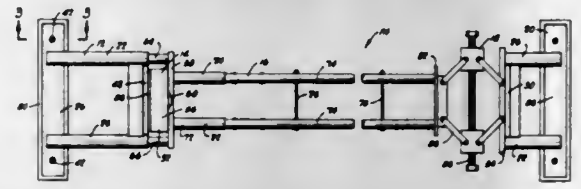


1. A staple extractor for the removal of wire staples from a material to which attached comprising in combination, a pair of opposed, spring biased channel units pivoted together at one of their ends, there being an undercut in each unit and a portion bent outward to form a pair of ears, a pair of opposed jaws formed on the free ends of each unit, said jaws having teeth at their opposed ends and a pair of opposed blocks fixed, one each in the floor of each jaw whereby when said units are pressed together, said pairs of teeth will normally remove a staple from the material, said blocks being adapted for gripping a broken piece of staple when remaining in the material for removal therefrom.

3,311,347

METHOD AND APPARATUS FOR STRETCHING CARPETS INCLUDING COMPRESSION FORCE MEASURING MEANS

Floyd N. Thompson, Burkburnett, Tex. 76354
Filed June 6, 1966, Ser. No. 555,448
7 Claims. (Cl. 254—57)

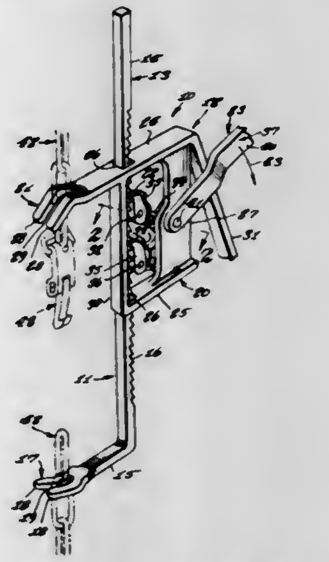


1. Carpet stretching apparatus comprising:
first and second spaced, telescopingly and slidingly connected carpet engaging members arranged to engage a carpet;
a compression force measuring means operably connected with said first carpet engaging member; and,
force exerting means operably connected with said force measuring means and with said second carpet engaging member for exerting a force on said apparatus to bias said carpet engaging members relatively apart thereby stretching the carpet between said members.

3,311,348

CHAIN JACK TENSIONING DEVICE

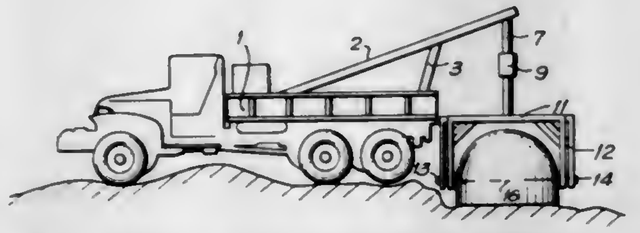
Raymond H. Taylor, Bishop, Calif.
(P.O. Box 122, Big Pine, Calif. 93513)
Filed Sept. 23, 1965, Ser. No. 489,555
1 Claim. (Cl. 254—74)



In a chain jack tensioning device, the combination of a stationary member, a slidable member on said stationary member, a claw on each of said members, and means for drawing said claws toward each other, said means comprising a ratchet on said stationary member, and a pair of pawls on said slidable member in engagement with said ratchet, said slidable member comprising a frame supporting said claw, one of said pawls and a lever unit having said other pawl, both said pawls being spring urged against said ratchet, said claws each comprising a stationary tine on said frame and a spring urged slidably retractable tine, a sleeve on said frame having an oversized opening, said slidable tine extending through said opening, a spur on said slidable tine, said spur abutting an edge of said sleeve when said tines are tilted relative to each other, and said spur passing through said sleeve when said tines are positioned in a straight line relative to each other.

3,311,349
SYSTEM FOR SECURING A SEISMIC VIBRATOR TO A VEHICLE

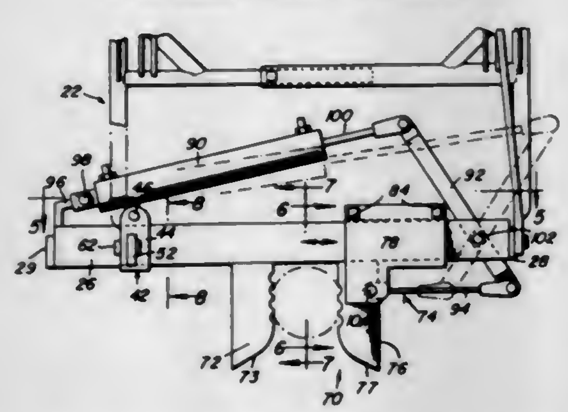
Julien Loeb, Saint-Cloud, and Jean-Pierre Rothenbuhler, Sucy-en-Brie, France, assignors to Compagnie Generale de Geophysique and Institut Francais des Petroles, des Carburants et Lubrifiants
Filed Sept. 21, 1965, Ser. No. 488,885
Claims priority, application France, Oct. 2, 1964, 990,098
4 Claims. (Cl. 254—93)



1. A system for securing to a vehicle chassis the casing of a vibrator adapted to produce elastic waves, comprising a framework rigid with the chassis, means pivotally connecting the vibrator casing with said framework and constraining the forces acting between the chassis and the vibrator to pass through the center of gravity of the vibrator, jacks fitted between said framework and the vibrator and adapted to shift the vibrator casing between a lower ground-engaging position and an upper released position, gauges carried by the vibrator casing and measuring the stresses exerted by the ground on the vibrator casing and means controlled by said gauges and acting on the jacks so that the resultant of the forces exerted on the vibrator including its own weight and the reaction of the ground on the vibrator has a direction perpendicular to the ground surface area in contact with the vibrator.

3,311,350
HYDRAULIC LIFT ATTACHMENT FOR VEHICLES

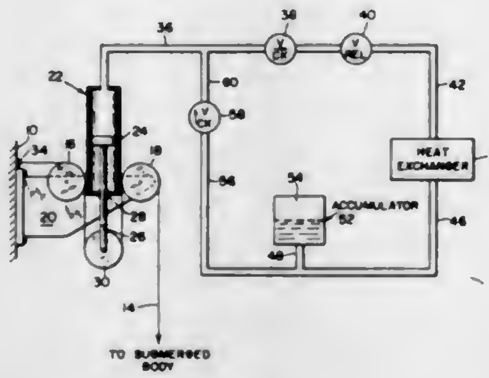
Maurice M. Irwin, Rte. 4, Noblesville, Ind. 46060
Filed May 18, 1965, Ser. No. 456,671
3 Claims. (Cl. 254—132)



1. In combination, a hydraulic lift attachment adapted to be removably mounted on spaced apart vertically swingable hydraulically actuated parallel boom members interconnected with a central hydraulic system of a tractor or the like, a transverse frame means provided with means removably securing said transverse frame means to respective parallel boom members adjacent their ends, jaw means carried by said transverse frame means and extending outwardly therefrom, said jaw means including a pair of substantially parallel jaw members, one of said jaw members being rigidly secured to said transverse frame means intermediate the ends thereof, the other of said jaw members being provided with means slidably supporting the jaw member on said transverse frame means for rectilinear sliding movement toward and away from said fixed jaw member, said jaw members being maintained in generally parallel relationship during opening and closing thereof, a double-action hydraulic cylinder having one end pivotally secured to said transverse frame means between said fixed jaw member and one end of said transverse frame means, said hydraulic cylinder being pivotally secured to said frame means inwardly thereof, said slidable jaw member being carried by said transverse frame means on the portion between the fixed jaw member and the end of the frame means opposite from that to which said cylinder is pivotally secured, means operatively connecting the operating piston of said cylinder to said rectilinearly slidable jaw member whereby the slidable jaw may be selectively reciprocated to grippingly engage an object to be lifted by said lift attachment, said operating piston connecting means including means operatively connecting the operating piston of said cylinder to said slidably mounted jaw member to selectively impart a sliding movement thereto, said connecting means including a lever pivotally journalled about a vertical axis carried by said transverse frame means, said pivoted lever having one end pivotally journalled to the operating piston of said hydraulic cylinder, a pivot pin carried by said slidable jaw, an operating link having one end pivotally journalled about said pivot carried by said slidable jaw, said operating link having its other end pivotally journalled to said pivoted lever outwardly of said pivot carried by said transverse frame means.

3,311,351
SHOCK ABSORBING DEVICE

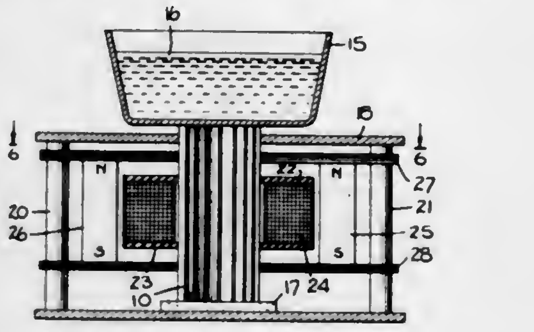
William W. Blakely, Thousand Oaks, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 2, 1966, Ser. No. 524,976
7 Claims. (Cl. 254—172)



1. Means for keeping a cable under a substantially uniform tension comprising:
- a tension responsive means having a portion movable in accordance with changes in cable tension;
- a sealed hydraulic system including a chamber in communication with said movable portion and containing hydraulic fluid;
- an accumulator to store hydraulic fluid under pressure;
- a first conduit communicating said chamber with said accumulator;
- said first conduit having a check valve therein to permit fluid to enter the accumulator and prevent fluid return to the chamber;
- said first conduit also having a pressure responsive control means therein to admit fluid to the accumulator when a predetermined chamber pressure is attained;
- a second conduit communicating said accumulator with said chamber;
- said second conduit having a check valve therein to permit fluid flow from the accumulator to the chamber but prevent fluid return to the accumulator;
- whereby upon increased cable tension fluid is stored under pressure in the accumulator and upon reduced cable tension the accumulator returns fluid to the chamber to maintain tension on the cable.

3,311,352
MAGNETOSTRICTIVE TRANSDUCERS

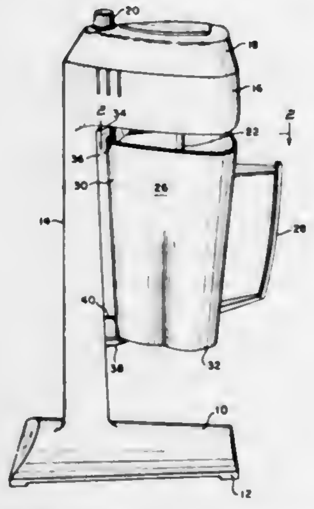
Frank Dostal, Elmhurst, N.Y., assignor to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 25, 1965, Ser. No. 442,734
9 Claims. (Cl. 259—72)



6. A magnetostrictive transducer comprising:
(A) a core fabricated of a sheet of magnetostrictive material corrugated into a series of parallel pleats, said pleats being circumferentially arranged to define a hollow cylinder, the end pleats in said cylinder being insulated from each other,
(B) a coil surrounding said core, and
(C) means to polarize said core including pole pieces disposed above and below said coil in operative association with said core, and a permanent magnet whose poles engage said pole pieces.

3,311,353
BEVERAGE MIXER

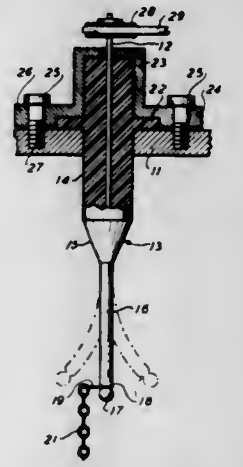
Raymond J. Rogenski, Torrington, Conn., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Oct. 21, 1965, Ser. No. 499,792
2 Claims. (Cl. 259—108)



1. An electric motor driven mixer which comprises,
- a base including an upright standard supporting an electric motor housing and a depending shaft driving a mixing means;
- a container for material to be mixed by said mixing means;
- arcuate guide means carried by the upper portion of said standard and an opposed flange depending from said motor housing for engaging the top of said container and for retaining the top of said container in operative position;
- a shelf projecting laterally and inwardly from the lower portion of said standard for supporting the bottom of said container;
- and opposed upright guide and flange means carried by said shelf for retaining the bottom of said container in operative position.

3,311,354
LEAKPROOF MOTION TRANSMITTER

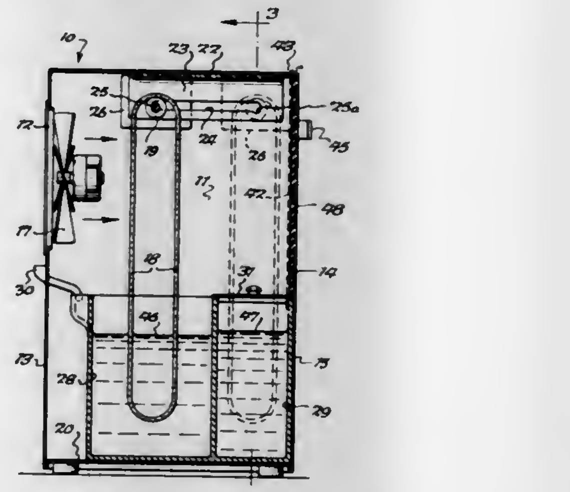
Kenneth T. Wilson, 45 Eagle Rock Ave., Roseland, N.J. 07068
Filed Oct. 21, 1965, Ser. No. 499,681
8 Claims. (Cl. 259—122)



1. A leakproof transmitter for rotary motion comprising a generally straight shaft for transmitting motion, one end part of said shaft being curved through an arc subtending less than a right angle, a flexible leakproof cover having a bore for the curved end part and the adjacent part of the straight portion of said shaft, and means for clamping the cover in leakproof engagement with a container while allowing the shaft to turn therein.

3,311,355
PORTABLE HUMIDITY CONTROL DEVICE

Joseph M. Rait, 95 Huxley Drive, Snyder, N.Y. 14226
Filed Aug. 19, 1965, Ser. No. 480,999
16 Claims. (Cl. 261—2)



1. A humidity control apparatus suitable for use for both humidification and dehumidification which comprises

a housing enclosing an air treatment chamber, said housing having an air inlet opening in one wall and an air discharge opening in an opposing wall,

a pair of tanks positioned at the bottom of said chamber,

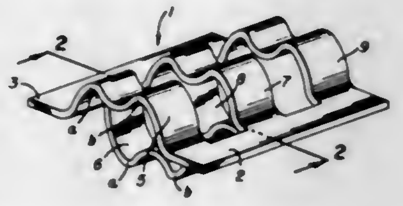
an endless, liquid-transport belt within said chamber between said openings, the belt extending across the openings in the housing, said belt being rotatably mounted and slidably moveable in the housing and extending below the upper level of said tanks,

support means positioned above and extending across said pair of tanks,

means for rotating said belt, said rotating means comprising roller means on which said endless belt is carried, and motor means connected to said roller means, whereby said motor means, when actuated, causes rotational movement of the roller and the endless belt carried by said roller, said roller means being supported by and slidably moveable within said support means, and

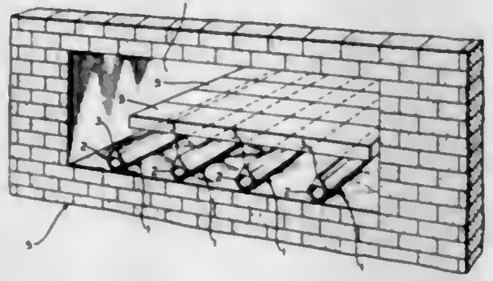
blower means for causing ambient air to enter said air inlet opening in said housing and to be discharged from said air discharge opening, whereby the ambient air passes through said endless belt before it is discharged from the housing.

3,311,356
TOWER PACKING
John S. Eckert, Silver Lake, Ohio, assignor, by mesne assignments, to U.S. Stoneware, Inc., a corporation of Massachusetts
Filed Dec. 17, 1965, Ser. No. 524,988
8 Claims. (Cl. 261—94)



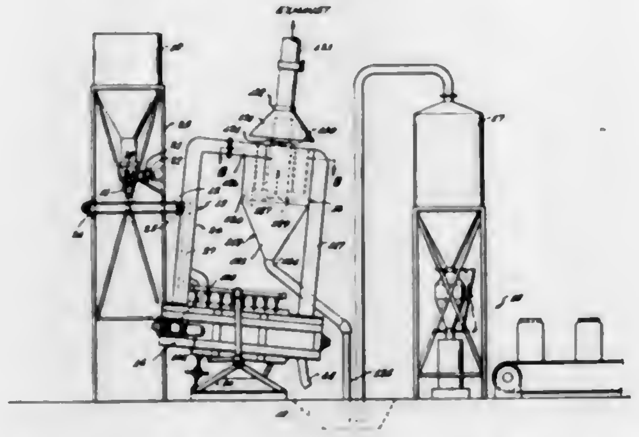
1. A packing element which includes a fin along each of its opposite edges, strips connecting these fins and having substantially parallel edges perpendicular to the fins, adjacent strips bulging in opposite directions, with the bulges indented to form at least two transfer points.

3,311,357
SKID PIPE FOR USE IN FURNACES
Joseph Richard Halter, Canton, Ohio, assignor to The Canton Drop Forging & Manufacturing Company, Canton, Ohio, a corporation of Ohio
Filed Nov. 16, 1964, Ser. No. 411,290
1 Claim. (Cl. 263—6)



A skid pipe for slab-heating furnaces, comprising a substantially straight extruded .10 to .15 carbon steel pipe of substantially circular cross section, and a longitudinally disposed integral rib upon the exterior of the pipe and coextensive therewith, said rib having a substantially semicircular outer edge and increasing in thickness toward the circumference of the pipe.

3,311,358
APPARATUS FOR EXPANDING HEAT-EXPANDABLE ORES
Albert E. Wagner, Sunland, Calif., assignor to Aden Supplies, Inc., a corporation of California
Filed June 29, 1964, Ser. No. 378,819
19 Claims. (Cl. 263—21)



1. An assembly for expanding crushed, heat-expandable ores, comprising:

a furnace structure including elements of refractory material defining an elongated furnace chamber having a pair of aligned front and rear openings in front and rear ends thereof, a side port from said chamber, a discharge port from said chamber through a lower side of said furnace structure adjacent said rear end of said chamber, and an exhaust port from said furnace chamber through an upper side of said furnace structure adjacent said rear end and communicating with said discharge port;

a pair of tubular ovens having openings at their ends;

rotary support means extending through said front and rear openings in said furnace chamber and coupled to opposite ends of said ovens for supporting said ovens side by side along said furnace chamber with a rear end of each oven opening into said discharge port and said exhaust port whereby crushed, heat-expandable ores expanded in said ovens and passing through said open rear ends drop through said discharge port and exhaust with any lightweight particles of said ores pass upward from said chamber through said exhaust port;

burner means in said furnace structure for establishing flames along opposite sides of said furnace chamber to heat lateral surfaces of said ovens;

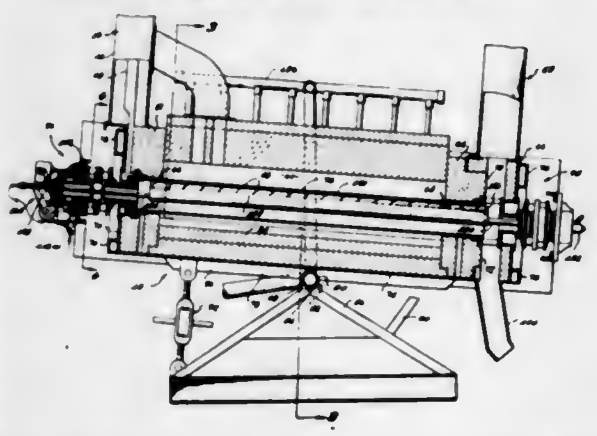
rotary drive means coupled to said rotary support means for rotating said ovens in opposite directions relative to said burner means with the right side oven rotating in a clockwise direction and the left side oven rotating in a counterclockwise direction;

means adapted to support said furnace structure in a position wherein said ovens are tilted downward from the front toward the rear of said furnace structure;

initial expansion and supply means for crushed heat-expandable ores for delivering said ores into a front end of each oven and for partially expanding said material while entering said ovens including a first generally vertical chimney extending from said furnace structure, a hot air duct from said side port in said furnace structure to said chimney, and a generally vertical feed tube for each oven within said first chimney having an upper end adapted to receive ore through an opening in said first chimney and a lower end leading to the front end of an oven;

and means for recovering said lightweight expanded ores in said exhaust including a second generally vertical chimney over said exhaust port, a recovery hopper comprising a relatively large vertical tubular member having an open bottom, a central exhaust opening in its top, a side port communicating with said second chimney, and a vertically extending spiral-shaped deflection plate extending downward from the top of said tubular member from one side of said port around and converging inward toward said exhaust opening.

3,311,359
FURNACE STRUCTURE FOR EXPANDING HEAT-EXPANDABLE ORES
Albert E. Wagner, Sunland, and John S. Adkins, Santa Monica, Calif., assignors to Aden Supplies, Inc., Los Angeles, Calif., a corporation of California
Filed June 29, 1964, Ser. No. 378,818
12 Claims. (Cl. 263—34)



1. A furnace assembly for expanding crushed, heat-expandable ores, comprising:

a furnace structure including elements of refractory material defining a pair of separated, open-ended, elongated furnace chambers each having an inverted generally heart-shaped cross section with right and left side lobes;

a tubular oven extending along and supported for rotary movement within each lobe of said furnace chambers;

a plurality of generally vertical burner nozzles supported in said furnace structure above each of said ovens and spaced along opposite longitudinal side surfaces of said furnace chamber;

a fuel line system for supplying fuel to said burners including a pipe under and extending between opposite sides of said furnace structure, fuel-carrying ducts from one end of said pipe to each nozzle associated with one of said furnace chambers, fuel-carrying ducts from an opposite end of said pipe to each nozzle associated with the other of said furnace chambers, and a fuel supply line from a fuel source to said pipe;

means including said pipe for supporting said furnace structure in a position wherein said ovens are tilted downward from the front toward the rear of said furnace structure;

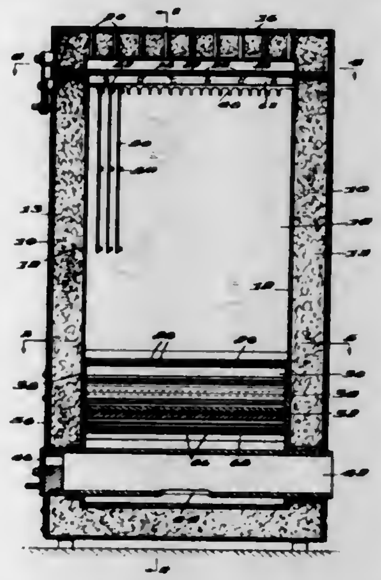
rotary drive means coupled to said ovens for rotating said ovens within said furnace chambers;

adjustable means for feeding heat expandable ore at a common rate into a front end of each of said ovens;

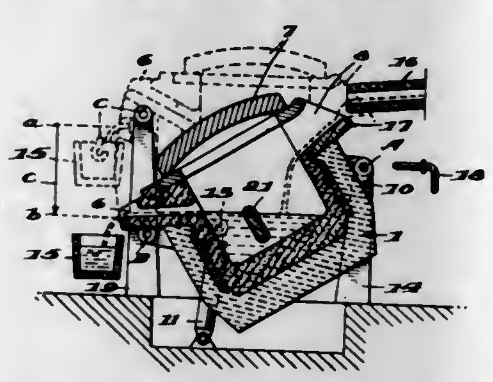
and means for scouring the inner surfaces of said ovens as they rotate within said furnace chambers.

3,311,360
AIR AGING OVEN APPARATUS
Maynard Foster Torrence, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 29, 1964, Ser. No. 407,414
6 Claims. (Cl. 263—40)

1. In an aging oven, a rectangular casing, said casing having an air heating region and an oven chamber immediately above and communicating with said heating region through at least one row of inlet holes in the lower wall of said chamber, means for propelling air through said inlet holes, removable cover means at the top of the chamber having at least one row of outlet ports to discharge heated air therefrom, said outlet ports having a greater total air flow capacity than said inlet holes in the lower wall; said outlet ports and inlet holes being in alignment in the same vertical plane transverse to the direction of the rows, rack means supported by said rectangular casing near the top of said chamber, said rack means being provided with suspension pins for suspending test samples vertically into said chamber, said pins being positioned such that each pin and test sample suspended therefrom is between two adjacent inlet holes along the rows.



3,311,361
INDUCTION FURNACE
Hermann Zepernick, Dortmund-Brechten, Germany, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed Mar. 11, 1964, Ser. No. 351,063
2 Claims. (Cl. 266—34)



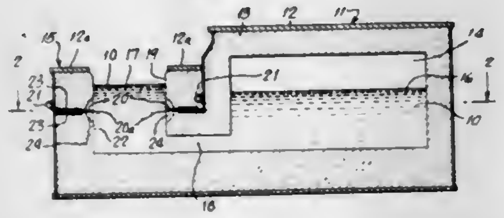
1. An induction furnace for the continuous further treatment and casting of metal such as iron which originates from a shaft furnace and which serves for premelting the metal, said induction furnace being channel-free and of the crucible type and which includes at opposite sides of said crucible respectively at the upper part thereof a pouring-off spout and a pouring-in aperture adapted to register with a discharge channel of said shaft furnace, first and second bearing pedestals located respectively at said opposite sides of said crucible, said first bearing pedestal located at the side of said crucible provided with said pouring-in aperture including a first bearing means alignable with a cooperating first bearing means located on said crucible below said pouring-in aperture and connectable therewith by a removable pin so as to establish a first pivot axis for said crucible by means of which said crucible may be tilted from a basic essentially horizontal position to a downwardly inclined position providing a partial pour-off of the cru-

cible contents, and said second bearing pedestal located at the side of said pouring-off spout including a lower second and an upper third bearing means alignable alternatively with a cooperating second bearing means located on said crucible below said pouring-off spout, said second bearing means on said crucible being connectable alternatively with said second or third bearing means on said second pedestal by a removable pin so as to establish a lower and second pivot axis for said crucible by means of which said crucible may be tilted upwardly from said downwardly inclined partial pour-off position when released from said first pivot axis so as to effect a complete emptying of the crucible, and so as to establish an upper and third pivot axis for said crucible by means of which said crucible may be tilted downwardly in the opposite direction when released from said first pivot axis from said basic position to a point where said pouring-in aperture is removed from registration with said discharge channel of said shaft furnace and exposed to enable insertion of a scraper tool for de-slagging of the metal within the crucible.

3,311,362
REFRACTORY GAS SEAL

Bryan Rapson and Frederick William Southam, Arvida, Quebec, Canada, assignors to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Sept. 30, 1964, Ser. No. 400,381
12 Claims. (Cl. 266—34)



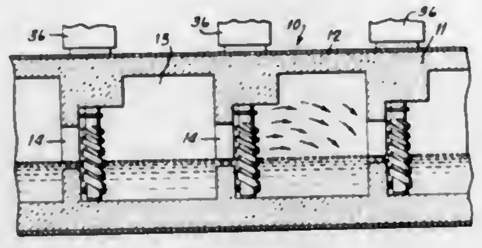
1. Refractory apparatus comprising first means containing a body of molten material having a first surface with a first gas-space thereover, second means interconnecting with said body of molten material below said first surface and containing a portion of said molten material having a second surface with a second gas-space thereover, refractory material lining the interior of said first and second means so as to form a refractory path from one to the other, means sealing said refractory path against passage therein of gas between said first means gas-space and said second means gas-space under the influence of a differential pressure caused by greater gas pressure at one of said surfaces than at the other of said surfaces comprising a continuous web set within said refractory path a distance below said other of said surfaces where the fluid static pressure of the melt is at least equal to said differential gas pressure and completely closing off said refractory path to gas flow.

3,311,363
GAS-LIQUID CONTACT APPARATUS FOR ALUMINUM REFINING BY THE SUBHALIDE DISTILLATION PROCESS

Norman W. F. Phillips, Bryan Rapson, and Frederick William Southam, all of Arvida, Quebec, Canada, assignors to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Oct. 30, 1964, Ser. No. 407,760
19 Claims. (Cl. 266—34)

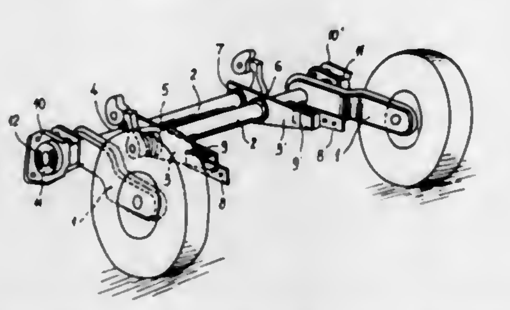
4. Apparatus for mixing and contacting a gas with a liquid comprising a chamber having a lower liquid region adapted to contain said liquid and an upper gas region adapted to accommodate said gas over the surface of said liquid, said chamber having a gas inlet end and a gas outlet end for passage of gas through the upper gas region in a direction of path extending generally from inlet to outlet, and liquid spraying means located in the chamber intermediate said ends and having a portion thereof within said lower liquid region and another portion thereof within said upper gas region, said liquid spraying means comprising a vertically disposed helical screw-lift adapted upon rotation thereof to lift liquid from the lower liquid region to the upper gas region and to therein release the liquid tangentially throughout the helical ascent thereof, and a concave member closely conforming to a limited arcuate portion of said helical screw-lift in the upper gas region portion thereof, said member being disposed to block release of liquid spray from said screw-lift in directions toward said outlet end.



3,311,364
MOUNTING OF MOTOR VEHICLE SUSPENSION ARMS

Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works

Filed June 7, 1965, Ser. No. 461,917
Claims priority, application France, July 3, 1964, 980,656, Patent 1,408,374
1 Claim. (Cl. 267—22)



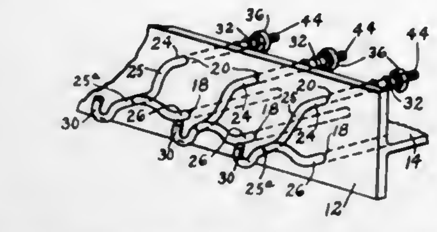
In a road vehicle having at least two suspension arms on each of which a vehicle wheel is mounted, the improvement comprising a pair of pivot shafts overlapping each other over a substantial portion of their lengths, each of said arms being rigidly mounted on a corresponding shaft, a pair of support plates extending at right angles to said shafts and having elastic bearing means through which said shafts extend to interconnect said shafts, and a pair of flexible rubber blocks extending from said plates and connecting said plates to the vehicle body, whereby the arms and their associated shafts form a one-piece unit.

3,311,365
CABLE FLOOR STRUCTURE

Oliver C. Eckel, P.O. Box 226, Carlisle, Mass. 01741

Filed Mar. 1, 1965, Ser. No. 435,937
3 Claims. (Cl. 267—89)

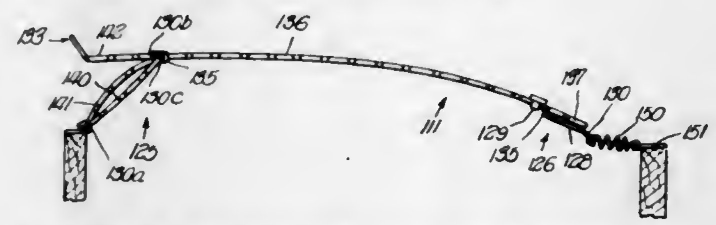
1. Floor structure comprising main supporting means embodying I-beams at opposite sides of said structure, each having a front flange, a rear flange and a web between said flanges, said front flange having upper holes and lower holes above and below said web respectively in vertical alignment, said lower holes and said upper holes being respectively in horizontal alignment, connectors at opposite sides of said structure each embodying two offset rods extending respectively through said upper and lower flange holes and meeting at one point forwardly of said flange and being integrally joined, said connectors each having a hook portion extending beyond said integral jointure, floor cables extending laterally of said structure and connected to said hook portions, bearing means on said offset rods rearwardly of said front flange, and coil springs around said rods and between said front flanges and said bearing means.



3,311,366
SPRING CONSTRUCTION

Lawton H. Crosby, Lake Bluff, Ill., assignor to Morley Furniture Company, Chicago, Ill., a corporation of Illinois

Filed Nov. 23, 1964, Ser. No. 413,248
4 Claims. (Cl. 267—102)



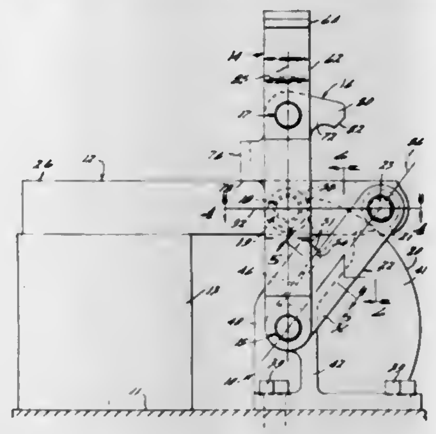
1. A spring arrangement for a spring assembly including a front rail and a back rail, comprising: a sinuous spring band disposed between the front rail and the back rail, front torque inducing means on said band connected to the front rail, rear torque inducing means on said band connected to the back rail, said rear torque inducing means exerting a downward torque in said band adjacent the back rail, said front torque inducing means exerting an upward torque in the body of said band at a predetermined substantial distance from the front rail, said front torque inducing means including a portion of said spring band bent toward said back rail about a first linear segment secured to said front rail, a second linear segment in said portion secured to a third linear segment in the body of said spring band at said predetermined distance from said front rail, a freely extending section of said band portion being bent toward said front rail about said second linear segment, said spring band body and portion between said first and second linear segments being bent downwardly from the rest of the body of said band about said second linear segment so that the front area of the arc of said body is substantially flattened, and the rear area of the arc of said body is maintained substantially arced, said freely extending section diverging from said band body and portion between said first and second linear segments and extending in approximately the same substantially flat arc as the front area of said body, said upward and downward torques developing a dynamic interplay of forces in the body of said band to provide superior resilience when a subject is seated on said spring arrangement and upward thrust as the subject arises.

3,311,367
TOGGLE CLAMP

Jack J. Sendoykas, 3201 E. Jefferson Ave., Apt. 1, St. Clair Shores, Mich. 48082

Filed Nov. 12, 1964, Ser. No. 410,519
21 Claims. (Cl. 269—91)

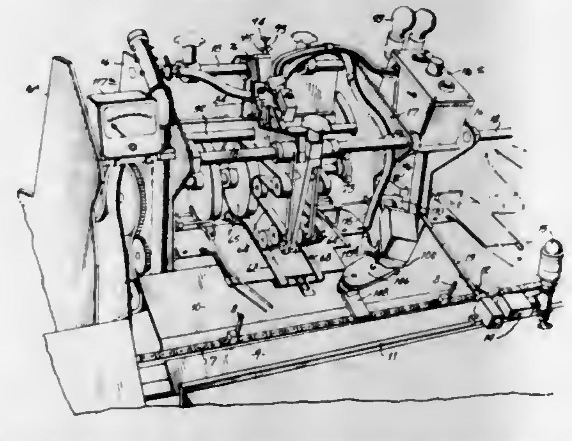
1. A clamp comprising work engaging means movable between an open retracted position and a closed clamping position, base means movably supporting said work engaging means for movement between the open position and the closed position, support link means pivotally connected to said base means and said work engaging means, cam means provided on said base means, handle means pivotally connected at one end to said support link means and to said base means, control link means pivotally mounted on said handle means and on said work engaging means, first abutment means formed on said control link means and being engageable with said work engaging means in the closed position and during movement to the closed position, second abutment means formed on said control link means and being engageable with said work engaging means in the open position and during movement to the open position, and roller means supporting said work engaging means on said cam means during movement between said closed position and said open position.



3,311,368
HIGH SPEED SIGNATURE GATHERING MACHINE

Ernest J. Sarring and Robert A. Bryson, Easton, Pa., assignors, by mesne assignments, to T. W. & C. B. Sheridan Co., New York, N.Y., a corporation of New York, a subsidiary of Harris-Intertype Corporation, New York, N.Y., a corporation of Delaware

Filed July 10, 1963, Ser. No. 293,987
15 Claims. (Cl. 270—54)

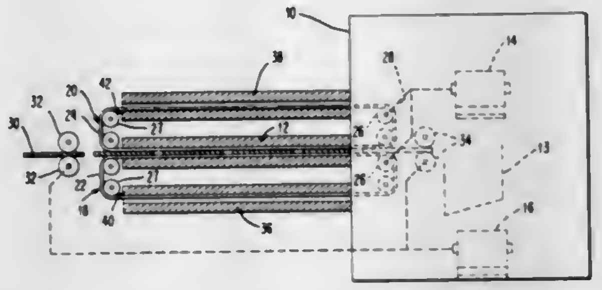


1. A signature gathering machine including a series of first means for feeding signatures automatically and continuously one after another, a series of interspaced constantly traveling second means extending along the series of first means for engaging the signatures fed thereby with each second means moving from each of the first means to the next of the first means to accumulate signatures, said second means being interspaced a predetermined distance, and means for mechanically intergearing the two series over a range of infinitely differing angular relations so that the first means are timed to feed the signatures to the second means when the latter are interspaced a predetermined distance and including for each of the first means a clutch for disengaging and re-engaging each first means with respect to its intergearing with the second means series, so that each first means may be retimed individually to feed

signatures for substantially immediate engagement thereof by each second means regardless of the latter's exact interspacing.

3,311,369
RECORD TRANSPORT SYSTEM

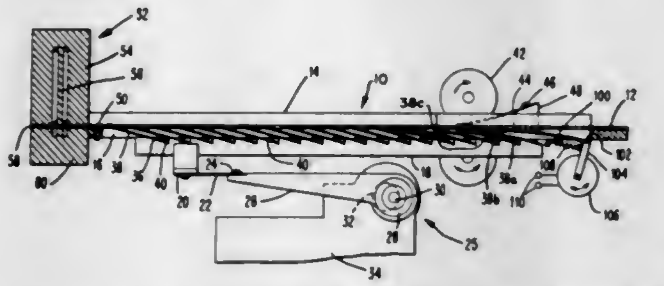
Solomon H. Pitt, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 12, 1965, Ser. No. 439,150
14 Claims. (Cl. 271—45)



1. In a record transport device for transporting discrete records with respect to a completely enclosed record handling system, said record handling system capable of radiating spurious energy indicative of the operation of said record handling system, a connecting passage communicating with said record handling system; two return passages communicating with said record handling system, said return passages located adjacent said connecting passage; a first continuous transport belt passing through said connecting passage and one of said return passages; a second continuous transport belt passing through said connecting passage and the second of said return passages; said first and second continuous transport belts being spaced apart in said connecting passage by the thickness of said records; said connecting passage and said return passages comprising lengths of microwave wave guides of sufficient width to permit the passage of said first and second continuous transport belts therethrough and of sufficient length to substantially prevent the radiation of energy from within said completely enclosed record handling system; drive means coupled to said continuous transport belts to drive said belts in either of two directions and means to insert said discrete records between said moving continuous transport belts whereby said records are transported with respect to said completely enclosed record handling system with minimum unwanted radiation of energy from within said completely enclosed record handling system.

3,311,370
SELECTIVE RECORD CARD ADVANCING MECHANISM

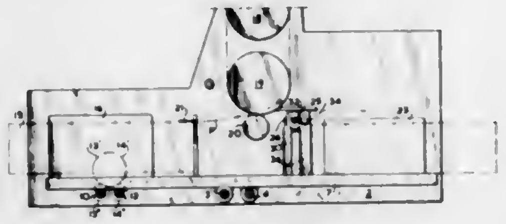
Alexander Hunter, Chalfont, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 5, 1965, Ser. No. 445,611
7 Claims. (Cl. 271—54)



1. In an apparatus for advancing material in a step-by-step manner to a succession of equally spaced positions comprising: a reciprocable material engaging means arranged to operatively engage the material in successive steps for repetitive advancing thereof when the material engaging means is moving in a direction of desired material advance; material guide means extending along the path of motion of said material engaging means and fixedly mounted with respect to said material engaging means to cause engagement of said material with said material engaging means; drive means coupled to said material engaging means to reciprocate said material engaging means; restraining means mounted in close proximity to said material engaging means acting to limit the amount of advance of said material in the desired direction of material advance and prevent movement of said material in a direction other than the direction of desired material advance; a movable shield means mounted intermediate said material and said material advancing means to prevent contact between said material and said material advancing means; translating means coupled to said shield means for selectively moving said shield means between a first position in which said shield means prevents contact between said material and said material advancing means and a second position in which said shield means permits contact between said material and said material advancing means; and control means coupled to said translating means to enable said shield means to be selectively moved to said first or second position.

3,311,371
ADJUSTABLE GUIDE MEANS FOR DUPLICATING MACHINE

Karl G. Zeuthen, Gentofte, Denmark, assignor to Zeuthen & Aagaard A/S, Glostrup, Denmark, a corporation of Denmark
Filed Apr. 12, 1965, Ser. No. 447,205
Claims priority, application Denmark, Apr. 18, 1964, 1,929/64
3 Claims. (Cl. 271—59)



1. In a duplicating machine having at least one roller and a counter-pressure roller in which sheets are supplied from a supply stack at the entrance of the machine to said rollers and delivered from said rollers to the discharge end of the machine, the improvement comprising a pair of parallel spaced carrying members extending from the entrance of the machine to the discharge end thereof, side guides for the sheets in the supply stack and side guides for the discharged sheets, said side guides being mounted on said carrying members, and means for adjusting the distance between said carrying members to simultaneously adjust the distance between the side guides for the sheets in the supply stack and the distance between the side guides for the discharged sheets.

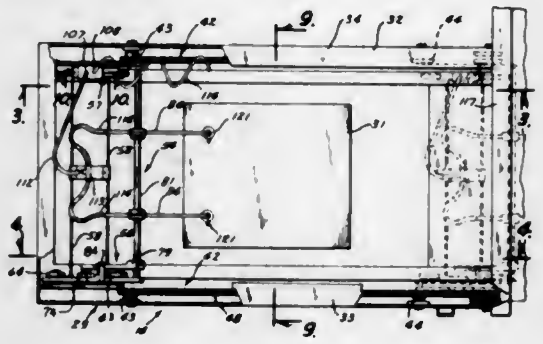
3,311,372
SHEET MATERIAL HANDLING APPARATUS

Gardner V. Hall, Des Moines, Iowa, assignor to Pace Mfg. Co., Des Moines, Iowa, a corporation of Iowa
Filed Apr. 15, 1965, Ser. No. 448,309
4 Claims. (Cl. 271—74)

1. In a screen printing press having a bed frame for holding a sheet material to be printed upon and a screen supporting frame movably mounted on said bed frame for up and down movement toward and away from said bed frame, a material pickup apparatus for automatically removing the material from said bed frame after being printed upon comprising:

(a) a frame structure extended laterally from one side of said bed frame,

(b) a vacuum pickup means movably supported on said frame structure for horizontal reciprocal movement between a first position between said bed frame and screen supporting frame, when said supporting frame is moved away from said bed frame, and to a second position adjacent the outer end of said frame structure,



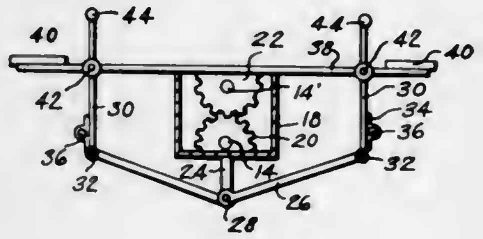
(c) means for holding the pickup means in said first position for a predetermined time interval,

(d) means for linearly moving said pickup means vertically into engagement with the printed material during said time interval, and

(e) means for supplying a subatmospheric pressure to the pickup means during said predetermined time interval and for releasing said pressure when the pickup means is in the second position therefor.

3,311,373
SEESAW INCLUDING GEAR MEANS FOR TRANSMITTING MOVEMENT

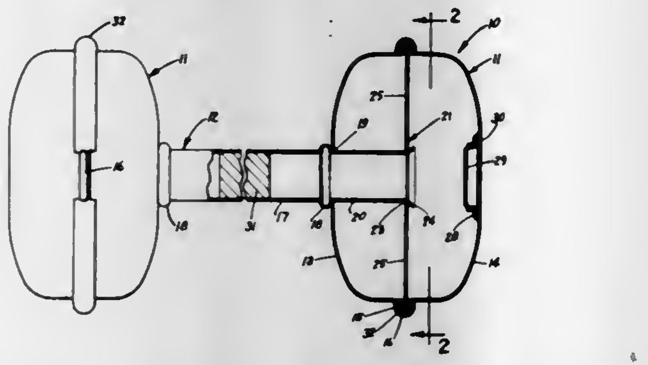
Donald W. Phillips, R.D. 2, Claysville, Pa. 15323
Filed July 23, 1964, Ser. No. 384,758
1 Claim. (Cl. 272—54)



A seesaw apparatus comprising, in combination, a pair of A-frames, first and second cross-bar members carried by said A-frames for providing support for the movable components of said apparatus, a gear box having an arcuate slot and a hollow bottom portion therein, said gear box movably supported on said cross-bar members, a pair of sector gears positioned within said gear box with each rotatably secured to one of said cross-bar members, a downwardly extending rod secured to said second cross-bar member and being oscillatably disposed relative to said hollow portion of said gear box, a pair of elongated link rods being pivotally secured to a pair of swaying downwardly extending rod, the free ends of said elongated link rods being pivotally secured to a pair of swaying means which include a pair of control bars, each bar being provided with a horizontal foot rest, a pair of elongated parallel bars firmly affixed to the top portion of said gear box and being adapted to operably communicate with the outwardly positioned control bars, a circular seat at each end of the elongated parallel bars for imparting swaying motion to its respective control bar for pivotally moving its adjacent elongated link rod for imparting the rotary motion to the sector gears within said gear box, thereby causing said elongated parallel bars to rock relative to said cross-bar members, and a plurality of transverse pins carried by said cross-bar members for providing stop means against lateral sliding of said gear box when said apparatus is in operation.

3,311,374
VARIABLE WEIGHT BAR BELL EXERCISING DEVICE

Edward H. Wittenberg and Irving E. Wittenberg, both of 3235 George St., La Crosse, Wis. 54601
Filed Aug. 26, 1964, Ser. No. 392,124
8 Claims. (Cl. 272—84)

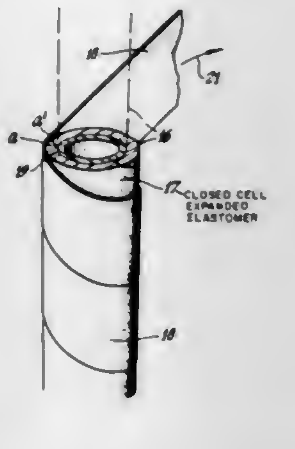


8. A weight lifting exercise device comprising a pair of hollow bulbous members spaced apart at opposite ends of an elongated handle, said bulbous members being thin walled and each comprised of a pair of mating deeply concave shells secured to each other along an annular seam, said seams lying in spaced apart parallel planes extending perpendicular to the longitudinal axis of the handle at opposite ends thereof, the innermost of each of said pair of mating shells being rigidly secured to one end of said handle, a reinforcing plate dividing each of said bulbous members into a pair of chambers, said reinforcing plate lying between each pair of said mating shells in the plane of said seams and secured thereto, an opening in the outermost of the mating shells of each of said bulbous members for introduction of a weight-adding material to each of said bulbous members, a removable closure for said opening, communicating ports between the chambers in said bulbous members defined by said shells and said reinforcing plate for passage of weight-adding material between said chambers and barrier means to prevent passage of weight-adding material between said bulbous members.

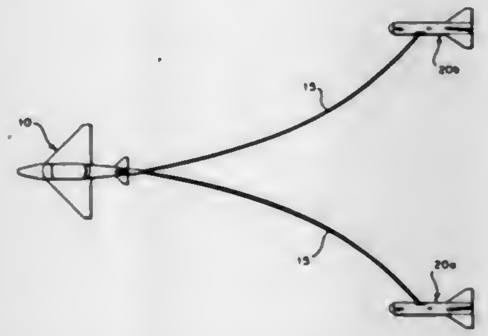
3,311,375
BALL-STRIKING CLUB INCLUDING TENSED TORQUE RESISTING GRIP LAYER NOT LATERALLY DISPLACEABLE BY COMPRESSIVE FORCES

John Henry Onions, Alma House, Upper Spring Lane, Kenilworth, England
Filed Oct. 25, 1963, Ser. No. 319,051
Claims priority, application Great Britain, Jan. 3, 1963, 327/63
1 Claim. (Cl. 273—81.5)

A club having a grip, a shaft, and a ball-striking head, said grip comprising an inner layer of relatively soft, closed cell expanded elastomer material capable of being compressed easily without lateral displacement resulting and an outer layer of flexible, substantially non-extensible sheet material covering said inner layer substantially completely, said outer layer being soft enough to transmit compression to said inner layer but being sufficiently inextensible to prevent circumferential stretching thereof due to torsional forces resulting from the striking of a ball, an adhesive material firmly securing said inner layer to said shaft and said outer layer to said inner layer, said inner layer and outer layers being in a stretched condition with substantially all the slack removed therefrom so that they have torsional forces acting thereon tending to restore them to their original condition, said torsional forces of said inner layer being so directed that, when said club head strikes a ball and creates a torque acting on the outer layer, said outer layer distributes said torque throughout the length of said grip and applies such torque to the inner layer in a circumferential direction which causes the already stretched inner layer to be further circumferentially stretched, whereby said outer layer may rotate about said shaft by an amount equal only to the further stretching of said inner layer, and the energy of said further stretching when relieved is applied to the ball as it leaves the striking head.

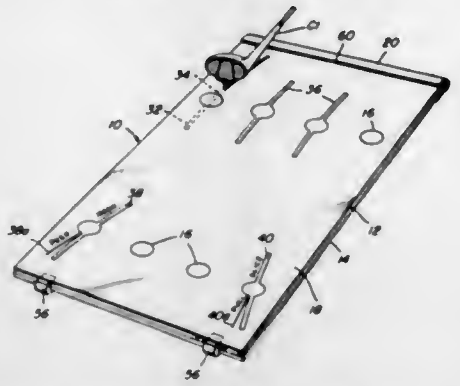


3,311,376
OFF-SET TOW TARGET
Wilmer C. Woodward, Blue Bell, and Theodore C. Herring, New Hope, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 29, 1965, Ser. No. 429,176
12 Claims. (Cl. 273—105.3)



9. An aerial tow target for flying a flight path that is offset laterally from that of a towing aircraft to which the target may be attached by a towing cable or the like, comprising:
- an elongated body member;
- means secured to one end of said elongated body member for developing side forces on the target;
- means secured to the other end of said elongated body member for stabilizing and developing side forces on the target, whereby said two recited means cause said body member, when towed by an aircraft, to fly in a flight path which is offset laterally from that of the towing aircraft;
- fastening means attached to said body member for connecting the towing cable to the target; and
- means on said body member for cooperating with the towing cable to maintain the target at a desired roll attitude.

3,311,377
GOLF SWING PRACTICING DEVICE
Steven A. Holbus, 252 E. 33rd St., Erie, Pa. 16504
Filed Mar. 11, 1964, Ser. No. 350,975
3 Claims. (Cl. 273—186)

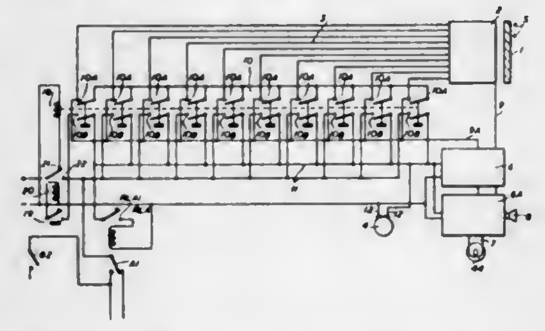


1. A reusable golf swing recording device for use in analysis of the stroking habit of a golfer, comprising, a rigid base, a cushioning or shock absorbing mat of greater length and pre-determined color positioned to extend beyond said base at one end, a protective transparent sheet positioned adjacent to the upper planar area of said mat and co-extensive therewith, spaced indicia and fiducial marking of a different predetermined color simulating golf balls and golf club swing paths respectively, positioned on the underside of said transparent sheet, transparent and pliant means for holding said transparent sheet firmly but movably in place at one end of said recording device, clip means for holding said sheet firmly but movably in place at the opposite end of said device, spaced members having friction engaging under surfaces secured to the underside of said rigid base to keep said recording device from sliding, a golf club, and means including a flexible holder in the shape of an inverted pedestal with step tapering sides and wings secured to the sole of said golf club and extending downwardly therefrom and having a portion also extending downwardly from said golf club opposite the above mentioned extending pedestal to provide a support for said flexible pedestal and a marking member having a marking substance associated therewith secured to the front face of said holder, whereby when a golfer swings said golf club at one of said simulated golf balls on the underside of said transparent sheet and contrasted against upper planar area of said mat, a recording is made of the path described by said club head over said recording device by said marking substance being frictionally transferred from the above mentioned marking member to the upper side of the transparent sheet as the said holder is forced backwardly against the said support by pressure of a golf club moved through a golf swing, with the frictionally transferred marking substance being easily removable from said upper side of said transparent sheet due to the relationship between the composition of both the marking member and said transparent sheet.

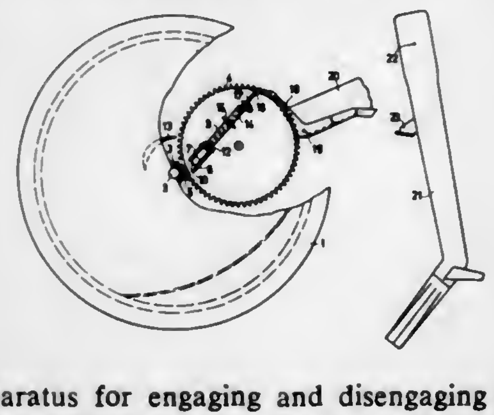
3,311,378
SOUND RECORD PRODUCING APPARATUS
Charles William Clark, 24 Manchester Square, London W.1, England
Filed June 4, 1964, Ser. No. 372,570
4 Claims. (Cl. 274—10)

1. Sound record producing apparatus comprising means for supporting in a readily removable and replaceable manner and traversing, a magnetic tape having spaced laterally thereof a multiplicity of individual sound tracks constituting individual recordings, each individual recording starting at aproximately the same point in the length of the tape, electronic amplifying apparatus, pickup means for transmitting impulses from said sound tracks to said amplifying apparatus, selector means whereby any one of said sound tracks can be selected to be operative to

transmit impulses through said pickup means to said amplifying apparatus, a rotary support for a record disc on which a mechanical sound record can be made, a stylus type recording head connected to the amplifying apparatus to receive impulses therefrom, recording head control means operable to move the said recording head into and out of recording engagement with a record disc disposed upon said turntable to make a sound record thereon in the form of a spiral groove, storage means for a plurality of record discs, transfer means for transferring the discs one by one from the storage means to the turntable and for removing each disc from the turntable prior to the transfer of the next disc on to the turntable and for delivering the removed disc to a receiving point, and operating mechanism arranged to be brought into operation by an initiating device on insertion of a coin and serving upon such initiation to render the amplifying apparatus effective to cause traversing of the pickup means by the selected sound track to cause operation of the turntable and the recording head control means to cause the stylus to record on a record disc on the turntable the signals derived through the amplifying apparatus from the selected sound track, and subsequently to remove the disc from the turntable and deliver it to the receiving point.

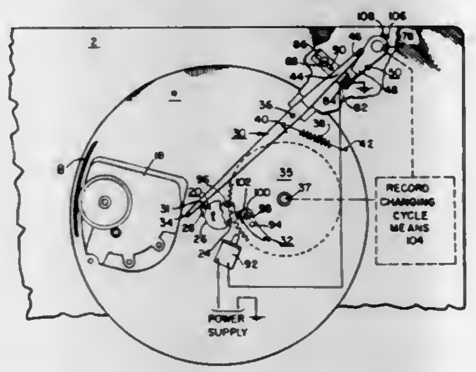


3,311,379
RECORD CHANGING COUPLING FOR A PHONOGRAPH
Horst Zarm, Berlin-Zehlendorf, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 15, 1964, Ser. No. 367,716
4 Claims. (Cl. 274—15)



1. Apparatus for engaging and disengaging the drive wheel of a record changing mechanism and a pinion wheel on the associated phonograph turntable comprising drive wheel means having a toothed periphery and having a gap in the said peripheral teeth thereof, a coupling member, means supporting said coupling member on said drive wheel for lateral sliding movement; said coupling member comprising a pair of rod members, means for frictionally connecting said rod members in telescopic relation, one said rod member having a configured end face adjacent said gap, the other of said rod members having a free end surface adjacent the periphery of said drive wheel for engagement with a lever moveable by the tone arm of the phonograph, said one rod member having an upstanding feeler member integral therewith, discrete cam means on said turntable moveable in a circular path for engaging said feeler member and a curved rib on said turntable for engaging said feeler member, said curved rib being located opposite said cam member, and means on said turntable lagging said cam mean by 90° in the normal direction of rotation of said turntable and projecting into the plane of said gap for engaging said configured end face in an extended position of said one rod member.

3,311,380
LOW FORCE VELOCITY TRIP
Donald J. Hammerand, Franklin Park, and Allen J. Bury, Prospect Heights, Ill., assignors to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 16, 1964, Ser. No. 418,679
5 Claims. (Cl. 274—15)

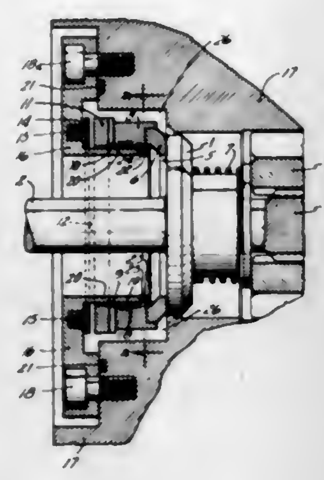


1. A velocity trip mechanism for initiating a record changing cycle in an automatic record playing apparatus comprising: a movable tone arm; a switch including a first and a second contact; gravity-friction clutch means interposed between said tone arm and said first contact; a rotating turntable including camming means; a pivotally mounted lever arm having a first end cooperating with said camming means and a second end cooperating with said first contact; said second end being normally disengaged from said first contact, but periodically engageable therewith for positively urging it away from said second contact; an electromagnet serially connected with said switch; magnetically permeable pawl means movably responsive to energization of said electromagnet, whereby an exaggerated tone arm movement moves said first contact into engagement with said second contact before said lever arm urges said first contact away therefrom, thereby energizing said electromagnet; and means responsive to movement of said pawl means for carrying out a record changing cycle.

3,311,381
ROTARY SHAFT SEAL
Karl H. Pech, Simsbury, Conn., assignor to Chandler Evans Inc., West Hartford, Conn., a corporation of Delaware
Filed July 30, 1964, Ser. No. 386,164
4 Claims. (Cl. 277—30)

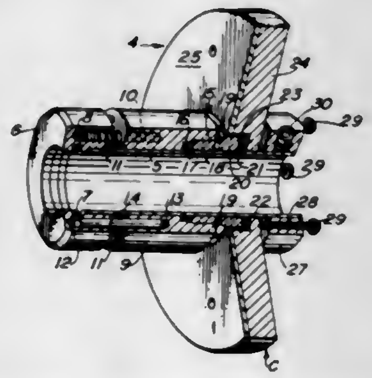
1. Apparatus for sealing a shaft in a housing comprising, a shaft, a flange rigidly connected to said shaft, a housing encompassing said flange, a seal guide fixedly secured to said housing, a sealing element enveloping said seal guide with a radially disposed sealing surface in engagement with said flange, universal joint-like means intermediate said housing and said sealing element constructed and arranged so as to impart a universal motion to said sealing element such that said sealing surface of said sealing element will accommodate limited positional displacement of the axis of said shaft, symmetrical projections fixedly attached to said sealing element and radially inwardly disposed, radially disposed surfaces of said projections in engagement with axially disposed slots in said seal guide such that said sealing element is maintained in a rotatably fixed and a substantially concentric

relationship with said seal guide, yieldable fluid sealing means positioned intermediate and encapsuled by said seal guide and said sealing element, resilient means intermediate said universal joint-like means and said housing in singular series force relationship with said universal joint-like means and said sealing element urging said sealing element into engagement with said flange, second resilient means acting on said flange opposite said sealing element and urging said flange into engagement with said sealing element opposing said first resilient means.



3,311,382
STUFFING BOX REPLACEMENT SEAL

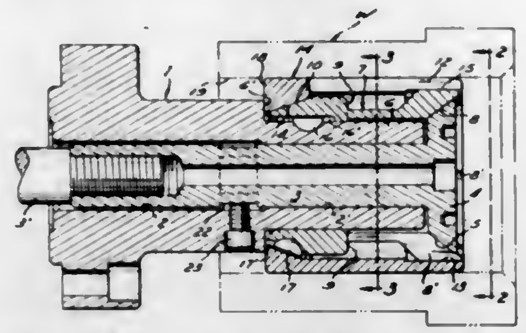
Leonard N. Dolhun, Rockford, Mich., assignor to AP Parts Corporation, a corporation of Michigan
Filed Nov. 12, 1963, Ser. No. 322,910
5 Claims. (Cl. 277—91)



1. A shaft seal comprising a mounting plate formed with a shaft opening and adapted for demountable attachment on a housing wall in position embracing a shaft extending outwardly of the housing through the wall and said shaft opening, a seating ring secured to the inwardly facing side of said plate, around said shaft opening, a support sleeve extending through the mounting plate and seating ring at said shaft opening, said sleeve being sized to slidingly receive the shaft, means to seal the sleeve on the shaft against fluid flow through the sleeve axially of the shaft, an abutment collar secured on and extending outwardly of the sleeve, in position spaced from and facing the inwardly facing side of the mounting plate, a bushing embracing and movable axially of said support sleeve, between said collar and said plate, said bushing having a circular recess opening axially at its plate facing end, in alignment with said seating ring, a seal ring seated in said recess and slidingly supported on the sleeve in registration with said seating ring, and bias means on said collar resiliently urging the bushing axially of the sleeve in a direction to press the seal ring against the seating ring, and clamp means on said sleeve on the side of said plate remote from said seating ring, said clamp means being operable to detachably secure the sleeve against axial movement on the shaft.

3,311,383
EXPANDABLE MANDREL

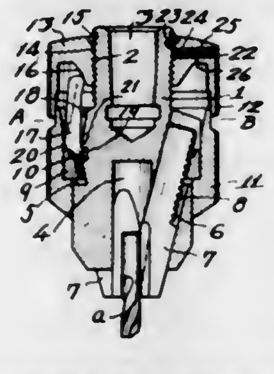
John R. Cox, Lakewood, Ohio, assignor to Balas Collet Manufacturing Co., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 28, 1965, Ser. No. 428,796
12 Claims. (Cl. 279—2)



1. A releasable work gripping device including a work support member, an intermediate sleeve member slidably supported on said work support member, an expandable mandrel supported on said intermediate sleeve member, said intermediate sleeve member having an external inclined face portion adjacent its inner end and an expandable outer end portion formed with a bore having an inclined face, said mandrel having a bore at its inner end inclined at the same angle as said inclined face portion at the inner end of said intermediate sleeve member and disposed to be engaged thereby, the outer end portion of said mandrel being supported on said expandable outer end portion of said intermediate sleeve member, and an operating head supported for axial movement relative to said work support member and having a face portion inclined at the same angle as, and disposed to engage, said inclined face of said bore in the outer end portion of said intermediate sleeve member.

3,311,384
DRILL CHUCK

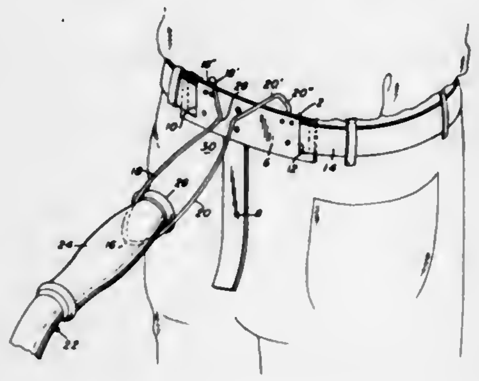
Kiyoshi Kawasaki, 4619 Shimada-shi, Shizuoka, Japan
Filed Dec. 30, 1964, Ser. No. 422,384
Claims priority, application Japan, Feb. 1, 1964, 39/5,065
2 Claims. (Cl. 279—62)



1. A drill chuck comprising a main body for holding a drilling tool and having equally spaced jaw guiding grooves, a peripheral recess around the body and longitudinal grooves formed between said jaw guiding grooves, a screw cap threaded on the top of said main body, and having a downwardly extending inner extension, said extension having an inner threaded surface for thread engagement with the main body and an outer tapered surface, a tightening ring disposed within said peripheral recess of the main body for free turning movement and having an inner threaded surface, clamping jaws having rack teeth on portions of their outer surfaces for thread engagement with said inner threaded surface of the tightening ring, and a plurality of lever bars 17 disposed in respective longitudinal grooves of the main body and having upper ends abutting against said tapered outer surface of the extension of the screw cap and lower ends abutting against said tightening ring whereby said drilling tool may be firmly gripped by the clamping jaws whose inherent gripping force is reinforced through the leverage of said lever bars, characterized by means cooperating between said main body and screw cap for unison movement or separate movement of the two members whereby when said drilling tool is to be attached to said main body the main body and screw cap maintain their unison movement relation and move in unison until said clamping jaws have engaged the tool, but when the screw cap is further turned with a stronger force after the clamping jaws have engaged the drilling tool the main body and screw cap break their unison movement relation so as to cause only the screw cap to turn whereby independently of the main body the lever bars may be actuated to provide a stronger clamping force to said jaws.

3,311,385
GOLF CART PULLING DEVICE

Dolph G. Frantz, 3212 Dorchester Drive, Montgomery, Ala. 36111
Filed Sept. 29, 1965, Ser. No. 491,364
5 Claims. (Cl. 280—1.5)



1. A device adapted to be attached to a human for pulling a portable vehicle having a handle, comprising,

a vertically extending member adapted to lie along the lower back portion of a human, means on said vertically extending member attaching it to an article of apparel, a generally upright U-shaped member attached to said vertically extending member and extending downwardly and rearwardly from an upper portion of said vertically extending member, said U-shaped member having legs spaced apart a distance rendering it capable of frictionally engaging a said handle.

3,311,386
GAS-CUSHION ASSEMBLY FOR VEHICULAR SUSPENSION SYSTEMS

Fritz Ostwald, Buchschlag, and Friedrich Beuchle, Frankfurt am Main, Germany, and Dezsö Varga, Leamington Spa, England, assignors to Alfred Teves Maschinen- und Armaturenfabrik KG, Frankfurt am Main, Germany, a corporation of Germany
Filed Apr. 14, 1965, Ser. No. 450,244
Claims priority, application Germany, Oct. 30, 1964, T 27,327
20 Claims. (Cl. 280—6)

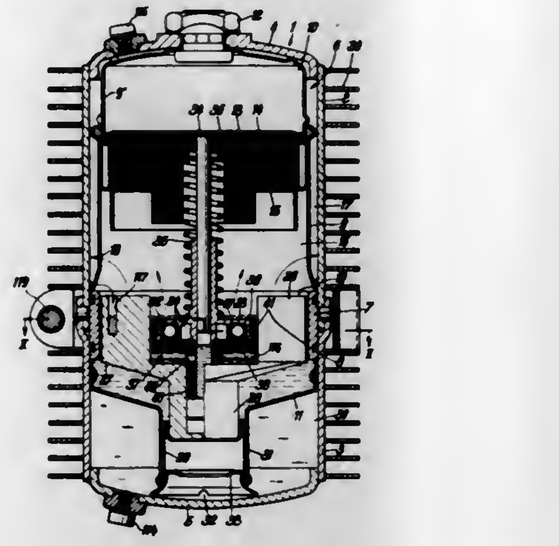
1. In a vehicle provided with a chassis supported by a gas-cushion assembly on a wheel base, the combination therewith of a pressure regulator for said gas-cushion assembly comprising:

manometric means forming a gas space in communication with said gas-cushion assembly, said manometric means including a piston displaceable by gas pressure from said assembly;

a closed circulation system for a vaporizable fluid, said system including a chamber bounded in part by said piston, cooling means for condensing said fluid and collector means for the condensate;

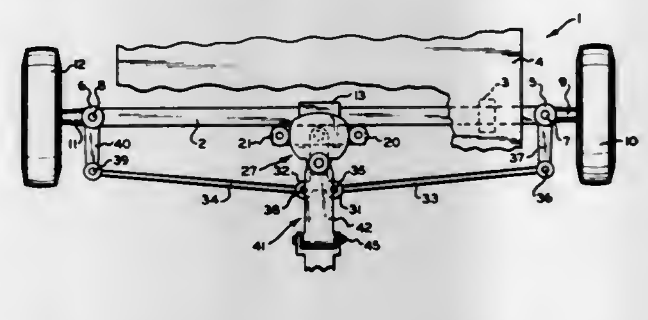
heating means in said system positioned adjacent said collector means for contact by said condensate;

and control means for said heating means coupled with said piston for varying the degree of vaporization of said condensate in response to variations in said gas pressure whereby an equilibrium is maintained between said gas pressure and an opposing force exerted upon said piston by vapor pressure in said chamber.



3,311,387
STEERING APPARATUS FOR TOWABLE VEHICLES

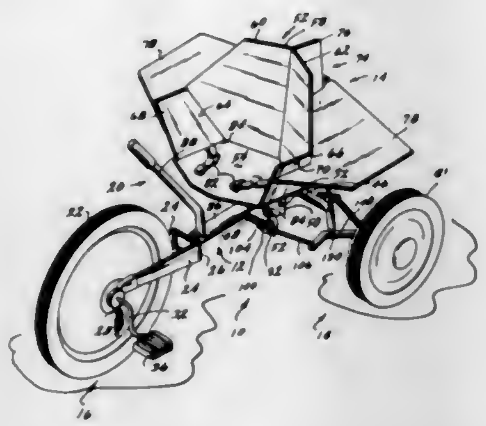
Edwin O. Klemm and George Keith Mulholland, Saginaw, Mich., assignors to Saginaw Products Corporation, Saginaw, Mich., a corporation of Michigan
Filed Feb. 25, 1965, Ser. No. 435,183
13 Claims. (Cl. 280—103)



1. Vehicle steering apparatus comprising: support means; steerable wheel journaling means mounted on said support means; steering means mounted on said support means for rocking movements about a first axis; means for limiting rocking movements of said steering means; motion transmitting means interconnecting said steering means and said journaling means for imparting steering movements to the latter in response to rocking of said steering means; control means mounted on said steering means for rocking movements relative to the latter about an axis spaced from said first axis; and abutment means mounted by the support means on opposite sides of said control means for disabling relative rocking movement of said steering means and said control means during rocking of said steering means and enabling rocking of said control means relatively to said steering means when rocking of the latter is prevented by said limiting means.

3,311,388
THREE-WHEELED VELOCIPEDE

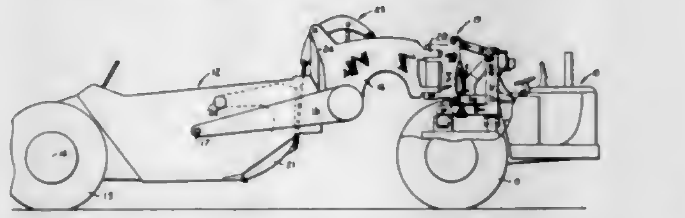
John W. Ryan, Bel Air, and Robert A. MacMeekin, Huntington Beach, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Apr. 12, 1965, Ser. No. 447,208
14 Claims. (Cl. 280—269)



1. A toy vehicle comprising:
a sheet metal frame having a fork assembly and a depending rear wall, said rear wall sloping downwardly and inwardly toward said front fork assembly and having first and second outboard ends;
a pedal-driven wheel rotatably mounted in said front fork assembly for propelling said vehicle; and
steering means including a wheel-carrying spindle swingably connected to each of said outboard ends.

3,311,389
SYSTEM FOR CONTROL OF PITCH AND BOUNCE IN TRACTOR-TRAILER COMBINATIONS

James C. Barton and John W. Carter, Peoria, and Wayne E. Roberts, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 7, 1965, Ser. No. 461,887
5 Claims. (Cl. 280—489)

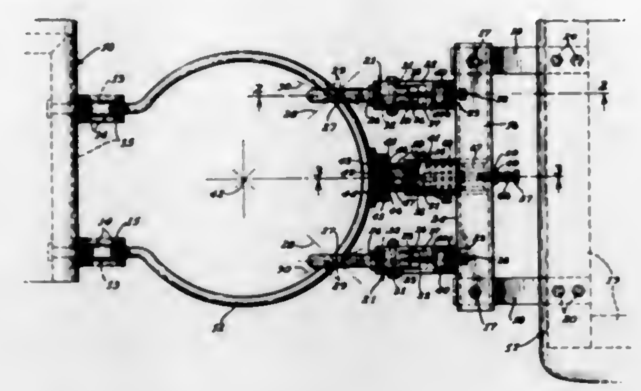


1. A system for controlling both bounce and pitch-type vibrations at the articulated connection between vehicle components comprising at least two links pivotally connected with each of said components, spring means forming a connection between said components for lineal deflection in response to relative vertical motion between the components caused by bounce-type vibration, said links being nonparallel whereby pitch-type vibrations between the components will induce relative vertical motion and lineal deflection of the spring means, said spring means being a hydraulic pneumatic cylinder capable of being tuned and damped.

3,311,390
TRAILER HITCH APPARATUS

William L. Rendessy, Phoenix, Ariz., assignor of fifteen percent to Phoenix Electronics Components, Inc., Phoenix, Ariz., a corporation of Arizona
Filed June 28, 1965, Ser. No. 467,667
2 Claims. (Cl. 280—504)

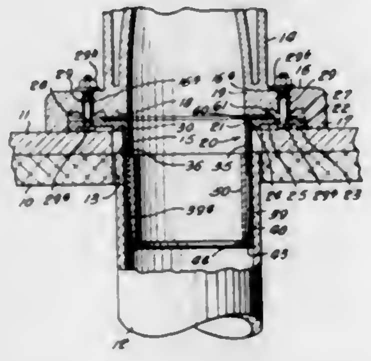
1. A trailer hitch apparatus for pivotally interconnecting a trailer frame and a towing vehicle frame comprising in combination:
(A) a towing ring fixed to said trailer frame,
(B) a pair of laterally spaced eyelet guides mounted on said towing vehicle frame pivotally receiving said towing ring,



(C) a friction brake including a brake shoe located between said spaced eyelet guides and mounted on said vehicle frame to engage said towing ring to restrain and damp the relative pivotal movements between said towing ring and said eyelet guides.

3,311,391
WATER CLOSET BOWL SETTING FLANGE AND SEAL

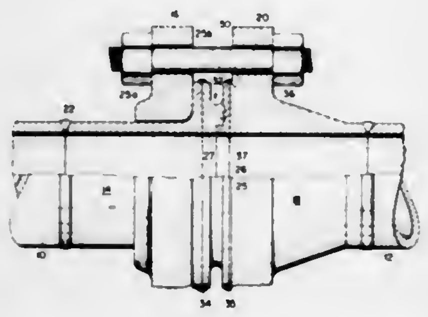
J. W. Harrell, 232 Brooch St., Pittsburg, Tex. 75686
Filed May 11, 1964, Ser. No. 366,329
2 Claims. (Cl. 285—58)



1. A closet bowl floor connector and seal assembly for providing a water tight and gas tight seal between a tubular outlet horn depending from a closet bowl and the inlet end portion of a sewer pipe, said assembly comprising: an elongated tubular expander sleeve having an external annular floor engaging flange at its upper end, and having the lower portion of the cylindrical sleeve provided with a plurality of longitudinal slots forming depending fingers in such lower portion of said sleeve, an elongate elastomeric sealing sleeve disposed exteriorly of said expander sleeve and adapted to be positioned in the open upper end of a sewer pipe for sealing between the sleeve and the sewer pipe; said sealing sleeve being of a length extending from a point on the upper portion of said expander sleeve adjacent the floor engaging flange to a point below the lower end of said depending fingers of said expander sleeve, the bore of said sealing sleeve being tapered inwardly from the upper end toward the bottom end to provide an increasing wall thickness from the upper end toward the lower end of said sealing sleeve, and an internal annular flange at the lower end of the bore of said sealing sleeve disposed below and adjacent the lower ends of said depending fingers of said expander sleeve, said flange on the lower portion of said sealing sleeve being engageable with the lower ends of said depending fingers of said expander sleeve to assure movement of said sealing sleeve into said sewer pipe as the same is positioned in the open upper end of said sewer pipe; and a substantially cylindrical tubular lock sleeve of lesser length than the length of said expander sleeve having an external diameter substantially conforming to the bore of the upper portion of said expander sleeve and having a tapered surface at its lower end, said lock sleeve being longitudinally slidably insertable in said expander sleeve and engaging said depending finger portions of said expander sleeve for expanding said finger portions outwardly to compress the sealing sleeve between said fingers and said sewer pipe to seal between the expander sleeve and the sewer pipe; and means on said flange adapted to connect said flange with a water closet bowl in a sealing flow communication with a water closet bowl.

3,311,392
BIMETALLIC JOINT FOR CRYOGENIC SERVICE

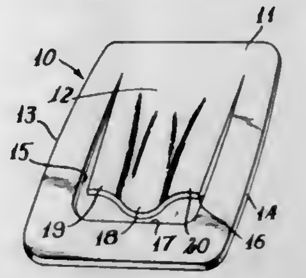
Herman F. Buschow, Hillsdale, N.J., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Filed Mar. 16, 1966, Ser. No. 543,462
4 Claims. (Cl. 285—173)



1. In a piping system wherein the piping elements are of dissimilar metals and are connected by a pipe joint assembly, said joint assembly comprising a first pipe of aluminum and a second pipe of stainless steel, said pipes being in longitudinal axial alignment, each pipe having a radially outwardly extending flange, said flanges having generally planar confronting faces, a gasket positioned between and connected to said flanges in gas sealing relation, said gasket comprising an integrated pair of body members, said integrated pair having a transverse bore for the passage of fluids from one pipe to the other, said body members being composed respectively of aluminum and of stainless steel, said aluminum body member being molded against the stainless steel member and having a chemical bond uniting said body members at their interface, said body members having interengaging portions along at least a portion of their interface, said bond being occasioned by the migration of metal between the stainless steel and the aluminum forming an iron-aluminum alloy, said alloy being microscopically thin and penetrating into the aluminum by progressively decreasing amounts providing a cohesion between said body members having a relatively low brittleness factor and serving as a gas seal, said body members forming a relatively axially thick gasket body, said body members each having a flange-like portion extending radially outwardly, said flange-like portions being relatively thin with respect to the gasket body and forming an annular space therebetween, each flange portion being welded to the adjacent pipe flange of like metal, said body members being ing adapted to transfer stresses of the piping elements through said iron-aluminum alloy portion; said radially outwardly extending flange-like portions being exposed externally of the piping whereby welding and rewelding can be accomplished without destruction of the piping system.

3,311,393
RESILIENT RETAINER

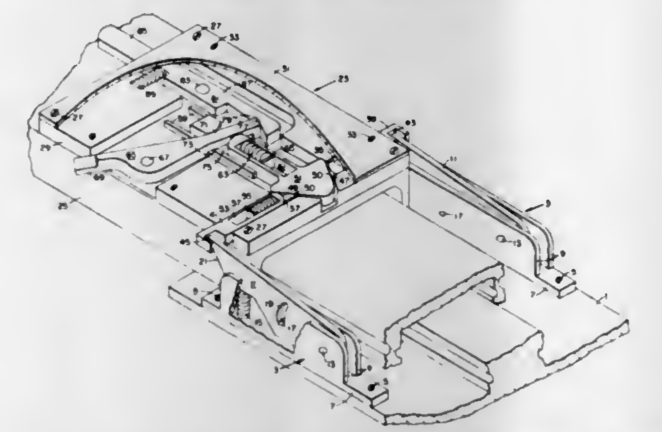
William J. Leitmann, Chicago, Ill., assignor to Rohden Manufacturing Company, Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 13, 1965, Ser. No. 447,797
4 Claims. (Cl. 287—53)



1. In an arrangement wherein a shaft-like means is joined to a knob, said shaft-like means having at least one flat side, and said knob having a bore to receive said shaft including a longitudinally extending flat side portion for cooperation with the flat side of said shaft-like means, a relief groove formed in said flat side portion and extending longitudinally of said bore, the improvement comprising a resilient retainer for releasably joining said shaft-like means to said knob to transmit rotational forces in a backlash-free manner, said resilient retainer including a plate-like mounting portion adapted for interposition between the flat side on said shaft-like means and flat side portion of said bore, a flap portion formed centrally of said plate-like mounting portion and having a free end portion disposed above a plane passing through said plate-like mounting portion, said flap portion having an undulation formed at the free end thereof and extending transversely of the longitudinal axis of said plate-like mounting portion, said undulation being adapted to be received in said relief groove, a pair of shaft engaging portions formed on opposite sides of said undulation, said shaft engaging portions being disposed above said plate-like mounting portion and adapted for engagement with the flat side of said shaft-like means, said undulation in said flap portion extending below said plate-like portion and the end portion of said flap opposite the free end portion being formed integral with a transverse end portion on said plate-like mounting portion, said end portion being adapted to be flexed upwardly into engagement with said shaft-like means as said shaft engaging portions are engaged by said shaft-like means.

3,311,394
AUTOMATIC LATCHING MECHANISM

John M. Nardozza, Lawrence, Mass., assignor by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Dec. 11, 1964, Ser. No. 417,847
6 Claims. (Cl. 292—33)

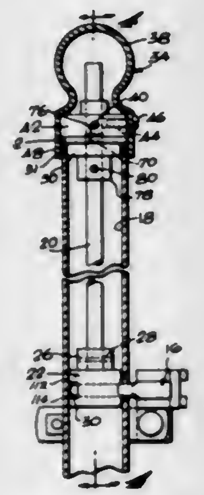


1. An automatic latching mechanism including: striker mechanism and bolt latching mechanism mounted for movement relative to each other and including coacting

means for latching a door in an open position; said coacting means being so constructed and arranged as to require a two step procedure for releasing such coaction to thereby allow one of said striker mechanism and said bolt latching mechanism to move relative to the other in a door closing direction; and coacting means including at least one pivotably mounted pawl member on said striker mechanism and at least one reciprocally mounted bolt member on said bolt latching mechanism, said pawl member being spring biased toward a latching position and said bolt member being spring biased away from the latching position; and said bolt latching mechanism including a reciprocally mounted plunger for actuating said bolt member to a latching position, a pivotably mounted trigger member interconnected with said plunger for actuating said plunger to a plunger extended position, and a pivotably mounted manual release lever including latching means for latching said trigger member in said plunger extended position.

3,311,395
LATCH MECHANISM AND STRIKER

Fred L. Leonard, 14720 NW. 8th Court, Miami, Fla. 33136
Filed Mar. 24, 1965, Ser. No. 442,343
20 Claims. (Cl. 292—228)

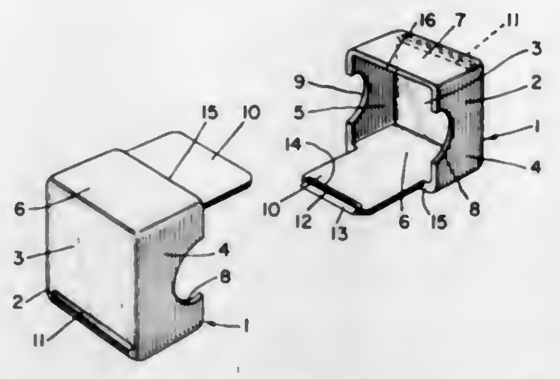


1. For cooperating with a hooked striker on a swingable gate, a latch mechanism comprising, in combination, a tubular housing having a lateral opening; an operator shaft in the housing and having a lateral recess adjacent one end in companionate relation to the opening, and the other end exteriorly of the housing; operator means connected to the other end effective to angularly displace the shaft about its axis; said recess being of a configuration companionate to the striker to receive the striker therein such that the striker, when in the recess, is held, while the shaft is in one position of angular displacement, and, when the shaft is displaced angularly relative to the said one position to a second position, said hooked striker is slidable into and out of the recess.

3,311,396
UNAUTHORIZED ACCESS INDICATING MEANS

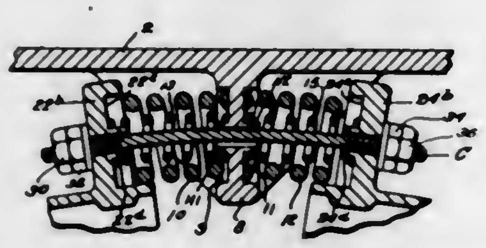
Kendall L. Hotchkiss, 23831 Hartland St., Canoga Park, Calif. 91303, and Frank K. Landry, 20891 Kelvin Place, Woodland Hills, Calif. 91364
Filed Apr. 20, 1965, Ser. No. 449,482
5 Claims. (Cl. 292—307)

1. A seal means constructed of frangible plastic material adapted to enclose a mechanical means to prevent tampering therewith comprising, first and second similar body members each having a pair of side walls and a pair of continuing end walls, said side and end walls being enclosed by a back wall, and at least one of said side walls provided with a cut-away portion, a tongue means extending in the plane of and beyond one of said end walls, said tongue means including a locking means, said back wall having a slotted area slightly removed from the plane of the other of said end walls so that as said similar body members are brought into assembled relation to enclose the mechanical means the locking means pass through the slotted areas on each of said back walls.



3,311,397
RESILIENT BUMPERS FOR VEHICLES

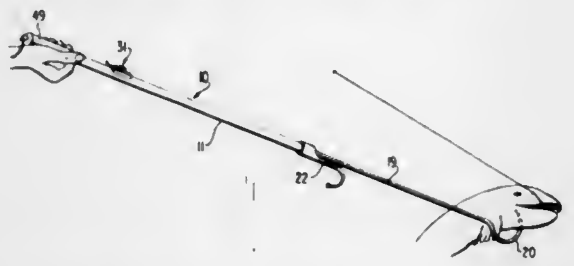
Joseph D. Ramsey, 19 Westland Road, Watertown, Mass. 02172
Filed Feb. 9, 1966, Ser. No. 526,140
4 Claims. (Cl. 293—84)



1. An improved bumper construction comprising an elongated rigid frame piece adapted to be supported at one end of an automobile above ground level and presenting a right angularly disposed medial body portion having its opposite sides thereof formed with annular spring retaining recesses and central stud portions extending out of the recesses, a pair of relatively large coiled spring elements mounted in respective annular spring-retaining recesses and solidly secured thereto in opposed relationship to one another such that the axis of contraction and extension of the spring elements extends substantially parallel to the longitudinal axis of the frame piece, the outer extremities of said relatively large springs being unsupported, a second pair of relatively small coiled springs located concentrically within the large springs and engaged over respective central stud portions of said spring retaining recesses, a pair of bumper side sections, respective side section shackle members pivotally attached to the frame piece, said shackle members extending angularly away from the frame piece and being pivotally attached to the bumper side sections to yieldably support the bumper side sections in spaced relation to the frame piece, a bumper central section having its opposite ends pivotally connected to each of the said bumper side sections about independent pivot pins transversely located through the bumper side sections at points in close proximity to the said shackle members, said pivoted bumper side sections further being constructed with right angularly disposed extensions for receiving outer ends of said second pair of relatively small coiled springs and having openings formed therethrough, said small coiled springs occurring in a normally compressed state to resiliently hold respective bumper side sections in an angularly disposed position between the bumper central section and the said frame piece, a holding element extending through each of the springs and the medial body portion, said holding element having opposite extremities thereof anchored through the right angularly disposed extensions of the bumper side sections to secure the pair of relatively small springs to relative side sections whereby the said side sections may be displaced against the resistance of the small springs through a limited arc of travel and against the resistance of the large springs through a further limited arc of travel.

3,311,398
RETRACTABLE FISHING GAFF

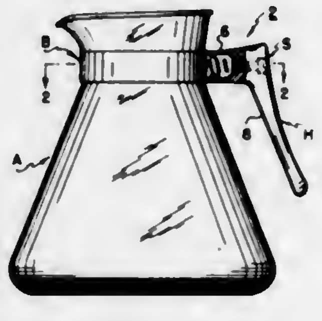
Fred L. Erhardt, 438 Highland Ave., Clifton, N.J. 07732
Filed Aug. 9, 1965, Ser. No. 478,048
6 Claims. (Cl. 294—19)



1. A fishing gaff assembly comprising an elongated barrel, a piston reciprocable within said barrel, a front locking plug having an axial opening closing the front of said barrel, a rear plug closing the rear of said barrel, a plurality of radial locking slots formed in the rear face of said front locking plug, a gaff hook having a point at one end and an elongated shank at the other end, said shank end extending through said axial opening of said front locking plug and being secured to said piston, hook sheathing means mounted on said barrel and adapted to protect said hook point when said piston is moved toward said rear plug to a non-use position, a coil compression spring within said barrel interposed between said rear plug and said piston and normally urging said piston toward said front locking plug and said hook point away from said sheathing means, a radially extending locking pin on said shank within said barrel adapted to engage within one of said locking slots when said piston is propelled forwardly under the impetus of said spring to lock said shank from rotation, lock means on said barrel and piston adapted to hold said piston in its non-use position against the force of said resilient means, and trigger means on said barrel adapted to release said lock means.

3,311,399
FASTENING DEVICE AND HANDLE ASSEMBLY

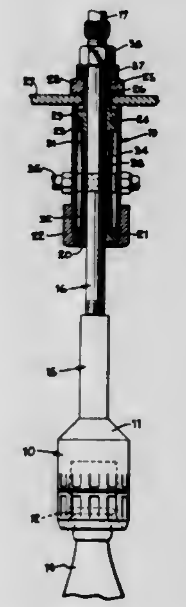
Robert J. Holton, Rocky River, Ohio, assignor to Tinnerman Products, Inc., a corporation of Ohio
Filed Feb. 24, 1965, Ser. No. 434,872
8 Claims. (Cl. 294—31.2)



1. In a handle assembly comprising, at least one flexible band having free end portions adapted to be disposed around a vessel or the like, a fastening clip attached at one end to the free end portions of said band, a handle having a threaded member disposed therethrough and extending into the other end of said clip, said threaded member being movable in said clip for coacting threaded engagement with the free end portions of said band, said clip including a body comprised of polymeric material, such as plastic or the like, said body having a slot extending axially therethrough and including a pair of spaced, oppositely disposed ribs within said slot, said threaded member being movable within said slot for self-thread cutting engagement with said ribs.

3,311,400
BOTTLE TRANSPORTER

Edward F. Rowekamp, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 18, 1965, Ser. No. 433,570
8 Claims. (Cl. 294—64)



1. In a device for transporting a plurality of bottles from a first position to a second position, said device having a head, means to move said head from the first position to the second position, and a plurality of bottle grasping means suspended from said head, the improvement comprising

relative movement means to permit relative movement between said grasping means and said head whereby said grasping means can accommodate themselves to bottles of different heights upon contacting said bottles, and

locking means to prevent relative sliding movement between said grasping means and said head when so desired whereby said grasping means may be locked relative to said head when moving said head from the first position to the second position.

3,311,401
CONCRETE BUCKET HOOK ASSEMBLY

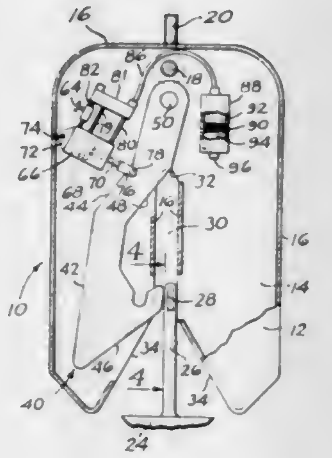
Stuart A. Bacon, 1078 Chenowith Road, The Dalles, Oreg. 97058
Filed Dec. 13, 1965, Ser. No. 513,231
10 Claims. (Cl. 294—83)

1. A hook assembly for use in lifting a concrete bucket provided with a rigid bail, the hook assembly comprising:

(a) a housing provided with a central vertical guideway dimensioned to receive the bucket bail,

(b) connecting means on the housing for connecting the same to a hoist for raising and lowering the hook assembly between bail-engaging and bail-releasing positions,

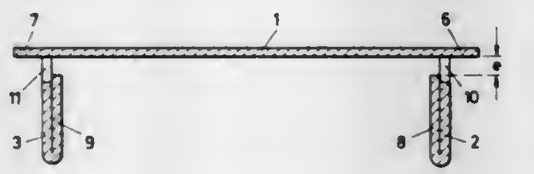
(c) a hook laterally dimensioned to span the guideway and having an elongated shank,
(d) pivotal attaching means for attaching the hook shank to the housing above the guideway permitting oscillation of the hook between a closed position wherein it overlies the guideway and open positions wherein it is displaced therefrom,
(e) first cam means on the hook overlying the lower portion of the guidway when the hook is in its closed position and operable by the bail when the hook is lowered to shift the hook to a first open position permitting advancement of the bail into the guideway,



(f) second cam means on the hook overlying the upper portion of the guideway when the hook is in its closed position and operable by the bail as it advances further into the guideway to shift the hook to a second open position; and
(g) detent means coupled between the hook and housing operable to restrain the shifting of the hook from its open to its closed position for a time predetermined to permit withdrawal of the hook from the bail.

3,311,402
MULTIPLE CONTAINER HOLDER

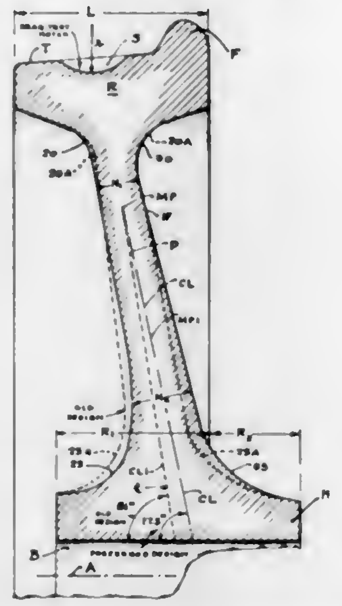
Wilhelm Spandöck, Dortmund, Germany, assignor to Fritz Busche Druckereigesellschaft m.b.H., Dortmund, Germany, a German company
Filed Dec. 10, 1965, Ser. No. 512,952
Claims priority, application Germany, Dec. 24, 1964, B 79,904
9 Claims. (Cl. 294—87.2)



1. A holder for retaining a plurality of containers which each have at least one beaded rim or cover that provides a projection, the holder being formed from a cardboard blank and comprising
(a) central panel
(b) longitudinal side strips which are bent-over out of the plane of said panel
(c) apertures located opposite each other in pairs in said side strips for receiving the beaded rims or covers to be retained by the holder, and
(d) in inwardly folded-over edge strip adhesively secured to the inner surface of each longitudinal side strip.

3,311,403
CAR WHEEL

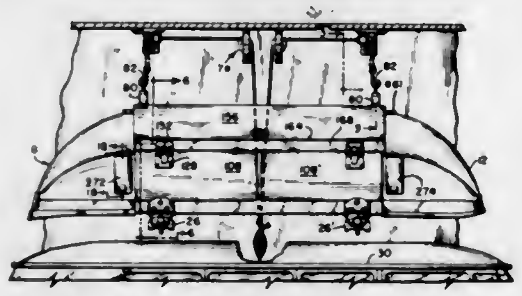
Robert H. Beetle, Mountain Lakes, N.J., and Arthur W. Farrell, Tallman, N.Y., assignors to Abex Corporation, a corporation of Delaware
Filed June 3, 1965, Ser. No. 460,995
4 Claims. (Cl. 295—27)



1. In a railway wheel having a geometry affording a relatively high resistance to fracture by rapid propagation of thermal cracks, a hub portion having an axially extending bore therethrough, an outer rim portion, and a plate portion extending between said hub portion and said rim portion for joining said hub portion to said rim portion, said plate portion having a center line through the cross-section thereof when projected to said hub portion intersecting the center line through said bore of said hub portion at an angle not greater than about approximately 78° and not less than 72°.

3,311,404
CAMPER UNIT

Arthur S. Thomas, 3121 NW. 2nd St., Miami, Fla. 33060
Filed May 10, 1965, Ser. No. 454,522
5 Claims. (Cl. 296—23)

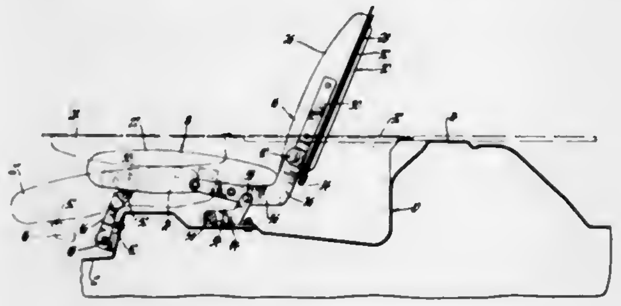


1. A camping unit comprising; a floored housing with septums defining a cargo-carrying main compartment, and a forward and a rearward chamber, said housing being adapted to be supported on the roof of a vehicle, adjustable means carried on opposite sides of the housing to detachably connect the unit to the vehicle, the said adjustable means being adjustable vertically and horizontally, access means on the housing communicating with the interior of said housing and hinged doors above said access means, the hinged side of said doors being adjacent the longitudinal center line of the top of said housing; locking means for the said doors; pivotally mounted sleeves supported on each side of the housing in the forward and rearward chamber; guide means for the distal ends of the sleeves outwardly of the main center line of the housing; spreader bars, carried in the housing and arranged to be seated in the sleeves as extensions of said

sleeves; an eave pole for connection with the spreader bars of the unit, and means to connect the spreader bars and the eave poles, a ridge pole to be supported above said housing, support means to connect the ridge pole to the housing and to hold it above said housing, the said spreader bars, eave pole and ridge pole when connected together comprising a frame extending outwardly of the sides of the housing and above the housing, the said frame being adapted to support an outer tent covering thereover.

3,311,405
VEHICLE SEAT

William E. Brennan, St. Clair Shores, Vernon D. Halliday, Flushing, and Kennard Pitts, Rochester, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 27, 1964, Ser. No. 392,556
5 Claims. (Cl. 296—66)

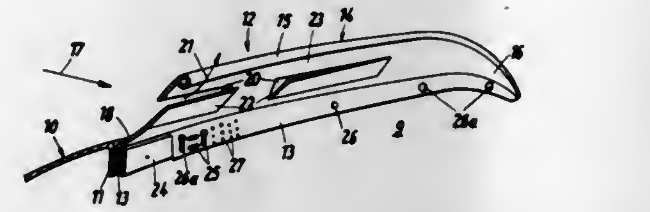


1. In a vehicle body having a primary floor and a cargo floor, a convertible seat assembly including a seat and a seat back, said seat assembly having a seat forming position and a folded stored position and being movable therebetween, anchor plates secured to said body, linkage means pivotally secured to said anchor plates and to said seat assembly for supporting said seat assembly, an auxiliary floor panel pivotally secured to one edge of said seat back, said linkage means including a first hook lever and a second hook lever, said first hook lever coacting with one of said anchor plates for limiting pivotal movement of said seat assembly in one direction, said linkage means having an over center position for resisting pivotal movement of said seat assembly in the other direction, and said second hook lever engaging an aperture in said auxiliary floor panel for securing said panel parallelly adjacent said seat back when said seat assembly is in said seat forming position and during movement to said stored position, said second hook lever releasing said panel when said seat assembly is in said stored position.

3,311,406
DEFLECTOR FOR HEAD WIND

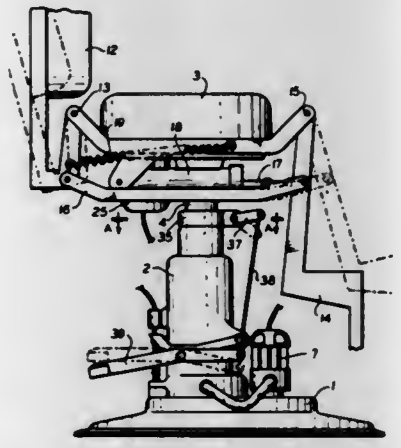
Erich Fritsch, Mettmann, Rhineland, Germany, assignor to Fritsch & Co. o.H.G., Mettmann, Rhineland, Germany
Filed Apr. 26, 1964, Ser. No. 363,251
Claims priority, application Germany, Aug. 28, 1963, F 24,461; Sept. 3, 1963, F 24,521; Dec. 18, 1963, F 25,060
1 Claim. (Cl. 296—91)

As a novel article of manufacture, a deflector for preventing the entry of head wind through an opening provided in that section of the body of an automotive vehicle which surrounds the top and the sides of a passenger compartment, comprising an elongated deflecting blade having an inner edge and an outer edge and a concave front side arranged to face the wind and extending from said inner to said outer edge, outwardly and rearwardly inclined from the front end of said opening, said deflecting blade being provided with at least one aperture and including a flap adjacent to said aperture and arranged to deflect outwardly and away from the opening such currents of air which pass through the aperture when the vehicle is in motion; and a holding portion rigid with said inner edge of said deflecting blade and arranged to be secured to the body of the vehicle.



3,311,407
AUTOMATIC DEVICE FOR OPERATING THE SEAT FRAME AND BACK SUPPORT OF A HAIR DRESSING AND BEAUTY TREATMENT CHAIR

Hideharu Horie, 58 Banchi, Kamiai-cho, Nishinari-ku, Osaka, Japan
Filed May 4, 1965, Ser. No. 453,120
Claims priority, application Japan, Apr. 8, 1965, 40/20,929
1 Claim. (Cl. 297—71)

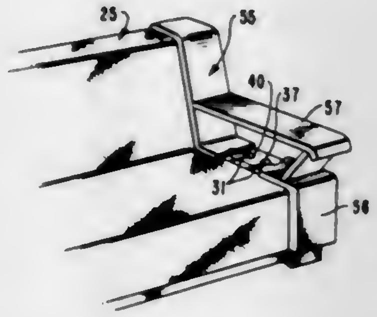


An automatic device for operating the seat frame and back supporting plate of a hair-dressing and beauty treatment chair, comprising,
a seat frame,
a first piston secured to said seat frame,
a first cylinder containing hydraulic fluid and receiving said first piston for reciprocating movement therein, to raise and lower, respectively, said seat frame thereby,
a base supporting said first cylinder in vertical position,
a tank containing said hydraulic fluid,
a motor pump operatively connecting said first cylinder with said tank to apply pressure to said hydraulic fluid in said chamber,
a back supporting plate of U-shape being pivotally secured to said seat frame,
a foot rest,
the front side of said seat frame being pivotally secured to the upper end of said foot rest,
a connecting rod connecting said back supporting plate with said foot rest,
a second piston secured to the front part of said connecting rod,
a second cylinder secured to said seat frame and receiving said second piston for reciprocating movement therein,
means for controlling the position of said seat frame and of said back supporting plate,

a spring secured to the front side of said seat frame and to the lower side of said back supporting plate, respectively, and urging a forward movement of said connecting rod,
two L-shaped levers pivotally secured to the front of said first cylinder,
a vertically disposed spring opposing the downward movement of one of said levers,
a switch,
the upper end of said spring engaging said switch,
a relief valve engaged by the lower side of the other of said levers,
a split collar connected to the top of said first cylinder and embracing said first piston,
a bolt connecting the ends of said split collar,
an arm lever rigidly secured to said bolt,
a connecting rod pivotally secured to said arm lever, so that upon pulling said connecting rod, said bolt being rotated,
foot levers secured to said L-shaped levers by means of an axle extending through said L-shaped levers and through said foot levers,
the lower end of said connecting rod being secured to said axle, so that upon foot operating of said foot levers, said connecting rod is pulled downwardly to control said seat frame, and
manually operated valve means controlling the movement of said second piston in said second cylinder, and thereby controlling the position of said back supporting plate.

3,311,408
REMOVABLE UPHOLSTERY COVER FOR FURNITURE

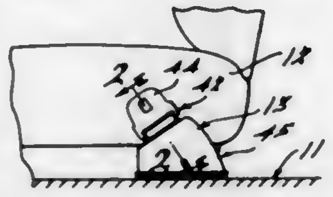
Maynard C. Sarvas, 11375 Baskerville Road,
Los Alamitos, Calif. 90720
Original application Oct. 16, 1961, Ser. No. 145,359, now Patent No. 3,188,137, dated June 8, 1965. Divided and this application June 7, 1965, Ser. No. 481,994
2 Claims. (Cl. 297—218)



1. An upholstered article of furniture having a readily removable and replaceable upholstery cover that remains tight and well-aligned comprising a frame having a seat portion, and a back rest portion, with the seat portion having a lower front portion, the sides of the frame providing marginal anchor surfaces, cushioning material coupled to the seat and back rest portions of the frame, a single upholstery cover, consisting of a single sheet, for the article of furniture and extending over the back of the back rest portion, the front of the back rest portion, the seat portion, and the lower front portion of the seat portion, and having margins extending adjacent the marginal anchor surfaces of the frame, elastic means detachably securing the upholstery cover to the frame along the sides thereof and at the bottom of the lower front portion and at the bottom of the back rest portion, and uncovered detachable arm rest means adapted to slide over the side edges of the frame so as to cover the elastic means therealong.

3,311,409
SEAT BELT RETRACTOR

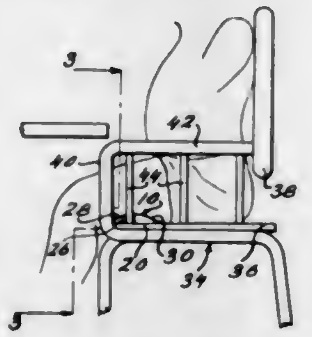
Robert C. Fisher, 580 E. Long Lake Road,
Bloomfield Hills, Mich. 48013
Filed Mar. 17, 1965, Ser. No. 440,553
3 Claims. (Cl. 297—388)



1. A seat belt retractor adapted to be positioned at the side of the vehicle seat comprising
bracket means comprising first and second sheet metal members having upstanding arms and
offset mounting portions, respectively, the mounting portions of said members being disposed in juxtaposed relation and the arms thereof in spaced relation, the mounting portions having aligned apertures therein to facilitate attachment of said retractor to the vehicle and the spaced arms having aligned bearing apertures therein,
a shaft journaled at one end in the bearing aperture one of said arms, the other end of said shaft extending through the bearing aperture other of said arms and being journaled therein,
a hub affixed to said shaft between said arms for locating said shaft relative to said arms,
a seat belt,
means affixing one end of said seat belt to said hub,
a retraction spring retainer fixed to the other of said arms and overlying and enclosing said other shaft end, and
a coiled torsional retractor spring cooperating with said spring retainer, one end of said torsion spring being affixed to said spring retainer and the other end thereof being affixed to said other shaft end for tensioning of said spring upon rotation of said shaft due to extension of said belt.

3,311,410
ANTI-SLIP BAR FOR HIGH CHAIRS

James A. Hill, 44 Greenbriar Road,
Brockton, Mass. 62401
Filed Feb. 16, 1966, Ser. No. 527,844
4 Claims. (Cl. 297—423)

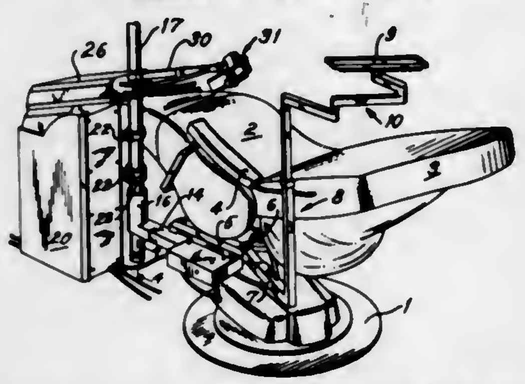


1. For use with an infant's high chair having a seat and opposed side panels wherein each side panel includes at least one vertical post adjacent the forward edge of the seat, an infant anti-slip device comprising:
(a) an elongated bar element having a flat bottom, a transversely curved convex top and end sides,
(b) a slot extending inwardly of said bar from each end side thereof and in longitudinal alignment,
(c) each said slot having an inner end wall and with the end walls spaced apart a distance less than the distance between the opposed vertical posts of said side panels,

(d) said bar element in use engaging said seat and extending between said side panels with the curved top uppermost and with each slot receiving therein a vertical post of an adjacent side panel such as to retain the bar element in fixed relation on said seat adjacent the front edge thereof.

3,311,411
ADJUSTABLE CERVICAL TRAY AND INSTRUMENT CONSOLE DENTAL CHAIR

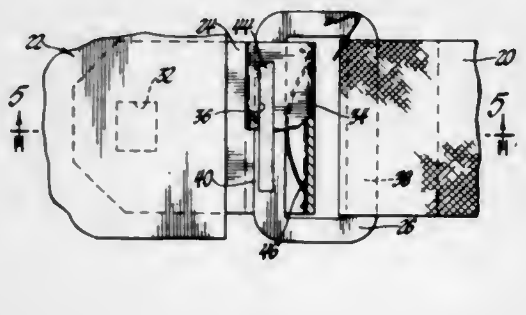
Richard W. Page, Chappaqua, N.Y., and Harold C. Kilpatrick, New Canaan, Conn., assignors to Chayes Dental Instrument Corporation, Danbury, Conn., a corporation of Connecticut
Filed Aug. 2, 1965, Ser. No. 476,344
2 Claims. (Cl. 297—170)



1. A dental chair arrangement comprising an operating chair having a vertically adjustable seat support, a bracket secured to said seat support and a dental instrument console supported by the bracket and comprising a telescoping instrument supporting arm overhanging the chair and having its outer end supported for pivoting about a vertical axis and a horizontal axis, a holder for a plurality of dental instruments and means pivotally mounting the said holder to the overhanging end of the said arm for adjustment about an axis which is approximately vertical when said arm is horizontal, a cervical tray and means for supporting the same from the seat support for movement therewith, said means comprising a horizontal cantilever arm pivotally secured at one end to said seat support for swinging adjustment about a vertical axis, a telescoping vertical column member secured to the other end of the cantilever arm, whereby the upper end of the column member has a predetermined range of adjustment both vertically and radially from the said vertical axis, a set of arms pivotally connected end-to-end for hinging on vertical axes, a cervical tray and means supporting said tray on a terminal arm of said set, and means pivotally mounting the free end of the other terminal arm of said set on the top of said column member, whereby said tray has a full predetermined range of horizontal adjustment with relation to a patient in said chair when the upper end of said column member is in any of its adjusted positions.

3,311,412
SEAT BELT TENSION INDICATOR

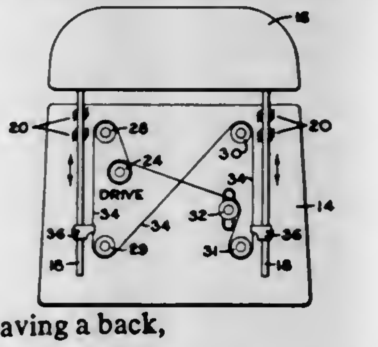
Kent B. Kelly, Lake Orion, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 15, 1966, Ser. No. 542,800
5 Claims. (Cl. 297—385)



1. A seat belt tension indicator including:
a buckle member adapted to engage another buckle member;
loop means attached on one side to said seat belt and movably attached on the other side to one of said buckle members, said loop means having an indicator portion thereon visible when said loop means is in a certain position relative to said buckle member;
and spring means mounted between said loop means and said buckle member to normally bias said loop means into the position where said indicator portion is visible when there is not sufficient tension on said seat belt.

3,311,413
HEADREST POSITIONING MECHANISM

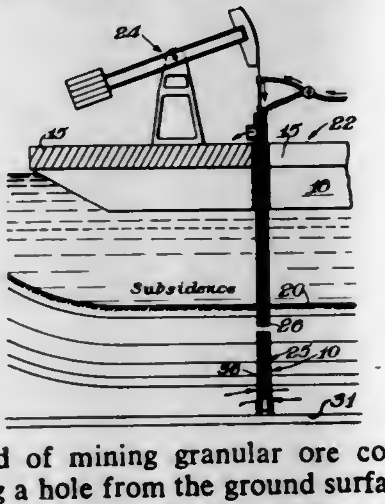
Jack E. Martens, Bloomfield Hills, Mich., assignor to The Anderson Company, a corporation of Indiana
Filed July 17, 1964, Ser. No. 383,438
6 Claims. (Cl. 297—410)



1. In a seat having a back,
a headrest,
said headrest having a pair of depending spaced-apart parallel rods slidably receivable in said back,
drive mechanism adapted to be carried by said back for selectively positioning said headrest with respect to said back,
said drive mechanism comprising a reversible motor for driving a drum in either direction, a plurality of spaced pulleys, and an endless cable connected to said drum and drivingly encircling said pulleys,
opposed parallel reaches formed by said cable disposed adjacent said rods and driven in the same general direction,
means pivotally carried by said rods connected with said movable reaches whereby selective rotation of said motor positions said headrest relative to said back.

3,311,414
APPARATUS AND METHOD FOR MINING GRANULAR ORE

Harry B. Cannon, Sr., Harry B. Cannon, Jr., and Hugh N. Cannon, all of P.O. Box 2432, Lakeland, Fla. 33802
Filed Apr. 9, 1964, Ser. No. 359,552
12 Claims. (Cl. 299—18)



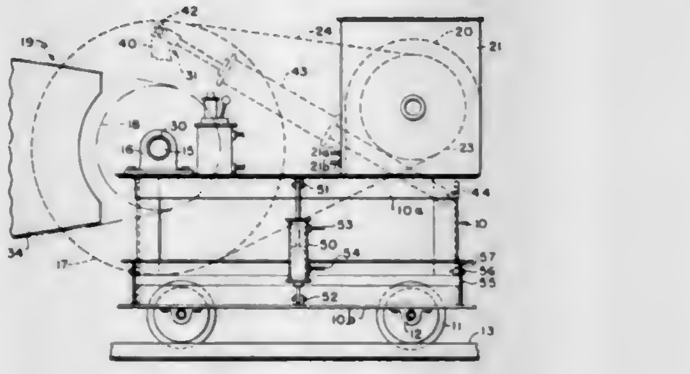
5. A method of mining granular ore comprising the steps of drilling a hole from the ground surface into a bed of said granular ore through a layer of water impervious

strata, inserting a conduit in said hole, sealing a portion of said conduit in said layer of strata, inducing the ore to broadly laterally subside without cavitation by applying suction at the bottom of said conduit to the undiluted ore to cause it to flow into the bottom of said conduit and by preventing dilution of the ore outside the conduit, and pumping the ore upwardly through said conduit.

3,311,415

STONE SAW WITH PULSED FEED FOR CHAIN CUTTER

Robert W. Miller, Cincinnati, Ohio, assignor to Alaskaug Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 19, 1964, Ser. No. 404,779
5 Claims. (Cl. 299—36)

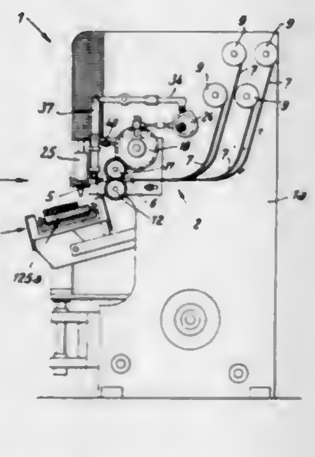


1. A stone sawing apparatus comprising, in combination, a frame, a transverse shaft mounted in said frame, a bell-crank lever surrounding said shaft for pivotal movement thereabout, a chain saw comprising a chain guide and chain links carrying linearly movable abrasive bits, said saw being mounted at one end of said lever, a driving sprocket for said saw, said sprocket being operatively mounted for rotation on said shaft, hydraulic means secured to the other end of said lever for forcing the saw against the stone, means operating on said hydraulic means for applying pulses thereto and means for simultaneously actuating said saw through rotation of said sprocket.

3,311,416

BRUSH MAKING MACHINE

Heinz Zahoransky, 49 Wintererstrasse, Freiburg, Germany
Filed Feb. 24, 1965, Ser. No. 434,768
Claims priority, application Germany, Feb. 28, 1964 (utility model) Z 9,060, Z 10,675
19 Claims. (Cl. 300—4)

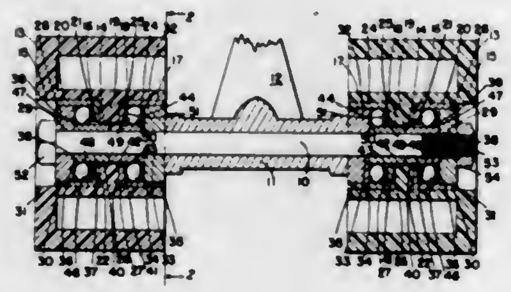


1. In a machine for making brushes of the type wherein groups of separate filament portions are inserted into a back support, in combination, a source of supply comprising a plurality of flat filaments adapted to be subdivided into filament portions of requisite length; feeding means operative to intermittently advance said flat filaments side by side and lengthwise along an elongated path; stacking means for moving the leading portions of filaments during advance thereof so that such leading portions are superimposed on each other; aligning means for aligning said flat filaments during advance thereof so that they extend in a common plane adjacent to and parallel to each other in direction of their advance; cutting means cooperating with said aligning stacking means for separating the thus superimposed leading portions of the thus aligned flat filaments between intermittent operations of said feeding means to form groups of flat separated filament portions; inserting means arranged to receive such groups; and transfer means for delivering the groups to said inserting means.

3,311,417

BEARING SUPPORTED SKATE WHEEL

Antonio M. Uribe, 1131 E. Merced Ave., West Covina, Calif. 91772
Filed Mar. 8, 1965, Ser. No. 437,846
10 Claims. (Cl. 301—5.7)

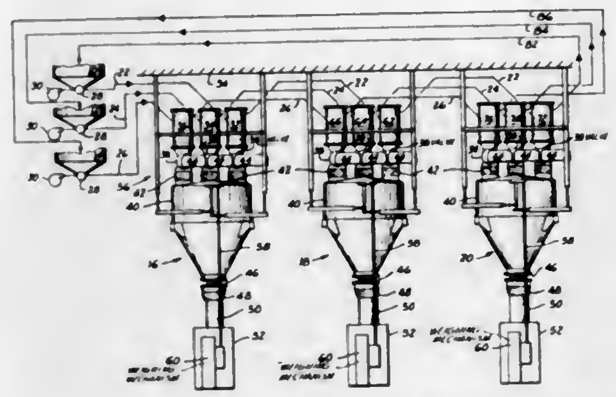


1. A bearing supported wheel assembly comprising: a wheel, said wheel being provided with an axial bore extending therethrough; a first axial counterbore extending into said wheel a predetermined distance from one end thereof and forming a first axial cavity; a second axial counterbore extending into said wheel a predetermined distance from the opposite end of said wheel and forming a second axial cavity, the ends of said first and second axial cavities forming shoulders that are in spaced relationship to each other; an axle having an enlarged end portion at one end and an enlarged adjustable retaining means at the opposite end thereof, the axle extending through said wheel and having a diameter smaller than the diameter of the axial bore; a first and a second annular disc race in contact with its corresponding shoulder of said first and second cavities, each annular disc race having a central bore at least as large as the axial bore of said wheel; a first and a second circumferential annular race secured within its respective first and second axial cavity, each of said circumferential annular races being in contact with its respective annular disc race; an annular sleeve race snugly rotatable on said axle, a portion of said sleeve race being coextensive with a portion of said first and second circumferential annular races and having an external diameter that is smaller than the axial bore of said wheel; a first and a second annular disclike end race, each end race being snugly rotatable on said axle and having an outside diameter to permit it to slide snugly into and snugly revolve within its respective annular circumferential race; and a plurality of bearings disposed within each cavity formed between the corresponding annular circumferential race, annular disc race, the respective portion of the sleeve race and the inner surface of the end race, the degree of thrust applied to the bearing being determined by the position of the adjustable retaining means at one end of said axle.

3,311,418

HANDLING OF PULVERULENT MATERIALS

Stanley R. Scruby and Donald J. McIver, Houston, Tex., assignors to Systems Engineering and Manufacturing Co., Inc., Houston, Tex., a corporation of Texas
Filed July 24, 1964, Ser. No. 384,833
1 Claim. (Cl. 302—3)

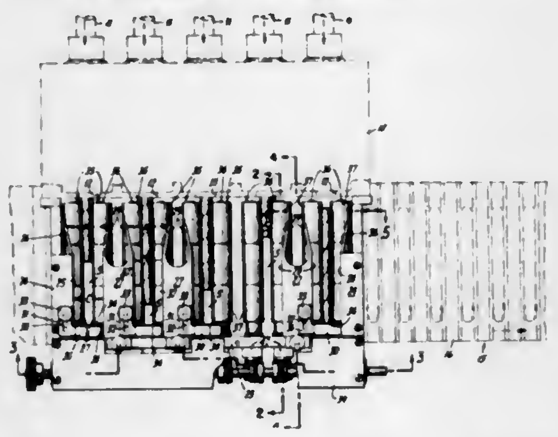


A batching system for preparing batches of plural dissimilar pulverulent solids which comprises
a plurality of scale hoppers,
weight indicating means engaged by each scale hopper,
a plurality of pressure vesesls above each scale hopper, each scale hopper with its associated pressure vessels constituting a battery,
conduits from the bottoms of the pressure vessels in each battery to the scale hopper in the battery,
a rotary valve in each conduit,
a plurality of material transfer conduits, each material transfer conduit connecting one pressure vessel in each battery in series with each other, the connections to the pressure vessels being at the tops of the pressure vessels,
a storage bin at the beginning of each material transfer conduit,
a return conduit from the last pressure vessel in each series to a storage bin,
said storage bin, pressure vessels, material transfer conduits and return conduit being continuously in open communication during operation, and
means for continuously impelling fluidized solid material through each material transfer conduit and its communicating pressure vessels and return conduit.

3,311,419

CONVEYING SYSTEM

Jerome B. Chambers, Billings, Mont., and Robert P. Dellaquila, Astoria, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Jan. 13, 1966, Ser. No. 520,471
10 Claims. (Cl. 302—12)

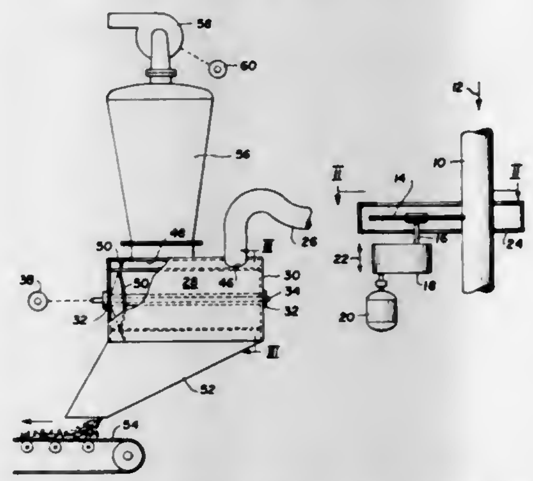


1. In a cigar conveyor system having a plurality of pneumatic ducts to feed cigars lengthwise and an endless belt conveyor moving transverse to the ducts and having pockets therein substantially parallel to the ends of the duct to receive cigars therefrom, a cigar transfer and positive feed device comprising a plurality of chutes vertically spaced above the endles belt conveyor substantially parallel to the pockets thereof and to each other, each of the chutes being longitudinally alined with one of the ducts and having an in-feed at one end adjacent the alined duct to receive cigars delivered thereby, a plurality of resilient low density impact members each disposed across the other end of one of the chutes opposite from the in-feed to block cigars from passing longitudinally through the chutes and to prevent injury to the cigars blocked thereby, and means for defining the bottoms of the chutes each with an out-feed therethrough substantially parallel to the pockets of the conveyor passing therebeneath and for positively feeding cigars through the out-feeds from all of the chutes to the pockets of the endless belt conveyor.

3,311,420

VACUUM CLEANING APPARATUS FOR PARTICULATE MATERIALS

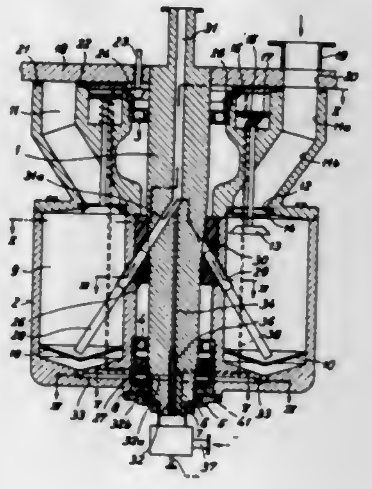
Fred E. Halstead, Rochester, Pa., assignor to Halstead Metal Products, Inc., Zelienople, Pa., a corporation of Pennsylvania
Filed June 7, 1965, Ser. No. 461,722
3 Claims. (Cl. 302—49)



1. A vacuum cleaning apparatus for metal chips produced by a metalworking tool comprising shield means surrounding at least a portion of said tool and adapted to receive metal chips produced by said tool, a generally cylindrical housing, a rotatable axle extending axially through the housing, a plurality of radially extending staves circumferentially spaced around said axle and forming with the housing a plurality of chambers, sealing flaps along the edges of the staves, an opening in the bottom of said housing through which metal chips in successive ones of said chambers may be discharged, a first conduit having one end connected to a first opening in the top portion of said housing at one end of the housing and another end connected to said shield means and acting as an intake for metal chips, a second conduit having one end connected to a second opening in the top portion of said housing at the other end of the housing, the first and second openings in the housing being located to both communicate with the same successive ones of said chambers as the axle rotates, baffle means at an end of each of said chambers and against which metal chips impinge, said baffle means being at the ends of the chambers opposite the ends of the chambers which communicate with said first opening, and a blower connected to the other end of said second conduit and arranged to suck air and metal chips through said first opening and into successive ones of said chambers as the axle rotates, the metal chips being retained within successive chambers and thereafter discharged through said opening in the bottom of the chamber while air substantially free of metal chips passes through said second conduit to said blower.

3,311,421
DEVICE FOR THE CONTINUOUS PNEUMATIC FEEDING OF POWDERED OR GRANULAR MATERIAL

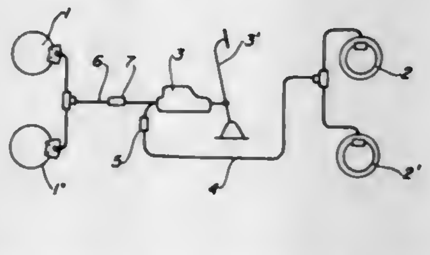
Otto Heinemann, Neubeckum, Westphalia, Germany, assignor to Polysius G.m.b.H., Neubeckum, Westphalia, Germany
Filed Feb. 9, 1966, Ser. No. 526,145
12 Claims. (Cl. 302—49)



1. A device for the continuous pneumatic feeding of finely divided material, comprising a fixed vertical shaft provided with a main compressed air conduit and a material discharge conduit, a plurality of annularly arranged pressure containers rotatably mounted on the shaft, each having a separate closable material inlet, a compressed air inlet, and a material exit pipe, the compressed air inlet and material exit pipe of each container leading to the periphery of the shaft and being in communication with the main compressed air conduit and the material discharge conduit, respectively, during a specific portion of each revolution of such container about the shaft.

3,311,422
FRONT AND REAR BRAKE PROPORTIONING SYSTEM

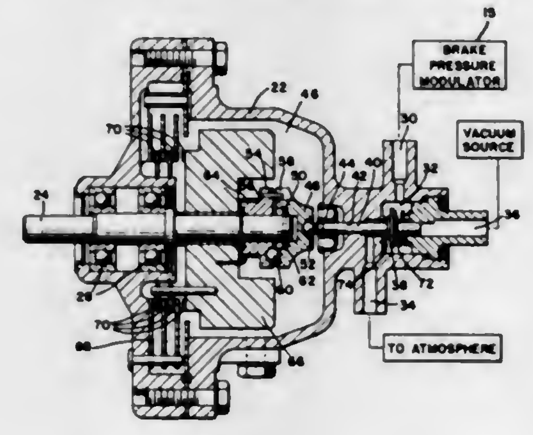
Heinrich Oberthür, Offenbach-Rumpenheim, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik KG., a corporation of Germany
Filed Oct. 22, 1965, Ser. No. 501,005
Claims priority, application Germany, Mar. 27, 1965, T 28,271
2 Claims. (Cl. 303—6)



1. A brake system for automotive vehicles and the like having a set of disk brakes with relatively high pressure response and a set of drum-type brakes with relatively low pressure response; a master cylinder for supplying hydraulic fluid under pressure to both sets of brakes; and a double-acting check valve connected between said set of disk brakes and said master cylinder for blocking flow of hydraulic fluid to said set of disk brakes upon actuation of said master cylinder to supply hydraulic fluid to said set of drum-type brakes until the hydraulic-fluid pressure of said master cylinder attains a predetermined value, and thereafter communicating between said master cylinder and said set of disk brakes to actuate the latter, while permitting substantially unhindered return flow of hydraulic fluid from said set of disk-type brakes to said master cylinder upon deactivation of same, said double-acting check valve comprising a housing forming a valve passage, a seat-forming member displaceable in said passage and yieldably bearing against said housing with a relatively high force for blocking the flow of hydraulic fluid through said passage until the attainment of said predetermined pressure in said master cylinder, said seat-forming member having an opening and a check member biased against said seat-forming member with a relatively weak force and disengageable therefrom to unblock said opening for return flow of hydraulic fluid from the disk brakes to said cylinder; and a pressure-retaining valve connected between said drum-type brakes and said master cylinder for maintaining a hydraulic pressure in said drum-type brakes upon de-energization thereof at a level slightly below the response pressure of said drum-type brakes.

3,311,423
BRAKE ANTI-LOCK INERTIA COMPENSATED SENSING UNIT

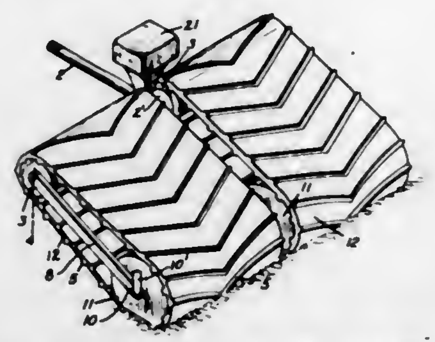
Robert A. Horvath, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 10, 1965, Ser. No. 507,140
5 Claims. (Cl. 303—21)



1. A brake anti-lock device comprising: a housing carried by a vehicle drive means rotatably carried in said housing and being rotated at a speed proportional to vehicle wheel speed; an inlet in said housing from a source of pressure and an outlet in said housing to a modulator for vehicle brakes; valve means slidably disposed in said housing and arranged to selectively control fluid communication between said inlet and said outlet; weight means rotatably carried on said drive means and translationally slidable thereon in response to abrupt changes in vehicle speed; and valve actuating means, said valve actuating means includes cam means axially slidable on said drive means and non-rotatable with respect thereto, spring carrier means carried by said drive means and adapted for limited rotational movement with respect to said cam means, and a torsion spring engaging said spring carrier means and said weight means in a manner accommodating limited relative rotational movement of said weight means and being non-restrictive of sliding movement of said weight means, differences in speed between said weight means and said drive means inducing relative rotational movement in said spring carrier means and consequent axial movement of said cam means whereby said valve means is translationally axially moved to control fluid communication between said inlet and outlet, said difference in speed being caused by a rotating weight means tending to maintain a rotational speed while said drive means has already responded to a decrease in vehicle wheel speed.

3,311,424
TRACTIVE DEVICE COMPRISING A BELT DRIVEN SOFT ROLLER

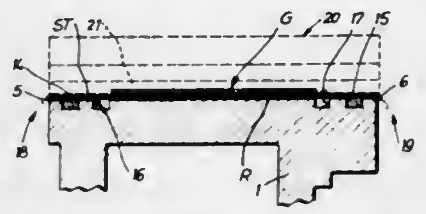
Guillermo K. Taylor, Acassuso, Buenos Aires, Argentina (% Marval & O'Farrell, Carlos Pellegrini 885, Buenos Aires, Argentina)
Filed June 3, 1965, Ser. No. 463,468
17 Claims. (Cl. 305—12)



12. A tractive device for vehicles of the type to be moved over soft or irregular ground, comprising a driving pulley having a first periphery, a resilient soft driven roller mounted for rotation about an axis and having a second periphery defining a highly flexible running surface yieldable and deformable to surface obstructions, said driven roller being spaced from said driving pulley, an endless belt contacting a portion of said first periphery and encircling said second periphery and contacting a portion of said second periphery to transmit torque from said first periphery to said second periphery, said endless belt being flexible to conform to the full shape of the portion of said second periphery which it contacts, all of said belt other than that portion contacting said second periphery being spaced above the lowermost surface of said second periphery so that, when said tractive device is on flat ground, the only portion of said belt which enters into contact with said ground also contacts said second periphery, the width and length of the projected footprint of said driven roller being at least as long as the loaded radius of said driven roller.

3,311,425
GUIDING MEANS FOR MACHINE TOOL PARTS, ESPECIALLY FOR CARRIAGES

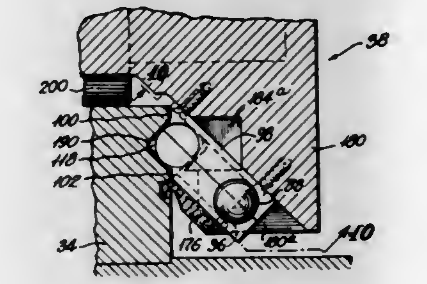
Willy Schraub, Beckrath, Wickrath (Niers), Germany, assignor to Scharmann & Co., Rheydt, Rhineland, Germany
Filed Mar. 23, 1964, Ser. No. 353,769
Claims priority, application Germany, July 5, 1963, Sch 33,584
3 Claims. (Cl. 308—3)



1. A guiding arrangement for guiding tracks on machine tools, which includes: a longitudinally extending guiding element, carriage means having one side thereof facing said guiding element, a sliding foil arranged on that side of said carriage means which faces said guiding element, said guiding element having a substantially plane top surface extending in the longitudinal direction of said guiding element and having each of its lateral marginal portions provided with at least two parallel grooves extending in the longitudinal direction of said guiding element, a metallic band resting on said plane surface and extending in the longitudinal direction thereof and having a width in excess of the lateral distance between those sides of the outermost one of said grooves which are adjacent the longitudinal edges of said guiding element, adhesive means filling said outermost grooves and extending therefrom over said plane top surface between the top surface portions respectively located between the outer sides of the innermost ones of said grooves and said longitudinal edges on one hand and those band surface portions on the other hand which are adjacent to and face said last-mentoned top surface portions, said adhesive means firmly connecting said last-mentioned band portions to said last-mentioned top surface portions, the band surface portion facing said top surface portion which is disposed between the innermost ones of said grooves being free of said adhesive, said sliding foil having a width about equal to the lateral spacing of said innermost ones of said grooves and engaging the upper side of said last mentioned band portion.

3,311,426
RECIRCULATING BEARING ARRANGEMENT

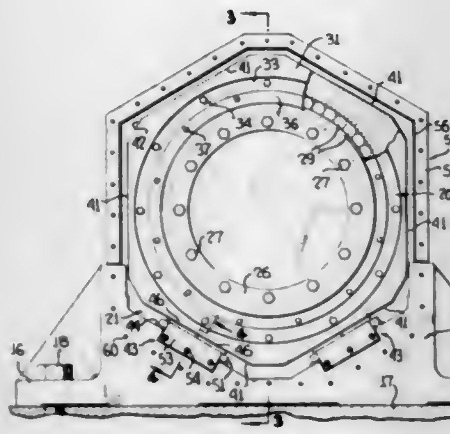
Jack N. Binns, 4866 Oaklawn Drive, Cincinnati, Ohio 45227
Original application Nov. 12, 1959, Ser. No. 852,377, now Patent No. 3,168,846, dated Feb. 9, 1965. Divided and this application May 8, 1964, Ser. No. 374,220
4 Claims. (Cl. 308—6)



4. A ball bearing structure for use in cooperation with a movable body and a stationary body, wherein the stationary body has a ball groove, said bearing structure embodying an elongate block having a bore longitudinally therethrough from end to end and having a side face opposing said ball groove of the stationary body, said side face having a groove of substantially V cross section providing an exposed ball raceway co-extensive with the block and disposed parallel with and in opposed operative relation to said ball groove of the stationary body, the bore and the raceway together with the said ball groove of the stationary body being adapted to accommodate a row of bearing balls movable along the raceway and through the bore, and a ball return end block fixed at each end of the elongate block, each of said end blocks comprising a body having a semi-circular bearing ball conveying passageway of circular cross-section and substantially the diameter of the conveyed bearing balls for receiving balls transferred from the bore, said semi-circular passageway lying with the center thereof in a plane oblique to said elongate block side face and passing through one side of the said V-groove therein and said plane substantially paralleling the opposite side of the V, said passageway having a circular ball receptive port in registry with one end of the block bore and a second circular port disposed adjacent to one end of said exposed raceway and having its center aligned with the approximate center of said V-groove to receive balls from the exposed raceway and feed balls thereto, and a scoop on each end block consisting of an integral part of the block and having an interiorly and an exteriorly transversely circular form, and said scoop lying to one side of said plane and extending outwardly with respect to the adjacent port beyond the limits of the exposed raceway for directing balls into and from said second port.

3,311,427
COMBINED AXIAL AND ROTARY BEARING

Leo A. Toth and William H. Carter, South Bend, Ind., assignors to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed July 10, 1964, Ser. No. 381,831
13 Claims. (Cl. 308—6)

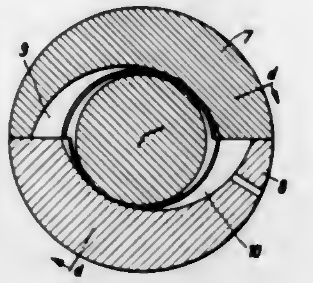


8. A combined axial and rotary bearing for a terminal end of a shaft, said bearing including an outer shell including a lower bearing support, a rotary bearing unit, an axial bearing unit supporting said rotary bearing unit on said support for movement axially of said shaft, said rotary bearing unit receiving and supporting one end of said shaft for rotary movement, said shell being closed except for a shaft receiving opening, and a shaft engaging seal defining said opening and forming a shell sealing seal with said shaft, and wherein said rotary bearing unit is a separately sealed unit having a separate seal with respect to said shaft, said axial bearing unit including a pair of upwardly facing outer axial bearing races on said support, said outer axial bearing races having an included angle therebetween materially greater than 90 degrees and materially less than 180 degrees, anti-friction bearing elements riding on said outer axial bearing races, said rotary bearing unit including a housing forming member having a linear polygonal outer surface defining a plurality of pairs of adjacent inner axial bearing races, the lowermost pair of said inner axial bearing races being parallel to respective ones of said outer axial bearing races and being supported by said bearing elements for axial movement, said housing being selectively positionable relative to said support to present another pair of said inner axial bearing races to said support when the currently used pair of inner axial bearing races become worn.

3,311,428
BEARING FOR CLOSELY HELD JOURNAL

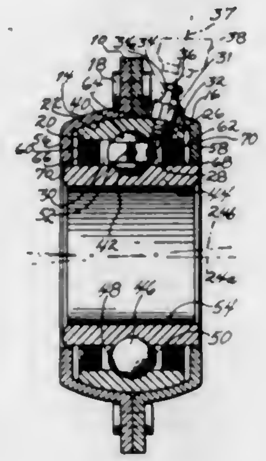
Roland Scheufler, Neckarsulm, Wurttemberg, Germany, assignor to Firma Karl Schmidt G.m.b.H., Neckarsulm, Wurttemberg, Germany, a German corporation
Filed Apr. 30, 1964, Ser. No. 363,864
Claims priority, application Germany, June 25, 1963, Sch 33,454
16 Claims. (Cl. 308—121)

1. In a sliding surface radial bearing having a bore shaped for sliding surface contact with a journal received therein at spaced loci about the periphery thereof to provide journal supporting and journal unsupporting loci in the bore, the improvement which comprises a metallic cover plate coaxial with the bearing mounted on each end thereof, said covers each having a bore for receiving a journal received in the sliding surface bearing, the bore of each cover being substantially equal to the bore of the bearing at loci thereof corresponding to loci of sliding surface contact between the shaft and bearing, and smaller than the bore of the sliding surface bearing at loci thereof corresponding to unsupporting loci in the sliding surface bearing bore, but larger at loci thereof corresponding to unsupported loci of the sliding surface bearing bore than the bore of the bearing at loci of sliding surface contact between the shaft and bearing, whereby escape of lubricant from the sliding surface bearing bore is impeded.



3,311,429
SELF-ALIGNING BEARING ASSEMBLY

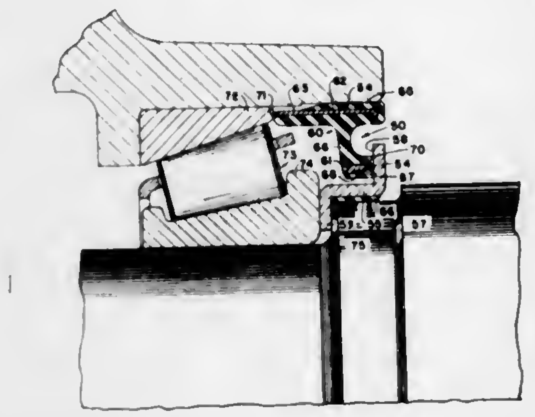
Frank A. Kocian, Evergreen Park, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Aug. 21, 1964, Ser. No. 391,097
15 Claims. (Cl. 308—187)



1. A self-aligning bearing assembly comprising:
a supported race and a supporting shroud member disposed one within another, and with the race being relatively movable and having an interior grease chamber therein;
generally radial end flanges to shroud the shroud member and carried thereby in outside locations axially opposite to the ends of the supported race, each flange extending radially inwardly to provide a narrow gap with an inner race;
said race directly carrying a grease introducing fitting communicatively connected to the interior thereof and rigidly affixed thereto, and projecting externally through an outside oversize opening in the shroud member so as to shift therewithin and, by taking up the clearance therein in the direction of rotative movement, to limit relative rotational movement between the race and the shroud member;
the supported race having a portion carried at the ends so as to move with the race and, in taking up the axial clearance between it and the different opposite end flanges because of the race tilting in different directions, so as to limit relative tilting movement of the supported race and the supporting shroud member transversely to their relative rotational movement aforesaid.

3,311,430
FACE SEAL

Dan A. Christensen, Woodside, Calif., and John H. Bradfute, Ann Arbor, Mich., assignors to Federal-Mogul Corporation, Detroit, Mich., a corporation of Michigan
Application Dec. 22, 1964, Ser. No. 438,807, which is a division of application Ser. No. 150,276, Nov. 6, 1961, now Patent No. 3,185,488, dated May 25, 1965. Divided and this application Oct. 11, 1965, Ser. No. 498,205
6 Claims. (Cl. 308—187.1)

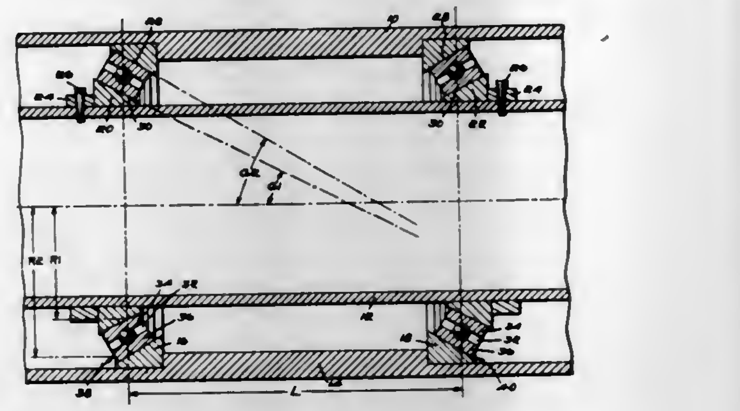


4. A mechanically sealed bearing installation comprising:
a housing having a cylindrical bore and a shoulder,
a shaft having a smaller diameter portion, a larger diameter portion and a shoulder joining said portions,
a first face member comprising a cylindrical portion engaging and sealed to said larger diameter portion and having at one end a radially inwardly extending portion engaging said shoulder and at its other end a radially outwardly extending portion providing a first sealing face,
an anti-friction bearing having an inner member engaging said smaller diameter portion of said shaft and said radially inwardly extending portion, an outer member engaging said bore and said housing shoulder, and anti-friction means between said inner and outer members, said outer member having an end wall, and
a second face member having an outer cylindrical metal member, an inner cylindrical metal member, and an elastomeric body joining them to provide a frustoconical diaphragm acting as a spring and substantially enclosing said metal members to provide a bore-engaging outer elastomeric periphery, said second face member engaging said end wall of said outer bearing member near one end said outer cylindrical metal member, and providing adjacent said inner cylindrical member a second sealing face in rotary sealing engagement with said first sealing face, the engagement of said faces placing said diaphragm in shear.

3,311,431
TEMPERATURE COMPENSATING BEARING ASSEMBLY

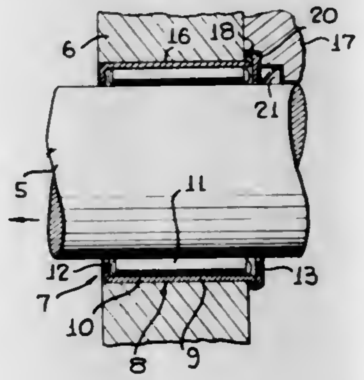
Irving W. Hilliard, 20 Barnesdale Road, Natick, Mass. 01760
Filed Aug. 7, 1964, Ser. No. 388,214
6 Claims. (Cl. 308—189)

1. In a bearing assembly of the type which includes an annular bearing positioned between radially spaced rotatable and non-rotatable elements, the coefficients of thermal expansion of said elements differing from that of said bearing, means responsive to changes in the temperature of said bearing assembly for maintaining contact at a relatively constant pressure per unit area between said bearing and said elements comprising: radially spaced inner and outer non-parallel surfaces on said bearing in surface-to-surface contact with adjacent non-parallel surfaces on said elements, the angular disposition of said surfaces in relation to the rotational axis of said bearing being such that radial forces exerted on the bearing as a result of said temperature changes will be resolved into forces causing axial movement of said bearing relative to said elements.



3,311,432
BEARING CUP WITH EXTERNAL RESTRAINING FLANGE

John H. Cowles, Forestville, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed June 23, 1964, Ser. No. 377,365
12 Claims. (Cl. 308—216)



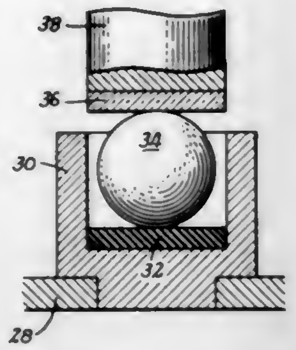
1. A bearing cup for rollers, said bearing cup comprising a cylindrical body having at opposite ends thereof inwardly directed roller retaining flanges, an outwardly directed bearing cup restraining projection adjacent one of said roller retaining flanges and an integrally formed bight portion connecting said cup restraining projection and said adjacent flange.

3,311,433
ROTARY THRUST BEARING

James W. Graham, Foxboro, and George E. Sgourakes, Millis, Mass., assignors to The Forboro Company, Foxboro, Mass.
Filed Apr. 20, 1965, Ser. No. 449,506
9 Claims. (Cl. 308—230)

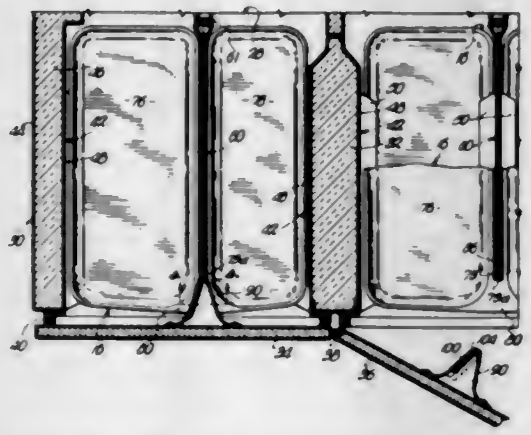
1. A self-centering rotary thrust bearing comprising a first bearing contact member having a flat surface, a second bearing contact member having a flat surface opposing the flat surface of said first member and parallel thereto, one of said two members being mounted for rotational movement relative to the other member about an axis transverse to said flat surfaces; a ball between said two surfaces and engaged therewith to support a thrust load along said rotational axis; said two surfaces

being formed of materials having dissimilar characteristics of engagement with said ball developing a differential action producing a force thereon towards said axis when said ball is within a certain distance from said axis and is revolved about said axis by rotation of said one member relative to the other member.



3,311,434
HOT AND COLD FOOD SERVING APPARATUS

Kermit W. Dyer, Overland Park, Kans., and Charles A. Moss, Lee's Summit, Mo., assignors to Crimsco, Inc., Kansas City, Mo., a corporation of Missouri
Filed Sept. 29, 1965, Ser. No. 491,184
24 Claims. (Cl. 312—214)



1. A food-serving tray comprising:

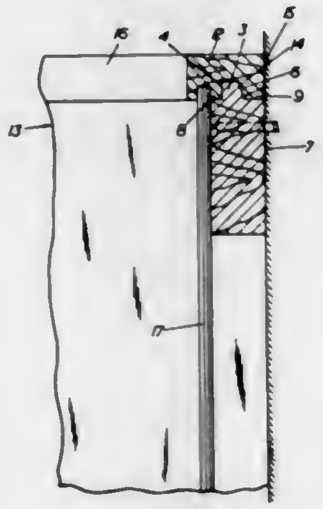
a pair of generally rectangular sections each having a generally flat, food-supporting center portion, a pair of opposed sides and a pair of opposed ends, said sections being disposed in side-by-side, spaced apart relationship with their center portions substantially coplanar and their proximal sides substantially parallel; and

means extending between and interconnecting an end of one section and said sections adjacent one corresponding end thereof only, presenting an elongated slot open adjacent the other end of said sections and extending therefrom between said sections continuously to a zone adjacent said one end of said sections.

3,311,435
WALL-MOUNTED FURNITURE

Robert Heritage, 2 Willow Ave., Barnes, London SW. 13, England
Filed Aug. 30, 1965, Ser. No. 483,431
4 Claims. (Cl. 312—245)

1. An article of furniture having two side walls and a top wall, and provided with suspension means by which said article is supported on a rigid supporting wall, said suspension means comprising: a mounting element rigid with the upper part of the rear of said article, a lightweight batten completely separable from the mounting element and having a flat rear surface adapted to be fastened to said supporting wall, at least one aperture in each end portion of said batten for receiving fixing means to fasten said batten to said supporting wall, a rib upstanding from the top surface of said batten and extending substantially the full length thereof, a groove in the bottom surface of said mounting element and extending substantially the full length thereof, said rib and said groove being shaped and sized to interengage and mate complementarily with each other, a shoulder of said batten extending substantially the full length thereof at the rear of said rib, a surface corresponding to and of substantially the same length as said shoulder on the bottom surface of said mounting element for seating on said shoulder when said rib and said groove are fully interengaged, a bubble-tube carried by a front portion of said batten between said fixing apertures and forming an integral part of said batten, said rib, said groove and said bubble-tube being correlated relatively to each other and to said article whereby, when the bubble of said bubble-tube indicates that said bubble-tube is horizontal, said batten is then in a position for said article of furniture to be correctly mounted thereon, said batten being of a length not greater than the width of said article and said rear surface of said batten being flush with the rear edges of said side walls and said top wall of the article when said article is mounted on said batten.



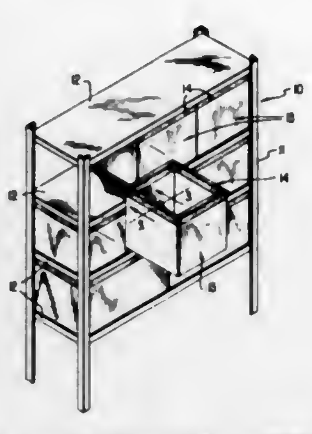
3,311,436
DISPLAY CASE, RECEPTACLE AND THE LIKE

Joseph S. Vitale, New York, N.Y. (427 Faitoute Ave., Roselle Park, N.J. 07204), and Steven M. Brown, Pleasantville, N.Y.; said Brown assignor of five-tenths to said Vitale
Filed June 22, 1965, Ser. No. 465,892
6 Claims. (Cl. 312—286)

1. A receptacle for holding coins and the like comprising a frame forming a substantially rectangular structure including a top, a bottom, an open front side and a rear side member extending upwardly from the bottom, a lower rectangular tray slidably disposed on said bottom, a middle tray slidably disposed on said lower tray, an upper tray slidably disposed on said middle tray, said rear side member terminating below the lower end of said upper tray, and a hinged cover member positioned to cover the rear side, top and front of said structure, said cover member being hingedly connected to the lower rear side edge of said structure.

3,311,437
STORAGE BOXES ADAPTED TO COACT WITH SHELF STRUCTURE FOR SEALING

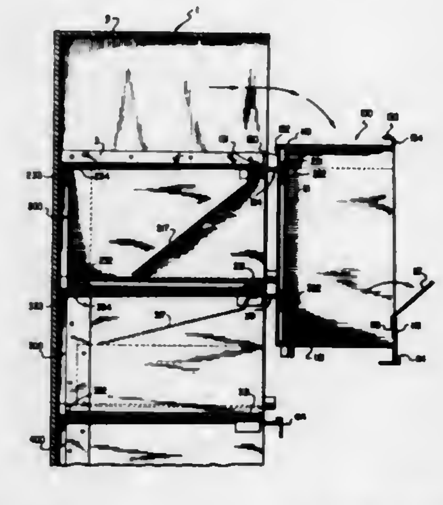
David Meade Peebles, 325 Marcy Ave., Oxon Hill, Md. 21117
Filed July 6, 1965, Ser. No. 469,655
2 Claims. (Cl. 312—296)



1. A storage unit structure comprising supporting means, a plurality of vertically spaced superposed horizontal rigid shelves fixedly secured to the supporting means, a plurality of rectangular open top storage boxes having substantially flat rigid bottoms adapted to engage and rest upon the upper faces of the shelves and being of a size whereby a group of said boxes in side-by-side substantially contacting relation on each shelf substantially completely fills the space between such shelf and the next uppermost shelf of the storage unit so that the entire volume of the storage unit is utilized by the storage boxes, and a continuous resilient compressible rim on the top edges of each open top box extending entirely around the four sides of the box and substantially above the top of the box whereby said rim is compressed due to contact with the bottom surface of the next uppermost shelf when the box is introduced into the space between a pair of shelves, the compression of said rim firmly sealing the open top box and also serving to stabilize and secure the box upon the shelf which supports it in said unit.

3,311,438
FILE CABINET

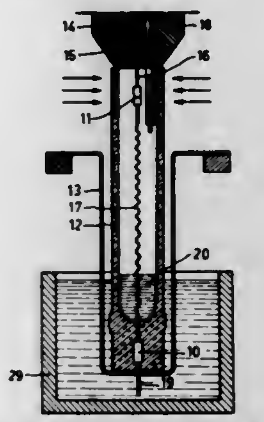
James E. Barrow, 70 Emerald Drive, Jonesboro, Ga. 30236
Filed Oct. 13, 1965, Ser. No. 495,431
15 Claims. (Cl. 312—323)



1. A filing drawer comprising a base plate, side walls, a front face plate, hooking means extending downward from the base plate, and a handle extending outward from the front face plate, said handle having means extending therefrom for engaging the hooking means of another drawer.

3,311,439
METHOD OF FILLING ELECTRIC INCANDESCENT LAMPS, DISCHARGE TUBES OR THE LIKE WITH GAS AND OF SEALING THE SAME

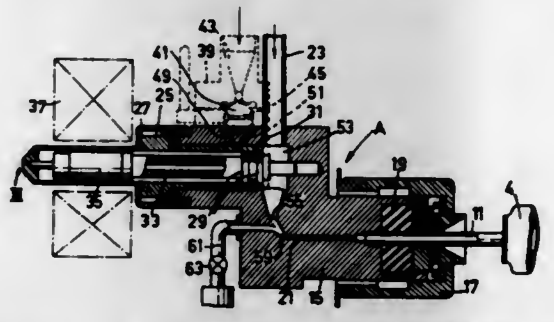
Henri Pacé, Chalon-sur-Seine, France, assignor to Fabriques Reunies de Lampes Electriques (Societe Anonyme), Issy-les-Moulineaux, Seine, France
Filed Mar. 22, 1963, Ser. No. 267,246
Claims priority, application France, Mar. 22, 1962, 891,886
3 Claims. (Cl. 316—24)



1. A method of filling an electric lamp with gases and sealing the same comprising introducing an inert gas under pressure exceeding atmospheric pressure into said lamp until said lamp is sealed thereby preventing the penetration of ambient air into said lamp, introducing a quantity of an inert rare gas into said lamp prior to sealing and while the flow of said inert gas in said lamp is maintained, and cooling at least a part of said lamp whereby the inert rare gas is condensed thereon, said inert rare gas remaining inside said lamp during the sealing operation.

3,311,440
APPARATUS RELATING TO EVACUATING AND FILLING GAS DISCHARGE LAMPS AND THE LIKE

Anton Reynders, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 6, 1964, Ser. No. 380,324
Claims priority, application Netherlands, July 11, 1963, 295,212
5 Claims. (Cl. 316—30)

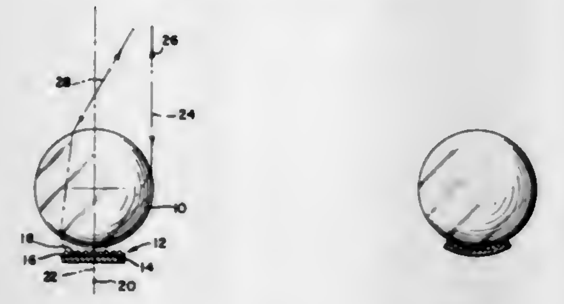


1. Apparatus for manufacturing fluorescent lamps in which lamp-tubes having a lamp-stem at each end are conveyed in a closed path while in a horizontal position, the combination comprising, a wheel defining said closed path, a plurality of head members spaced about said wheel, said head member having means for receiving a lamp-stem in sealed relation, a head body portion having a channel communicating with said lamp-stem at one end, a supply chamber within said head means connected with said head for connecting said channel with an evacuation source, means connected with said head for connecting said channel with a source of discharge gas, and means for supplying a measured quantity of mercury to said channel; said last-named means comprising a supply means communicating with the exterior ambient atmosphere surrounding said head and the interior of said

head, said supply means including means defining a supply chamber and a valve for closing said supply chamber from said ambient atmosphere and closure means for communicating said channel and said supply chamber for delivering a quantity of mercury from said supply chamber into said channel.

3,311,441
REFLECTOR

Edwin R. Gill, Jr., R.F.D. 2, Millerton, N.Y. 12546
Filed Apr. 3, 1963, Ser. No. 270,450
4 Claims. (Cl. 350—105)

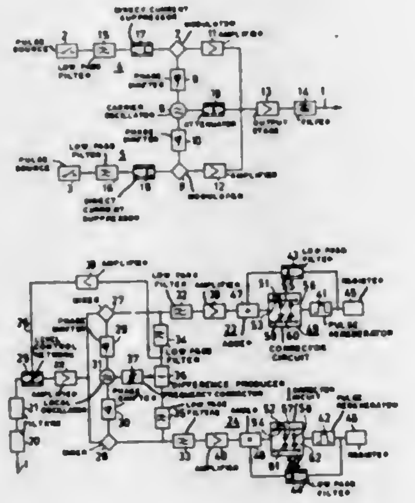


1. A reflector for reflecting a ray of light back along its own incident ray comprising a short focus transparent spherical lens having an outer exposed surface, a reflex reflecting surface adjacent the rear surface of said lens and intersecting a plane which is approximately perpendicular to said reflex reflecting surface and which passes through the center of said lens, said reflex reflecting surface comprising a plurality of light transmitting glass beads in contact with a reflecting surface, said lens having a diameter at least 30 times the size of said glass beads and having an index of refraction less than 1.70, said glass beads being located between said lens and said reflecting surface, said reflex reflecting surface being located between said rear surface of said lens and the point of focus of said lens.

3,311,442
PULSE TRANSMISSION SYSTEM EMPLOYING QUADRATURE MODULATION AND DIRECT CURRENT SUPPRESSION

Frank De Jager and Petrus Josephus Van Gerwen, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 5, 1963, Ser. No. 256,334
Claims priority, application Netherlands, Feb. 19, 1962, 274,976
15 Claims. (Cl. 325—42)

1. A pulse transmission system comprising a transmitter, a receiver, and a transmission path between said transmitter and receiver, said transmitter comprising a source of first and second pulse signals, first and second transmitter channels, means applying said first and second signals to said first and second transmitter channels respectively, at least one of said channels including means for suppressing the direct current component of signals in said one channel, a source of common carrier oscillations, first and second modulator means for modulating said carrier oscillations with the signals of said first and second channels respectively with a mutual phase displacement of 90°, means providing pilot oscillations of the frequency of said carrier oscillations, and means applying said pilot oscillations and the outputs of said first and second modulator means to said transmission path; said receiver comprising first and second receiving channels, each of said receiving channels comprising demodulator means and pulse regenerator means, means connecting each said demodulator means to said transmission path, and means connecting the output of each said demodulator means to said pulse regenerator means of the respective channel, said receiver further comprising means providing a local carrier oscillation synchronized with said pilot oscillations, and means applying said local carrier oscillations to the demodulator means of said first receiver channel for demodulating the signals corresponding to signals of said first transmitter channel which were transmitted with suppression of the direct current component, the pulse regenerator of said first receiver channel comprising low-pass filter negative feedback means having a time constant substantially equal to the time constant of said means for suppressing said direct current component.

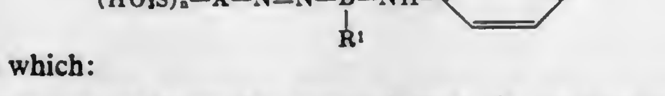


CHEMICAL

3,311,443
DYEING TEXTILE MATERIALS OF SYNTHETIC LINEAR POLYESTERS

Hans Baumann, Ludwigshafen (Rhine), Wilhelm Federkiel, Frankenthal, Pfalz, and Peter Richter, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Dec. 17, 1964, Ser. No. 419,221
Claims priority, application Germany, Dec. 21, 1963, B 74,778; Aug. 28, 1964, B 78,301
4 Claims. (Cl. 8—49)

1. In a process for dyeing synthetic linear polyester textile material by treatment of said material with a primary aromatic amine in a first liquor and oxidation of the amine absorbed by the textile material in a second liquor, the improvement which comprises preparing the amine in situ in said first treatment liquor by reductive cleavage of the azo group of an azo dye having the general formula:



in which:

A represents a member selected from the group consisting of phenylene and naphthylene,

B represents a member selected from the group consisting of phenylene and naphthylene,

R^1 represents a member selected from the group consisting of a hydrogen atom, hydroxy, methoxy and ethoxy,

R^2 represents a member selected from the group consisting of hydrogen, methyl, carboxy, methoxy and ethoxy and

n represents one of the integers 1 and 2,

and subjecting the textile material which has been treated in said first liquor to said oxidation in said second liquor.

3,311,444
DYEING OR PRINTING SYNTHETIC POLYAMIDE TEXTILE MATERIAL

Reinhold Krallmann, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Dec. 16, 1964, Ser. No. 418,907
Claims priority, application Germany, Dec. 18, 1963, B 74,717
4 Claims. (Cl. 8—55)

1. A process for dyeing and printing textile material of synthetic polyamides which comprises contacting said material with 5,8-dihydroxy-1,4-naphthoquinone at temperatures from 90 to 220° C.

3,311,445
PROCESS OF REACTING CELLULOSE FIBERS WITH CARBONYL SULFIDE AND PRODUCT THEREOF

Edward A. Swakon, Hammond, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Dec. 6, 1963, Ser. No. 328,489
10 Claims. (Cl. 8—118)

1. A method of modifying fibrous cellulosic materials which comprises treating natural cellulose fibers with an aqueous solution of a hydroxide of a metal selected from the class consisting of alkali metals and alkaline earth metals to at least wet said fibers with said aqueous solution, thereafter reacting the cellulose fibers treated with said aqueous hydroxide solution with carbonyl sulfide without dissolving said fibers, and washing said carbonyl sulfide reacted cellulose fibers with water to obtain modified cellulose fibers.

9. A method of preparing a modified woven cotton fabric to impart stiffness and water repellancy thereto which comprises wetting said cotton fabric wth an aqueous solution of sodium hydroxide, reacting said wet fabric with carbonyl sulfide, ageing said carbonyl sulfide reacted fabric for several hours, washing said aged fabric with dilute acid and then with water, and then drying the resulting modified woven cotton fabric.

3,311,446
PROCESS FOR PRODUCTION OF SODIUM PERBORATE

Willy Kegelart, Brussels, Belgium, assignor to Solvay & Cie, Brussels, Belgium, a Belgian company
No Drawing. Filed July 9, 1963, Ser. No. 293,885
Claims priority, application France, July 16, 1962, 904,094
2 Claims. (Cl. 23—60)

1. In a process for the manufacture of sodium perborate stabilized by an alkaline earth metal silicate, which comprises the steps of contacting a sodium metaborate solution with a hydrogen peroxide solution in the presence of at least one constituent of the stabilizer at room temperature to produce a supersaturated solution in which the relative supersaturation in perborate, expressed by the ratio between the weight of the sodium perborate actually present and the weight of sodium perborate which would normally be soluble in water at 20° C., is between 4 and 12, stirring the reaction medium continuously but not roughly, cooling the reaction medium to a temperature between 0° C. and 12° C. within a short time not exceeding one hour thereby to crystallize the sodium perborate, separating the crystallized sodium perborate from the mother liquor and drying it, the improvement which consists in mixing the damp crystallized sodium perborate obtained by separation from the reaction medium and which contains, besides water of crystallization, 40 to 60% by weight of mother liquor, with 40 to 150% by weight of dry sodium perborate, and drying the resulting mixture in a fluidized bed drier.

3,311,447
RECOVERY OF METAL PHOSPHATES FROM INDUSTRIAL LIQUORS

Ken Stuart, 12 Cherry Lane Drive,
Englewood, Colo. 80110
No Drawing. Filed Apr. 9, 1964, Ser. No. 358,637
2 Claims. (Cl. 23—105)

1. A process for recovering a complex having improved filterability from an industrial liquor containing an inorganic salt of the group consisting of sulfuric, hydrochloric and nitric acid, and a metal cation of the group consisting of zinc, iron, magnesium, manganese, cobalt and copper, said process comprising concurrently adding to the industrial liquor

- (A) a substance selected from the group consisting of ammonia, a potassium compound, a sodium compound and a lithium compound, or mixtures thereof, and
- (B) a material selected from the group consisting of
  - (1) an inorganic phosphate salt having a cation selected from the group consisting of $K+$, $Na+$, $Li+$ and NH_4+, or mixtures thereof, and
  - (2) a substance which forms said inorganic phosphate salt,

the amount of (B) being in a quantity to combine with the metal cation in the industrial liquor, the amount of (A) being in a quantity in excess of that required to combine with the sulfuric, hydrochloric or nitric acid in the industrial liquor, and continuing to add (A) until the pH of the liquor attains a value of 6.2 to 7.2, thus precipitating a complex characterized by including a phosphate salt having a cation of the group consisting of zinc, iron, magnesium, manganese, cobalt and copper or mixtures thereof and a phosphate salt having a cation of the group consisting of potassium, sodium, lithium and ammonium or mixtures thereof, said complex having an ammonia content of from 4 to 8% by weight or having equivalent weight contents of potassium, sodium and lithium, whereby the filterability of the complex is improved, and filtering said liquor in order to separate the complex therefrom.

3,311,448
CONTINUOUS CRYSTALLIZATION OF ALKALI METAL ALUMINUM ACID ORTHOPHOSPHATES

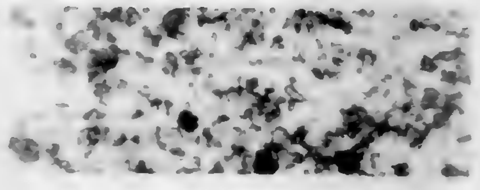
Julian E. Blanch, Tinley Park, Leo B. Post, Chicago, and George I. Klein, Park Forest, Ill., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
Filed Nov. 1, 1962, Ser. No. 234,773
4 Claims. (Cl. 23—107)

1. A process for preparing a complex crystalline alkali metal aluminum acid orthophosphate of the formula:

$$M_xAl_yH_z(PO_4)_8\cdot O\text{-}5H_2O$$

wherein M is an alkali metal selected from the group consisting of sodium and potassium and mixtures thereof and *x*, *y*, and *z* are numbers of from 1 to 15, 2 to 4, and 0 to 15, respectively, with the sum of $x+3y+z$ equal to 24, which comprises:

- (A) preparing a conveyable liquid reaction mixture containing alkali metal, aluminum, and phosphorous constituents in substantially stoichiometric proportions within the above formula and a free water content between 9.5% and 44% by weight of said liquid reaction mixture which comprises reacting a reactive trivalent aluminum compound and at least one alkali metal compound with phosphoric acid in an agitated reaction zone maintained between 40° C. and the boiling temperature of said liquid reaction mixture;



(B) retaining said liquid reaction mixture in said reaction zone until reaction is substantially complete;
(C) passing said liquid reaction mixture into an agitated crystallization zone comprising a pre-established bed of crystalline alkali metal aluminum acid orthophosphate of like composition maintained between 60° C. and 200° C. whereupon said liquid reaction mixture crystallizes; and
(D) recovering crystalline alkali metal aluminum acid orthophosphate from said crystallization zone.

3,311,449
PROCESS OF RECOVERING VALUABLE COMPONENTS FROM RED MUD

Masumi Atsukawa, Yoshihiko Nishimoto, Yoshitsugu Iwaiya, and Haro Kuwabara, Hiroshima, Japan, assignors to Mitsubishi Shipbuilding & Engineering Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Feb. 7, 1963, Ser. No. 256,976

Claims priority, application Japan, Feb. 12, 1962, 37/4,481

7 Claims. (Cl. 23—130)

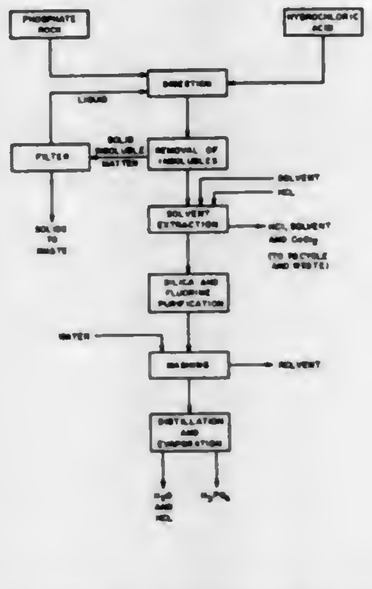
1. A method of treating red mud to recover therefrom sodium as sodium bisulfite, iron as ferric oxide, titanium as titanium dioxide, silicon as silica and aluminum as alumina comprising adding water to said red mud to form a slurry having a red mud concentration no greater than 40% by weight, contacting the slurry with sulfur dioxide to absorb the sulfur dioxide into the slurry until the pH of the slurry is at a value of from 3.5 to 6 to dissolve sodium oxide contained in the red mud out of the red mud into the water to form a solution of sodium bisulfite, separating said solution from an insoluble residue of the red mud, adding water to the insoluble residue to form an aqueous suspension thereof, contacting the suspension with sulfur dioxide to absorb the sulfur dioxide into the suspension until the pH of the suspension is at a value of from 1.5 to 2.5 to dissolve alumina and silica contained in the red mud residue out of the residue into the water to form a solution of aluminum bisulfite and silica and to leave in an undissolved state ferric oxide and titanium dioxide initially contained in the red mud, separating the last mentioned solution from an insoluble residue of the first mentioned insoluble residue, heating the last mentioned solution to drive some of the sulfur dioxide therefrom to adjust the pH thereof to a value of from 2.5 to 3 whereby the silica precipitates therefrom, leaving a residual solution, heating the residual solution to drive some of the sulfur dioxide therefrom to adjust the pH thereof to a value above 3.5 whereby aluminum bisulfite precipitates therefrom, and calcining the aluminum bisulfite at a temperature of from 500 to 700° C. to decompose the aluminum bisulfite into alumina.

3,311,450
PROCESS FOR THE MANUFACTURE OF PHOSPHORIC ACID

Alexander Alon, 16a Tel-Manek, Ahuza, Haifa, Israel; Ruth Blumberg, 25 Vitkin St., Mount Carmel, Haifa, Israel; and Avraham M. Baniel, 28 Horeb St., Haifa, Israel

Filed May 9, 1963, Ser. No. 279,164

5 Claims. (Cl. 23—165)



1. In a process for the manufacture of phosphoric acid substantially free of silica and fluorine comprising the steps of reacting a calcium phosphate-containing material which also contains silica and fluorine components with a mineral acid selected from the group consisting of hydrochloric acid and hydrochloric acid and sulfuric acid to produce an aqueous reaction mixture containing calcium chloride, phosphoric acid and silica and fluorine compounds, extracting phosphoric acid from said aqueous mixture in the presence of free hydrochloric acid with an organic solvent capable of dissolving phosphoric acid but having limited miscibility with water free of phosphoric acid, as well as with water containing phosphoric acid and calcium chloride, and separating the solvent extract thus obtained from the aqueous extract, the improvement comprising adding to said separated solvent extract a salt of a cation selected from the group consisting of sodium and potassium, and mixtures thereof, in at least about stoichiometric amounts to form a fluosilicate, and extracting and recovering phosphoric acid from the solvent extract.

3,311,451
PRODUCTION OF FINELY DIVIDED AMORPHOUS SILICA

Hanns Biegler, Wesseling, near Cologne, Walter Neugebauer, Constance (Bodensee), and Herbert Kempers, Merten, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

Filed June 29, 1964, Ser. No. 378,868

Claims priority, application Germany, June 28, 1963, D 41,852

6 Claims. (Cl. 23—182)

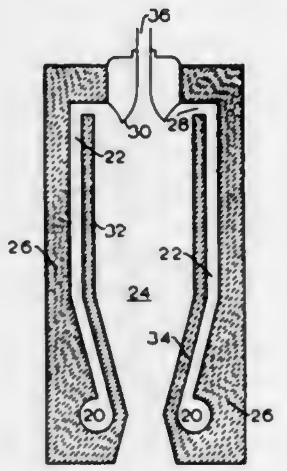
1. In the method of producing finely divided amorphous silica by reacting a silica containing material with a reducing agent in an electric arc furnace to produce a stream of gaseous silicon monoxide and oxidizing the gaseous silicon monoxide in the stream leaving the furnace with an oxidizing gas to form the finely divided amorphous silica, the steps of enveloping said stream of gaseous silicon monoxide after it has left the furnace with an aspirating envelope of a portion of the oxidizing gas to increase the velocity of such gas stream leaving the furnace and thereafter injecting the remainder of the oxidizing gas into such enveloped stream to cause turbulent mixture of the entire gas mixture.

3,311,452
PRODUCTION OF PYROGENIC PIGMENTS

Thomas H. Goodgame, Andover, and Randolph Antonsen, Boston, Mass., and Theodore D. Trowbridge, Stamford, Conn., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

Filed Oct. 23, 1962, Ser. No. 232,541

4 Claims. (Cl. 23—202)



1. In the process of converting in an enclosed reaction zone metal halide in vapor form to the corresponding solid metal oxide in aerosol form by reacting said halide at temperatures above about 800° C. while preventing the precipitation of substantial solid matter on the walls of the enclosure, which process comprises introducing axially into one end of an enclosed reaction zone a metal halide and a co-reactant comprising a molecular oxygen-containing gas, conducting the aerosol formed in said zone from the end of said zone opposite to the end wherein said halide and co-reactant are introduced, and recovering the metal oxide therefrom, the improvement which comprises flowing said metal halide and said co-reactant into an enclosed reaction zone having a length to diameter ratio of at least 1.5, and flowing adjacent the interior surfaces of said enclosed zone and axially in the same direction as and at a velocity at least about equal to the velocity of the reaction mass therein, an inert gaseous stream heated to a temperature above about 800° C., thereby providing a protective blanket of very hot gas adjacent said surfaces and providing auxiliary heat to said zone.

3,311,453
MANUFACTURE OF HYDROGEN PEROXIDE

George Russell Lusby, St. Hilaire Station, Quebec, Canada, assignor to Canadian Industries Limited, Quebec, Quebec, Canada, a corporation of Canada

No Drawing. Filed Oct. 7, 1963, Ser. No. 314,482

Claims priority, application Canada, Oct. 27, 1962, 861,129

8 Claims. (Cl. 23—207)

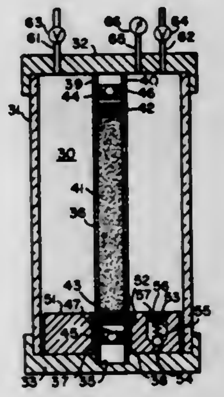
1. A process for the manufacture of hydrogen peroxide which comprises reacting a hydrogen sulphide-containing gas with a salt of an anthraquinone disulphonic acid in alkaline aqueous solution, thus producing insoluble elemental sulphur and a soluble reduced anthraquinone disulphonic acid salt, separating the sulphur from the reaction mixture, oxidizing said reduced salt to form hydrogen peroxide and the regenerated salt of the anthraquinone disulphonic acid, and separating the hydrogen peroxide from the reaction mixture.

3,311,454
APPARATUS FOR DETECTION AND MEASUREMENT OF CONTAMINATION OF SULFUR HEXAFLUORIDE AND OTHER GASES

George A. Kemeny, Franklin Township, Westmoreland County, and Harvey E. Spindle, Wilkins Township, Allegheny County, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 9, 1964, Ser. No. 336,704

14 Claims. (Cl. 23—254)



6. Apparatus for detecting contamination of a gas comprising, in combination, chamber forming means for trapping a sample of the gas to be tested, inlet and outlet means for the chamber each including valve means, means operatively connected to the chamber for indicating the pressure of gas therein, said chamber being elongated in shape, absorber tube means mounted in the chamber and extending parallel to the longitudinal axis thereof, piston means having an aperture therein for the absorber tube means disposed in the chamber and adapted to slide along the absorber tube means from one end of the chamber to the other in response to the force of gravity exerted thereon, the absorber tube means containing a chemical substance adapted to absorb at least one contaminating element from gas coming in contact therewith, and first and second ball check valves located at the ends of the absorber tube means respectively, the first and second ball check valves being closed while the chamber forming means is in an upright position, the absorber tube means at each end thereof external to the check valve communicating with the chamber, the piston having a third check valve therein to permit the flow of gas therethrough only when the piston is moving in one direction, the piston when moving along the absorber tube means in the other direction forcing gas through open first and second ball check valves and through the absorber tube means, the chamber forming means being adapted to be inverted to cause the first and second ball check valves to open and to cause the piston to move in said other direction.

3,311,455
DETECTOR FOR COMBUSTIBLE GAS

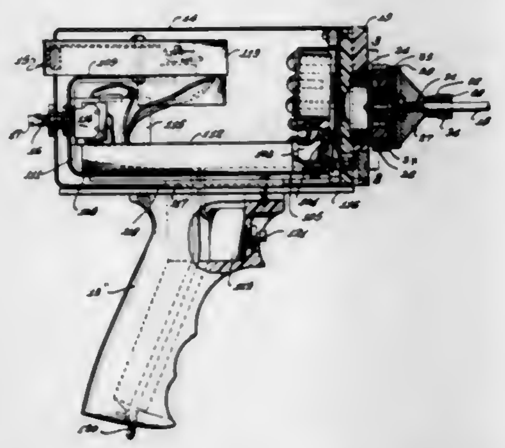
Myron L. Robinson, Monterey Park, Calif., assignor to Barton Instrument Corporation, Monterey Park, Calif., a corporation of California

Filed Apr. 30, 1963, Ser. No. 276,946

15 Claims. (Cl. 23—255)

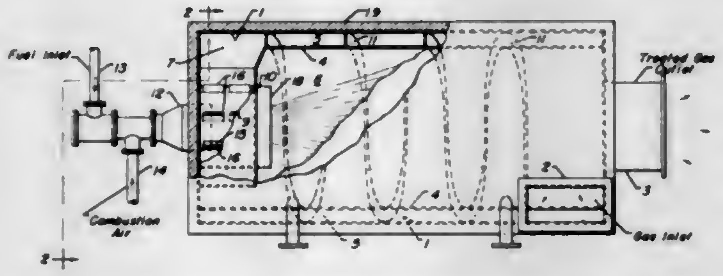
1. In a detector for detecting varying concentrations of combustible gas including concentrations in the explosive range, a bridge circuit having active and inactive elements in legs thereof, said elements being substantially identical except that the active element only has a surface catalytic to combustion of the gas to be detected, said elements being connected in the bridge so that the voltage across the bridge passes identical current through the elements whose value varies with variation in the voltage across the bridge, said elements each having a substantial temperature coefficient of resistance so that

their resistances vary with their temperature; means for placing an air sample in contact with both of said elements under substantially identical conditions whereby the presence of combustible gas in the sample will cause catalytic combustion at the surface of said active element to raise its temperature and effect a difference in the temperature and thus the resistance of said elements which will cause unbalance of the bridge; and means responsive to unbalance of the bridge to lower the voltage across the bridge and thereby reduce the current through said elements to a value producing at any concentration of combustible gas throughout the range of operation of said detector the minimum amount of said catalytic combustion which will cause only sufficient difference between the temperatures of the elements to unbalance the bridge only sufficiently to secure the minimum signal which will drive said bridge voltage to said lowered value.



3,311,456
APPARATUS FOR INCINERATING A WASTE GAS STREAM

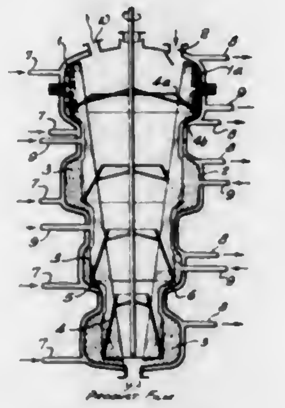
Walter A. Denny, St. Clair Shores, and William C. Verner, Detroit, Mich., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Mar. 21, 1963, Ser. No. 266,895
5 Claims. (Cl. 23—277)



1. A direct flame incinerating apparatus for effecting the thermal combustion of oxidizable components in a waste gas stream, which comprises in combination, an elongated combustion chamber having a flame and gas inlet means and a combustion gas outlet, an outer housing spaced from said combustion section and defining an annular-form heat exchange section, a waste gas inlet connecting with said housing and discharging into said heat exchange section, at least one volute shaped gas collecting-gas distributing section positioned at one end of said combustion chamber and having an inlet section thereto connective with said annular-form heat exchange section, and such volute-shaped section having an open central core that is in open communication with the interior of said combustion chamber, burner means projecting through the end of said housing into said open central core of said volute shaped section, fuel and air supply means connecting to said burner means, a plurality of slot-like openings spaced circumferentially around said central core of said volute shaped section whereby the waste gas stream flowing centrifugally therethough passes into the flame and hot gases from said burner means as a plurality of smaller tangential streams.

3,311,457
LIQUID CASCADE REACTOR

Gunter Goossens, Rial, Domat-Ems, Grisons, Switzerland, assignor to Inventa A.G., fur Forschung und Patentverwertung Lucerne, Lucerne, Switzerland
Filed Dec. 16, 1964, Ser. No. 418,731
Claims priority, application Switzerland, Dec. 20, 1963, 15,701/63
3 Claims. (Cl. 23—283)



1. A liquid ring cascade reactor for carrying out chemical reactions in a liquid base medium, comprising a plurality of peripheral chambers having outwardly bulging circumferential walls and arranged one above the other and connected to each other by intervening substantially cylindrical necks, said chambers comprising a top chamber and a bottom chamber and at least one intermediate chamber, each intermediate chamber having a top edge wall of larger interior diameter than its bottom edge wall, and each chamber below the top chamber having a top edge wall of substantially the same interior diameter as the bottom edge wall of the chamber above it and each chamber above the bottom chamber having a bottom edge wall of substantially the same interior diameter as the top edge wall of the chamber above it so that the interior edges of said edge walls are located on a paraboloid of revolution of a parabola on the vertical center line of the reactor, the parabola being below the bottom of the bottom chamber and the paraboloid being severed horizontally at the bottom of each neck and the remaining portion of the paraboloid being elevated to the top of the neck so that the successive chambers conform to the paraboloid as if the necks were omitted, means providing an inlet to the top chamber, and rotating means to intercept material entering through said inlet means and force said material into said chamber and comprising impeller blades immersed in the chambers respectively causing the liquid reaction medium to rotate and thereby to stay in the chambers during operation of the reactor.

3,311,458
COPPER COATED STEEL

Calvin A. Schunemann, Gates Mills, Ohio, assignor to Horizons Incorporated, Cleveland, Ohio, a corporation of New Jersey
No Drawing. Filed July 19, 1963, Ser. No. 296,385
3 Claims. (Cl. 29—183.5)

1. A ferrous article having on its surface a tightly adherent copper coating at least about 0.3 mil and not more than about 0.6 mil in thickness and containing oxygen in amounts between 0.3% and 0.6% in the portion of coating adjacent to the coated surface of the ferrous article and virtually no oxygen in the outer surface portion of the coating.

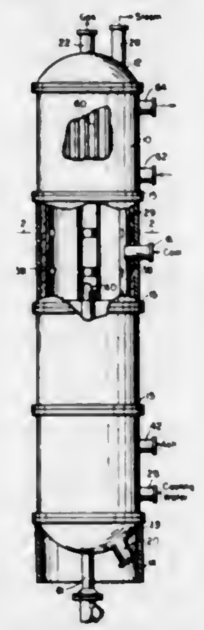
3,311,459
CHEMICAL HEATING DEVICE IN SHEET FORM

Thomas Francis, Toronto, Ontario, and Maurice H. Jones, Scarborough, Ontario, Canada, assignors to Ontario Research Foundation, Toronto, Ontario, Canada
No Drawing. Filed Dec. 12, 1963, Ser. No. 329,982
14 Claims. (Cl. 44—3)

1. A self-propagating chemical heating device in the form of a thin, flexible sheet that is paper-like in physical structure in that said sheet is comprised of a matrix of intermingled fibres; said sheet also including a composition of matter bound by and distributed throughout said fibres, said composition of matter comprising a mixture of powdered materials adapted to undergo an exothermic chemical reaction with each other upon ignition, at least one of the components of said mixture being insoluble in water; the weight of said fibres being from about 2% to 20% of the weight of said composition of matter, an amount of said fibres in excess of 1% of the weight of said composition of matter being asbestos fibres; the weight per unit area of said sheet and the distribution of said composition of matter throughout said sheet being such that said chemical reaction is self-propagating.

3,311,460
METHOD FOR GASIFICATION OF CARBONACEOUS MATERIALS

Harold H. Stotler, Westfield, N.J., George B. Farkas, Jackson Heights, N.Y., and Percival Cleveland Keith, Peapack, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Original application Jan. 4, 1962, Ser. No. 164,306, now Patent No. 3,226,204, dated Dec. 28, 1965. Divided and this application Aug. 11, 1965, Ser. No. 487,646
3 Claims. (Cl. 48—197)



1. The process of gasification of carbonaceous solids with a gas at temperatures in excess of 1700° F. and at reactor pressures in excess of 50 p.s.i.g., wherein the reactor is provided with a vertically extending baffle member having a plurality of continuous, laterally extending, blade portions having a minimum horizontal surface with reference to the length and width thereof, such blade portions extending substantially radially from the baffle member and being of substantially Y shape with the line of attachment of one blade portion to the baffle member being spaced from the line of attachment of the adjacent blade portion to avoid any sharp corners and with the tips of adjacent Y portions stabilized with respect to each other, which comprises passing the gas upwardly through a bed of solids in contact with the baffle member at a rate to cause mobility of said solids, the aggregate surface area of such baffle member being in the range of from four to twelve square feet per cubic foot of mobilized bed of solids, the blade portions being spaced one from another whereby the solids are free to move vertically and transversely with respect to said surfaces, cooling the reacted gas to a temperature in the order of 700° F. and withdrawing the reacted gas with a minimum of solids therewith.

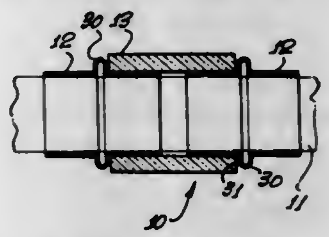
3,311,461
PROCESS FOR PRODUCING RARE EARTH-CONTAINING GLASS POLISHING AGENTS

Walter L. Silvernail, West Chicago, Ill., assignor to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed June 15, 1964, Ser. No. 375,317
4 Claims. (Cl. 51—293)

1. A process for producing a rare earth-containing glass polishing agent which consists essentially of pulverizing a bastnasite concentrate containing from about 15 to 99 weight percent rare earth oxide to a particle size of 0.1 to 20 microns, introducing only the pulverized concentrate into a heating zone and igniting only the concentrate at a temperature of from about 800 to 2,000° F. for a period of time sufficient to produce a rare earth-containing glass polishing agent and recovering the polishing agent so produced.

3,311,462
METHOD OF SEALING GLASS TO METAL

Clinton E. Maiden, Canoga Park, Calif., assignor to TRW Semiconductors, Inc., Lawndale, Calif., a corporation of Delaware
Filed Apr. 2, 1963, Ser. No. 274,371
4 Claims. (Cl. 65—41)



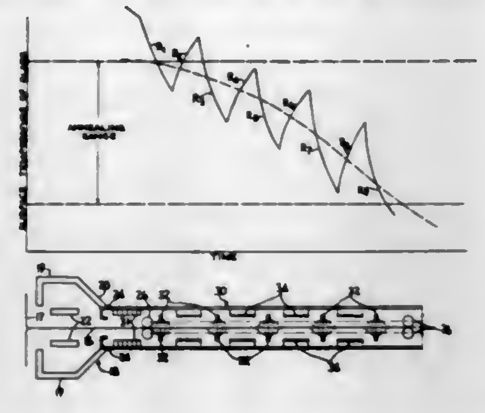
1. The method of forming a fused body subassembly comprising a glass tube and a metal sleeve hermetically sealed in coaxial relationship therewith comprising: assembling a glass tube and a metal sleeve in a desired adjacent coaxial relationship; heating said glass tube to soften the glass only sufficiently to achieve close contact between adjacent parts of said glass tube and metal sleeve without significant distortion of the shape and dimensions of said glass tube, while maintaining said glass tube and metal sleeve in said relationship in the absence of an applied compressive force, to thereby mechanically bond said glass tube and metal sleeve in said relationship; cooling said glass tube from below its softening point slowly enough to achieve annealing of the glass to thereby increase the resistance of the glass to mechanical and heat shock and enable subsequent deferred handling and closer control over dimensional tolerances during subsequent hermetic sealing; and, thereafter subjecting the thus mechanically bonded glass tube and metal sleeve to a heating cycle which is rapid enough to fuse the adjacent parts of said glass tube and metal sleeve in a complete hermetic seal without substantial distortion of said glass tube.

3,311,463
PROCESS OF ANNEALING GLASS SHEETS

Florian V. Atkeson, Springdale, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 3, 1963, Ser. No. 285,126
8 Claims. (Cl. 65—119)

1. A process of treating glass which comprises alternately impinging a cooling gaseous fluid upon the glass and radiating heat to the glass, each for a period of time

of between 6 seconds and 50 seconds, so as to change the temperature of the glass an amount of between 10 degrees and 90 degrees Fahrenheit, and reducing the temperature of the glass at least as great a number of degrees



Fahrenheit during any cooling step as the temperature of the glass is raised during an immediately subsequent heating step while the temperature of the glass is within the annealing range of the glass.

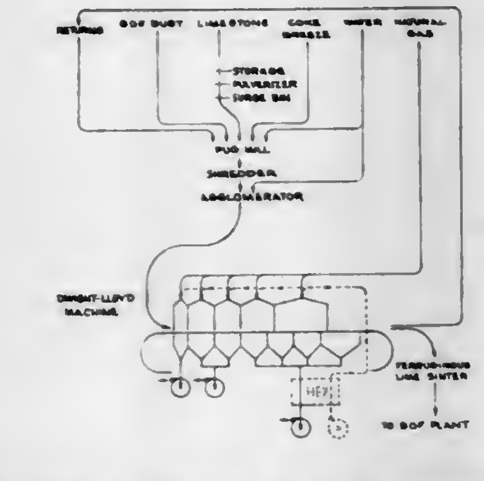
3,311,464
ALUMINUM-CONTAINING MOLDING POWDER AND PROCESS FOR MAKING

Richard N. Blomberg, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 25, 1964, Ser. No. 347,118
4 Claims. (Cl. 75—.5)

1. A process for preparing an aluminum-containing-molding powder comprising combining aluminum and a finely divided metal oxide from the group consisting of zinc and titanium oxides, the ratio of gram atoms of aluminum to moles of the oxide being from about 11:1 to 1:1, and heating the mixture with agitation at a temperature of from 850° to 1100° C. until the mixture has the characteristics of a powder.

3,311,465
IRON-CONTAINING FLUX MATERIAL FOR STEEL MAKING PROCESS

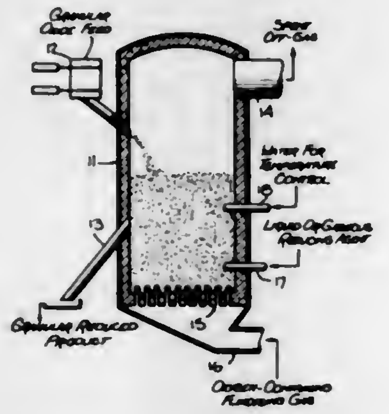
Thomas E. Ban, Cleveland Heights, Charles D. Thompson, South Euclid, and Carl J. Nelson, Lakewood, Ohio, assignors to McDowell-Wellman Engineering Company, a corporation of Ohio
Filed Feb. 6, 1964, Ser. No. 343,006
8 Claims. (Cl. 75—5)



1. A process for making an iron-containing flux material for steel-making processes comprising the steps of:
- (a) intimately mixing materials having predetermined average particle sizes and in accordance with the general formulation:
  - (1) minus ¼" limestone—from about 50% to about 80% by weight,
  - (2) minus 100 mesh iron oxide—from about 10% to about 48% by weight,
  - (3) minus ⅛" carbon—from about 10% to about 20% by weight,
- (b) moistening said dry mixture with water,
- (c) nodularizing said moistened mixture to form aggregate irregular green particles of random sizes ranging from about −0.1" to about 0.5",
- (d) charging said irregular green particles to a traveling grate sintering machine to a depth of from about 6" to 16" to form a burden,
- (e) igniting said burden with an open gas flame, and
- (f) sintering said burden at a temperature of at least about 2100° F. for a period of from about 5 minutes to about 20 minutes by passing air through said burden at a rate of from about 200 s.c.f.m./sq. ft. to about 325 s.c.f.m./sq. ft.

3,311,466
REDUCTION OF METAL OXIDES

Walter Curlook, Copper Cliff, Ontario, Canada, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 6, 1964, Ser. No. 409,381
Claims priority, application Canada, Nov. 29, 1963, 890,227
6 Claims. (Cl. 75—26)


GRANULAR OXIDE FEED
12
SPENT OFF-GAS
14
11
WATER FOR TEMPERATURE CONTROL
10
13
LIQUID OR GASEOUS REDUCING AGENT
17
GRANULAR REDUCED PRODUCT
15
16
OXYGEN-CONTAINING FLUIDIZING GAS

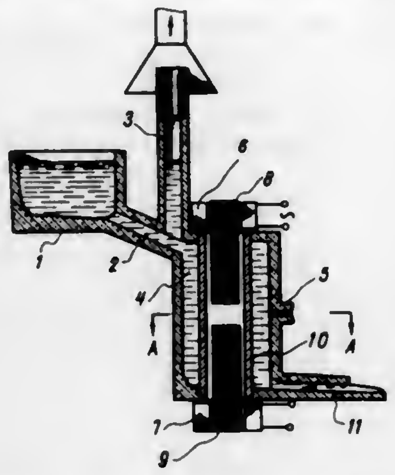
1. A process for the reduction of granulated metal oxide containing at least about 20% nickel and not more than about 40% iron which comprises feeding said oxide to a fluid bed of reduced metal oxide granules, supplying an oxygen-containing gaseous fluidizing medium to said bed, combusting fuel in said fluid bed under conditions of incomplete combustion to produce a combustion-product atmosphere reducing to nickel oxide and to produce a controlled bed temperature not exceeding about 1900° F., and maintaining bed granules in contact with said combustion-product atmosphere for a time sufficient to yield a reduced granular product wherein at least about 80% of the nickel contained in said oxide feed is reduced.

3,311,467
METHOD OF METAL MODIFICATION UNDER PRESSURE AND ARRANGEMENT TO CARRY OUT SAME

Vitalii Petrovich Polishouk, Mark Rakhmilievich Tsin, and Sergei Semenovich Zatoulovsky, all of Kiev, U.S.S.R., assignors to Institut Liteinogo proizvodstva Akademii nauk Ukrainskoi S.S.R.
Filed July 16, 1963, Ser. No. 295,319
3 Claims. (Cl. 75—45)

1. A method of continuous treatment of molten metals with additives comprising: providing a continuous flow of molten metal through a closed channel defining a treating zone; imposing electromagnetic fields on the continuous flow of metal in said closed channel at two axially spaced points so as to induce in the liquid metal in said channel two opposite electromagnetic forces, which create

a high pressure zone in said channel between the points where said electromagnetic fields are applied; continuously supplying additives which are vaporizable at the temperature of the molten metal to the flowing metal in said high pressure zone, whereby the additives evaporate at a slow rate under the effect of high pressure, thereby prolonging the time of contact between vapors of the additives and the molten metal.



3,311,468
SILVER RECOVERY PROCESS

Charles Davidoff, 118 Rollinghill Road, Manhasset, N.Y. 11030
No Drawing. Filed Dec. 26, 1963, Ser. No. 333,635
6 Claims. (Cl. 75—108)

1. A method of recovering silver from an aqueous solution of alkali metal silver cyanide comprising adding to the solution about 0.5 to 1 mole of a water soluble addition product of an aliphatic aldehyde with an alkali metal hydrosulfite for each mole of silver in the solution, maintaining the resulting solution at an elevated temperature above about 150° F. until cessation of precipitation of the silver, and removing the precipitated silver from the solution.

3,311,469
MANUFACTURE OF NODULAR IRON

Carl R. Loper, Jr., and Richard W. Heine, both of Madison, Wis., assignors, by mesne assignments, to Union Carbide Corporation, a corporation of New York
Filed Apr. 23, 1964, Ser. No. 362,056
2 Claims. (Cl. 75—130)

1. In a process for making nodular iron by bringing together magnesium, silicon and molten iron, the improvement which comprises providing in the molten iron a silicon content of between about 1 to 5%, a magnesium addition of about 0.02 to 0.25% and a bismuth addition of from about 0.010 to about 0.050%, said bismuth addition being sufficient to provide a substantial increase in the amount of spheroidal graphite nodules in the iron as compared to the same iron without a bismuth addition.

3,311,470
DUCTILE CORROSION-RESISTANT ALLOY

Dennis William Wakeman, Birmingham, Frank Grenville Haynes, Maidenhead, Keith J. Williams, Birmingham, Thomas E. Evans, Solihull, and William Barker, Sutton Coldfield, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 24, 1965, Ser. No. 442,495
Claims priority, application Great Britain, May 21, 1963, 20,204/63; Mar. 25, 1964, 12,656/64
19 Claims. (Cl. 75—170)

1. An alloy consisting essentially of 7% to about 16% silicon, 1% to about 5% titanium, up to about 5% copper, up to about 5% molybdenum and up to about 5% tungsten with the proviso that the total of copper, molybdenum and tungsten does not exceed 10% of the alloy, up to 3% iron, up to 1% manganese and up to 10% cobalt provided that the sum of the relationship

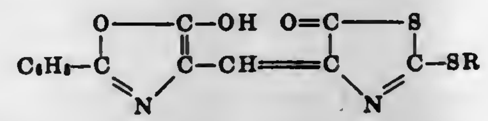
$$0.33(\%\ \mathrm{Fe})+\%\ \mathrm{Mn}+0.1\%\ \mathrm{Co})$$

does not exceed 1% and the balance essentially nickel.

3,311,471
PHOTOGRAPHIC REPRODUCTION PROCESSES AND MATERIALS THEREFOR

Martin Hepher, Harrow, Middlesex, England, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 23, 1963, Ser. No. 318,163
12 Claims. (Cl. 96—1.5)

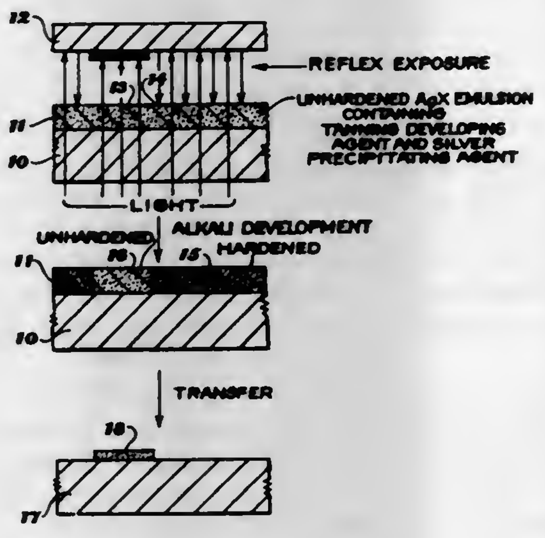
1. A photosensitive element comprising a photosensitive layer which is capable of forming a persistent conductivity latent image thereon when exposed to actinic radiation and which consists essentially of a dielectric resin binder having dispersed therein a sensitizing amount of a compound selected from the group consisting of compounds having the formula:



and isomers thereof, wherein R represents a member selected from the group consisting of alkyl, aryl and aralkyl.

3,311,472
PHOTOGRAPHIC COLLOID TRANSFER PROCESS WITH A SULFUR DIOXIDE ADDUCT TANNING DEVELOPER

Paul B. Gilman, Jr., and John C. Barnes, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 23, 1963, Ser. No. 304,139
13 Claims. (Cl. 96—28)

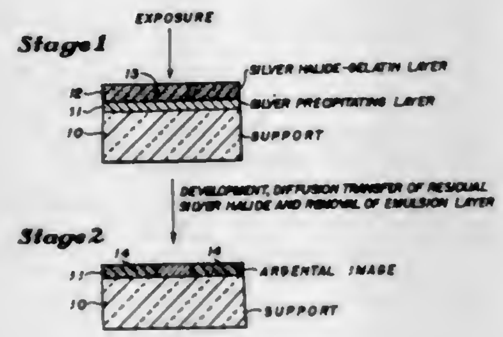

12
REFLEX EXPOSURE
13
14
UNHARDENED AgX EMULSION CONTAINING TANNING DEVELOPING AGENT AND SILVER PRECIPITATING AGENT
11
10
LIGHT
UNHARDENED
ALKALI DEVELOPMENT
16
15
HARDENED
11
10
TRANSFER
18
17

7. A method of photographic reproduction which comprises developing an exposed substantially unhardened gelatino-silver halide emulsion layer on a support, said emulsion containing at least one water soluble gelatin tanning silver halide developing agent comprising a sulfur dioxide adduct of a gelatin tanning silver halide developer, with an alkaline solution to obtain a hardened gelatin and chemically developed silver image in the image areas and substantially unhardened gelatin, physically developed silver and silver halide in the region of the emulsion layer

corresponding to the unexposed areas and removing the substantially unhardened gelatin areas from the said support.

3,311,473
SILVER HALIDE DIFFUSION PROCESS AND PRODUCTS THEREFOR

Donald P. Foster and Edward C. Yackel, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 28, 1962, Ser. No. 205,995
12 Claims. (Cl. 96—29)


EXPOSURE
Stage 1
13
12
11
10
SILVER HALIDE-GELATIN LAYER
SILVER PRECIPITATING LAYER
SUPPORT
DEVELOPMENT, DIFFUSION TRANSFER OF RESIDUAL SILVER HALIDE AND REMOVAL OF EMULSION LAYER
Stage 2
14
14
11
10
ARGENTAL IMAGE
SUPPORT

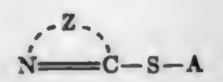
1. A light-sensitive photographic element comprising a support, a silver precipitating stratum containing silver precipitating nuclei and hardened colloid on the support, said colloid hardened with an aldehyde type hardener, and adhered to said stratum an unhardened light-sensitive gelatin emulsion layer containing silver halide and a compound selected from the class consisting of semicarbazide and the water-soluble semicarbazide salts thereof.

7. A light-sensitive photographic element comprising a support, a silver precipitating stratum containing silver precipitating nuclei and hardened colloid on the support, said colloid hardened with an aldehyde type hardener, a colloid barrier layer on said stratum containing a compound selected from the class consisting of semicarbazide and the water-soluble semicarbazide salts thereof and adhered to said barrier layer an unhardened light-sensitive gelatin emulsion layer containing silver halide.

3,311,474
PHOTOGRAPHIC MATERIAL

Jozef Frans Willems and Gerard Michiel Sevens, Wilrijk-Antwerp, and Francis Jeanne Sels, Kontich, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a company of Belgium
No Drawing. Filed Aug. 19, 1963, Ser. No. 303,124
Claims priority, application Belgium, Aug. 31, 1962, 41,926, Patent 621,948
5 Claims. (Cl. 96—29)

1. Photographic material comprising at least one light-sensitive silver halide emulsion layer wherein said material comprises in at least one water-permeable layer a compound of the following formula:

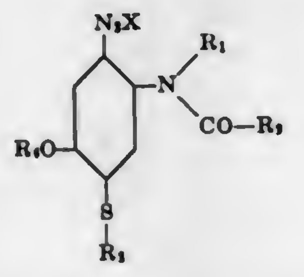


wherein:
- Z represents the atoms necessary to complete a heterocyclic ring, and
- A represents a member selected from the group consisting of a —COR group and a —SO_2R group wherein R represents a member selected from the group consisting of an alkyl radical, and an aryl radical.

3,311,475
DIAZOTYPE MATERIAL

Arie van Loon and Bernardus Hubertus Huibers, Venlo, Netherlands, assignors to Chemische Fabriek L. van der Grinten N.V., Venlo, Netherlands, a corporation of Dutch law
No Drawing. Filed July 14, 1964, Ser. No. 382,637
Claims priority, application Netherlands, July 19, 1963, 295,561
15 Claims. (Cl. 96—91)

2. A light-sensitive diazonium compound of the general formula



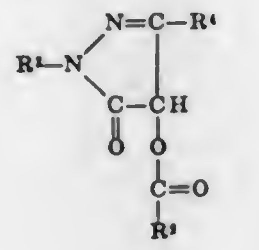
11. A diazotype material comprising a support carrying a light-sensitive layer containing a light-sensitive diazonium compound as defined in claim 2.

3,311,476
TWO-EQUIVALENT COUPLERS FOR COLOR PHOTOGRAPHY

Anthony Loria, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Dec. 26, 1962, Ser. No. 247,302
10 Claims. (Cl. 96—100)

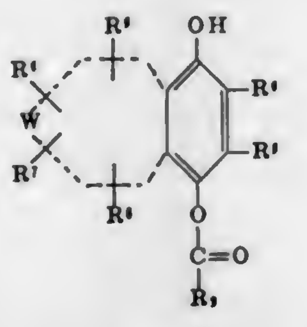
1. A light-sensitive photographic element comprising a support and at least one light-sensitive layer comprising a hydrophilic colloid-silver halide emulsion having dispersed therein an uncolored dye image-forming two-equivalent coupler selected from the couplers represented by the formulas:

(I)



and

(II)



wherein R^2 represents a group selected from the class consisting of an alkyl group having from 1 to 22 carbon atoms, a phenyl group, and a naphthyl group; R^3 represents a group selected from the class consisting of the hydrogen atom, an alkyl group, an aryl group and a heterocyclic group; R^4, R^5, R^6, R^7, R^8, and R^9 each represents a group selected from the class consisting of the hydrogen atom, an alkyl group, an aryl group, a heterocyclic group, an amino group, a carbonamido group, a sulfonamido group, a sulfamyl group and a carbamyl group; and W represents the nonmetallic atoms necessary to form a fused 5- or 6-membered ring, said couplers represented by Formula I forming magenta dye images and said couplers represented by Formula II forming cyan dye images.

3,311,477
METHOD OF PREPARING FREE-FLOWING WATER-INSOLUBLE SOLID PARTICLES

Sidney Segal, 1301 N. Harrison St., Wilmington, Del. 19806
No Drawing. Filed Mar. 9, 1965, Ser. No. 438,410
12 Claims. (Cl. 99—113)

1. The method of converting solvent insoluble solid particles which normally tend to cake in storage and clump in a liquid dispersing medium to free-flowing dry particles instantly dispersible in liquids, comprising homogeneously wetting the surfaces of said solid particles with a liquid mixture consisting essentially of water and a volatile organic liquid miscible with the water, said solid particles being insoluble in either component of said liquid mixture, and then drying said wetted solids to remove all of the wetting liquid.

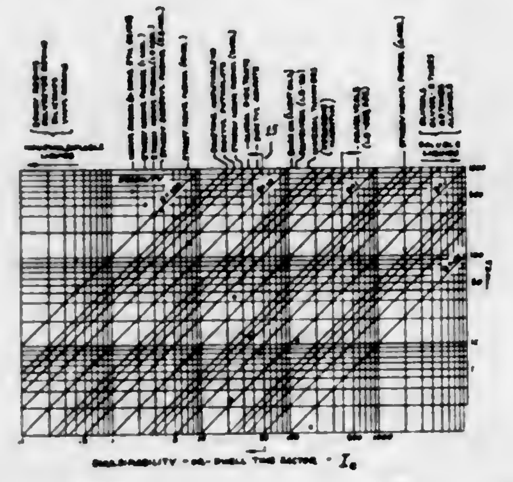
3,311,478
PROCESS FOR PREPARING A DRIED MEAT PRODUCT

Claude W. Robarge, Cudahy, Wis., assignor to Patrick Cudahy Inc., Cudahy, Wis., a corporation of Wisconsin
Filed Jan. 15, 1964, Ser. No. 337,819
1 Claim. (Cl. 99—208)

A process for making meat granules comprising:
- selecting a lean beef and trimming substantially all fat therefrom;
- placing said beef in a curing solution for a curing period;
- removing the beef from the curing solution and drying the cured beef to remove moisture therefrom until a product is had with a moisture content of about 52% to 60% and a fat content that is less than about 8%; and
- grinding the meat to form individual granules of about ⅛ to ¼ inch in diameter.

3,311,479
PENETRANT INSPECTION PROCESS AND COMPOSITIONS

James R. Alburger, 5007 Millard Ave., La Canada, Calif. 91011
Filed Oct. 4, 1965, Ser. No. 492,676
21 Claims. (Cl. 106—19)



1. An inspection penetrant liquid for detecting surface-connected defects, said penetrant liquid consisting essentially of a solvent and at least one dye dissolved in said solvent, said solvent consisting of at least one member selected from the group consisting of

(a) a normally liquid solvent of the generic formula

$$\left[\mathrm{R}\right]_{-y}^{-x}$$

in which R is naphthalene and each of x and y is an alkyl radical containing from 1 to 3 carbon atoms,

(b) a normally liquid solvent of the generic formula

$$\left[\mathrm{R}\right]_{-y}^{-x}$$

in which R is phthalate (or isophthalate) and each of x and y is an alkyl radical containing from 6 to 10 carbon atoms,

(c) a normally liquid solvent of the generic formula

$$\left[\mathrm{R}\right]_{-y}^{-x}$$

in which R is saturated dicarboxylate, where the number n of the CH_2 radicals in the dicarboxylate nucleus is in the approximate range of 0–34, and each of x and y is an alkyl radical containing from 6 to 10 carbon atoms,

(d) a normally liquid solvent of the generic formula

$$\left[\mathrm{R}\right]_{-y}^{-x}$$

in which R is phenol and each of x and y is an alkyl radical containing from 8 to 12 carbon atoms,

(e) a normally liquid solvent of the generic formula

$$\left[\mathrm{R}\right]_{-y}^{-x}$$

in which R is phenol, x is an alkyl radical containing from 8 to 12 carbon atoms, and y is an ethoxy group containing from zero to 5 mols of ethylene oxide per mol of R, and

(f) a normally liquid solvent of the generic formula

$$\left[\mathrm{R}\right]_{-y}^{-x}$$

in which R is 4.5-epoxy-tetrahydrophthalate and each of x and y is an alkyl radical containing from 6 to 8 carbon atoms,

said solvent being present in said inspection penetrant liquid in a weight concentration within the approximate range of 2 to 98 percent.

3,311,480
GLASS COMPOSITIONS

Gordon F. Brewster, Williamson, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
No Drawing. Filed Mar. 18, 1963, Ser. No. 266,024
8 Claims. (Cl. 106—54)

1. A segment glass composition consisting essentially of the following ingredients, percent by weight batch basis:

SiO_2	31.01–32.93
K_2O	3.38–3.58
Na_2O	7.84–8.32
CaO	4.51–4.79
MgO	2.21–2.35
BaO	17.62–18.70
ZnO	1.55–1.65
ZrO_2	3.96–4.20
B_2O_3	15.78–16.76
SrO	4.74–5.04
TiO_2	4.42–4.70
Co_2O_4	.058–.062
NiO	.237–.251

2. A segment glass composition consisting essentially of the following ingredients, percent by weight batch basis:

SiO_2	32.35–34.35
K_2O	1.02–1.08
Na_2O	9.66–10.26
CaO	1.45–1.55
BaO	17.60–18.68
ZnO	5.60–5.94
ZrO_2	6.60–7.00
B_2O_3	7.17–7.61
TiO_2	6.77–7.19
PbO	8.54–9.06
Co_3O_4	.0539–.0573
NiO	.196–.208

3,311,481
REFRACTORY FIBERS AND METHODS OF MAKING THEM

John Patrick Sterry, Anaheim, Calif., and Anton Skurcenski, deceased, late of Inglewood, Calif., by Baldo M. Kristovich, administrator, Los Angeles, Calif.; said Sterry assignor to Hitco, a corporation of California
Filed Mar. 1, 1962, Ser. No. 179,836
5 Claims. (Cl. 106—57)

1. The process of preparing ceramic fibers having at least substantial proportions of zircon which includes the steps of adding colloidal silica to zirconium diacetate in a proportion establishing a 1:1 molar ratio between the zirconia and silica constituents, adding acetic acid to maintain the pH in the range of approximately 3.5 to 4.0, evaporating the amorphous mass thus provided to a viscosity of between 15,000 and 40,000 centipoise at 70° F., forming amorphous fibers from the mass, and firing the fibers at successively higher temperatures to above the crystal-forming temperature of the fibers but below the fusion temperature of zirconia, silica and zircon to decompose and eliminate other constituents and to form polycrystalline fibers.

3,311,482
SINTERED TRANSPARENT BODIES OF ALUMINUM OXIDE AND METHOD OF PREPARING THE SAME

Emil A. Klingler, Alter Bergweg 4, Plochingen, Germany; Walther Dawihl, Rasswellerweg 3, Illingen, Germany; and Erhard Dörre, Weiherstrasse 3, Plochingen, Germany
No Drawing. Filed Jan. 25, 1966, Ser. No. 522,849
16 Claims. (Cl. 106—65)

1. A polycrystalline body consisting essentially of sintered grains of aluminum oxide, the average size of said grains being less than ten microns, said body having a specific gravity greater than 3.96, and an in-line transmissivity of at least 40 percent in layers of 0.5 millimeter for all light having a wavelength between 0.4 micron and 2 microns.

3,311,483
TREATING CELLULOSIC MATERIAL

Simone Garnier, 50 Rue de la Bidassoa, Paris, France, and Daniel Edouard Buntschu, Paris, France; said Buntschu assignor to said Garnier
Filed Aug. 26, 1963, Ser. No. 304,534
Claims priority, application France, Sept. 3, 1962, 908,491
14 Claims. (Cl. 106—93)

11. A composition consisting essentially of cellulosic fibers impregnated with a sulfate of a metal of the group consisting of barium, calcium and strontium and with decomposition products of iron sulfate, said fibers having a coating comprising a material of the group consisting of alginic acid and alginates, said composition being suitable for making concrete by mixing with cement.

14. Concrete prepared by mixing the composition described in claim 11 with cement and water.

3,311,484
METHOD OF STAINING WOOD AND COMPOSITION THEREFOR

John S. Burwell, 9351 Memorial, Detroit, Mich. 48228
No Drawing. Filed Sept. 18, 1963, Ser. No. 309,863
7 Claims. (Cl. 106—146)

1. A composition for staining and filling wood consisting essentially of milk and from 25% to 90% by volume of alcohol having a preservative effect on milk, possessing the property of causing penetration into the wood without raising the grain.

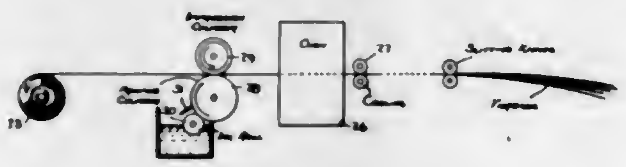
3,311,485
MICA PIGMENTS

Ernest J. Duwell, St. Paul, Minn., assignor to Minnesota Mining & Manufacturing Company, a corporation of Delaware
No Drawing. Filed Oct. 28, 1963, Ser. No. 319,501
5 Claims. (Cl. 106—291)

1. A colored laminar pigment consisting essentially of crystalline structure of synthetic tetrasilicic fluorine mica having cations of basic organic dyestuffs admitted into the crystalline structure in at least a portion of the cation exchange sites thereof.

3,311,486
MULTI-COLORED METALLIZED THREADS

Walter G. Scharf, Ridgewood, N.J., assignor to Metal Film Company, Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 111,319, May 19, 1961. This application Oct. 28, 1963, Ser. No. 320,604
5 Claims. (Cl. 117—4)

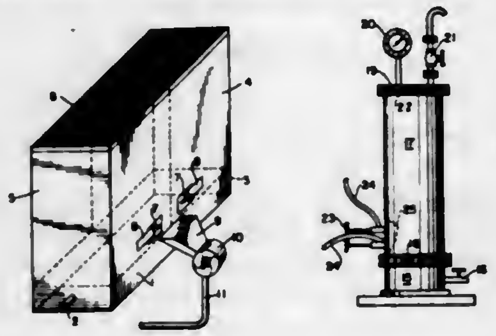


1. The method of producing multi-colored yarns, comprising the steps of depositing on a transparent thermoplastic web constituting a first layer, a metallic coating forming a second layer thereon, coating said second layer with a transparent synthetic plastic in liquid form of a material related structurally to said first layer to form a third layer thereon, drying and curing said third layer to form a non-tacky film adhering directly to said second layer, printing on said third layer discrete areas of different color with an ink formed of the same liquid plastic as said third layer but having a color agent dissolved therein, drying and curing said ink areas to form non-tacky areas adhering directly to said third layer and constituting a fourth layer thereon, the metallic color of said second layer being exposed through said third layer in those portions thereof not covered by said fourth layer, and slitting the four-layer web into multi-colored yarns.

3,311,487
SPRAY COATING METHOD

Donald Herbert Brooks, Vereeniging, Transvaal, Republic of South Africa, assignor, by mesne assignments, to International Protected Metals, Inc., a corporation of New Jersey
Continuation of application Ser. No. 847,643, Oct. 20, 1959. This application May 20, 1964, Ser. No. 377,158
1 Claim. (Cl. 117—21)

A method of applying a permanent coating of a fusible plastic to an article, which comprises providing a bed of fusible particulate plastic material within an enclosure, said particles being thermoplastic resin having a particle size between 40 and 200 mesh (British Standard), aerating said bed to a state of dense phase aeration below the limit at which a substantial part of the particulate material becomes entrained in the aerating medium, said condition of dense phase aeration being a state of aeration intermediate between the fluidized and settled state, maintaining said aerated bed under superatmospheric pressure below its upper free surface, withdrawing a stream of said material in dense phase aerated condition from below the free surface of said bed solely by the super-atmospheric pressure condition of said aerated bed and conducting said stream to a discharge point, controlling the rate of withdrawal of said material from the discharge point by varying the amount of pressure in said bed above the pressure at the discharge point, heating the article to be coated to at least the fusion temperature of said material, directing said stream on to the surface of said heated article to cause the particles thereof to adhere thereto, and building up a coating of said material to a desired thickness.



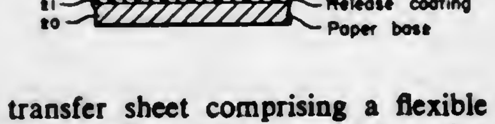
3,311,488
PROCESS FOR FORMING A REFRACTORY COATING ON ALUMINUM

Ludwig Edward Seufert, Boothwyn, Pa., and Herbert Talsma, Bloemendaal, Netherlands, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 9, 1963, Ser. No. 293,889
5 Claims. (Cl. 117—23)

1. A process comprising heating at a temperature of above 800° C. a layer of molten aluminum which contacts thereon a layer of particulate refractory, said refractory including at least 1% by weight of a fluxing agent selected from the group consisting of the oxides and hydroxides of alkali metal, magnesium oxide, zinc oxide, cobalt^{II} oxide, copper^{II} oxide, and lead^{II} oxide and precursors thereof, to form a dense coherent substantially crystalline material.

3,311,489
TRANSFER SHEET AND METHOD OF PREPARING

Marshall S. Barbour, Mexico, Maine, assignor to Oxford Paper Company, Rumford, Maine, a corporation of Maine
Filed Sept. 24, 1965, Ser. No. 490,032
13 Claims. (Cl. 117—36.4)



1. A transfer sheet comprising a flexible foundation and a coating adhered thereto, said coating comprising discrete, non-coalesced organic polymer spheres having a glass transition temperature of at least about 140° F. and having a particle size between about 0.05 and 0.3 micron, coloring matter, and a polyvalent metal salt of a carboxylated polymer which is in an amount sufficient to hold the organic polymer spheres together and to the flexible foundation, but insufficient to hold the organic polymer spheres to the flexible foundation when subjected to local pressure, said coating being in an amount equivalent to the amount of coating on a coated paper having from 1 to 7 lbs. of coating per ream of paper, and said coloring matter, together with the polyvalent metal salt of a carboxylated polymer being in an amount which is insufficient to completely fill the voids which exist between the organic polymer spheres.

3,311,490
DEVELOPING ELECTROSTATIC CHARGE IMAGE WITH A LIQUID DEVELOPER OF TWO IMMISCIBLE PHASES

Donald L. Fauser, Lakewood, and Edwin R. Kolb, Grafton, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Sept. 23, 1958, Ser. No. 762,756
9 Claims. (Cl. 117—37)

1. In an electrophotographic process of the character described in which an electrostatic charge image is produced on an electrophotographic surface, the developing steps which comprise treating said surface with an electrostatic charge image thereon with a liquid developer of two substantially immiscible phases at least the continuous phase comprising a liquid of high electrical resistivity, the dispersed phase forming a developer agent and comprising a resin dissolved in a solvent and carrying an electrostatic charge, said solvent being immiscible with said continuous phase, maintaining said surface in contact with said liquid developer for development of said charge image, and effecting substantially permanent adhesion of the developed image on said surface by removing said liquid of high electrical resistivity and the solvent for the dissolved resin.

3,311,491
METHOD OF COATING POLYOLEFINES WITH VINYLIDENE CHLORIDE COPOLYMERS

Alfred Reichardt, Ludwigshafen (Rhine), Hans Reinhard, Limburgerhof, Pfalz, and Heinz-Wilhelm Leifels, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Nov. 25, 1964, Ser. No. 413,968
Claims priority, application Germany, Nov. 30, 1963, B 74,471; May 2, 1964, B 76,627
7 Claims. (Cl. 117—47)

1. In a method of manufacturing coated articles from articles having a polyolefin surface by

(A) pretreating the polyolefin surface to improve the adhesion characteristics thereof,
(B) applying a subcoating to the pretreated polyolefin surface, drying said subcoating, and
(C) applying as a top coating to the subcoating an aqueous dispersion of a copolymer of 80 to 97% by weight of vinylidene chloride and 3 to 20% by weight of another copolymerizable monomer and drying said top coating, the improvement of applying as subcoating an emulsion polymer of
  (a) 90–98% by weight of a member selected from the group consisting of (1) at least one ester of an ethylenically unsaturated carboxylic acid having 3–5 carbon atoms and an alcohol having 1–8 carbon atoms and (2) at least one of said esters plus at least one other copolymerizable ethylenically unsaturated monomer selected from the group consisting of ethylenically unsaturated nitriles having 3–5 carbon atoms, ethylenically unsaturated carboxylic acids having 3–5 carbon atoms, amides of said carboxylic acids, styrene, vinyl chloride, vinylidene chlo-

ride, vinyl esters of saturated monocarboxylic acids having 1–18 carbon atoms, and

(b) 2 to 10% by weight of at least one N-alkylolamide of a copolymerizable ethylenically unsaturated acid having 3 to 5 carbon atoms.

3,311,492
METHOD OF INSOLUBILIZING STARCH BY REACTION WITH SODIUM STANNATE

Robert T. Hart, West Rumford, Maine, assignor to Oxford Paper Company, New York, N.Y., a corporation of Maine

No Drawing. Filed May 6, 1966, Ser. No. 548,046

5 Claims. (Cl. 117—62.2)

1. The process of forming an insolubilized starch coating on paper which comprises coating paper with an aqueous starch solution, at least partially drying the coating, treating the coating by immersing the coating in an aqueous bath consisting essentially of water and a sufficient amount of sodium stannate to render the starch coating insoluble when dried, and drying the treated coating.

3,311,493
METHOD OF COPPER COATING STEEL

Calvin A. Schunemann, Gates Mills, Ohio, assignor to Horizons Incorporated, a corporation of New Jersey

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,327

10 Claims. (Cl. 117—71)

1. A process of providing a ferrous base material with an adherent corrosion-proof coating at least about 0.3 mils in thickness on at least one surface of said material, said process comprising:

coating the surface of said material with a mixture consisting essentially of between 2% and 10% by weight cuprous oxide and the balance substantially all cuprous chloride;

thereafter heating the coating base material in a hydrogen atmosphere at about 1100° C. for not over 1 minute; and

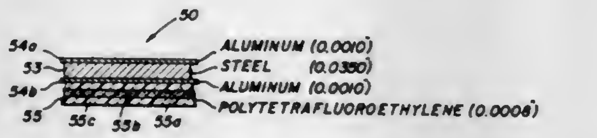
thereafter quenching said heated material to a temperature below 700° C.

3,311,494
PROCESSES OF PRODUCING SMOOTH ADHERENT COATINGS OF POLYTETRAFLUOROETHYLENE

Raymond L. Reinert, South Elgin, and Carl T. Fliss, Glen Ellyn, Ill., assignors to General Electric Company, a corporation of New York

Original application Dec. 7, 1964, Ser. No. 416,582, now Patent No. 3,241,545, dated Mar. 22, 1966. Divided and this application Oct. 20, 1965, Ser. No. 498,694

6 Claims. (Cl. 117—75)



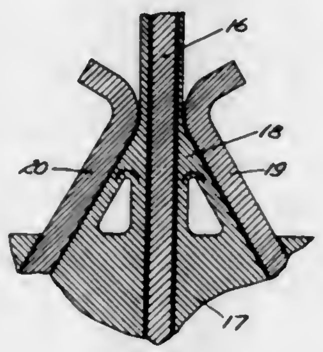
5. The process comprising applying to a substrate a first coating comprising an emulsion in water of polytetrafluoroethylene solids, curing said first coating by heating the same for a time interval of about 15 minutes at a temperature of about 750° F., applying to said cured first coating a second coating comprising an emulsion in water of polytetrafluoroethylene solids and inorganic oxide coloring pigments, curing said second coating by heating the same for a time interval of about 15 minutes at a temperature of about 750° F., applying to said cured second coating a third coating comprising an emulsion in water of polytetrafluoroethylene solids and a humectant, said humectant generally comprising a compound selected from the group consisting of glycerol, propylene glycol, ethylene glycol and dimethylsulfoxide and being present in an amount from about 7% by weight to about 10% by weight of said emulsion, and curing said third coating by heating the same for a time interval of about 15 minutes at a temperature of about 750° F., whereby upon cooling there is produced upon said substrate a unified adherent coating having a smooth surface devoid of cracks and blemishes.

3,311,495
METHOD OF REMOVING EXCESS HOT-DIPPED ALUMINUM COATING

Gerald E. Snider, Muncie, and Ernest R. Boller, Marion, Ind., assignors to The Boller Development Corporation, Marion, Ind., a corporation of Indiana

Filed July 25, 1963, Ser. No. 297,521

5 Claims. (Cl. 117—102)



1. In a process for coating a metal article with aluminum metal which comprises immersing the article in a molten aluminum coating bath and withdrawing the coated article, the improvement which comprises contacting the aluminum coating on the coated article while the aluminum coating is in liquid state with a body of liquid aluminum supported on a surface separate from the coated article and partially immersed in the aluminum coating bath to thereby allow excess aluminum coating metal to drain from the coated article to the molten aluminum coating bath.

3,311,496
PROCESS FOR PRODUCING ROT AND WRINKLE RESISTANT CELLULOSE CONTAINING TEXTILE AND TEXTILE OBTAINED THEREWITH

William Julius van Loo, Jr., Middlesex, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 18, 1964, Ser. No. 345,608

7 Claims. (Cl. 117—138.5)

1. A process for imparting to cellulose-containing textile materials improved wrinkle recovery with low tensile strength losses, which comprises treating the material with an aqueous impregnating solution of an aminoplast containing a curing catalyst so as to apply from 1% to about 30% based on the weight of the material of said aminoplast, curing said aminoplast impregnated material in the presence of water without substantially drying the material, subsequently applying to said treated material an aqueous solution of a water-soluble creaseproofing hardenable aminoplast containing a curing catalyst so as to apply from 1% to about 15% based on the dry weight of the material of said aminoplast and heat curing the thus treated material.

3,311,497
SURFACE TREATING OF ALKENYL AROMATIC RESINOUS FILM TO PROVIDE A MATTE FINISHED INK RECEPTIVE SURFACE THEREON

William R. R. Park, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 9, 1961, Ser. No. 81,234

7 Claims. (Cl. 117—138.8)

1. Method of preparing a matte writing ink receptive surface on an oriented film prepared from an alkenyl aromatic polymer resin consisting essentially of: treating the surface of a film prepared from an alkenyl aromatic polymer resin with a mixture comprising a volatile organic liquid medium which is a swelling agent for said alkenyl aromatic resin; said swelling agent boiling between about 40° centigrade and about 135° centrigrade, the film is contacted with the treating medium within a temperature range of from about 0° to about 60° centigrade said mixture having dispersed therein from about 0.05 percent to about 5 percent by weight of an ink receptive resinous polymeric material, until the surface of said article is swollen by said swelling agent and subsequently removing by evaporation in an air blast the volatile component of said mixture from said article, to form from said alkenyl aromatic resin a matte surface.

3,311,498
PARTIALLY ESTERIFIED REGENERATED CELLULOSE FILM AS A PACKAGING MATERIAL

John T. Massengale, West Chester, and Edward A. Wielicki, Philadelphia, Pa., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware

No Drawing. Filed May 21, 1963, Ser. No. 282,151

9 Claims. (Cl. 117—145)

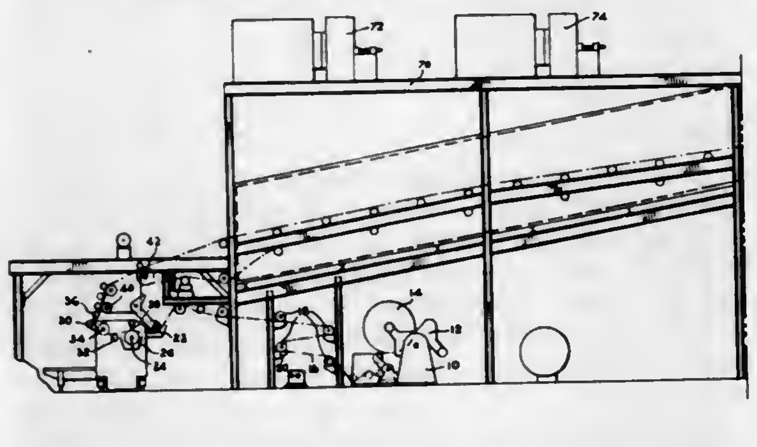
4. A package having an outer wrapping of a heat- and water-resistant dimensionally stable film, said film prepared by the partial esterification of a non-fibrous regenerated cellulose film.

3,311,499
HIGH SPEED MEANS AND METHOD FOR COATING AND DRYING THIN PAPER WEBS

Thomas W. Busch, Appleton, Wis., and Abraham Lewenstein, deceased, late of Appleton, Wis., by Marceline Lewenstein, administrator, Appleton, Wis., assignors to Appleton Coated Paper Co., Appleton, Wis., a corporation of Wisconsin

Filed Oct. 11, 1965, Ser. No. 495,378

12 Claims. (Cl. 117—119.8)



6. A high speed drier for drying thin webs of paper wet on one surface with a coating composition in the form of an aqueous emulsion comprising an elongate horizontally disposed housing having an inlet at one end and an outlet at the other, an endless supporting belt of porous material providing a continuous supporting surface extending horizontally through the housing with the upper run of the belt supported to travel through a convex path having a radius of at least 250 feet, driving means operatively connected to the continuous belt for linear displacement thereof through the housing at a uniform rate, means for positioning the coated web with the coated side uppermost on the top side of the upper run of the belt whereby the coated web is continuously supported and carried by said belt for travel through the housing in a relaxed state on the surface of the belt and means for advancing the coated web onto the belt at the same linear speed as the belt for travel therewith through the housing, and means for projecting hot drying gases onto the top side of the coated paper web during passage through the housing to volatilize off the diluent from the applied coating composition during passage through the housing.

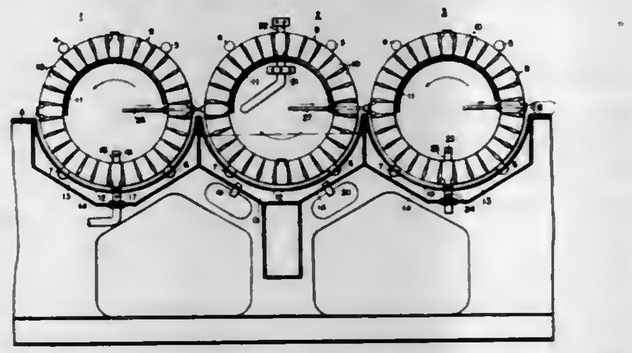
3,311,500
CONTINUOUS FEED BOTTLE SYSTEM FOR BOTTLE WASHING MACHINE

Toshimichi Seto, Tokyo, Japan, assignor to Kabushiki-Kaisha Nihon Seikosho and Zaidanhojin Sekitan Sogo Kenkyusho, both of Tokyo, Japan

Filed Apr. 6, 1965, Ser. No. 445,965

Claims priority, application Japan, Apr. 15, 1964, 39/20,967

5 Claims. (Cl. 134—23)



1. In a continuous bottle feeding system for use with a washing machine comprising a plurality of rotary members horizontally disposed at predetermined intervals with the longitudinal axes parallel to each other in a common plane, said plurality of rotatory members effecting rotational movement in opposite rotational direction of adjacent rotatory members at a predetermined common speed, each of said rotatory members being provided on the peripheral portion with $(Kn+1)$ of bottle holding cages disposed circumferentially thereon, where K is a predetermined number of revolutions of the rotatory member through which the bottles are revolved prior to discharge and n is any integer, each of said rotatory members being operatively associated with a cleaning tank, the method of operating the said system comprising first loading bottles to be washed into a first cage located on the periphery of the first of said rotatory members and successively loading each Kth cage on said first rotatory member and revolving said first rotatory members through K revolutions in the said cleaning tank and after completion of K revolutions continuously transferring bottles from said first cage and successively from each Kth cage to a first cage and successively to each Kth cage in said second rotary member that is revolving in a second tank and revolving said second rotatory member through K revolutions and successively discharging said bottles.

3,311,501
SILVER-CADMIUM SECONDARY BATTERY

Paul Ruetschi, Yardley, Pa., assignor to The Electric Storage Battery Company, a corporation of New Jersey

No Drawing. Filed May 25, 1964, Ser. No. 370,110

2 Claims. (Cl. 136—24)

1. A silver-cadmium battery having an alkaline electrolyte containing germanate ions in the vicinity of the

silver positive electrode after discharge of said battery, said germanate ions being present in amounts sufficient to provide from about 1 to about 50 grams of germanium per kilogram of silver in the positive electrode.

3,311,502

DIDYMIUM HYDRATE ADDITIVE TO NICKEL HYDROXIDE ELECTRODES

Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of William N. Carson, Jr., Sumner, Md.
No Drawing. Filed Oct. 19, 1965, Ser. No. 498,167
2 Claims. (Cl. 136—28)

1. A nickel-cadmium battery wherein the improvement in combination therewith comprises the positive electrode consisting essentially of nickel hydroxide and from 2.5–15 mole percent of the nickel hydroxide of didymium hydroxide.

3,311,503

THERMAL CELL CONTAINING V_2O_5 DEPOLARIZING AGENT AND METHOD OF MAKING THE SAME

Glenn F. Zellhoefer, Normal, Ill., assignor, by mesne assignments, to National Union Electric Corporation, Stamford, Conn., a corporation of Delaware
No Drawing. Filed Jan. 27, 1954, Ser. No. 406,608
19 Claims. (Cl. 136—83)

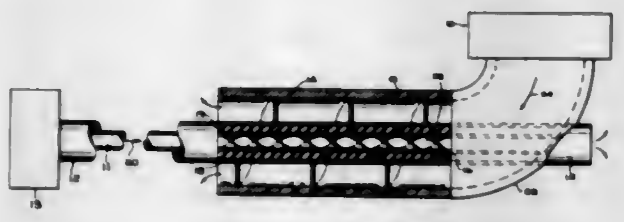
1. In an electrochemical power supply comprising a thermal cell including a mass of normally solid electrolyte, a depolarizing agent, and electrodes comprising a cathode and an anode; the improvement wherein said depolarizing agent comprises dried, powdered V_2O_5 intimately admixed with a normally solid current conducting material which is operable at the operating temperature of said cell to substantially increase the current conducting characteristics of said depolarizing agent, said agent being disposed in contact with said mass of electrolyte and said cathode.

12. That method of incorporating a depolarizing agent in a thermal cell which includes the step of spraying a slurry of finely powdered V_2O_5 and a current conducting material on a tape and drying said slurry, and assembling said tape with the V_2O_5 thereon in contact with and between the cathode and the electrolyte of said cell.

3,311,504

FUEL CELL

Paul P. Johnson, Saunderstown, R.I., assignor to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts
Filed May 2, 1960, Ser. No. 26,114
4 Claims. (Cl. 136—86)



1. In a fuel cell system comprising a housing, an electrolyte, at least one oxidizing electrode and at least one fuel electrode, the improvement wherein the system comprises a pair of elongated co-axial members with means for supporting said members in spaced relationship with one another, one of said members defining the fuel electrode, the oxidizing electrode and a porous matrix impregnated with an electrolyte, said co-axial members forming two gas passages and means for feeding fuel into one of said gas passages at one end of said cell and means for feeding an oxidizing material into the other of said gas passages at the end opposite to the means for feeding fuel whereby said fuel and oxidizing gases are introduced at opposite ends of the cell, said gas passages having venting means for removing gaseous impurities and chemical by-products.

3,311,505

GAS ELECTRODES AND THEIR FABRICATION

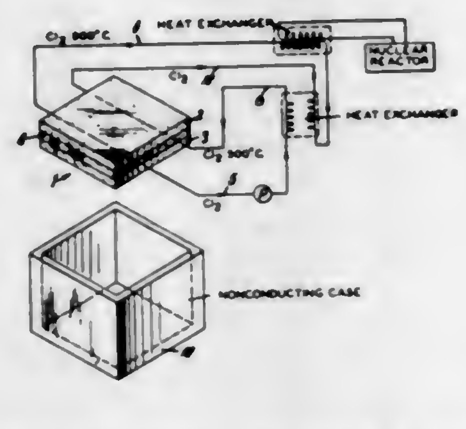
Michel Paget, Neuilly-sur-Seine, and Odile Bloch, Meudon, France, assignors to Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, Seine-et-Oise, France
No Drawing. Filed Sept. 1, 1964, Ser. No. 393,762
8 Claims. (Cl. 136—86)

1. In combination with a fuel cell, a gas electrode comprising a sintered metal substratum, said metal being selected from the group consisting of cobalt, nickel and iron, and a surface deposit of carbonaceous matter obtained by heating the substratum in a hydrocarbon atmosphere, at hydrocarbon cracking temperature, the said substratum being obtained by sintering a metal from the group consisting of iron, nickel, and cobalt resulting from the thermal decomposition of iron carbonyl, nickel carbonyl, cobalt carbonyl respectively, said substratum having a porous volume representing 40 to 80% of its apparent volume and an average pore diameter between 5 and 25 microns.

3,311,506

THERMOCELL BATTERY

Seymour Senderoff, Fairview Park, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Original application Mar. 9, 1961, Ser. No. 94,619. Divided and this application Aug. 24, 1965, Ser. No. 482,132
9 Claims. (Cl. 136—86)

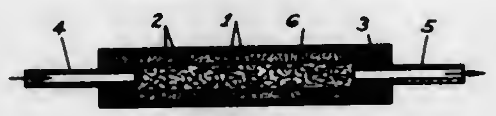


4. A thermocell battery comprising a non-conductive container and in said container a plurality of unit cells, each comprising a first porous collector adapted to receive hydrogen gas at a given temperature and to release said gas at a lower temperature; a second porous collector adapted to receive hydrogen gas at a higher temperature than that received by said first collector and adapted to release said gas at a lower temperature; a molten electrolyte selected from the group consisting of hydroxides, hydrides and acid salts, said electrolyte lying intermediate said first and second collectors, said conduit means communicating with each other; means for maintaining the gas at said given temperature and said higher temperature, respectively; conduit means for bringing the gas to and removing the gas from said collectors; and electrically conducting means connecting the successive collectors of said units.

3,311,507

MULTIPLE LAYER ELECTRODE

Heiner Dittmann, Horst Grüne, Eduard Justi, and August Winsel, all of Braunschweig, Germany, assignors to Varta Aktiengesellschaft, Hagen, Westphalia, and Siemens-Schuckertwerke Aktiengesellschaft, Berlin and Erlangen, Germany
Filed Apr. 26, 1962, Ser. No. 208,153
Claims priority, application Germany, Apr. 29, 1961, R 30,226
17 Claims. (Cl. 136—120)



16 In the process of producing a multiple layer electrode by pressing and sintering fine metal powders to form the respective layers, the improvement which comprises first pressing powder material for forming a peripheral frame for the electrode, then adding in the center of the frame powder for a first working layer and pressing such first working layer powder thereat, then adding powder for a gas distribution layer onto the surface of the already pressed working layer, then pressing such gas distribution layer powder in contact with the already pressed first working layer, then adding powder for a second working layer onto the corresponding surface of the already pressed gas distribution layer, then pressing such second working layer powder in contact with the already pressed gas distribution layer, the two working layers and gas distribution layer being of a total thickness at least as small as the thickness of said frame, then adding a powder for a respective surface layer onto each corresponding surface of the already pressed working layers covering the gas distribution layer therebetween, and pressing and sintering the surface layer powders in contact with the corresponding already pressed working layers having the gas distribution layer therebetween, whereby to form a composite multilayered electrode having the particles of the respective layers bonded to one another at the contact points therebetween and bonded to the next adjacent layer at the contact points of particles in one layer adjacent particles in the next layer.

3,311,508

METHOD OF ACTIVATING PLATINUM OR PALLADIUM CONTAINING ELECTRODE

Royce E. Biddick, Minneapolis, and William G. Howard, St. Paul, Minn., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Aug. 19, 1965, Ser. No. 481,056
7 Claims. (Cl. 136—120)

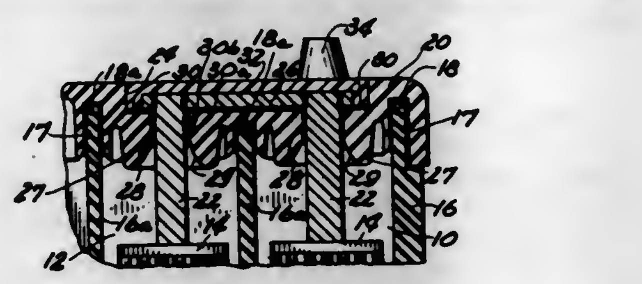
1. The method of chemically activating an electrochemical transition metal catalyst selected from platinum and palladium bonded within an electrode for use in a fuel cell consisting essentially of exposing the electrode to an atmosphere consisting principally of hydrogen, at ambient temperature, for a time sufficient to increase the electrochemical activity of said transition metal and thereafter subjecting the electrode to an inert atmosphere to remove all traces of free hydrogen before exposing the electrode to oxygen-containing atmospheres.

3,311,509

METHOD OF SEALING INTERCELL BATTERY CONNECTIONS

Anthony Sabatino, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed May 28, 1964, Ser. No. 370,892
3 Claims. (Cl. 136—134)

1. A method of sealing the terminal portions of an electrolytic storage battery to the casing thereof comprising the steps of placing a terminal portion in a close fitting relationship with a casing portion, applying a low viscosity epoxy cement to said closely fitting terminal portion and casing portion by pouring the cement onto said casing adjacent said casing portion, whereby said cement is drawn therebetween, causing said cement to set and bond said terminal portion to said casing portion, applying molten battery compound to surround said terminal portion and said casing portion and form a smooth surface with said casing, and causing said battery compound to set.



3,311,510

METHOD OF MAKING A SILICON SEMICONDUCTOR DEVICE

Joseph Mandelkorn, Cleveland Heights, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
No Drawing. Filed Mar. 16, 1964, Ser. No. 352,400
4 Claims. (Cl. 148—1.5)

1. A method of improving the resistance to radiation damage of a silicon semiconductor material comprising the steps of

reducing the number of recombination centers and trapping centers by adding an electrically active impurity selected from the rare earth elements to the silicon semiconductor material and

increasing the conductivity of the silicon within said semiconductor material by controlling the amount of the addition of said electrically active impurity from the rare earth elements.

3,311,511

ALLOY STEEL AND METHOD

George N. Goller, Towson, Md., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
No Drawing. Filed Aug. 12, 1963, Ser. No. 301,641
10 Claims. (Cl. 148—12)

1. In the production of chromium-nickel-manganese stainless steel sheet, strip and wire of good fatigue resistance and strength, the art which comprises providing sheet, strip or wire essentially consisting of about: 16% to 26% chromium, 5.5% to 15% nickel, 5.5% to 15% manganese, .10% to .60% nitrogen, and remainder substantially all iron; cold-reducing the same, without benefit of intermediate anneal, in an amount exceeding about 80%; and then tempering the same at a temperature of at least about 1750° F.

3,311,512

METHOD OF PRODUCING STEEL STRAPPING

August F. Mohri and John F. Jarrell, Hamilton, Ontario, and Robert C. Reynolds, Burlington, Ontario, Canada, assignors to The Steel Company of Canada, Limited, Hamilton, Ontario, Canada, a Canadian company
No Drawing. Filed Apr. 2, 1964, Ser. No. 356,950
Claims priority, application Canada, Mar. 17, 1964, 898,040
6 Claims. (Cl. 148—12.1)

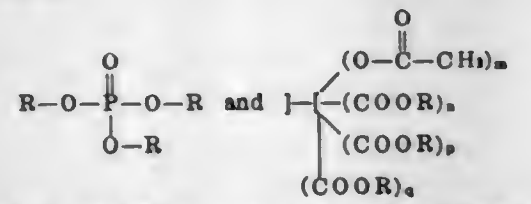
4. The method of producing high tensile steel strapping which comprises the steps of cold working a steel strip having a carbon content of about 0.27% and a manganese content of about 1.50% to reduce the strip about 60% to about 70% in thickness such that the said

steel strip attains the desired gauge thickness, annealing the cold worked steel strip at a temperature of about 900° F. for about 6 hours to obtain the desired grain structure and ductility, cooling the strip in a protective atmosphere to a temperature below about 200° F., and slitting that strip into relatively narrow strips of a desired width.

3,311,513
NITRAMINE, NITROCELLULOSE EXPLOSIVE WITH ESTER PLASTICIZER

Charles Donald Forrest, Westville, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 5, 1965, Ser. No. 437,555
8 Claims. (Cl. 149—2)

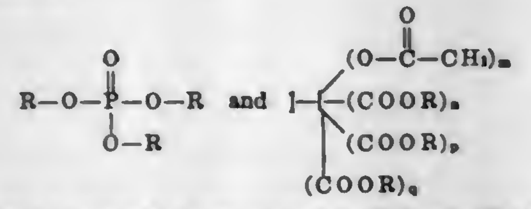
1. Improved detonating explosive compositions comprising uniform blends of:
(a) about from 65 to 85% by weight of crystalline explosive nitramine having an average particle size below about 200 microns and selected from the group consisting of cyclotrimethylenetrinitramine and cyclotetramethylenetetranitramine;
(b) about from 0.5 to 15% by weight of soluble nitrocellulose having an average degree of polymerization of about from 2000 to 3000; and
(c) about from 10 to 34.5% by weight of ester selected from phosphate and carboxylate esters having the formulas:



$$\mathrm{R{-}O{-}\underset{O-R}{\overset{O}{\overset{\|}{P}}}{-}O{-}R} \quad \text{and} \quad]\!-\![\begin{cases}(\mathrm{O{-}\overset{O}{\overset{\|}{C}}{-}CH_3})_m\\ (\mathrm{COOR})_n\\ (\mathrm{COOR})_p\\ (\mathrm{COOR})_q\end{cases}$$

in which each R represents an aliphatically saturated organic radical of about 1 to 8 carbon atoms free of functional substituents;]—[is a hydrocarbon nucleus of about 1 to 8 carbon atoms; and each of *m*, *n*, *p*, and *q* is a cardinal number of 0 to 1, the sum of *n*, *p*, and *q* being 2 to 3.

6. In a method for preparing improved detonating explosive compositions comprising uniform blends of:
(a) about from 65 to 85% by weight of crystalline explosive nitramine having an average particle size below about 200 microns and selected from the group consisting of cyclotrimethylenetrinitramine and cyclotetramethylenetetranitramine;
(b) about from 0.5 to 15% by weight of soluble nitrocellulose having an average degree of polymerization of about from 2000 to 3000; and
(c) about from 10 to 34.5% by weight of ester selected from phosphate and carboxylate esters having the formulas:



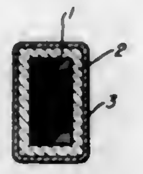
$$\mathrm{R{-}O{-}\underset{O-R}{\overset{O}{\overset{\|}{P}}}{-}O{-}R} \quad \text{and} \quad]\!-\![\begin{cases}(\mathrm{O{-}\overset{O}{\overset{\|}{C}}{-}CH_3})_m\\ (\mathrm{COOR})_n\\ (\mathrm{COOR})_p\\ (\mathrm{COOR})_q\end{cases}$$

in which each R represents an aliphatically saturated organic radical of about 1 to 8 carbon atoms free of functional substituents;]—[is a hydrocarbon nucleus of about 1 to 8 carbon atoms; and each of *m*, *n*, *p*, and *q* is a cardinal number of 0 to 1, the sum of *n*, *p*, and *q* being 2 to 3,

the steps comprising intimately blending about from 50 to 90% of the total weight of said crystalline explosive nitramine with said ester and said nitrocellulose until a first substantially homogeneous mass is formed, then intimately blending the remaining portion of said nitramine with said first mass until a uniform product is obtained.

3,311,514
METHOD FOR MANUFACTURING ELECTRICALLY INSULATED COILS

Kenji Matsunobu and Kazuo Oka, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Aug. 12, 1963, Ser. No. 301,453
Claims priority, application Japan, Sept. 7, 1962, 37/38,134
4 Claims. (Cl. 156—53)



1. A method of manufacturing electrically insulated coil elements which comprises covering electrical conductors with electrically insulating materials containing a moldable varnish, inserting the resultant insulated conductors into a tube consisting essentially of synthetic resin, connecting the ends of said tube to an evacuating means, vacuum-drying said insulated conductors contained in said tube, sealing said ends of said tube, and forming said insulated conductors to the desired coil element structure by heat and pressure.

3,311,515
THIXOTROPIC, NON-FLOWING ADHESIVE BONDING AND JOINTING COMPOSITIONS AND METHODS OF BONDING CERAMIC TILES TO SUBSTRATES USING THIXOTROPIC, NON-FLOWING ADHESIVE BONDING AND JOINTING COMPOSITIONS

Ernest E. Weller, Sayreville, and Robert J. Kleinhans, Highland Park, N.J., assignors to Tile-Council of America, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 18, 1963, Ser. No. 317,151
18 Claims. (Cl. 156—71)

7. A method of coating a substrate with tile, which comprises:
(1) covering the substrate with a thixotropic, non-flowing adhesive bonding composition formed by admixing an epoxy resin having terminal epoxy groups and a polyamido-amine gel epoxy resin hardener composition, said polyamido-amine being the reaction product of a polycarboxylic acid and a stoichiometric excess of a polyamine, said polyamido-amine gel being obtained by adding between about 5 and 50% by weight, based on said polyamido-amine, of water to said polyamido-amine,
(2) pressing tile into said adhesive bonding composition, and
(3) curing the composition to produce a firm bond between the substrate and tile.

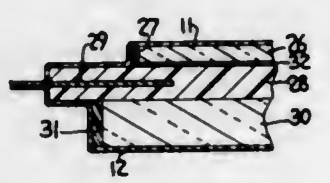
3,311,516
FLEXIBLE COMPOSITIONS WITH RIGID SETTING PROPERTIES

Karlis L. Jaunarajs and Frederick L. Pundsack, Somerville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 2, 1964, Ser. No. 335,388
18 Claims. (Cl. 156—71)

16. The method of applying a coherent, hydration setting gypsum sheet comprising forming a dilute aqueous slurry with approximately 20 to 40 parts by weight of asbestos fiber and approximately 60 to 80 parts by weight of particulate gypsum substantially all sized less than about 250 microns in diameter, consolidating the solids of the slurry into a coherent sheet by filtering, drying the consolidated sheet at temperatures within the approximate range of 300 to 375° F. for a period of about ½ to 6 hours to dehydrate the gypsum, removing at least about 50% by weight thereof of its combined water of crystallization, applying and conforming the resulting pliant and conformable and handleable, coherent dehydrated gypsum sheet to the area to be surfaced, and wetting the sheet to hydrate the dehydrated gypsum and set the sheet into a hard, rigid surface.

3,311,517
METHOD OF LAMINATING TRANSPARENT ASSEMBLIES

Leroy D. Keslar, Natrona Heights, and John S. Rankin, Belle Vernon, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 13, 1963, Ser. No. 287,632
6 Claims. (Cl. 156—104)



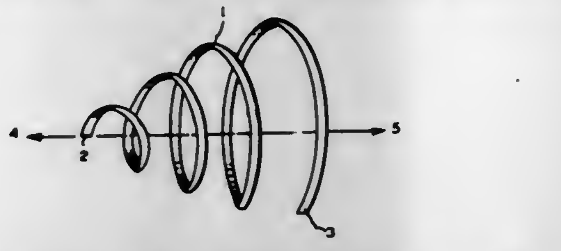
1. In a method of preparing and laminating transparent assemblies wherein a flexible plastic sheet of interlayer material capable of substantial distortion at elevated temperatures and pressure is sandwiched between rigid layers of transparent material and thereafter the assembly is laminated together in an oil autoclave at elevated temperatures and pressures, the improvement comprising mounting an assembly between upper and lower walls of a horizontally disposed bag consisting essentially of a laminated layer of oil and moisture resistant plastic material and an inner layer of a heat-sealable plastic material having inwardly directed protuberances providing passages therebetween, said walls having a thickness not exceeding .005 inch so as to conform intimately to the outline of the assembly, said bag produced by sealing said laminated material together along three sides outside the margin of said assembly to form walls of a bag with an access opening enclosing said assembly, evacuating the interior of said bag through said access opening while the outer walls of the bag are exposed to substantially normal temperature and pressure conditions to conform said bag to its enclosed assembly without substantially deforming the interlayer material, sealing said access opening while maintaining said bag evacuated, and exposing the sealed bag and its contents to an elevated temperature and pressure for a time sufficient to laminate said assembly, with said bag encapsulating said assembly in such intimate contact that it resists substantial deformation of the flexible interlayer material forming part of said assembly during said exposure to elevated temperature and pressure.

5. The method according to claim 1, wherein said assembly to be laminated comprises interlayer material of polyvinyl butyral and rigid sheets composed of glass.

3,311,518
METHOD OF FORMING A ROVING BALL OF NON-TWISTED ROVING

William R. Steitz and Harry Talv, Nashville, Tenn., assignors to Ferro Corporation, Cleveland, Ohio
Filed Dec. 6, 1963, Ser. No. 328,722
10 Claims. (Cl. 156—148)

1. The method of producing a substantially continuous multifilament length wherein the relationship of the component filaments within said substantially continuous length are characterized by minimum twist, from a first helically wound roving ball wherein said roving has a leading and trailing end, comprising the steps of:
(a) rewinding said roving from said first roving ball into a second helically wound roving ball, maintaining the same end as leading end in said second roving ball,
(b) during step (a) imparting a first order twist to said roving as it is wound into said second roving ball,
(c) while maintaining said second roving ball in a non-rotating attitude, drawing said roving from said second roving ball by pulling said leading end therefrom,

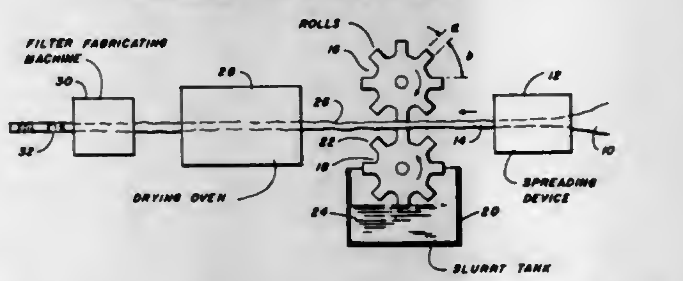


(d) and simultaneously with step (c), applying a second order twist to said roving,

to thereby equalize its existing first order twist to provide a roving as removed by its leading end from a helical winding thereof, characterized by its component filaments lying in substantially parallel relationship and exhibiting minimum twist with respect to each other.

3,311,519
ADDITIVE FILTER

George Patrick Touey and John Edward Kiefer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 28, 1964, Ser. No. 340,601
3 Claims. (Cl. 156—180)



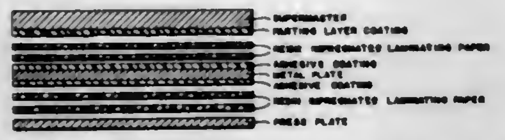
1. The method of treating continuous filament tow which comprises applying activated carbon to alternate sections of a single band of continuous filament tow of at least about 6000 filaments arranged in a generally parallel relationship to the longitudinal axis of the tow and of a denier per filament of about 3 to 8 from an aqueous dispersion of the activated carbon by striking said alternate sections of the tow with corresponding alternate protrusions of the lower roll of a pair of rotating rolls as the tow passes through the nip formed therebetween, forming the tow with activated carbon thus applied thereto into substantially cylindrical wrapped filter rods, and cutting said rods so as to form filter elements containing the activated carbon deposited on alternate sections thereof.

3,311,520
METHOD OF FORMING TEXTURED LAMINATE SURFACE

Jack Michaelson, Baltimore, Richard C. McDevitt, College Park, and Herbert I. Scher, Baltimore, Md., assignors to National Plastic Products Company, Inc., Odenton, Md., a corporation of Maryland
Filed Oct. 18, 1965, Ser. No. 497,426
7 Claims. (Cl. 156—209)

1. In the manufacture of pressing plate dies for the production of three-dimensional surfaced laminates, the process comprising:
(A) providing a negative master having a deformation resistant dimensionally stable metal core and a thermoset resin impregnated fibrous sheet surface having a textured pattern thereon;
(B) coating said negative master with a fluorinated hydrocarbon polymer highly resistant to sticking;

- (C) assembling in a stack
  - (a) a plurality of fibrous sheets impregnated with a thermosetting resin,
  - (b) an adhesive coated deformation resistant, dimensionally stable metal plate, and
  - (c) said polymer coated negative master, with said impregnated fibrous sheets (a) being interposed between said coated surfaces;
- (D) applying sufficient heat and pressure to the assembly to effect a lamination of said sheets together with said metal plate to thereby produce a positive master;
- (E) removing said negative master from said newly formed positive master;



- (F) coating said positive master with a non-stick fluorinated hydrocarbon polymer;
- (G) assembling in a stack
  - (a) a plurality of fibrous sheets impregnated with a thermosetting resin;
  - (b) an adhesive coated deformation resistant and dimensionally stable metal plate, and
  - (c) said polymer coated positive master, with said impregnated fibrous sheets (a) being interposed between said coated surfaces; and
- (H) applying sufficient heat and pressure to the assembly to effect a lamination of said fibrous sheets to said metal plate to thereby produce a negatively surfaced pressure plate die for use in the manufacture of three-dimensional surfaced laminates.

3,311,521
IMAGE TRANSFER METHOD

Harry James Hofrichter, Eugene, Oreg., assignor to Peter Hodgson
No Drawing. Filed Oct. 4, 1965, Ser. No. 492,851
5 Claims. (Cl. 156—234)

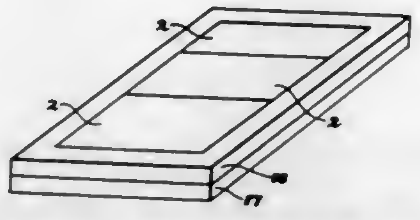
1. Method for transferring a printing type ink image from an inked surface to a substrate comprising the steps of:

- (a) preparing the surface of said substrate to receive said image by applying to said substrate a four carbon straight chain butylene glycol selected from the group consisting of 1,3-butylene glycol and 2,3-butylene glycol;
- (b) contacting said inked surface with a silicone putty to transfer said ink image to the surface of the silicone putty;
- (c) separating the silicone putty from said inked surface; and
- (d) contacting the portion of the silicone putty carrying said ink image with said prepared substrate for a time sufficient to transfer said ink image from the surface of the putty to the surface of the prepared substrate.

3,311,522
PROCESS FOR BONDING CRYSTALLINE COMPONENTS AND COMPOSITE ARTICLE PRODUCED THEREBY

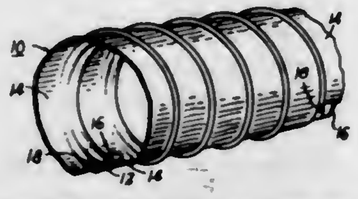
Le Roy S. Ladd, William F. Parsons, and Robert J. Weagley, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 25, 1963, Ser. No. 260,421
5 Claims. (Cl. 156—306)

1. A method of forming composite optical elements comprising placing at least two solid homogeneous polycrystalline elements within a frame having a coefficient of expansion lower than that of said elements, heating the frame to a temperature below the melting temperature of said elements, and maintaining the temperature until said elements are bonded together.



3,311,523
APPARATUS FOR FORMING A CONTINUOUS REINFORCED FLEXIBLE HOSE

Lester E. Carpenter, Vernon, Conn., Richard B. Pelley, East Kingston, N.H., and Joseph T. Hall, Stamford, Conn., assignors to Callahan Mining Corporation, New York, N.Y.
Filed Mar. 25, 1964, Ser. No. 354,525
13 Claims. (Cl. 156—429)



1. An apparatus for forming a continuous pre-stressed flexible hose from a continuous flexible strip having a continuous reinforcing spring wire secured thereto substantially adjacent one edge thereof comprising

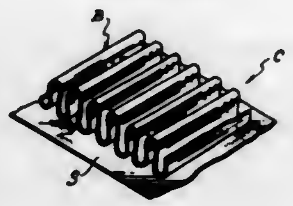
- (A) means for continuously plastically deforming the wire reinforced strip into a first helical path,
- (B) first and second forming rollers, at least one of said rollers having first and second annular grooves therein,
- (C) said forming rollers being mounted for rotation about parallel axes, the flexible strip being passed from said first helical path between said rollers with its wire reinforced edge received in said first groove and being thereafter looped around one of said rollers with its wire reinforced edge received in said second groove in a selected mount of overlapping with the other edge of said strip,
- (D) and means for continuously counter rotating said rollers,
- (E) said first and second grooves being spaced apart axially by a distance different from the pitch of said first helical path so that said strip is elastically constrained to achieve said selected amount of overlapping.

3,311,524
MACHINES FOR PRODUCING PACKAGING COMPONENTS

Hanns E. Hecker, Hamden, Conn., assignor to Marenta A.G., Cham, Switzerland
Filed Aug. 29, 1963, Ser. No. 305,251
3 Claims. (Cl. 156—471)

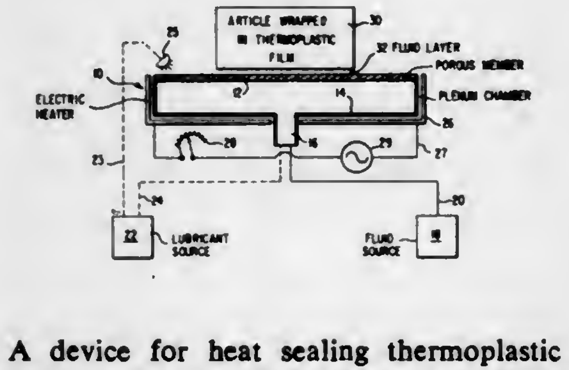
1. In a machine for producing packaging inlays having parallel bands of article-retaining convolutions formed of corrugated sheet material, wherein said machine includes a corrugating assembly comprising a series of parallel rollers arranged to travel along a closed path and being movable toward and away from each other, and means for bunching together said rollers during movement of the latter through a working zone extending along a portion of said path, the improvement which comprises: corrugation forming roll means including a rotatable

shaft, a series of peripherally toothed discs removably mounted on said shaft in a selected order, and spacing collars removably mounted on said shaft between selected discs, thereby to define circumferentially extending grooves in the forming roll means at selectively determined locations along the axis of the latter; said forming roll means being located so that the peripheral teeth of said discs enter between successive rollers of said corrugating assembly in advance of said working zone for forming corrugations in bands of said sheet material fed in parallel between said forming roll and corrugating assembly; and a guide structure including a plurality of fingers extending chordally in said circumferential grooves of the forming roll means under said rollers between which said peripheral teeth of said discs enter for stripping the corrugated bands from the forming roll means and for ensuring the continued travel of said corrugated bands with the rollers bunched together in said working zone, thereby narrowing the entries to the convolutions of the corrugated bands receiving the rollers; and means supporting said fingers for free movement parallel to the axis of said forming roll means so that, when the locations of said grooves are altered by rearrangement of said discs and collars on the shaft, said fingers can be moved laterally into respective coincidence with the relocated grooves.



3,311,525
HEAT SEALING APPARATUS INCLUDING A POROUS MEMBER AND FLUID PRESSURE

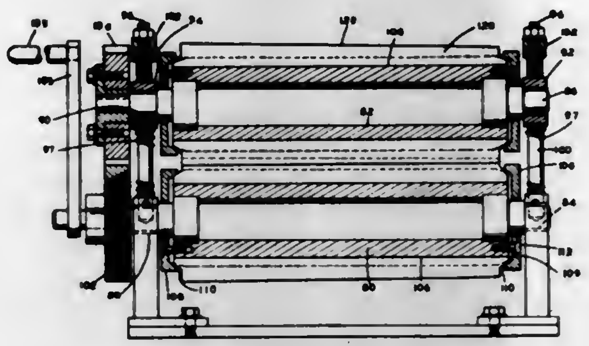
James J. Fanuzzi, Pompton Plains, and William L. Calvert, Westfield, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Oct. 2, 1963, Ser. No. 313,340
10 Claims. (Cl. 156—497)



1. A device for heat sealing thermoplastic material brought into close proximity thereto which comprises a porous member having a pore size of from about 1 micron to about 50 microns and a thickness of from about 0.003 inch to about 1 inch, means to force a fluid thru said porous member whereby a thin layer of said fluid is maintained between said thermoplastic material and said porous member and whereby the rate of flow of said fluid from the surface of said porous member remains constant, uniform and substantially undiminished over the entire surface area of said porous member during the entire heat sealing operation, and means to heat said porous member and said fluid.

3,311,526
APPARATUS FOR MAKING FILTERS

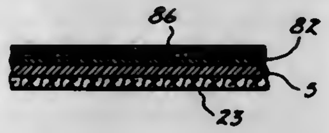
George Barany, Syracuse, N.Y., assignor to Cambridge Filter Corporation, a corporation of New York
Original application Feb. 28, 1963, Ser. No. 261,632. Divided and this application May 14, 1965, Ser. No. 464,266
3 Claims. (Cl. 156—596)



1. Apparatus for forming corrugated spacing members for pleated filters, wherein the corrugations at one end are of greater amplitude and height than the corrugations at the other end, comprising a pair of spaced rolls mounted on substantially parallel axes, means for positively driving one roll from the other in a reverse direction, a plurality of uniformly spaced forming blades projecting radially from each roll into interforming relationship with the blades of the other roll, certain of said blades of each roll having a forming edge inclined with respect to the axis of the rolls in one direction, and being uniformly angularly spaced around the rolls, and the remaining blades being disposed intermediate of the first named blades and having forming edges oppositely inclined with respect to the axis of said rolls.

3,311,527
POLYURETHANE COATED FABRIC

Anthony J. Urbanic, Akron, and Donald Van Wagenen, Alliance, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Jan. 20, 1964, Ser. No. 338,826
10 Claims. (Cl. 161—64)



1. A lightweight coated fabric having excellent hand and drape and comprising a fabric layer and a scuff resistant composition layer secured to one side of said fabric layer, said composition layer comprising the reaction product of an organic diisocyanate, an hydroxyl terminated polyester diol having an average molecular weight of from about 2000 to 2400, a horny resin compatible with the polyurethane formed to provide homogenous films which do not craze on an elongation of greater than 50% of the composition, soluble in volatile organic solvents for said composition prior to curing and having from about 0.5 to 7% by weight active hydrogen groups, and an average molecular weight of from about 2,500 to 350,000, a low molecular weight glycol, and a branched chain polyester having more than 2 hydroxyl groups produced by the reaction of a glycol, dicarboxylic acid and a polyol having more than 2 hydroxyl groups in an amount of from about 0.01 to 10 mol percent based on the total mols of glycol, dicarboxylic acid and polyol used to make the branched polyester and having an average molecular

weight of from about 2000 to 4000, sufficient diisocyanate being present to provide an excess of isocyanate groups over the active hydrogen groups in said resin, said polyesters and said glycol, said resin being used as a crosslinker in a minor amount by weight sufficient to obtain rapid gelation of the composition without excessive penetration of the composition into the fabric, said glycol being used as a chain extender in a minor amount by weight to obtain the desired adhesion of the composition to the fabric and said branched chain polyester being used in a minor amount by weight as a reactive pigment vehicle, each, as compared to the total weight of said organic diisocyanate and said polyester diol.

5. A lightweight coated fabric according to claim 1, (B–1) containing additionally a layer of an adhesive coating composition adherently disposed on the surface of said scuff resistant layer opposite to said fabric layer, and (B–2) further containing additionally a flock layer of finely divided material adherently disposed on said adhesive layer opposite to said scuff resistant layer.

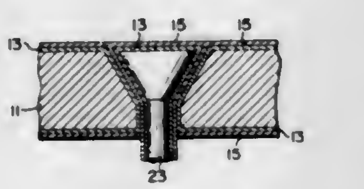
3,311,528
NEOPRENE-GLASS FIBER STRUCTURES AND METHOD FOR PREPARATION

Alfred Marzocchi, Cumberland, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
No Drawing. Filed Dec. 5, 1962, Ser. No. 242,349
10 Claims. (Cl. 161—193)

6. In the method of producing glass fiber-elastomeric products in which a strong and permanent bonding relationship is established between the glass fiber surfaces and the elastomeric material during cure, comprising the steps of coating the glass fibers with a composition containing an inorganic metal halide in which the metal is selected from the group consisting of zinc, magnesium and aluminum and an anchoring agent selected from the group consisting of an organo silicon compound having an organic group attached to the silicon atom containing a group selected from the group consisting of an olefinic group and an aromatic group and a Werner complex compound in which the carboxylato group coordinated with the trivalent nuclear chromium atom contains a group selected from the group consisting of an olefinic group and an aromatic group, combining the glass fibers and the elastomeric material in which the elastomeric material is one that is usable with the metal halide, and then curing the elastomeric material in the combination with the glass fibers.

3,311,529
CORROSION PROTECTION FOR METALS

Stanley L. Chisholm, 2503 Commonwealth Ave., San Diego, Calif. 92104
Filed May 23, 1963, Ser. No. 289,153
4 Claims. (Cl. 161—213)



1. The combination of a heavy metal and a light metal in a single structural system having contiguous surfaces,
- (a) said light metal selected from a group consisting of aluminum, magnesium and titanium and alloys thereof,
- (b) a first coating including a metalloid constituent selected from the group consisting of antimony and arsenic applied to the surface of the heavy metal, and
- (c) a barrier layer second coating on the surface of such light metal and compatible therewith for insulating the light metal from chemical reaction with the first coating,
- (d) at least one of the coatings containing a corrosion inhibitor selected from the group consisting of a low solubility chromate, molybdate, selenate and vanadate,
- (e) said coatings being in contact with each other and with the respective metals;

whereby said first coating protects the heavy metal from external corrosive agents and said second coating protects the light metal from direct reaction by said first coating.

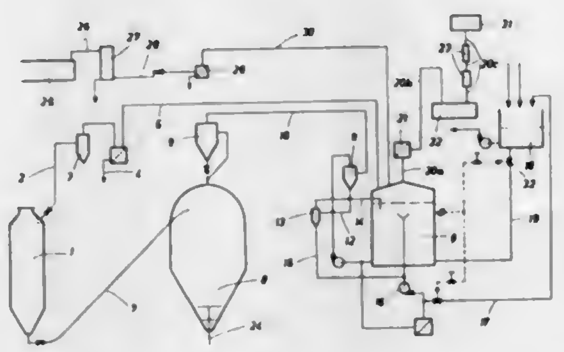
3,311,530
CONTINUOUS DIGESTOR

Edgar J. Justus, Beloit, Wis., and Kenton J. Brown, Loves Park, Ill., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed June 28, 1963, Ser. No. 291,523
10 Claims. (Cl. 162—19)

1. A continuous chemical pulping process which comprises treating wood chips in a relatively weak alkaline black liquor, draining said black liquor from the treated chips, saturating the treated chips in white liquor while gradually increasing the temperature of said white liquor, subjecting the treated chips to direct contact with steam to raise the chips to a cooking temperature, cooking the thus treated material under conditions of elevated temperature and pressure, diluting and cooling the pulp stock thus produced in a first washing stage with a filtered cooling liquor derived from a succeeding washing stage, diluting the pulp stock after the first washing stage with white water in said succeeding washing stage, filtering said pulp stock, and passing the filtrate thus recovered to said first washing stage to dilute said pulp stock entering said first washing stage, the chips moving essentially downstream through such saturating and subsequent steam contacting steps exposed to apertured conduit means, such process also including the steps of feeding such saturating liquor to the chips through the upstream end of such conduit means and feeding the steam to the chips through the downstream end of such conduit means and generally countercurrent to such downstream chip movement.

3,311,531
PROCESS OF PRODUCING SULFATE PULP WITH REMOVAL OF OFFENSIVELY SMELLING GASES

Othmar Feischl, Friedrich Knoll, and Gerhard Puschmann, all of Ansfelden, Austria, assignors to Nettingsdorfer Papier- und Sulfatzellulose-Fabrik Aktiengesellschaft, Nettingsdorf, Austria
Filed June 6, 1963, Ser. No. 286,093
Claims priority, application Austria, June 7, 1962, A 4,589/62; Jan. 11, 1963, A 209/63
13 Claims. (Cl. 162—51)



1. In a process which involves a formation of offensively smelling, oxidizable gases at a plurality of points at varying rates and concentrations, the steps of conducting said gases from at least two of said points into a common container, maintaining a body of liquid in said container, admitting said gases from said points to said container to mix in said container, feeding the resulting gas mixture to an oxidizing station, controlling the admission and the feeding of said gases to equalize the varying rates and concentrations of the gases by lowering and raising the level of said body of liquid in said container, and oxidizing said gas mixture in said oxidizing station.

3,311,532
KETENE DIMER PAPER SIZING COMPOSITIONS INCLUDING ACYL COMPOUND EXTENDER AND PAPER SIZED THEREWITH

Russell Joseph Kulick, Port Chester, N.Y., and Edward Strazdins and Anthony Ralph Savina, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Mar. 17, 1965, Ser. No. 440,584
16 Claims. (Cl. 162—179)

1. A composition consisting essentially of a paper-sizing ketene dimer and an effective extending amount in excess of about 10%, based on the weight thereof, of a hydrophobic substantially water-insoluble saturated substantially straight-chain acyl compound as extender therefor.

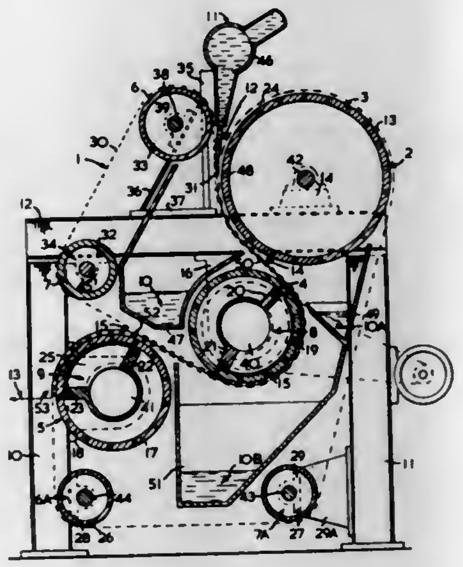
9. Paper composed of cellulose fibers sized by a uniformly distributed reacted content of a paper-sizing ketene dimer and by an effective uniformly distributed unreacted content, within the range of from 10% to about 200% of the weight of said ketene dimer, of a hydrophobic substantially water-insoluble saturated substantially straight-chain acyl compound selected from the group consisting of higher fatty acids and their anhydrides, chlorides, amides and aldehydes as extender therefor.

3,311,533
APPARATUS FOR MAKING FORMED FIBROUS WEBS

Raimbault M. A. T. de Montigny, Baie d'Urfe, Quebec, and Joseph A. Lapointe and John G. Buchanan, Pointe Claire, Quebec, Canada, assignors to Pulp and Paper Research Institute of Canada, Montreal, Quebec, Canada
Filed Apr. 6, 1964, Ser. No. 357,410
Claims priority, application Canada, Apr. 29, 1963, 874,330
9 Claims. (Cl. 162—203)

1. An apparatus for making formed fibrous webs comprising at least two rotatable cylinders having foraminous surfaces, first and second continuous foraminous bands which converge to provide an entrance nip for the reception of stock, said foraminous bands being arranged to travel around part of the periphery of one of said cylinders to provide a first zone in which water is expressed outwardly with repect to said one cylinder and inwardly to be stored in said one cylinder, and said foraminous bands being arranged to travel together from one of said cylinders to the second of said cylinders and around part of the periphery of the second of said cylinders, means in the second of said cylinders for applying an airflow at a low pressure differential acting outwardly of the second of said cylinders being insufficient to separate the bands from the second of said cylinders or to damage the web, said means applying an airflow establishing a second zone and said foraminous bands being arranged to guide the web to a third zone, said third zone comprising means for establishing an air flow acting inwardly with respect to a cylinder having a foraminous surface, the air flow in said third zone being at a high pressure differential for the extraction of additional moisture from the web, means for collecting water expressed outwardly in the first and second zones and means exterior to the first cylinder and peripherally displaced from the first zone in the direction of movement of the surface of the first cylinder for receiving from the first cylinder water expressed inwardly into the first cylinder in the first zone.

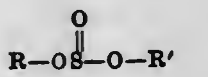
8. A method of making a formed web comprising the steps introducing a stream of pulp into the entrance nip provided between two converging endless bands, compressing the pulp between said bands in a first zone to express water through the surfaces of both bands, collecting the water expressed in one direction in a receptacle and storing the water expressed in the other direction in a foraminous member, transferring the water stored in the foraminous member by movement of the surface of the foraminous member to a location remote from the bands and then discharging it from the foraminous member to a receptacle, causing the foraminous bands to travel together to a second zone, and applying a pneumatic pressure differential to cause an air flow through the web and at least one of the bands.



3,311,534
METHOD FOR PROTECTING PLANTS AGAINST INSECTS AND MITES WITH MIXED SULFITE ESTERS

Rupert A. Covey, Wolcott, Allen E. Smith, Oxford, and Winchester L. Hubbard, Woodbridge, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey
No Drawing. Original application Aug. 20, 1962, Ser. No. 218,112, now Patent No. 3,179,684, dated Apr. 20, 1965. Divided and this application Dec. 21, 1964, Ser. No. 420,098
7 Claims. (Cl. 167—22)

1. The method of protecting plants against attack by insects and mites which comprises applying to the plants a compound having the formula



$$R{-}O\overset{\overset{\displaystyle O}{\|}}{S}{-}O{-}R'$$

in which R is an alkyl having up to 18 carbon atoms, benzyl, cyanoethyl, carbethoxyethyl, chloroalkyl having up to 5 carbon atoms and up to 3 chloro radicals, phenyl, naphthyl, phenyl and naphthyl having substituents consisting of up to 5 halo radicals selected from the class consisting of bromo and chloro, or mono-substituted phenyl and naphthyl having as the substituent an alkyl having up to 9 carbon atoms, and R′ is acyclic alkynyl of the formula C_nH_{2n-3}—in which n is 3 to 10.

3,311,535
USE OF DIPYRIDYLIUM COMPOUNDS AGAINST FISH PARASITES

Arthur A. Whipp, Medford, N.J., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Nov. 15, 1963, Ser. No. 323,892

6 Claims. (Cl. 167—53)

1. A method of controlling fish diseases caused by bacteria and protozoa which comprises introducing into the aqueous environment of fish sufficient 1,1'-ethylene-2,2'-dipyridylium dihalide, wherein said halide is of atomic number 17 to 35 to provide a concentration of from 0.25 to 10 p.p.m. of cation.

3,311,536
2 - METHYL - 4 - SULFONILAMIDO - 6 - METHOXY-3(2H)-PYRIDAZINONE FOR TREATING COCCIDIOSIS

Miyoshi Ikeda and Fujio Fujioka, Tokyo, and Chutaro Sugiyama and Takenari Nakagome, Nishinomiya, Japan, assignors to Sumitomo Chemical Co., Ltd., Osaka, Japan

No Drawing. Filed Jan. 20, 1966, Ser. No. 521,805

Claims priority, application Japan, Jan. 23, 1965, 40/3,721

2 Claims. (Cl. 167—53.1)

1. A method for preventing and treating poultry coccidiosis, which comprises orally administering to poultry a therapeutically effective amount of 2-methyl-4-sulfanilamido-6-methoxy-3(2H)-pyridazinone.

3,311,537
ROSEOLIC ACID AND METHOD OF PREPARING SAME

Koppaka V. Rao, Pinebrook, Donald W. Renn, River Vale, and William S. Marsh, Wanaque, N.J., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 26, 1962, Ser. No. 233,400

7 Claims. (Cl. 167—65)

6. The antitumor agent roseolic acid which is a dark red, non-dialyzable, weakly acidic, high molecular weight solid which melts at 185°–195° C. with decomposition, is insoluble in acetone, dioxane and the lower alcohols, slightly soluble in water and more soluble in aqueous sodium chloride solutions and glucose solutions; and which forms a red color in acidic and neutral solutions and a blue color in aqueous alkali, a magenta color in concentrated sulfuric acid, and a light yellow color with sodium hydrosulfite; which substance gives a negative reaction with ninhydrin and with ferric chloride and a positive Molisch test, and contains a reversible oxidation-reduction system; and which exhibits absorption maxima in the ultraviolet region of the spectrum when dissolved in pH 7.0 phosphate buffer at 256 and 500 mμ with

$$E^{1\%}_{1\,\mathrm{cm.}}$$

values of 190±10 and approximately 2, respectively; and when measured in a KBr pellet containing 1% of the product exhibits broad absorption maxima in the hydroxyl and carbonyl regions of the infrared spectrum; which substance when titrated potentiometrically with sodium hydroxide gives an equivalent weight of 1520±100; and which contains the elements carbon, hydrogen, nitrogen, phosphorus and oxygen in the following percentages by weight:

Carbon	37.25
Hydrogen	4.94
Nitrogen	11.80
Phosphorus	8.01
Oxygen (by difference)	38.00

which substance when subjected to electrophoresis at pH 7.0 in 0.02 M phosphate buffer at 250–300 volts and 180±10 milliamperes migrates towards the anode as a single sharp band; and which, when heated in 1 N hydrochloric acid at 100° C., gives a red precipitate soluble in chloroform and almost insoluble in water; which red precipitate when crystallized from chloroform:methanol (1:1) melts at 238°–240° C. with decomposition and which gives a dark green color with alcoholic ferric chloride, a magenta color with concentrated sulfuric acid and a blue color with aqueous sodium hydroxide; and which precipitate possesses a reversible oxidation-reduction system; which precipitate exhibits absorption maxima in the ultraviolet region of the spectrum when dissolved in methanol at 232, 250, 285 and 500 mμ and

$$E^{1\%}_{1\,\mathrm{cm.}}$$

values of 935, 710, 180, and 310, respectively; and when measured in a KBr pellet containing 0.33% of the product, exhibits absorption maxima in the infrared region of the spectrum at 3436, 2899, 1712, 1610, 1575, 1439, 1408, 1374, 1351, 1285, 1256, 1236, 1206, 1188, 1124, 1088, 1073, 1040, 989, 943, 928, 921, 836, 813, 790 and 763 reciprocal centimeters as shown in the accompanying drawing; and which precipitate contains the elements carbon, oxygen and hydrogen in the following percentages by weight:

Carbon	63.35
Hydrogen	4.70
Oxygen (by difference)	31.95

which precipitate has a molecular weight of 477; and when heated in 6 N hydrochloric acid gives a positive ninhydrin reaction.

3,311,538
STREPTOMYCES DERIVED ANTIBIOTICS

Stanley Ball, Gerrards Cross, England, assignor to Glaxo Group Limited, Greenford, England, a British company

Filed Feb. 12, 1963, Ser. No. 258,032

Claims priority, application Great Britain, Feb. 8, 1956, 3,981/56; Feb. 18, 1957, 5,461/57

5 Claims. (Cl. 167—65)

1. An antibiotic composition consisting essentially of a mixture of an antibiotic having the following properties:

R_f value using a descending chromatographic system with Whatman No. 2 paper and the upper phase obtained after equilibration of a mixture of benzene, methanol and water (100:45:55 v./v.) as developing solvent=0.45

Infra-red spectra adsorption maxima in bromoform solution at: 2.75, 2.83, 2.97, 3.37, 3.48, 5.79, 5.99, 6.17, 6.33, 6.60, 6.99, 7.20, 7.30, 7.42, 7.90, 8.28, 9.63, 9.93, 10.25, 10.36, 10.76, 11.24, 11.51, 12.45, and 13.33μ,

Ultra-violet spectrum absorption maximum in ethanol solution at

$$215\ \mathrm{m}\mu\ (E^{1\%}_{1\,\mathrm{cm.}}=650)$$

Molecular weight (Rast camphor method)=650

Elemental analysis:	Percent
Carbon	63.25
Hydrogen	7.10
Nitrogen	8.05
Oxygen	21.60

Optical rotation $[\alpha]_D^{20}$: −17.4 (c., 0.4 in methanol) readily soluble in lower alcohols, ketones, esters, methylene dichloride, acetic acid, dioxane and dimethylformamide; moderately soluble in benzene; slightly soluble in water and lower esters; substantially insoluble in light petroleum and carbon tetrachloride, and an antibiotic having the following properties:

Optical rotation $[\alpha]_D^{20}=-58.0°$ (0.2% in methanol)

Melting point 270° C. (decomp.)

U.V. absorption spectrum

$$\lambda_{\mathrm{max.}}\ 262\ \mathrm{m}\mu,\ E^{1\%}_{1\,\mathrm{cm.}}\ 222.5$$

$$\lambda_{\mathrm{max.}}\ 306\ \mathrm{m}\mu,\ E^{1\%}_{1\,\mathrm{cm.}}\ 105$$

Elemental analysis	Percent
Carbon	62.20
Hydrogen	6.08
Nitrogen	12.88

Red coloration with ferric chloride solution

Infra-red spectra absorption maxima in bromoform solution at: 2.940, 3.1110, 3.380, 3.48, 5.75, 5.82, 5.98, 6.13, 6.57, 6.90, 7.10, 7.40, 8.02, 9.47, 10.00, 10.31, 10.64, 11.36, 11.74, 12.44, 13.33μ,

said mixture containing on a weight basis no more than five times as much of one of said antibiotics as of the other and said composition containing no more than 70% by weight of contaminating material derived from the fermentation producing said antibiotics.

5. In substantially pure form, a compound having antibiotic properties which has R_f value using a descending chromatographic system with Whatman No. 2 paper and the upper phase obtained after equilibration of a mixture of benzene, methanol and water (100:45:55 v./v.) as developing solvent=0.45

Infra-red spectra absorption maxima in bromoform solution at: 2.75, 2.83, 2.97, 3.37, 3.48, 5.79, 5.99, 6.17, 6.33, 6.60, 6.99, 7.20, 7.30, 7.42, 7.90, 8.28, 9.63, 9.93, 10.25, 10.36, 10.76, 11.24, 11.51, 12.45, and 13.33μ,

Ultra-violet spectrum absorption maximum in ethanol solution at

$$215\ \mathrm{m}\mu\ (E^{1\%}_{1\,\mathrm{cm.}}=650)$$

Molecular weight (Rast camphor method)=650

Elemental analysis:	Percent
Carbon	63.25
Hydrogen	7.10
Nitrogen	8.05
Oxygen	21.60

Optical rotation $[\alpha]_D^{20}$: −17.4 (c., 0.4 in methanol) readily soluble in lower alcohols, ketones, esters, methylene dichloride, acetic acid, dioxane and dimethylformamide; moderately soluble in benzene; slightly soluble in water and lower ethers; substantially insoluble in light petroleum and carbon tetrachloride.

3,311,539
METHOD OF TREATING TRAUMATIZED NERVES

Floyd S. Eberts, Jr., Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Feb. 14, 1964, Ser. No. 344,835

1 Claim. (Cl. 167—65)

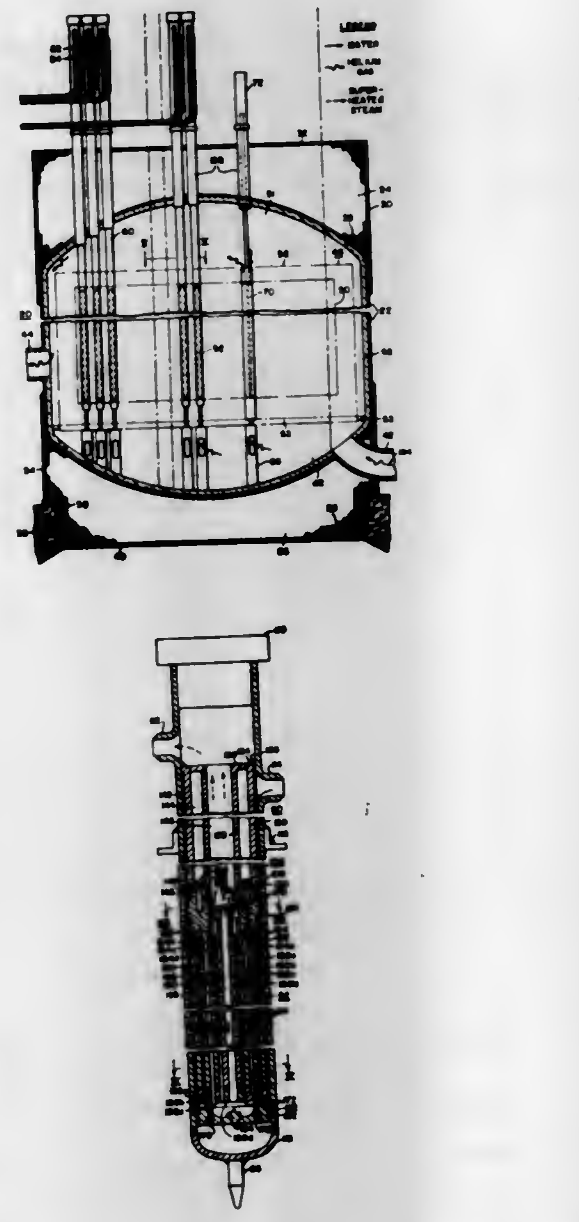
A method of increasing the nucleoprotein content of neural cells, promoting regeneration of neural tissue and augmenting neuromuscular transmission which comprises the systemic administration to mammals having traumatized nerves of an effective unitary dosage of a pharmaceutical composition consisting essentially of 2-amino-1,3,3-tricyano-2-propene.

3,311,540
INTEGRAL BOILING AND SUPERHEATING NUCLEAR REACTOR AND PRESSURE TUBE ASSEMBLY THEREFOR

Stephen N. Tower, Murrysville, and Theodore Stern, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 28, 1964, Ser. No. 370,838

19 Claims. (Cl. 176—53)

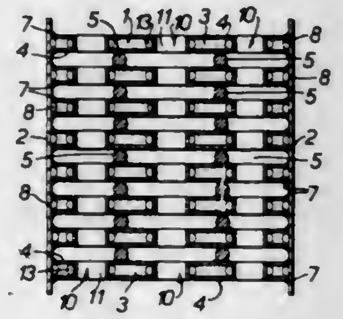


1. In a neutronic reactor, an outer vessel, a solid moderator lattice disposed in said vessel and forming a plurality of flow openings therethrough, a re-entrant pressure tube assembly disposed in each of said openings and having a portion thereof passing through said outer vessel, means for circulating a liquid coolant through each of said pressure tube assemblies, fissionable material disposed within each of said pressure tube assemblies in a heat exchange relationship with said liquid coolant, means for producing superheated vapor within each of said pressure tube assemblies, and means for circulating a cooling fluid through said vessel in intimate contact with said moderator lattice and with the exterior surfaces of said pressure tube assemblies to promote heat transfer from said moderator lattice to said pressure tube assemblies.

8. A pressure tube assembly for a neutronic reactor comprising an elongated pressure tube having an inlet aperture and an outlet aperture, a plurality of spaced annular fissile fuel elements located coaxially within said pressure tube, said fuel elements forming a plurality of reverse flow passages communicating serially with one

another and with said inlet and outlet apertures so as to provide a continuous flow path from said inlet aperture to said outlet aperture for a coolant flowing from said inlet aperture, said annular fuel elements being to said outlet aperture in a heat exchanging relationship with the coolant and having sufficient fissile fuel material adjacent each of said flow passages to convert the coolant from a liquid to a superheated vapor by the absorption of heat from said fuel elements during the passage of said coolant through said flow passages.

3,311,541
NUCLEAR REACTOR FUEL ELEMENTS
Philip Bernard Eyre, Lytham, near Blackpool, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Aug. 12, 1965, Ser. No. 479,174
Claims priority, application Great Britain, Sept. 21, 1964, 38,486/64
3 Claims. (Cl. 176—75)

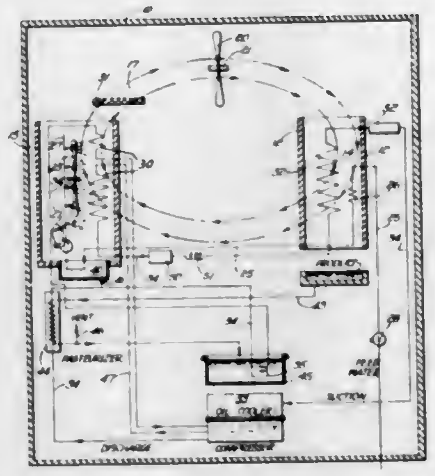


1. A plate type fuel element comprising an assembly of parallel fuel plates brazed at their longitudinal edges between side plates having leak testing grooves along the longitudinal edges of the fuel plates, the grooves being formed in the fuel material exposed between the cladding at the longitudinal edges of the fuel plates prior to brazing the fuel plates to the side plates.

3,311,542
METHOD OF MAKING SOLID TOTAL HYDROLYZATE OF STARCH
Ralph W. Kerr, 1858 Venetian Point Drive, Clearwater, Fla. 33515
No Drawing. Filed Feb. 19, 1965, Ser. No. 434,104
3 Claims. (Cl. 195—31)

1. A process for producing an edible, solid, highly converted, total hydrolyzate of starch having a D.E. not less than 98 and a true dextrose content not less than 96 percent, both values on an anhydrous basis, consisting of liquefying starch in aqueous media, hydrolyzing the liquefied starch with amyloglucosidase that has been substantially completely purified from transglucosidase, clarifying the hydrolyzate by filtration, decolorizing the filtrate by means of carbon, and, by heating, concentrating the clarified and decolorized total hydrolyzate of starch to a degree so that said total hydrolyzate is a solid when cooled to atmospheric temperatures, said highly converted, total hydrolyzate of starch being substantially non-hydroscopic and free from unpleasant taste and odors; and said amyloglucosidase purification consisting essentially of adding to an aqueous solution of the enzyme, an insoluble clarification agent that adsorbs substantially none of the amyloglucosidase, and precipitating the active, purified amyloglucosidase from the clarified solution with the addition of about one to two volumes of a water miscible solvent selected from the group consisting of isopropyl alcohol and acetone, said clarified solution of the enzyme being adjusted to a total concentration of soluble salts of between about 0.10 and 3.5 grams per 100 ml.

3,311,543
VAPOR COMPRESSION STILL FOR DISTILLING IMPURE WATER
Frederick A. Loebel, Milwaukee, Wis., assignor to Aqua-Chem, Inc., a corporation of Wisconsin
Filed May 15, 1963, Ser. No. 280,653
4 Claims. (Cl. 202—160)

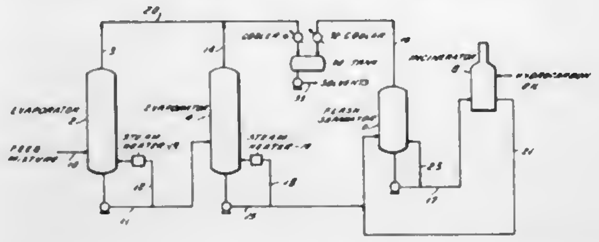


1. An apparatus for purifying water which comprises compressor means for compressing a refrigerant, means for circulating the compressed refrigerant into heat exchange with water to be purified in a water vaporization zone for heating the water, means for expanding said refrigerant after passage through the water vaporization zone, means for directing the expanded refrigerant in heat exchange with a water condensing zone for cooling the water condensing zone, means for recycling the expanded refrigerant to the compressor for recompression, means providing a current of air moving from the water vaporizing zone to the water condensing zone for vaporizing the water to be purified in the vaporizing zone, means for separating condensed product water from the condensing zone into at least two bodies, means directing compressed refrigerant through one of said bodies in heat exchange therewith for providing a body of hot water, means directing expanded refrigerant into heat exchange with the other of said bodies to cool said body and provide a body of cold water, an accumulator for storing refrigerant, and means comprising a series of solenoid actuated valves connected in circuitry with the compressor for selectively by-passing the respective heat exchangers associated with the respective bodies of hot and cold water, and means responsive to a preselected level and a preselected temperature of each of said two bodies to actuate the series of solenoid actuated valves.

3,311,544
PROCESS FOR THE PURIFICATION OF ETHYLENE GLYCOL BY TREATMENT WITH MAGNESIUM OXIDE AND WATER
Lothar Riehl, Grebben, Rhineland, and Erhard Siggel, Laudenbach am Main, Germany, assignors to Vereinigte Glanzstoff-Fabriken A.G., Wuppertal-Elberfeld, Germany
No Drawing. Filed Oct. 15, 1963, Ser. No. 316,429
Claims priority, application Germany, Oct. 18, 1962, V 23,155
5 Claims. (Cl. 203—36)

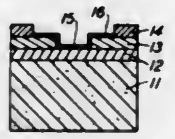
1. A process for the purification of a crude ethylene glycol liberated during the production of a polyester which comprises: adding to said glycol about 0.5 to 10% by weight of water and about 0.001 to 0.1% by weight of magnesium oxide, said percentages by weight being calculated with reference to the crude ethylene glycol; boiling said glycol under total reflux in the presence of said water and said magnesium oxide for a period of at least about 20 minutes; and thereafter distilling ethylene glycol from the refluxed mixture.

3,311,545
CONTACT OF HYDROXYL COMPOUND CONTAINING POLYMERIZATION CATALYST WITH HEATED HYDROCARBON OIL
Ray Richard Rasmussen, El Paso, Tex., assignor to El Paso Natural Gas Products Company, El Paso, Tex., a corporation of Texas
Filed June 27, 1963, Ser. No. 291,008
4 Claims. (Cl. 203—41)



1. In a method for deashing a solid polyolefin product containing solid metallic catalyst impurities, which comprises contacting said impure polyolefin product with a solvent comprising a hydroxyl-containing compound to extract said impurities, separating the thus treated solid polyolefin from the resulting solution containing the solvent and said impurities, and recovering the solvent from said solid impurities, the improvement which comprises concentrating said solution to about 45 to 60% by weight total solids by heating the solution to a temperature sufficient to volatilize a major proportion of said solvent, separating the volatilized solvent from the unvolatilized solution, contacting the unvolatilized solution with a hydrocarbon oil having a boiling point within the range of about 300° to 800° F. and which has been preheated to a temperature of about 300° to 700° F. to volatilize the remainder of the solvent, and separating the thus volatilized solvent from the hydrocarbon oil containing said solid impurities.

3,311,546
FABRICATION OF THIN FILM RESISTORS
Robert W. Berry, Berkeley Heights, and David A. McLean, Chatham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 12, 1963, Ser. No. 330,171
6 Claims. (Cl. 204—42)



1. A method for the fabrication of a metal film resistor having a short resistive path length which comprises the steps of depositing upon a non-conductive substrate (a) a first anodizable film-forming metal over a region encompassing and larger than the desired resistive path, (b) a second anodizable film-forming metal in intimate contact with said first anodizable film-forming metal over two discrete regions of such configuration that the spacing between said discrete regions equals in length the desired resistive path, and photoengraving and anodizing the resultant assembly to a specific predetermined resistive value.

3,311,547
ELECTRODEPOSITION OF A RHODIUM-INDIUM ALLOY
Reginald Robert Benham, Letchworth, England, assignor to Johnson Matthey & Company Limited, London, England, a British company
No Drawing. Filed Feb. 25, 1964, Ser. No. 347,119
17 Claims. (Cl. 204—43)

6. A method which comprises electrodepositing a non-brittle layer of a predominately rhodium-containing alloy upon a basis material from an aqueous electrolyte consisting essentially of from 8 to 12 g./l. of rhodium in the form of a water soluble compound thereof and from 0.01 to 1.0 g./l. of indium in the form of a water soluble compound thereof that is compatible with said rhodium compound at a current density of from 2.5 to 20 amps./sq. ft.

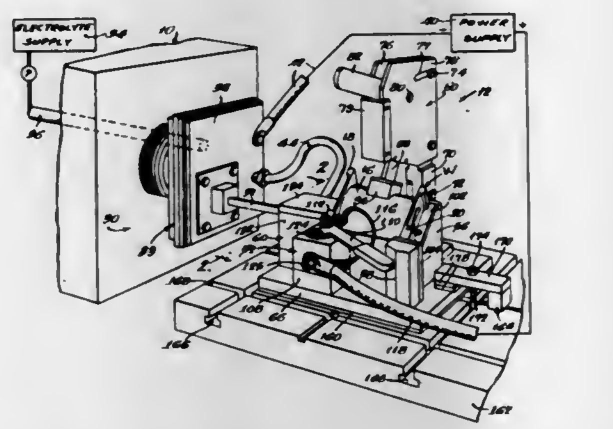
3,311,548
ELECTRODEPOSITION OF CHROMIUM
Henry Brown, Huntington Woods, and Edward A. Romanowski, Troy, Mich., assignors to The Udylite Corporation, Warren, Mich., a corporation of Delaware
No Drawing. Filed Feb. 20, 1964, Ser. No. 346,095
16 Claims. (Cl. 204—51)

1. A method of electrodepositing chromium which comprises electrolyzing an aqueous acidic hexavalent chromium plating solution containing a ratio of CrO_3 to sulfate ion greater than about 150 to 1 and less than about 400 to 1 and containing therein dissolved about 0.1 gram/liter to about 20 grams/liter of a dicarboxylic acid characterized by the following formula

$$HOOC—(CH_2)_x—COOH$$

where *x* is an integer from 1 to 8 inclusive.

3,311,549
ELECTROLYTIC SHAPING APPARATUS
Norbert A. Bruns, Palatine, Ill., assignor to Anocut Engineering Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 7, 1963, Ser. No. 249,639
3 Claims. (Cl. 204—224)

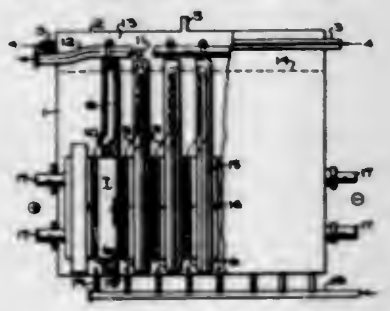


1. In an electrolytic shaping apparatus for electrolytically shaping an electrically conductive and electrochemically erodible workpiece by a movable electrode, the combination comprising, supporting blocks on which the workpiece is positioned, the workpiece being held in position on said supporting blocks by a clamping means, said clamping means including a clamping arm having a resilient pad on one end thereof adapted to engage the workpiece, said clamping arm being controlled by a handle associated therewith to lock said clamping arm in position and thereby hold the workpiece on said supporting blocks, means for holding a positive lead from an electric power supply against the workpiece, said holding means including a pivotal handle means having a copper braid conductor attached thereto and adapted to be pivoted to contact said conductor with the workpiece, said conductor being connected to a positive terminal of said power supply, and means to lock said handle means in place, whereby the conductor is firmly held in contact with the workpiece, whereby the workpiece is anodic with respect to the electrode during electrolytic shaping, electrode guide means for the electrode, including a passageway through which the electrode slides and is guided during

electrolytic shaping, said clamping means holding the workpiece so that the portion to be eroded is secured against said electrode guide means and closes one end of said electrode guide passageway, said electrode guide means including an electrolyte reservoir and means to direct electrolyte from said reservoir to said passageway and to and through a work gap between the electrode and the workpiece during electrolytic shaping, said supporting blocks, said clamping means and said electrode guide means being supported upon a work table, and insulating means to prevent electrical contact between said last mentioned means and said work table.

3,311,550
CELL FOR THE ELECTROLYSIS OF AQUEOUS SOLUTIONS OF HYDROGEN CHLORIDE

Robert Schoberle and Gerardus Nicolaas Stijnen, Roermond, Netherlands, assignors to Solvay & Cie, Brussels, Belgium
Filed Nov. 6, 1963, Ser. No. 321,766
Claims priority, application Netherlands, Nov. 29, 1962, 286,119
8 Claims. (Cl. 204—256)



1. A cell for the electrolysis of aqueous solutions of hydrogen chloride comprising (1) an electrically insulated trough of generally reinforced internal cross-sectional form transversally closed by a cover and in which are positioned, without any fixed attachment, a plurality of longitudinally positioned decomposition elements each comprising a bipolar graphite electrode grooved on both of its faces, the electrode being mounted in a frame provided with a diaphragm and in the upper part of it with a gas chamber connected through flexible conduits to a collector for evacuation of the gas formed between the inner side of the electrode and the diaphragm, the lower part of the frame immersed in the electrolyte being provided peripherally with a packing engaging the inside of the trough, (2) means for delivering aqueous hydrogen chloride solution to the decomposition elements, (3) means for evacuation of the gas generated on the outer side of the electrode and also of the diluted solution of hydrogen chloride, and (4) means for conducting to the cell the electric current necessary for electrolysis.

3,311,551
PROPANE TREATING OF TOP CRUDE TO PRODUCE ASPHALT AND GAS OIL

Joe Van Pool, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 11, 1964, Ser. No. 395,867
7 Claims. (Cl. 208—45)

1. A process for producing asphalt and gas oil from a topped crude oil of high wax content without centrifuging to remove wax which comprises the steps of:

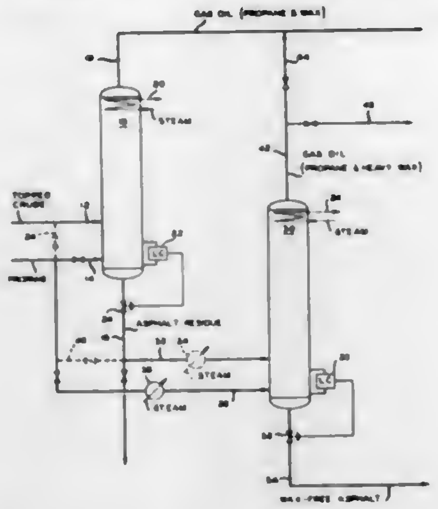
(a) treating said topped crude oil in a first propane deasphalting zone with about 3 to 10 volumes of propane per volume of crude oil at a temperature in the range of about 100 to 180° F.;

(b) recovering an overhead stream from the first zone of step (a) comprising propane and gas oil;

(c) recovering a bottoms stream from the first zone of step (a) comprising asphalt and propane;

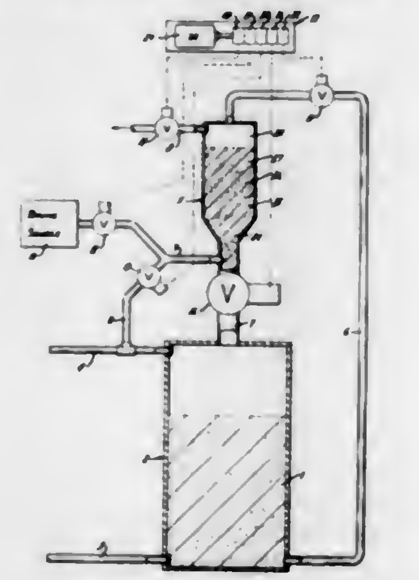
(d) adjusting the propane-asphalt ratio of the bottoms stream of step (c) to the range of 1:1 to 4:1 and passing the resulting stream to a second propane deasphalting zone maintained at a temperature in the range of about 150 to 200° F. and at least 20° F. above the average treating temperature in the first zone of (a) to produce an asphalt bottoms stream substantially free of wax and an overhead stream of propane and gas oil of improved gas oil quality; and

(e) separately recovering the bottoms stream and the overhead stream of step (d).



3,311,552
CONTINUOUS BRINE PULSING SOFTENER

William A. Staats, Torrance, Calif., assignor, by mesne assignments, to Culligan, Inc., North Brook, Ill., a corporation of Delaware
Filed Jan. 8, 1964, Ser. No. 336,481
6 Claims. (Cl. 210—33)



5. A method of regenerating ion exchange material utilized for the continuous softening of hard water passing through a bed of the ion exchange material, comprising the steps of periodically removing an increment of the ion exchange material from the bed to a regeneration chamber on top of previously removed increments of material, passing a brine solution through the previously removed increments and the newly removed increment of material as a continuous bed, subsequently passing a fresh water rinse through the increments of material in the regeneration chamber from the softening bed of material whereby each increment of material is subjected to a plurality of brine pulses separated by rinse pulses, and returning the lowermost increment to the ion exchange material bed.

3,311,553
DRILLING FLUID

Walter J. Weiss, Sugar Land, and John S. Brukner and Clarence O. Walker, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 5, 1964, Ser. No. 409,293
11 Claims. (Cl. 252—8.5)

1. An aqueous drilling fluid comprising an aqueous phase which is unsaturated with calcium hydroxide, said aqueous phase having dispersed therein an amount of solids above 10% by volume based on said drilling fluid and calcium sulfate dissolved therein to yield a calcium ion concentration of at least 200 parts per million by weight and containing from 0.25 to about 8 pounds per barrel of a water soluble chromate selected from the group consisting of alkali metal and ammonium, chromates, polychromates and mixtures thereof, said aqueous phase having a pH in the range of from about 8 to about 10.7, a filtrate alkalinity of less than about 0.5 cc. of 0.02 N sulfuric acid and a drilling fluid alkalinity of less than about 1 cc. of 0.02 N sulfuric acid, per 1 cc. of aqueous filtrate and per 1 cc. of aqueous drilling fluid, respectively, to phenolphthalein end point.

3,311,554
METHOD OF PREPARING W_2C CONTAINING A FINE DISPERSION OF CARBON

Hugh R. McCurdy and John R. Van Orsdel, Columbus, Ohio, assignors, by mesne assignments, to Hughes Tool Company, Houston, Tex., a corporation of Delaware
No Drawing. Filed Apr. 14, 1964, Ser. No. 359,790
7 Claims. (Cl. 252—12)

1. The method of converting monotungsten carbide to W_2C with dispersed carbon comprising the steps of compressing a charge of tungsten carbide powder to an ultrahigh pressure and heating the tungsten carbide powder to a molten condition while simultaneously subjecting said powder to a pressure in excess of 25 kilobars, the percentage of dispersed carbon in the resulting product being approximately that formed by the reaction

$$2WC=W_2C+C$$

3,311,555
METHOD FOR RUNNING-IN GEAR WHEELS AND AN AGENT THEREFOR

Klaus Ehrlenspiel and Klaus Michels, Munich, Germany, and Gustav Niemann, Flemingstrasse 39, Munich, Germany, and Dieter Reister, Munich Germany; said Ehrlenspiel, said Michels, and said Reister assignors to said Niemann
Filed Sept. 27, 1962, Ser. No. 226,506
Claims priority, application Germany, Sept. 29, 1961, N 20,615
11 Claims. (Cl. 252—31)

1. A running-in agent for metallic gears and the like, consisting essentially of a liquid selected from the group consisting of water and aqueous alcohol, having dissolved therein in an amount of from 0.1% by weight up to its maximum solubility in said liquid a compound selected from the group consisting of potassium bisulfate, calcium chloride, alkali metal salts of polyphosphoric acids, diammonium phosphate salt, borax, potassium iodate, chromic acid and alkali metal salts thereof, sodium acetate, potassium carbonate, colloidal sulfur, trichloromethyl-phosphoric acid, trichloromethyl-phosphoric acid diethyl ester, trichloromethyl-phosphoric acid dibutyl ester, chloroethyl phosphoric acid, di(chloroethyl) ester of chloroethyl phosphoric acid, trichloro-hydroxyethyl-phosphoric acid, di(isoamyl) ester of trichloro-hydroxyethyl-phosphoric acid, tritertiary butyl phosphite, zinc dithiophosphate, tributyl trithiophosphite and sodium pentochlorophenol, and also containing in an amount of from 0.1 to 95.0% by weight a substance selected from the group consisting of $H_3PO_4(MoO_2\cdot 4MoO_3)\cdot 4H_2O$, polyvinyl alcohol, polymerized ethylene oxide, sugar, glycerine and triethylene glycol.

3,311,556
COPOLYMERS OF ISOBUTENE AND 2-ALLYLOXYTETRAHYDROPYRAN

Cecil G. Brannen, Highland, and James A. Wuellner, Gary, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,726
9 Claims. (Cl. 252—32.7)

1. The copolymer consisting essentially of the copolymerization product of polymerizable monomers (A) isobutene and (B) 2-allyloxytetrahydropyran wherein the molar ratio of A:B is 1–100:1; said copolymer having a molecular weight from about 1000 to about 200,000.

8. A mineral lubricating oil containing about 2 weight percent of a hydrolyzed oil-soluble copolymer of claim 1 wherein the molar ratio of A:B is about 32:1, said copolymer having a molecular weight from about 60,000 to about 70,000.

9. The composition of claim 8 further including about 6 weight percent barium-containing P_2S_5-polybutene reaction product, about 1 weight percent dialkyldithiophosphate, and about 1 weight percent calcium petroleum sulfonate.

3,311,557
LUBRICANT FOR ROLLING METALS

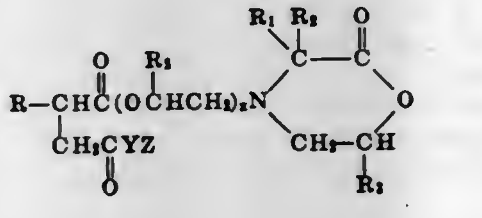
Knapel F. Schiermeier and Clark W. Judd, Alton, Ill., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 30, 1964, Ser. No. 414,869
12 Claims. (Cl. 252—34)

1. A soluble oil suitable for use in hot rolling non-ferrous metals which consists essentially of a major amount of a mineral lubricating oil having a viscosity index of at least 80 and a viscosity at 100° F. of from about 75 to about 250 SUS, from about 10% to about 30% by weight of fatty acid having from 12 to 30 carbon atoms, from about 2.0% to about 8.0% by weight of an alkylene polyol wherein the alkylene group has from 4 to 8 carbon atoms, and an ethanolamine in an amount to provide a ratio of the total base number—electrometric to total acid number—electrometric in the range from about 0.15 to 0.4.

3,311,558
N-ALKYLMORPHOLINONE ESTERS OF ALKENYLSUCCINIC ANHYDRIDES

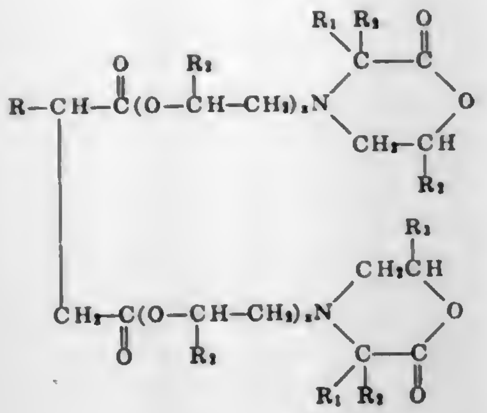
Charles J. Prizer, Moorestown, N.J., and William D. Emmons, Huntingdon Valley, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Nov. 24, 1964, Ser. No. 413,654
17 Claims. (Cl. 252—47.5)

1. A composition selected from the class consisting of



(I)

and



(II)

wherein R represents an alkenyl radical containing about 30 to 200 carbon atoms,

R_1, individually, is selected from the class consisting of hydrogen and alkyl of 1 to 8 carbon atoms,

R_2, individually, is selected from the class consisting of hydrogen, phenyl and alkyl of 1 to 8 carbon atoms,

R_1 and R_2, collectively, and including the carbon atom to which they are attached, represent a saturated ring of 5 to 7 carbon atoms, optionally containing alkyl substituents of 1 to 4 carbon atoms,

R_3 is selected from the class consisting of hydrogen and methyl,

Y is selected from the class consisting of oxygen and the group, NR_4,

R_4 is selected from the class consisting of hydrogen, alkyl of 1 to 24 carbon atoms, phenyl, alkylphenyl in which the alkyl substitution contains a total of 1 to 8 carbon atoms, naphthyl and phenylalkyl in which the alkyl contains 1 to 8 carbon atoms,

Z is selected from the class consisting of hydrogen, alkyl of 1 to 24 carbon atoms, optionally containing a group selected from the class consisting of thio, hydroxy and tertiary amino, phenyl, alkylphenyl in which the alkyl substitution contains a total of 1 to 8 carbon atoms, naphthyl and phenylalkyl in which the alkyl contains 1 to 8 carbon atoms, and

x represents a number from 1 to 7.

10. A composition selected from the class consisting of lubricating oils and normally liquid hydrocarbon fuels comprising having incorporated therein a minor amount sufficient to impart dispersancy of the composition of claim **1**.

3,311,559

OIL ADDITIVE

Edward H. Mottus, Ballwin, Mo., assignor to Monsanto Company, a corporation of Delaware

Original application Aug. 31, 1962, Ser. No. 224,883. Divided and this application May 12, 1966, Ser. No. 549,629

8 Claims. (Cl. 252—51.5)

1. A composition having good high temperature and dispersant characteristics comprising a major amount of mineral oil and a minor amount of an oil-soluble interpolymer having viscosity index improving and dispersant characteristics said interpolymer comprising a major amount at least sufficient to give an oil-soluble polymer of at least one oil-solubilizing mono-olefinic monomer and a minor amount at least sufficient to give dispersant characteristics of tetrahydrofurfuryl methacrylate.

5. A composition of claim **1** wherein the polymer has a minor amount of N-vinyl-2-pyrrolidone.

3,311,560

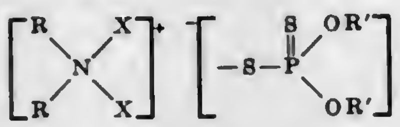
AUTOMATIC TRANSMISSION FLUIDS CONTAINING QUATERNARY AMMONIUM THIOPHOSPHATES

Bruce W. Hotten, Orinda, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Mar. 10, 1964, Ser. No. 350,665

4 Claims. (Cl. 252—75)

1. A power transmission fluid consisting essentially of a major portion of a mineral lubricating oil base and from 0.1% to 3.00% by weight of a quarternary ammonium salt of a diorgano dithiophosphoric acid, said salt being represented by the general formula



in which X is selected from the group consisting of ethyl and methyl radicals, R is selected from the group consisting of alkyl radicals having from 1 to 18 carbon atoms, benzyl radicals, alkylbenzyl radicals having from 8 to 25 carbon atoms, monohydroxyalkyl radicals having from 1 to 18 carbon atoms and mixtures thereof, and R' is selected from the group consisting of alkyl radicals having from 4 to 18 carbon atoms and alkylphenyl radicals having from 8 to 25 carbon atoms and mixtures thereof, said mineral lubricating oil base having a viscosity of from 50 to 400 SSU at 100° F. and containing minor portions of supplementary additives consisting essentially of

(A) from 1.0% to 15.0% by weight of a polymeric viscosity index improver selected from the group consisting of (1) an alkyl methacrylate-vinyl pyrrolidone copolymer having a molecular weight of about 300,000 and a nitrogen content of about 1% and in which the alkyl groups are mixed C_{12} and C_{18} radicals and (2) polymerized alkyl methacrylates having an average of 12 carbon atoms in the alkyl chain and a molecular weight of about 200,000,

(B) from 1.0% to 15% by weight of the reaction product of N-methylpiperazine with a quadripolymer comprised of monomeric constituents of dodecyl methacrylate, octadecyl methacrylate, polyethylene glycol methacrylate and glycidyl methacrylate in a molar ratio of about 33/17/1/1, wherein the polyethylene glycol has a molecular weight from 500 to 2500, and the molecular weight of the polymer is from 100,000 to 300,000,

(C) from 1.0% to 15% by weight of a rust preventative selected from the group consisting of pentaerythritol monoleate, calcium petroleum sulfonate and alkenyl succinic acids having a molecular weight of from 400 to 3000,

(D) from 0.1% to 1% by weight of an aromatic oxidation inhibitor selected from the group consisting of 2,6-di-(tert.butyl)-p - cresol, 4,4' - methylene-bis-(2-6-di-tert.butyl phenol), 2,5-di-(tert.butyl)-p-cresol, 2,6-(tert.butyl)phenol, phenyl-α-naphthylamine, bis-(octylphenyl)amine and phenothiazine,

(E) from 0.0008 to 0.1% by weight of a dimethyl silicone foam inhibitor.

3,311,561

WATER-IN-OIL EMULSIONS

Frank E. Anderson, Springfield, Robert H. Campbell, Brookhaven, and Samuel E. Jolly, Ridley Park, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,330

3 Claims. (Cl. 252—75)

1. An emulsion of water in petroleum oil suitable for use as a fire-resistant hydraulic fluid which consists essentially of 20 to 45 volumes of water and 55 to 80 volumes of petroleum oil containing 1.6 to 8 volume percent of glycerol moonester of fatty acid having 16 to 20 carbon atoms, 1.6 to 8 volume percent of polyoxyethylene sorbitan ester of fatty acid having 16 to 20 carbon atoms, said ester being the reaction product of 1 to 3 fatty acid molecules and 3 to 20 ethylene oxide molecules per molecule of sorbitan 0.08 to 4 volume percent of alkanolamine having the formula NRR'R" wherein R, R' and R" are selected from the group consisting of hydroxyalkyl containing 2 to 4 carbon atoms, hydrogen, lower alkyl, aminoethyl and phenyl provided that at least one of the radicals R, R' and R" is hydroxyalkyl, 0.16 to 8 volume percent of a salt of alkanolamine as defined above and an organic monocarboxylic acid having 12 to 26 carbon atoms and 0.16 to 8 volume percent of alkaline earth metal salt of sulfonic acid selected from the group consisting of alkyl benzene sulfonic acids having 8 to 16 carbon atoms in the alkyl group and oil-soluble petroleum sulfonic acids.

3,311,562

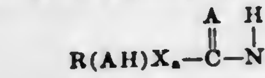
GERMICIDAL DETERGENT COMPOSITIONS CONTAINING AMIDES AND HALOGENATED AMIDES OF SULFUR-CONTAINING PHENOL CARBOXYLIC ACIDS

Herbert C. Stecker, Ho-Ho-Kus, N.J. 07423

No Drawing. Filed Feb. 17, 1964, Ser. No. 345,063

6 Claims. (Cl. 252—106)

1. A germicidal detergent composition consisting essentially of a detergent selected from the group consisting of anionic, cationic, non-ionic, and ampholytic, and about 0.01% to about 1.0%, by weight, of a sulfur-containing compound having the general formula:



$$R(AH)X_a{-}\overset{\overset{\displaystyle A}{\|}}{C}{-}\overset{\overset{\displaystyle H}{|}}{N}{-}RX_b$$

wherein:

R is an aromatic radical selected from the class consisting of phenyl and naphthyl groups,

A is an atom selected from the class consisting of oxygen and sulfur,

X is a halogen atom selected from the class consisting of fluorine, chlorine, bromine and iodine,

a is a numeral from 0 to 2, and

b is a numeral from 0 to 3.

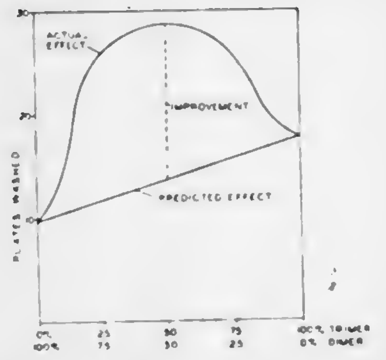
3,311,563

DETERGENT COMPOSITIONS

Gilbert J. McEwan, Webster Groves, Mo., assignor to Monsanto Company, a corporation of Delaware

Filed June 19, 1963, Ser. No. 288,976

4 Claims. (Cl. 252—161)



1. A detergent composition consisting essentially of a mixture of a first mono higher alkyl aromatic material having a single six-member aromatic nucleus selected from the group consisting of alkali metal mono hexene dimer alkylaromatic sulfonates and mono hexene dimer alkylaromatic sulfonic acids with a second mono higher alkyl aromatic material having a single six-member aromatic nucleus selected from the group consisting of alkali metal mono hexene trimer alkylaromatic sulfonates and mono hexene trimer alkylaromatic sulfonic acids, wherein the hexene dimer alkyl portion of said first mono higher alkylaromatic material is straight chain in character and has branching on from about 25 to about 50% of its α-carbon atoms and the hexene trimer alkyl portion of said second mono higher alkylaromatic material is straight chain in character and has branching on from about 5 to about 50% of its α-carbon atoms; the amount of said first mono higher alkyl aromatic material in said mixture being from about 20 to about 80 weight percent, based on the total weight of said mixture.

3,311,564

OXYLUMINESCENT COMPOSITIONS CONTAINING DEHYDRATING AGENTS

Edward T. Cline, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 1, 1965, Ser. No. 506,620

9 Claims. (Cl. 252—188.3)

1. An oxyluminescent composition comprising tetrakis-(disubstituted-amino)ethylene of the formula

$$(R_2N)_2C{=}C(NR_2)_2$$

wherein the R's can be the same or different and are selected from the group consisting of monovalent alkyl and cycloalkyl of up to 10 carbons, divalent alkylene joined to the other R attached to the same N to form a 3–5 membered monoaza heterocycle and divalent alkylene joined to an R attached to a second N to form a 3–7 membered diaza heterocycle, and from 2% to 200%, by weight of the tetrakis(disubstituted-amino)ethylene, of at least one member selected from the class consisting of a dehydrating agent inert to the tetrakis(disubstituted-amino)-ethylene and its oxidation products, an alkali metal hydroxide, an alkaline earth metal hydroxide, and a compound that reacts with water to form an alkali or alkaline earth metal hydroxide.

3,311,565

SINGLE SOLUTION DECONTAMINATION TREATMENT

Norman Michael, Corona del Mar, Calif., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 21, 1962, Ser. No. 225,354

6 Claims. (Cl. 252—301.1)

1. A method of decontaminating a metal surface coated with a radioactive scale which comprises flushing said surface continuously with a dilute aqueous solution consisting of ammonium bifluoride in a concentration of about 1% and a corrosion inhibitor selected from the group consisting of potassium acid phthalate, ammonium benzoate, ammonium salicylate, sodium benzoate, and sodium salicylate, said inhibitor being present in a concentration of about 0.5% to about 5%.

3,311,566

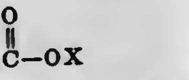
HALOGENATED CARBOXYLIC ACIDS

Murray Hauptschein, Glenside, and Maurice Miville, Flourtown, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 13, 1965, Ser. No. 495,720

9 Claims. (Cl. 252—356)

1. A mixture of fluorinated compounds having the general formula



$$ZC_nF_{2n}\overset{\overset{\displaystyle O}{\|}}{C}{-}OX$$

where Z is selected from the class consisting of fluorine and chlorine; where *n* is an integer from 6 to 13; where the fluoroalkyl group ZC_nF_{2n}— has a chain length of from 5 to 12 carbon atoms; and where X is selected from the class consisting of hydrogen, alkali metal, ammonium and lower alkyl substituted ammonium; said mixture containing from 55% to 90% by weight of at least one of said fluorinated compounds in which said fluoroalkyl group has a chain length of from 5 to 7 carbon atoms and not more than 8 carbon atoms in the fluoroalkyl group; and from 10% to 45% by weight of at least one of said fluorinated compounds in which the fluoroalkyl group has a chain length of from 9 to 12 carbon atoms.

3,311,567
CORROSION INHIBITOR COMPOSITION CONTAINING RESIN ALIAMIDE

Olen L. Riggs, Jr., Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,582

9 Claims. (Cl. 252—390)

1. A corrosion inhibitor solution composition consisting essentially of:

(a) an amide corresponding to the formula

R—CONH—R′

where R is an aliphatic hydrocarbon radical having from 7 to 23 carbon atoms and R′ is a stabilized rosin nucleus, said amide being present in an amount of about 0.1–5 weight percent,

(b) an oil soluble metal sulfonate selected from the group consisting of alkali metal alkyl sulfonate, alkaline earth metal alkyl sulfonate, alkali metal alkyl benzene sulfonate and alkaline earth metal alkyl benzene sulfonate, said sulfonate having a molecular weight of about 300–700 and being present in an amount of about 1–10 weight percent, and

(c) the remainder an oil carrier for said amide and said sulfonate, said carrier being selected from the class consisting of hydrocarbon oil, vegetable oil and animal oil.

3,311,568
METHOD FOR PRODUCTION OF CATALYST FOR HYDRATION OF OLEFINS TO ALCOHOLS

Mikhail Jakovlevich Klimenko, Moscow, U.S.S.R., assignor to Nauchno-Issledovatelsky Institute Sinteticheskikh Spirtov i Organicheskikh Produktov, Moscow, U.S.S.R.

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,663

5 Claims. (Cl. 252—435)

4. A method of producing a catalyst for hydration of olefins to alcohols comprising the steps of preliminary treatment of a porous siliceous material selected from the group of diatomite, kieselguhr, and diatomaceous earth, with a hot aqueous solution of an inorganic acid at temperatures ranging from about 40° C. to the boiling point of said solution for several hours and washing the resultant material with water, preparing a paste by mixing said treated siliceous material with bentonite clay added in amounts of 1 to 10% of the total dry weight of the mixture, and titanium dioxide added in amounts of 1 to 10% of the total dry weight of the mixture, molding said paste, calcining the resulting molded carrier at temperatures ranging from 1050 to 1350° C., and saturating said calcined carrier with a solution of phosphoric acid.

3,311,569
METHOD OF MAKING HALOGEN MODIFIED POLY(ALKYLENE OXIDE) RESINS

Keith L. Smith and Alfred E. Winslow, Charleston, Howard R. Guest, Scott Depot, and Ben W. Kiff, Ona, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 19, 1962, Ser. No. 231,853

7 Claims. (Cl. 260—2)

1. A process for reducing the reduced viscosity of a poly(lower-alkylene oxide) which comprises contacting a finely divided, resinous, poly(lower-alkylene oxide), selected from the group consisting of poly(ethylene oxide) and poly(propylene oxide), with a degrading agent, selected from the group consisting of halogen, alkali metal hypochlorite, and alkaline earth metal hypochlorite, to produce a solid poly(lower-alkylene oxide) having a halogen content of from about 0.1 to about 1.5 weight percent, based on the weight of said poly(lower-alkylene oxide), and a reduced viscosity of at least 1 when measured at a concentration of 0.2 gram of poly(lower-alkylene oxide) in 100 milliliters of acetonitrile at 30° C., said reduced viscosity being lower than that of the starting poly(lower-alkylene oxide).

3,311,570
POLYMERS AND COPOLYMERS OF 1,1,1-TRIHALO-3,4-EPOXYBUTANES

Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 27, 1964, Ser. No. 356,012

11 Claims. (Cl. 260—2)

1. As a new composition of matter, a solid, linear polymer of a 1,1,1-trihalo-3,4-epoxybutane selected from the group consisting of homopolymers thereof and copolymers thereof with at least one other epoxide wherein the epoxy group is an oxirane ring, at least one of said other epoxides being a halogen-containing epoxide.

3,311,571
INFUSIBLE SILAZANE POLYMER AND PROCESS FOR PRODUCING SAME

Robert E. Burks, Jr., Robert E. Lacey, and Charles L. Christy, Jr., all of Birmingham, Ala., assignors to Southern Research Institute, Birmingham, Ala., a corporation of Alabama

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,817

8 Claims. (Cl. 260—2)

1. The process of producing an infusible silazane polymer having improved thermal and chemical stability from diphenyldichlorosilane which comprises:

(a) reacting diphenyldichlorosilane in the presence of triethylamine with a nitrogen containing base selected from the group consisting of ammonia and methylamine to form a polymeric, non-crystalline reaction product, and

(b) heating said non-crystalline reaction product in a reaction zone open to the atmosphere at a temperature ranging from approximately 250° C. to 450° C. until the infusible polymer is formed.

6. A composition comprising an infusible silazane polymer resulting from heating in a reaction zone open to the atmosphere at a temperature ranging from approximately 250° C. to 450° C. until the infusible polymer is formed the polymeric, non-crystalline, low molecular weight, reaction product of diphenyldichlorosilane with a nitrogen containing base selected from the group consisting of ammonia and methylamine in the presence of triethylamine.

3,311,572
WEAKLY BASIC ANION EXCHANGE RESINS PREPARED FROM ACRYLONITRILE - POLYETHYLENICALLY UNSATURATED COMPOUNDS REACTED WITH DIAMINES AND PROCESS FOR MAKING SAME

Bayard T. Storey, Flourtown, Leon M. Miller, Chalfont, and William Fries, Philadelphia, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,724

11 Claims. (Cl. 260—2.1)

1. An insoluble anion exchange resin containing heterocyclic rings obtained by reacting

(A) a cross-linked copolymer formed by copolymerization of a nitrile-containing vinyl monomer and from 0.5% to 30% by weight of a polyvinyl monomer, which weight is based on the total weight of the polymerizable vinyl monomers, and

(B) a diamino compound selected from the group consisting of

$$R^1NHCR^2R^3CR^4R^5NH_2$$

and

$$R^1NHCR^2R^3CR^4R^5CR^6R^7NH_2$$

in which R^1, R^2, R^3, R^4, R^5, R^6 and R^7 are selected from the group consisting of hydrogen and lower alkyl radicals, the reaction being carried out with a minimum of one mole of amine per mole of cyano group in the polymer, the temperature of the reaction being at least about 105° C. when the method employed is simply to heat the copolymer and the amine until evolution of ammonia has substantially ceased, and being in the range of about 60° C. to 105° C. when the method employed is to first convert the cyano groups of the copolymer to imidate ester salt groups, by reaction under anhydrous conditions with strong mineral acid and an alcohol, and then react the imidate ester salt groups with the amine.

5. An insoluble anion exchange resin containing heterocyclic rings obtained by reacting:

(A) a cross-linked copolymer prepared from a monoethylenically unsaturated monomer which contains a cyano group selected from the group consisting of acrylonitrile, methacrylonitrile, vinylidene cyanide, 1-cyanomethyl, 1-cyanoethyl, 1-cyanopropyl, 2-cyanopropyl, 1-cyanobutyl, 2-cyanobutyl,3-cyanoethyl, 1-cyanopropyl, 2-cyanopropyl, 1-cyanobutyl, 2-cyanobutyl, 3-cyanobutyl acrylates and methacrylates; the corresponding N-cyanoalkyl acrylamides and methacrylamides; α-ortho-, meta-, and para-cyanostyrene; 1-cyanobutadiene and 2-cyanobutadiene; the methyl, ethyl, propyl, and butyl esters of α-cyanoacrylic acid; and the N-cyanoalkyl esters of α-cyanoacrylic acid, and a polyethylenically unsaturated compound selected from the group consisting of metadivinylbenzene, paradivinylbenzene, mixtures of these isomers, 1,3,5-trivinylbenzene, 1,2,4-trivinylbenzene, trivinoxypropane, the isomeric divinyl xylenes, divinyl toluenes, and divinylnaphthalenes, N,N′-methylene bisacrylamide, N,N′-methylene bismethacrylamide, and N,N′-divinylethylene urea with

(B) a diamino compound selected from the group consisting of

$$R^1NHCR^2R^3CR^4R^5NH_2$$

and

$$R^1NHCR^2R^3CR^4R^5CR^6R^7NH_2$$

in which R^1, R^2, R^3, R^4, R^5, R^6 and R^7 are selected from the group consisting of hydrogen and lower alkyl radicals, the reaction being carried out with a minimum of one mole of amine per mole of cyano group in the polymer, the temperature of the reaction being at least about 105° C. when the method employed is simply to heat the copolymer and the amine until evolution of ammonia has substantially ceased, and being in the range of about 60° C. to 105° C. when the method employed is to first convert the cyano groups of the copolymer to imidate ester salt groups, by reaction under anhydrous conditions with strong mineral acid and an alcohol, and then react the imidate ester salt groups with the amine.

3,311,573
FOAMING COMPOSITIONS

Neil Bonnette Graham and James David Murdock, St. Hilaire, Quebec, Canada, assignors to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

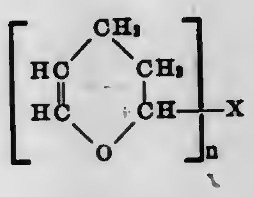
No Drawing. Filed Apr. 23, 1963, Ser. No. 274,908

Claims priority, application Great Britain, Nov. 27, 1962, 44,863/62, 44,865/62, 44,867/62; Feb. 5, 1963, 4,724/63, 4,726/63, 4,728/63

15 Claims. (Cl. 260—2.5)

1. A foamed cellular polymeric material which is reaction product of a foamable composition comprising

(A) at least one polymerizable cyclic vinyl ether of the generic formula



wherein *n* is an integer having a value of at least two and X is a linking group having a valence equal to *n*;

(B) a material reactive with the ethylenic double bonds of said vinyl ether and selected from the group consisting of

(BB) compatible phenolic compounds;

(BC) compatible epoxidized materials containing at least one epoxide group per molecule; and

(BD) mixtures of (BB) and (BC);

(C) an acidic catalyst capable of promoting the polymerizing reaction between (A) and (B) and selected from the group consisting of strong proton-donating acids and Lewis acids; and

(D) a foaming agent vaporizing at the temperature of reaction of (A) with (B).

3,311,574
FOAMING COMPOSITIONS

William David Samuel Bowering, St. Lambert, and Neil Bonnette Graham, St. Hilaire, Quebec, Canada, assignors to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

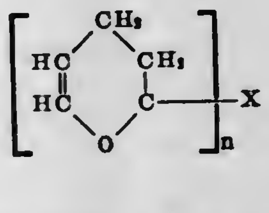
No Drawing. Filed Apr. 23, 1963, Ser. No. 274,950

Claims priority, application Great Britain, Apr. 25, 1962, 15,812/62

15 Claims. (Cl. 260—2.5)

1. A foamed cellular polymeric material which is the reaction product of a foamable composition comprising:

(A) at least one polymerizable cyclic vinyl ether of the generic formula



wherein *n* is an integer having a value of at least two, R is a member selected from the group consisting of the hydrogen atom and the carboxaldehyde radical, and X is a linking group having a valence equal to *n*;

(B) an acidic catalyst capable of promoting the polymerization of said vinyl ether and selected from the group consisting of strong proton-donating acids and Lewis acids; and

(C) a foaming agent vaporizing at the temperature of polymerization of said vinyl ether.

3,311,575

FOAMING COMPOSITIONS

Neil Bonnette Graham, St. Hilaire, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

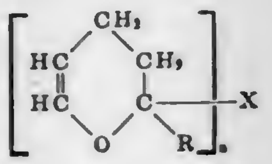
No Drawing. Filed Apr. 23, 1963, Ser. No. 274,953

Claims priority, application Great Britain, Nov. 27, 1962, 44,864/62, 44,866/62; Feb. 5, 1963, 4,725/63, 4,727/63

9 Claims. (Cl. 260—2.5)

1. A foamed cellular polymeric material which is the reaction product of a foamable composition comprising

(A) at least one polymerizable cyclic vinyl ether of the generic formula



wherein *n* is an integer having a value of at least two, R is a member selected from the group consisting of the hydrogen atom and the carboxaldehyde radical, and X is a linking group having a valence equal to *n*;

(B) a material reactive with the ethylenic double bonds of said vinyl ether and selected from the group consisting of

  (BB) compatible aliphatic monohydric and polyhydric alcoholic compounds;

  (BC) mixtures of (BB) with compatible phenolic compounds;

  (BD) mixtures of (BB) with compatible epoxidized materials containing at least one epoxide group per molecule; and

  (BE) compatible polycarboxylic acids;

(C) an acidic catalyst capable of promoting the polymerizing reaction between (A) and (B) and selected from the group consisting of strong proton-donating acids and Lewis acids; and

(D) a foaming agent vaporizing at the temperature of reaction of (A) with (B).

3,311,576

PROCESS AND COMPOSITIONS FOR STIFFENING TEXTILES

Gunter Tauber, Dusseldorf-Reisholz, and Manfred Dohr and Joachim Gallnke, Dusseldorf-Holthausen, Germany, assignors to Henkel & Cie, G.m.b.H., Dusseldorf-Holthausen, Germany

No Drawing. Filed May 2, 1963, Ser. No. 277,434

Claims priority, application Germany, Apr. 11, 1963, H 48,821

17 Claims. (Cl. 260—17)

1. Process for providing a stiffening finish to textiles wherein the finish is stable against neutral washing agent solutions but soluble in alkaline washing agent solutions, which comprises treating said textile with aqueous dispersions of copolymers containing free carboxyl groups prepared from vinyl esters of alkanoic acids of 2 to 4 carbon atoms and copolymerizable carboxylic acids having from one to two carboxyl groups in the molecule, said dispersions having been prepared in the presence of protective colloids selected from the group consisting of water-soluble copolymers of acrylamide with N-alkyl acrylamides having from 2 to 6 carbon atoms in the alkyl radical and water-soluble hydroxyethyl cellulose in an amount from about 0.5 to 7% by weight, which is substantially free of reactive vinyl alcohol groups.

3,311,577

UNDERWATER CONTACT LENS SOLUTION

Billy F. Rankin, Rockville, Md., assignor to Burton Parsons Chemicals, Inc., Washington, D.C., a corporation of Delaware

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,693

11 Claims. (Cl. 260—17)

4. An eye compatible composition suitable for use with contact lenses consisting essentially of a water base containing a cellulosic derivative selected from the group consisting of methyl cellulose, carboxy methyl cellulose, propyl methyl cellulose, hydroxy ethyl cellulose, and hydroxy propyl cellulose; from .25 to 4% unsubstituted polyalkylene glycol; a combination of alkali metal mono and dibasic buffers to provide a pH of from about 7.4 and 8.2 and a viscosity of between about 3000 and 30,000 cps. when measured by a Brookfield viscosimeter at 20° C. with a #6 spindle at 10 r.p.m.

3,311,578

PROCESS FOR PREPARING IMPROVED HIGHLY POLYMERIC CRYSTALLINE THERMOPLASTIC POLYESTERS

Thomas M. Laakso, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 4, 1964, Ser. No. 364,772

8 Claims. (Cl. 260—22)

1. A process for preparing highly polymeric, crystalline polyesters that are characterized by having relatively wide spreads in their melting and recrystallization temperatures and having the ability to remain tacky for substantial periods after being heated to their melting temperatures, which comprises the steps (1) heating at about atmospheric pressure a bifunctional dicarboxylic acid of 2–40 carbon atoms with a bifunctional dihydroxy compound of 2–20 carbon atoms, in the proportions of substantially greater than 1 mole of the said dihydroxy compound per mole of the said acid, at about 190–250° C., in the presence of strontium oxide in an amount of up to about 1% based on the total weight of said acid and said dihydroxy compound, until substantially all of the water that can be formed in the reaction at about atmospheric pressure has been removed, and (2) adding a titanium alkoxide in an amount of up to about 1% based on the total weight of said acid and said dihydroxy compound, each alkoxide group of said titanium alkoxide having 1–8 carbon atoms, and continuing heating the reaction mixture under high vacuum until the said polyester product has formed.

3,311,579

WATER SOLUBLE AND INSOLUBLE EMULSIFIER MIXTURE FOR VINYL POLYMERS

Frank J. Donat, Cleveland, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 6, 1963, Ser. No. 256,537

10 Claims. (Cl. 260—23)

1. The process comprising initiating a polymerization of at least one vinyl monomer in an aqueous medium in admixture with a water-insoluble soap as the sole emulsifier and subsequently adding at 1 to 50% conversion a water-soluble emulsifier in an amount sufficient to stabilize the existing polymer particles but substantially insufficient to cause the nucleation of any new particles while the polymerization is still progressing to produce a stable, uniform sized particle emulsion.

3,311,580

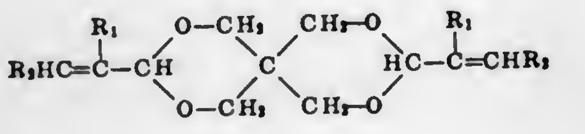
COATING COMPOSITIONS COMPRISING DIALLYLIDENE ACETAL-FATTY ACID PARTIAL ESTER-POLYOL REACTION PRODUCTS

Norman C. MacArthur, Avondale, Pa., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Apr. 3, 1964, Ser. No. 357,292

8 Claims. (Cl. 260—23.5)

1. A composition comprising the reaction product of a diallylidene acetal having the general formula:



wherein R_1 is a substituent selected from the group consisting of hydrogen, alkyl having from 1 to 6 carbon atoms, phenyl, and halogen radicals and R_2 is a substituent selected from the group consisting of hydrogen and methyl radicals with aliphatic alcoholic hydroxyl-containing reactants having a stoichiometric equivalence with respect to hydroxyl groups substantially about 2, at least one of said reactants being a drying oil fatty acid partial ester of a polyhydroxy alcohol having at least one free hydroxyl group per molecule of said partial ester, said reaction product having been prepared in the presence of an acid catalyst in an inert atmosphere at elevated temperature wherein the reaction was terminated short of the gel point by removing the acid catalyst.

3,311,581

ADHESIVE COMPOSITION COMPRISING A POLYMER OF A CARBOXYLIC ACID ESTER, POLYVINYL ALCOHOL, AND AN AMINOPLAST

Andrew E. Pink, 15 Winsor Lane, Topsfield, Mass. 01983, now by change of name Andrew Earl Pierce

No Drawing. Filed June 22, 1964, Ser. No. 377,061

7 Claims. (Cl. 260—29.4)

1. An adhesive comprising an aqueous dispersion of a polymer selected from the group consisting of polyvinyl acetate, propionate, butyrate and poly C_1–C_8 alkyl esters of alpha unsaturated aliphatic acids containing not more than 6 carbon atoms per molecule of the monomeric ester, polyvinyl alcohol, an aminoplast resin selected from a group consisting of urea formaldehyde, melamine formaldehyde, guanidine formaldehyde, and dicyandiamide formaldehyde, and an agent that in contact with said resin causes curing of the adhesive when in the dried film form, said agent being an amine salt in combination with a metal salt that in water is acidic, the proportion of said polymer being in the range of between about 15–50 parts, the proportion of said alcohol being in the range of between about .5–15 parts, the proportion of said aminoplast resin being in the range of between about .2–3 parts, the proportion of said amine salt being in the range of between 1–10 parts, the proportion of said metal salt being in the range between about 1–10 parts and the proportion of water being sufficient to make 100 parts total.

3,311,582

DELUSTERING COMPOSITIONS AND METHOD OF DELUSTERING FABRICS

Peter G. Sparks, Philadelphia, and Hugo A. Alps, Huntingdon Valley, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed June 24, 1964, Ser. No. 377,497

11 Claims. (Cl. 260—29.4)

7. A composition adapted to deluster glossy substrates to which it is applied comprising an aqueous dispersion containing about ½ to 45% by weight of an emulsion copolymer of 70 to 97% by weight of at least one monomer selected from the group consisting of methyl methacrylate, styrene, and vinyltoluene, 0 to 10% by weight of an ester of acrylic acid or methacrylic acid other than methyl methacrylate, and about 3 to 20% by weight of a copolymerizable non-conjugated polyethylenically unsaturated comonomer, the average particle size of the dispersed copolymer being from about 0.1 to about 0.5 micron, and about ½ to 15% by weight of a linear binder polymer having an apparent second order transition temperature of not over about 30° C. and containing polymmerized therein about 1 to 25% by weight of an acrylamide, and a water-soluble melamine-formaldehyde condensate.

3,311,583

TERPOLYMER ACRYLATES-ACRYLIC ACID-HYDROXYALKYL ESTERS OF ACRYLIC ACID

Charles R. Bearden, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 6, 1963, Ser. No. 321,738

20 Claims. (Cl. 260—29.6)

1. A composition comprising a solution of an interpolymer consisting of (1) from 10 to 40 weight percent of an organic acid selected from the group consisting of acrylic acid and methacrylic acid, (2) from 10 to 65 weight percent of at least one monoethylenically unsaturated monomer selected from the group consisting of (a) an ester of said acids and a saturated aliphatic alcohol having from 1 to 8 carbon atoms in the molecule and (b) a monovinyl aromatic hydrocarbon, and (3) from 15 to 70 weight percent of at least one hydroxyalkyl ester selected from the group consisting of hydroxyalkyl esters of acrylic and methacrylic acids, which ester has from 2 to 4 carbon atoms in the hydroxyalkyl radical, the proportions of said ingredients being within the lines ABCDEFG of the trilinear diagram of drawing, and said interpolymer being soluble in a solvent selected from the group consisting of water, aliphatic alcohols containing from one to four carbons and mixtures of water and said alcohols.

3,311,584

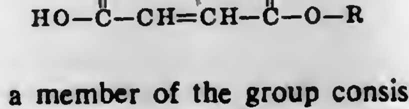
INTERPOLYMERS OF VINYLIDENE AROMATIC, BUTADIENE AND HALF ESTER OF MALEIC ACID

Robert L. Zimmerman, Midland, Mich., and George B. Sterling, Mogadore, Ohio, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Mar. 2, 1964, Ser. No. 348,699

8 Claims. (Cl. 260—29.7)

1. An interpolymer containing in chemically combined form from 24 to 77 percent by weight of at least one vinylidene aromatic compound, from 5 to 30 percent by weight of butadiene and from 15 to 51.5 percent by weight of at least one monoester of maleic acid having the general formula



$$HO-\overset{O}{\overset{\|}{C}}-CH=CH-\overset{O}{\overset{\|}{C}}-O-R$$

wherein R is a member of the group consisting of alkyl radicals containing from 2 to 18 carbon atoms and oxyethylene radicals of the formula $—(C_2H_4O)_xR'$ wherein R' is a member of the group consisting of alkyl radicals containing from 1 to 8 carbon atoms and radicals of the formula $R''—C_6H_4—$ wherein R'' represents an alkyl radical containing from 9 to 15 carbon atoms and *x* is an integer from 1 to 6, and within the area defined by the lines ABCD of the drawing.

3,311,585

FIRE-RESISTANT REFLECTIVE COATINGS OF FIBROUS POTASSIUM TITANATE, COLLOIDAL SILICA AND ELASTOMERIC LATEX

Frank E. Edlin, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 27, 1964, Ser. No. 414,413

6 Claims. (Cl. 260—29.7)

1. An aqueous composition comprising 25 to 35 parts by weight of a water-insoluble fibrous potassium titanate pigment having a length to diameter ratio of from 10:1 to 100:1 and a diameter of less than 0.6 micron, sufficient colloidal silica aquasol in which the silica particles have an average ultimate particle size of 5 to 15 millimicrons to give 25 to 35 parts by weight dry basis of colloidal silica, and 1 to 3.5 parts by weight of a latex-type elastomer selected from the group of polymers consisting of chlorinated butadiene, chlorosulfonated polyethylene, fluoroelastomers, and urethane rubbers.

3,311,586

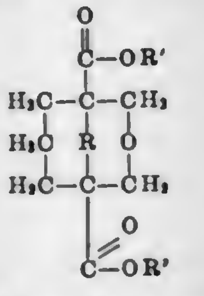
ESTERS OF DIBASIC BICYCLIC ACIDS AND USE AS PLASTICIZERS

John F. Olin, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Nov. 20, 1959, Ser. No. 854,260. Divided and this application July 15, 1963, Ser. No. 295,200

6 Claims. (Cl. 260—30.4)

6. A resinous composition comprising a major amount of a vinyl chloride polymer plasticized with a plasticizing amount of an ester having the formula



wherein R is selected from the group consisting of carbonyl and hydroxymethylidyne radicals and R′ is selected from the group consisting of alkyl, cycloalkyl, (alkyl) cycloalkyl, and aralkyl radicals.

3,311,587

POLYPHENYLENE OXIDES EXTENDED WITH ELEMENTAL SULFUR

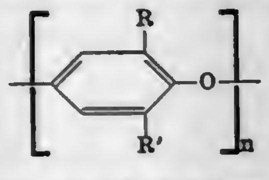
Daniel W. Fox, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,758

7 Claims. (Cl. 260—37)

1. A polyphenylene oxide polymeric composition comprising

(a) a polyphenylene oxide having the general formula:



where R is a member selected from the group consisting of hydrogen, hydrocarbon radicals, halohydrocarbon radicals having at least two carbon atoms between the halogen atom and the phenol nucleus, hydrocarbonoxy radicals, and halohydrocarbonoxy radicals having at least two carbon atoms between the halogen atom and phenol nucleus; and R′ is the same as R and in addition, halogen; and *n* is a whole integer of at least 100; and

(b) from 1–25% by weight elemental sulfur.

3,311,588

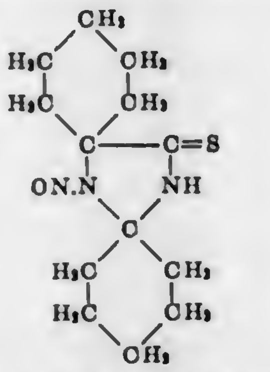
7-NITROSO IMIDAZOLIDINE THIONES AS STABILIZERS FOR DIENE ELASTOMERS AND THEIR VULCANIZATES

Wendell S. Cook, Canal Fulton, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Original application Aug. 11, 1964, Ser. No. 388,943, now Patent No. 3,275,650, dated Sept. 27, 1966. Divided and this application June 9, 1965, Ser. No. 462,722

9 Claims. (Cl. 260—45.8)

5. A product of the class consisting of conjugated hydrocarbon diene elastomer emulsion polymers and vulcanizates thereof stabilized with an imidazolidine derivative of the class consisting of the compound having the formula



and lower alkyl derivatives thereof substituted on methylene groups which are connected to two other methylene groups.

3,311,589

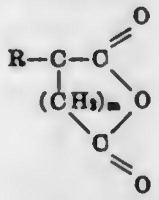
EPOXY RESIN COMPOSITIONS CURED WITH REACTION PRODUCTS OF DICARBOXYLIC ANHYDRIDES, ALIPHATIC DIOLS AND TERTIARY AMINES

Leo S. Kohn, Schenectady, N.Y., and John J. Keane, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 20, 1962, Ser. No. 246,009

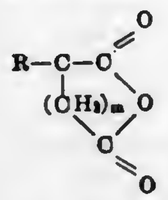
7 Claims. (Cl. 260—47)

1. A composition of matter comprising the heat reaction product of (1) a complex epoxide resin containing an average of more than one epoxide group per molecule and comprising the reaction product of 2,2-bis-(4-hydroxyphenyl)-propane and epihalohydrin, said epoxide resin having an epoxide equivalent of about 170 to 200 and up to 0.2 hydroxyl group per molecule, (2) a curing agent for said epoxy resin comprising the heat reaction product at temperatures of up to about 120° C. of (a) two moles of anhydride having the formula



where R is selected from H and methyl groups, and *m* is an integer up to 2, and (b) one mole of diol containing only terminal hydroxyl groups and having up to about 12 carbon atoms and (3) tertiary amine, said curing agent being present in an amount to provide from about 0.85 to 1 acid equivalent per equivalent of epoxide, said amine being present in the amount of from about 0.25 to 2 percent by weight based on the weight of said epoxide resin.

3. A composition of matter comprising the heat reaction product of (1) a complex epoxide resin containing an average of more than one epoxide group per molecule and comprising the reaction product of 2,2-bis-(4-hydroxyphenyl)-propane and epihalohydrin, said epoxide resin having an epoxide equivalent of about 170 to 200 and up to 0.2 hydroxyl group per molecule, (2) a curing agent for said epoxy resin comprising the heat reaction product at temperatures of up to about 120° C. of (a) two moles of anhydride having the formula



where R is selected from H and methyl groups, and *m* is an integer up to 2, and (b) one mole of diol containing only terminal hydroxyl groups having up to about 12 carbon atoms and containing at least one tertiary amino group.

3,311,590

EPOXY RESIN HAVING HIGH DIELECTRIC LOSS FACTOR

Christian A. Weber, Dale D. Rogers, and Paul C. Woodland, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 20, 1963, Ser. No. 310,453

8 Claims. (Cl. 260—47)

1. A thermosettable epoxy resin characterized by a high dielectric loss factor comprising an equimolecular mixture of a diglycidyl ether of thiobisphenol and a hardening agent comprising the adduct of an aliphatic polyamine and a diglycidyl ether.

3,311,591

PROCESS FOR THE PRODUCTION OF HIGH MOLECULAR WEIGHT POLYOXYMETHYLENES

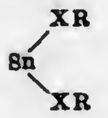
Kuno Wagner and Ernst-Ulrich Köcher, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Sept. 25, 1963, Ser. No. 311,310

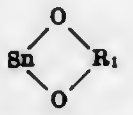
Claims priority, application Germany, Oct. 13, 1962, F 38,027

4 Claims. (Cl. 260—67)

1. A process for the production of high molecular weight polyoxymethylene which comprises polymerizing monomeric gaseous formaldehyde containing 0.5 to 3.0% by weight of water in the presence of a catalytic amount of a compound of the formulae:



and



wherein R is a phenyl radical, R_1 is a 1,2-phenylene radical, and X is selected from the group consisting of —O— and —S— at temperatures of about −20 to 120° C. and recovering resulting high molecular weight polyoxymethylene.

3,311,592

PROCESS FOR THE PRODUCTION OF HIGH MOLECULAR WEIGHT POLYOXYMETHYLENES

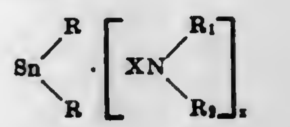
Kuno Wagner and Ernst-Ulrich Köcher, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Sept. 25, 1963, Ser. No. 311,329

Claims priority, application Germany, Oct. 13, 1962, F 38,029

4 Claims. (Cl. 260—67)

1. A process for the preparation of high molecular weight polyoxymethylene which comprises polymerizing monomeric gaseous formaldehyde containing 0.5 to 3.0% by weight of water in the presence of a catalytic amount of a compound of the formula:



wherein R is selected from the group consisting of an organic carboxylic acid radical containing from 2 up to 8 carbon atoms, a dithiocarbamic acid radical, hydroxyl, a mercapto group, cyanide, thiocyanate and cyanate, X is selected from the group consisting of hydrogen and alkoxy methylene, R_1 is selected from the group consisting of alkyl containing from 1 up to 18 carbon atoms, aryl and alkoxy methylene, R_2 is selected from the group consisting of alkyl containing from 1 up to 18 carbon atoms, aryl, a carbamide group and a thiocarbamide group and *x* is a whole number from 1 to 10.

3,311,593

POLYURETHANE SOLID PROPELLANTS PREPARED FROM AN ORGANOBORON ISOCYANATE AND A CARBORANE ALCOHOL

Theodore L. Heying, North Haven, Conn., Joyce Ann Reid, Highland Park, N.J., and Samuel I. Trotz, Orange, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Dec. 1, 1964, Ser. No. 415,863

8 Claims. (Cl. 260—77.5)

1. A process for the preparation of a urethane which comprises (A) reacting, in the presence of an inert organic solvent, an azide of the formula:

$$MN_3$$

wherein M is an alkali metal selected from the group consisting of sodium, lithium and potassium, with a compound of the formula:

$$B_{10}H_{10}(CR^bCR^c)$$

wherein R^b and R^c are each selected from the group consisting of hydrogen and —COX, wherein X is selected from the group consisting of chlorine, bromine, and iodine, and with the proviso that at least one of R^b and R^c is —COX, to form an alkali metal halide and an organoboron isocyanate, (B) removing the said alkali metal halide from the reaction mixture, (C) reacting the said organoboron isocyanate with a carborane alcohol of the formula:

$$B_{10}H_{10}(CR^fCR^g)$$

wherein R^f and R^g are selected from the group consisting of hydrogen and —R^hOH, wherein R^h is a saturated bivalent hydrocarbon radical of from 1 to 5 carbon atoms, and with the proviso that at least one of R^f and R^g is —R^hOH, to yield a urethane product, and (D) recovering the said urethane product from the reaction mixture.

3,311,594

METHOD OF MAKING ACID-STABILIZED, BASE REACTIVATABLE AMINO-TYPE EPICHLOROHYDRIN WET-STRENGTH RESINS

Ralph H. Earle, Jr., Claymont, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Feb. 25, 1966, Ser. No. 529,936

15 Claims. (Cl. 260—77.5)

1. The method of making an acid-stabilized, base reactivatable resin which comprises

(1) reacting a polyamine having at least three amino groups, at least one of which is a tertiary amino

group, with a material selected from the group consisting of

- (a) a dicarboxylic acid selected from the group consisting of diglycolic acid and C_3–C_{10} saturated aliphatic dicarboxylic acids in a mole ratio of polyamine to dicarboxylic acid of from about 0.8:1 to about 1.4:1 to form an amino-polyamide containing free amino groups, at least 70% of which are tertiary amino groups, and
- (b) a material selected from the group consisting of urea and thiourea in a mole ratio of the former to the latter from about 0.7:1 to about 1.5:1 to form a material selected from the group consisting of a polyaminoureylene and a polyaminothioureylene containing free amino groups, at least 70% of which are tertiary amino groups,

(2) reacting the material selected from the group consisting of the aminopolyamide, the polyaminoureylene and the polyaminothioureylene with epichlorohydrin in a mole ratio of epichlorohydrin to free amino groups of the aminopolyamide of from about 0.8:1 to about 2.0:1 and of the polyaminoureylene and polyaminothioureylene of from about 1.0:1 to about 1.7:1 to form an aqueous solution of a cationic thermosetting resin containing epoxide groups and chloride ions and then

(3) reacting the resin, in aqueous solution, with from about 0.3 equivalent to about 1.2 equivalents per equivalent of epichlorohydrin, of a water-soluble acid until the epoxide groups are converted substantially to the corresponding halohydrin groups.

3,311,595

PROCESS FOR THE MANUFACTURE OF LOW MOLECULAR WEIGHT HOMO- AND CO-POLYMERS OF VINYL ESTERS

Karl-Heinz Kahrs and Werner Ehmann, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a German corporation

No Drawing. Filed Oct. 23, 1962, Ser. No. 232,570

Claims priority, application Germany, Oct. 27, 1961, F 35,228

13 Claims. (Cl. 260—78.5)

1. A process for the manufacture of a low molecular weight polymer from a preselected total amount of (A) monomer consisting essentially of 50 to 100 parts by weight of a vinyl ester monomer of a monovalent, saturated aliphatic acid of 1 to 18 carbon atoms or a vinyl ester monomer of benzoic acid or a lower alkyl-substituted benzoic acid, and (B) 0 to 50 parts by weight of a comonomer selected from the group consisting of crotonic acid, an ester of maleic acid or fumaric acid and a monohydric, saturated aliphatic alcohol or 1 to 10 carbon atoms, or a combination thereof, which comprises (1) prepolymerizing in a vessel 5 to 50 parts by weight of said total amount of monomer or said monomer and comonomer at a temperature of 40 to 95° C. with a free radical polymerization catalyst and in a 3 to 8 carbon secondary aliphatic alcohol or mixture thereof with up to 50% by weight water as solvent, the solvent being present in an amount of 1 to 50% by weight of the total solvent-monomer mixture, and (2) adding the remainder of said total amount of monomer or said monomer and comonomer to said vessel and completing polymerization of the total monomer added to said vessel in the initial solvent in said vessel.

3,311,596

PROCESS FOR THE PRODUCTION OF POLYMERS OF α-OLEFINS

Christoph Berding, Ludwigshafen (Rhine), Hermann Pankraz Hofmann, Frankenthal, Pfalz, Ernst-Guenther Kastning, Assenheim, Pfalz, Nikolaus von Kutepow, Karlsruhe-Ruppurr, Herbert Naarmann, Ludwigshafen (Rhine), and Hermann Reis, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Apr. 19, 1963, Ser. No. 274,346

Claims priority, application Germany, Apr. 21, 1962, B 66,939; June 28, 1962, B 67,848

14 Claims. (Cl. 260—78.5)

1. A process for the production of a polymer of an α-olefine which comprises contacting an α-olefine with 2 to 10 carbon atoms and 1 to 2 olefinic double bonds with a single active catalyst consisting of at least one metal chelate compound of

- (A) a metal selected from the class consisting of metals of Groups IVB, VB, VIB, VIIB and VIII of the periodic system, and
- (B) a compound capable of forming a chelate complex selected from the group consisting of β-diketones, β-ketocarboxylic esters, acetylacetonimide, salicylaldehyde, chloromalondialdehyde, α-hydroxypropionic acid, dihydroxymalonic acid, histidine and 1,3-diaminobutyric acid.

3,311,597

OIL ADDITIVES COMPRISING INTERPOLYMERS OF TETRAHYDROFURFURYL ESTERS

Edward H. Mottus, Ballwin, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Aug. 31, 1962, Ser. No. 224,883

8 Claims. (Cl. 260—80.5)

1. An oil-soluble interpolymer of tetrahydrofurfuryl methacrylate and an oil-solubilizing mono-olefinic monomer, said interpolymer having viscosity index improving and dispersant characteristics, said interpolymer comprising a major amount at least sufficient to give oil-solubility of at least one oil-solubilizing mono-olefinic monomer and a minor amount at least sufficient to give dispersant characteristics of tetrahydrofurfuryl methacrylate.

3,311,598

PROCESS FOR HYDROFORMYLATING AN UNSATURATED HYDROCARBON POLYMER

Joseph Kern Mertzweiller and Horace Marion Tenney, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,268

7 Claims. (Cl. 260—85.1)

1. The method of preparing oxygen-containing polymers which comprises reacting an unsaturated hydrocarbon compound having a molecular weight of from about 500 to about 1,000,000 with carbon monoxide and hydrogen in the presence of a hydrocarbon soluble complex of the following general formula:

$$[(R')M(CO)_y(BR_3)]_x$$

wherein M is a transition metal selected from the group consisting of iron, cobalt and rhodium, B is a Group VA atom selected from the group consisting of phosphorus and arsenic, R is a radical containing from 1 to about 20 carbon atoms and is chosen from the group consisting of alkyl and alkoxy, R' is a pi bonded conjugated diolefin containing from 3 to 6 carbon atoms, x is an integer from 1 to 2, y is an integer from 1 to 2, with the proviso that when x is 1, then y is 2, and when x is 2, then y is 1.

3,311,599

SELECTED N,N-BIS (PERFLUOROALKYL) AMINOETHYLENES AND POLYMERS THEREOF

Frank Shumate Fawcett, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 17, 1963, Ser. No. 288,461

20 Claims. (Cl. 260—87.5)

1. N,N-bis(perfluoroalkyl)aminoethylenes of the general formula $(R_f)_2NCX'=CXX'$ wherein R_f is perfluoroalkyl of up to 6 carbons, X is selected from the group consisting of hydrogen and fluorine and X' is selected from the group consisting of hydrogen, fluorine, chlorine and $(R_f)_2N$—, with the provisos that the two R_f substituents and the two X' substituents need not be, respectively, the same, and that not more than one X' is $(R_f)_2N$—.

11. A solid, addition polymer of a compound of claim 1.

3,311,600

COPOLYMERS OF ALPHA-MONOOLEFINS AND OMEGA-HALO-MONO-ALPHA-OLEFINS

Robert Bacskai, Berkeley, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed June 12, 1964, Ser. No. 374,807

6 Claims. (Cl. 260—87.5)

1. In a process for obtaining copolymers insoluble in boiling heptane of:

- (a) at least 1 hydrocarbon mono-α-olefin of from 3 to 6 carbons; and
- (b) an ω-halo-mono-α-olefin of from 4 to 16 carbons, wherein the halogen is chlorine or bromine;

using a "Ziegler-type" catalyst containing a hydrocarbyl aluminum compound wherein the ratio of hydrocarbyl groups to aluminum is greater than one and the remaining valences of aluminum are satisfied by halogen atoms and titanium trichloride;

the improvement which comprises adding from 0.2 to 5 moles per atom of titanium of an organic Lewis base of from 2 to 20 carbons having as its only hetero-atom an element of atomic number 7 to 8, all of whose valences are bonded to carbon.

3,311,601

PROCESS COAGULATING CHLOROPRENE POLYMERS FROM A LATEX

James Batts Conley, Memphis, Ind., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 2, 1963, Ser. No. 299,667

7 Claims. (Cl. 260—92.3)

1. In a process for the isolation of chloroprene polymer, which polymer exhibits low temperature brittleness, which process comprises freezing a layer of an aqueous latex emulsion of said polymer on a rotating drum surface. removing the resulting frozen layer from said drum, thawing to melt the ice and washing and drying the thin layer of coagulated polymer which results; the improvement of incorporating in said latex emulsion before freezing from about 1 to 20 parts by weight, per 100 parts of polymer, of a volatile liquid selected from the group consisting of aromatic hydrocarbons, ketones, and nitriles, said volatile liquid having a boiling point in the range of from about 56° C. to 150° C.

3,311,602

PROCESS FOR THE CHLOROMETHYLATION OF AROMATIC HYDROCARBONS

Charles F. Raley, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 1, 1963, Ser. No. 292,131

11 Claims. (Cl. 260—93.5)

1. In a process for the chloromethylation of aromatic compounds and polymers containing aromatic groups by reacting said aromatic material with an excess of an alkyl chloromethyl ether in the presence of a chloromethylation catalyst, the improvement which comprises (A) using a chloromethylation catalyst selected from the group consisting of stannic chloride, zinc chloride and zinc compounds capable of forming zinc chlorides in situ, and (B) adding to the chloromethylation reaction mixture from 0.05 to 1.5 moles of a catalyst regenerant per equivalent of aromatic chloromethylation, said regenerant being selected from the group consisting of silicon tetrachloride, titanium tetrachloride, and sulfur trioxide.

3,311,603

POLYMERIZATION PROCESS IN THE PRESENCE OF A ZIEGLER CATALYST WATER AND AN AMINE

Harry A. Cheney, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 16, 1963, Ser. No. 309,296

6 Claims. (Cl. 260—93.7)

1. A continuous process for producing highly crystalline polypropylene which comprises

- (1) preparing a reaction mixture comprising
  - (a) liquid non-reactive hydrocarbon diluent,
  - (b) propylene and polymer resulting from its polymerization, and
  - (c) as catalyst the reaction product of between 25 p.p.m. and 1% by weight of catalytically active titanium trichloride resulting from the reduction of titanium tetrachloride with an aluminum alkyl compound or aluminum metal, an aluminum dialkyl halide, the molar ratio of Al:Ti being between about 1:1 and about 5:1, an added, controlled amount of water and an added, controlled amount of an amine selected from the group consisting of (1) aliphatic tertiary amines having at least 5 carbon atoms per molecule, (2) aliphatic secondary amines having at least 5 carbon atoms per molecule, (3) aliphatic primary amines having at least 4 carbon atoms per molecule, and (4) heterocyclic nitrogen compounds having five- to six-membered rings and having an alkyl radical substituent of up to 6 carbon atoms on at least one carbon alpha to a nitrogen atom in the ring;
- (2) maintaining said reaction mixture at a temperature range from 0° C. to 120° C.;
- (3) continuously adding to said reaction mixture additional diluent, propylene, and catalyst ingredients;
- (4) controlling the addition of water and of amine such that the total amount of water which contacts said aluminum dialkyl halide is in the range from 0.02 to 1 mole per mole of aluminum dialkyl halide and is in contact with said aluminum dialkyl halide in the absence of titanium trichloride for a time in the range from 0 to 60 seconds and the total amount of amine is in the range from 0.005 to 0.5 mole per mole of aluminum dialkyl halide, said added water and amine being effective to modify the catalytic properties of the catalyst to maintain a product crystallinity, as indicated by percent insoluble in isopentane, greater than 95% and substantially in excess of that obtained by employing a substantially higher or a substantially lower amount of water and said amine, or any amount of water or said amine separately, at otherwise identical conditions; and
- (5) continuously withdrawing a portion of said reaction mixture, deactivating catalyst therein, and recovering polymer therefrom.

3,311,604

PROCESS FOR POLYMERIZING ISOPRENE WITH A CATALYST CONSISTING OF TITANIUM TETRACHLORIDE AND AN ALUMINUM HYDRIDE

Walter Marconi and Alessandro Mazzei, Milan, Marcello de Malde, San Donato Milanese, and Salvatore Cucinella, Milan, Italy, assignors to SNAM S.p.A., a company of Italy

No Drawing. Original application Jan. 29, 1962, Ser. No. 169,621. Divided and this application Aug. 1, 1963, Ser. No. 299,182

Claims priority, application Italy, Feb. 4, 1961, 1,984/61, Patent 647,780; Nov. 21, 1961, 18,075/61, Patent 707,662; Nov. 24, 1961, 21,200/61

4 Claims. (Cl. 260—94.3)

1. A process for the stereospecific polymerization of isoprene in substantially anhydrous conditions in the presence of a catalytic system consisting of titanium tetrachloride and an aluminum compound in which the aluminum compound is an aluminum hydride of the following general formula:

$$AlH_2X$$

wherein X is a member chosen from the group consisting of a halogen, a residue of a secondary amine, and a residue of a piperidine ring.

3,311,605

METHOD FOR THE PREPARATION OF POLYFUNCTIONAL DIAZONIUM HALIDES

Hartmut Steppan, Wiesbaden-Dotzheim, and Wilhelm Neugebauer, Wiesbaden-Biebrich, Germany, and August Rebenstock, deceased, late of Wiesbaden-Biebrich, Germany, by Wilhelmine Rebenstock and Erika Wilhelmine Unger, heirs, Wiesbaden-Biebrich, Germany, and Else Rebenstock, nee Gross, Wiesbaden-Biebrich, Germany, for Albrecht Michael Rebenstock, minor heir, and Gisela Rebenstock, nee Grief, Wiesbaden, Germany, for Erika Rebenstock, minor heir, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Filed Mar. 1, 1965, Ser. No. 440,058

Claims priority, application Germany, Jan. 25, 1961, K 42,718

1 Claim. (Cl. 260—141)

A process for the preparation of a polyfunctional diazonium halide which comprises condensing formaldehyde with a diazonium salt selected from the group consisting of the sulfates, chlorides, bromides and phosphates of diphenylamine-4-diazonium and diphenylamine-4-diazonium substituted on a phenyl nucleus by not more than two substituents selected from the group consisting of methyl and ethyl, alkoxy groups having not more than six carbon atoms, a carboxy group, and chloro, in solution in phosphoric acid of at least 50% concentration by weight; modifying the solvency of a liquid portion of the reaction mixture by the addition of an effective amount of methanol; equalizing the sum of halide ions in the reaction mixture to the sum of diazonium cations present therein by the addition of at least one halide substance selected from the group consisting of hydrochloric and hydrobromic acids and the chlorides and bromides of alkali metals, alkaline earth metals, aluminum, and rare earth metals; neutralizing the reaction mixture by the addition of a compound selected from the group consisting of the oxides, hydroxides, carbonates, bicarbonates, and alcoholates of the alkali metals, alkaline earth metals, aluminum and rare earth metals; separating the liquid portion of the reaction mixture from a solid portion thereof; and evaporating the liquid portion to dryness to recover the polyfunctional diazonium salt as a residue of the evaporation.

3,311,606

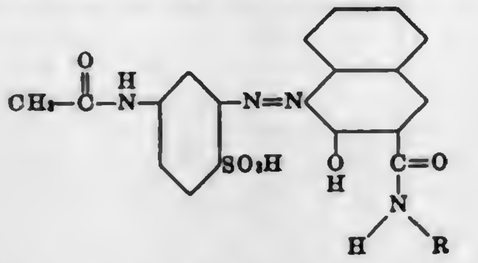
MONOAZO DYES

Robert W. Eltonhead, Reading, Pa., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,112

7 Claims. (Cl. 260—204)

1. A compound having the following structure:



wherein R is an aryl radical having a total molecular weight of not more than 175 and represents phenyl, naphthyl and phenyl or naphthyl containing nitro, chloro, alkyl or alkoxy groups as substituents thereof.

3,311,607

NEOMYCIN PAMOATE

Silvano Casadio, Milan, Italy, assignor to Istituto de Angeli S.p.A., Milan, Italy, an Italian body corporate

No Drawing. Filed Nov. 20, 1964, Ser. No. 412,832

Claims priority, application Great Britain, Dec. 23, 1963, 50,730/63

1 Claim. (Cl. 260—210)

Neomycin pamoate.

3,311,608

CELLULOSE ISOCYANATE-ALIPHATIC POLYAMINE ION-EXCHANGE COMPOSITION AND METHOD FOR MAKING SAME

John P. Murphy, 346 Morning View Ave., Cleveland, Ohio 44305

No Drawing. Filed Feb. 12, 1963, Ser. No. 257,859

15 Claims. (Cl. 260—212)

1. A method of preparing an ion-exchange composition which comprises reacting cellulose or its derivatives with a stoichiometric excess of a polyisocyanate under anhydrous conditions to obtain a cellulose-polyisocyanate intermediate having unreacted isocyanate groups; removing the excess polyisocyanate from said intermediate and subsequently reacting said intermediate with at least 0.1 moles of an aliphatic polyamine per unreacted isocyanate group to impart ion-exchange sites to the product.

11. An ion-exchange composition consisting essentially of the reaction product of cellulose or its derivatives, a polyisocyanate and an aliphatic polyamine; said reaction product characterized as having approximately 1 to 10 moles of the cellulose esterified with approximately 0.1 to 3.0 moles of the isocyanate and residual unesterified isocyanate groups; said unesterified isocyanate groups being chemically bound to sufficient amounts of an aliphatic polyamine to impart ion-exchange capacities ranging up to 3.5 meq. per gram of product.

3,311,609

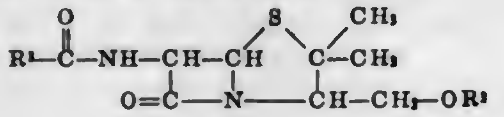
PENICILLIN ALCOHOLS

Lee C. Cheney, Fayetteville, N.Y., and Yvon G. Perron, Ville d'Anjou, Quebec, Canada, assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 20, 1963, Ser. No. 325,138

13 Claims. (Cl. 260—239.1)

1. A compound of the formula



in which R³ represents the side chain of a penicillin and R² is hydrogen.

3,311,610

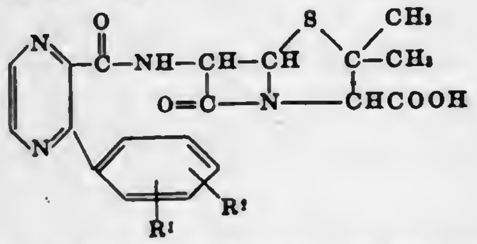
6-(2' - PHENYLPYRAZINE - 3' - CARBOXAMIDO) PENICILLANIC ACIDS AND SALTS THEREOF

Takayuki Naito and Susumu Nakagawa, Tokyo, Japan, assignors to Bristol-Banyu Research Institute, Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed June 8, 1965, Ser. No. 462,389

14 Claims. (Cl. 260—239.1)

1. A compound selected from the group consisting of an acid of the formula



wherein R¹ and R² are each a member selected from the group consisting of hydrogen, trifluoromethyl, chloro, bromo, (lower)alkylthio, (lower)alkylsulfonyl, (lower) alkyl and (lower)alkoxy and nontoxic, pharmaceutically acceptable salts thereof.

3,311,611

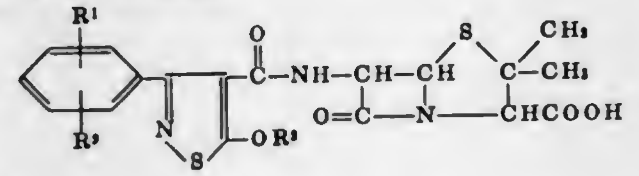
DERIVATIVES OF 6-AMINOPENICILLANIC ACID

Raymond Urgel Lemieux, Edmonton, Alberta, and Ronald George Micetich, Sherwood Park, Alberta, Canada, assignors to R & L Molecular Research Ltd., Edmonton, Alberta, Canada

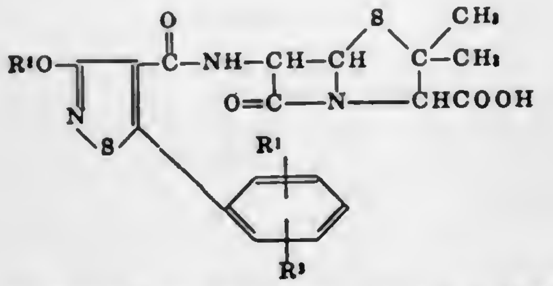
No Drawing. Filed Dec. 20, 1965, Ser. No. 515,216

15 Claims. (Cl. 260—239.1)

1. A compound selected from the group consisting of acids of the formulae



and



wherein R¹ and R² are each a member selected from the group consisting of hydrogen, chloro, bromo, iodo, (lower)alkyl, (lower)alkoxy or trifluoromethyl and R³ is (lower)alkyl; and nontoxic, pharmaceutically acceptable salts thereof.

3,311,612

PROCESS FOR PREPARING 5-ARYL-3H-1,4-BENZO-DIAZEPIN-2-(1H)-ONES

Earl Reeder, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original applications Nov. 2, 1961, Ser. No. 149,527, now Patent No. 3,136,815, dated June 9, 1964; Nov. 20, 1961, Ser. No. 154,921; Nov. 20, 1961, Ser. No. 154,926, now Patent No. 3,270,053, dated Aug. 30, 1966; Nov. 20, 1961, Ser. No. 154,927, now Patent No. 3,239,564, dated Mar. 8, 1966. Divided and this application Nov. 27, 1963, Ser. No. 326,336

Claims priority, application Switzerland, Dec. 2, 1960, 13,490/60, 13,492/60, 13,493/60

7 Claims. (Cl. 260—239.3)

1. A process for producing 5-phenyl-3H-1,4-benzodiazepin-2(1H)-one-4-oxides which comprises treating a 2-halomethyl-4-phenyl-quinazoline 3-oxide with an alkali hydroxide.

3,311,613

DERIVATIVES OF GLYCYRRHETINIC ACID AND PROCESS FOR THE PREPARATION THEREOF

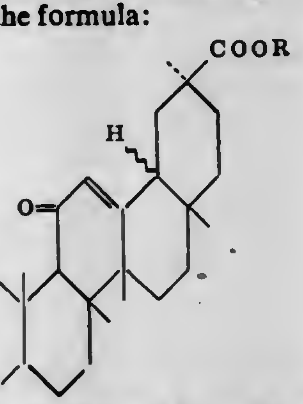
William Alan McFarlane Davies, Ilford, England, assignor to Biorex Laboratories Limited, London, England

No Drawing. Filed Mar. 16, 1965, Ser. No. 440,290

Claims priority, application Great Britain, Mar. 24, 1964, 12,273/64

9 Claims. (Cl. 260—239.3)

1. A member of the class consisting of glycyrrhetinic acid derivatives of the formula:



wherein R is a member selected from the group consisting of H and alkyl of up to and including 6 carbon atoms, and A is a member selected from the group consisting of β-cyanoethyl and β-carboxyethyl when B is isoallyl and A is β-carboxyethyl when B is isopropylamino-(2) and A and B together can also form 3-keto-4-aza-5,5-dimethyl-n-pentylene.

2. 3b-aza-A-homo-11-oxo-18α-olean-12-en-30-oic acid.

3,311,614

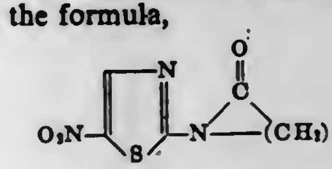
HETEROCYCLIC AMIDES AND METHODS FOR THEIR PRODUCTION

David B. Capps, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed May 13, 1965, Ser. No. 455,654

6 Claims. (Cl. 260—239.3)

1. An N-(5-nitro-2-thiazolyl)-heterocyclic amide compound, having the formula,



where *n* is a positive integer greater than 2 and less than 6.

4. Hexahydro - 1 - (5 - nitro - 2 - thiazolyl) - 2H-azepin-2-one.

3,311,615

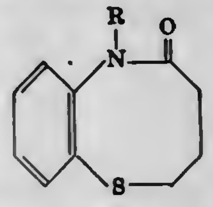
CERTAIN BENZOTHIAZOCINE DERIVATIVES

Richard J. Mohrbacher, Fort Washington, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed June 8, 1965, Ser. No. 462,402

19 Claims. (Cl. 260—239.3)

1. A member selected from the group of 3,4-dihydro-2H-1,6-benzothiazocin-5(6H)-ones having the formula



wherein R is a member selected from the group consisting of hydrogen, loweralkyl, phenylloweralkyl and diloweralkylaminoloweralkyl; and the non-toxic, therapeutically active acid addition salts and loweralkyl quaternary ammonium derivatives of the basic nitrogen containing compounds.

3,311,616
13β-n-PROPYL-18,19-BIS-NOR-PROGESTERONE AND PROCESS OF PREPARATION

Gerard Nomine, Noisy-le-Sec, Robert Bucourt, Clichy-sous-Bois, and Jacques Dube, Eaubonne, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Mar. 16, 1965, Ser. No. 440,273

15 Claims. (Cl. 260—239.5)

2. 3-pyrrolidyl-13β-n-propyl - 18,19 - bis-nor-$\Delta^{3,5}$-pregnadiene-20-one.

3,311,617
6-CYANO STEROIDAL ENOL ETHERS AND PROCESS FOR PREPARING SAME

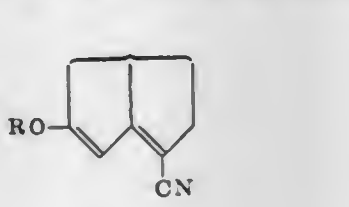
Vladimir Petrow and John Patrick Yardley, London, England, assignors to The British Drug Houses Limited, London, England

No Drawing. Filed June 18, 1964, Ser. No. 376,251

Claims priority, application Great Britain, June 20, 1963, 24,547/63

29 Claims. (Cl. 260—239.55)

6. 3-enol ethers of 6-cyano-3-oxo-Δ^4-steroids of the androstane, 19-norandrostane, pregnane and 19-norpregnane series having in Rings A and B of the steroid nucleus the structure



(I)

where R is an alkyl, aralkyl or cycloalkyl radical containing up to 11 carbon atoms.

19. 6 - cyano - 3 - ethoxy - 25D - spirosta - 3,5-diene.

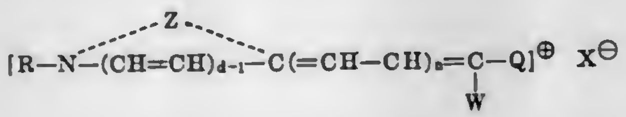
3,311,618
CLASS OF CATIONIC MEROCYANINE DYES

Donald W. Heseltine, and Lewis L. Lincoln, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Original application Mar. 10, 1960, Ser. No. 14,101, now Patent No. 3,125,448, dated Mar. 17, 1964. Divided and this application May 29, 1963, Ser. No. 284,046

10 Claims. (Cl. 260—240)

1. A dye having the formula:

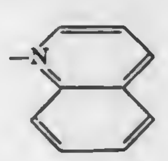


$$[\mathrm{R{-}}\overbrace{\mathrm{N{-}(CH{=}CH)_{d-1}{-}C}}^{Z}\mathrm{({=}CH{-}CH)_n{=}}\underset{\mathrm{W}}{\mathrm{C}}\mathrm{{-}Q}]^{\oplus}\ \mathrm{X}^{\ominus}$$

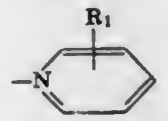
wherein R is a lower alkyl group having from 1 to 6 carbon atoms, Z represents the non-metallic atoms needed to complete a heterocyclic nucleus selected from the group consisting of

(1) the thiazole nucleus,
(2) the benzothiazole nucleus,
(3) the naphtho[1,2]thiazole nucleus,
(4) the naphtho[2,1]thiazole nucleus,
(5) the thianaphtheno-7′,6′,4,5-thiazole nucleus,
(6) the oxazole nucleus,
(7) the benzoxazole nucleus,
(8) the naphtho[1,2]oxazole nucleus
(9) the naphtho[2,1]oxazole nucleus,
(10) the selenazole nucleus,
(11) the benzoselenazole nucleus,
(12) the naphtho[1,2]selenazole nucleus,
(13) the naphtho[2,1]selenazole nucleus,
(14) the thiazoline nucleus,
(15) the 2-quinoline nucleus,
(16) the 4-quinoline nucleus,
(17) the benzimidazole nucleus,
(18) the 3,3-di(low carbon alkyl)indolenine nuclei,
(19) the 2-pyridine nucleus,
(20) the 4-pyridine nucleus,
(21) the 4-(2-thienyl)thiazole nucleus,
(22) the tetrahydrobenzothiazole nucleus,
(23) the 5,6-dioxymethylenebenzothiazole nucleus,
(24) the tetrahydrobenzoselenazole nucleus,

and the heterocyclic nuclei resulting when the heterocyclic nuclei numbered 1 to 20, inclusive, are substituted with a member selected from the group consisting of lower alkyl, lower alkoxy, hydroxyl, phenyl and halogen, *d* is a positive integer of from 1 to 2, *n* is a positive integer of from 1 to 3, Q represents a member selected from the group consisting of



and



R_1 is a member selected from the class consisting of a hydrogen atom, a bromine atom, a methyl group and a phenyl group, provided that when R_1 is selected from the class consisting of a methyl group and a bromine atom, said R_1 group is substituted on the carbon atom meta to the nitrogen atom of the pyridine ring, W is a member selected from the class consisting of a cyano group, benzoyl group and benzothiazolyl group and X is an acid anion.

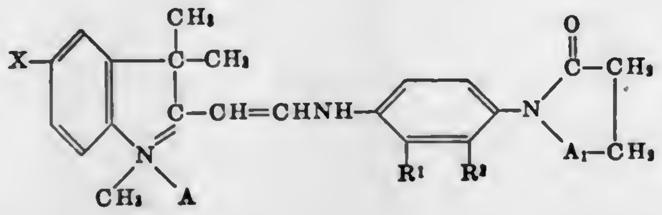
3,311,619
METHINE DYES FOR ACRYLIC FIBERS

John G. Fisher and James M. Straley, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 5, 1964, Ser. No. 365,204

12 Claims. (Cl. 260—240.8)

1. A methine compound having the formula



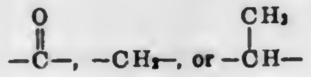
wherein

X represents hydrogen, halogen, or lower carbalkoxy;

A represents a monovalent organic or inorganic acid anion;

R^1 and R^2 each represents hydrogen or lower alkyl; and

A_1 represents



$$\overset{\mathrm{O}}{\overset{\|}{-\mathrm{C}-}},\ -\mathrm{CH_2}-,\ \text{or}\ \overset{\mathrm{CH_3}}{\overset{|}{-\mathrm{CH}-}}$$

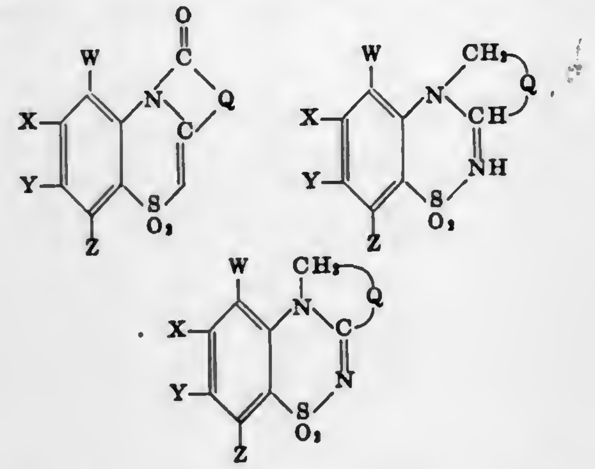
3,311,620
FUSED RING BENZOTHIADIAZINES

Stanley C. Bell, 114 Walnut Park Drive 19120, and Scott J. Childress, 1704 Hopkinson House, Washington Square S. 19106, both of Philadelphia, Pa.

No Drawing. Filed May 31, 1963, Ser. No. 285,549

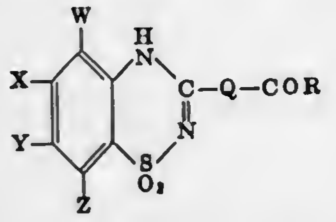
22 Claims. (Cl. 260—243)

1. A compound of the class represented by the formulae:



wherein W, X, Y and Z are selected from the group consisting of hydrogen, halogen, lower alkyl, halo(lower) alkyl, sulfamyl, and alkylsulfamyl; and Q is a divalent radical selected from the group consisting of the ethylene, propylene, vinylene, o-phenylene, 1,2-naphthylene, 2,3-pyridylene, thiodimethylene, oxydimethylene, iminodimethylene, and methylene substituted ethylene.

2. A compound selected from group having the formula:



wherein W, X, Y and Z are selected from the group consisting of hydrogen, halogen, lower alkyl, halo lower alkyl, sulfamyl and alkylsulfamyl; R is selected from the group consisting of hydroxy, amido and lower alkoxy, and Q is selected from the group consisting of ethylene, propylene, vinylene, o-phenylene, 1,2-naphthylene, 2,3-pyridylene radicals, thiodimethylene, oxydimethylene, iminodimethylene, methylene substituted ethylene compound and the tautomeric form of said selected compound having a double bond at the 3,4-positions.

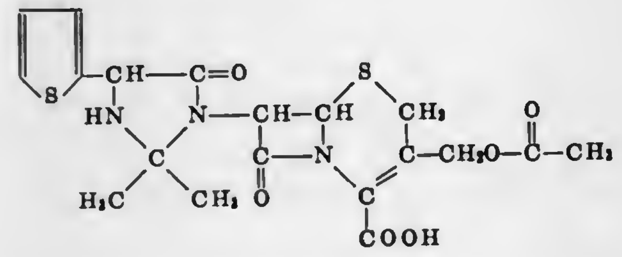
3,311,621
DERIVATIVES OF CEPHALOSPORANIC ACID

Leonard Bruce Crast, Jr., North Syracuse, and John Michael Essery, Liverpool, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 7, 1966, Ser. No. 540,805

5 Claims. (Cl. 260—243)

1. The compound of the formula



and its nontoxic, pharmaceutically acceptable salts.

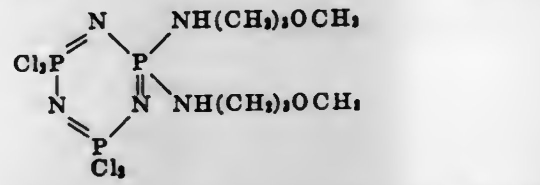
3,311,622
SUBSTITUTED PHOSPHONITRILIC TRIMERS

Stephen P. Joffre, Cedar Grove, N.J., assignor to Shulton, Inc., Clifton, N.J., a corporation of New Jersey

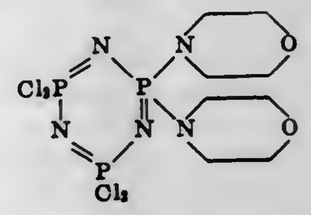
No Drawing. Filed May 17, 1961, Ser. No. 110,665

5 Claims. (Cl. 260—246)

1. Phosphonitrile chloride-bis-methoxy propylamine of the formula



4. Phosphonitrile chloride-bis-morpholine of the formula



3,311,623
NOVEL 4H-m-DITHIINO[5,4-d]PYRIMIDINES

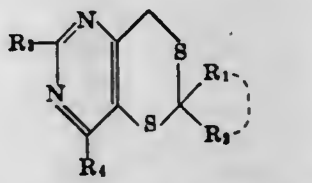
Gerhard Ohnacker and Eberhard Woitun, Biberach an der Riss, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany, a corporation of Germany

No Drawing. Filed Dec. 11, 1964, Ser. No. 417,782

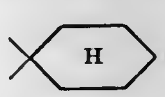
Claims priority, application Germany, Dec. 16, 1963, T 25,269

13 Claims. (Cl. 260—246)

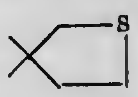
1. A compound selected from the group consisting of 4H-m-dithiino[5,4-d]pyrimidine substitution products of the formula



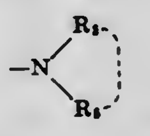
wherein R_1 and R_2 are each selected from the group consisting of hydrogen, lower alkyl, phenyl, halophenyl, benzyl and, together with each other and the carbon atom to which they are attached, a spirocyclic ring of a formula selected from the group consisting of



and

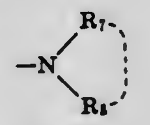


R_3 is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, phenyl, benzyl and



wherein R_5 and R_6, together with each other and the adjacent nitrogen atom, form a basic heterocyclic ring selected from the group consisting of pyrrolidino, morpholino and lower alkyl-morpholino, and

R_4 is selected from the group consisting of hydroxy, lower alkoxy, lower alkenoxy and



wherein R_7 and R_8 are each selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, hydroxy-lower alkyl, lower alkoxy-lower alkyl, morpholino-lower alkyl, phenyl, benzyl, cyclohexyl and, together with each other and the adjacent nitrogen atom, a basic heterocyclic ring selected from the group consisting of pyrrolidino, morpholino, piperidino, lower alkyl-morpholino and N'-lower alkyl-piperazino, and their non-toxic, pharmacologically acceptable acid addition salts.

5. 6,8-dimorpholino-4H-m-dithiino[5,4-d]pyrimidine.

3,311,624
4-AMINO-PIPERIDINES

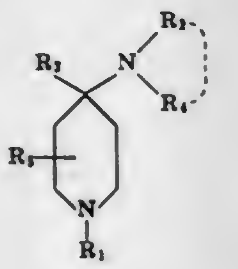
Gerhard Ohnacker and Eberhard Woitun, Biberach an der Riss, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany, a corporation of Germany

No Drawing. Filed Apr. 14, 1964, Ser. No. 359,767

Claims priority, application Germany, Apr. 22, 1963, T 23,868

11 Claims. (Cl. 260—247.1)

1. A compound selected from the group consisting of 4-amino-piperidines of the formula



wherein

R_1 is selected from the group consisting of lower alkyl of more than one carbon atom, phenyl-lower alkyl, allyl, phenyl-allyl and phenoxy-lower alkyl,

R_2 is selected from the group consisting of alkyl of 1 to 12 carbon atoms, allyl, phenyl, chlorophenyl, lower alkoxy-phenyl, lower alkyl-phenyl, phenyl-lower alkyl, lower alkyl-phenyl-lower alkyl and thienyl-2,

R_3 and R_4 are each selected from the group consisting of lower alkyl, benzyl and, together with each other and the adjacent nitrogen atom, basic heterocycles selected from the group consisting of pyrrolidino, piperidino, morpholino and N'-methyl-piperazino, and

R_5 is lower alkyl,

and their non-toxic, pharmacologically acceptable acid addition salts.

7. 1 - (β - phenyl - ethyl) - 4 - (thienyl - 2') - 4-morpholino-piperidine.

3,311,625
QUATERNARY AMMONIUM SALTS OF SULFUR BEARING ANIONS

Reginald L. Wakeman, Philadelphia, Pa., and Joseph F. Coates, Washington, D.C., assignors to Millmaster-Onyx Corporation, a corporation of New York

No Drawing. Filed Apr. 26, 1966, Ser. No. 545,249

8 Claims. (Cl. 260—247.1)

1. A quaternary ammonium salt of an aliphatic bivalent sulfur-bearing compound wherein the quaternary ammonium cation has at least one alkyl group of from 8 to 22 carbon atoms attached to the nitrogen and possesses a phenol coefficient of at least 100 with respect to both *Staphylococcus aureus* and *Salmonella typhus* at 20° C., and wherein the sulfur-bearing anion is furnished by a member selected from the group consisting of a higher alkyl mercaptan, thioglycolic acid, thiodiglycolic acid and t-dodecyl thioglycolic acid.

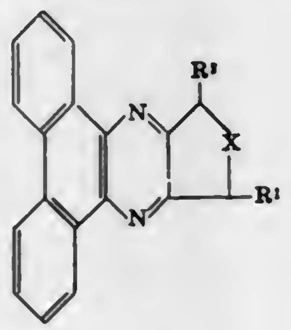
3,311,626
CYCLOPENTAQUINOXALINE DERIVATIVES

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York County, N.Y., a corporation of Delaware

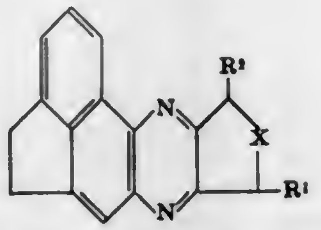
No Drawing. Filed June 27, 1966, Ser. No. 560,817

6 Claims. (Cl. 260—250)

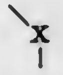
1. A compound selected from the group consisting of compounds having the formulae:



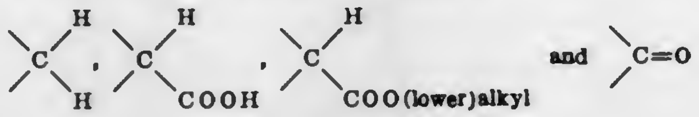
and



in which R^1 is a member of the group consisting of hydrogen, phenyl and carb(lower)alkoxy, while R^2 is of the group consisting of hydrogen, lower alkyl, carb(lower) alkoxy and phenyl while



is a member of the group consisting of



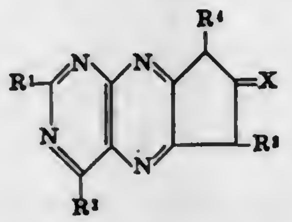
3,311,627
PTERIDINE DERIVATIVES

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

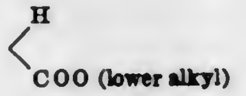
No Drawing. Filed June 28, 1966, Ser. No. 561,051

3 Claims. (Cl. 260—251.5)

1. A compound represented by the formula:



in which R^1 represents a member of the group consisting of hydrogen, hydroxy, lower alkyl and phenyl, while R^2 stands for a member of the group consisting of hydrogen, hydroxy, and lower alkyl, with R^3 representing a member of the group consisting of hydrogen and carb (lower)alkoxy and R^4 is selected from the group consisting of hydrogen, lower alkyl and carb(lower)alkoxy, the symbol X representing a member of the group consisting of hydrogen, oxygen and the radical,



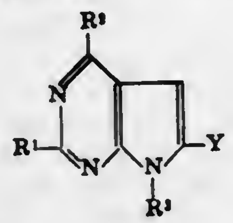
3,311,628
DERIVATIVES OF PYRROLO [2,3-d] PYRIMIDINE

Richard A. Partyka, Liverpool, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

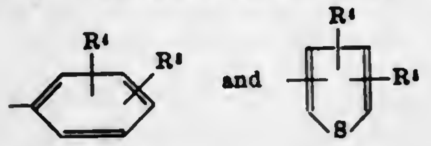
No Drawing. Filed Mar. 9, 1965, Ser. No. 438,409

15 Claims. (Cl. 260—256.4)

1. A member selected from the group consisting of compounds of the formula



wherein X is a member selected from the group consisting of chloro and bromo, R^1 is a member selected from the group consisting of (lower)alkyl, (lower)alkylthio and —Ar in which Ar is a member selected from the group consisting of radicals of the formula



in which R^4 and R^5 are each members selected from the group consisting of hydrogen, chloro, bromo, (lower)alkyl, (lower)alkoxy and trifluoromethyl, R^2 is a member selected from the group consisting of hydrogen, (lower)-alkyl and —Ar, and R^3 is a member selected from the group consisting of (lower)alkyl, (lower)cycloalkyl containing from 3 to 8 carbon atoms inclusive, (lower)alkenyl, (lower)alkynyl, di(lower)alkylamino(lower)alkyl, piperidino(lower)alkyl, morpholino(lower)alkyl, N'-(lower)alkylpiperazino(lower)alkyl, —Ar and

$$—(CH_2)_n—Ar$$

wherein *n* is an integer from one to three inclusive; and the nontoxic, pharmaceutically acceptable acid addition salts thereof.

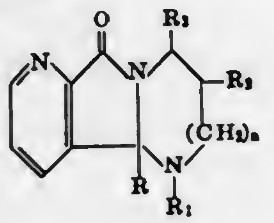
3,311,629
9b - ARYL - 1,2,3,9b - TETRAHYDRO - 5H - IMIDAZO[1,2 - a]PYRIDO[3,2 - c]PYRROL - 5 - ONES AND RELATED COMPOUNDS

Theodore S. Sulkowski, Narberth, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

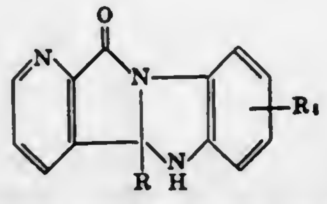
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,955

10 Claims. (Cl. 260—256.4)

1. A compound selected from the group consisting of those having the formulae:



and



wherein R is selected from the group consisting of phenyl, thienyl, halophenyl, (lower)alkylphenyl and (lower)alkoxyphenyl; R_1 is selected from the group consisting of hydrogen and lower alkyl; R_2 and R_3 are selected from the group consisting of hydrogen and (lower)alkyl, with the proviso that when *n* is 1 R_2 may also be hydroxy; R_4 is selected from the group consisting of halogen, halo (lower)alkyl, sulfamyl and (lower)alkylsulfamyl; and *n* has a value of from 0 to 1.

4. A compound as described in claim 1 which is: 10b-(p - chlorophenyl) - 1,2,3,4,6,10b - hexahydropyrimido [1,2-a]pyrido[3,2-c]pyrrol-6-(2H)-one.

3,311,630
PROCESS FOR THE PREPARATION OF QUINACRIDONE IN FORM OF A PIGMENT

Marco Tessandori, Milan, Italy, assignor to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy

No Drawing. Filed May 10, 1966, Ser. No. 548,845

5 Claims. (Cl. 260—279)

1. A process for the preparation of quinacridone as a pigment in the pure beta form, which process comprises dissolving crude quinacridone in methylsulfuric acid and then reprecipitating the quinacridone with water.

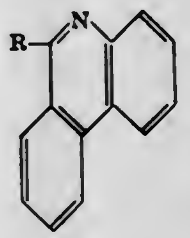
3,311,631
METHOD OF PREPARING PHENANTHRIDINES

Harry Chafetz, Poughkeepsie, N.Y., and Richard C. Anderson, Logan, Utah, assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

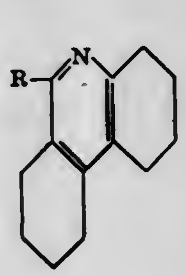
No Drawing. Filed Mar. 31, 1964, Ser. No. 356,030

2 Claims. (Cl. 260—283)

1. A method of preparing a phenanthridine of the formula



where R is a substituent selected from the group consisting of hydrogen and alkyl, aryl, alkenyl, alkaryl and aralkyl of from 1 to 20 carbons, comprising contacting ammonia, an aldehyde of the formula RCHO where R is as heretofore defined, and 2-(1-cyclohexyl)-cyclohexanone in a molar ratio of between about 100:5–1:1 and 1:5–1:1 with a cyclization catalyst selected from the group consisting of silica, alumina, silica-alumina, silica-5 to 40 wt. percent magnesia, silica-5 to 40 wt. percent chromia, alumina-5 to 40 wt. percent magnesia, alumina-5 to 40 wt. percent chromia and mixtures thereof, at a temperature between about 180 and 425° C. and in the absence of oxygen to form an intermediate octahydrophenanthridine of the formula:



where R is as heretofore defined, and subsequently heating said octahydrophenanthridine intermediate in the presence of an inert gas sweep and a dehydrogenation catalyst selected from Group VIII of the Periodic Table at a temperature between about 200 and 400° C. to form said phenanthridine.

3,311,632
3-ACETYL-CINCHONINIC ACID COMPOUNDS

Hermann Bretschneider, Innsbruck-Arzl, Austria, Kraft Hohenlohe-Oehringen, Cambridge, Mass., and Alfred Rhomberg, Innsbruck, Austria, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 4, 1964, Ser. No. 349,488

Claims priority, application Switzerland, Mar. 13, 1963, 3,168/63; Aug. 7, 1963, 9,744/63

7 Claims. (Cl. 260—287)

6. 3-benzoyl-cinchoninic acid acetic acid pseudoanhydride.

7. 3-acetyl-cinchoninic acid piperidide.

3,311,633
2-DEHYDRO-EMETINES

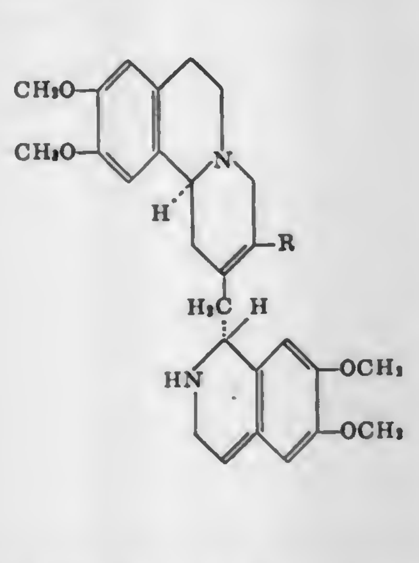
Arnold Brossi, Verona, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 19, 1963, Ser. No. 266,183

Claims priority, application Switzerland, Mar. 21, 1962, 3,386/62

2 Claims. (Cl. 260—288)

1. A compound of the group consisting of (—)-compounds, substantially free from their dextro rotary isomer, of the formula



wherein R is lower alkyl, and pharmaceutically acceptable acid addition salts thereof.

3,311,634
CERTAIN NORBORNENE-(ANE) DICARBOXIMIDES

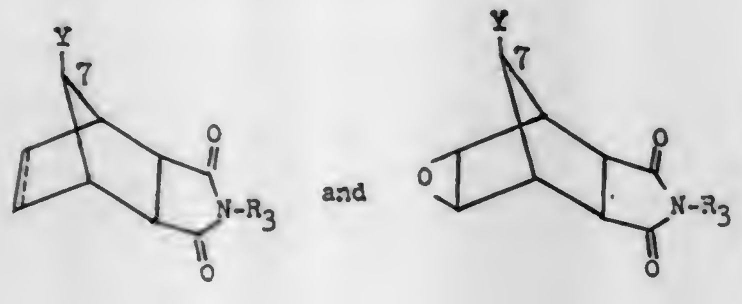
George Ireland Poos, Ambler, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed Mar. 5, 1965, Ser. No. 437,593

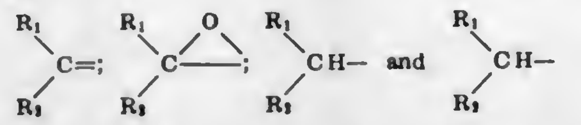
28 Claims. (Cl. 260—294)

16. 7-[α-4-(1-methylpiperidyl)benzylidene] - 5 - norbornene-2,3-dicarboximide.

23. A norbornene(ane) dicarboximide having a formula selected from the group consisting of

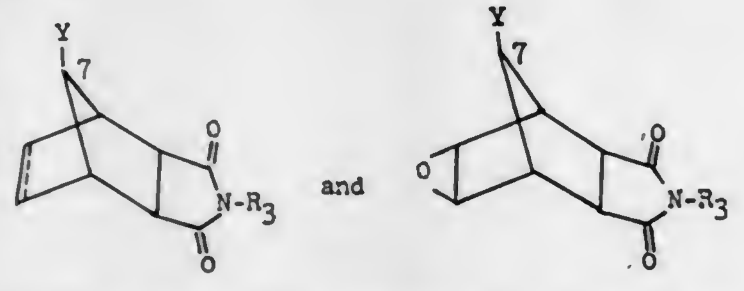


wherein Y is a member selected from the group consisting of

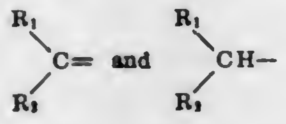


wherein the 7-carbon of the norbornene(ane) is further substituted with hydroxyl; R_1 is a member selected from the group consisting of phenyl, lower alkylphenyl, halophenyl, trifluoromethylphenyl and cyclohexyl; R_2 is a member selected from the group consisting of loweralkyl, phenyl, loweralkylphenyl, halophenyl, trifluoromethylphenyl and cyclohexyl; R_3 is a member selected from the group consisting of hydrogen, loweralkyl, loweralkoxyloweralkyl, monohydroxylloweralkyl, benzyl, phenethyl, carbamoyl, diloweralkylaminoloweralkyl and phenacyl.

24. A norbornene(ane) dicarboximide having a formula selected from the group consisting of

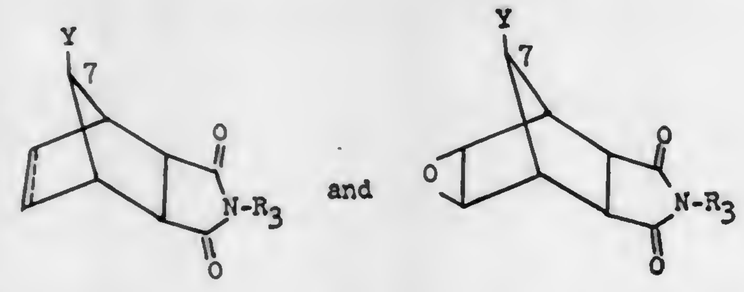


wherein Y is a member selected from the group consisting of

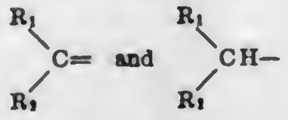


R_1 is a member selected from the group consisting of loweralkyl, phenyl, loweralkylphenyl, halophenyl, trifluoromethylphenyl and cyclohexyl; R_2 is a member selected from the group consisting of pyridyl, piperidyl and N-loweralkyl-piperidyl; R_3 is a member selected from the group consisting of hydrogen, loweralkyl, loweralkoxyloweralkyl, monohydroxyloweralkyl, benzyl, phenethyl, carbamoyl, diloweralkylaminoloweralkyl and phenacyl.

25. A norbornene(ane) dicarboximide having a formula selected from the group consisting of

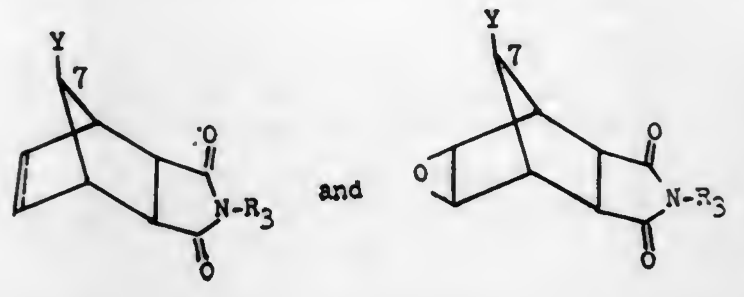


wherein Y is a member selected from the group consisting of

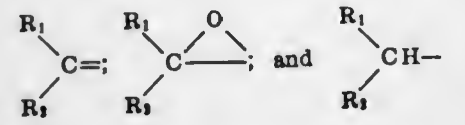


R_1 and R_2 each is a member selected from the group consisting of pyridyl, piperidyl and N-loweralkylpiperidyl; R_3 is a member selected from the group consisting of hydrogen, loweralkyl, loweralkoxyloweralkyl, monohydroxyloweralkyl, benzyl, phenethyl, carbamoyl, diloweralkylaminoloweralkyl and phenacyl.

26. A norbornene(ane) dicarboximide having a formula selected from the group consisting of

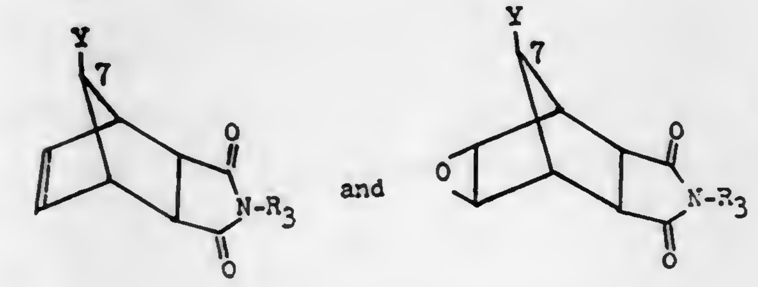


wherein Y is a member selected from the group consisting of

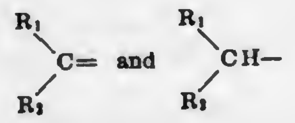


wherein the 7-carbon of the norbornene(ane) is further substituted with hydroxyl; R_1 is a member selected from the group consisting of loweralkyl, phenyl, loweralkylphenyl, halophenyl, trifluoromethylphenyl and cyclohexyl; R_2 is thienyl; R_3 is a member selected from the group consisting of hydrogen, loweralkyl, loweralkoxyloweralkyl, monohydroxyloweralkyl, benzyl, phenethyl, carbamoyl, diloweralkylaminoloweralkyl and phenacyl.

27. A nonbornene(ane) dicarboximide having a formula selected from the group consisting of

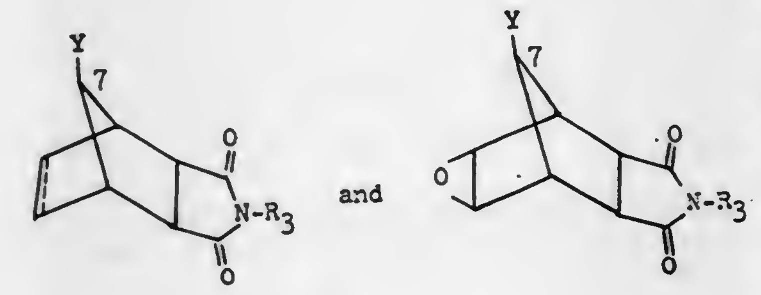


wherein Y is a member selected from the group consisting of

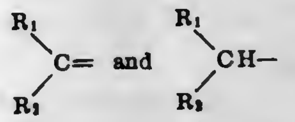


R_1 and R_2 each is thienyl; R_3 is a member selected from the group consisting of hydrogen, loweralkyl, loweralkoxyloweralkyl, monohydroxyloweralkyl, benzyl, phenethyl, carbamoyl, diloweralkylaminoloweralkyl and phenacyl.

28. A norbornene(ane) dicarboximide having a formula selected from the group consisting of



wherein Y is a member selected from the group consisting of



R_1 is a member selected from the group consisting of pyridyl and N-loweralkylpiperidyl; R_2 is thienyl; R_3 is a member selected from the group consisting of hydrogen, loweralkyl, loweralkoxyloweralkyl, monohydroxyloweralkyl, benzyl, phenethyl, carbamoyl, diloweralkylaminoloweralkyl and phenacyl.

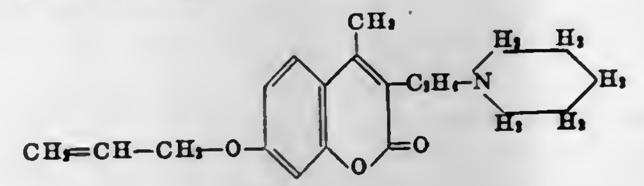
3,311,635
ETHERS OF 3-ALKYLAMINO-4-METHYL-7-HYDROXY-COUMARIN

Heinrich Ritter, Dornigheim, Kreis Hanau, and Rudi Beyerle and Rolf-Eberhard Nitz, Frankfurt am Main-Fechenheim, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main-Fechenheim, Germany

Original application July 26, 1962, Ser. No. 212,657, now Patent No. 3,282,938, dated Nov. 1, 1966. Divided and this application May 5, 1964, Ser. No. 368,756

4 Claims. (Cl. 260—294.3)

4. 3-β-piperidinoethyl-4-methyl-7-allyloxy - coumarin having the formula



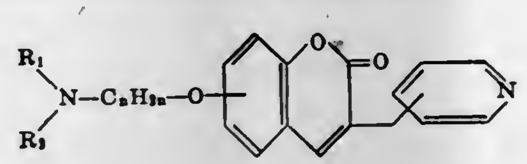
3,311,636
ORGANIC CHEMICAL COMPOUNDS AND PROCESS

Robert B. Moffett, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Mar. 14, 1963, Ser. No. 265,083

2 Claims. (Cl. 260—295)

1. A compound selected from the group consisting of (1) free base compounds of the formula



wherein $—C_nH_{2n}—$ is lower-alkylene; *n* is an integer from 2 to 4, inclusive; and R_1 and R_2 taken separately are lower-alkyl, and taken together with —N< constitute a saturated heterocyclic amino radical selected from the group consisting of pyrrolidino, 2-methylpyrrolidino, 2-ethylpyrrolidino, 2,2-dimethylpyrrolidino, 3,4-dimethylpyrrolidino, 2-isopropylpyrrolidino, 2-sec-butylpyrrolidino, and like alkyl pyrrolidino groups, morpholino, 2-ethylmorpholino, 2-ethyl-5-methylmorpholino, 3,3-dimethylmorpholino, thiamorpholino, 3-methylthiamorpholino, 2,3,6-trimethylthiamorpholino, 4-methylpiperazino, 4-butylpiperazino, piperidino, 2-methylpiperidino, 3-methylpiperidino, 4 - methylpiperidino, 4 - propylpiperidino, 2-propylpiperidino, 4-isopropylpiperidino, and like alkylpiperidino groups, hexamethylenimino, 2-methylhexamethylenimino, 3,6 - dimethylhexamethylenimino, and homomorpholino; (2) acid addition salts thereof; and (3) N-oxides thereof.

2. 7 - (3 - dimethylaminopropoxy) - 3 - (4 - pyridyl) coumarin.

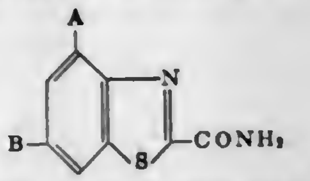
3,311,637
4-(or 6-)-LOWER ALKOXYBENZOTHIAZOLE-2-CARBOXAMIDE

William D. McElroy, 220 Ridgewood Road 21210, and Emil H. White, 1713 Waverly Way 21212, both of Baltimore, Md.

No Drawing. Original application Aug. 8, 1961, Ser. No. 129,963, now Patent No. 3,164,613, dated Jan. 5, 1965. Divided and this application May 21, 1964, Ser. No. 375,693

2 Claims. (Cl. 260—304)

1. A compound having the formula



where A and B are different members of the class consisting of hydrogen and lower alkoxy.

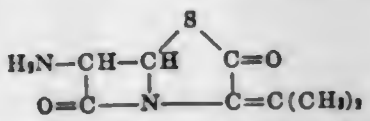
3,311,638
ANHYDROPENICILLINS

Saul Wolfe, Syracuse, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 16, 1961, Ser. No. 131,719

13 Claims. (Cl. 260—306.7)

1. Anhydro-6-aminopenicillanic acid having the structure



$$\begin{array}{l} \qquad\qquad\qquad\quad S \\ H_2N-CH-CH \qquad C=O \\ \qquad\quad O=C-N-C=C(CH_3)_2 \end{array}$$

13. The process for the preparation of an antibacterial agent which comprises heating a mixture of anhydro-alpha-phenoxyethylpenicillin, mercuric acetate and benzene for at least two hours.

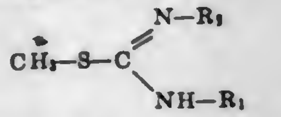
3,311,639
PREPARATION OF HYDROCHLORIDE SALTS OF S-METHYL-ISOTHIOUREA DERIVATIVES

Robert Paul Mull, Florham Park, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,134

9 Claims. (Cl. 260—309.6)

1. Process for the preparation of hydrochloride salts of compounds having the Formula I


(I)

$$CH_3-S-C\begin{array}{l} =N-R_1 \\ -NH-R_2 \end{array} \qquad (I)$$

in which R_1 stands for a member selected from the group consisting of hydrogen, lower alkyl, amino and lower alkylamino, R_2 for a member selected from the group consisting of hydrogen and lower alkyl, R_1 and R_2 taken together also represent lower alkylene separating the nitrogen atoms by 2 to 4 carbon atoms, which comprises evaporating the voltaile portion from a mixture containing a member selected from the group consisting of the hydrobromide salt and the hydriodide salt of said compound of Formula I and at least one mole of hydrogen chloride in methanol.

3,311,640
11-(2-PROPYNYL)-2-(PROPYNYLOXY)-2-PROPYNYL ESTER OF 11H-BENZO(a)CARBAZOLE-3-CARBOXYLIC ACID

Chester E. Pawloski, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,661

1 Claim. (Cl. 260—315)

11-(2-propynyl)-2-(2-propynyloxy)-2-propynyl ester of 11H-benzo(a)carbazole-3-carboxylic acid.

3,311,641
HYDROHALIDES OF NOVEL CYCLOHEPTA[b]-PYRROLE DERIVATIVES AND A PROCESS FOR PREPARING THE SAME AS WELL AS INTERMEDIATES AND PROCESS FOR THEIR PREPARATIONS

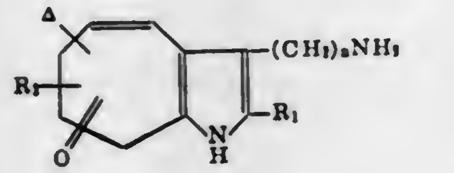
Genshun Sunagawa and Yasunobu Sato, Tokyo, Japan, assignors to Sankyo Company, Limited, Tokyo, Japan

No Drawing. Filed June 16, 1964, Ser. No. 375,652

Claims priority, application Japan, June 22, 1963, 38/32,512

5 Claims. (Cl. 260—326.3)

1. A hydrohalide of a compound having the formula



wherein R_1 is selected from the group consisting of hydrogen, alkyl of 1–5 carbon atoms and carboxyl; R_2 is selected from the group consisting of hydrogen, hydroxyl, alkoxyl of 1–5 carbon atoms, halogen, alkyl of 1–5 carbon atoms and phenyl; *n* is integer from 1 to 4; Δ represents double bond and exists on the cyclohepta[b]pyrrole nucleus at 6- or 7-position; and 0= represents keto which is attached to the nucleus at 8-position when the double bond exists at 6-position and at 6-position when the double bond exists at 7-position.

2. 2 - carboxy - 3 - (2 - aminoethyl) - 5-hydroxycyclohepta[b]pyrrol-6(1H)-one hydrochloride.

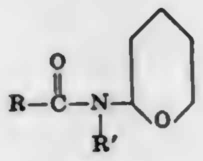
3,311,642
PYRANYLATION OF AMIDES

Gino J. Marco, Webster Groves, and Angelo John Speziale, Creve Coeur, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 11, 1961, Ser. No. 144,293

8 Claims. (Cl. 260—345.7)

1. N-(2-tetrahydropyranyl) amide of the formula



wherein R and R′ are hydrocarbyl radicals containing from 1 to 6 carbon atoms and are free of non-benzenoid unsaturation.

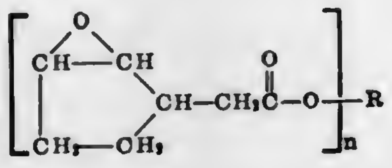
3,311,643
NOVEL EPOXIDES, METHODS OF MAKING SAME, AND POLYMERS THEREOF

Samuel W. Tinsley, Jr., South Charleston, and Erich Marcus, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 29, 1961, Ser. No. 163,090

14 Claims. (Cl. 260—348)

1. A compound of the formula:



wherein *n* is an integer of 2 to 3 and wherein R is a saturated alkane radical of 2 to 18 carbon atoms having a valence of *n*.

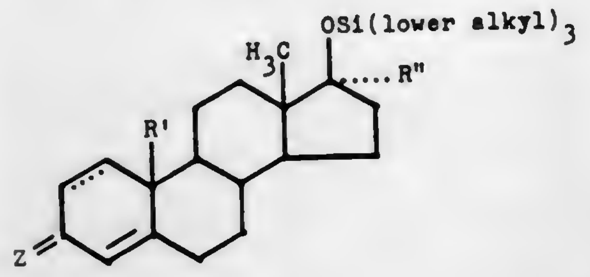
3,311,644
ANDROST/ESTR-4-EN-17β-YLOXYTRIALKYLSILANES AND CONGENERS

Edward A. Brown, Wilmette, and Ivar Laos, Skokie, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 28, 1965, Ser. No. 451,649

8 Claims. (Cl. 260—397.4)

1. A compound of the formula



wherein Z is selected from the group consisting of hydrogen and oxygen, R′ is selected from the group consisting of hydrogen and the methyl radical, R″ is selected from the group consisting of hydrogen and radicals of the formula

$$-C_nH_{2n+1}$$

in which *n* represents a positive integer less than 3, and the dotted line designates an optional double bond.

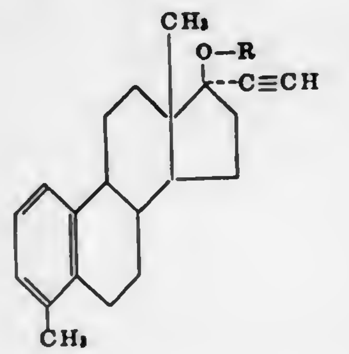
3,311,645
4-METHYL-17α-ETHINYL ESTRA-1,3,5(10)-TRIENE COMPOUNDS

Eugene L. Wittle, Ann Arbor, Mich., assignor to Parke Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed July 16, 1964, Ser. No. 383,245

5 Claims. (Cl. 260—397.5)

1. A 4-methyl-17α-ethinylestra-1,3,5(10)-trien compound having the formula



where R is a member of the class consisting of hydrogen, trifluoroacetyl, and lower alkanoyl.

3,311,646
CHEMICAL COMPOSITIONS AND PROCESSES FOR PREPARING THE SAME

Robert M. Washburn and Roger A. Baldwin, Whittier, Calif., assignors to Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware

No Drawing. Original application Nov. 3, 1961, Ser. No. 149,887, now Patent No. 3,112,331, dated Nov. 26, 1963. Divided and this application Jan. 11, 1963, Ser. No. 268,425

8 Claims. (Cl. 260—429)

1. A process for the preparation of a new class of monomeric compounds which comprises reacting under anhydrous conditions,

(a) Two moles of a compound having the formula

$$R_3M(N_3)$$

wherein

R is selected from the group consisting of aryl, alkyl, halogen, alkoxy, aryloxy, amino, alkylthio, and arylthio groups;

M is a metal selected from the group consisting of silicon, germanium, and tin; with

(b) One mole of a compound having the formula

$$R'R''Y-L-YR'R''$$

wherein

Y is selected from the group consisting of phosphorus, arsenic, and antimony; and R′ and R″ are selected from at least one of the group consisting of aryl, alkyl, alkoxy, aryloxy, amino, alkylthio, and arylthio groups;

and L is an organic group selected from the alkylene and arylene groups.

3. As new compositions of matter, compounds having the general formula

$$R_3M-N=Y(R'R'')-L-Y(R'R'')=N-MR_3$$

where

R is selected from the group consisting of aryl, alkyl, halogen, alkoxy, aryloxy, amino, alkylthio, arylthio, and azido groups;

M is a metal selected from the group consisting of silicon, germanium, and tin;

Y is selected from the group consisting of phosphorus, arsenic, and antimony;

R′ and R″ are selected from at least one of the group consisting of aryl, alkyl, alkoxy, aryloxy, amino, alkylthio, and arylthio groups;

and L is an organic group selected from the alkylene and arylene groups.

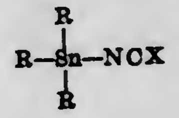
3,311,647
PROCESS OF PREPARING ORGANOMETALLIC ISOCYANATES

Walter A. Stamm, Tarrytown, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 4, 1963, Ser. No. 313,773

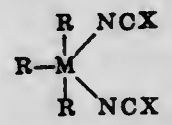
7 Claims. (Cl. 260—429.7)

1. The method of preparing an organometallic isocyanate selected from the group consisting of:



$$R-\overset{R}{\underset{R}{Sn}}-NCX$$

and



$$R-\overset{R}{\underset{R}{M}}\begin{array}{l} NCX \\ NCX \end{array}$$

wherein R is a hydrocarbon radical selected from the class consisting of alkyl of from 1 to 18 carbon atoms, phenyl and naphthyl, X is a chalcogen selected from the class consisting of oxygen and sulfur, M is an element selected from the class consisting of antimony and arsenic, which comprises heating $XC(NH_2)_2$ wherein X has the significance as above defined with a member from the class consisting of a trisubstituted organic tin chloride, a trisubstituted organic tin hydroxide, a bis(trisubstituted) organic tin oxide, a trisubstituted organoantimony dichloride, a trisubstituted organoantimony dihydroxide, a trisubstituted organoantimony oxide, trisubstituted organoarsenic dichloride, trisubstituted organoarsenic dihydroxide and a trisubstituted organoarsenic oxide, it being understood that the substituents, have the value as above given for R and isolating the so-formed organometallic isocyanate.

3,311,648
ORGANOTIN SULFONIUM COMPOUNDS

Sheldon Herbstman, Bronx, and Walter A. Stamm, Tarrytown, N.Y., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 21, 1963, Ser. No. 317,822
5 Claims. (Cl. 260—429.7)

1. An organotin compound selected from the class consisting of

$$\left[Ar_3S\right]^{+1}_{2}[RSnX_5]^{-2}$$

and

$$[Ar_3S]^+[(R)_n(X)_{5-n}]^-$$

wherein Ar represents an aromatic hydrocarbon radical of from 6 to 12 carbon atoms, R is selected from the class consisting of alkyl having from 1 to 18 carbon atoms and an aromatic hydrocarbon radical of from 6 to 12 carbon atoms, X is a halogen selected from the class consisting of bromine and chlorine and *n* is an integer of from 2 to 3, it being provided that when *n* is 3, R is always an aromatic hydrocarbon radical as aforesaid.

5. A method of preparing an organotin compound selected from the class consisting of

$$\left[Ar_3S\right]^{+1}_{2}[RSnX_5]^{-2}$$

and

$$[Ar_3S]^+[(R)_nSn(X)_{5-n}]^-$$

wherein Ar represents an aromatic hydrocarbon radical of from 6 to 12 carbon atoms, R is selected from the class consisting of alkyl having from 1 to 18 carbon atoms and an aromatic hydrocarbon radical of from 6 to 12 carbon atoms, X is a halogen selected from the class consisting of bromine and chlorine and *n* is an integer of from 2 to 3, it being provided that when *n* is 3, R is always an aromatic hydrocarbon radical as aforesaid, which comprises reacting a triarylsulfonium halide of the formula Ar_3SX with an organotin halide selected from the class consisting of $RSnX_3$, R_2SnX_2 and R_3SnX, wherein Ar, R and X have the significance as above set forth, and isolating the so-obtained organotin compound.

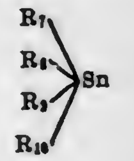
3,311,649
PREPARATION OF DISTANNANES

Kenneth R. Molt, Cincinnati, and Ingenuin Hechenbleikner, Kenwood, Ohio, assignors to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio
No Drawing. Filed Nov. 30, 1964, Ser. No. 414,847
12 Claims. (Cl. 260—429.7)

1. A process of preparing a hexaorgano-distannane comprising heating to reaction temperature reactants consisting essentially of (1) a compound having the formula $R_1R_2R_3SnCl$ and a compound having the formula

$$R_4R_5R_6SnCl$$

where R_1, R_2, R_3, R_4, R_5 and R_6 are selected from the group consisting of alkyl, aryl and aralkyl where the compounds $R_1R_2R_3SnCl$ and $R_4R_5R_6SnCl$ can be identical with the proviso that not more than three of R_1, R_2, R_3, R_4, R_5 and R_6 are aryl and (2) sodium in a tetrahydrocarbontin compound of the formula



as a solvent, R_7, R_8, R_9 and R_{10} being selected from the group consisting of alkyl and aryl.

3,311,650
PROCESS FOR PRODUCING TRIOCTYLALUMINUM SULFONATE

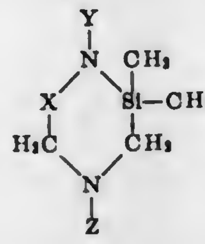
William K. Johnson, Des Peres, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed Sept. 6, 1963, Ser. No. 307,030
1 Claim. (Cl. 260—448)

The process of producing trioctylaluminum sulfonate which comprises treating trioctylaluminum with sulfur trioxide.

3,311,651
PROCESS FOR THE PRODUCTION OF HYDROLYZABLE AMINOMETHYLSILICON COMPOUNDS

Hans Niederprüm, Monheim, Rhineland, and Walter Simmler, Cologne-Mulheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 26, 1963, Ser. No. 297,984
Claims priority, application Germany, Aug. 2, 1962, F 27,503
9 Claims. (Cl. 260—448.2)

1. A sila-piperazine derivative of the formula

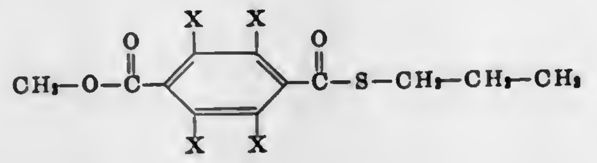


wherein X is a divalent radical selected from the group consisting of methylene and dimethylsilylene, and Y and Z are each selected from the group consisting of hydrogen and aliphatic hydrocarbon radicals of 1–3 carbon atoms.

3,311,652
METHYL S-n-PROPYL 2,3,5,6-TETRAHALOMONOTHIOTEREPHTHALATE

Sidney B. Richter, Chicago, and Alfred A. Levin, Skokie, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Oct. 13, 1964, Ser. No. 403,656
3 Claims. (Cl. 260—455)

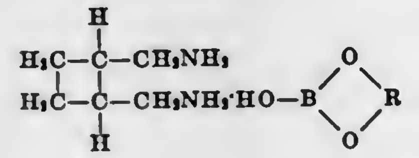
1. Compounds of the general formula:



3,311,653
GLYCOL BORATE AMINE SALTS

Richard J. De Gray, South Euclid, and Sarah H. Belden, Beachwood, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Aug. 1, 1963, Ser. No. 299,191
2 Claims. (Cl. 260—462)

1. Compounds having the formula

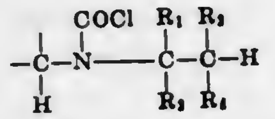


where R is selected from the group consisting of alpha and beta alkylene of 2–20 carbon atoms.

3,311,654
PROCESS FOR THE PREPARATION OF ORGANIC ISOCYANATES

Adnan A. R. Sayigh, New Haven, and James N. Tilley, Cheshire, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed June 4, 1963, Ser. No. 285,206
18 Claims. (Cl. 260—465)

1. A process for preparing an organic isocyanate, which comprises heating a secondary carbamoyl chloride reactant containing at least one moiety with the formula:



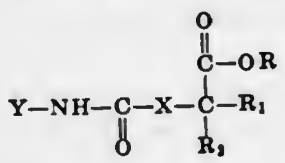
$$-\underset{H}{\overset{|}{\underset{|}{C}}}-\overset{COCl}{\underset{}{N}}-\underset{R_2}{\overset{R_1}{C}}-\underset{R_4}{\overset{R_3}{C}}-H$$

wherein R_1 and R_2 are lower alkyl, and wherein R_3 and R_4 are selected from the group consisting of hydrogen and lower alkyl, in the range 50° to 250° C., to form said organic isocyanate.

3,311,655
PROCESS FOR THE PREPARATION OF URETHANES

Jacques Boileau and Jean Vaganay, Sorgues, France, assignors to Etat Francais, représenté par le Ministre des Armées (Direction des Poudres), Paris, France
No Drawing. Filed May 19, 1961, Ser. No. 125,295
Claims priority, application France, May 24, 1960, 828,050; May 3, 1961, 860,551
7 Claims. (Cl. 260—471)

1. A method of preparing a urethane of the formula:



$$Y-NH-\underset{\overset{\|}{O}}{C}-X-\underset{R_2}{\overset{\overset{\overset{O}{\|}}{C}-OR}{C}}-R_1$$

wherein:

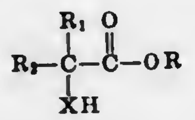
R is an alkyl group having 1–4 carbon atoms;

X is selected from the group consisting of sulphur and oxygen;

Y is selected from the group consisting of

- (a) alkyl groups having up to 18 carbon atoms,
- (b) pyridyl,
- (c) phenyl,
- (d) halophenyl,
- (e) nitrophenyl,
- (f) methoxyphenyl, and
- (g) benzyl;

R_1 and R_2 are selected from the group consisting of hydrogen, lower alkyl, and phenyl, and wherein R_1 and R_2 may be linked to form a polymethylene ring of 4–5 carbon atoms, comprising mixing an amine of the formula YNH_2 where Y is as defined above, with phosgene and an ester of the formula:



$$R_2-\underset{XH}{\overset{R_1}{C}}-\overset{O}{\overset{\|}{C}}-OR$$

wherein X, R, R_1 and R_2 are as defined above, and heating the mixture containing the three said reactants to a temperature of not more than 85° C., the ester being present in the mixture in molar excess of the amine at all times, whereby a urethane of the said formula is formed.

7. A method of preparing the 3-chlorophenylcarbamate of ethyl lactate comprising mixing metachloroaniline in an inert organic solvent with ethyl lactate and phosgene, and heating the mixture containing the three said reactants for a first period to a temperature of −10° to 20° C., then for a second period to a temperature of 45°–70° C., the amount of phosgene being from 1.1 to 5 moles and the amount of ethyl lactate being from 1.05 to 3 moles per mole of the metachloroaniline, the ethyl lactate being present in the mixture in molar excess of the metachloroaniline at all times, whereby the said 2-chlorophenylcarbamate of ethyl lactate is formed.

3,311,656
INTERMEDIATES FOR THE PREPARATION OF A CAROTENOID

Joseph Donald Surmatis, West Caldwell, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed May 12, 1964, Ser. No. 366,881
7 Claims. (Cl. 260—488)

2. 3-acetoxy vitamin A alcohol.

5. 3-acetoxyretinyl triphenylphosphonium chloride.

3.311,657
PRODUCTION OF POLYFLUOROALIPHATIC CARBOXYLIC ACIDS FROM POLYFLUORINATED OLEFINS

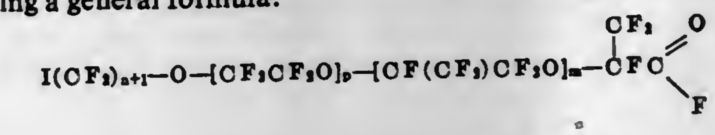
Donald P. Graham, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 1, 1964, Ser. No. 393,754
16 Claims. (Cl. 260—539)

1. A process for preparing alkali metal salts of polyfluoroaliphatic carboxylic acids which comprises reacting a polyfluorinated olefin of the formula $CF_2{=}CXY$, where X is from the group consisting of Cl, F, and $CF{=}CF_2$ and Y is from the group consisting of Cl, F, and CF_3, with carbon dioxide and an alkali metal fluoride in the presence of a liquid reaction medium selected from the group consisting of acetonitrile and polyalkyleneglycol dialkylethers of the formula $RO(C_pH_{2p}O)_nR$, where R is lower alkyl of 1 to 6 carbon atoms, *p* is 2 to 4, and *n* is from 1 to 4, and recovering from said liquid reaction medium the alkali metal salt of a polyfluoroaliphatic carboxylic acid of the structure CF_3CXYCO_2Me, where X and Y have the meanings set forth above, and Me is an alkali metal.

3,311,658
FLUOROCARBON ETHERS CONTAINING IODINE

Joseph Leo Warnell, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 1, 1966, Ser. No. 569,018
3 Claims. (Cl. 260—544)

1. An omega-iodofluorocarbon ether acid fluoride having a general formula:



$$I(CF_2)_{n+1}-O-[CF_2CF_2O]_p-[CF(CF_3)CF_2O]_m-\overset{CF_3}{\overset{|}{C}}FC\begin{smallmatrix}{=}O\\ {-}F\end{smallmatrix}$$

where *n* is 1 or 3, *p* is an integer from 0 to 5 inclusive, and *m* is an integer from 0 to 5 inclusive.

3,311,659
PROCESS FOR PREPARING HIGHER FATTY ALKYL DILOWERALKYL BENZYL AMMONIUM HALIDES

Einar P. Birkelo, Minneapolis, and Timothy N. Johnson, St. Paul, Minn., assignors to Rayette-Faberge, Inc., a corporation of Minnesota
Filed Nov. 21, 1963, Ser. No. 325,327
7 Claims. (Cl. 260—567.6)

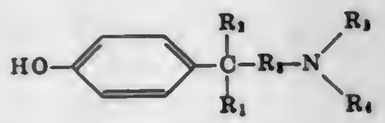
1. The process of preparing higher fatty alkyl diloweralkyl benzyl quaternary ammonium halides which comprises reacting benzyl halide with a higher fatty alkyl

diloweralkyl amine in the presence of about 1 to 20% by weight of the amine of a higher fatty acid amide.

3,311,660
PROCESS FOR PREPARING 2-(4-HYDROXYPHENYL)-2-(4'-AMINOPHENYL)-METHANES

Heinrich Krimm, Krefeld-Bockum, and Hermann Schnell, Krefeld-Urdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 15, 1963, Ser. No. 295,203
Claims priority, application Germany, July 16, 1962, F 37,328
5 Claims. (Cl. 260—570)

1. A process for the production of 2-(4-hydroxyphenyl)-2-(4'-aminophenyl)-methanes of the formula:

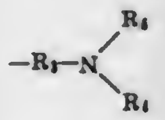


wherein:

R_1 and R_2 when taken individually are members selected from the group consisting of hydrogen, lower alkyl and phenyl with the proviso that at least one of R_1 and R_2 is other than hydrogen and R_1 and R_2 when taken together with the carbon to which they are attached stand for cyclohexyl,

R_3 stands for a member selected from the group consisting of phenyl, monochlorophenyl, dichlorophenyl, mononitrophenyl, mono lower alkyl-monochlorophenyl, mono lower alkyl phenyl and dilower alkyl phenyl, and

R_4 and R_5 stand for hydrogen, lower alkyl and cyclohexyl, comprising adding an aromatic amine of the residual formula

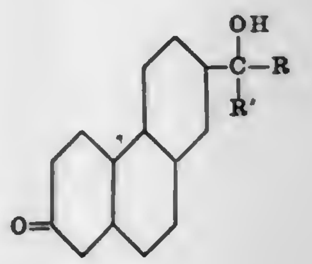


on to a compound selected from the group consisting of a monomeric or dimeric vinyl phenol at a temperature of between about 100 to about 250° C. in the presence of a catalyst selected from the group consisting of an acidic substance and a basic substance.

3,311,661
NOVEL POLYHYDROPHENANTHRENE DERIVATIVES

Moses Wolf Goldberg, deceased, late of Upper Montclair, N.J., by Regina Hauser Goldberg, executrix, Upper Montclair, N.J., and Lester Mischa Jampolsky, Upper Montclair, and Richard Wightman Kierstead, North Caldwell, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Original application Apr. 11, 1962, Ser. No 186,651, now Patent No. 3,275,691, dated Sept. 27, 1966. Divided and this application July 27, 1965, Ser. No. 475,629
4 Claims. (Cl. 260—586)

1. A compound having the formula



wherein R is selected from the group consisting of hydrogen and lower alkyl and R' is selected from the group consisting of hydrogen, lower alkyl, vinyl and ethynyl.

3,311,662
TETRAARYLBORON COMPOUNDS

Robert M. Washburn and Franklin A. Billig, Whittier, Calif., assignors to American Potash & Chemical Corporation, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Nov. 30, 1962, Ser. No. 241,126
6 Claims. (Cl. 260—606.5)

1. The composition having the formula:

$$[Ar_3B—L—BAr_3]^{=}2Na^{+}$$

wherein each Ar substituent is an independently chosen monovalent substituent selected from the group consisting of aryl, alkaryl, haloaryl, aroxyaryl and alkoxyaryl substituents, and L is a bivalent substituent selected from the group consisting of arylene, haloarylene, alkarylene, aroxyarylene, oxy-di(arylene) and alkoxyarylene substituents.

3,311,663
NON-CRYSTALLINE HALO-ARYL SULFIDES

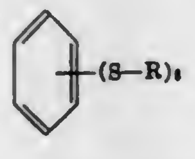
Marcel E. Degeorges, Lyon, and Yolande Bourgau, Neuville-sur-Saone, France, assignors to Society Progil, Paris, France
No Drawing. Filed Dec. 26, 1962, Ser. No. 247,007
Claims priority, application France, Dec. 30, 1961, 883,586
6 Claims. (Cl. 260—608)

1. A process for the preparation of a non-crystalline, substantially solid polychlorophenyl polysulfide which does not crystallize when cooled from its liquid state to below its solidification temperature and which is soluble in oils, which comprises reacting at least one polychlorobenzene with sulfur monochloride at temperatures within the range of from 10° to 150° C. to produce the corresponding crystalline polychlorophenyl polysulfide by condensation; heating the reaction mixture at temperatures within the range of from 80° to 250° C. for from 1 to 12 hours to convert the crystalline polysulfide to said non-crystalline polychlorophenyl polysulfide; and separating said non-crystalline polychlorophenyl polysulfide from the reaction mixture by distillation.

3,311,664
HEXAKIS THIOETHERS

Walter Reifschneider, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 3, 1964, Ser. No. 349,179
6 Claims. (Cl. 260—609)

1. A compound corresponding to the formula

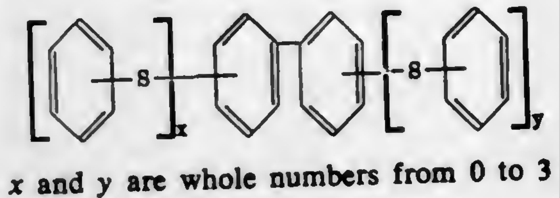


wherein R represents a member of the group consisting of (phenylthio)phenyl and monohalophenyl whereof halo is selected from fluoro, chloro, and bromo; and (((fluorophenylthio)phenylthio)phenyl).

3,311,665
POLYPHENYL THIOETHERS

John Robert Campbell, Tarkio, and Roger E. Hatton, Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Original application Feb. 26, 1963, Ser. No. 261,470. Divided and this application Oct. 8, 1965, Ser. No. 494,271
3 Claims. (Cl. 260—609)

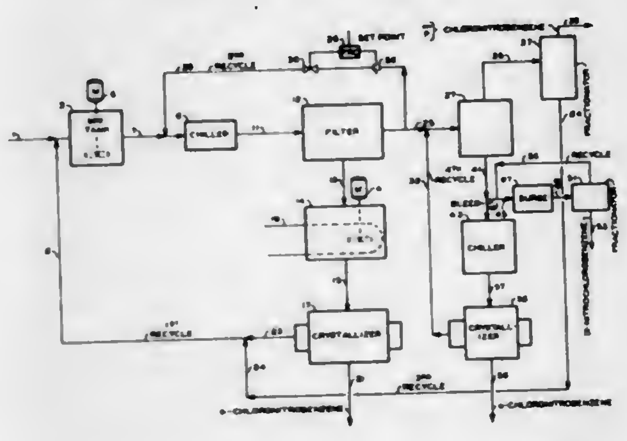
1. A phenylmercaptobiphenyl represented by the structure



where *x* and *y* are whole numbers from 0 to 3 and the sum of $x+y$ is from 1 to 6.

3,311,666
SEPARATION OF CHLORONITROBENZENE ISOMERS BY CRYSTALLIZATION AND FRACTIONATION

Robert O. Dunn, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,225
5 Claims. (Cl. 260—646)

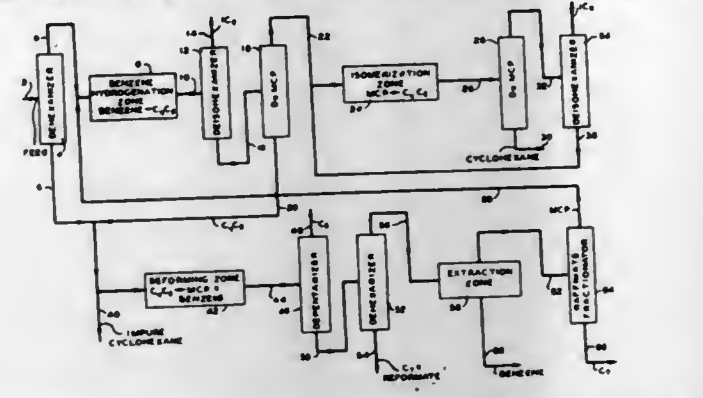


1. In a process for recovering substantially pure o-chloronitrobenzene and substantially pure p-chloronitrobenzene from a feed stream comprising o-chloronitrobenzene, p-chloronitrobenzene, m-chloronitrobenzene, and di-nitrochlorobenzene whereby the mol ratio of p-chloronitrobenzene to o-chloronitrobenzene is greater than 33.5 to 66.5, said method comprising the steps of cooling the feed to approximately 14° C. whereby a slurry of crystals and mother liquor is formed; recovering substantially pure p-chloronitrobenzene crystals from mother liquor; fractional distilling said mother liquor to produce an effluent comprising a m-chloronitrobenzene, p-chloronitrobenzene rich stream and an o-chloronitrobenzene rich bottom stream; chilling the o-chloronitrobenzene rich stream to approximately 14° C.; and recovering substantially pure o-chloro nitrobenzene crystals from said o-chloronitrobenzene rich stream.

3,311,667
PROCESS FOR THE PREPARATION OF CYCLOHEXANE

John T. Cabbage, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed May 6, 1963, Ser. No. 278,290
4 Claims. (Cl. 260—667)

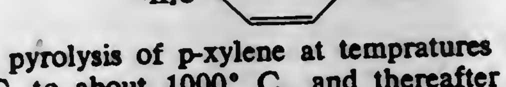
1. A process for the removal of benzene from a feed to an isomerization zone comprising introducing a feed containing cyclohexane, isohexanes, benzene and methylcyclopentane into a benzene-hydrogenation zone wherein said benzene is converted to cyclohexane, recovering isohexanes and residual benzene from the hydrogenation zone effluent, recovering a fraction concentrated in methylcyclopentane and substantially free of benzene from the hydrogenation zone effluent, and passing said fraction to a catalytic isomerization zone wherein said methylcyclopentane is converted to cyclohexane, said isomerization catalyst being adversely affected by the presence of benzene in said fraction.



3,311,668
HIGH TEMPERATURE PROCESS

Sydney P. Spence, Westfield, Leonard M. Baker, Plainfield, Ulrich A. Steiner, North Plainfield, Larry Madestau, Martinsville, and Lester A. Rowe, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Mar. 26, 1964, Ser. No. 354,869
5 Claims. (Cl. 260—668)

1. In a process for the preparation of cyclic di-p-xylylene which comprises forming a reactive p-xylylene diradical having the formula



by the pyrolysis of p-xylene at tempratures from about 900° C. to about 1000° C., and thereafter condensing the reactive diradical so formed in a fluid medium containing an inert solvent maintained at a temperature below about 300° C., the improvement which comprises rendering the pyrolysis environment non-catalytic to side reactions by forming said environment of an iron-nickel-chromium alloy composition containing a deactivating amount of a rare earth metal.

3,311,669
ACID-CATALYZED REACTIONS OF NAPHTHALENE

Ronald D. Bushick, Glen Mills, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed July 11, 1966, Ser. No. 564,713
8 Claims. (Cl. 260—668)

1. A process for producing tetrahydroanthracene which comprises contacting naphthalene with a molar excess of a normal paraffinic hydrocarbon over moles of naphthalene in the presence of a catalyst consisting essentially of hydrogen fluoride and boron trifluoride, at a conversion temperature between 0 and 70° C., under a pressure sufficiently high to maintain substantially liquid phase conversion conditions.

3,311,670
PROCESS FOR SEPARATION OF AROMATIC HYDROCARBONS

William Smolin, Beacon, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed July 17, 1963, Ser. No. 295,660
9 Claims. (Cl. 260—674)

1. A method for the separation of xylene isomers from a hydrocarbon mixture comprising meta-xylene and para-xylene which comprises

contacting said hydrocarbon mixture with aqueous sulfuric acid of 76 to 84 weight percent strength, at a temperature within the range of 150 to 225° F., and at an acid to hydrocarbon weight ratio within the range of 4:1 to 20:1 effecting formation of a hydrocarbon phase enriched in para-xylene and an acid phase comprising meta-xylenesulfonic acid,

separately withdrawing said hydrocarbon phase enriched in para-xylene,

contacting said acid phase with a paraffinic hydrocarbon solvent at a temperature within the range of 275 to 325° F., at a solvent to acid phase weight ratio within the range of 0.05:1 to 0.5:1 effecting regeneration of sulfuric acid and hydrolysis of dissolved meta-xylenesulfonic acid forming an extract phase comprising meta-xylene in said solvent,

and separating a hydrocarbon stream enriched in meta-xylene and solvent from said extract phase.

3,311,671
METHOD FOR THE SEPARATION OF DIOLEFINS FROM MONOOLEFINS WITH MOLECULAR SIEVES

Bertsil Burgess Baker, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 30, 1963, Ser. No. 334,578

4 Claims. (Cl. 260—677)

1. The method of separating diolefins from monoolefins which comprises the steps of

(a) contacting a liquid mixture of diolefins and monoolefins, said olefins having from 4 to 30 carbon atoms with a molecular sieve consisting of an alkali metal- or alkaline earth metal-aluminum silicate zeolite having a pore size of from 10 to 13 A., at a temperature in the range between ambient temperature and 100° C. and

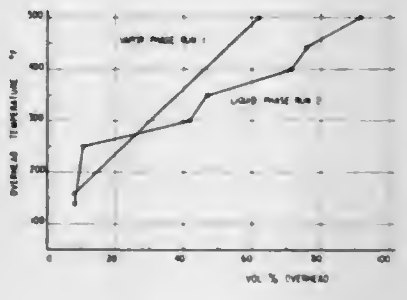
(b) thereafter separating a liquid phase consisting essentially of the said monoolefins with a reduced content of diolefins from the molecular sieve.

3,311,672
LIQUID PHASE POLYMERIZATION OF OLEFINS USING A BORIA-ALUMINA CATALYST

Stephen M. Kovach, Highland, Ind., assignor to Sinclair Research, Inc., Wilmington, Del., a corporation of Delaware

Filed Aug. 24, 1962, Ser. No. 219,219

5 Claims. (Cl. 260—683.15)



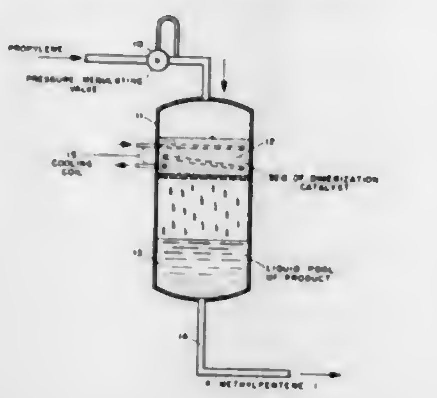
1. A proces for the selective polymerization of C_3 to C_{12} olefins to polymers whose molecular weights correspond to multiple units of said olefin which consists essentially of polymerizing a feed consisting essentially of said olefin at a temperature below about 200° F. and a pressure of about 0 to 2000 p.s.i.g. in the liquid phase in contact with a catalyst consisting essential of about 2 to 20% by weight of boria supported on activated alumina.

3,311,673
PREPARATION OF 4-METHYLPENTENE-1

Lewis W. Hall, Jr., Claymont, Del., and Wilmer E. McCorquodale, Jr., Delaware County, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Nov. 1, 1965, Ser. No. 505,947

9 Claims. (Cl. 260—683.15)



1. Method of preparing 4-methylpentene-1 by the dimerization of propylene which comprises

(a) feeding gaseous propylene to a reactor having a bed of solid dimerization catalyst, means for removing heat from said bed and a liquid product collection zone separate from the bed, said catalyst comprising a support containing a dimerization component selected from the group consisting of alkali metals, alkali metal alkyls and alkali metal aryls,

(b) maintaining said reactor at a temperature above 100° C. but below the critical temperature of 4-methylpentene-1,

(c) maintaining the pressure in said reactor, by the introduction of gaseous propylene thereto, sufficiently high to cause liquefaction of 4-methylpentene-1 within the bed while maintaining the temperature therein below said critical temperature, whereby 4-methylpentene-1 condenses within said bed as dimerization of propylene occurs and immediately flows to said collection zone, and

(d) withdrawing liquid 4-methylpentene-1 from said reactor.

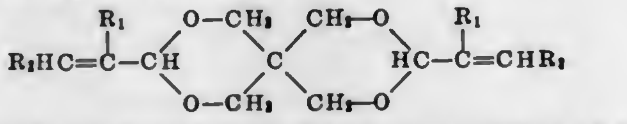
3,311,674
PROCESS FOR PREPARING HEAT-CURABLE COMPOSITIONS COMPRISING REACTING POLYETHERACETAL PREPOLYMER CONTAINING HYDROXY GROUPS WITH A HYDROXY REACTIVE CURING COMPONENT

Norman C. MacArthur, Avondale, Pa., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Apr. 3, 1964, Ser. No. 357,282

8 Claims. (Cl. 260—849)

1. A process for preparing heat-curable compositions which comprises partially reacting together components consisting essentially of (1) from about 20% to about 80% by weight of a soluble polyetheracetal prepolymer resin having from 1 to 4 free hydroxyl groups per molecule, and derived from the reaction of a cyclic diallylidene acetal having the general formula



wherein R_1 is selected from the group consisting of hydrogen, alkyl containing from 1 to 6 carbon atoms, phenyl, and halogen radicals and R_2 is selected from the group consisting of hydrogen and methyl radicals, and polyhydroxy alcohol having a degree of functionality with respect to hydroxyl groups greater than 2, and (2) from about 80% to about 20% by weight of a hydroxyl reactive curing component therefor having a degree of functionality with respect to hydroxyl groups of at least 2, and sufficient to form a substantially insoluble, cross-linked structure with said polyetheracetal prepolymer resin when cured therewith, in a mutual solvent and in the absence of polymerizing catalyst, until a film of the above said components, upon evaporation of said solvent, remains clear, and thereafter incorporating a carboxylic acid curing catalyst into the partially reacted mixture of said components.

7. The process in accordance with claim 1 in which the hydroxyl reactive curing component is a butylated melamine-formaldehyde resin.

3,311,675
BULK SOLVENT POLYMERIZATION PROCESS

Kenneth W. Doak, Wyckoff, Michael Erchak, Jr., Ridgewood, and Barna Toekes, Oakland, N.J., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Apr. 16, 1963, Ser. No. 273,451

14 Claims. (Cl. 260—880)

1. A bulk polymerization process for the preparation of a diolefin rubber-modified polyvinyl aromatic product which comprises the following sequential steps:

(a) polymerizing with agitation in an initial polymerization zone, a polymerizable mixture comprising about 70 to 97 percent by weight of a polymerizable composition and about 3 to 30 perecnt by weight of an inert alkyl aromatic diluent having a boiling point between about 110° C. to 200° C., said polymerizable composition comprising about 70 to 98 percent by weight of a polymerizable compound selected from the group consisting of styrene, alkyl derivatives of styrene, halogen derivatives of styrene and mixtures thereof, about 2 to 30 percent by weight of a diolefin rubber, at an elevated temperature below about 140° C. until a conversion of about 10 to 45 percent polymeric material is obtained;

(b) passing the resulting initial reaction product mixture, comprising partially polymerized and unreacted materials, to at least one additional polymerization zone wherein said reaction product mixture is further subjected to polymerization at a temperature above 100° C. and up to 220° C. until a conversion of from 85 to 100 percent is obtained;

(c) passing the resulting polyvinyl aromatic product to a devolatilization zone wherein said product is heated to a temperature of about 140° to 260° C. and under a pressure of about 5 mm. to 760 mm. Hg abs. to remove unreacted polymerizable compound and alkyl aromatic diluent; and

(d) recovering said devolatilized polyvinyl aromatic product.

3,311,676
DEVOLATILIZATION PROCESS

Barna Toekes, Oakland, N.J., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Aug. 8, 1963, Ser. No. 300,832

6 Claims. (Cl. 260—880)

1. A process for devolatilizing a molten polymeric material containing volatile contaminants which comprises heating said polymeric material to a temperature at least above the softening point of the polymeric material, feeding the heated material at a velocity of about 0.2 to 5 feet per minute through a confined foaming zone having a tubular shape and at a reduced pressure of less than 200 mm. Hg applied to the exit end of said foaming zone, whereby a foam is formed in said foaming zone containing bubbles of the volatiles removed from said polymeric material, passing the thus formed foam at this temperature into a phase separation zone which is in open communication with said foaming zone, separating a gas phase resulting from the collapse of said foam from a molten polymeric material phase, and recovering said devolatilized molten polymeric material from the bottom of said separation zone.

3,311,677
PHOSPHOROUS, ARSENIC OR ANTIMONY DERIVATIVES OF UREA AND THIOUREA

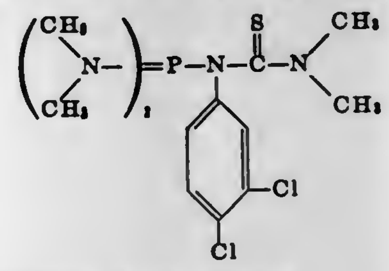
Günter Oertel, Cologne-Flittard, Hugo Malz, Leverkusen, Hans Holtschmidt, Cologne-Stammheim, and Eberhardt Degener, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Nov. 1, 1962, Ser. No. 234,869

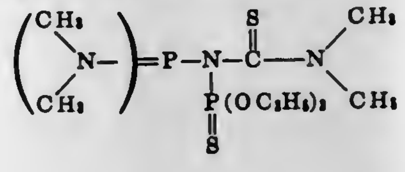
Claims priority, application Germany, Nov. 10, 1961, F 35,329

10 Claims. (Cl. 260—926)

1. The compound of the formula



2. The compound of the formula

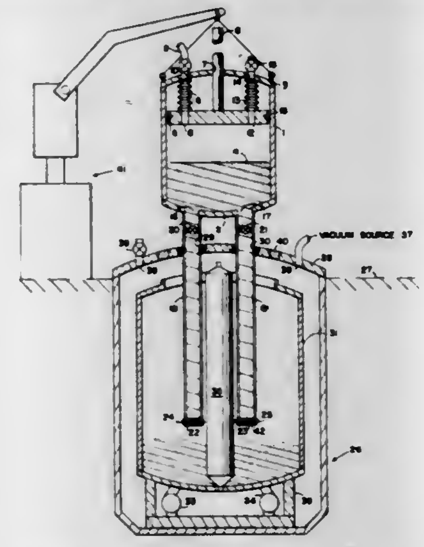


3,311,678
METHOD AND APPARATUS FOR CASTING STAPLE-CONTAINING PROPELLANT GRAINS

Winford G. Brock, Athens, and Joseph E. Nix, Guntersville, Ala., assignors to the United States of America as represented by the Secretary of the Army

Filed Sept. 17, 1965, Ser. No. 488,290

6 Claims. (Cl. 264—3)



1. The method of preparing a staple-containing solid propellant grain which comprises intermittently passing a staple-containing propellant mixture in the uncured, dough-like state through a barrier having a plurality of circular orifices of a diameter such as to cause alignment of said staples upon passage therethrough whereby said mixture is formed into a multiplicity of substantially spherical pellets, introducing a stream of said pellets into a mold whereby a randomized pellet bed is formed in said mold, degassing said pellet bed and curing the resulting degassed pellet bed.

6. Apparatus for preparing staple-containing solid propellant grains comprising in combination an enclosed generally cylindrical, vertically extending casting can form-

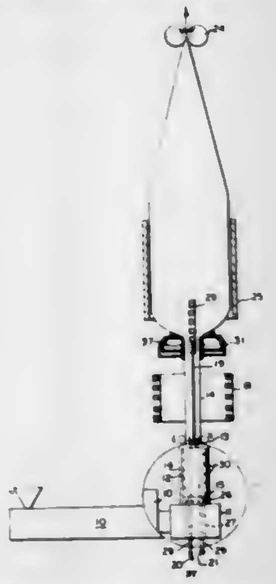
ing a propellant-containing region in its lower portion and a gas pressure chamber in its upper portion, downwardly movable pressure-transmitting means disposed between said regions, means for intermittently introducing pressurized gas into said chamber, at least one barrier at the bottom of said can communicating with said propellant-containing region, said barrier having a plurality of circular, uniform sized orifices ⅛ to ½ inch in diameter extending therethrough, a mold disposed below said barrier, and mold degassing means.

3,311,679
PROCESS FOR ORIENTING TUBULAR FILMS OF POLYMERIC MATERIAL

Edward Joseph Moore, Tonawanda, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 29, 1964, Ser. No. 421,781

13 Claims. (Cl. 264—25)



1. In a process wherein thermoplastic polymeric material is extruded in the form of a tubular sheet in its formative state; the tubular sheet is advanced at a predetermined initial rate; the tubular sheet is then quenched to a temperature below its formative state; sufficient pressure is maintained within the tubular sheet to prevent collapse and to provide, when the tubular sheet is heated to a temperature within its orientation temperature range, an expansion to a diameter at least 2 times the original diameter of the sheet; the tubular sheet is heated to a temperature within the orientation temperature range to expand the tubular sheet to a diameter at least 2 times its original diameter, said expansion being carried out while said tubular sheet is exposed to said heat source; the heated tubular sheet is advanced, while expanding, at a rate at least 2 times the initial rate of advancement; and the tubular sheet is cooled while the sheet is maintained substantially at its expanded diameter; the improvement comprising: initially restraining the tubular sheet at and beyond the plane of initial expansion and then permitting further expansion without restraint.

3,311,680
PROCESS AND APPARATUS FOR PELLETIZING POWDEROUS MATERIALS BY VIBRATIONAL FORCES

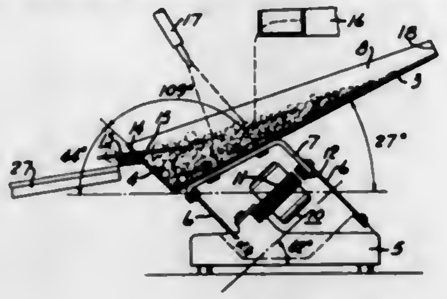
Shinobu Makino, Tokyo, Japan, assignor to Shinko Electric Co., Ltd., Toba-shi, Japan

Filed June 1, 1964, Ser. No. 371,713

Claims priority, application Japan, June 4, 1963, 38/29,409

11 Claims. (Cl. 264—37)

1. The method of continuously pelletizing powders by vibratory forces including the steps of supporting, for vibratory reciprocation in a predetermined arcuate path, upwardly inclined surfaces extending in opposite directions from a common juncture, feeding a powderous material to one inclined surface, subjecting the material to vibrations imparted to the inclined surfaces to continuously circulate the material in a closed path extending up one inclined surface and back over itself downwardly to the other inclined surface, supplying a liquid binder to the flowing powders to agglomerate and build them into hard pellets due to the hammering action produced by the vibratory reciprocation of the developing pellets against the vibratory inclined surfaces and against each other, selectively intercepting pellets of predetermined size from the top of the downwardly moving material for discharge.

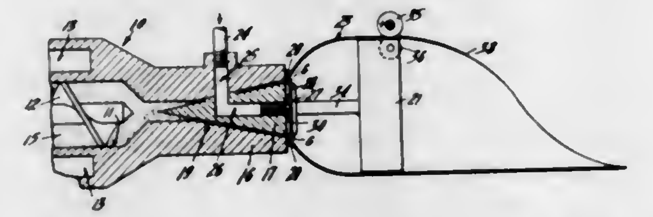


3,311,681
METHOD OF EXTRUDING A FOAMED PLASTIC SHEET HAVING A SKIN ON ONE SURFACE

Jerome Alfred Cherney and Hubert Joseph Germiat, Fox River Grove, and Elbert William Perry, Wonder Lake, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 28, 1960, Ser. No. 66,380

4 Claims. (Cl. 264—48)



1. In a method of making a foamed plastic sheet composed of a multitude of integral, thin-walled cells, including the steps of feeding a foamable fluid plastic to a die opening, extruding said plastic through said opening to form a tube, foaming said plastic simultaneously with said extrusion, closing said tube, and blowing a gas into said closed tube to expand the same, the improvement comprising impinging a gas against one surface of said tube adjacent said die opening, said gas having a lower temperature than said impinged surface whereby the cells contiguous said impinged surface are cooled.

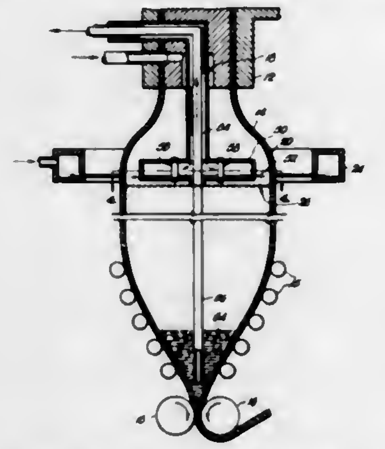
3,311,682
PROCESS FOR EXTRUSION OF TUBULAR PLASTIC FILM WITH EXTERNAL AND INTERNAL SPRAY COOLING

Edward Ringley, Wycoff, and Edward J. Grazulis, Clifton, N.J., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 21, 1963, Ser. No. 317,711

1 Claim. (Cl. 264—95)

In a blow-extrusion process for preparing thin gauge film of an ethylene homopolymer in which the ethylene homopolymer is extruded at a rate of at least about eight pounds per hour per circumferential inch of die opening and at a temperature above about 270° F. into ambient air in tubular form, the extruded tube is withdrawn from the die under positively applied force to orient the ethylene homopolymer in the direction perpendicular to the die face, gas pressure is applied to the interior of the extruded tube to expand the tube and orient the ethylene homopolymer in the direction parallel to the die face, the extruded tube is cooled, collapsed and passed through nip rolls, said cooling accomplished within a distance of about four die diameters downstream of the die face, by directing a stream of water substantially perpendicularly against the exterior surface of the hot expanded tube and cooling the hot tube to below about 180° F. within less than about one second, said stream of water, at least immediately prior to contacting the expanded tube, constituting a solid sheet in a plane substantially parallel to the die face, the improvement which comprises also directing a stream of water substantially perpendicularly against the interior surface of the hot extruded tube, said interior stream of water contacting the hot extruded tube in substantially the same plane as the exterior stream of water so that heat is withdrawn substantially uniformly from both surfaces of the hot extruded tube.

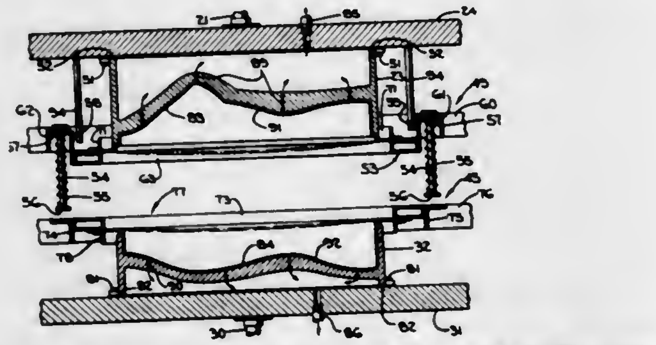


3,311,683
VACUUM FORMING METHOD

John Alesi, Jr., and John A. Alesi, Los Angeles, Calif., assignors to Formex Manufacturing, Inc., Santa Monica, Calif., a corporation of California

Original application Dec. 31, 1962, Ser. No. 248,596, now Patent No. 3,256,565, dated June 21, 1966. Divided and this application July 22, 1963, Ser. No. 303,702

2 Claims. (Cl. 264—92)



1. The method of vacuum forming a substantially complete enclosure by means of two mold halves, said method comprising the steps of:

supporting the edges of a pair of heat-fusible plastic sheets in a pair of separate spaced-apart rigid frameworks;

maintaining said frameworks spaced-apart and horizontal while positioning said frameworks between vertically spaced aligned horizontally extending heating elements to thereby concurrently heat both sides of both sheets to a heat-fusible temperature;

positioning said frameworks and their respective heated and separated sheets between said mold halves while the latter are separated;

engaging the edges of the cavities of said mold halves and said heated sheets;

withdrawing air from the cavities of said mold halves to thereby form said plastic sheets; and

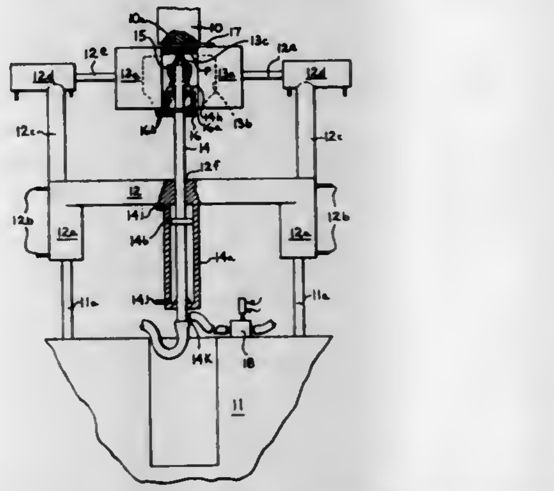
moving said mold halves and frameworks relatively towards one another whereby the edges of the cavities therein lie in contact with and squeeze and fuse said sheets together in a seam along the edges of said cavities.

3,311,684
METHOD FOR BLOW MOLDING THERMOPLASTIC ARTICLES

James Elmer Heider, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Sept. 3, 1963, Ser. No. 306,056

1 Claim. (Cl. 264—99)



In the method of blow molding hollow thermoplastic articles wherein a heated tubular formation of thermoplastic material is freely extruded through an orifice to form a parison which is subsequently expanded in a blow mold, the improvement comprising the steps of:

(1) grasping the freely extruded tubular formation at two axially spaced positions one of said positions being adjacent the leading end of the formation and the other at a trailing position relative thereto, said grasping at said trailing position pinching the tubing closed at that point to permit internal cooling of all of the tubing forwardly of the trailing position without substantial effect on the temperature of the following extruded thermoplastic material;

(2) severing the grasped tubular formation from the thermoplastic material issuing from the orifice;

(3) cooling the portion of the tubular formation intermediate the grasping portions to substantially the crystallization temperature of the thermoplastic material; and

(4) moving the grasped leading end of said cooled portion in the direction of extrusion relative to the grasped trailing end, thereby stretching said cooled portion and producing an axial stress oriented parison.

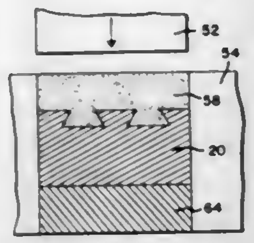
3,311,685
METHOD OF MAKING THERMOELECTRIC INITIATORS OF SEMICONDUCTOR MATERIAL

Harry B. Forney and Lloyd E. Line, Jr., Richmond, and Carl S. Muller, Hanover County, Va., assignors to Texaco Experiment, Incorporated, Richmond, Va., a corporation of Virginia

Original application May 3, 1962, Ser. No. 192,272, now Patent No. 3,211,096. Divided and this application Jan. 8, 1965, Ser. No. 430,787

1 Claim. (Cl. 264—111)

The method of making a dense compacted semiconductor device formed of a heat sink electrode and a semiconductor wafer comprising the steps of providing a face of the heat sink electrode with undercut grooves, placing said electrode in a pressure die, placing a quantity of granular semiconductor material on the side of said electrode which is grooved, and applying pressure to said granular semiconductor material of at least 50,000 pounds per square inch within said die, to thereby com-



pact said semiconductor material and to also join the compacted semiconductor material wafer to the heat sink electrode.

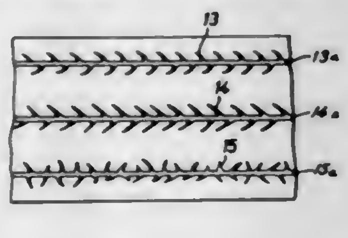
3,311,686
REFRACTORY SHAPE AND PROCESS OF MAKING SAME

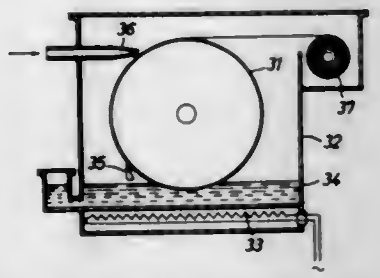
Calvin M. Christy, St. Louis, Mo., assignor to Christy Firebrick Company, St. Louis, Mo., a corporation of Missouri
No Drawing. Filed Mar. 15, 1965, Ser. No. 439,951
8 Claims. (Cl. 264—117)

1. A method of making a substantially spherical refractory shape comprising the steps of spraying about 5–15% water by weight into a rolling mixture of about 70–90% non-plastic refractory aggregate and about 10–30% hydraulic setting agent, said water being by weight of the aggregate and setting agent, rolling the wetted mixture while simultaneously adding additional dry ingredients and water in the said proportion until spherical refractory shapes of a substantially predetermined diameter from about ⅛" to about 2" in diameter are formed, discharging the shapes, and air drying the shapes to produce finished refractory products.

3,311,687
PROCESS FOR MANUFACTURING A MONOFILAMENT

Frederick Scragg and Alexander Albert Chubb, both of Sunderland Street Works, Macclesfield, England
Original application Dec. 5, 1961, Ser. No. 157,080, now Patent No. 3,243,339. Divided and this application Jan. 29, 1965, Ser. No. 428,949
Claims priority, application Great Britain, Dec. 6, 1960, 41,955/60
4 Claims. (Cl. 264—167)

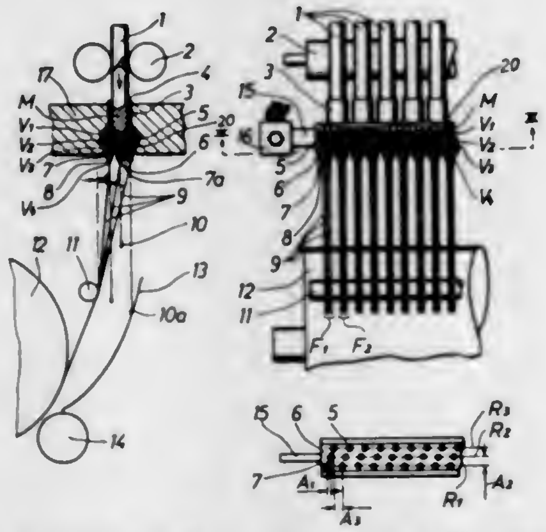




1. In a process of manufacturing a filament from plastic material, the steps of continuously moving in a predetermined direction a body having an endless surface formed with cavity means composed of an endless elongated cavity which extends substantially in said predetermined direction and a plurality of branch cavities extending from said endless elongated cavity in substantially transversal direction thereto; continuously passing successive increments of said endless surface through a bath of molten thermoplastic material which adheres to said surface and fills said cavity means therein; continuously removing from said endless surface excess molten thermoplastic material which is located in said surface outside of said cavity means so as to form in said cavity means an endless elongated filament structure composed of an endless elongated filament having branches and consisting of molten thermoplastic material; continuously cooling said endless elongated filament structure of thermoplastic material in said cavity means subsequent to removal of said excess molten thermoplastic material, so as to at least partly set the thermoplastic material of said filament structure; and continuously withdrawing said at least partly set endless elongated thermoplastic filament structure from said cavity means.

3,311,688
CONTINUOUS PRODUCTION OF FILAMENTS

Werner Hugo Wilhelm Schuller, Dr. Kurt Huber-Strasse 14, Munich-Grunwald, Germany
Filed Dec. 4, 1964, Ser. No. 415,957
Claims priority, application Germany, Dec. 6, 1963, Sch 34,281
14 Claims. (Cl. 264—176)



9. In a process for the continuous and simultaneous production of filaments from vitreous thermoplastic material, the steps of continuously feeding a plurality of rods of vitreous thermoplastic material endwise into a common heating chamber; heating the thermoplastic material in the tially vertically downwardly from said chamber a plurality of horizontally spaced filaments located in more than two substantially parallel rows, the filaments in each of said rows being in the vicinity of said chamber staggered with respect to the filaments in each of the other rows and all of said filaments being located in parallel vertical planes which are spaced from each other; guiding the filaments along inclined paths in said spaced parallel vertical planes substantially normal to the rows of filaments so that the filaments in said inclined paths remain spaced from each other and in the event of breakage of a filament any new filament withdrawn from said chamber along a vertical path will not interfere with said filaments in said inclined paths.

3,311,689
PREPARATION OF INORGANIC OXIDE MONOFILAMENTS

Robert H. Kelsey, Chagrin Falls, Ohio, assignor to Horizons Incorporated, Cleveland, Ohio, a corporation of New Jersey
Filed Jan. 17, 1963, Ser. No. 252,083
8 Claims. (Cl. 264—210)

1. A process for producing solid, transparent, flexible filaments of at least one metal oxide of a metal selected from the group consisting of aluminum, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, yttrium, zirconium, the lanthanide rare earths and hafnium which comprises:

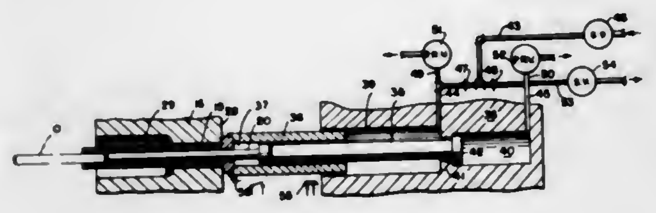
- (a) preparing a single phase liquid concentrate by first dissolving a water-soluble aliphatic carboxylate salt of said metal in water;
- (b) stabilizing said dilute solution by adding free carboxylic acid to said dilute solution, and adding about 0.002% by weight of a wetting agent to said solution;
- (c) thereafter filtering said solution thereby removing extraneous gases and undissolved solids from the resulting liquid;
- (d) and then removing water and other volatile constituents from the resultant clarified liquid by heating the same while at less than atmospheric pressure the combination of temperatures and pressures being such that water and other volatile constitutents in said clarified liquid are removed therefrom;
- (e) and, after the liquid has been concentrated sufficiently to be readily extrudable into filaments, maintaining the liquid concentrate at a temperature such that changes in its viscosity with changes in temperature are relatively small as compared with changes in viscosity with temperature at slightly lower temperatures, and extruding said concentrate, while it is maintained at said temperature, and recovering the resulting filaments.

8. The process of claim 1 including the following additional steps:

- (f) stretching the freshly extruded filament immediately after it emerges from a spinnerette and
- (g) firing the stretched filament to burn away the organic matter present therein.

3,311,690
INJECTION MOLDING METHOD FOR ENCAPSULATING METAL OBJECTS

William H. Fischer, McHenry, Ill., assignor to Continuous Molding Corporation, Niles, Ill., a corporation of Illinois
Filed Mar. 13, 1963, Ser. No. 264,838
5 Claims. (Cl. 264—278)



5. The method of encapsulating an object in a plastic substance which consists in,

first: positioning the object on a first element mounting a reciprocable second element which partially embraces the object and disposes it in a molding die cavity in spaced relationship with the walls thereof and in endwise engagement with an opposed support;

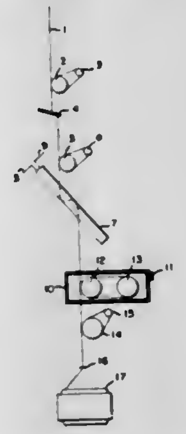
secondly: injecting a controlled pressured flow of a fluid plastic substance into the die cavity sufficient to fill the cavity and simultaneously forcibly retract the second element to gradually increase the area of the object for engagement by the plastic substance;

thirdly: retracting the first element as the second element becomes retracted to a predetermined extent to withdraw the object from said opposed support and expose to the plastic substance the area of the object engaged by said opposed support, and then continuing the retraction of both said elements at a predetermined rate to fix the position of the object in the die cavity prior to the said elements becoming fully withdrawn from the object; and

finally: removing the encapsulated object from the die cavity.

3,311,691
PROCESS FOR DRAWING A POLYAMIDE YARN

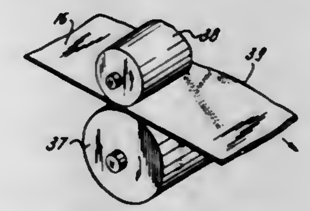
Alfred Nelson Good, Hixson, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 26, 1963, Ser. No. 311,727
3 Claims. (Cl. 264—290)



1. A process comprising forwarding a substantially undrawn polyamide yarn to a friction element to provide a first drawing by snubbing the said yarn about the said friction element and removing the said yarn from the said friction element at a linear speed of from about 2.2 to about 5.0 times the rate at which the said yarn is supplied to the said friction element, thereafter, while further forwarding the said yarn, simultaneously (A) heating the said yarn through a fixed length of yarn path to a temperature of at least 130° C. and less than 10° C. below the melting point of the said polyamide and (B) providing a second drawing of the said yarn by removing the said yarn from the said length of yarn path at a linear speed at least about 1.1 times the rate at which the said yarn is supplied to the said length of yarn path, thereafter maintaining the yarn at constant length while heating substantially at the temperature of the said length of yarn path for a period of from about 0.25 to about 0.60 second and finally cooling the said yarn while forwarding to windup at a linear rate of from about 0.985 to about 0.895 times the rate of the said yarn while maintained at constant length.

3,311,692
GRAVURE EMBOSSING OF THERMOPLASTICS

Robert B. Baird, Scotch Plains, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed May 8, 1963, Ser. No. 278,927
13 Claims. (Cl. 264—293)



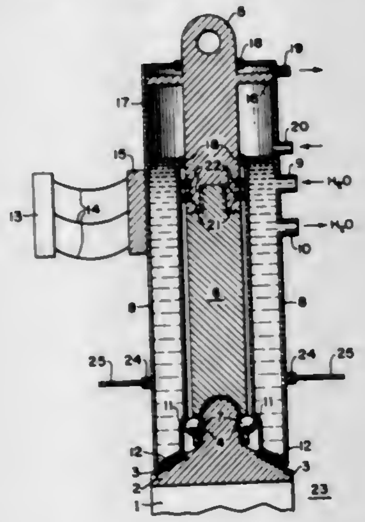
1. A method for preparing intricately designed thermoplastic articles from thermoplastic sheets, which comprises heating a sheet of thermoplastic material having a thickness ranging from about .5 to about 50 mils to a

temperature above the softening point of the thermoplastic; supporting the thermoplastic material with a resilient backing member having a resiliency as evidenced by a depression ranging from 2 to 20 percent when subjected to a force of 100 pounds per square inch for one minute; contacting the thermoplastic material with an intaglio etched rigid member having a plurality of microscopic cells, each respective cell having a cross-sectional dimension of no greater than 22 mils and no less than 8.5 mils, a cross-sectional area ranging from 36 square mils to 230 square mils and a depth ranging from 4 microns to 80 microns; compressing the resiliently supported thermoplastic material against the etched member with a pressure sufficient to force the thermoplastic material into the microscopic cells while maintaining the thermoplastic material at a temperature above the softening point of the thermoplastic material and thereafter cooling the thermoplastic material.

ELECTRICAL

3,311,693
DEVICE FOR SUSPENDING A CONSUMABLE ELECTRODE AND SUPPLYING A MELTING CURRENT THERETO

Alfred Hauff, Bruchkobel, and Helmut Scheidig, Hanau am Main, Germany, assignors to W. C. Heraeus G.m.b.H., Hanau am Main, Germany, a German firm
Filed Dec. 17, 1963, Ser. No. 331,170
Claims priority, application Germany, Dec. 20, 1962, H 47,756
10 Claims. (Cl. 13—15)

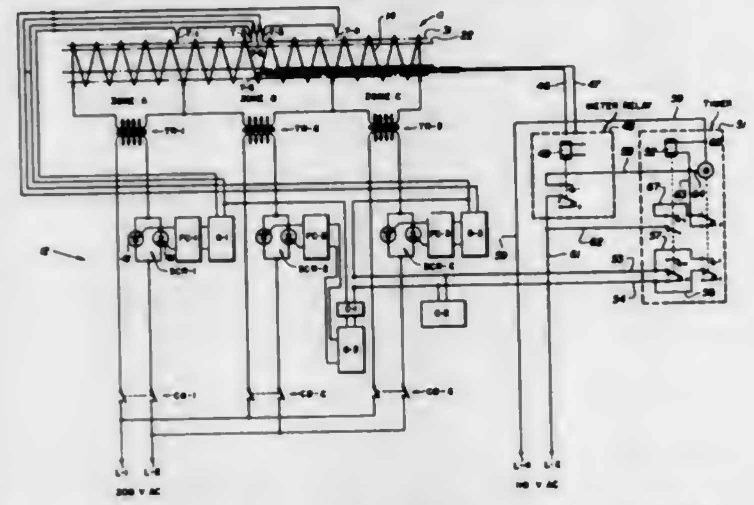


1. A device for suspending a consumable electrode which has a terminal stub of reduced diameter comprising a reentrant portion for lifting engagement in an arc furnace and for supplying the melting current thereto comprising an electrode suspension rod, a supporting head rigidly secured to said suspension rod, locking means on the lower end of said supporting head comprising at least one stub locking member mounted in said supporting head for radial inward locking movement during continuous longitudinal constraint with respect to said supporting head adapted to lock said supporting head to the upper end of the consumable electrode, and actuator means comprising current supply means separate from and surrounding said supporting head and a considerable part of said suspension rod and movable relative thereto so as to engage with said electrode to supply the melting current thereto and having a lower extremity which includes an interior cavity portion shaped to slidingly engage with and urge into radially inward stub locking motion in said reentrant portion the said at least one stub locking member upon movement by the supporting head, upwardly into the said current supply means.

3,311,694
DIFFUSION FURNACE UTILIZING HIGH SPEED RECOVERY

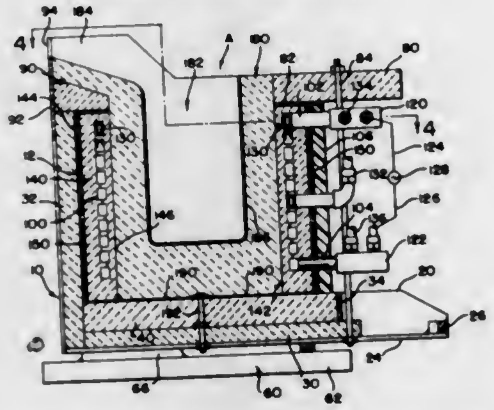
Cecil A. Lasch, Jr., Los Altos, Calif., assignor to Electroglas, Incorporated, Menlo Park, Calif., a corporation of California
Filed May 28, 1965, Ser. No. 459,795
10 Claims. (Cl. 13—24)

9. In a diffusion furnace, means forming a zone to be heated, heating means disposed in the zone, a source of power, control means for connecting the source of power to the heating means, temperature sensing means disposed in said zone, additional temperature sensing means disposed in said zone, means providing first and second reference set points representing first and second temperatures in which the second set point represents a temperature substantially higher than the first set point, and means connecting said additional temperature sensing means to said means providing first and second predetermined reference set points to said control means whereby said control means is normally under the control of said first set point to maintain said zone at said first temperature represented by the first set point and said control means is under the control of said second set point when the additional temperature sensing means senses a drop below said first temperature to cause the temperature in said zone to rise to said first temperature and then to overshoot said first temperature.



3,311,695
COIL ASSEMBLY FOR AN INDUCTION MELTING FURNACE AND METHOD OF MAKING SAME

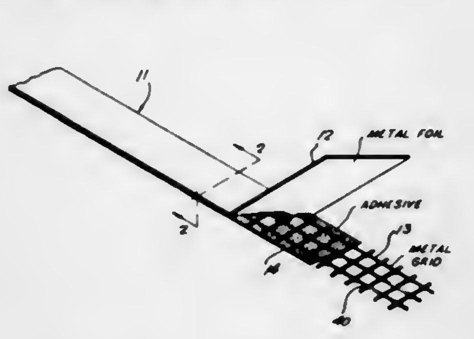
Robert J. Kasper, Seven Hills, Cuyahoga, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 9, 1964, Ser. No. 402,850
13 Claims. (Cl. 13—27)



1. In an induction melting furnace comprising: an induction heating coil assembly having a multi-turn heating coil with input leads adapted to be connected to a source of alternating current, and a frame for supporting said coil assembly, the improvement comprising; said coil assembly including a hardened refractory material cast as a self-supporting body around said induction heating coil to fixedly support said coil within said cast body with said input leads extending outwardly from said body, said body having an inner chamber coaxial with said coil for receiving a rammed refractory melting pot and an outer lateral surface, and a non-conductive band wrapped around said lateral surface for reinforcing said body.

3,311,696
ELECTRICALLY AND THERMALLY CONDUCTIVE SHIELD

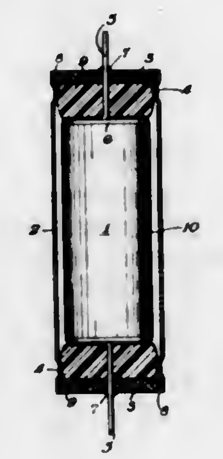
Donald A. Melnick, 7301 Birch Ave., Takoma Park, Md. 20012
Filed June 18, 1965, Ser. No. 465,043
11 Claims. (Cl. 174—18)



1. A pliable conductive shield comprising a body of thin malleable sheet metal, uniformly distributed substantially uni-planar conductive projection means secured to the bottom surface of said body in conductive contact therewith, and a layer of adhesive material on said bottom surface and being substantially flush with said projection means for securing the shield to a metal surface with said projection means in conductive engagement with the metal surface.

3,311,697
CAPACITOR UNIT

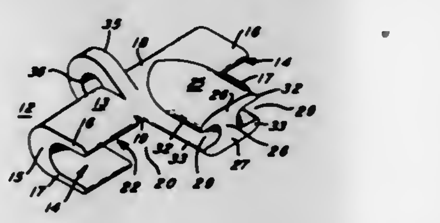
James Quinn, Whiteburn, West Lothian, Scotland, assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Aug. 10, 1965, Ser. No. 478,628
Claims priority, application Great Britain, Aug. 19, 1964, 33,888/64
6 Claims. (Cl. 174—52)



1. A capacitor unit having a generally cylindrical capacitive element within a tubular housing, said element being of smaller diameter and shorter than said housing, said element being restrained against axial and lateral movement relative to said housing by a compressed resilient member between each end of said element and the adjacent rigid end closure of said housing, each resilient member having a generally disc-like form, and a lead-wire of said element extending through an aperture in each resilient member.

3,311,698
SERVICE ATTACHMENT CONNECTOR FOR SECONDARY DISTRIBUTION SYSTEM

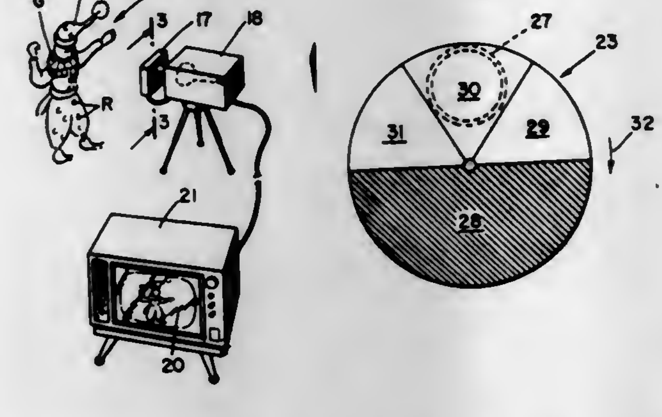
John J. Cockroft, 739 Blossom Road, Warminster, Pa. 18974; Charles C. Scarlett, 221 S. Wayne Ave., Wayne, Pa. 19087; and Archibald T. Flower, Glenside, and David L. Buchanan, Flourtown, Pa., said Flower and Buchanan assignors to said Cockroft and Scarlett
Filed June 11, 1965, Ser. No. 463,242
12 Claims. (Cl. 174—72)



1. A service attachment connector comprising
a unitary body of metal having an elongated secondary cable gripping section and, extending transversely therefrom,
a service wire gripping section,
said cable gripping section having a U-shaped channel with spaced pairs of bendable arms.
said wire gripping section having plate portions with a peripheral wire receiving groove and parallel margins bendable into gripping engagement with a wire.

3,311,699
SUBJECTIVE COLOR SYSTEM

James F. Butterfield, Sherman Oaks, Calif., assignor, by mesne assignments, to The Battelle Development Corporation, a corporation of Delaware
Filed Sept. 10, 1963, Ser. No. 307,976
56 Claims. (Cl. 178—5.2)



1. A method of modulating light for providing a subjective color reproduction of a multi-colored image by providing light in an intermittent manner in a sequence in accordance with the following steps
blocking substantially all light from said image,
successively blocking substantially all light from each one of three primary color components of said image in turn while passing substantially all light from other color components of said image, and
repeating said steps to sustain subjective color corresponding to respective colors in said image.

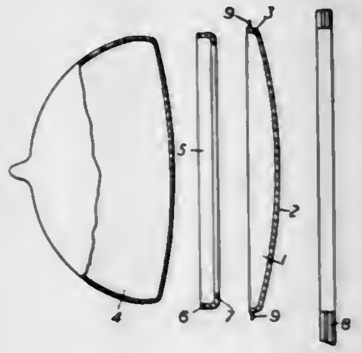
3,311,700
TELEVISION TUBE ASSEMBLIES, METHODS OF FORMING SUCH ASSEMBLIES AND IMPLOSION GUARDS THEREFOR

William Raymond Bulcraig, Prescot, and Walter Roy Blood, Huyton, near Liverpool, England, assignors to Pilkington Brothers Limited, Liverpool, England, a company of Great Britain

Filed June 6, 1963, Ser. No. 286,091

Claims priority, application Great Britain, June 7, 1962, 22,124/62

1 Claim. (Cl. 178—7.82)



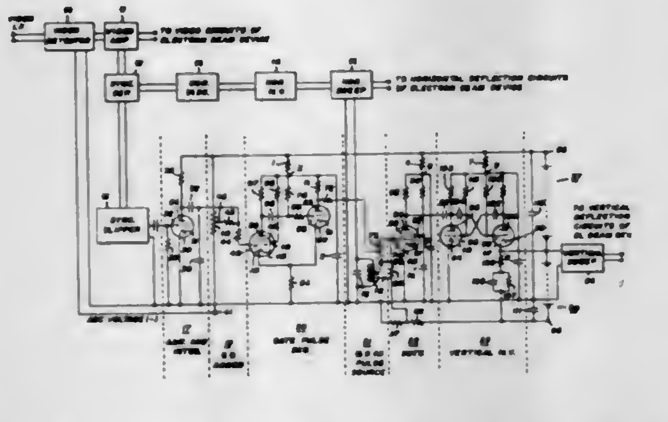
A television tube assembly comprising a television tube, an implosion guard of toughened transparent glass consisting of a tray formation including a double curvature base matching the end formation of the said tube and a continuous integral boundary wall adapted to surround the end of the tube and having lugs extending outwardly from each corner thereof, and a cushioning gasket comprising a band portion fitted over the peripheral wall of the tube and lying between and in contact with the tube wall and the boundary wall of the guard, the gasket further comprising an integral beading lying between and in contact with the margins of the front face of the tube and the base of the guard, the gasket being formed of a strip of resilient material having a thickness equal to the desired space between the television tube front face and the base of the said guard.

3,311,701
VERTICAL SYNCHRONIZATION SYSTEM FOR USE IN A TELEVISION RECEIVER

Edward I. Lynch, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York

Filed Oct. 30, 1963, Ser. No. 320,072

8 Claims. (Cl. 178—69.5)



1. In a television system, means for deriving from a received television signal a series of integrated vertical synchronizing pulses, means responsive to a predetermined amplitude level of said integrated pulses to produce another series of pulses, each pulse in said other series corresponding to a respective pulse in said one series, a source of short pulses having a repetition rate of an integral multiple of the horizontal scanning frequency of the television system, means responsive to said other series of pulses for deriving from said source of short pulses groups of such short pulses, each group occurring during the occurrence of a respective one of said other series of pulses, and means for developing a third series of pulses each responsive to the first one of a respective group of short pulses.

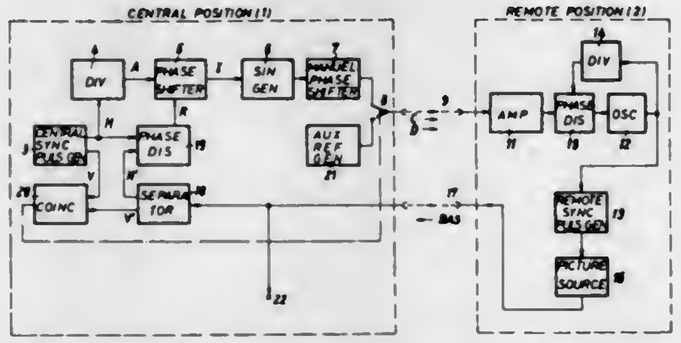
3,311,702
APPARATUS FOR SYNCHRONIZING A TELEVISION PICTURE SIGNAL SOURCE

Ernst Legler, Darmstadt, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany

Filed Nov. 12, 1963, Ser. No. 322,630

Claims priority, application Germany, Nov. 13, 1962, F 38,296

6 Claims. (Cl. 178—69.5)



1. Apparatus for synchronizing a television picture signal source situated at a remote position with sync signals generated at a central position comprising, in combination, a central sync pulse generating equipment generating a train of central horizontal sync pulses by means of a master pulse generator operating at an exactly predetermined frequency; a reference signal generator generating a periodical reference signal indicating the phase of said central horizontal sync pulses; a phase shifting device shifting the phase of a signal applied to its first input in dependence upon a control voltage applied to its second input; connection means applying said reference signal to said first input of said phase shifting device; a remote sync pulse generating equipment generating a train of remote horizontal sync pulses and synchronizing said picture signal source; means for transmitting said reference signal via said phase shifter to said remote position; means for synchronizing said remote sync pulse generating equipment with said reference signal; a phase discriminator having two inputs and one output and generating a control voltage depending upon the phase difference of signals applied to its two inputs; means applying said remote horizontal sync pulses to one of said inputs of said phase discriminator; means applying said central horizontal sync pulses to the other one of said inputs of said phase discriminator and connection means connecting said output of said phase discriminator to said second input of said phase shifting device.

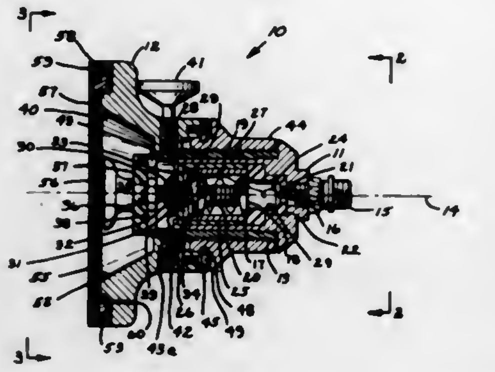
3,311,703
MICROPHONE WITH LOW FREQUENCY FILTER

Carl E. Grinstead, 1600 S. Baldwin, Arcadia, Calif. 91006

Filed May 21, 1963, Ser. No. 282,050

13 Claims. (Cl. 179—1)

1. A microphone comprising a capacitor and a filter, said capacitor having a first plate and a second plate, said plates being spaced from each other and having an electrical capacitance between them which varies according to the spacing between said plates, said spacing between said plates being variable by externally produced sound waves striking said first plate, said filter comprising a membrane spaced from said first plate forming a pocket therebetween, the pocket being closed, there being a restricted fluid passageway from the pocket to atmosphere so proportioned as to permit flow of air therethrough in response to forces of relatively low frequencies imposed on the membrane, and to impede said flow in response to forces of relatively higher frequencies imposed on the membrane, whereby to act as a mechanical filter limiting the transmission of the lower frequencies to the first plate.

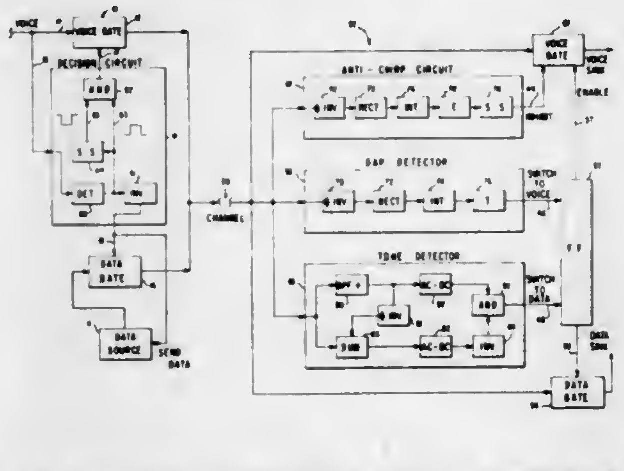


3,311,704
VOICE-DATA MULTIPLEXING SYSTEM FOR TRANSMITTING DATA DURING PAUSES IN THE VOICE SIGNALS

Richard F. J. Filipowsky, Constantine Prisekin, and Frank S. Davidson, Rockville, Md., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 28, 1963, Ser. No. 291,394

3 Claims. (Cl. 179—2)



3. A voice-data multiplexing system in which a transmitter utilizes idle gaps in voice signals for the transmission of data signals over a common transmission channel, comprising:

transmitter means including

  means for preventing the transmission of any signal over said channel for a predetermined first duration after the appearance of voice signals at said transmitter;

  means responsive only to gaps in said voice signal exceeding a predetermined second duration for initiating the transmission of a keying signal to herald subsequent data transmission; and

receiver means including

  means responsive to the absence of signals in said transmission channel for said predetermined first duration for causing said receiver means to gate subsequently received voice signals over said channel to a voice sink;

  means responsive to gaps of said second predetermined duration in the signal over said channel for generating a first output signal;

  means responsive to the reappearance of any signal after said second predetermined duration for generating a second output signal;

  means including triggering means responsive to said first and second output signals for preventing the gating, to said voice sink, of any signals received subsequent to the appearance of a gap of said second predetermined duration; and

  means responsive to said keying signal for causing said receiver means to gate signals subsequently received over said channel to a data sink.

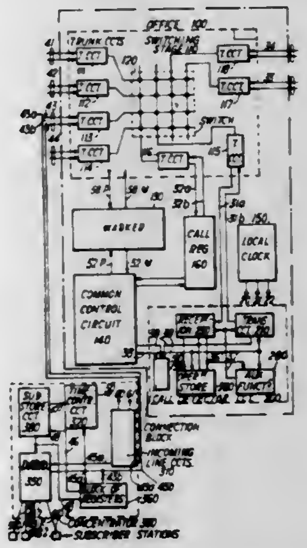
3,311,705
LINE CONCENTRATOR AND ITS ASSOCIATED CIRCUITS IN A TIME MULTIPLEX TRANSMISSION SYSTEM

Jean Pierre Le Corre, Sainte-Genevieve-des-Bois, and Rene Alexandre Pierre Marcel Lefevre, Jose Serrano, and Raphael Guy Yelloz, Paris, France, assignors to International Standard Electric Corporation

Filed Apr. 5, 1963, Ser. No. 270,871

Claims priority, application France, Apr. 6, 1962, 893,616

13 Claims. (Cl. 179—15)



5. A time division multiplex telephone system comprising an office having a plurality of concentrators associated therewith via multi-channel highways, means for selecting and using any free one of said channels as a service channel over which said office and concentrators may exchange control information, local clock means at said office and each of said concentrators, means responsive to signals transmitted during a particular time slot for synchronizing said clocks, and space division switching means operated responsive to said exchange control information for selecting particular time slots to provide a given connection for giving communication through said system.

3,311,706
MULTIPLE MODULE TIME DIVISION MULTIPLEX COMMUNICATION SYSTEM UTILIZING HIGH-LOW SPEED CONVERSION

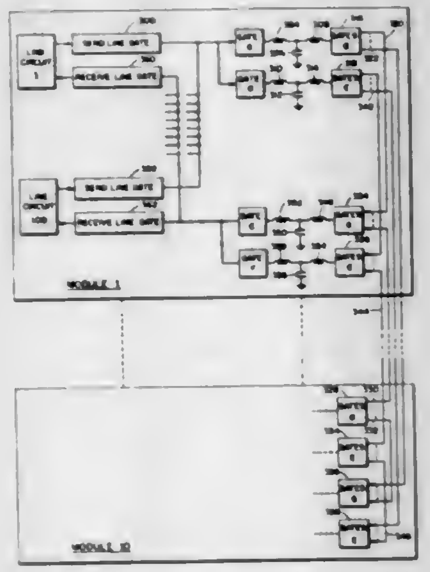
Barrie Brightman and Paul K. Kavanaugh, Webster, and Richard Scott, Pittsford, N.Y., assignors, by mesne assignments, to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Filed Apr. 11, 1963, Ser. No. 272,251

5 Claims. (Cl. 179—15)

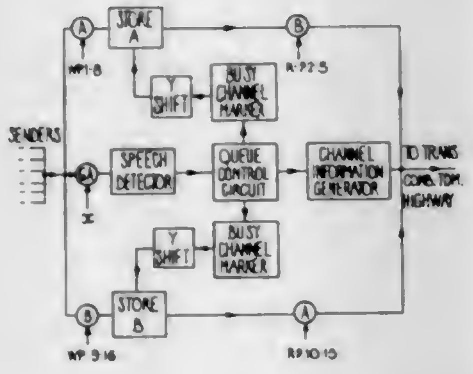
1. In a system for transferring an information analog signal from a first of a plurality of line circuits to a second of said plurality of line circuits, comprising a first and a second information storage unit, a third and a fourth information storage unit, first means including a send gate and an output control gate in series for periodically transferring a sample of said signal from said first line circuit to said first storage unit during a first time interval of given duration, second means for transferring

said sample stored by said first storage unit to said third storage unit during a second time interval following said first time interval which second time interval is substantially longer in duration than said given duration, and third means including a receive gate and an input control gate in series for transferring said sample stored by said third storage unit to said second line circuit during a third time interval following said second time interval which third time interval is substantially equal in duration to said given duration, said send gate, output control gate, input control gate and receive gate being operated only for said given duration, said send and receive gates operating at twice the frequency of said input and output control gates, fourth means for transferring a sample of a second signal from a third line circuit to said second storage means, fifth means for transferring information stored in said second storage unit to said fourth storage unit during a fourth time interval of substantially equal duration to said second time interval, and sixth means for transferring said sample of said second signal from said fourth storage means to a fourth line circuit.



3,311,707
TIME ASSIGNMENT SPEECH INTERPOLATION SYSTEM

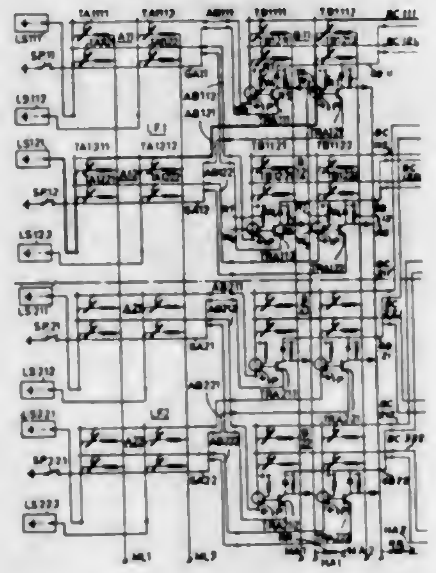
David Ian Urquhart-Pullen, Ascot, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed June 26, 1963, Ser. No. 290,797
Claims priority, application Great Britain, June 27, 1962, 24,722/62
5 Claims. (Cl. 179—15)



1. In a multiplex transmission system having a smaller number of transmission channels than information channels, a transmitter, signal storage means in said transmitter, means for writing signals from each of the information channels into the store in recurrent cycles and means for reading from the store information to be transmitted during the intervals between the writing cycles, together with channel selection means including means for interrogating each channel during writing, a first device which is set if the channel carries information during the present cycle, a second device which is set by the first device and retains its setting until the next cycle and means for reading from the store signals of those information channels whereof both associated devices are in the set state.

3,311,708
MEANS FOR IDENTIFYING FREE CHANNELS IN AN AUTOMATIC SWITCHING SYSTEM

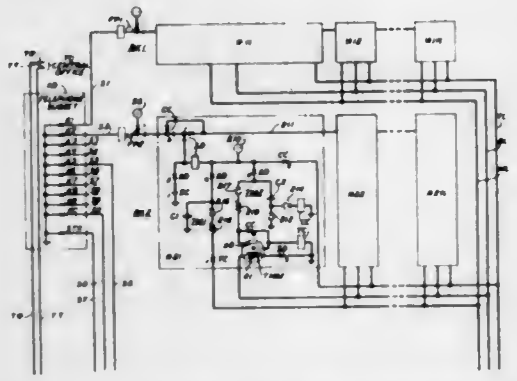
Jan Louis de Kroes, Hilversum, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 28, 1963, Ser. No. 291,489
Claims priority, application Netherlands, July 25, 1962, 281,507
6 Claims. (Cl. 179—18)



1. Means for identifying free channels in an automatic switching system of the type having first and second groups of conductors, a plurality of switching stages sequentially arranged between said first and second groups, a plurality of first conductors for connecting each conductor of said first group to the first stage, a plurality of second conductors for connecting each conductor of said second group to the last stage, and a plurality of intermediate conductors for connecting each stage to the next succeeding stage, each switching stage comprising a plurality of switch means whereby a plurality of channels are provided between each conductor of said first group and each conductor of said second group, each channel comprising a first conductor, an intermediate conductor between each stage, and a second conductor; said means for identifying free channels comprising a plurality of elements having negative resistance characteristics, each said element corresponding to a separate intermediate conductor, means for biasing each said element to a nonconductive state when the respective intermediate conductor forms a part of a busy channel, a separate first point corresponding to each conductor of said first group and a separate second point corresponding to each conductor of said second group, a source of potential, means for interconnecting said elements between said first and second points whereby a plurality of paths are formed between each first point and each second point by way of a plurality of said elements in series relationship, each said path including only those elements which correspond to intermediate conductors forming a single channel between the conductors of the first and second groups corresponding to the respective first and second points, means for selectively connecting said source between a first point and a second point, and means for indicating current flow in said paths.

3,311,709
MULTIDIGIT REGISTER CIRCUIT HAVING RANDOM INTERROGATING MEANS

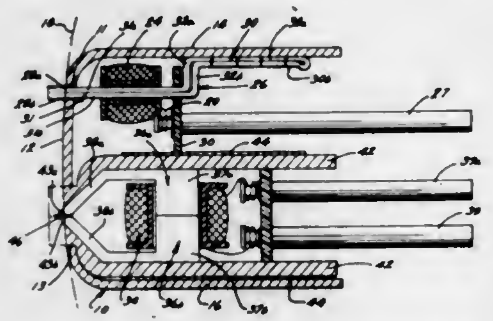
Andrew Bontempo, Bayshore, N.Y., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed Mar. 20, 1964, Ser. No. 353,397
14 Claims. (Cl. 179—18)



1. A multidigit register circuit comprising a plurality of digit registers each individually associated with a particular digit value and operable to register a single digit of that value, means for receiving input digits and for selectively operating individual ones of said digit registers in accordance with the digit values of said input digits, readout means individual to each of said digit registers and responsive to the order of registration of said input digits in said digit registers for interrogating said digit registers selectively in said order of registration.

3,311,710
COMBINATION RECORD AND ERASE HEAD HAVING A MAGNETIC HOUSING

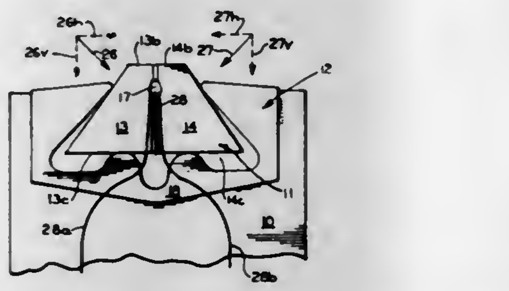
Charles F. Murphy, Vermontville, and Leo W. Page, Potterville, Mich., assignors to Michigan Magnetics, Inc., Vermontville, Mich., a corporation of Michigan
Filed Mar. 4, 1963, Ser. No. 262,525
8 Claims. (Cl. 179—100.2)



1. A combination head for tape recorders, comprising: a housing of magnetically permeable material having a tape-engaging face; erasing head means in said housing forming a magnetic circuit with a portion of said housing; said erasing head means including core means protruding through said tape-engaging face and forming an erasing gap means between said core means and said housing at said tape-engaging face; recording head means in said housing including a magnetic circuit having core pieces protruding through said tape-engaging face and forming a recording gap between the core pieces; said erasing gaps and recording gaps being aligned, and means for magnetically insulating said recording head means from said housing and erasing head means.

3,311,711
RESILIENT CORE HOLDER FOR PRESSING HEAD SECTIONS INTO ALIGNMENT

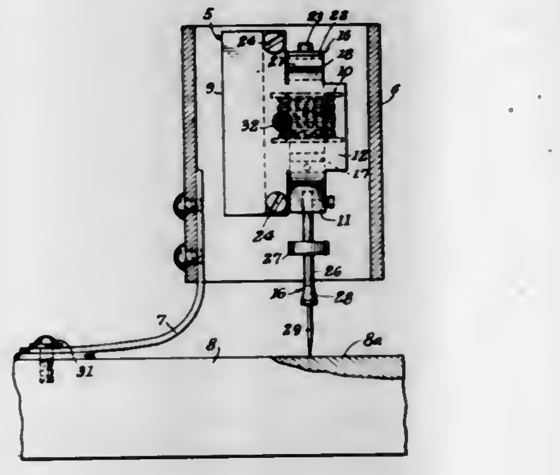
Michael B. Maryatt, Sunnyvale, and Henry V. Milewski, Jr., Redwood City, Calif., assignors to Mach-Tronics, Inc., Mountain View, Calif., a corporation of California
Filed July 29, 1963, Ser. No. 298,815
6 Claims. (Cl. 179—100.2)



1. A magnetic transducer head comprising: a core including a pair of magnetic sections with inclined sides and a non-magnetic spacer separating the magnetic sections; a core holder including a body member having aligning shoulders and having flexible arms extending inwardly from the ends of the body member to form a recess for receiving the core, said core being mounted in the recess formed in said core holder with each of said flexible arms engaging the inclined side of one of the magnetic sections of the core, said flexible arms urging the magnetic sections in a direction to press the magnetic sections together against its non-magnetic spacer, and said flexible arms urging the magnetic sections in another direction to bear against the aligning shoulders of the body member; and a core mounting structure, said core holder being secured to the core mounting structure.

3,311,712
SONIC TRANSDUCER

John F. Cain, Pacific Palisades, Calif., assignor, by direct and mesne assignments, of one-half to Alan A. Allen, Los Angeles, Calif., and one-half to Harry Z. Marx, La Jolla, Calif.
Filed Nov. 27, 1963, Ser. No. 326,595
6 Claims. (Cl. 179—113)



1. A sonic transducer comprising:

(a) an electro-magnetic reproducer having an exciter coil,

(b) an armature extending through said coil and mounted on a pivot to move pivotally in response to variations in the electrical impulses induced in the coil,

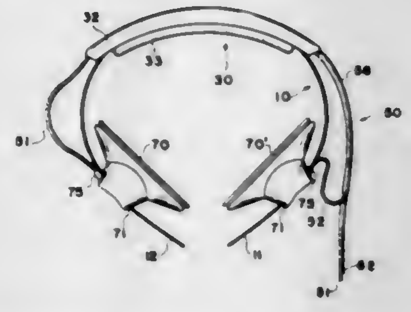
(c) a resonator carried by one vibrating end of the armature,

(d) said resonator including a flexible and elongated pointed member,

(e) the point of the member being adapted to be impinged upon the surface of a fixed and solid member to flex and transmit its vibrations to said solid member and, thereby, produce sound, and
(f) flexible means for fixedly mounting the reproducer.

3,311,713
HEADBAND AND CORD SETS FOR EARPHONES

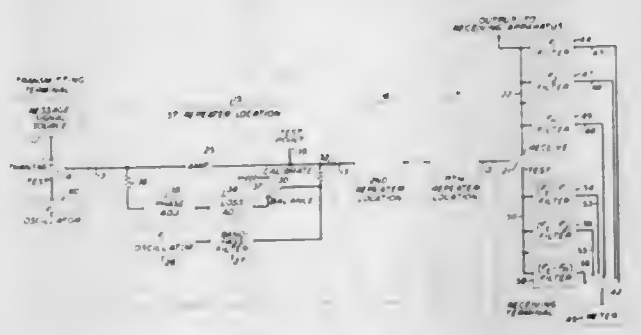
Ronald A. Knuebel, Ashtabula, Ohio, assignor to The Astatic Corporation, Conneaut, Ohio, a corporation of Ohio
Filed July 3, 1963, Ser. No. 292,565
10 Claims. (Cl. 179—156)



1. In a headband assembly for headphones, a pair of curved U-shaped side bands disposed with their closed ends spaced from each other and their open ends in confronting relation, an earphone captively and slidably engaged on each of said bands, a curved cushion assembly underlying the juncture of said bands, a grooved boss on the upper side of said cushion assembly for receiving and disengageably locking said bands to each other and to said boss, a metal clip anchoring said bands on said boss, plural conductor means anchored adjacent said boss and extending to said earphones, and a cover over the outer surface of said cushion assembly, said cover including means to maintain said bands locked, to maintain anchorage of said conductors and to securely attach to said cushion assembly.

3,311,714
METHOD AND APPARATUS FOR TESTING A REPEATERED TRANSMISSION PATH

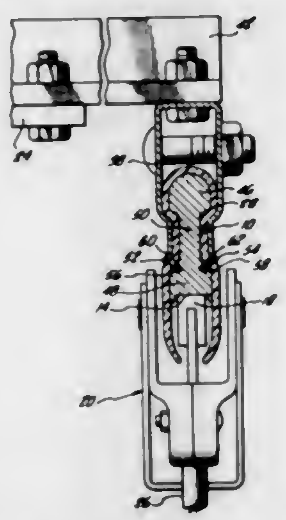
Louis Howson, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 20, 1963, Ser. No. 332,076
5 Claims. (Cl. 179—175.31)



1. Apparatus for monitoring the operation of an amplifier which comprises, in combination, a source of a single frequency testing signal, a first circuit path for applying said signal to the input of said amplifier, a second circuit path for applying said signal to the output of said amplifier, means for adjusting the relative impedances of said first and said second circuit paths such that the signal passing to said output through said second circuit path is equal in amplitude to and 180° out of phase with the signal passing to said output through the combination of said first circuit path and said amplifier, and means for measuring the magnitude of any signal having said single frequency which appears at the output of said amplifier due to changes in the transfer gain of said amplifier.

3,311,715
HEATED TROLLEY CONDUCTOR SYSTEM

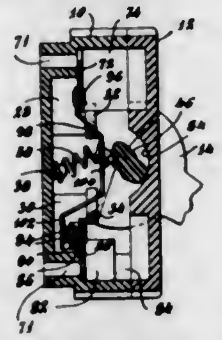
James A. Corl, San Carlos, and Cecil J. Mayo, Hillsborough, Calif., assignors to Insul-8-Corp., San Carlos, Calif., a corporation of California
Filed Feb. 10, 1965, Ser. No. 431,540
5 Claims. (Cl. 191—27)



1. An elongated conductor bar having a contact surface extending along the bottom thereof for engagement by a current collector, the conductor bar having a pair of open external slots extending longitudinally of the bar respectively adjacent opposite sides thereof, a pair of electrical heater wires each having an electrically insulative covering and respectively disposed in said external slots, and an elongated insulating sheath engaged over said conductor bar so as to substantially cover the top and sides thereof while leaving said contact surface accessible, the insulating sheath covering said external slots so as to physically confine the heater wires therein.

3,311,716
SNAP-ACTION SEQUENTIAL MULTI-CIRCUIT SWITCH

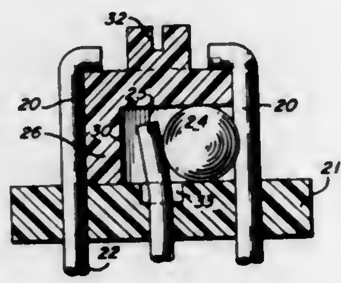
Ernest R. Carlson, Fairfield, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Oct. 20, 1965, Ser. No. 498,855
9 Claims. (Cl. 200—6)



1. In a switch including first and second arms movable, respectively, against first and second fixed contacts and means for selectively moving said arms against said fixed contacts, the improvement which comprises: a resilient conductive shunt member having a first end secured to the first fixed contact of said switch and a second end intermediate the second fixed contact and said second arm, said second end being normally displaced from said second fixed contact but movable thereagainst by said second arm.

3,311,717
ELECTRICAL SWITCH WITH IMPROVED MOVABLE CONTACT AND DETENT STRUCTURE

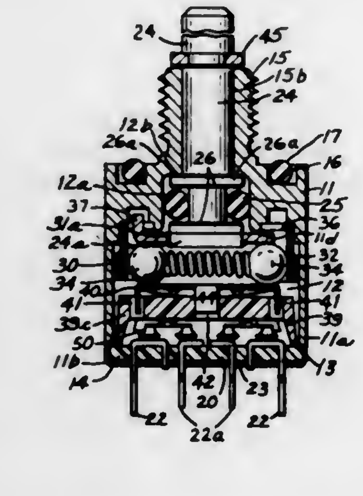
Melvin A. Lace, Prospect Heights, Ill., assignor to Oak Electro/Netics Corp., a corporation of Delaware
Filed Dec. 16, 1965, Ser. No. 514,247
13 Claims. (Cl. 200—8)



1. An electrical switch comprising:
a support,
a plurality of elongated, electrically conductive contact members extending from said support and arranged substantially equally spaced from each other in the shape of a ring,
a bridging contact of conductive material movable across said support to complete a circuit between contact members,
a resilient wire extending from said support and located at the center of said ring,
said bridging contact being located between said resilient wire and adjacent conductive contact members along said ring,
a carrier adjacent said bridging contact for moving said bridging contact along said ring, and
means mounting said carrier for rotation about the center of said ring.

3,311,718
ROTARY ELECTRIC SWITCH WITH IMPROVED INTERNAL ACTUATING AND CONTACT STRUCTURE INCLUDING TOLERANCE COMPENSATOR MEANS

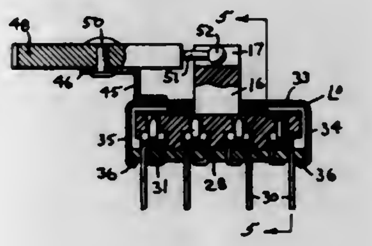
Kenneth C. Allison, Crystal Lake, Ill., and Thomas R. Beaver, Elkhart, Ind., assignors to CTS Corporation, Elkhart, Ind., a corporation of Indiana
Filed Apr. 14, 1965, Ser. No. 464,255
16 Claims. (Cl. 200—11)



1. In a switch, the combination of a cup-shaped housing defining a chamber open at one end, a contact carrier closing the open end of the chamber, a shaft rotatably mounted in the housing and having one end extending into the chamber, a plurality of circumferentially spaced stationary contacts carried by the contact carrier and extending into the chamber, a stationary center contact carried by the contact carrier, a driver disposed in the chamber and constrained to rotate with the shaft, a tolerance compensator biasing the driver against the contact carrier and the shaft outwardly of the housing, a movable contactor carried by the driver for wiping engagement with the stationary center contact and the circumferentially spaced stationary contacts upon rotation of the shaft, and indexing means for positioning the shaft in a plurality of positions.

3,311,719
SLIDE SWITCH WITH IMPROVED LEVER ACTUATOR

Joseph M. Vananzi, Meadowbrook, Pa., assignor to Continental-Wirt Electronics Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 11, 1966, Ser. No. 554,623
9 Claims. (Cl. 200—16)



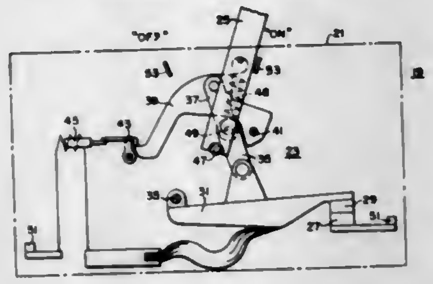
1. A slide switch comprising in combination, a contact assembly including an insulating base member and a plurality of electrically conductive contact elements carried by said base member, a slider element overlying said contact assembly having a body portion mode of electrical insulating material and a post formation extending upward therefrom with the body of the latter being apertured to form a socket therein, a least one electrically conductive contact bridge held captive to the underpart of said slider body so as to move therewith and mechanically engage a pair of contact elements of said contact assembly, a case enclosing said slider element and having a top wall and depending front and rear walls, said case top wall overlying said slider body and said case front and rear walls extending downwrd immediately in front of and behind said slider element body to the insulating base member of said contact assembly and being locked to the latter by locking ears carried by said case front and rear walls, and a detent pressure plate overlying said slider body and disposed between said slider body and said case top wall, said case top wall being apertured and having projected upward therethrough said slider element post formation, said post formation being narrower than said case top wall aperture so that said post and the slider body may be shifted laterally with respect to said contact assembly and case for a distance determined by the length of said case top wall aperture between at least two detented positions to thereby shift the switch from one contact condition to another, an actuating lever extending longitudinally forward from the case front wall and rearward to a terminating end which latter is shiftably disposed within the socket of the slider post formation, said actuating lever being pivotably secured between its front and rear ends to said case for swinging movement operative to shift said post and slider body between the aforesaid detented positions, the forward length of said actuating lever being sufficiently long to project completely through and be operable from one side of a panel when the remainder of the switch structure is disposed on the opposite side of the panel.

3,311,720
ELECTRIC CONTROL DEVICE WITH INTERLOCKING MEANS

James E. Johnson, Fairport, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 29, 1965, Ser. No. 491,269

17 Claims. (Cl. 200—50)



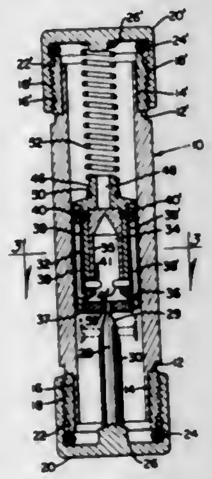
1. A circuit interrupting structure adapted for use in an enclosure having an openable cover structure with an opening therein and a latch part thereon, said circuit interrupting structure comprising a pair of cooperable contacts, an operating mechanism movable to open and close said contacts, a handle operating means operatively connected to operate said operating mechanism, a handle member comprising a handle part for protruding through said opening in said cover structure when said cover structure is closed, said handle member being movable as a unit between a contact-open position and a contact-closed position to operate said operating mechanism to open and close said contacts, an interlocking member movably supported on said handle member, when said cover structure is open and said circuit interrupting structure is in the contact-open position said interlocking member operating automatically to prevent operation of said circuit interrupting structure to the contact-closed position, said interlocking member being engageable by said cover structure when said cover structure is moved to the closed position whereupon said interlocking member will be automatically moved to an unlatching position to permit free operation of said circuit interrupting structure between the contact-open and contact-closed positions, when said cover structure is closed and said circuit interrupting structure is operated to the contact-closed position said interlocking member being automatically positioned in a latching position to engage said latch part of said cover structure to prevent opening of said cover structure.

3,311,721
TIME DELAY SWITCHING DEVICE

Arthur George Wright, 7585 Raleigh St., Westminster, Colo. 80030

Filed Apr. 18, 1966, Ser. No. 543,249

24 Claims. (Cl. 200—61.04)



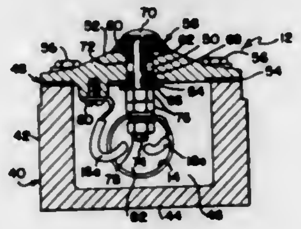
1. A switching device comprising, in combination: a housing of insulating material; an electrically conducting closure means at both ends of said housing; a first electrical terminal contact means in said housing connected to one of said closure means in electrically conducting relationship; a second electrical terminal contact means in said housing attached to said other closure means in electrically conducting relationship and adapted to contact said first electrical terminal contact means in electrically conducting relationship; a timing element of soluble material holding said terminal contact means out of contact for a predetermined time; a solvent for said soluble element in said housing; whereby upon elapse of said predetermined time said terminal contact means come in contact and a continuous conducting path is established between said conducting closure means at both ends of said housing.

3,311,722
PROBE HEAD FOR STORM SEWERS AND THE LIKE

Harold L. Hammerschmidt and Kenneth J. Hutchings, Minneapolis, Minn., assignors to Automatic Control Company, St. Paul, Minn., a corporation of Minnesota

Filed Feb. 10, 1965, Ser. No. 431,600

5 Claims. (Cl. 200—61.05)



1. A probe head comprising a cup-shaped housing providing an upwardly facing recess, a metallic cover member detachably secured to said housing so as to close said recess, said cover member having a centrally disposed aperture extending vertically therethrough, a metallic probe button having a shank extending downwardly through said aperture into said recess, said button also having an exposed electrically conductive surface thereon, and means underlying said button for electrically insulating said button from said cover member and for supporting said button such that its exposed surface is spaced entirely above said cover member and at least a portion of said exposed surface being convex, said insulating means including a bushing having a cylindrical portion extending downwardly into said aperture in an encircling relation with said shank and also having a downwardly and outwardly sloping surface extending from the edge of said button to said cover member.

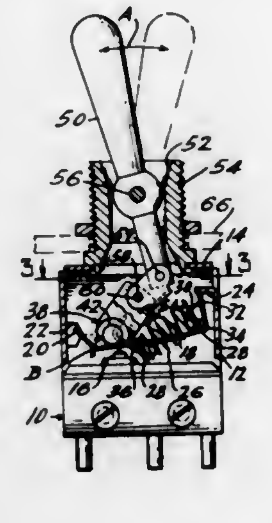
3,311,723
TOGGLE SWITCH

Curtis R. Stevens, La Mirada, Calif., assignor to Master Specialties Company, Gardena, Calif., a corporation of California

Filed Nov. 22, 1965, Ser. No. 508,975

7 Claims. (Cl. 200—68)

1. A switch actuating structure for use with a switch block having a switch button projecting from one surface, comprising a housing having a top spaced from said one surface of said switch block and a pair of opposite sides extending between said top and switch block, an actuating blade positioned over said actuating button, said actuating blade being pivoted on an axis positioned to one side of said actuating button for rotation against and away from said button, first stop means for abutment by said actuating blade and limiting depression of said button into said block, second stop means limiting movement of said blade away from said button, a bell crank pivotally supported on an axis parallel to the pivotal axis of said actuating blade, said bell crank having first and second legs generally at right angles to each other, an over-center spring operatively connecting said first leg to said actuating blade to produce a snap movement of said blade between said first and second stop means upon movement of said bell crank between first and second positions, said first leg of said bell crank being in contacting relationship with said over-center spring, a handle pivoted between its ends on an axis parallel to said other axes and with its lower end adjacent said bell crank, and a connecting drag link pinned at one end to said lower end of said handle and pinned at its other end to said second leg of said bell crank.

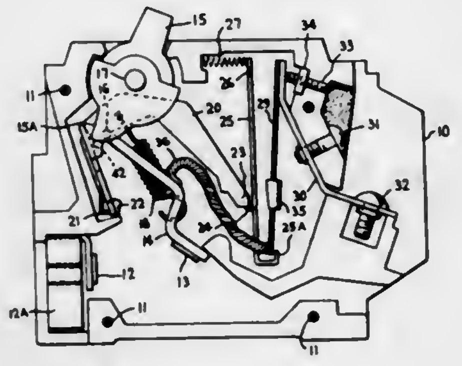


3,311,724
RELEASABLE LATCH MEMBER FOR ELECTRIC CIRCUIT BREAKER

David B. Powell, Bristol, Conn., assignor to General Electric Company, a corporation of New York

Filed Oct. 22, 1964, Ser. No. 405,757

2 Claims. (Cl. 200—116)



1. An electric circuit breaker comprising:

(a) an insulating casing,

(b) a relatively stationary contact mounted in said insulating casing,

(c) a relatively movable contact mounted in said insulating casing,

(d) operating mechanism for moving said relatively movable contact into and out of engagement with said relatively stationary contact comprising a manually engageable handle member pivotally supported in said insulating casing,

(e) a contact arm pivotally connected to said manually operable handle at one point and connected to operate said relatively movable contact at another point,

(f) a releasable support member pivotally supported in said insulating casing at a first point and having a latchable portion at a second point,

(g) a tension type operating spring interconnecting said contact arm and said releasable support member so that movement of said manually operable member about its pivotal support in said casing moves the pivotal support of said contact arm across the line of action of said operating spring to move said relatively movable contact into and out of engagement with said relatively stationary contact with a snap action,

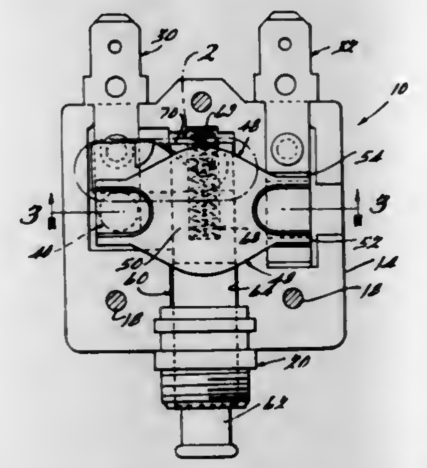
(h) said releasable support member being constructed of a single flat sheet of metallic material and comprising a first generally planar transversely extending portion, said transversely extending portion including a pair of opposed edge portions providing said pivotal support of said member in said casing and a generally planar body portion bent from said sheet substantially at right angles to said transversely extending portion and substantially midway between said bearing portions, said operating spring being connected to said body portion of said releasable support member between said transversely extending portion and said latch portion.

3,311,725
CIRCUIT BREAKER WITH LOST MOTION LOCKOUT MEMBER FOR INTERPOSING BETWEEN CONTACTS

Thomas W. Butler, Ann Arbor, and Bertram T. Vaughn, Michigan Center, Mich., assignors to Mechanical Products, Inc., Jackson, Mich., a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 503,917

1 Claim. (Cl. 200—138)



A manually openable and closeable circuit breaker comprising:

an insulating enclosure,

a pair of terminals extending exteriorly of said casing,

a fixed contact mechanically supported by and electrically connected to one of said terminals,

a snap-acting bimetallic blade having a fixed end portion mechanically supported by and electrically connected to the other of said terminals,

a movable contact on the other end of said blade engageable with said fixed contact,

a manual operator having a handle portion extending exteriorly of said enclosure,

a generally flat lockout member pivotally secured to said manual operator,

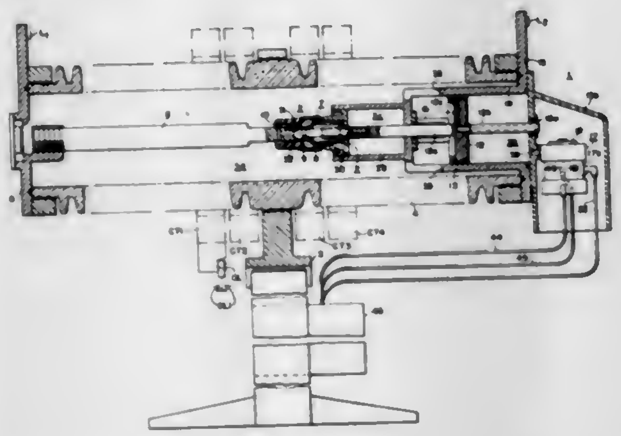
a manual operator spring normally biasing said manual operator and lockout member towards the contacts open condition,

a lockout spring normally biasing said lockout member for rotation relative to said manual operator, said lockout member being normally engaged with said movable contact to preclude movement of said manual operator to the contacts open condition and to preclude interposition of said lockout member between said contacts, thereof, a cam on said lockout member engageable with said blade upon rotation of said lockout member for biasing said blade towards the contacts open condition,

the pivotal relationship between said manual operator and the lockout member thereof effecting a lost motion connection therebetween whereby the cam on said lockout member is engaged with said blade while said contacts are in the closed condition and said lockout spring is loaded to bias said cam under said blade with a snap action.

3,311,726
PUFFER-TYPE FLUID-BLAST CIRCUIT INTERRUPTER WITH PRESSURIZED CASING FOR ACTUATING DRIVING PISTON

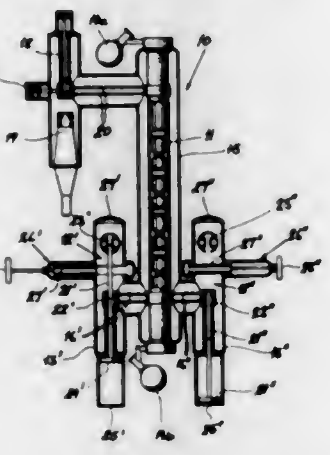
William A. Fish, Jr., Wilkins Township, Allegheny County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 5, 1964, Ser. No. 401,603
3 Claims. (Cl. 200—148)



1. A fluid-blast circuit interrupter of the puffer type pneumatically latched in both the open and closed-circuit positions including means defining an elongated cylindrical insulating casing means with the opposite ends thereof open, grounded supporting means for fixedly supporting said elongated insulating casing means horizontally adjacent the mid-portion thereof an adequate distance above ground potential, an end terminal member closing one open end of the insulating casing means and having a stationary contact post secured thereto, said stationary contact post secured thereto, said stationary contact post having a fixed stationary contact secured to the inner extremity thereof and disposed adjacent the mid-portion of said casing means, a movable unitary movable contact and fluid-driving structure closing the other open end of the insulating casing and having a terminal portion, means pressurizing said casing means, said removable unitary structure including fluid-driving piston means including an operating cylinder and a piston relatively movable with respect to each other and constituting a pair of relatively movable parts, a movable contact cooperable with said stationary contact to establish an arc, means securing said movable contact to one of said parts so as to move therewith, said removable unitary structure additionally including an operating cylinder and a driving piston reciprocably movable therein, means connecting said driving piston with said one part so as to cause the opening and closing movement of said movable contact, means constantly exposing one face of said driving piston to the pressure within said pressurized casing means, and exhaust valve means pneumatically latched in both the open and closed positions carried by said unitary removable structure for alternately pressurizing or exhausting the other face of the driving piston within the operating cylinder.

3,311,727
GATE VALVE ASSEMBLY FOR ISOLATING FLUID FILLED COMPARTMENTS IN SHIELDED POWER STATION SWITCHING ARRANGEMENT FOR INSPECTION AND/OR REPAIR

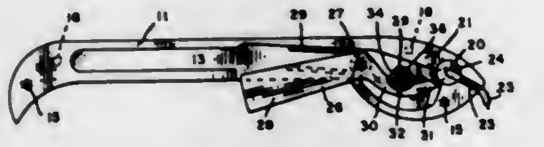
Pierre Picard, Argenteuil, France, assignor to S.A. COQ-France, Pantin, Seine, France, a corporation of France
Filed July 18, 1966, Ser. No. 565,867
Claims priority, application France, July 20, 1962, 904,604, Patent 1,347,006
6 Claims. (Cl. 200—148)



1. A switching assembly comprising a metal container with a plurality of communicating branches, means for introducing an insulating fluid into said container, conductor means in said container forming an electrical circuit including a plurality of switches each located within a respective branch, each of said switches including two spaced-apart contacts and a connecting armature, said armature being movable from an operative position interconnecting said contacts to an inoperative position separated from at least one of said contacts, and gate-valve means in each of said branches having a shutter element interposable between the two contacts of the associated switch upon movement of said armature to said inoperative position, said sealing element in its interposed position blocking any movement of said armature into said opeartive position.

3,311,728
CONTROL SWITCH FOR POWER OPERATED HAND MACHINES

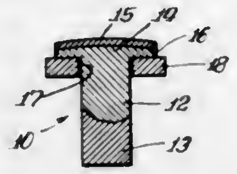
Timothy Brenzen, Red Lake, Ontario, Canada
Filed May 6, 1965, Ser. No. 456,893
2 Claims. (Cl. 200—157)



1. A control switch for power operated hand machines, comprising: a casing; an insulated fixed electrode mounted in the casing, and for electrical connection with an engine ignition system; a resiliently actuated finger pivotally mounted in the casing and normally acting to swing into contact with the electrode, to short said ignition connection; a tapered cross pin slidably mounted in the casing, adjacent said finger; a compressed spring between one end of said cross pin and the casing; means for manually end-shifting said cross pin, against said compressed spring, to pivot the finger out of contact with the electrode, by the cam action of the taper of the cross pin therepast, and for latching of the finger behind a ledge on said cross pin; and manually operable means on said finger for moving and releasing same from said latching.

3,311,729
ELECTRICAL CONTACT AND METHOD OF FORMING THE SAME

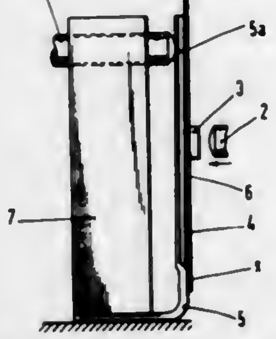
Jeremiah Porter Duell, Jr., Libertyville, Ill., assignor to Deringer Mfg. Company, a corporation of Illinois
Filed Oct. 4, 1965, Ser. No. 492,636
6 Claims. (Cl. 200—166)



4. As a new article of manufacture, a metal body in the shape of a rivet having a head formed at least in part by a first metal, a stem of a second metal joined to said head with the free end of said stem formed of said first metal.

3,311,730
CHATTER-FREE CONTACT DEVICE

Herbert Berg, Planegg, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, a corporation of Germany
Filed Aug. 30, 1965, Ser. No. 483,589
Claims priority, application Germany, Aug. 28, 1964, S 92,850
9 Claims. (Cl. 200—166)

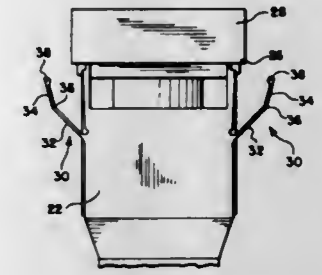


1. A chatter-free contact device, especially for relays having high switching speed, and having a movable contact element and at least one stationary contact element, characterized in that for the dissipation of the impact energy of the movable contact element, preferably controlled by means of an armature, there is allocated to the stationary contact element a damping device comprising a thin contact spring and a stiff supporting spring, said contact spring and supporting spring arranged to form a hollow space therebetween, in which is present a fluid, said fluid, upon movement of the contact spring toward the supporting spring, displaced to effect a damping action for the prevention of contact chatter.

3,311,731
PANEL MOUNTED SWITCH HOUSING

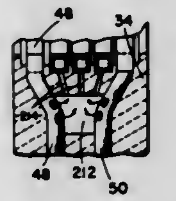
John A. Koepke, Mount Prospect, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Mar. 4, 1966, Ser. No. 531,672
10 Claims. (Cl. 200—168)

1. A one-piece switch housing made from a plastic material having resilient characteristics and adapted to receive switch components for assembly to an apertured panel, said switch housing comprising a substantially rigid hollow body member having at least a pair of exteriorly disposed, integral wing elements arranged on said body member in generally opposed relationship, said body member being imperforate in the vicinity of said wing elements, each wing element disposed at a predetermined divergent angle from its juncture with said body member and terminating in a free end located beneath a laterally outwardly directed shoulder of said body member, each wing element designed to provide shoulder means for engaging the complementary apertured panel with which it is adapted to be associated, the thickness of each wing element being sufficiently less than the thickness of said body member to cause radial inward flexing of said wing elements upon passing through the aperture of said panel for spring retention of said switch housing against marginal portions surrounding the panel aperture, the laterally outwardly directed shoulder of said switch housing being in engagement with said apertured panel when completely assembled thereto.



3,311,732
INDUCTION HEATING MEANS

John A. Stein, Torrance, and Therian E. Austin, Long Beach, Calif., assignors to North American Aviation, Inc.
Original application Oct. 27, 1961, Ser. No. 148,171, now Patent No. 3,156,807, dated Nov. 19, 1964. Divided and this application Apr. 20, 1964, Ser. No. 366,941
17 Claims. (Cl. 219—10.49)



1. Induction heating means for causing heat in a localized area of a specimen, said means including a generally cylindrical induction coil for concentrically surrounding said specimen and comprising hollow conductive tubing through which cooling air, admitted into a plurality of locations intermediate the ends of said tubing, passes during the application of said heat, the walls of said tubing constituting a portion of an electrical circuit through which electrical power supplied to said coil results in said heat, and exit means comprising at least one aperture in said tubing intermediate the ends thereof for venting said cooling air to surrounding atmosphere.

3,311,733
METHOD AND APPARATUS FOR PRECISION HEAT TREATMENT OF COIL SPRINGS

Albert H. Bitzer, Jr., Kenilworth, Ill. (% Illinois Coil Spring Co., 2100 N. Major Ave., Chicago, Ill. 60639)
Filed Sept. 24, 1963, Ser. No. 310,987
15 Claims. (Cl. 219—50)

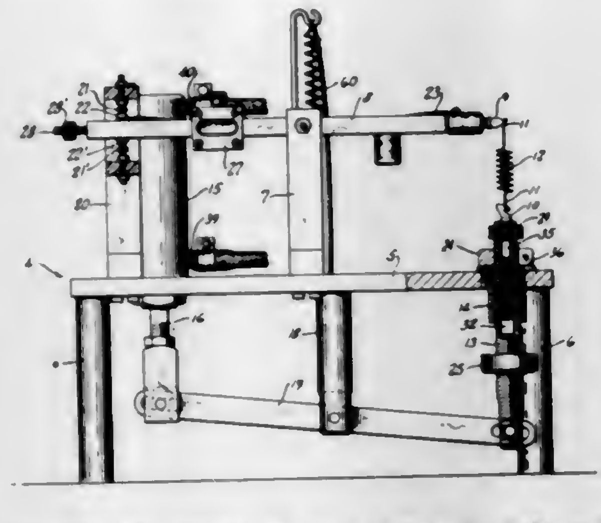
1. The method of heat treating a coil spring so that it will have a specified deflected length when subjected to a load of a specified value, which method is characterized by the following steps:

(A) deflecting the spring to the specified length;

(B) heating the spring while maintaining it deflected to the specified length;

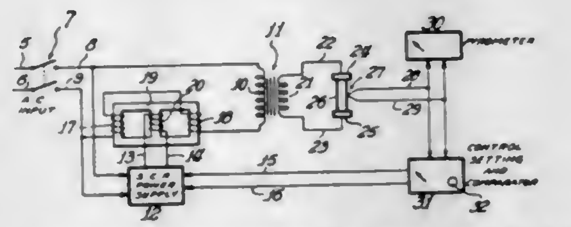
(C) as the spring is heated, measuring the reaction force that it exerts;

(D) promptly terminating heating when the reaction force exerted by the spring becomes equal to the specified load value; and



(E) cooling the spring while holding it deflected to the specified deflected length.

3,311,734
ELECTRICAL RESISTANCE HEATING APPARATUS
Herbert E. Peterson, 815 W. Northeast Shore Drive, McHenry, Ill. 60050
Continuation of abandoned application Ser. No. 328,017, Dec. 4, 1963. This application Apr. 11, 1966, Ser. No. 541,857
2 Claims. (Cl. 219—50)



1. In a system for regulating the amount of electrical energy transferred to a load to be heated by the energy, the combination of:

a step-down transformer having a primary winding and a secondary winding;

saturable reactor means having a control winding for regulating the level of saturation and at least one output winding for passing electrical energy as a function of the specific saturation level of said reactor means;

means, including said output winding of the saturable reactor means, for passing A.C. energy to the primary winding of the transformer;

conductor means for passing electrical energy from the secondary winding of the transformer to the load;

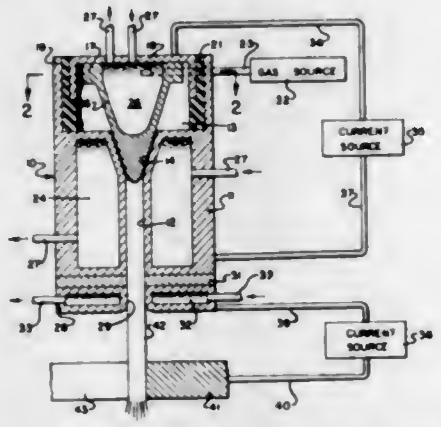
sensing means disposed adjacent said load for sensing the temperature thereof and for producing a signal voltage related to the temperature of said load;

indicating means coupled to said sensing means for providing a visual indication of the load temperature;

power supply means for receiving A.C. energy, rectifying the A.C. energy in proportion to a difference signal, and passing the resultant D.C. energy to said control winding of the saturable reactor means; and

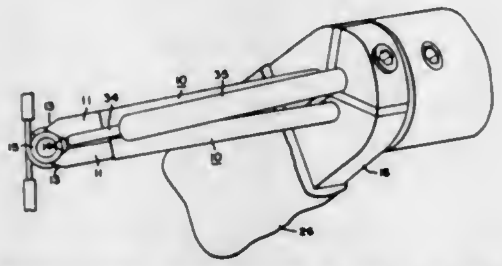
comparator means, coupled to said sensing means, for receiving said signal voltage indicating the temperature of said load, and having an output circuit connected to apply said difference signal to said power supply and thus regulate the saturation level of the saturable reactor means, said comparator means including adjusting means for establishing a reference voltage for comparison with said signal voltage to provide said difference signal, to govern the desired saturation level of the saturable reactor means and thereby control the temperature of the load.

3,311,735
APPARATUS AND METHOD FOR GENERATING HEAT
John W. Winzeler and James F. Tucker, Santa Ana, Calif., assignors to Giannini Scientific Corporation, Santa Ana, Calif., a corporation of Delaware
Continuation of application Ser. No. 111,763, May 22, 1961. This application May 21, 1964, Ser. No. 369,188
6 Claims. (Cl. 219—121)



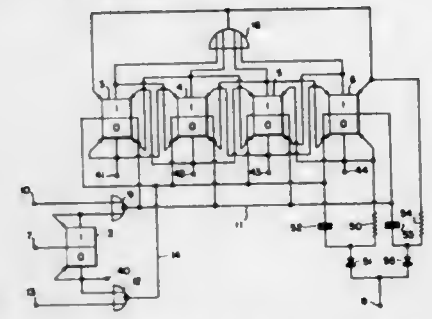
1. Apparatus for heating a metal workpiece, which comprises an electrical plasma-jet torch having a back electrode and a nozzle electrode, means to pass gas between said back and nozzle electrodes and through the nozzle opening in said nozzle electrode to the vicinity of said workpiece, means to maintain an electric arc between said back and nozzle electrodes to thereby effect heating and ionization of said gas, a non-consumable additional electrode disposed between said nozzle electrode and said workpiece in spaced relationship from said workpiece, said additional electrode being insulated from said nozzle electrode and having an opening therein through which said ionized gas passes in traveling from said nozzle electrode to the vicinity of said workpiece, and means independent of said back electrode to maintain a second arc between said additional electrode and said workpiece through said ionized gas, said last-named means comprising means to effect between said additional electrode and said workpiece a pulse discharge of short duration.

3,311,736
RESISTANCE SOLDERING APPARATUS
Charles A. Burton, Pitcairn, and Jack W. Clements, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1964, Ser. No. 358,439
10 Claims. (Cl. 219—234)



1. An assemblage comprising a pair of side-by-side low-resistivity metal soldering electrodes having tips of blade-shaped construction with respective thin workpiece-contactor edges which diverge from one another in a forward direction, which tips, at least in their longitudinal region inclusive of said thin workpiece-contactor edges, are of substantially constant thickness throughout their width.

3,311,737
BIDIRECTIONAL DECADE COUNTER
Daniel J. Soltz, Elkins Park, and Richard J. Spady, Feasterville, Pa., assignors to Honeywell Inc., a corporation of Delaware
Filed Oct. 22, 1963, Ser. No. 317,984
4 Claims. (Cl. 235—92)



1. A counter comprising a plurality of bistable binary elements each having a "0" side output line, a "1" side output line, an input signal line, a "0" side transfer control line, and a "1" side transfer control line, said transfer control lines being arranged to route an input signal on said input signal line to a selected side of said bistable element under control of a transfer control signal applied to either one of said transfer control lines, an OR gate connected to accept an output signal from a selected similar output line from all except a first one of said binary elements, first circuit means connecting an output signal from said OR gate to a "1" state transfer line of a second one of said binary elements, second circuit means connecting said "0" side output line of a second one of said binary elements to said "0" side transfer line of said second one of said binary elements, third circuit means operative to connect an output line of each of said binary elements except the first one and the last one to a single transfer control line of an opposite side on a succeeding one of said binary elements, said first binary element having its input line arranged to be connected to a source of signals to be counted and its output lines to similar ones of its transfer control lines, fourth circuit means operative to supply an output signal from one output line of said first element to all of the input lines of the other ones of said binary elements, and an output signal means operative to provide an output signal representative of a "1" state in a selected combination of said binary elements.

3,311,738
ANALOGUE SPHERICAL TRIANGLE COMPUTER
David M. Makow, Ottawa, Ontario, Canada, assignor to National Research Council, Ottawa, Ontario, Canada, a corporation of Canada
Filed June 28, 1963, Ser. No. 291,429
Claims priority, application Canada, July 18, 1962, 854,015, Patent 696,168
4 Claims. (Cl. 235—150.271)

1. An analogue computer for solving a spherical triangle equation of the form

$$\cos \alpha \cos x \cos y = \pm \sin x \sin y + \sin z$$

where α, x, y, and z are parameters of said equation comprising:

(a) four rotatable shafts whose angular displacements correspond to values of said four parameters,

(b) a first and second cosine potentiometer connected to the shafts, corresponding to the values of α and x respectively,

(c) a first and second sine potentiometer connected to the shafts corresponding to the values of y and z respectively,

(d) equal voltages applied to each of said potentiometers,

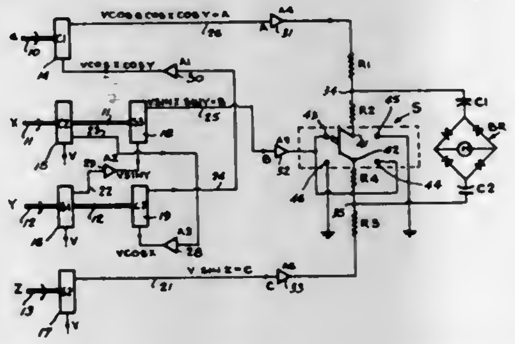
(e) a third cosine potentiometer connected to the shaft corresponding to the value of y,

(f) a third sine potentiometer connected to the shaft corresponding to the value of x,

(g) a connection from the output of said second cosine potentiometer to input of said third cosine potentiometer,

(h) a connection from the output of said first sine potentiometer to input of said third sine potentiometer,

(i) a connection from the output of said third cosine potentiometer to the input of said first cosine potentiometer,



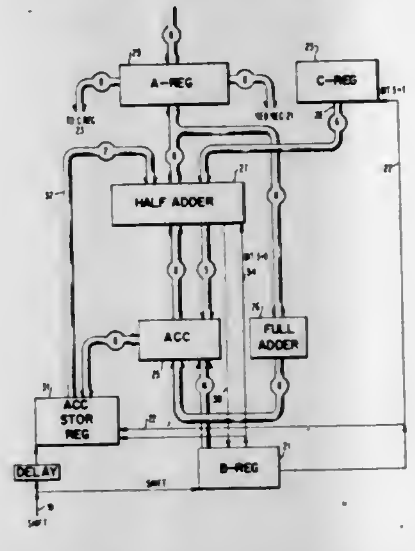
(j) a first and second resistor, said resistors having equal resistance, connected in series between the output of said first cosine potentiometer and the output of said third sine potentiometer

(k) a third and fourth resistor, said resistors having equal resistance, connected in series between the output of said second sine potentiometer and ground,

(l) voltage comparison means connected between the common point of said first and second resistor and common point of said third and fourth resistor,

(m) indicator means to indicate equality voltage at said common points.

3,311,739
ACCUMULATIVE MULTIPLIER
Lawrence W. Aiken, Mount Marion, and Arthur Schiff, Lake Katrine, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 10, 1963, Ser. No. 250,703
15 Claims. (Cl. 235—164)

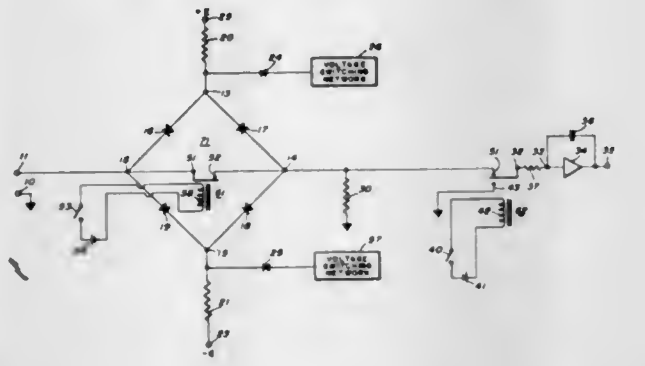


11. An accumulative multiplier including an adder and a plurality of registers for deriving the product of a first set of operands during a first multiply cycle, said product being stored in selected ones of said registers, means for repositioning said derived product from said selected registers prior to the second multiply cycle, and means to provide the accumulative product of said first and second sets of operands, said last named means including control means operative during said second multiply cycle to simultaneously combine the product of said

first set of operands with corresponding portions of the product of said second set of operands during each iteration of said second multiply cycle.

3,311,740
SWITCHING APPARATUS FOR CONTROLLING THE INPUT CIRCUIT OF AN ANALOG INTEGRATOR

Walter D. Urban, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 3, 1963, Ser. No. 306,399
4 Claims. (Cl. 235—183)



1. In an integrating circuit, wherein a controlled relay is used to positively connect and disconnect an input circuit of an integrator without affecting the storage signal on the integrator by the relatively slow time constant of said relay, the circuit combination comprising:

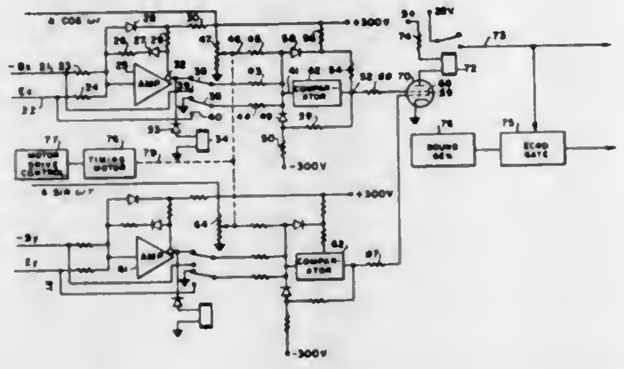
first means for receiving a signal for transmission to the integrator circuit;
a switch means with a conducting and nonconducting state coupled to the first means for allowing passage of said signal in the conducting state;
said switch means being arranged with four semiconductor diodes to form a bridge with input and output terminals, the input terminal coupled to the said first means;
said bridge arranged for being in a conducting state by having a source of potential impressed across a first and second bridge terminal for causing the said semiconductor diodes to be in a forwardly biased condition for permitting a current flow;
a current limiting means coupled to each of said first and said second bridge terminals for allowing flow of a fixed source of current through said bridge;
a first and second clamping means coupled to said current limiting means for selectively controlling said source of potential to change said switch means to a non-conducting state;
a first relay means coupled to said bridge output terminal and selectively controlled for operation whenever said bridge changes from conducting to a non-conducting state.

3,311,741
CIRCUIT FOR COMPUTING SIMULATED RANGE

Robert R. Fontaine, Riverdale, and William H. Sturdevant, Hyattsville, Md., assignors, by mesne assignments, to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Mar. 12, 1963, Ser. No. 264,529
5 Claims. (Cl. 235—184)

1. A computing circuit for determining a time interval corresponding to the simulated range between two devices, comprising

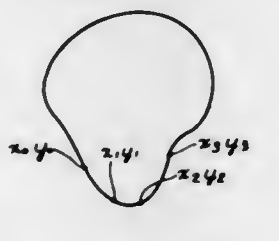
(a) means for supplying first and second voltages having magnitudes representing one coordinate of said two devices,
(b) means for obtaining a third voltage proportional to the absolute value of the difference between said first and second voltages,
(c) means for supplying fourth and fifth voltages having magnitudes representing another coordinate of said two devices,
(d) means for obtaining a sixth voltage proportional to the absolute value of the difference between said fourth and fifth voltages,



(e) means for supplying two alternating voltages in phase quadrature having amplitudes increasing uniformly from a zero valve at a given instant,
(f) and means for producing an output signal when one of said alternating voltages equals said third voltage and the other alternating voltage simultaneously equals the sixth voltage.

3,311,742
APPARATUS FOR GENERATING A FUNCTION BY CUBIC INTERPOLATION

Douglas G. Anderson, 906 W. Oakridge, Ferndale, Mich. 48220
Filed Jan. 15, 1963, Ser. No. 251,617
24 Claims. (Cl. 235—197)



1. A function generator comprising,

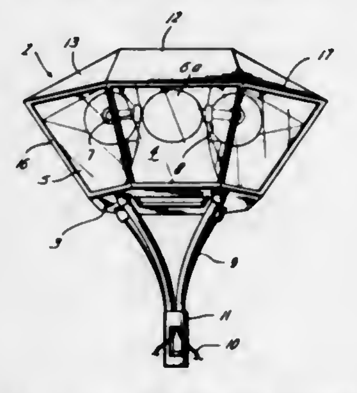
means operable to provide analogs of the relative values of the x and y coordinates of four points x_0y_0, x_1y_1, x_2y_2, and x_3y_3 known to lie on a function,
means operable to vary the analog of the value of x from x_1 to x_2,
and means operable to vary the analog of the value of y from y_1 to y_2 in accordance with a cubic equation responsive to said variation of the x analog from x_1 to x_2,
the latter-said means including:
  means operable to provide an analog of the linear interpolative value of y, namely y_d, between x_1y_1 and x_2y_2 at any value of x, namely x_p, intermediate x_1 and x_2,
  means operable to provide an analog of the linear interpolative value of y, namely y_c, at x_p, between two points selected so that the value of y_c is symmetrically dependent on the values of y_0 and y_3,
  means operable to provide at x_p an analog of the difference between the values y_c and y_d,
  means operable to provide analogs of the quantities x_p-x_1, x_2-x_p, and x_2-x_1,
  and means operable to interrelate the analogs of said values and quantities at x_p in accordance with the expression

$$y_d-\frac{K(x_p-x_1)(x_2-x_p)}{(x_2-x_1)^2}(y_c-y_d)$$

wherein K is a constant greater than zero,
and means operable responsive to change in the value of said expression to equate the value of y to the value of said expression at x_p.

3,311,743
OUTDOOR LIGHTING FIXTURE

Buell Moore, Houston, Tex., assignor to Wide-Lite Corp., division of Esquire, Inc., Houston, Tex., a corporation of Texas
Filed June 29, 1964, Ser. No. 378,653
3 Claims. (Cl. 240—3)

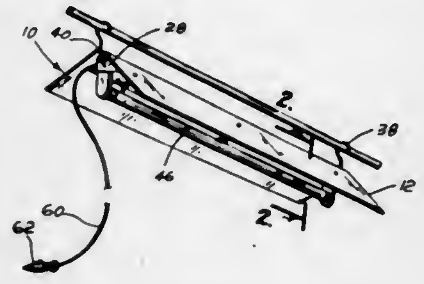


1. An enclosed outdoor lighting fixture, comprising

an enclosure having a central vertical passageway, said passageway being shaped to cause upward movement of air by the Venturi effect by having its narrowest dimension near its center and gradually flaring to a larger dimension at its bottom opening and its largest dimension at its top opening, said passageway being free from obstructions, and
a plurality of sockets adapted to receive lighting bulbs such that they are disposed within the enclosure and spaced around and close to the wall of said passageway,
the heating effect of the bulbs establishing air currents in said passageway, said air currents flowing upward through said passageway and at a faster rate opposite the narrowest dimension than elsewhere, thereby cooling the walls of the passageway.

3,311,744
LIGHT ASSEMBLY

Richard J. Weeks, 6210 Northwest Drive, Des Moines, Iowa 50322
Filed Aug. 6, 1964, Ser. No. 387,971
6 Claims. (Cl. 240—51.11)

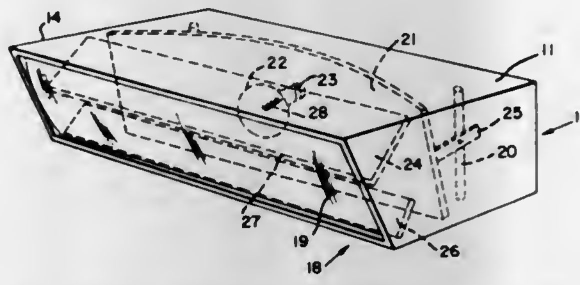


1. A light assembly, comprising,

a unitary elongated sheet member formed into two elongated portions, said portions having an angle therebetween of less than 180 degrees,
an elongated lamp frame having a transverse cross-section shape corresponding to the space between said portions,
means for securing said frame to said sheet member between and in mating engagement with said portions,
light means secured to said frame on the opposite side of said frame from said sheet member,
said sheet material having a greater length than said lamp frame and said lamp frame being centered between the ends of said sheet member,
said sheet member having inwardly extending slots formed along a line of intersection of said portions,
hanger means connected to each end of said frame and extending through said slots for engagement with a supporting surface on the opposite side of said sheet material from said frame, and
said hanger means are further defined as being pivotally connected to said frame and said hanger means adapted to pivot from a position extending through said slots in said sheet member to a position extending between said portions on the side of said frame whereby said light assembly may be supported in a vertical position with one of said hanger means extending outwardly of said frame parallel to the longitudinal axis of said light assembly for said one hanger means to engage to a supporting means.

3,311,745
CONTROLLED BEAM HEADLAMP AND THE LIKE

Elwin Gossner, 341 1st St. W., Sonoma, Calif. 95476
Filed Mar. 19, 1964, Ser. No. 353,067
11 Claims. (Cl. 240—41.1)



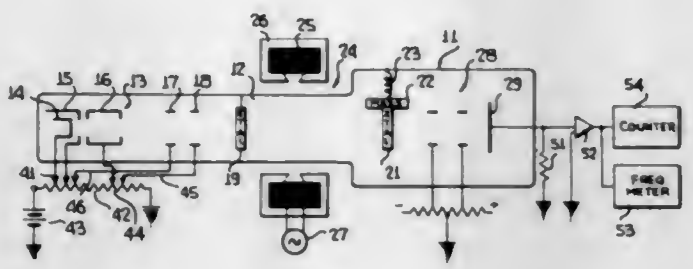
1. In a light controlling device minimizing glare from headlamps, outdoor illuminating lamps and the like, in combination a relatively shallow lamp housing defining an opening which is wider than the depth thereof and having depth sufficient to restrict the horizontal angle of light emitted from a light source therein, a light source disposed within said housnig at a point rearwardly of said opening, a reflector in back of said light source relative to said opening, a vertically curved glass in said opening, an upper louver positioned horizontally and angled downwardly and outwardly across said opening but inside said curved glass to prevent the direct passage of light above a designated angle below the horizontal, and a lower louver positioned horizontally across said opening also inside said curved glass to prevent passage of light at a designated angle below the horizontal, and to permit only the passage of light in a wide flat shaft angled downwardly.

3,311,746
ELECTRON BEAM DEVICE FOR MEASURING THE DISPLACEMENT OF ONE BODY RELATIVE TO ANOTHER

Loren R. Linstrom, North Springfield, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed June 3, 1964, Ser. No. 372,180
12 Claims. (Cl. 250—49.5)

1. A system for measuring displacement of one body relative to another comprising means for forming a col-

limated electron beam, a pair of relatively moveable crystals, said crystals having lattice separations on the same order of magnitude as the wavelength of electrons in said beam, one of said crystals intercepting said collimated electron beam to derive a plurality of separate electron beams, the second crystal intercepting the electron beams deriving from said one crystal and deriving electron beam fringes in response to relative movement of said crystals, and means for detecting said fringes.

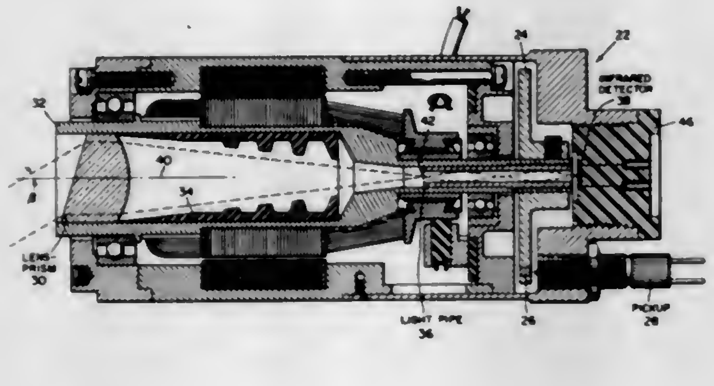


3,311,747
INFRARED HORIZON SENSOR FOR MISSILE ATTITUDE CONTROL

E Quimby Smith, Jr., Camarillo, and Milton R. Marson, Warren W. Hewitt, and Webster L. Hage, Oxnard, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Dec. 31, 1963, Ser. No. 334,946

7 Claims. (Cl. 250—83.3)



2. An attitude-determining system designed for incorporation into a missile possessing a longitudinal axis, said missile having in the forward body portion thereof an annular section which is permeable to infrared radiation, said system comprising:

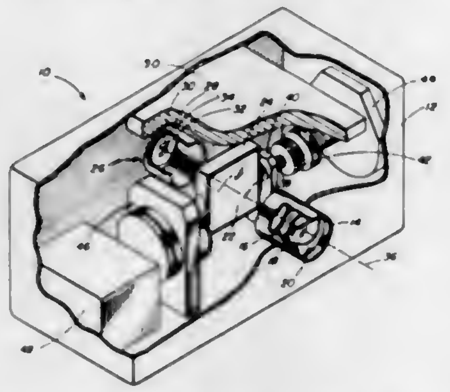
- a scanning device carried by said missile, said scanning device including a motor mounted so that its axis of rotation coincides with the longitudinal axis of said missile, said motor having a hollow armature;
- a rotatable optical element located within the hollow armature of said motor, said optical element being so designed as to continuously intercept infrared radiation passing through the said permeable section of the missile body portion when said optical element is rotated;
- said optical element being in the form of a lens-prism having a planar prism surface lying at an angle from the normal to the said missile's longitudinal axis, said lens-prism also incorporating a lens portion to focus the infrared radiation intercepted on the said planar prism surface to a point on the longitudinal axis of the missile during rotation of said motor; and
- a detector forming part of said scanning device for receiving the infrared radiation focused by said lens-prism.

3,311,748
SUN TRACKER WITH ROTATABLE PLANE-PARALLEL PLATE AND TWO PHOTO-CELLS

Frank A. Volpe, Chillum, and Benjamin G. Zimmerman, Forest Heights, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Dec. 20, 1963, Ser. No. 332,313

16 Claims. (Cl. 250—203)



11. In a space vehicle attitude control system having first means adapted to compare a first signal proportional to the desired orientation of said space vehicle with a second signal proportional to the actual orientation thereof, and second means responsive to the output of said first means for controlling the attitude of said space vehicle to insure coincidence between said desired and said actual orientation; sun tracking apparatus for determining the angle of incidence of solar luminous energy relative to a preestablished axis of said space vehicle, said system comprising:

- a light-responsive detector positioned in light-receiving relationship with said solar luminous energy,
- said detector comprising first and second light-sensitive areas positioned on opposite sides of a detector null line,
- a light-refracting optical slab refracting said solar luminous energy prior to its impinging on said detector,
- the relative amount of solar luminous energy impinging on each of said light-sensitive areas being a function of the orientation of said slab relative of the plane of said detector,
- means for rotating said slab relative to the plane of said detector to cause equal amounts of solar luminous energy to impinge on each of said light-sensitive areas,
- whereby the angle between the plane of said slab and the plane of said detector is a function of the angle of incidence of said solar luminous energy relative to said preestablished axis, and
- means responsive to the orientation of said optical slab for providing said second signal to said first means for comparison with said first signal.

3,311,749
RADIATION SENSITIVE POSITION DETECTING AND LENGTH MEASURING APPARATUS

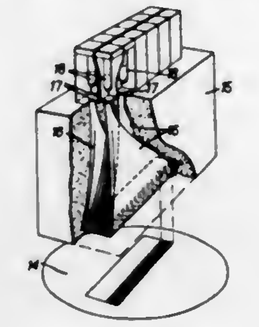
Peter Richard Ashworth Briggs, Sheffield, England, assignor to Davy and United Instruments Limited, Yorkshire, England

Filed Mar. 9, 1964, Ser. No. 350,380

Claims priority, application Great Britain, Mar. 13, 1963, 9,868/63

4 Claims. (Cl. 250—219)

1. A position detecting device comprising a series of elongate radiation transmitting elements, each element composed of a number of individual filaments, each of circular cross-section, the radiation receiving ends of which filaments are spread out into a substantially straight line and the other ends of which are bunched together, each adapted to transmit radiation along its length by multiple internal reflections, each element having a radiation receiving end of elongate cross-section, the receiving ends of the elements being arranged side by side with their long sides parallel to and closely adjacent one another, the long sides of the receiving ends of the elements arranged parallel to the edge to be detected so that the receiving ends of the elements receive light from the edge of the object, and a series of radiation detectors located adjacent the other ends of the elements, each detector being positioned to receive radiation from only one of said elements.

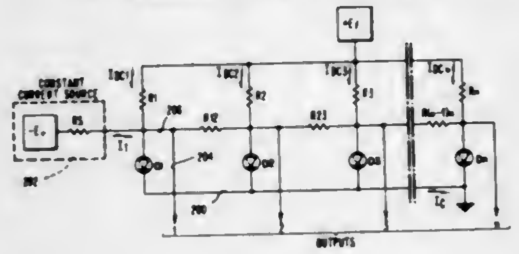


3,311,750
SIGNAL TRANSLATING DEVICES UTILIZING SEQUENTIALLY OPERATED STORAGE DIODES

William J. Bartik, Jenkintown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed July 18, 1963, Ser. No. 296,018

3 Claims. (Cl. 307—88.5)



1. A signal translating device for producing a series of output signals comprising: a plurality of storage diode means each having an anode and a cathode, said diodes capable of being switched between high and low impedance states; a bias source connected to all of the anodes of said diode means to place said diodes in a low impedance state; a potential source connected to all of the cathodes of said diode means; resistor means connected between the anodes of successive diode means; an input source connected through said resistor means to the anode of each of said diode means to sequentially switch said diodes from said low impedance state to said high impedance state; and a plurality of output means each connected to the anode of a different one of said diode means to provide an output signal when its associated diode means is switched to its high impedance state.

3,311,751
CONTROL CIRCUIT FOR VOLTAGE CONTROLLED OSCILLATOR

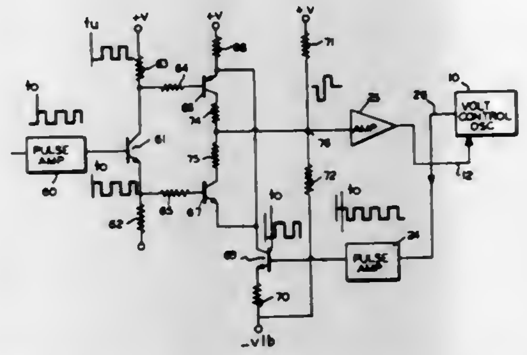
Neil E. Maestre, Levittown, N.J., assignor, by mesne assignments, to United Aircraft Corporation, a corporation of Delaware

Original application July 23, 1962, Ser. No. 211,537. Divided and this application Oct. 25, 1963, Ser. No. 318,892

3 Claims. (Cl. 307—88.5)

1. A phase comparator circuit comprising:

- a phase splitter circuit for producing two signals 180° out of phase,
- a pair of transistors of opposite conductivity types, each being energized by a different one of said phase displaced signals thereby to jointly conduct and being rendered nonconductive,
- a gating transistor interconnected to said pair of transistors to reversedly bias one of said transistors conducting and the other nonconducting,



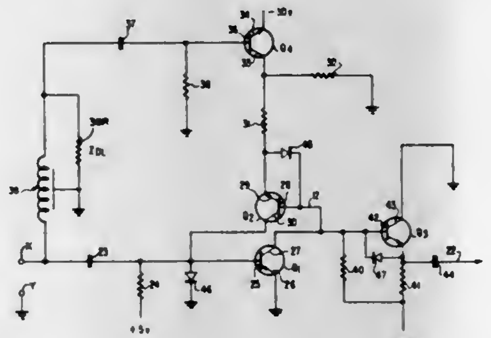
- an output circuit selectively responsive to one of said transistors conducting to produce a positive wave and to the other of said transistors conducting to produce a negative wave,
- means for energizing said phase splitter by an input signal and means for controlling the conduction of said gate circuit by another input signal to be phase compared with the first input signal.

3,311,752
SQUARE WAVE GENERATOR CIRCUIT

Lukas M. Foppes, Mountain Lakes, N.J., assignor to Aircraft Radio Corporation, Boonton, N.J., a corporation of New Jersey

Filed Dec. 27, 1963, Ser. No. 333,848

8 Claims. (Cl. 307—88.5)

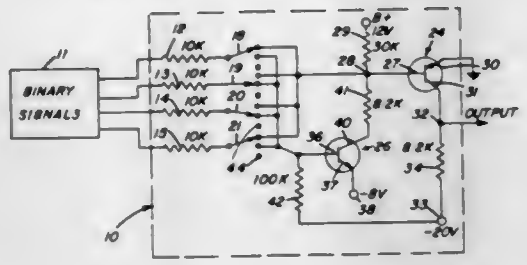


1. A triggered pulse generator circuit comprising in combination,

- a source of trigger pulses,
- a transistor amplifier having input and output terminals,
- a regenerative feedback circuit connected between the input and output terminals of said transistor amplifier for driving said transistor amplifier to saturation on application of a trigger pulse thereto from said source,
- said regenerative feedback circuit including a second transistor having an input base electrode, emitter electrode and an output collector electrode, said input base electrode being connected to the output terminal of said first transistor amplifier and said output collector electrode connected to said input terminal of said transistor amplifier,
- time delay circuit means connected to said source of trigger pulses for delaying trigger pulses from said source a predetermined time interval,
- means between said time delay circuit and the emitter electrode of said second transistor to control current to said emitter electrode to disable said regenerative feedback circuit at said predetermined time interval after the application of the trigger pulse to the input terminal of said transistor amplifier.

3,311,753
COMPARISON CIRCUIT

Raymond L. Nelson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 16, 1964, Ser. No. 338,139
10 Claims. (Cl. 307—88.5)



9. A multiple signal comparison circuit for comparing a plurality of signals having voltage potentials at one of two preselected levels, comprising:

a first transistor having its emitter electrode clamped to a potential equal to a first of the input signal voltage levels;

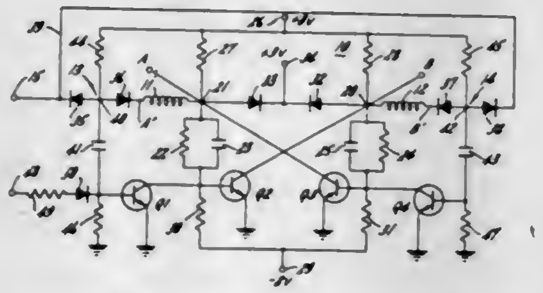
a second transistor having its emitter electrode clamped to a potential equal to the second input voltage level;

electrical circuit means for biasing said transistors to remain off when input signals are applied to their bases at voltage levels equal to that at which each is clamped respectively; and

means for selectively applying the input signals to the bases to obtain conductance thereof when any one input signal is not in accordance with the respective clamping voltage.

3,311,754
TRANSISTORIZED HIGH SPEED BISTABLE MULTIVIBRATOR FOR DIGITAL COUNTER BIT

Richard A. Linder, Baltimore, and Richard G. Schneider, College Park, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 6, 1964, Ser. No. 343,169
10 Claims. (Cl. 307—88.5)



1. A high speed bistable multivibrator circuit comprising:

a multivibrator having a pair of rapidly switching transistors with a control switching input to each and an output for each, the output of each transistor being coupled to switch the other transistor;

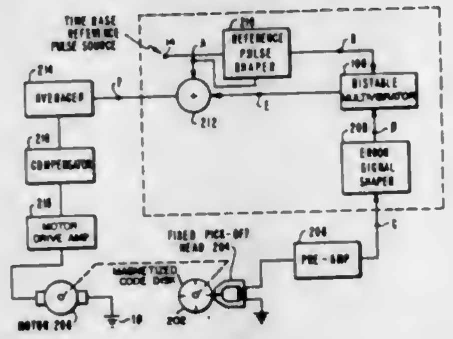
first and second gating circuits each having a pair of crystal rectifiers in anode back-to-back relation with first and second inputs and an output with the cathode of one crystal rectifier constituting said first input and the cathode of the other crystal rectifier constituting said second input, the first gating circuit having its first input coupled to one transistor output of said multivibrator and its output coupled to the control switching input of the other transistor and the second gating circuit having its first input coupled to the other transistor output and its output coupled to the control switching input of said one transistor;

an input of a pulse repetition frequency source coupled in common to said second inputs of said first and second gating circuits; and

an inductive delay element in each coupling of said one transistor output and said first gating circuit first input and of said other transistor output and said second gating circuit first input whereby the output of each transistor coupled to switch the other transistor will not operate through each gating circuit to produce a secondary switching pulse following each pulse of said pulse repetition frequency source.

3,311,755
TACHOMETER INPUT PHASE COMPARATOR

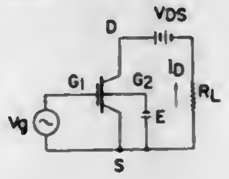
James W. Hebb, Mountain View, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Mar. 30, 1964, Ser. No. 355,742
6 Claims. (Cl. 307—88.5)



6. A phase comparator comprising: a reference signal source for generating time base reference signal, a phase information source for generating phase information signals, means coupled to the reference signal source and to the phase information signal source for switching between one voltage level and another voltage level alternately in response to the time base reference sginals and the phase information signals, and means for subtracting the time base reference signals from the output of the switching means.

3,311,756
ELECTRONIC CIRCUIT HAVING A FIELD-EFFECT TRANSISTOR THEREIN

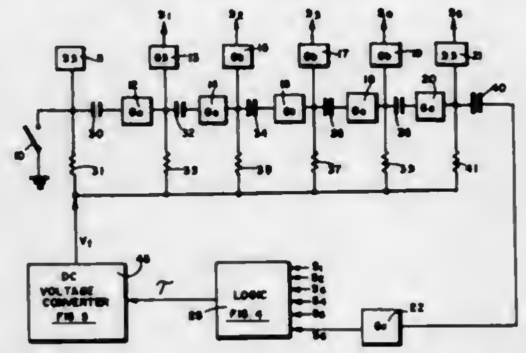
Minoru Nagata and Minoru Ono, Kodaira-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho Tokyo-to, Japan, a joint-stock company of Japan
Filed June 19, 1964, Ser. No. 376,322
Claims priority, application Japan, June 24, 1963, 38/32,677; July 13, 1963, 38/37,197
5 Claims. (Cl. 307—88.5)



1. A transistor amplifier comprising a field effect transistor provided with a semiconductor substrate; a channel layer formed on said semiconductor substrate; source and drain electrodes fitted on both ends of said channel layer; an insulating layer formed on said channel layer; a first gate electrode fixed on said insulating layer and a second gate electrode fixed on said semiconductor substrate; a bias voltage source; an operating power source; a signal source; a load; means to connect said load and operating power source in series with said source and drain electrodes; means to connect said bias voltage source to one of said first and second gate electrodes; and means to connect said signal source to the other gate electrode.

3,311,757
DIGITAL PULSE DISTRIBUTION CIRCUIT FOR DIVIDING THE PERIOD OF A CYCLIC INPUT SIGNAL INTO PREDETERMINED PLURALITY OF OUTPUTS

Raymond T. Matsumoto, Cypress, Calif., assignor to North American Aviation, Inc.
Filed Oct. 5, 1964, Ser. No. 401,470
9 Claims. (Cl. 307—88.5)



1. Apparatus for automatically dividing the period of a cyclic input signal into a predetermined number of sequential pulses and maintaining the combined duration of said pulses approximately equal to said period, comprising

a source of control voltage,

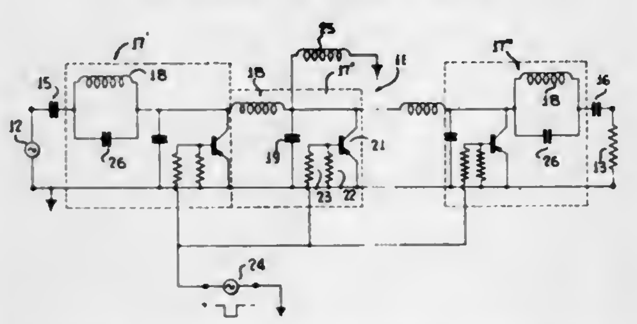
first means connected to receive said input signal for generating said predetermined number of sequential pulses in response to each cycle of said input signal, the period of each of said pulses being proportional to the amplitude of said control voltage applied thereto from said source,

second means connected to said first means for receiving said sequential pulses and for generating a control pulse the duration of which is proportional to the difference between the combined periods of said sequential pulses and the period of said cyclic input signal,

and third means connected to said second means for receiving said control pulse and for varying in response thereto the amplitude of said control voltage from said source, said variation being in proportion to the duration of said control pulse, whereby the combined periods of said predetermined number of sequential pulses is maintained approximately equal to the period of said cyclic input signal, thereby automatically dividing each cycle of said input signal into a predetermined number of proportional sequential pulse periods.

3,311,758
TRANSISTORIZED BROADBAND SWITCH

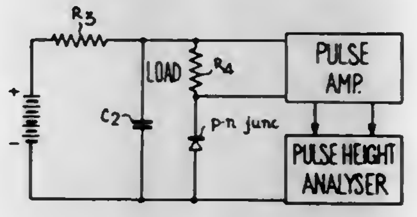
Ronald E. Irons, Burke, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Nov. 12, 1964, Ser. No. 410,406
6 Claims. (Cl. 307—88.5)



1. A switch for selectively passing a signal source having a predetermined frequency range to a load comprising a plurality of cascaded switching sections connected between said source and load, each of said sections including a filter section for passing signals in said range without substantial attenuation, a transistor switch having its emitter collector path shunting said section, and driven solely by the signal energy of said source, a control source coupled to the emitter base junction of said transistor for selectively open and short circuiting the transistor emitter collector path.

3,311,759
SOLID STATE RADIATION DETECTORS

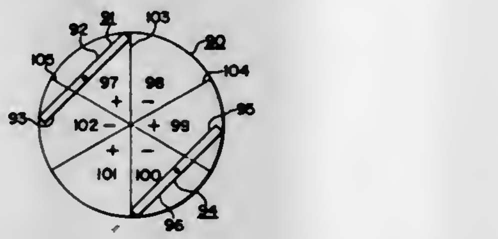
Robert Lindsay Rouse, Reading, and James Wakefield, Woolhampton, England, assignors to Associated Electrical Industries Limited, London, England, a British company
Continuation of abandoned application Ser. No. 254,272, Jan. 28, 1963. This application June 6, 1966, Ser. No. 555,614
Claims priority, application Great Britain, Feb. 2, 1962, 4,145/62
3 Claims. (Cl. 307—88.5)



1. A solid state radiation detector for detecting gamma rays and X-rays comprisig a member formed of a Group III–V semi-conductor compound wherein one of the elements of the compound has an atomic number of at least 49 and the other element has an atomic number less than 32, said member including a PIN junction means applying a reverse electrical bias across said junction forming a wide depletion region so that gamma rays and X-rays received in the depletion region produce β particles in the depletion region which β particles cause a signal pulse to be created in the detector, the elemental composition of said compound causing the production of β particles to be predominantly the result of the pair production effect and the photoelectric effect while the Compton effect is relatively small, pulse analyzing means for analyzing the pulse created by the β particles, and means electrically connecting said member to said pulse analyzing means.

3,311,760
HIGH Q RESONATOR

Charles B. Durgin and John H. Thompson, Penn Hills Township, and Robert H. Whittaker, Franklin Township, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1963, Ser. No. 325,360
15 Claims. (Cl. 310—8)



1. A high Q resonator comprising:

a flexural mode member having two perpendicular nodal lines at a first mode of operation and a plurality of other nodal lines at higher modes of operation;

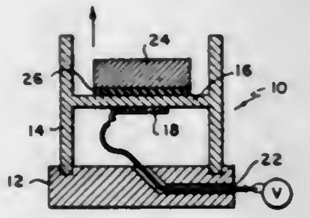
driving means for said member responsive to an input signal to place said member into a vibratory condition;

pickup means for said member responsive to said vibratory condition for providing an output signal indicative thereof;

said driving and pickup means constructed and arranged relative to said member so as not to cross a nodal line of said first mode of operation and to cross certain nodal lines at said higher modes of operation.

3,311,761
TRANSDUCER MOUNTING

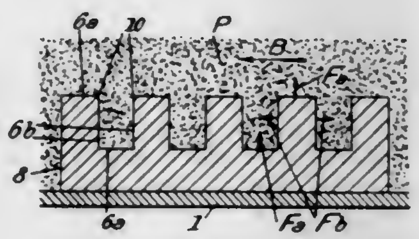
Fred Schloss, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 26, 1963, Ser. No. 333,769
13 Claims. (Cl. 310—8.4)



1. A mounting for increasing the acceleration sensitivity of a transducer, including:
- a mounting means;
- a flexible diaphragm, said flexible diaphragm being secured to said mounting means;
- a disc-shaped transducer secured to one surface of said diaphragm;
- a mass of material for creating an inertial load on said diaphragm; and
- means interposed between said diaphragm and said mass of material for seating said mass on said diaphragm and for increasing the inertial load on said diaphragm without stiffening it, said means for seating said mass on said diaphragm is a compliant layer of material.

3,311,762
MAGNETOHYDRODYNAMIC GENERATORS, PARTICULARLY IN ELECTRODES THEREFOR

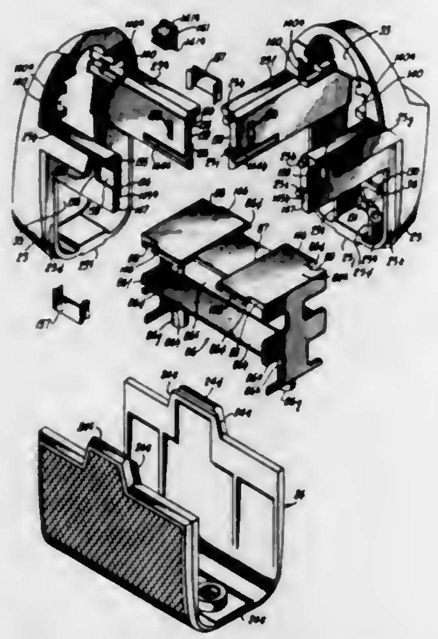
Zicu Croitoru, Paris, France, assignor to Electricite de France, Service National, Paris, France, a society of France
Filed Mar. 4, 1963, Ser. No. 262,693
Claims priority, application France, Mar. 13, 1962, 890,931
10 Claims. (Cl. 310—11)



1. In a magnetohydrodynamic generator comprising an elongated channel to be traversed in operation by a longitudinal stream of ionized gas, means for providing a magnetic field across said channel substantially perpendicularly to the longitudinal direction of said stream of ionized gas in operation, at least one first electrode having a surface thereof inside said channel for collecting in operation the positive charges separated from said stream by said magnetic field, and at least one second electrode having a surface thereof inside said channel for collecting in operation the negative charges separated from said stream by said magnetic field, the improvement consisting in constituting said surface of said at least one first electrode with alternating ribs and grooves when looking in the direction of said magnetic field, said ribs and grooves having the axes thereof directed substantially parallel to the longitudinal axis of said channel.

3,311,763
ELECTRIC SHAVER

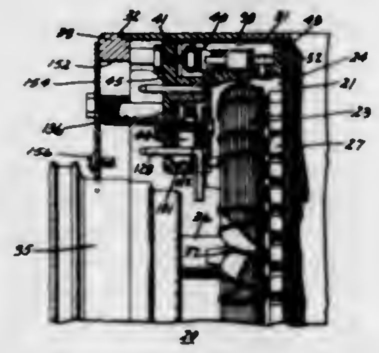
Ivar Jepson, Oak Park, and Leon M. Roszyk, Berwyn, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed July 15, 1963, Ser. No. 295,028
14 Claims. (Cl. 310—50)



1. In an electric dry shaver, a sub-assembly comprising a cutting and power unit, a plurality of support means projecting from the ends of said unit, a casing substantially enclosing said unit comprising complementary cup-shaped sections including abutting wall portions, said wall portions projecting from an intermediate portion of the open sides of said cup-shaped sections, one of said casing sections supporting one end of said unit and the other casing section supporting the other end of said unit, a plurality of recesses defined in each casing section, resilient mounting means disposed in said recesses, said recesses being so disposed that when each casing section is moved toward its associated end of said unit said support means move into said recesses and are disposed in full supporting relationship in said recesses when said abutting wall portions engage, and means for locking said sections together in abutting relationship assembled with said sub-assembly.

3,311,764
DYNAMOELECTRIC MACHINE WITH A SINGLE WIRING CONTROL SUPPORTED UNIT

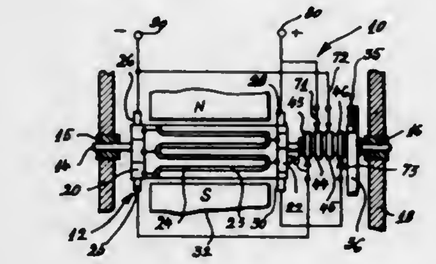
Clovis E. Linkous, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed Jan. 2, 1964, Ser. No. 335,243
5 Claims. (Cl. 310—68)



1. A dynamoelectric machine comprising a frame, a stator mounted within said frame and carrying start and main windings having end turns projecting beyond the side faces of said stator, a single winding control unit arranged within said frame, said unit having a single piece generally L-shaped support formed of hardened electrically insulating material, one leg of said support extending toward one side face of said stator between said winding end turns and frame, bracket means securing said support to said frame, said one leg having a chamber opening toward said frame, a start winding switch mounted within said chamber having first and second contacts and being insulated from said frame, the other leg of said support depending toward the axis of the machine axially beyond the associated end turns, said other leg including a chamber opening toward said stator, an overload switch mounted within said chamber having a pair of normally closed contacts, a manual reset insulator post rotatably carried by said other leg and having an insulating wedge normally biased toward said contacts, a cover enclosing said overload switch chamber, said post terminating in a handle projecting from the face of said other leg disposed toward said frame, said face having a pair of main winding terminals and a pair of power line terminals upstanding therefrom, said frame including means to permit access to said face upstanding terminals, and handles, electrically conducting link means connecting one line terminal to one contact of said overload switch, a second link means connecting the other overload switch contact to one side of the start winding and to one of said first start winding switch contacts, and a third link means connecting the other line terminal to one side of the said start winding and to the other side of said main winding, the start winding switch having a terminal connection between the other side of the start winding and second start winding switch contact, the terminal connections for both sides of said start winding being commonly positioned on said support.

3,311,765
DOUBLE WOUND PERMANENT MAGNETIC FIELD MOTOR

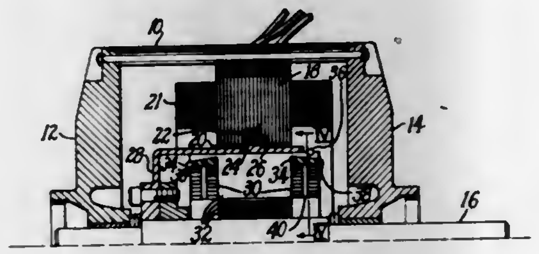
Gregory Csurgay, Fort Lauderdale, Fla., assignor, by mesne assignments, to MSL Industries, Inc., Motor Group, Racine, Wis.
Filed Oct. 9, 1964, Ser. No. 402,859
10 Claims. (Cl. 310—68)



1. A direct current motor, comprising a casing, a permanent magnet structure in said casing having a plurality of magnetic poles maintaining a permanent magnetic field in said casing, a rotary armature having a shaft rotatably journaled in said casing, said armature having a pair of coils and a pair of commutators, turns of each coil being connected to different ones of the commutators, a first pair of brushes contacting one of the commutators, a second pair of brushes contacting the other of the commutators, circuit means for connecting one brush of each pair of brushes to a different external power supply terminal, and a centrifugal governor and switch assembly mounted on said shaft and rotatable therewith; said assembly including a multiple pole-double throw switch having poles and contacts electrically connected in circuit with the brushes, and governor means for throwing the switch from a first operating position when the rotary armature is stationary and when the rotary armature is rotating at less than a predetermined speed to a second operating position when the rotary armature is rotating at a higher speed than predetermined speed, said coils being connected in parallel when the switch is in one of the operating positions thereof and being connected in series when the switch is in the other operating position thereof.

3,311,766
HIGH RESPONSE ACTUATORS

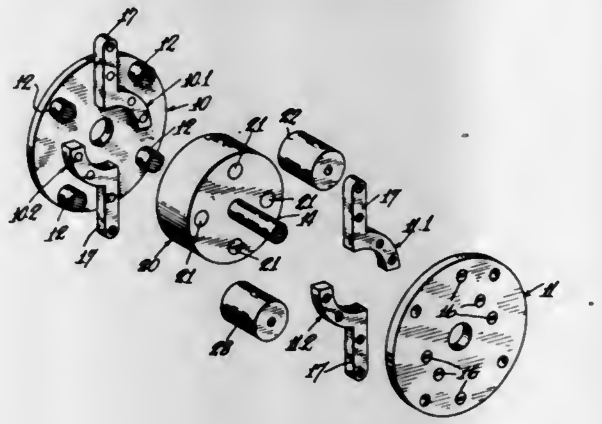
Gifford P. Scott, Beverly, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey
Filed Aug. 7, 1964, Ser. No. 388,065
9 Claims. (Cl. 310—83)



1. In an electromagnetic actuator having a reaction ring, a coaxial flextube cooperative therewith at spaced circumferential points of engagement, and a stator energizable to provide a rotatable magnetic field for progressing said points of engagement thus to drive the flextube, the improvement comprising the provision of armature means including an annular series of conductive laminations disposed on the side of the flextube opposite the reaction ring, and at least one radially deflectable coil of magnetically conductive material the convolutions of which are engageable edgewise with said laminations to facilitate the flow of flux.

3,311,767
ELECTRICAL APPARATUS

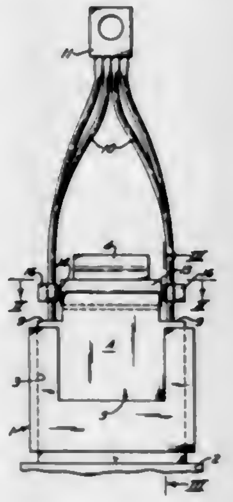
Robert W. Faulkner, R.D. 1, Box 59, Garrettsville, Ohio 44231
Filed June 9, 1964, Ser. No. 373,652
16 Claims. (Cl. 310—168)



1. Electrical apparatus comprising a rotatably mounted shaft, a pair of fixedly positioned, magnetically permeable pole members positioned on one side of said shaft and spaced axially thereof, magnetically permeable means providing a low reluctance path between said pole pieces, said means being carried by and rotatable with said shaft toward and away from between said pole pieces, and an electrical conductor carried by respective pole pieces and each providing a plurality of serially arranged convolutions lying substantially normal to the rotational axis of said shaft.

3,311,768
PRESSURE EQUALIZING DEVICE FOR SPLIT BRUSHES

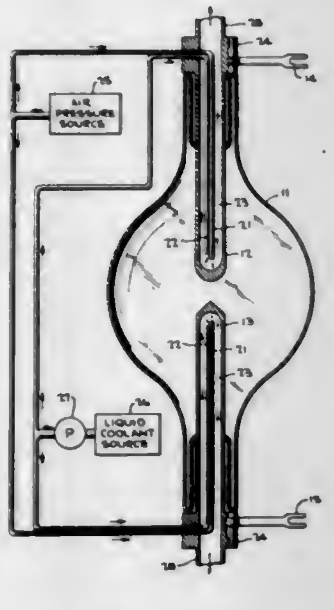
Volney E. Mowry, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed Dec. 7, 1964, Ser. No. 416,573
9 Claims. (Cl. 310—246)



9. A pressure equalizing device for insertion between a pressure finger and the inwardly inclined outer end surfaces of a pair of carbon brush half-sections side by side and each having a pair of shunt wires extending outwardly away from its outer end, said device comprising a roller adapted to be pressed against said inclined surfaces by said finger, the roller having axial openings in its ends, a pair of aligned shafts rotatably disposed in said openings and projecting therefrom, means inside the roller holding the shafts therein and means secured to the outer ends of the shafts and formed for loose connection to said shunt wires.

3,311,769
GASEOUS DISCHARGE LAMP WITH INTERNALLY COOLED ELECTRODES

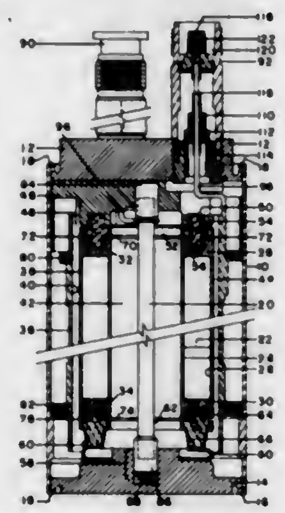
John A. Schmidtlein, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 12, 1965, Ser. No. 447,584
7 Claims. (Cl. 313—32)



1. A high intensity light source comprising a sealed, gas-filled, light transparent envelope containing two electrodes disposed with a first arc end of each in spaced relation such that an arc may be energized across the adjacent first arc ends thereof upon application of a selected voltage thereacross; each of said electrodes being hollowed in the region of said first arc end with said first arc end closed; means for energizing said electrodes; and means for applying liquid coolant substantially in vapor form to the internal surface of said closed first arc end of each of said hollowed electrodes such that upon contact with the energized electrode in the vicinity of said first arc end, a change of state from liquid to gas occurs and the gaseous mixture formed thereby is exhausted from said hollowed region of each respective electrode.

3,311,770
GAMMA COMPENSATED NEUTRON ION CHAMBER

Leo R. Boyd, San Jose, Calif., assignor to General Electric Company, a corporation of New York
Filed May 13, 1963, Ser. No. 279,928
5 Claims. (Cl. 313—61)

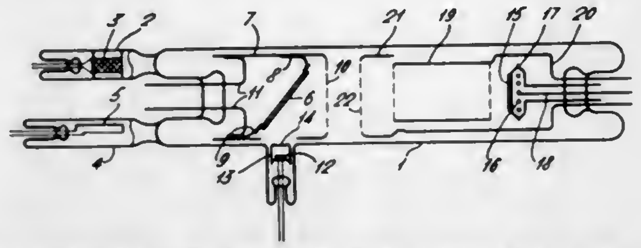


1. A gamma compensated neutron sensitive ion chamber which comprises a case, a first end member closing one end of said case and providing a first inwardly projecting boss, a second end member closing the other end of said case and providing a second inwardly projecting boss, an inner electrode, a signal electrode surrounding said inner electrode, an outer electrode surrounding said signal electrode, said electrodes being coaxially spaced apart from one another within said case, a first insulator projecting into supporting contact with said first boss and with one end of said signal electrode, a second insulator projecting into supporting contact with the other end of said signal electrode and said second boss, the corresponding inner and outer dimensions and the thicknesses of said first boss, said first and second insulators and said signal electrode being substantially the same, readily ionizable medium filling all open volumes within said case, a neutron sensitive material disposed between said signal and said outer electrodes and capable of producing ionizing radiation upon neutron irradiation, and terminal means secured to and insulated from said case and connected to said electrodes.

3,311,771
NEUTRON GENERATORS

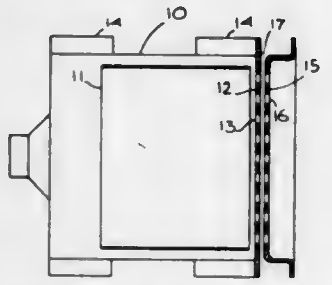
James David London Hedley Wood and Peter Donald Lomer, Letchworth, England, assignors to the United Kingdom Atomic Energy Authority, London, England
Filed June 24, 1963, Ser. No. 290,086
Claims priority, application Great Britain, June 28, 1962, 24,879/62
3 Claims. (Cl. 313—61)

1. A neutron generator comprising a sealed envelope containing an electrostatic shield positioned between a target and an ion source to form one boundary of an accelerating gap and to provide a field-free zone on the side of the shield remote from the ion source, said target being located within said zone, said shield having an aperture for passage of ions from the ion source to the target, and means mounted in direct view of the target for detecting alpha particles emitted by the target, said detecting means being mounted within said field-free zone on the side of the shield remote from the ion source to prevent secondary electrons emitted from the target from being accelerated towards the detecting means.



3,311,772
FOCUSSING SYSTEM FOR AN ION SOURCE HAVING APERTURED ELECTRODES

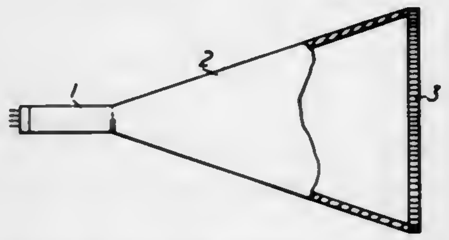
Robert C. Speiser, Altadena, and Gordon Sohl, Pasadena, Calif., assignors, by mesne assignments, to the United States of America as represented by the National Aeronautics and Space Administration
Filed May 18, 1964, Ser. No. 368,123
6 Claims. (Cl. 313—63)



2. An electrode system for an ion source in which the plasma density is non-uniform across the diameter of said source, said electrode system comprising: screen and accelerating electrodes positioned in face-to-face relationship in such a manner that the spacing therebetween varies inversely as the plasma density, said electrodes having apertures therethrough that respectively are in registration with each other and whose sizes vary in accordance with the radial displacement thereof from the center of the electrode and inversely as the plasma density.

3,311,773
PHOSPHOR FIBRE FACE PLATE FOR CATHODE-RAY TUBES

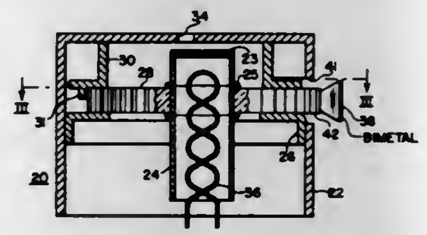
George Christie Turner, Manchester, England, assignor to Ferranti, Limited, Hollinwood, Lancashire, England, a company of Great Britain and Northern Ireland
Filed Dec. 3, 1962, Ser. No. 241,668
Claims priority, application Great Britain, Dec. 6, 1961, 43,676/61
5 Claims. (Cl. 313—92)



1. A cathode-ray tube including an envelope having a face plate, at least part of said face plate comprising a bundle of fibres of substantially optically transparent phosphor material extending through said face plate in a direction parallel to the longitudinal axis of said cathode-ray tube envelope and means for bonding said fibres together in a vacuum tight manner.

3,311,774
ELECTRON DISCHARGE DEVICE HAVING A ROTATABLE CATHODE THEREIN

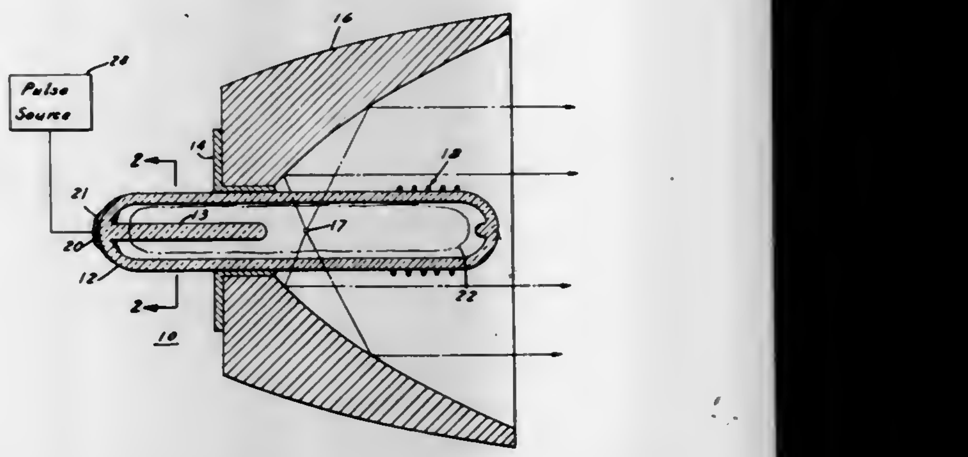
Eros Atti, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 23, 1964, Ser. No. 353,683
20 Claims. (Cl. 313—146)



1. An electron discharge device comprising an envelope having therein a source for producing an electron beam, said source having at least a first and second portion, a control element having an aperture therein, said aperture so positioned with respect to said source so that said first portion substantially emanates all of said electron beam, means for moving said source with respect to said aperture so that said second portion emanates substantially all of said electron beam rather than said first portion, and locking means for disposing said source in a fixed position with respect to said aperture and for releasing said source to thereby allow said means for moving to freely move said source.

3,311,775
GASEOUS DISCHARGE LAMP WITH STABILIZING ARRANGEMENT

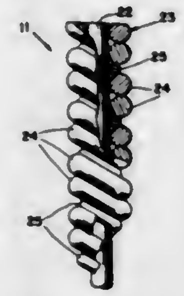
Samuel Solow, Rolling Hills, Calif., assignor, by mesne assignments, to GTC Corporation, a corporation of Texas
Filed Aug. 27, 1963, Ser. No. 304,878
9 Claims. (Cl. 313—161)



1. An electrodeless discharge lamp comprising a discharge tube closed at both ends and consisting of a dielectric material, a solenoidal coil positioned around a portion of the discharge tube for establishing an electromagnetic field therein, and stabilizing means including a prod consisting essentially of the same material as the discharge tube affixed to one of the closed ends of said tube and extending within the discharge tube for maintaining the intensity of light generated in the tube substantially constant at a predetermined point therein.

3,311,776
MULTIFILAR SUBLIMATION FILAMENT FOR GETTER VACUUM PUMPS

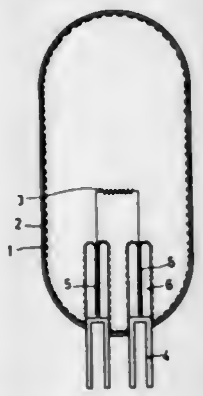
Arthur B. Francis, Los Altos Hills, and Wesley H. Hayward, Mountain View, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 27, 1964, Ser. No. 392,417
3 Claims. (Cl. 313—178)



3. A sublimation means comprising a tungsten core and a trifilar layer wound over said core in direct thermal contact therewith, said layer comprising two titanium wires and a molybdenum wire, the cross-sectional dimension of said titanium wires being approximately equal to the cross-sectional dimension of the tungsten core and the cross-sectional dimension of the molybdenum wire being approximately one-half the cross-sectional dimension of the tungsten core.

3,311,777
INCANDESCENT LAMP INCLUDING A FLUORINE GAS ATMOSPHERE AND A SOLID FLUORINATING AGENT

Johann Schröder, Aachen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 11, 1964, Ser. No. 351,164
Claims priority, application Germany, Mar. 28, 1963, N 22,953
5 Claims. (Cl. 313—223)

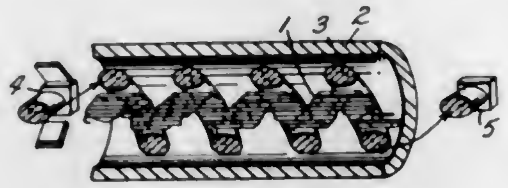


1. An electric incandescent lamp comprising a filament of material from the group consisting of tungsten, carbon and tantalum carbide, an atmosphere in said lamp including fluorine as an agent with which the selected filament material forms a volatile compound, and a solid fluorinating agent, said atmosphere being in contact with said solid fluorinating agent.

3,311,778
TRAVELLING WAVE TUBE OPERATING WITH HELICALLY MOVING ELECTROSTATICALLY GUIDED ELECTRON BEAM

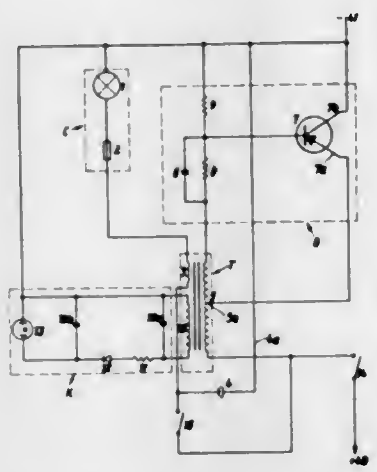
Klaus Pöschl, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Oct. 24, 1963, Ser. No. 318,708
Claims priority, application Germany, Oct. 25, 1962, S 82,176
2 Claims. (Cl. 315—3.5)

1. In the operation of a travelling wave tube operating with an electron beam which is guided electrostatically along a helical path extending between an inner and an outer conductor, wherein the inner conductor, which is with respect to the outer conductor acted on by direct potential, operates as a delay line which is helically wound about the tube axis and along which an electromagnetic wave is propagated with azimuthal delay, following the motion of the electron beam, the improvement therewith comprising means for coupling said electron beam to the electromagnetic wave travelling along said delay line and means for adjusting said coupling means to provide the electrons of said electron beam with an angular velocity which is less than the angular phase velocity of the wave propagated along the delay line, which wave is coupled to the electron beam, with the difference in such velocities being so selected that synchronism between the electrons and said wave is achieved only in the further course of the electron beam subsequent to such entry.



3,311,779
INDICATING LAMP CIRCUIT FOR THE FAILURE OF HEAD LAMP CIRCUIT

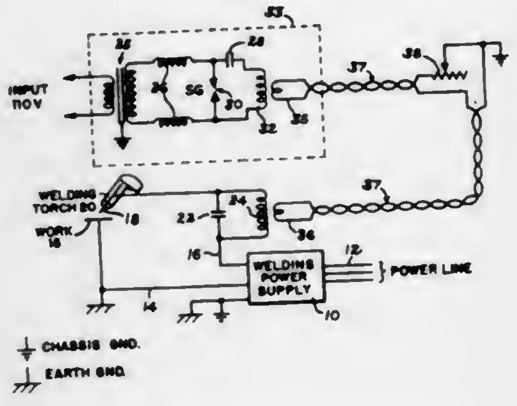
Heinrich Hartkorn, Jr., Malar-Ernst-Str. 10, Bad Durkheim, Germany
Filed Mar. 19, 1964, Ser. No. 353,221
Claims priority, application Germany, Mar. 27, 1963, H 48,657; Apr. 29, 1963, H 49,012; Sept. 27, 1963, H 46,224
17 Claims. (Cl. 315—83)



17. In an automobile having a head lamp circuit, an ignition system and a battery, an ignition switch for connecting the battery with the ignition system, a head lamp switch connecting the battery with the head lamp circuit, an oscillator connected to the ignition switch so as to be energized into a condition of oscillation upon closing of the ignition switch, an indicating circuit having an indicating lamp therein, a transformer having one winding connected across the oscillator output, a second winding connected across said head lamp circuit on the side of said head lamp switch opposite said battery, and a third winding connected across said indicating circuit, and said indicating circuit having a high impedance at the oscillator frequency relative to the impedance of said head lamp circuit whereby under conditions of continuity of said head lamp circuit said indicating lamp is not illuminated, while under conditions of interruption of said head lamp circuit said indicating lamp is illuminated.

3,311,780
ALTERNATING CURRENT ARC WELDING SYSTEM WITH A HIGH FREQUENCY VOLTAGE SUPERPOSED THEREON

Alan B. Blackburn, Troy, Ohio, assignor to Hobart Brothers Company, Troy, Ohio, a corporation of Ohio
Filed Dec. 22, 1964, Ser. No. 420,278
6 Claims. (Cl. 315—163)

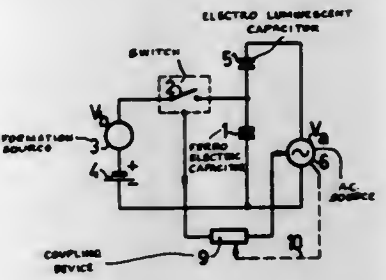


1. In arc welding apparatus having a source of welding power to be connected to a workpiece and to an electrode to form a welding circuit for establishing a welding arc between the electrode and the workpiece, and a high-frequency generator circuit providing a source of high-frequency alternating current to be superimposed on the welding circuit during open circuit conditions for reestablishing the welding arc; the improvement comprising an inductance connected in series between said source of welding power and said electrode such that the welding current is passed through said inductance, a capacitance connected in parallel with said inductance and selected to form a resonant circuit at the basic frequency of said generator circuit, and means forming an inductive link coupling circuit between said high-frequency generator and said inductance such that during open circuit conditions in the welding circuit the high-frequency oscillations are coupled into the welding circuit through said resonant circuit, establishment of the welding arc by the high-frequency current causing a flow of welding current through said inductance which operates automatically to cause detuning of the resonant circuit thereby to suppress the amount of high-frequency energy present in the welding circuit so long as the arc is maintained.

3,311,781
CIRCUIT COMPRISING WRITING AND REPRODUCING CIRCUITS USING ELECTROLUMINESCENT AND FERROELECTRIC CELLS

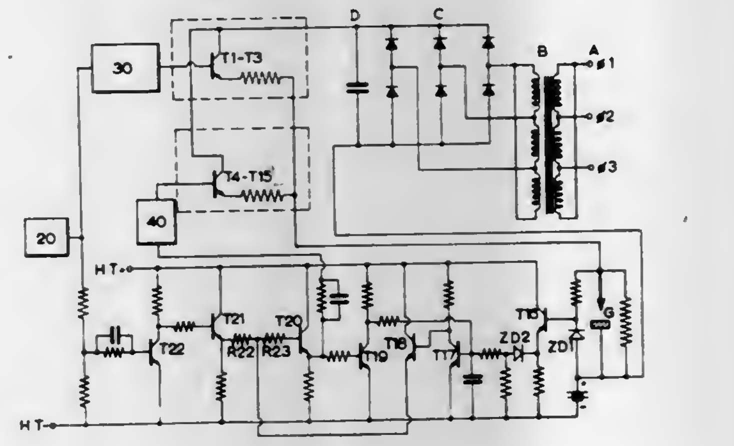
Simon Duinker, Edward Fokko de Haan, Gesinus Diemer, and Johannes Gerrit van Santen, all of Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 29, 1960, Ser. No. 59,254
Claims priority, application Netherlands, Oct. 2, 1959, 243,983
9 Claims. (Cl. 315—173)

6. An information display system comprising a source of pulsatory information signals, a source of alternating voltage having a frequency that is integrally related to and at least equal to the repetition frequency of said information signals, a first capacitor having a voltage dependent impedance, a second capacitor having an electroluminescent dielectric, a source of a direct voltage, means applying said direct voltage and information signals serially to said first capacitor, means interconnecting said first and second capacitors and source of alternating voltage whereby the alternating voltage across said second capacitor is dependent upon the impedance of said first capacitor, and coupling means connected between said source of signals and said source of alternating voltage for maintaining a substantially constant phase relationship between said pulsatory signal and said alternating voltage.



3,311,782
ELECTRO-EROSION APPARATUS WITH MEANS TO INTERRUPT SHORT CIRCUIT ACROSS GAP ONLY AFTER DURATION OF POWER PULSE

Gordon Victor Smith, Highnam, and Eric John Ward, Gloucester, England, assignors to Sparcatron Limited, Stafford, England, a British company
Filed July 9, 1965, Ser. No. 470,827
Claims priority, application Great Britain, Feb. 19, 1965, 7,288/65
4 Claims. (Cl. 315—225)



1. Electro-erosion machining apparatus for machining a conductive workpiece by discrete electric discharges across a gap between an electrode and the workpiece, comprising

(a) a source of unidirectional voltage;
(b) semiconductor means having control means and being connected in series circuit with said source and with the electrode and workpiece defining said gap;
(c) means for generating discrete control pulses and being connected to periodically forward-bias said semiconductor control means to modulate the supply of current to the gap;
(d) gate means connected between said generating means and said semiconductor control means and when conductive passing said control pulses to the latter;
(e) means for normally rendering said gate means conductive;
(f) means for sensing short-circuiting of said gap and for blocking said gate means in response thereto; and
(g) means to render said blocking means inoperative after initiation of each control pulse and for its duration.

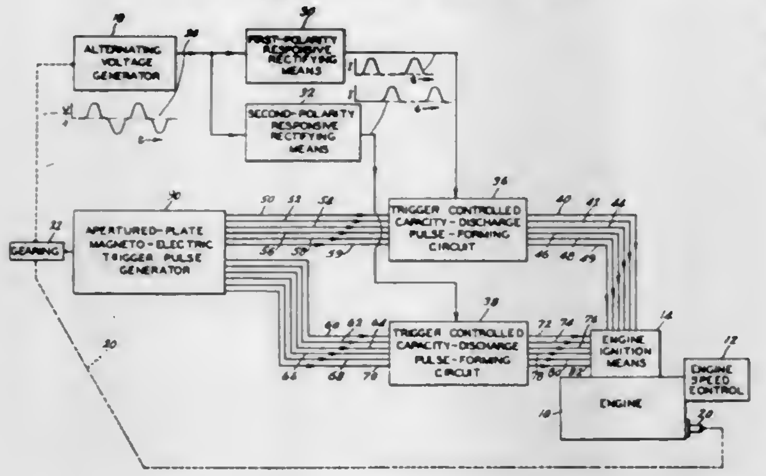
3,311,783

IGNITION SYSTEM WITH ELECTRONIC DISTRIBUTION AND CONTROL

Leslie E. Gibbs, Wilbraham, and Ralph S. Warner, East Longmeadow, Mass., assignors to American Bosch Arma Corporation, Springfield, Mass., a corporation of New York

Filed Apr. 7, 1964, Ser. No. 358,015

15 Claims. (Cl. 315—226)


ALTERNATING VOLTAGE GENERATOR
FIRST-POLARITY RESPONSIVE RECTIFYING MEANS
SECOND-POLARITY RESPONSIVE RECTIFYING MEANS
APERTURED-PLATE MAGNETO-ELECTRIC TRIGGER PULSE GENERATOR
GEARING
TRIGGER CONTROLLED CAPACITY-DISCHARGE PULSE-FORMING CIRCUIT
TRIGGER CONTROLLED CAPACITY-DISCHARGE PULSE-FORMING CIRCUIT
ENGINE IGNITION MEANS
ENGINE SPEED CONTROL
ENGINE

1. An ignition system for an internal combustion engine comprising a plurality of cylinders at least four in number each having an igniting element responsive to voltage applied thereto to produce ignition of fuel therein, said system comprising:

first and second separate capacitive means;

a source of voltage of alternating polarity and rectifying means connecting said source to said first and second capacitive means alternately to charge them to voltages of the same polarity;

two sets of normally non-transmissive electrically-controllable switching means, each said sets being connected between a different one of said first and second capacitive means and a corresponding set of said igniting elements, each of said switching means being responsive to a control pulse applied thereto to become transmissive and to discharge one of said capacitive means through one of said igniting elements;

pulse-generating means for generating electrical control pulses and for applying them to said switching means in synchronism with operation of said engine to render said plurality of switching means transmissive in sequence, said pulse-generating means applying successive control pulses to different ones of said sets of switches thereby to produce successive discharges from different ones of said capacitive means;

said pulse-generating means comprising a plurality of spaced conductive pick-up means each connected to a different one of said switch means, a rotor having a magnet element thereon and rotatable to move said magnet element through positions of substantial alignment with different ones of said pick-up means successively, and an apertured plate of magnetic material interposed between said pick-up means and said magnet element and having a plurality of apertures therein each in substantial alignment with a different one of said pick-up means.

3,311,784

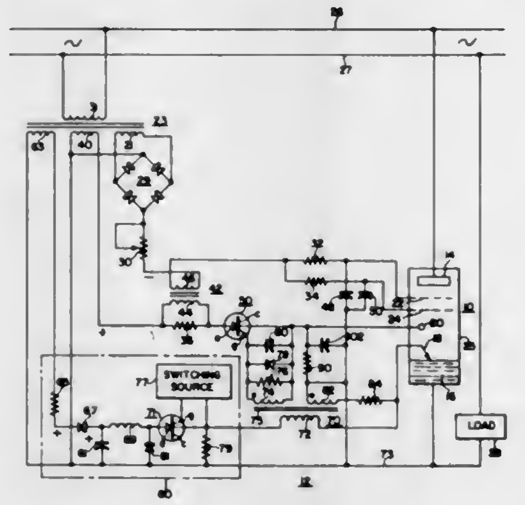
PREIGNITION PREVENTION IN IGNITRONS BY DELAYED APPLICATION TO THE AUXILIARY ANODE

Louis A. Casanova, Wilkinsburg, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 14, 1963, Ser. No. 323,719

6 Claims. (Cl. 315—262)

4. In combination, a rectifier tube of the type having an anode, cathode, ignitor, auxiliary anode, and grid means; a source of negative unidirectional potential connected in circuit relation with said grid means; a source of alternating potential; a load circuit; said source of alternating potential, load circuit, anode, and cathode being connected in series circuit relation; switching means having two main electrodes and a control electrode; the main electrodes of said switching means being connected in series circuit relation with the auxiliary anode of said rectifier tube and said source of alternating potential; firing means connected in circuit relation with said ignitor providing a first signal for initiating electron emission from said cathode; means connected in circuit relation with said ignitor and the control electrode of said switching means for producing a second signal responsive to the current and collapsing voltage characteristic of said ignitor when electron emission from said cathode is established; said second signal changing said switching means from its nonconducting to its conducting state and electrically connecting said source of alternating potential with the auxiliary anode of said rectifier tube, causing electrons to flow from said cathode to said auxiliary anode; and means responsive to electron flow from said cathode to said auxiliary anode connected in circuit relation with said grid means producing a positive potential overcoming the negative potential applied to said grid means allowing electrons to flow from said cathode to said anode through said load circuit.



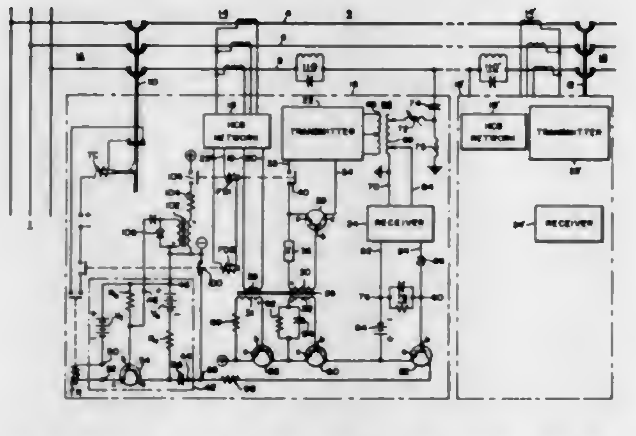
3,311,785

TRANSISTORIZED PHASE COMPARISON RELAYING

Herbert W. Lensner, East Orange, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 11, 1964, Ser. No. 388,871

18 Claims. (Cl. 317—28)



1. A relaying apparatus for connection to a transmission line to supervise the energized condition of a section thereof comprising, a control network having input terminals adapted to be energized as a function of the flow of an electrical quantity through the section, the control network having a plurality of pairs of output terminals, each said pair of terminals being energized with a pulsating output voltage, a transformer having a plurality of windings, means connecting a first of said windings for energization by said output voltage, a plurality of semiconductor switches, each said switch having a main circuit and a control circuit for placing its associated said main circuit in a conductive condition, a trip circuit including said main circuits of a first and a second and a third of said switches, said trip circuit being effective to actuate said relaying apparatus solely when all of said just-mentioned main circuits are conducting, means connecting said control circuit of said first switch to a second of said windings, a phase shifting circuit, means connecting said control circuit of said second switch to a third of said windings and including said phase shifting circuit, a control circuit connected to said control circuit of said third switch, said last-named control circuit having a normal operating condition in which it maintains said main circuit of said third switch conducting and an actuated condition in which it maintains said main circuit of said third switch nonconducting, and a means effective to place said last-named control circuit in its said actuated conditions.

3,311,786

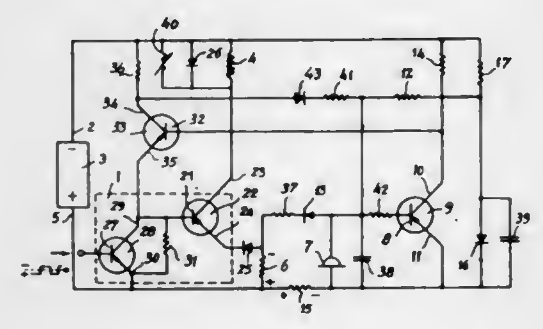
DETECTION AND CONTROL ELECTRONIC CIRCUIT FOR CIRCUIT BREAKING

Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works

Filed Apr. 6, 1964, Ser. No. 357,535

Claims priority, application France, Apr. 10, 1963, 931,166, Patent 1,361,501

11 Claims. (Cl. 317—33)



1. An overload circuit breaker, comprising a tunnel diode producing a current peak in its forward bias characteristics, a transistor whose base and emitter are connected in parallel with said tunnel diode forming a hybrid circuit; at least one low-rating resistor series connected to a circuit to be protected and picking up information relating to current intensity, connecting means constituted by a complex resistance, such as a negative bias tunnel diode, for leading voltage developed across terminals of the information resistance to said hybrid circuit, means for cutting out said circuit to be protected, said cutout means being controlled by the transistor associated with said tunnel diode, another resistance disposed between the output of the hybrid circuit and one side of a source of current, the other side of said source being connected to the other side of the hybrid circuit, said source furnishing a voltage which is high in comparison with the voltage required to bias the base of said transistor, whereby an auxiliary current is fed through said hybrid circuit and mathematically combines with the current issuing from said information resistance, so that a cutout condition is sustained subsequent to tripping by said auxiliary current.

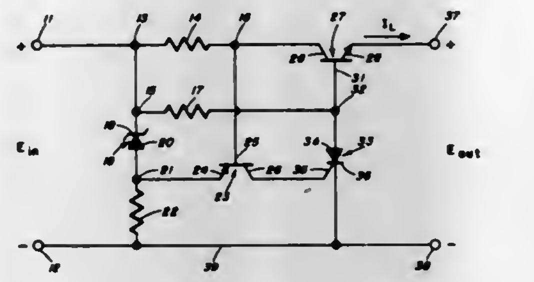
3,311,787

TRANSISTORIZED CIRCUIT BREAKER

Tracy B. Gunderman, Clinton, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Apr. 9, 1964, Ser. No. 358,675

6 Claims. (Cl. 317—33)



1. A circuit breaker system that opens automatically upon changes in load current conditions comprising:

a controlled semiconductor device;

a series resistor for providing a varying voltage drop indicative of load current flow;

said series resistor and said semiconductor connected in series relationship in one side of source line;

a voltage reference network connected in parallel relationship with a source input voltage;

a control semiconductor device connected in circuitry arrangement with voltage reference network for providing control voltage to said controlled semiconductor; and

a silicon controlled rectifier connected in circuitry arrangement with said control semiconductor device and controlled semiconductor device;

whereby the control semiconductor device remains nonconducting whenever the load current passing through the series resistor produces a voltage drop across the series resistor that is below a predetermined level that is set by the voltage reference network and the control semiconductor device and silicon controlled rectifier is conducting whenever the voltage drop across the series resistor has exceeded the value set by the voltage reference source.

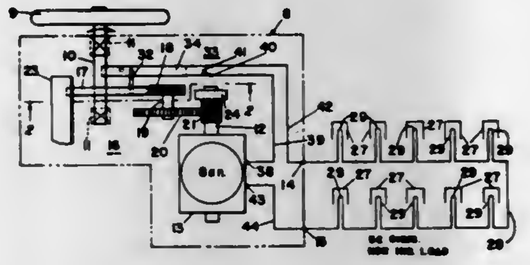
3,311,788

SYSTEM FOR FIRING SERIES-CIRCUIT BLASTING CAPS

Milton D. Faige, 36 De Kalb Place, Morristown, N.J. 07960

Filed July 23, 1964, Ser. No. 384,814

4 Claims. (Cl. 317—80)

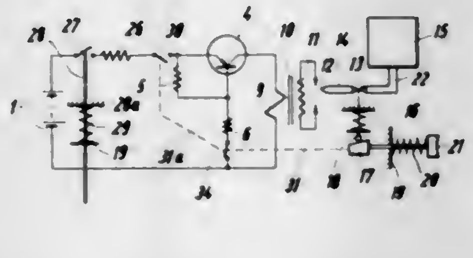


1. A system for firing series-circuit blasting caps with a high degree of reliability, comprising in combination, an electric current generator, electrical means providing a firing circuit output connection with said generator including a pair of output terminals, normally-open switch means in said connection between the generator and one of said terminals, movable means for manually driving said generator with a limited power stroke through a

varying current range having a limited sustained peak, said last-named means having an operating pin-like element affixed thereto and movable therewith in a predetermined path for effecting closure of said switch means in response to each power stroke of the generator driving means in timed relation to and during said peak in the output current range.

3,311,789
GAS CIGARETTE LIGHTER WITH SPARK IGNITION

Hermann Remy, Frankfurt am Main-Niederrad, Germany, assignor to Rowenta Metallwarenfabrik G.m.b.H., Offenbach am Main, Germany, a firm
Filed May 1, 1964, Ser. No. 364,264
Claims priority, application Germany, May 8, 1963, R 35,125
11 Claims. (Cl. 317—86)



1. An ignition assemblage for a gas-fueled electrically ignited lighter comprising, in combination, a fuel valve; an actuator for controlling the release of fuel by the valve and ignition of released fuel; a step-up transformer having a primary winding and a secondary winding; a battery connected to the primary winding of the transformer in a power supply circuit; electronic switching means included in said power supply circuit, said switching means having a state of conductivity and a state of nonconductivity; a control circuit means coating with said electronic switching means to control the state of conductivity thereof; a normally open control switch, closing of said switch actuating the control circuit means thereby changing the state of conductivity of said electronic switching means, mechanical transmission means coupling said actuator to said normally open control switch and to the fuel valve of the lighter, operation of said actuator causing the transmission means first to open the fuel valve of the lighter for releasing fuel through the same and then to close the control switch; and an ignition circuit including a spark gap connected to the secondary winding of the transformer, said change in the conductivity of the electronic switching means by closing of said control switch inducing a voltage surge in the secondary transformer winding, said voltage surge causing a spark discharge across said gap for igniting fuel released by the fuel valve.

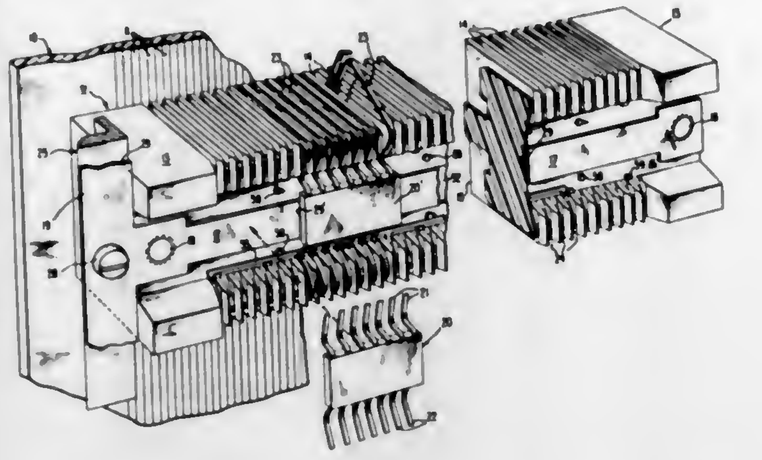
3,311,790
MICROMODULE CONNECTOR AND ASSEMBLY

Benton A. Vizzier, Sr., and Lewis M. Hooks, Huntsville, Ala., assignors to Brown Engineering Company, Inc., Huntsville, Ala., a corporation of Alabama
Filed Feb. 17, 1965, Ser. No. 433,331
12 Claims. (Cl. 317—100)

10. In a circuit board assembly a microcircuit support, comprising

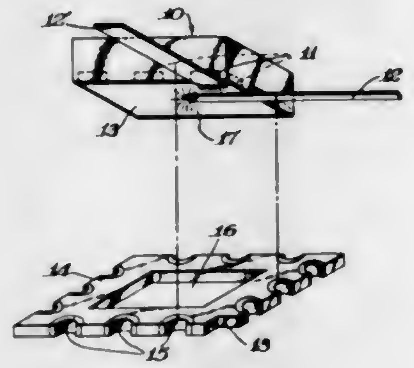
an insulating support including a longitudinal channel dimensioned to engage a plurality of like circuit elements having lateral leads extending therefrom,

a plurality of peripheral slots extending from said channel to the reverse side of said support, each dimensioned to receive like spring contact means, and spring contact means in each said slot being tensioned to retain therebelow one said lead and extending from said channel to said reverse side as a protruding contact for engaging a circuit board.



3,311,791
MICROMODULE

Warren A. Larson, Pittsfield, and Alfred Whitman, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Aug. 4, 1964, Ser. No. 387,444
2 Claims. (Cl. 317—101)

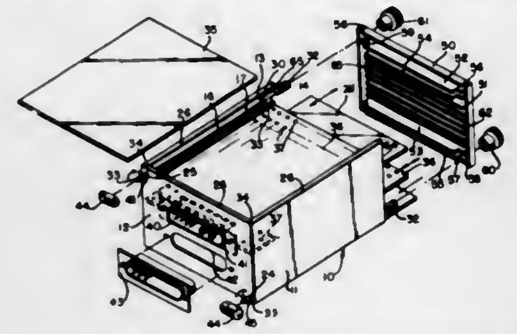


2. A microelement comprising a thin nonconducting substrate having a pair of closely spaced parallel planar surfaces, a plurality of peripherally located tinned notches and a centrally located opening therein; a microelement subassembly bonded to said substrate so as to cover said centrally located opening, said subassembly comprising an electrical component potted within a nonconducting, box-shaped form, said form having a plurality of comparatively weak lead-accommodating breakaway areas in the sides thereof, an anode lead emerging from the potting material at a point near one of the sides of said form and extending through said side at a point where one of said breakaway areas has been removed, a cathode lead emerging from said potting material at a point about equidistant from the sides of said form, said potting material filling said form to an extent short of completely, by a distance about equal to the thickness of the cathode lead.

3,311,792
PLUG-IN CASE FOR HIGH FREQUENCY CIRCUITS

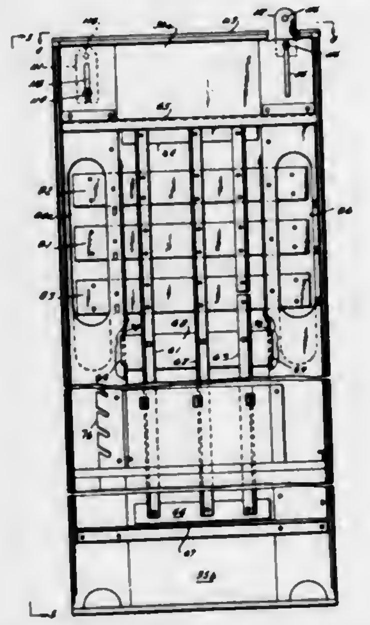
Ray R. Scoville, 5083 Commonwealth Ave., La Canada, Calif. 91011
Filed June 1, 1965, Ser. No. 460,053
10 Claims. (Cl. 317—101)

9. A housing for electronic circuits comprising a conductive frame member of closed configuration having a ribbed interior surface defining a plurality of superposed grooves slidably receiving and supporting circuit boards, at least one side of said frame member having plug-type electrical connectors coupled to circuits on said circuit boards, a plurality of conductive plate member slidably inserted into spaced ones of said grooves in spaced parallel relation to said boards for shielding the circuits on said boards from one another and from regions exterior of said housing, at least one side of said frame member comprising a removable end plate positioned in a plane transverse to the planes of said circuit boards and of said plate members, said removable end plate including grooves receiving edges of said circuit boards and of said plate memberss, and elongated lock shafts extending through said frame member and protruding through apertures in a pair of opposing sides of said frame member, said lock shafts including detent means adjacent the exterior of one of said opposing sides adapted to removably engage a supporting structure upon which said housing is to be mounted, said lock shafts further including means adjacent the exterior of the other of said opposing sides for manipulating said detent means to effect locking engagement and disengagement of said housing from said supporting structure.



3,311,793
ELECTRICAL CONTROL CENTER

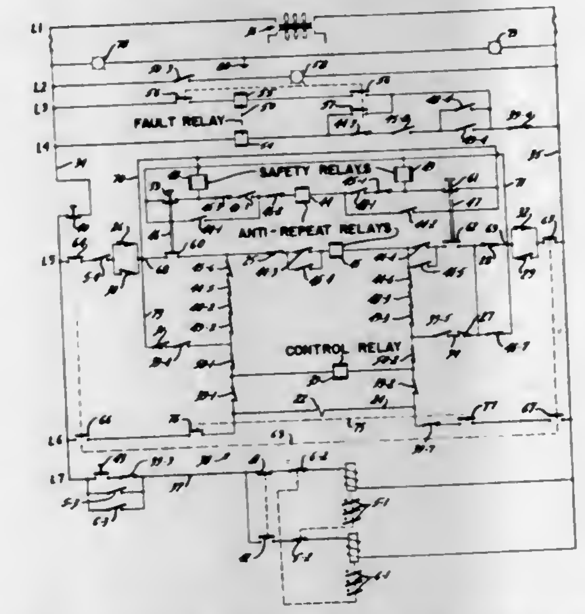
Frank W. Kussy, Birmingham, George H. Farnsworth, Grosse Pointe Woods, and Robert W. Thomas, St. Clair Shores, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 28, 1964, Ser. No. 399,592
4 Claims. (Cl. 317—120)



1. A control center of the class described including an elongated enclosure with opposed sides, and in addition to said sides a back and a front; said front having at lease one openable cover; a plurality of elongated bus bars disposed within said enclosure and extending generally parallel to the longitudinal axis of said enclosure; support means maintaining said bus bars in insulating relationship; each of said bus bars having a first portion engaged by said support means and a second portion extending forward of said first portion for engagement by power tapping stabs of control apparatus; each of said portions extending for substantially the entire length of said bus bars; each of the bus bars being of generally L-shape cross-section with a first and a second leg constituting said first and said second portions, respectively; said first legs positioned in a common plane; said support means including fixed elements of said enclosure secured to said bus bars at opposite ends thereof, fastening means, and at least one elongated plate-like insulating intermediate element positively secured solely to said bus bars by said fastening means; an elongated channel member mounted to each of said sides of said enclosure and having a part extending generally parallel to said sides; said parts having aligned slots; said intermediate element having its ends received by said slots; said intermediate element is comprising a strip extending transverse to said bus bars; said intermediate element being notched at opposite ends of a long edge thereof with the spacing between notches approximating the spacing between the parts of the channels extending generally parallel to said sides of the enclosure, said element being positioned so that said parts block side to side movement of said element.

3,311,794
ELECTRICAL INTERLOCK CONTROL CIRCUIT

Frank H. Holland and John F. Holland, Cleveland, Ohio, assignors, by mesne assignments, to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Oct. 22, 1963, Ser. No. 318,025
21 Claims. (Cl. 317—135)



1. In an electrical control circuit for cyclical operation in response to a switching means,

a main electrically actuated control means connected in an energizing circuit,

anti-repeat cycle means including a plurality of interlocking electrically actuated anti-repeat means connected to control the main control means, said interlocked anti-repeat means requiring sequential operation including a first anti-repeat means having contacts connected in the energizing circuit of the control means and connected in the energizing circuit of the control means and connected in an energizing circuit including contacts of a second anti-repeat means, the second anti-repeat means connected in a second energizing circuit including contacts of the first anti-repeat means and having contacts in the energizing circuit of the main electrically actuated control means whereby the first anti-repeat means is energized to energize the second anti-repeat means and serves to deenergize and reset said first anti-repeat means and thereby to conjointly control the energization of the control means, cycling means connected for simultaneous movement and including a first switch means connected in the energizing circuit of the first anti-repeat means and a second switch means connected in the energizing circuit of the second anti-repeat means, said switch means being interlocked for simultaneous movement whereby only one of said switch means is closed at any one time,

electrically actuated safety means connected in an energizing circuit including said first switch means and including contacts connected in the energizing circuit of the first anti-repeat means and the control means, and

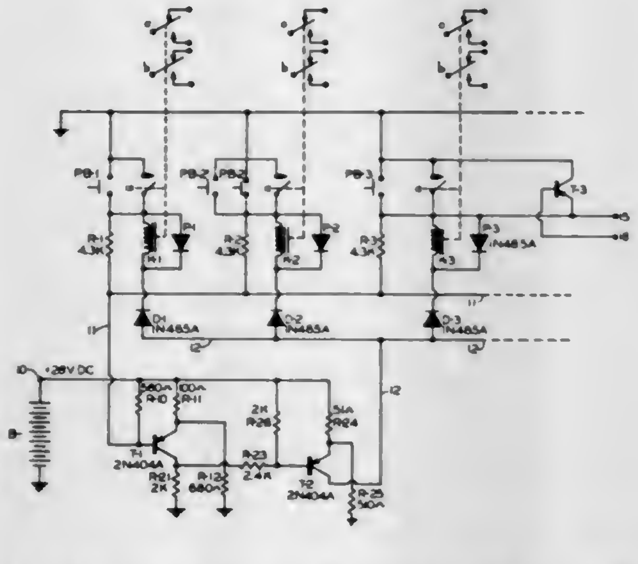
electrically actuated fault means conjointly controlled by all of said electrically actuated means and including means preventing energization of said control means.

3,311,795
ELECTRONIC INTERLOCK CIRCUIT

Edward O. Gilbert, Ann Arbor, Mich., assignor to Applied Dynamics Inc., Ann Arbor, Mich., a corporation of Michigan

Filed Apr. 22, 1964, Ser. No. 363,337

8 Claims. (Cl. 317—137)



1. A relay interlock circuit, comprising, in combination: a plurality of selectively operable switches; a plurality of electromagnetic relays each including an operating coil and a holding circuit, each of said holding circuits being connected in parallel with a respective one of said switches; a first plurality of resistances; a first terminal and a second terminal, each of said switches being connected in series with a respective one of said resistances between said first and second terminals; a second resistance connected in series with said second terminal; voltage supply means connected between said second resistance and said first terminal; a plurality of uni-directional conduction devices, each of said operating coils being connected in series with a respective one of said devices, in series with a respective one of said switches, and to a third terminal; means for sensing the amount of current flowing through said second resistance and for providing a control signal; and electronic switching means for switchably applying power to said third terminal, said control signal being connected to control said electronic switching means.

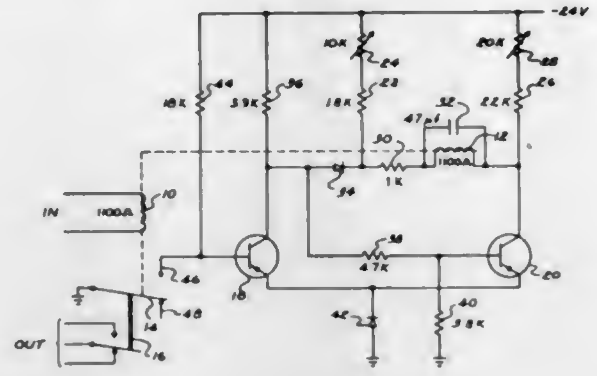
3,311,796
RELAY CIRCUIT

Wallace P. Mercer III, Prince William County, Va., assignor to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia

Filed Aug. 28, 1964, Ser. No. 392,721

8 Claims. (Cl. 317—155.5)

1. A relay circuit comprising a relay having a line winding, an auxiliary winding, and an armature, a switching circuit for reversing the direction of current in said auxiliary winding including two switching means, one of said switching means being designed to operate when said armature is in a first position and the other of said switching means being designed to operate when said armature is in a second position, said auxiliary winding being connected in said switching circuit between said two switching means to control the direction of current flow through said auxiliary winding, the resultant flux caused by the current flow in said auxiliary winding and the current flow in said line winding effecting movement of said armature in response to a predetermined electrical condition in the line.

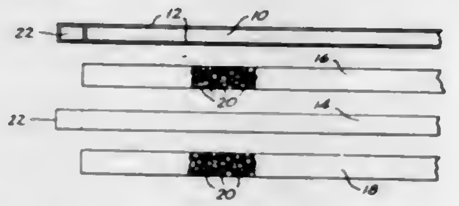


3,311,797
ELECTROLYTIC CAPACITOR INCLUDING HEAT RESISTANT SPACER CONTAINING THE ELECTROLYTE AND METHOD OF MAKING SAME

Mark B. Siddall, Albany, Oreg., assignor to Wah Chang Corporation, New York, N.Y., a corporation of New York

Filed Oct. 24, 1963, Ser. No. 318,658

6 Claims. (Cl. 317—230)



5. An electrolytic capacitor comprising a laminated assembly of a strip of electrically conductive metallic anode material selected from the class consisting of zirconium, titanium, columbium, tantalum, and alloys thereof having a dielectric film covering its surface, a strip of electrically conductive metallic cathode material, and a strip of electrically non-conductive, porous, heat-resistant separator material interposed between the conductive strips and a solid pyrolytically reducible semiconductive oxide electrolyte overlying said dielectric film and dispersed throughout said heat resistant material.

3,311,798
COMPONENT PACKAGE

Billy D. Gray, Torrance, Calif., assignor to TRW Semiconductors, Inc., Lawndale, Calif., a corporation of Delaware

Filed Sept. 27, 1963, Ser. No. 312,200

8 Claims. (Cl. 317—234)

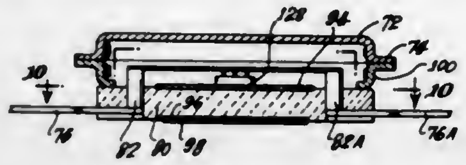
3. A hermetically sealed miniaturized component package comprising:

a ceramic substrate member having a top surface, a bottom surface and an apertured portion therebetween, said top surface being metallized over a portion thereof;

a pin fixedly mounted in said apertured portion and extending beyond said top surface;

an electronic device fixedly mounted upon said top surface and having an electrical conductor connected to said pin;

a lead member ohmically connected to said pin member and arranged to extend from said package;



an annular metal member having radially extending top and bottom flanges, said bottom flange being fused to said top surface of said substrate bearing substantially entirely upon said top surface; and,

a metal cap cold-welded to said metal member at said top flange thereof whereby a hermetically sealed enclosure is created.

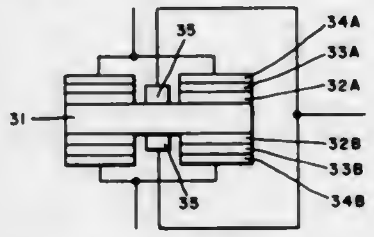
3,311,799
SEMICONDUCTOR BARRIER LAYER SWITCH WITH SYMMETRICAL CHARACTERISTICS ON EITHER POLARITY

Brian J. Gumm, Watford, and Clifford V. H. Miles, Enfield, England, assignors to Westinghouse Brake & Signal Company Limited, London, England, a corporation of Great Britain

Filed July 6, 1960, Ser. No. 41,083

Claims priority, application Great Britain, July 31, 1959, 26,299/59

1 Claim. (Cl. 317—235)



A semiconductor switching device comprising a wafer of a semiconductor material, said wafer having a central region of a first-type of semiconductivity, said central region having a top surface and a bottom surface, a first region of a second-type of semiconductivity disposed upon the top surface of the central region about the periphery thereof, a p-n junction between the first region and the central region, a second region of a second-type of semiconductivity disposed upon the bottom surface of the central region about the periphery thereof, a p-n junction between the second region and the central region, a metallic source of minority carriers affixed to the first and second regions of second-type semiconductivity, an electrical contact affixed to each metallic source of minority carriers, and one electrical contact affixed to the top surface of the central region and one electrical contact affixed to the bottom surface of the central region.

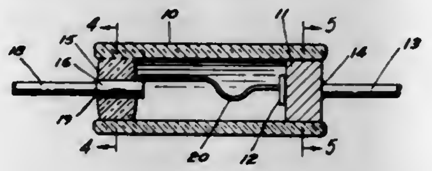
3,311,800
MEANS AND METHOD OF SEALING GLASS ENCAPSULATED DIODES

David Bakalar, Boston, Mass., assignor to Transitron Electronic Corporation, Wakefield, Mass., a corporation of Massachusetts

Continuation of application Ser. No. 850,432, Nov. 2, 1959. This application Aug. 6, 1965, Ser. No. 480,246

3 Claims. (Cl. 317—236)

1. A glass encapsulated semiconductor device comprising, a hollow cylindrical glass tube having a wall thickness less than the inside diameter of said tube, first and second metal end caps sealing off the ends of said glass tube each bounded by a circumferential surface fused to the inside wall of said tube, the outside diameter of each end cap corresponding substantially to said inside diameter, said end caps having a thermal coefficient of expansion substantially equal to that of said glass, first and second flexible conducting leads having one end attached to said first and second end caps respectively along the common axis of said tube and said end caps at a point substantially flush with the surface of a respective end cap outside the volume enclosed by said tube and said end caps, the cross sectional area of each of said leads being much less than that of each end cap, said first end cap comprising a metal cylindrical structure of high thermal and electrical conductivity having a conducting surface inside said volume and having a cross sectional area greater than that of said first lead attached to said structure at said point substantially flush with said end cap outside surface, a wafer of semiconductor material supported by and in electrical and thermal contact with said inside conducting surface, and means including a lead having a diameter less than that of said second flexible lead and a metal cylindrical structure with a cross sectional area greater than that of said second flexible lead for establishing rectifying contact between the latter lead and a point on the surface of said wafer, said cylindrical structures being the only metal in contact with glass encapsulating said wafer and comprising said points substantially flush with said outside surfaces.

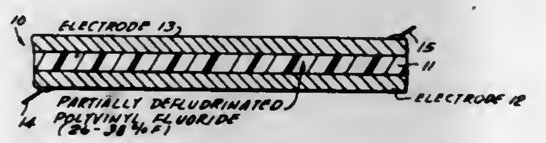


3,311,801
ELECTRIC CAPACITOR

Milton H. Pintell, Bronx, N.Y., assignor to Intron International, Inc., Congers, N.Y., a corporation of New York

Continuation of application Ser. No. 470,059, July 7, 1965. This application June 23, 1966, Ser. No. 561,315

2 Claims. (Cl. 317—258)



1. A thermally sensitive electrical capacitor comprising a pair of electrodes separated by a film of partially defluorinated polyvinyl fluoride with a fluorine content of 26 to 38% by weight of the polymer, said polymer being composed exclusively of carbon, hydrogen and fluorine atoms.

3,311,802
WARD-LEONARD PLURAL MOTOR ELECTRICAL DRIVE MEANS

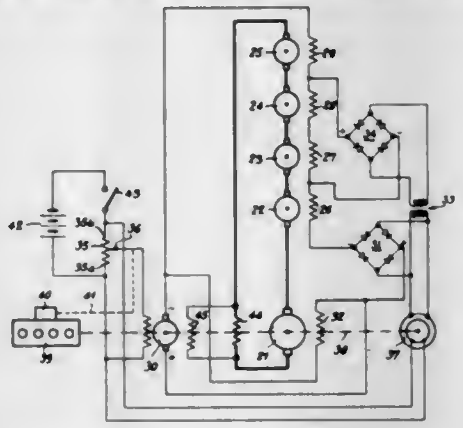
Ferdinand Schenk, Satigny, Geneva, Switzerland, assignor to Automobiles M. Berliet, Lyon, France, a French body corporate

Filed Feb. 14, 1964, Ser. No. 344,880

Claims priority, application Switzerland, Feb. 15, 1963, 1,952/63

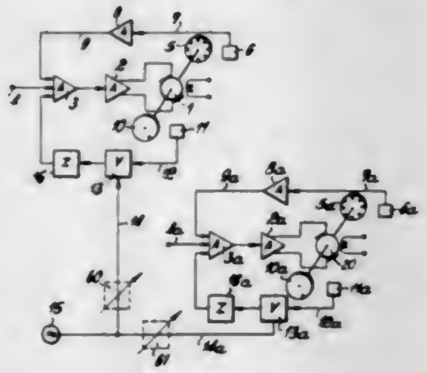
1 Claim. (Cl. 318—61)

Ward-Leonard type, progressive power transfer, electrical drive means comprising a plurality of identical, separately-excited, D.C. motors arranged in at least one group comprising at least two mechanically coupled motors having their armature and field windings respectively connected in series in each group, a separately excited, D.C. generator having its armature winding connected in parallel with the series-connected armature windings of each group, a first D.C. source adapted to supply the field current of said D.C. generator and connected in parallel with the series-connected field windings of each group, a second D.C. source connected in parallel with said series-connected field windings of each group and in opposition to said first source, control means for progressively varying the voltage of said second source up to the voltage of said first source to cancel out said first source, a third source of unidirectional direct current adapted to supply the field windings of at least one motor of each group, which is destined to receive the full power supply destined for this group, with a current having the same flow direction as that of said first D.C. source, whereby power is progessively transferred between said motors intended to receive the full power supply and the other motors of the respective groups by a progressive increase or decrease of the voltage of said second D.C. source, the full power supply being received by the motors intended therefor when the latter receive their excitation current only from said third direct current source, the excitation currents delivered to all the motors by said first D.C. source then being zero.



3,311,803
SYNCHRONIZED MOTOR DRIVE UTILIZING SPEED AND PHASE CONTROL

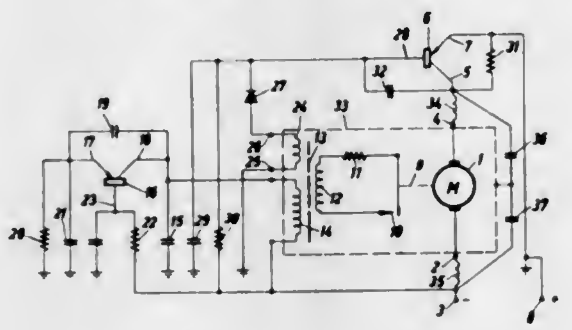
Winfried Schulz, Berlin, Germany, assignor to Continental Elektroindustrie A.G. Askania-Werk, Berlin-Mariendorf, Germany, a corporation of Germany
Filed Apr. 22, 1964, Ser. No. 361,802
Claims priority, application Germany, Apr. 26, 1963,
C 29,781
7 Claims. (Cl. 318—85)



1. A synchronized motor drive comprising:
(a) a motor having a voltage-responsive shaft speed,
(b) means for generating a voltage responsive to the shaft speed and independent of shaft phase at any given speed,
(c) means responsive to deviation of said speed-responsive voltage from a standard value to alter the voltage impressed on the motor to vary the shaft speed in the direction to restore the standard value, characterized by the improved construction having:
(d) means for generating a voltage responsive to the phase of the shaft rotation,
(e) and means responsive to deviation of the phase-responsive voltage from a standard value to alter the voltage impressed on the motor to vary the shaft speed in the direction to restore the standard value.

3,311,804
D.C. MOTOR WITH CENTRIFUGAL SWITCH

Bernd Kusserow, Kronach, Upper Franconia, Germany, assignor to Loewe Opta Aktiengesellschaft, Berlin, Germany, a company of Germany
Filed Jan. 20, 1964, Ser. No. 339,031
Claims priority, application Germany, Jan. 23, 1963,
L 43,974
4 Claims. (Cl. 318—325)



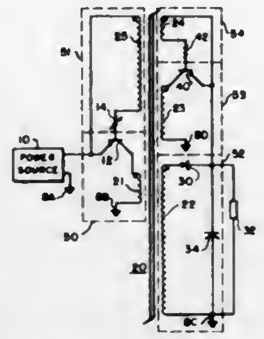
1. A speed governor system for a D.C. motor in tape recorders comprising a centrifugal switch contact mounted on said motor shaft and being switched in accordance with a predetermined speed of said shaft, a first and a second transistor each having base, emitter and collector elements, a transformer comprising a primary winding and two secondary windings; said primary winding being mounted on the motor shaft and said secondaries being stationary; said primary, said centrifugal switch, and a series resistance forming a damping circuit; one of said secondary windings being an induction coil of an oscillator with said second transistor in grounded-base circuit, the emitter resistance of said second transistor being by-passed by a capacitor forming a voltage divider in combination with a further capacitor lying between collector and emitter elements of said second transistor; the other secondary winding forming a coupling winding connected with said base element of said first transistor, whose collector and emitter elements being connected in series to the motor circuit; one pole of said other secondary transformer winding being grounded and the other pole being connected over a rectifier with said base element of said first transistor; between said base element and one pole of said motor being incorporated a resistance determining time of running up to speed.

3,311,805
ASYMMETRICAL LOW VOLTAGE CONVERTER

Emil Kittl, Oceanport, and William L. Dudley, Shrewsbury, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Nov. 2, 1964, Ser. No. 408,436
8 Claims. (Cl. 321—2)

1. A low voltage converter comprising:
a source of direct current;
a transformer having an input winding, an output winding, and a reset winding;
a first switching means for connecting said source of direct current to said input winding, during a first time interval;
an output load;

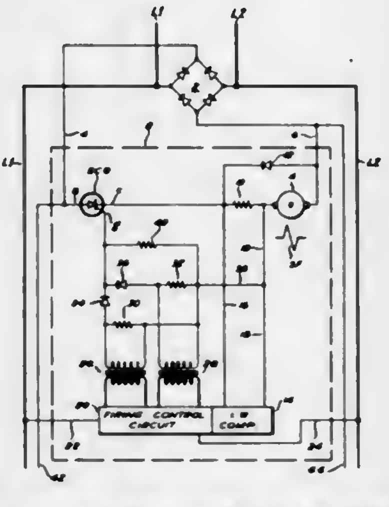
a storage capacitor connected across said output load;
rectifying means connecting said output winding to said output load; and



a second switching means for connecting said storage capacitor to said reset winding during a second time interval substantially shorter than said first time interval,
said first and second time intervals comprising one cycle of operation.

3,311,806
GATING DEVICE CONTROL MEANS

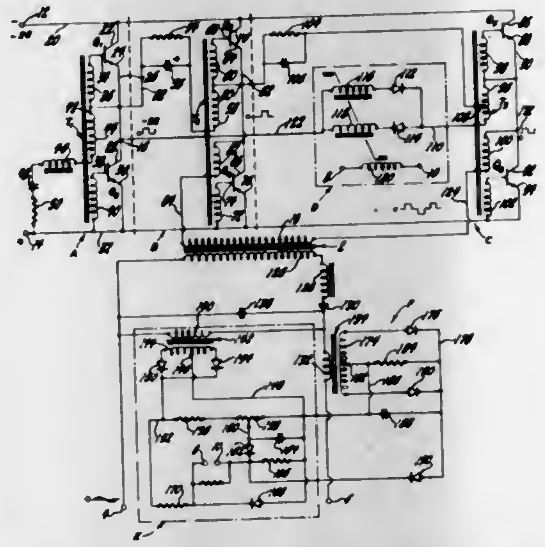
Reginald E. Charlwood, Menomonee Falls, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,264
14 Claims. (Cl. 321—18)



1. In a control system for energizing a direct current load device from an alternating current power supply source:
a gating device of the type having an anode, a cathode and a control electrode and being responsive to application of a firing signal to its control electrode to conduct current in its anode and cathode circuit for the remainder of the half-cycle of its forward anode voltage regardless of any additional voltage or polarity thereof that may be applied to its control electrode;
rectifier means connected to said alternating current source to provide a supply of rectified voltage; means connecting said gating device in circuit with said rectifier means and a load device to said supply;
an impedance connected to the cathode of said gating device in said circuit whereby the load current flows through said impedance;
and means for applying a firing signal to the control electrode of said gating device at a selected point during a half-cycle of its forward anode voltage to cause said gating device to conduct current to the load device for the remainder of such half-cycle and including means for applying from said impedance a reverse bias voltage to said control electrode sufficient to cause said gating device to assume a current blocking condition at the end of such half-cycle by increasing the value of holding current that would be required to keep said gating device conducting.

3,311,807
STATIC INVERTER

James A. Rodaer, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 13, 1963, Ser. No. 308,808
7 Claims. (Cl. 321—18)

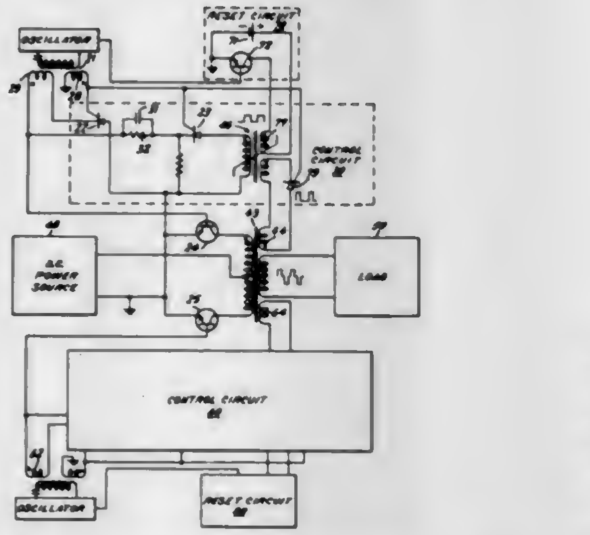


7. Static inverter means for converting D.C. to A.C. power comprising, a source of D.C. power, an oscillator connected thereto for providing a series of pulses when energized, a bridge power amplifier including two arms connected to the output of the oscillator, magnetic amplifier control means connected between the output of the oscillator and one arm of the bridge power amplifier to control the time phase of the pulses applied thereto and thus control the output of the bridge power amplifier, an output transformer connected to the bridge power amplifier across which the A.C. power is developed, an output circuit connected to the output transformer to deliver the generated A.C. power, an error signal transformer connected across the output circuit across which the output voltage is applied, said transformer having a secondary winding, a full wave rectifier connected across the secondary winding to develop a D.C. voltage proportional to the R.M.S. of the alternating current voltage, resistance means connected across the full wave rectifier forming a voltage divider, an adjustable tap thereon, second rectifier means connected between the adjustable tap and magnetic amplifier control means, second voltage divider means connected across the full wave rectifier, an intermediate point of which is connected to the second rectifier means to bias the same and a reference diode connected in shunt to a portion of the second voltage divider to regulate the forward current to the magnetic amplifier control means and thus the output, a plurality of current transformers connected in the output circuit, full wave rectifier means connected to each current transformer to develop D.C. signals proportional to the output current, a second reference diode connected to the output of one full wave rectifier and to the magnetic amplifier control means, biasing means including a condenser connected to said one full wave rectifier and the second reference diode to reverse bias the same under normal conditions but forward bias it on short circuit or overload, a pair of conductors connected across the bridge amplifier input, a silicon controlled rectifier connected across the pair of conductors to short circuit the same if conductive, said silicon controlled rectifier having a gate electrode and biasing means connected to the output of the other full wave rectifier of the current

transformer and to the gate electrode to control conductive periods of the silicon controlled rectifier to cut off the static inverter quickly on energizing.

3,311,808
SELF-STABILIZING PULSE DURATION MODULATION AMPLIFIER

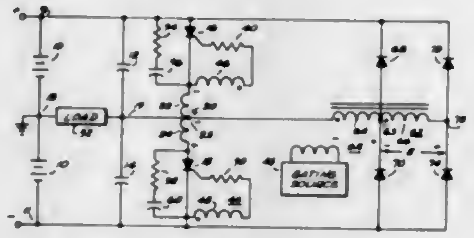
Francisc Carol Schwarz, Ithaca, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 17, 1962, Ser. No. 245,059
3 Claims. (Cl. 321—45)



3. A self-stabilizing amplifier comprising:
(a) a balanced transformer coupled between a load and a power source;
(b) a pair of semiconductor switching elements, each switching element being arranged in series between the power source and said transformer to control the duration of applied power during alternate half cycles;
(c) a control circuit for each of said switching elements including a saturable transformer coupled to said balanced transformer to receive a fixed proportion of the instantaneous voltage applied to the load, said saturable transformer providing a signal to hold said switching element ON during volt-time integration and applying a turn OFF signal to said switching element at saturation;
(d) means coupling a reference oscillator signal to each said control circuit to turn said semiconductor switches ON during alternate oscillator half cycles;
(e) reset means for each of said saturable transformers including a reference D.C. voltage source for providing resetting of these integrators during the half cycles when the corresponding switching element is open;
(f) switching means, coupled to the reference oscillator, for connecting said reference voltage to said reactors during reset half cycles;
(g) switching means isolating said saturable transformer from spurious signals during the responsive to the reference oscillator signal during the respective reset half cycles of each control circuit.

3,311,809
STATIC INVERTER COMMUTATION CIRCUIT

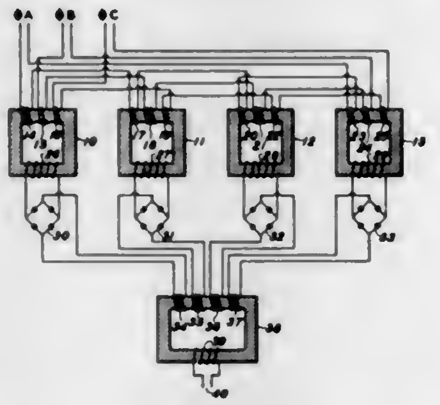
Philip D. Corey and Armistead L. Wellford, Waynesboro, Va., assignors to General Electric Company, a corporation of New York
Filed June 19, 1963, Ser. No. 288,955
6 Claims. (Cl. 321—45)



1. A circuit for converting the output of a unidirectional potential source having a positive and a negative terminal to an A.C. output comprising a series arrangement of first and second gate controlled rectifiers and a center tapped inductance disposed therebetween connected across said source, a first capacitance connected across said first gate controlled rectifier and half of said inductance, a second capacitance connected across said second gate controlled rectifier and the other half of said inductance, an autotransformer having a primary and a secondary winding coupled in series and having a first end terminal, a second end terminal, and a common terminal, means coupling said first terminal to the center tap of said inductance, a first forward poled diode connected between said common terminal of said primary and secondary windings and said positive terminal, a second forward poled diode connected between said negative terminal and said common terminal of said primary and secondary windings, a third forward poled diode connected between said second terminal and said positive terminal, a fourth forward poled diode connected between said negative terminal and said second terminal and signal generating means in circuit with said gate controlled rectifiers for gating said controlled rectifiers into conductivity during alternately occurring half cycles of output from said generating means.

3,311,810
STATIC FREQUENCY MULTIPLIER UTILIZING A PLURALITY OF SATURABLE MAGNETIC CORES

Stephen Browning Sample, Urbana, Ill., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 16, 1964, Ser. No. 352,054
3 Claims. (Cl. 321—68)

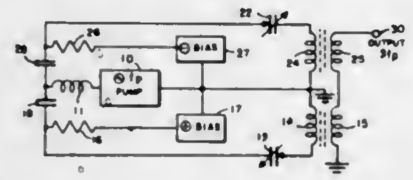


3. A static magnetic frequency multiplier adapted to multiply electrical power of an input frequency by a factor *n*, *n* being an even integer, comprising in combination:

n saturable magnetic cores,
at least two sets of primary windings on said cores,
  each of said sets of windings including windings on at least two of said cores,
  each of said sets of windings being series connected and adapted to be connected to a source of input voltage of common frequency and different independent phase,
  said primary windings being connected so that the cores form a sequence in which the phase of the magnetizing force in each successive core advances by 180°/*n*, of input frequency phase with respect to the preceding core,
  the magnetizing force in each core being sufficient to maintain the core saturated over about (1—1/*n*) of each half cycle of magnetizing force,
  a secondary winding on each saturable core,
  all windings on each core being in flux-sharing relationship,
  individual rectification means connected to each secondary winding to produce a series of unipolarity pulses,
a non-saturating transformer,
n primary windings on said non-saturating transformer each said winding being connected to an individual rectifying means,
  windings associated with adjacent cores in said sequence being poled to induce flux in opposite senses,
  control means connected between the secondary winding on each saturable core and the corresponding primary winding on the non-saturating transformer, said control means being adapted to permit the flow of power from said secondary windings to said primary windings while blocking the flow of power from said primary windings to said secondary windings,
  and an output winding on said non-saturating transformer.

3,311,811
ODD-ORDER, PARAMETRIC, FREQUENCY MULTIPLIER

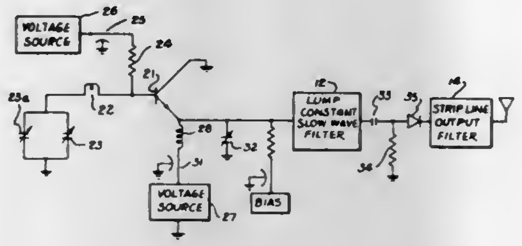
Werner M. Rupp, Elberon, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 2, 1963, Ser. No. 270,126
3 Claims. (Cl. 321—69)



1. An odd-order harmonic generator comprising a source of pump voltage; a source of negative bias voltage; a first resistor, a first variable-capacitor diode, and a first inductor connected in series across said source of negative bias voltage, with the anode of said first diode connected to said first resistor; said first diode and said first inductor comprising a first resonant circuit tuned to said odd-order harmonic of the frequency of said pump; a source of positive bias voltage; a second resistor, a second variable-capacitor diode, and a second inductor connected in series across said source of positive bias voltage, with the cathode of said second diode connected to said second resistor; said second diode and said second inductor comprising a second resonant circuit tuned to said odd-order harmonic of the frequency of said pump; means for connecting said source of pump voltage across the series combination of said first diode and said first inductor; means for connecting said source of pump voltage across the series combination of said second diode and said second inductor; a first coil inductively coupled to said first inductor; a second coil inductively coupled to said second inductor; means for connecting said first and second coils, with the voltages produced by said odd-order harmonics of said first and second tuned circuits in phase, to an output circuit.

3,311,812
BROADBAND SOLID STATE MICROWAVE ENERGY SOURCE

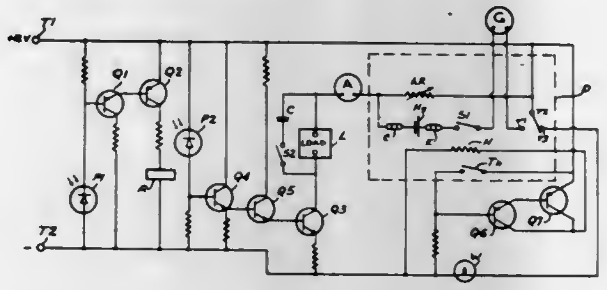
Theodore D. Geiszler and Henry D. Elifritz, Santa Clara, Calif., assignors to Western Microwave Laboratories Inc., Santa Clara, Calif.
Filed July 9, 1964, Ser. No. 381,455
11 Claims. (Cl. 321—69)



1. A microwave energy source for operation over a selected band of frequencies comprising a TEM mode bandpass filter of the variety including a plurality of transmission line elements disposed in parallel relation in a common plane between two ground planes wherein each of said line elements between end line elements in said plurality thereof, is grounded at one end and ungrounded at the other end with a predetermined capacitive reactance to ground at each ungrounded end, and said end line elements are adapted to function as impedance transformer means; high frequency oscillator means having a selected capacitive reactance over said selected band of frequencies electrically connected to one of said end elements and so disposed that said selected capacitive reactance is operative to alter the electrical length of said one of said end elements such that the last said end element will resonate in the vicinity of said selected band of frequencies; and means for varying the frequency of said high frequency oscillator means.

3,311,813
PHOTOSENSITIVE DEVICE CONTROLLED VOLTAGE-CURRENT REGULATING SYSTEMS

Jack Sutcliffe, Smiths Falls, Ontario, Canada, assignor to Guildline Instruments Limited, Smiths Falls, Ontario, Canada
Filed Sept. 23, 1965, Ser. No. 489,680
Claims priority, application Canada, Dec. 20, 1962, 865,067
7 Claims. (Cl. 323—4)



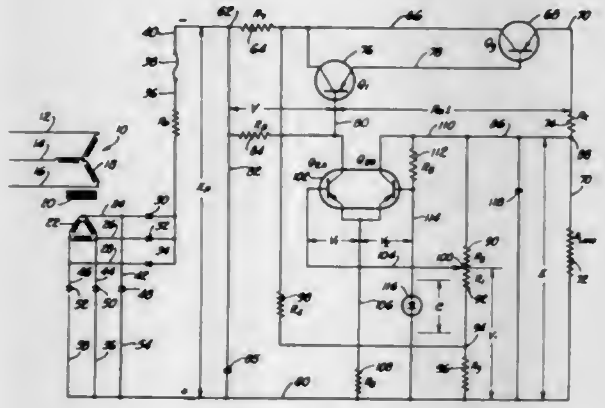
1. In a circuit having means for supplying a predetermined steady electrical quantity to a load, the provision of means for maintaining constant the value of said quantity, said value-maintaining means comprising:
(a) means for generating a voltage proportional to the actual value of said quantity as supplied to the load,
(b) a source of a standard voltage,
(c) a galvanometer including a light source and a mirror, said galvanometer being connected to said voltage generating means and to said source for comparing said generated voltage to said standard voltage and for deflecting said mirror upon detection of any lack of equality between said voltages,
(d) variable resistance means,

(e) means connecting said variable resistance means in said supplying means in series with the load,
(f) photo-sensitive means located to receive light from said light source deflected by said mirror for detecting the magnitude and sense of deflection of the galvanometer,
(g) means connecting said photo-sensitive means to said variable resistance means to vary the latter to modify said supplying means to restore equality between said voltages, and
(h) means connected to said supply means in parallel with the load to provide a parallel path thereto upon appearance of a voltage across the load in excess of a predetermined value.

3,311,814

REGULATED POWER SUPPLY

Arnie L. Cliffgard, 12624 Lakewood Blvd., Downey, Calif. 90242
Filed June 6, 1963, Ser. No. 286,113
1 Claim. (Cl. 323—9)



In a direct current voltage regulator, means to supply an unregulated direct current voltage in excess of the desired regulated voltage, said means of supply having an internal resistance, means to connect a load across said regulated voltage, a pair of buses between said means to supply an unregulated voltage and the load, variable conductance means comprising a variable conductance transistor in one of said buses, said variable conductance means being varied to impress a substantially constant voltage upon the load, said variable conductance means being a transistor, a further transistor having a base controlling said variable conductance transistor, the resistance from said base to said bus containing said variable conductance transistor being the equivalent base to emitter resistance of said transistors;

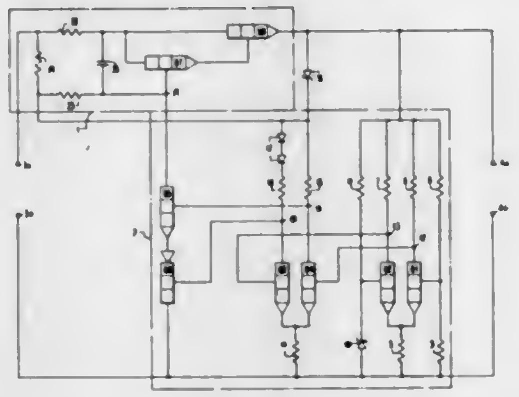
means to regulate the conductance of said variable conductance means, said means to regulate including a voltage divider comprising a first resistance and a second resistance, said second resistance being connected to said one bus adjacent said load, third and fourth resistances connected in series between said buses, said first resistance being connected between said third and fourth resistances so that said voltage divider is connected to receive an indication of the voltage in the other said bus and the variations in voltage in said one bus due to variations in supply voltage so that the voltage across the load remains substantially constant;

a resistance in said bus containing said variable conductance transistor, said resistance being made equal to the sum of the internal resistance and said equivalent resistance, one end of said resistance being connected to the base of said further transistor to feed thereto a signal substantially equal to and opposite in sign to said internal resistance and said equivalent resistance whereby said variable conductance transistor controls the voltage on the load independently of the resistance.

3,311,815

PRECISION REGULATED POWER SUPPLY

John Y. Robertson, Concord, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 291,541
7 Claims. (Cl. 323—22)



7. In a voltage regulating circuit,
a source of electrical power,
output terminals connected to said source,
a variable impedance element connected in circuit with said source and said output terminals,
a feedback loop connected to said output terminals and said variable impedance element to vary the impedance of said element in a manner to maintain a constant electrical condition to said output terminals,
said feedback loop including an amplifier having a differential stage with a pair of active elements, means for converting the difference in current through said elements to an unbalanced signal without loss of common mode rejection comprising
  first and second loads connected to said active elements,
  one said load consisting of a first resistance,
  the other of said loads consisting of a resistance equal in value to said first resistance and a series connected voltage offset means,
  a pair of transistors of opposite conductivity type each having a base, emitter and collector electrodes,
  circuit means respectively connecting said bases to the points intermediate said active elements and their respective loads to create a voltage between said bases responsive to the difference in individual voltages across said loads,
  means connecting said emitter electrodes in common,
  and means connecting said collector electrodes to provide a variable current control signal to said variable impedance element.

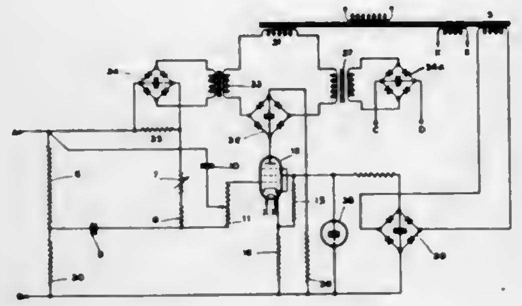
3,311,816

ELECTRONIC VOLTAGE CONTROLLER

Fritz Ludwig Felix Steghart, 11 Morelands Drive, Gerrards Cross, England
Continuation of application Ser. No. 206,535, June 12, 1962, which is a division of application Ser. No. 692,845, Oct. 28, 1957. This application May 20, 1966, Ser. No. 551,808
Claims priority, application Great Britain, Nov. 1, 1956, 33,350/56; Dec. 28, 1956, 39,377/56
5 Claims. (Cl. 323—22)

3. A process controller comprising:
input terminals for receiving a direct current signal dependent upon a physical condition which is to be

controlled according to a predetermined value thereof;
output terminals for connection to controlling means for restoring said physical condition to said desired value in response to said direct current signal;
amplifier means, including means for converting a direct current into alternating current, having an input connected to one of said input terminals, and to integrating means (9) and having an output connected to one of said output terminals;

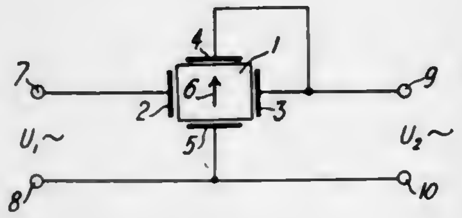


said integrating means comprising a resistance-capacitance network for causing a time-integrated component of said signal to appear at said output of said amplifier means, said integrating means being connected to receive an amplified signal from said amplifier output and apply said time integrated component to said amplifier input; and
isolation means comprising a transformer of high insulation resistance isolating said integrating means in one pole from said amplifier output.

3,311,817

A.C. CAPACITIVE VOLTAGE STABILIZER

Antonín Glanc, Libochovice, Czechoslovakia, assignor to Ceskoslovenska Akademie ved, Prague, Czechoslovakia, a corporation of Czechoslovakia
Filed Dec. 9, 1963, Ser. No. 328,871
Claims priority, application Czechoslovakia, Dec. 19, 1962, 7,137/62
3 Claims. (Cl. 323—93)

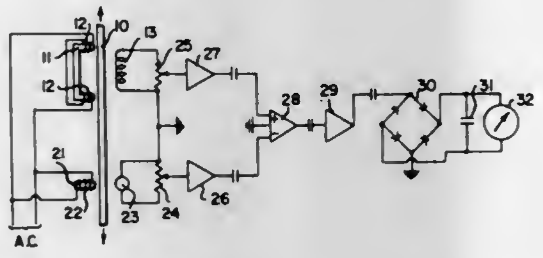


1. An A.C. capacitive voltage stabilizer comprising a single piece of a ferroelectric dielectric having a variable real component of its permittivity in the direction of its ferroelectric axis and a substantially constant real component of its permittivity in a direction perpendicular to said ferroelectric axis; a first pair of electrodes oppositely disposed adjacent said dielectric to form a first capacitor and a second pair of electrodes oppositely disposed adjacent said dielectric to form a second capacitor, the electrodes of said first pair being arranged along the direction of the ferroelectric axis and electrodes of said second pair being arranged along a direction perpendicular to the direction of the ferroelectric axis; a pair of input terminals each connected to one electrode of each of said capacitors for receiving A.C. voltage, the A.C. voltage being divided across said capacitors inversely according to the permittivity thereof; and a pair of output terminals, one of said output terminals being connected to one electrode of one of said capacitances, another of said output terminals being connected to an electrode of each of said capacitances for providing a stabilized output A.C. voltage.

3,311,818

NON-CONTACT APPARATUS FOR MAGNETICALLY MEASURING STRAIN

George F. Quittner, Cleveland Heights, Ohio, assignor, by mesne assignments, to API Instruments Company, Chesterland, Ohio, a corporation of Ohio
Filed Mar. 11, 1963, Ser. No. 264,096
3 Claims. (Cl. 324—34)



1. Apparatus for non-contact ascertaining of substantially unidimension direction strain in a magnetic or eddy current conductive sample having two opposite sides, said apparatus comprising:
first means which includes a core and coil arrangement located adjacent a first of said sample sides and for electromagnetically linking with at least a portion of said sample and for producing a flux which extends therethrough substantially in a first direction,
second means which includes a coil located adjacent the second of said sample sides and aligned in said first direction for electromagnetically sensing magnetic flux characteristic in said sample as caused by said first means,
third means which includes a core and coil arrangement located adjacent one of said two sample sides and for electromagnetically linking with at least a portion of said sample and for producing a flux which extends therethrough in a second direction which is transverse to said first direction,
fourth means which includes a coil located on the other of the two sample sides and aligned in said second direction for electromagnetically sensing magnetic flux characteristic in sample as caused by said third means,
means for comparing the output of the second means with that of the fourth means,
and means for reading out said comparison.

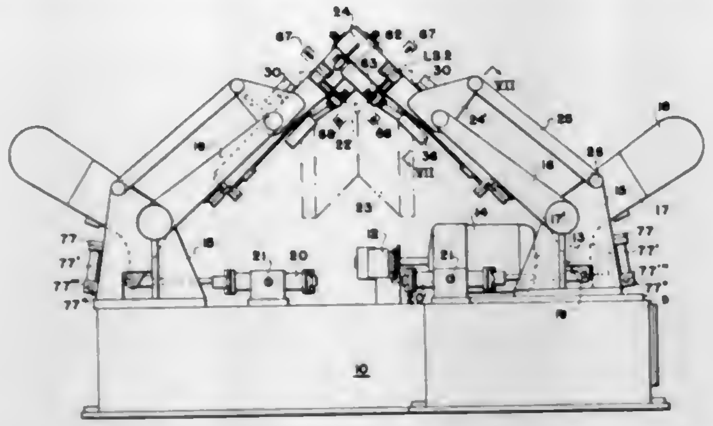
3,311,819

AUTOMATIC BILLET SCANNING APPARATUS WITH EDGE SENSING MEANS FOR REVERSING SCAN

John S. Miller, Poland, Ohio, assignor to The McKay Machine Company, Youngstown, Ohio, a corporation of Ohio
Filed June 3, 1963, Ser. No. 284,956
7 Claims. (Cl. 324—37)

1. Apparatus for transversely scanning and magnetically inspecting a face of a longitudinally advancing metal billet, comprising a base, a carrier, an arm for mounting said carrier on said base for movement toward and away from said billet face, a scanning device mounted on said carrier for reciprocating movement across said billet face in parallel relation thereto, said scanning device containing magnetic inspection means, motor means on said carrier to reciprocate said scanning device, inductively operative edge detecting means mounted for movement with said scanning device and operable to detect the approach to either side edge of said billet face, and means con-

trolling operation of said motor means and responsive to said edge detecting means for maintaining the reciprocable



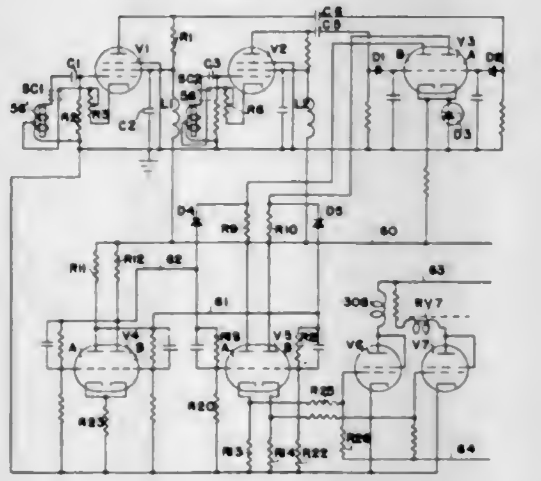
movement of said scanning device substantially equal to the transverse dimension of a billet advancing through said apparatus.

3,311,820
ACTUATING CIRCUIT FOR AUTOMATICALLY REVERSING A RECIPROCAL SCANNER

Le Roy E. Johnson, Youngstown, Ohio, assignor to The McKay Machine Company, Youngstown, Ohio, a corporation of Ohio

Filed June 7, 1963, Ser. No. 286,420

4 Claims. (Cl. 324—37)



1. In combination: a carriage reciprocable from margin to margin of an electrically conductive workpiece, a pair of proximity devices carried by said carriage and spaced from each other in the direction of carriage reciprocation whereby in one direction of carriage movement one of said proximity devices will be shifted beyond one workpiece margin and in the other direction of carriage movement the other sensing device will be shifted beyond the other workpiece margin, each proximity device forming a part of a respective oscillating circuit and each of such circuits oscillating when its associated proximity device is shifted beyond the margin of said workpiece and each circuit being dampened and ceasing to oscillate when its associated proximity device is adjacent said workpiece, and means responsive to oscillation in either of said circuits only while oscillation is dampened in the other circuit and such means interrupting carriage movement in one direction and effecting carriage movement in the other direction when said one proximity device has been shifted beyond said one workpiece margin and interrupting carriage movement in the other direction and effecting carriage movement in said one direction when said other proximity device has been shifted beyond said other workpiece margin.

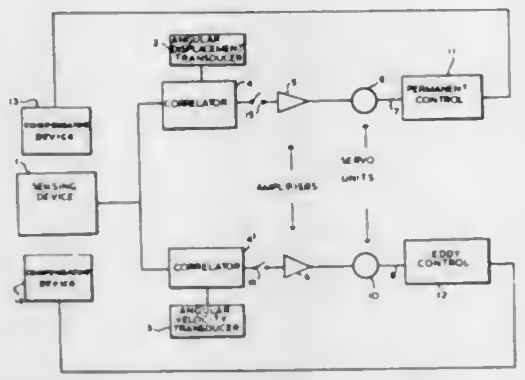
3,311,821
APPARATUS FOR AUTOMATICALLY COMPENSATING THE OUTPUT OF A MAGNETIC FIELD SENSING DEVICE FOR THE EFFECTS OF INTERFERING MAGNETIC FIELDS

Joseph Jean Andre Brunel, Montreal, Quebec, Canada, assignor to Canadair Limited, St. Laurent, Montreal, Quebec, Canada, a corporation of Canada

Filed Feb. 18, 1963, Ser. No. 259,316

Claims priority, application Canada, Dec. 11, 1962, 864,306

9 Claims. (Cl. 324—43)



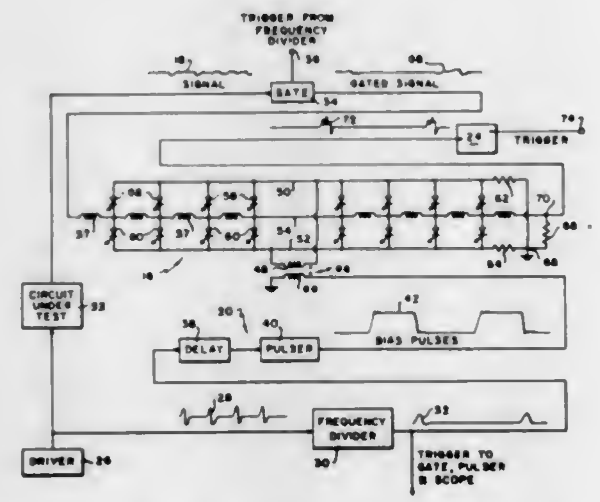
1. Apparatus for automatically compensating the output signal of a magnetic field sensing device for the effects of interfering magnetic fields comprising transducing means for providing a signal representative of the position, or derivatives thereof with respect to time, of the sensing device, means for correlating said signals from said transducer and said sensing device to provide an output signal representative of the amount of an error component present in said sensing device output signal due to a given component of said interfering magnetic fields, and compensator means responsive to said correlator output signal for countering the effect on said sensing device of said interfering magnetic field component in such a way as to decrease the amount of said error component.

3,311,822
TESTING APPARATUS INCLUDING A PARAMETRIC AMPLIFIER

Herbert W. Lorber, Las Vegas, Nev., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed May 28, 1963, Ser. No. 284,301

3 Claims. (Cl. 324—57)



1. Apparatus for determining the waveform of a low voltage which appears on a specimen when a driving voltage is applied to said specimen, comprising:

a low velocity of propagation path for electric voltages, having an input terminal for receiving an electric signal and an output terminal for providing an amplified replica of said signal;

a circuit to be tested having an input and an output;

a gate means having a gate input and an output and signal input, said gate output being connected to said input terminal of said low velocity propagation path;

a high velocity-of-propagation path;

a plurality of variable-capacitance diodes electrically connected in parallel between said high velocity-of-propagation path and said low velocity-of-propagation path along the length of said low velocity-of-propagation path;

means for applying a voltage to said high velocity-of-propagation path after said electric signal has entered said low velocity-of-propagation path and for maintaining said voltage constant as the amplified replica of said electric signal leaves said output terminal said means for applying a voltage comprising:

a driver means for supplying pulses, said driver means having an output;

a frequency divider means having an output and an input, said divider input being connected to said driver means output;

a delay means having an output and an input, said delay means input connected to said frequency divider means output;

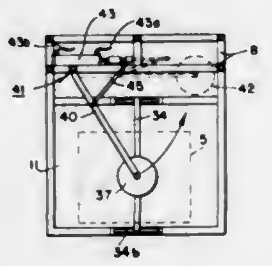
a pulser means having an input and an output coupled to said high velocity of propagation path and said pulser means input being connected to said delay means output, said gate means input being connected to said frequency divider output and said circuit to be tested having its input connected to said driver means output and its output connected to said gate means signal input; and indicating means having an input connected to said output terminal of said low velocity of propagation path.

3,311,823
CALIBRATION MEANS FOR A CAPACITANCE MOISTURE-CONTENT MEASURING APPARATUS INCLUDING A REFERENCE SLUG FOR INTRODUCTION BETWEEN CAPACITOR PLATES

Warren E. Benson, Jr., Needham, Mass., assignor to Forté Engineering Corporation, Norwood, Mass., a corporation of Delaware

Original application Mar. 27, 1964, Ser. No. 355,278, now Patent No. 3,284,706, dated Nov. 8, 1966. Divided and this application Mar. 7, 1966, Ser. No. 532,470

5 Claims. (Cl. 324—61)



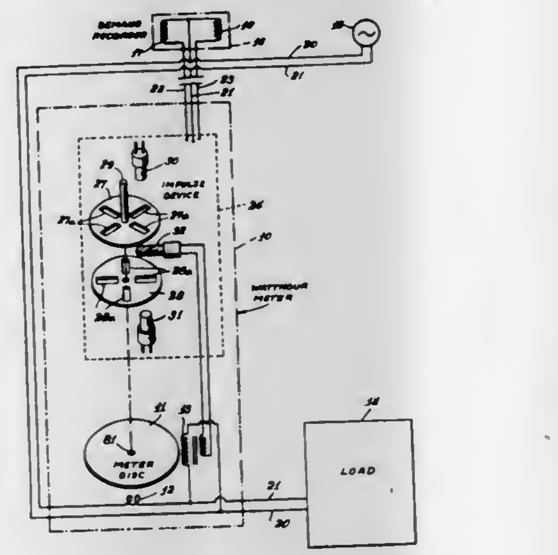
1. Apparatus responsive to capacitivity of substances in bulk form and adapted to be coupled into an electrical measurement system, comprising a pair of substantially planar broad-area electrodes, framework means mounting said electrodes in spaced substantially parallel insulated relationship with a hollow measurement site therebetween for accommodating bulk quantities of said substances, a reference slug including at least two plates of nonhygroscopic material and means mounting said plates in substantially parallel spaced relationship to one another and to said electrodes, means mounting said reference slug on said framework means for pivotal movements between a first predetermined position within said measurement site between said electrodes and a second position outside of said measurement site, said slug being of lesser dimensions in directions perpendicular to said electrodes than the spacing between said electrodes, and means selectably moving said slug between said first and second positions.

3,311,824
TRANSIENT INSENSITIVE PHOTOELECTRIC IMPULSE DEVICE FOR USE WITH WATTHOUR METER TO ACTUATE DEMAND RECORDER

Paul E. Pitt, West Lafayette, Ind., assignor to Duncan Electric Company, Inc., Tippecanoe County, Indiana, a corporation of Indiana

Filed Sept. 6, 1963, Ser. No. 307,170

11 Claims. (Cl. 324—103)



4. A demand meter apparatus for use with a watthour meter and power lines from a source of electrical power, said apparatus comprising in combination: a demand recorder having two impulse responsive devices; and a cycling switch including two impedance control means, one of the means being connected in a circuit in series with one device and the lines to actuate the one device by presenting a relatively low impedance in the circuit and to deactuate the one device by presenting a relatively high impedance, the other means being connected in a circuit in series with the other device and the lines to actuate the other device by presenting a relatively low impedance in the circuit and to deactuate the other device by presenting a relatively high impedance, each means being adapted to present a relatively low impedance when a high voltage transient impulse characteristic of the results of a lightning stroke on the lines is applied thereto, said switch including means connected to said watthour meter to periodically raise the impedance of one means and to lower the impedance of the other means, and vice versa, at a rate which is a function of the electrical demand measured by said watthour meter.

3,311,825
MULTI-BAND DIRECT READING GRID DIP METER

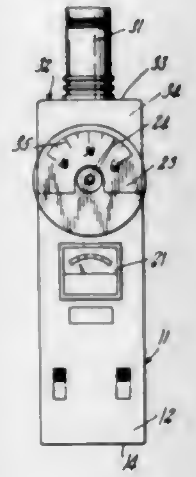
Robert A. Waters, Weston, Mass., assignor to Waters Manufacturing, Inc., Wayland, Mass., a corporation of Massachusetts

Filed Aug. 7, 1963, Ser. No. 300,546

2 Claims. (Cl. 324—115)

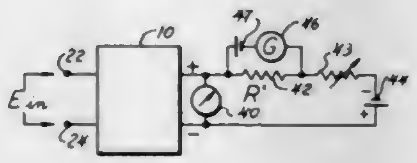
1. In an instrument of the type described, a main housing containing an internal tunable element with a control shaft extending through a wall in the housing, a socket on

an adjacent wall of the housing, and a shaft position indicator mounted on the external portion of the control shaft and spaced from the wall of the housing; in combination with a set of interchangeable coil-scale elements, each such element consisting of an induction element and a base, said base having two flat portions approximately perpendicular to each other, the first portion carrying the induction element, with prongs extending through the base and spaced to plug into the socket, the second portion extending into a position of partial overlap with the shaft position indicator, and bearing a scale corresponding to the range of frequencies in which the induction element enables the instrument to operate.



3,311,826
MEASURING SYSTEM STANDARD UTILIZING AMPLIFIER WITH RECTIFIER IN NEGATIVE FEEDBACK PATH TO COMPENSATE RECTIFIER FORWARD VOLTAGE DROP

Herbert Galman, 1612 N. Altadena Drive, Pasadena, Calif. 91107
Filed Oct. 25, 1962, Ser. No. 232,995
2 Claims. (Cl. 324—123)



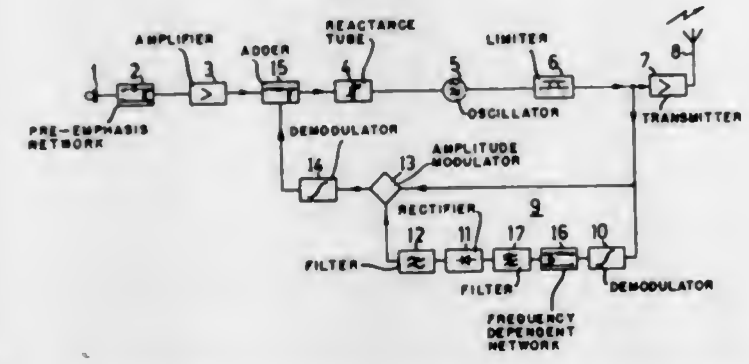
1. An electrical measuring system for measuring either A.C. or D.C. voltage with a high degree of precision comprising a pair of input terminals to which the voltage to be measured may be applied, a first precision resistor connected in a series current path leading from one of said terminals, an amplifier having the capability of amplifying both A.C. and D.C. signals connected with its input in series between the first precision resistor and the other of said terminals, a rectifier coupled between the output and input of the amplifier, an indicating device connected to receive unidirectional current from the rectifier without being limited by the voltage drop across the rectifier, a voltage source connected in series with the indicating device and having a polarity such as to oppose the forward direction of current through the rectifier, a second precision resistor coupled in shunt with the indicating device, a variable resistor and a second voltage source coupled to the indicating device and the second precision resistor, and a null indicating device connected across the rectifier output.

ERRATUM

For Class 325—42 see:
Patent No. 3,311,442

3,311,827
TRANSMISSION EQUIPMENT FOR THE TRANSMISSION OF SIGNALS BY MODULATED OSCILLATIONS OF CONSTANT AMPLITUDE

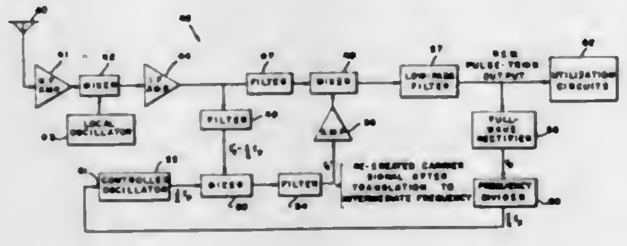
Johannes Anton Greefkes and Karel Riemens, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,659
Claims priority, application Netherlands, Oct. 1, 1962, 283,823
7 Claims. (Cl. 325—46)



1. A transmission system comprising a source of signals, a dynamic control voltage circuit for producing a control voltage, means for adding said signals and control voltage, a source of oscillations, means for modulating said oscillations with the output of said adding means with constant amplitude, and means for transmitting said modulated oscillations, said dynamic control voltage circuit comprising demodulating means, means applying the output of said modulating means to said demodulating means, a network having a frequency dependent transmission characteristic connected to the output of said demodulating means, said network having a transmission factor which decreases with increases in signal frequency, means for rectifying the output of said network, means for amplitude modulating said modulated oscillations with the output of said rectifying means, and means for demodulating the output of said amplitude modulating means to produce said control voltage.

3,311,828
COMMUNICATION SYSTEM, METHODS, AND APPARATUS UTILIZING VESTIGIAL-SIDEBAND, SUPPRESSED-CARRIER P.C.M. SIGNALS

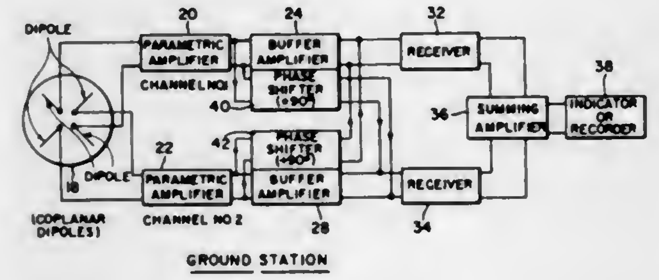
Norman E. Chasek, Stamford, Conn., assignor to International Microwave Corporation, Cos Cob, Conn.
Filed Feb. 12, 1963, Ser. No. 257,978
6 Claims. (Cl. 325—49)



5. A radio communication system comprising means for providing a single-sideband, suppressed-carrier, amplitude-modulated P.C.M. signal, transmitting means for transmitting said signal, means for providing an auxiliary signal having a frequency equal to the carrier frequency shifted by a fraction less-than-one of the pulse-repetition frequency, means for supplying said auxiliary signal to the transmitting means, radio receiving apparatus including filter means for separating said auxiliary signal from the P.C.M. signal, controllable oscillator means for providing said fraction less-than-one of the pulse-repetition frequency, first mixer means for beating the signal from said controllable oscillator means with said separated auxiliary signal for creating an effective carrier signal, second mixer means for beating said effective carrier signal with the P.C.M. for coherent detection thereof, and control means coupled from the output of said second mixer means to said controllable oscillator for controlling said oscillator to provide said fraction less-than-one of the pulse-repetition frequency.

3,311,829
CIRCULAR POLARIZATION DIVERSITY DATA TRANSMISSION SYSTEM

Glenn D. Gillett, Los Altos, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 27, 1964, Ser. No. 370,739
4 Claims. (Cl. 325—56)



1. Communication system incorporating apparatus for enabling signals to be transmitted from a vehicle traveling above the surface of the earth to a receiving station, said system comprising:

an antenna system mounted on said vehicle, said antenna system being designed to simultaneously transmit radiation from antenna units which are alternately circularly polarized in a left-hand and in a right-hand sense;

a transmitter on said vehicle for energizing said antenna system;

a receiver system located at any desired point, said receiver system further including an antenna system designed to receive the radiation emitted by said first antenna system;

said receiver system incorporating a pair of channels through which respectively pass the right- and left-hand circularly-polarized energy picked up by said antenna receiving system; and

means for combining the energy present in the output of each of said pair of receiver channels so that the amplitude level of the energy in the combined signals remains essentially constant regardless of variations in the orientation of the vehicle with respect to the receiving station during the course of the vehicle's flight.

3,311,830
AM AND FM TRANSMITTER

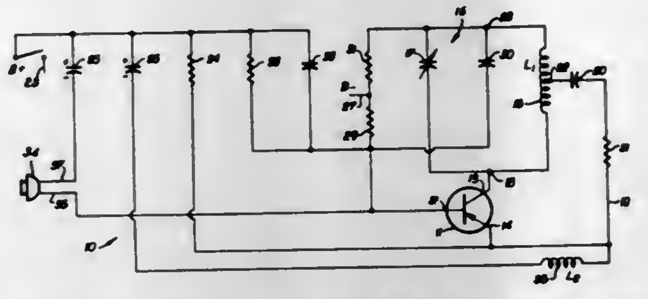
Clifford D. Skirvin, Pomona, Calif., assignor to Microdat Inc., South Pasadena, Calif., a corporation of California
Filed Aug. 26, 1965, Ser. No. 486,590
13 Claims. (Cl. 325—105)

1. In combination for transmitting signals representing audio information,

first means for providing first signals having amplitudes and first frequencies variable to represent audio information,

second means responsive to the first signals for producing an impedance variable in accordance with the amplitude of the first signals,

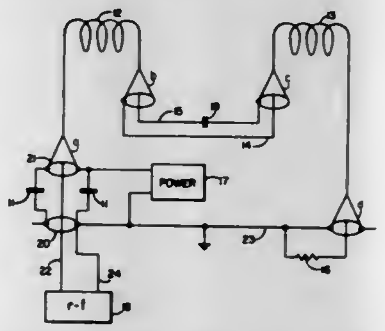
third means for providing carrier signals at a frequency above the frequencies of the first signals, and



fourth means responsive to the first and carrier signals for modulating the carrier signals with the first signals and with second signals frequency modulated in accordance with the variations in the variable impedance.

3,311,831
COAXIAL COMBINER-SEPARATOR FOR COMBINING OR SEPARATING DIFFERENT ELECTRICAL SIGNALS

Melvin L. Leppert, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 30, 1964, Ser. No. 386,463
13 Claims. (Cl. 325—178)



1. An electrical circuit for simultaneously transmitting a plurality of discrete signals of different frequencies, comprising:

a pair of coaxial cables, each having inner and outer conductors,

said cables being wound to form separate inductors,

the inner and outer conductors of one of said cables being coupled respectively to the outer and inner conductors of the other of said cables;

first conductive means connected to the free end of said one cable to permit conduction of one of said plurality of signals along the inner conductor thereof,

second conductive means connected to the free end of said one cable for permitting at least one of the others of said plurality of signals to be conducted along the outer conductor thereof;

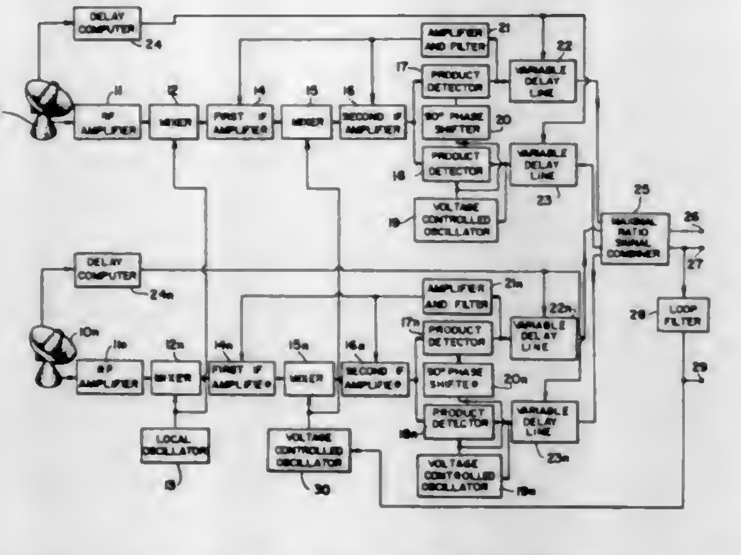
and an electrical common connecting said first and second conductive means with the outer conductor of said other cable at the free end thereof.

3,311,832
MULTIPLE INPUT RADIO RECEIVER

James H. Schrader, Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Mar. 29, 1963, Ser. No. 269,212
10 Claims. (Cl. 325—305)

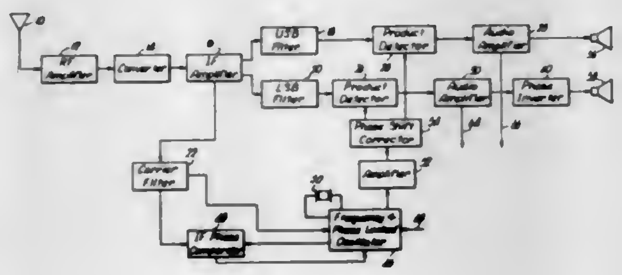
8. In a multi-input receiver that operates from a plurality of independently steerable antennas, means for re-

moving from the signals intercepted by all antennas the angular modulation that is common to all the intercepted signals; and means for removing from each intercepted signal the angular modulation that is peculiar to that signal.



3,311,833
METHOD AND APPARATUS FOR INCREASING THE READABILITY OF AMPLITUDE MODULATED WAVES

William R. Lewis, Kansas City, and William E. Hanneman, Independence, Mo., and George W. Woster, Mission, Kans., assignors to Wilcox Electric Company, Inc., Kansas City, Mo., a corporation of Kansas
Filed Apr. 11, 1963, Ser. No. 272,487
4 Claims. (Cl. 325—474)



1. Apparatus for increasing the readability of an amplitude modulated signal having at least a pair of side band signals as components thereof, said apparatus comprising:

first filter means responsive to said amplitude modulated signal and adapted to have the same applied thereto for attenuating the components of said amplitude modulated signal except one of said side band signals;

second filter means responsive to said amplitude modulated signal and adapted to have the same applied thereto for attenuating the components of said amplitude modulated signal except the other side band signal;

means for providing a carrier signal for said side band signals;

first electrical means coupled with said first filter means and said carrier providing means for subtracting the frequency of the lower of said one side band and carrier signals from the frequency of the higher thereof to produce a first intelligence signal;

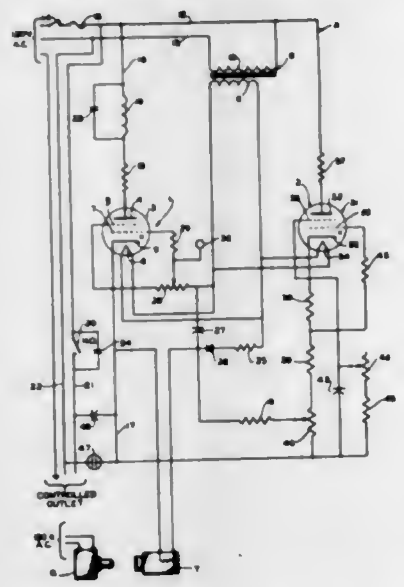
second electrical means coupled with said second filter means and said carrier providing means for subtracting the frequency of the lower of said other side band and carrier signals from the frequency of the higher thereof to produce a second intelligence signal, said carrier providing means comprising an oscillator stage for locally generating said carrier signal and discriminator means coupled with said stage and responsive to said first and second intelligence signals for controlling the phase of said generated carrier signal to maintain said first intelligence signal in phase with said second intelligence signal;

transducer means coupled with said first electrical means and responsive to said first intelligence signal for converting the latter into a first sound wave; and

phase reversal means coupled with said second electrical means and responsive to said second intelligence signal for converting the latter into a second sound wave substantially 180 degrees out-of-phase with said first sound wave.

3,311,834
TIME PROPORTIONING CONTROL CIRCUITS

George E. Barker, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware
Filed Nov. 13, 1963, Ser. No. 323,383
26 Claims. (Cl. 328—1)

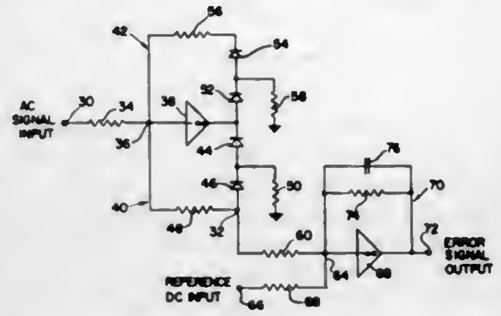


3. A time proportioning controller comprising in combination electromagnetic sensing means for detecting a change in a controlled function, an electronic control device comprising emitting means, collecting means and electron control means, a source of alternating current voltage for powering said device, means for applying a bias voltage across the emitting means, electron control means circuit of said device, said sensing means being adapted to change its resistance characteristics responsive to changes in emission incident thereupon and thereby affect the bias voltage in said device and render said device in a conductive state where a corrective impulse is initiated, and false signal means operatively connected to the emitting means, electron control means circuit of said control device for transmitting a false signal to said control device and thereby initiate a corrective signal independently of the action of said sensing means.

3,311,835
OPERATIONAL RECTIFIER

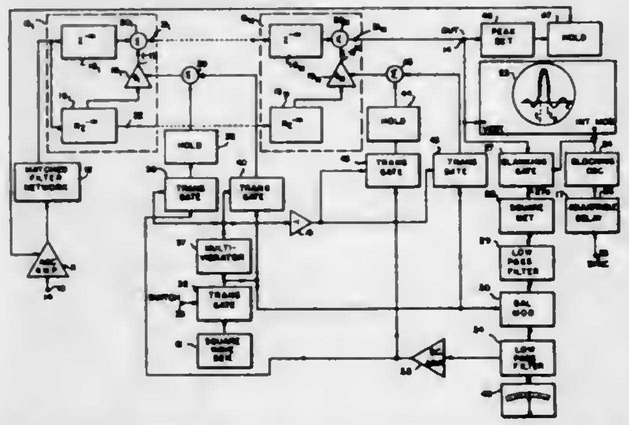
Peter L. Richman, Lexington, Mass., assignor, by mesne assignments, to Weston Instruments Inc., Newark, N.J., a corporation of Texas
Filed Mar. 22, 1963, Ser. No. 267,206
6 Claims. (Cl. 328—146)

1. A device for monitoring an A.C. voltage signal, said device comprising in combination, operational rectifier means for converting said A.C. voltage to a D.C. voltage, and a comparator means for comparing said D.C. voltage with a precision D.C. reference voltage, said operational rectifier means comprising a high gain amplifier having a degenerative feedback loop including in series a pair of unidirectionally conductive devices poled in the same direction and a resistance between the output and input of said amplifier, means resistively connecting the junction of said unidirectionally conductive devices to ground, and means for coupling the input of said comparator means to a point in said feedback loop between said resistance and said unidirectionally conductive devices.



3,311,836
SYSTEM FOR TRANSLATING PULSE SIGNALS ACCOMPANIED BY SPURIOUS SIDE PULSES

Michael J. Di Toro, Massapequa, N.Y., assignor to Cardion Electronics, Inc., a corporation of Delaware
Filed Dec. 7, 1964, Ser. No. 416,288
14 Claims. (Cl. 328—167)



2. A system for translating a signal comprising a primary pulse and spurious minor side pulses with substantial suppression of said side pulses comprising:

an input circuit for supplying a signal to be translated;

an output circuit;

an N-section wave-signal delay network coupled between said input and output circuits, each section including a central connection tap and a plurality of connection taps symmetrically spaced relative to said central tap;

a circuit in each section for deriving a signal corresponding to an input signal with a delay equal to that at said central tap;

means in the first section of said network for sensing the instantaneous signal voltages at said central tap and at each of said plurality of taps on one side thereof in response to the distribution of an input signal along said network section;

a plurality of signal-repeating means in each section of said network individually responsive to the polarity of such instantaneous signal at each given one of said plurality of taps for coupling the corresponding symmetrically disposed tap to said output circuit with controlled polarity;

means in each section of said network for summing the signal outputs of said signal-repeating means and adding the summation signal to said derived signal;

means for applying to said output circuit the sum of said summation signal and said derived signal of the final section of said network;

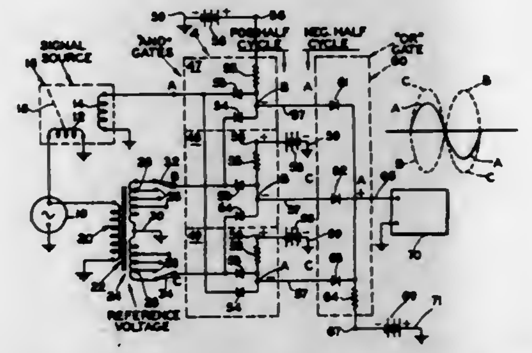
means for detecting a predetermined characteristic of said side pulses at said output circuit;

means for adjusting the gain of all said signal-repeating means above and below a nominal value;

and means for setting the gains of all said signal-repeating means in unison in a sense to reduce the value of said predetermined characteristic at said output circuit.

3,311,837
SIGNAL LIMITING AND THRESHOLD MEANS IN ELECTRONIC COMPUTING AND CONTROL SYSTEMS

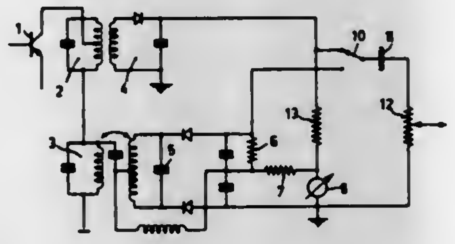
Harold Moreines, Springfield, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Dec. 16, 1963, Ser. No. 330,819
19 Claims. (Cl. 328—169)



10. In a control system, means for limiting a control signal comprising means for effecting a controlling electrical signal of varying amplitude and sense, other means for effecting first and second electrical reference signals of opposite sense, and means of selecting among said several electrical signals the electrical signal having an amplitude intermediate that of the other signals.

3,311,838
RECEIVER FOR THE RECEPTION OF AM SIGNALS AND FM SIGNALS WITH TUNING INDICATION

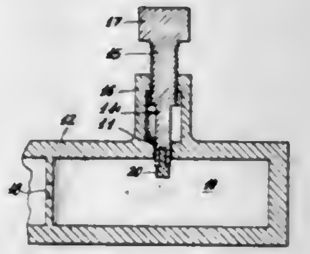
Berend Danker, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 31, 1963, Ser. No. 298,972
Claims priority, application Netherlands, Aug. 21, 1962, 282,335
5 Claims. (Cl. 329—111)



1. A tuning indicator circuit for a receiver for amplitude and frequency modulated signals; said receiver being of the type having an amplitude demodulator with first load resistance means through which a first direct current flows in one direction in response to the reception of amplitude modulated signals, and a frequency modulation detector with second load resistance means through which a second direct current flows in one direction in response to the reception of frequency modulated signals; said tuning indicator circuit comprising a current indicating device having first and second terminals, means continuously connecting said first terminal to a point of constant potential, and means continuously connecting said second terminal to an end of each of said

first and second load resistance means, whereby said first and second direct currents flow through said current indicating device.

3,311,839
COMPENSATED TUNABLE CAVITY WITH SINGLE VARIABLE ELEMENT
Uldis Rutulis, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Dec. 16, 1965, Ser. No. 514,213
4 Claims. (Cl. 330—4.9)



1. A tunable cavity resonator comprising:

walls defining a hollow resonant cavity,

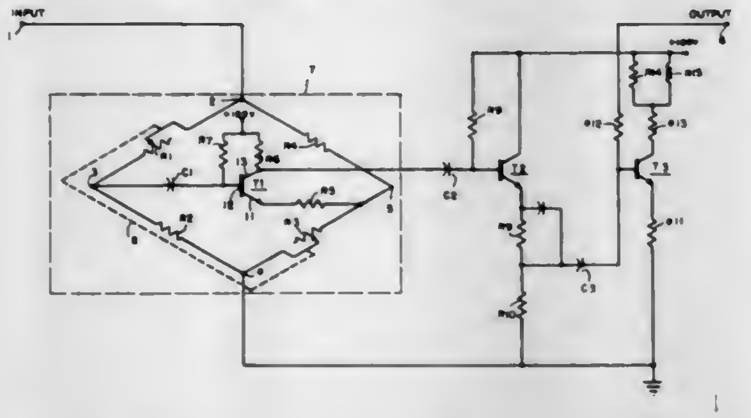
one wall only of said cavity being provided with a single opening for receiving a tuning post,

said opening being located for reactive tuning of the resonant frequency of said cavity,

an elongated tuning post mounted perpendicularly to said one wall of said cavity at said opening for longitudinal movement through said opening into said cavity,

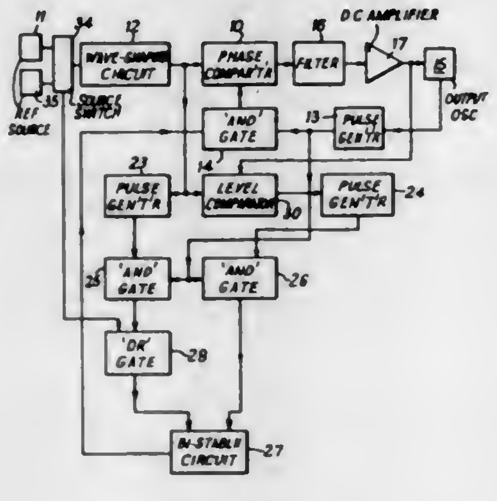
said tuning post having a first portion of conducting metal at least part of which extends externally of said cavity, and a second terminating portion of a lossy dielectric material substantially coextensive with said first portion to introduce into said cavity a loss which varies with the amount of insertion of the tuning post.

3,311,840
BRIDGE TYPE CIRCUIT FOR CONTROLLING THE GAIN OF A TRANSISTOR AMPLIFIER
Rolf S. Gillard, San Jose, Calif., assignor to the United States of America as represented by the Secretary of the Army
Filed May 27, 1964, Ser. No. 370,737
2 Claims. (Cl. 330—29)



1. A gain control circuit comprising: a resistive bridge circuit having first, second, third and fourth terminals; a first variable resistor connected between said first and second terminals; a first fixed resistor connected between said second and third terminals; a second variable resistor connected between said third and fourth terminals; a second fixed resistor connected between said fourth and first terminals; means to apply an input signal to said first terminal; means to connect said third terminal to ground; a transistor having a base electrode, a collector electrode and an emitter electrode; a capacitor connected between said second terminal and said base electrode; a third fixed resistor connected between said fourth terminal and said emitter electrode; and output circuit means coupled to said collector electrode.

3,311,841
FREQUENCY CONTROL SYSTEM WITH PHASE CONSCIOUS CONTROL INTERRUPTER
John Victor Corney and Anthony Isaacs, both of London, England, assignors to Ferguson Radio Corporation Limited, London, England, a British corporation
Filed Apr. 1, 1965, Ser. No. 444,773
Claims priority, application Great Britain, Oct. 4, 1961, 35,773/61
16 Claims. (Cl. 331—14)



1. A frequency control system for synchronizing the frequency of an oscillation generator with the frequency of a source of reference oscillations, comprising in combination with said generator and said source:

a phase comparator having a first input circuit, a second input circuit and an output circuit, said first input circuit being connected to said source to receive oscillations therefrom, said second input circuit being connected to said generator to receive oscillations therefrom, said phase comparator being operative to generate at said output circuit a control signal representative of a variation of the phase of the reference oscillations relative to the output oscillations;

means coupling said output circuit to said oscillation generator, said oscillation generator being responsive to said control signal to tend to cancel said variation in phase;

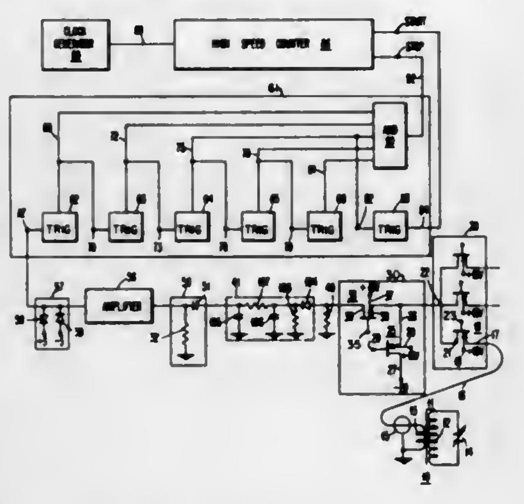
first sensing means interconnected between said source and said oscillation generator, including means to generate a first switching signal in response to a shift of phase into a range in which the variation in phase would be increased;

second sensing means interconnected between said source and said oscillation generator, including means to generate a second switching signal in response to a shift of phase from said range;

switch means connected to said first and second sensing means to receive said first and second switching signals, said switch means being connected to said comparator to be operative to switch said comparator from an operative to an inoperative condition, including means operable in response to said first and second switching signals to render said comparator inoperative and operative respectively;

and stabilizing means to maintain said oscillation generator at substantially constant frequency whenever said comparator is inoperative.

3,311,842
DIGITAL TRANSDUCER WITH CONDITION RESPONSIVE SHOCK EXCITED RESONANT CIRCUIT
John W. Beck, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 19, 1965, Ser. No. 426,505
14 Claims. (Cl. 331—66)



6. In a variable measuring system,

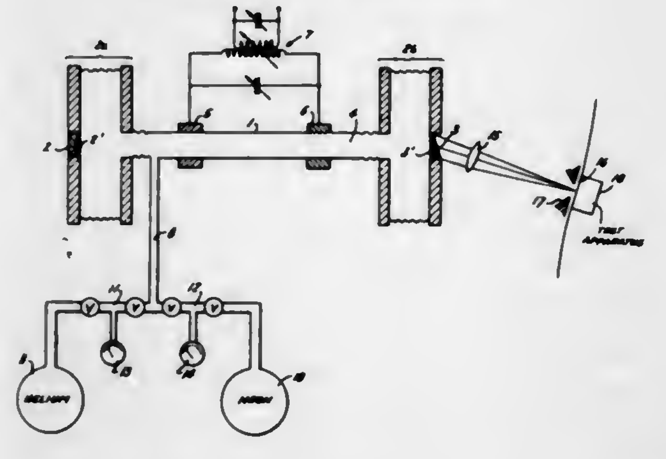
a reactive element having a value dependent on the variable to be measured,

means connecting said element as a part of a resonant circuit to make the resonant frequency thereof at least partially dependent on the variable to be measured,

means for shock exciting said circuit with a pulse to induce oscillations therein,

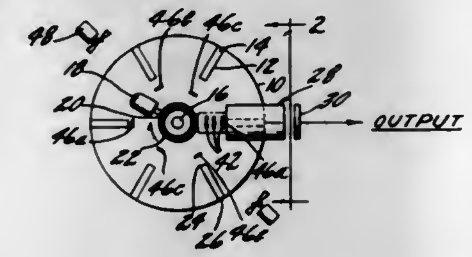
and means connected to said circuit for determining the frequency of said oscillations.

3,311,843
VISIBLE He-Ne LASER HAVING A PRESSURE BELOW 0.8 TORR
Wolfgang Friedl, Hanau am Main, Germany, assignor to Quarzlampen Gesellschaft m.b.H., Hanau am Main, Germany
Filed Mar. 18, 1963, Ser. No. 265,952
Claims priority, application Germany, Mar. 19, 1962, Q 704
5 Claims. (Cl. 331—94.5)



1. Quantum-mechanical oscillator for producing an oriented beam of coherent radiation in the visible range of the spectrum, comprising, in combination, a tubular gas discharge chamber means having an inner diameter of up to 1.5 cm.; first and second reflector means located at the opposite ends of said tubular gas discharge chamber means for reflecting between themselves in the axial direction of said chamber means radiation produced therein, the first reflector means at one of said ends causing total reflection, the second reflector means at the opposite end causing only partial reflection and permitting emission of coherent radiation therethrough in said axial direction; a gaseous filling arranged in said tubular gas discharge chamber means and comprising a mixture of helium and neon gas at a predetermined absolute pressure less than 0.8 torr; means for creating said predetermined gas pressure in said discharge chamber; and high-frequency generator means including electrode means assembled with said tubular gas discharge chamber means for producing in said gaseous filling by means of an electric field stronger than that causing only infrared radiation high frequency gas discharges resulting in said radiation, the spectral range thereof extending from the infrared obtainable with helium-neon quantum-mechanical oscillators into the visible part of the spectrum.

3,311,844
HIGH REPETITION RATE LASER SYSTEM
Robert A. Di Curcio, Windsor, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 31, 1963, Ser. No. 284,560
5 Claims. (Cl. 331—94.5)

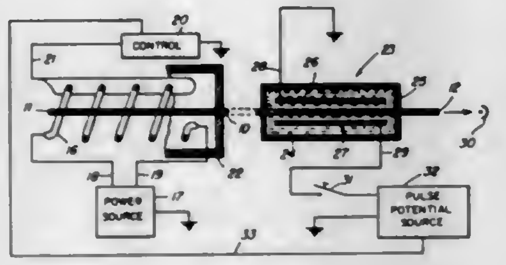


1. A laser system including a carrier, a plurality of active laser elements mounted on said carrier in spaced relation to each other, means defining a resonant cavity for said laser elements, said resonant cavity including reflecting means for said laser elements, at least part of said reflecting means being in spaced relation with said laser elements a pumping chamber in spaced relation with said carrier, said pumping chamber including an open ended pumping reflector of elliptical cross section and at least one energy supply means substantially at the focus removed from said open end to deliver pumping energy to said laser elements when in said resonant cavity, said open end of said pumping reflector facing said carrier and said pumping reflector being positioned so that any of said laser elements when in alignment with the major axis of the ellipse is at the focus of the ellipse nearest said open end, means for moving said carrier to pass said laser elements by said open end of said pumping reflector, said reflecting means being aligned with respect to a laser element in said pumping chamber to form a resonant cavity, a plurality of cam means corresponding to each of said laser elements, and operating means periodically actuated by said cam means individually when the corresponding laser element is at the focus to operate said energy supplying means and deliver pumping energy to said corresponding laser.

3,311,845
Q-SWITCHING APPARATUS FOR A LASER DEVICE
Charles J. Koester, South Woodstock, Conn., assignor to American Optical Company, Southbridge, Mass.
Filed June 10, 1963, Ser. No. 286,808
6 Claims. (Cl. 331—94.5)

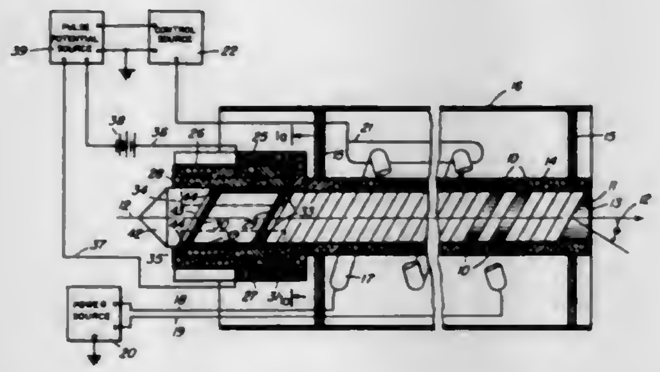
1. A laser structure comprising, in combination, means providing a resonant wave-energy propagation path, said

means including an active laser element having a propagation path portion formed of a first material transmissive to laser emissive light energy with a smooth surface area against which laser emissive light energy propagating through said portion in said path impinges at an oblique angle; a body of a second material transmissive to said light energy intimately engaging said smooth surface area of said propagation path portion; at least one of said first and second materials exhibiting for an electric-field component of said light energy an electrically controlled field-responsive variation in refractive index within a range of values including a value at which the ratio of the refractive index of said second material to the refractive index of said first material for said light energy is less than unity; and means electrically energizable to apply thereto a field effective to vary said refractive index of said one of said materials within said range of values to control the Q condition of said element.



3,311,846
POLARIZING APPARATUS USING INCLINED PLATES OF LASERABLE MATERIAL

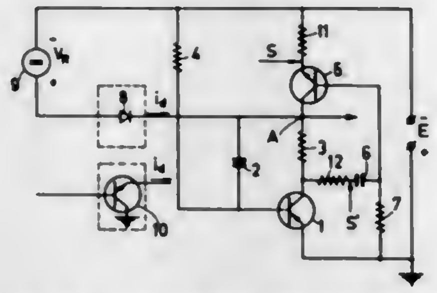
George R. Simpson, South Woodstock, Conn., and Elias Snitzer, Sturbridge, Mass., assignors to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed June 20, 1963, Ser. No. 289,252
5 Claims. (Cl. 331—94.5)



1. A laser structure comprising
- a plurality of plates of solid laserable material having substantially parallel and planar faces,
- means for retaining said plates in stacked relation along a preselected axis and with the planar faces thereof oriented in relation to said axis to provide plane polarized light for light propagated along a light propagation path extending through said plates parallel to said axis,
- means including polarization control means in said light propagation path to provide controlled polarization change for plane-polarized light propagated to said control means, and light reflective means terminating at least one end of said path for effecting repropagation by said control means of light previously propagated thereby.

3,311,847
CIRCUIT FOR CONTROLLING THE OSCILLATION FREQUENCY OF TRANSISTORIZED SAWTOOTH OSCILLATORS

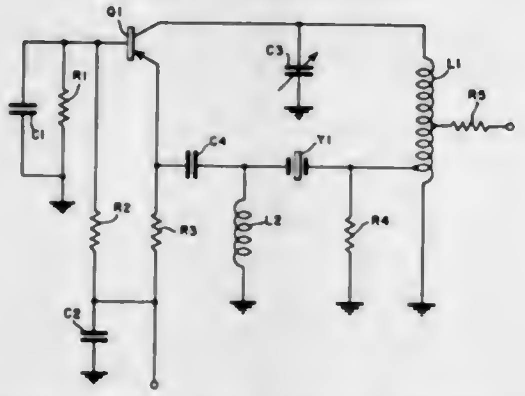
Wouter Smeulers, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 4, 1965, Ser. No. 453,069
Claims priority, application Netherlands, May 5, 1964, 64/04944
10 Claims. (Cl. 331—111)



1. A circuit for controlling the oscillation frequency of a transistor sawtooth oscillator by means of a direct control voltage, comprising a transistor sawtooth oscillator, a diode, a source of a direct control voltage connected to one electrode of said diode, means applying a sawtooth voltage produced by said sawtooth oscillator to the other electrode of said diode, the magnitude of said control voltage relative to said sawtooth voltage being such that said diode is cut-off during both the forward stroke and the return stroke of said sawtooth voltage and is conductive only near the end of one of said strokes, and means for applying the current flowing through said diode to said oscillator to trigger the oscillator from said one stroke to the other.

3,311,848
TRANSISTOR CRYSTAL OSCILLATOR WITH PI FILTER FEEDBACK

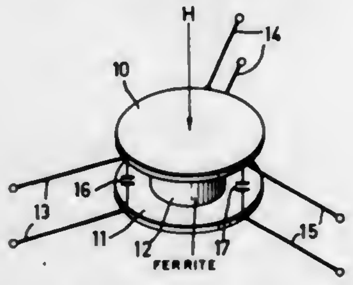
Royden R. Freeland, Oklahoma City, Okla., assignor to International Crystal Manufacturing Co., Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed Mar. 8, 1965, Ser. No. 437,992
3 Claims. (Cl. 331—116)



1. A transistorized crystal control oscillator circuit adapted to selectively generate an alternating current output of any frequency and phase within a frequency phase band of predetermined widths including one preselected frequency and phase and frequencies and phases greater than said one preselected frequency, said oscillator circuit including a transistor having a base, emitter and collector, and an inductance-capacitance output tank circuit coupled between the collector of said transistor and ground, a piezoelectric crystal having input and output terminals, said input terminal being connected to a tap of the inductance of said output tank circuit and said output terminal being capacitively coupled to the emitter of said transistor, a base bias circuit connected to the base of said transistor, means for biasing the emitter and feedback connected to the emitter of said transistor, and inductor means having one end connected between said crystal and said emitter and the other end connected to ground, the portion of said inductance between the tap and ground, the crystal, and the inductor means acting as part of a constant Kπ section bandpass filter, where K is a constant, and a crystal frequency trimmer by varying the output load of the network, thereby providing a shunt to ground for the crystal fundamental frequency as well as a feedback path for the circuit.

3,311,849
BAND LINE CIRCULATOR HAVING EQUAL CAPACITANCES AT EACH PORT IN ORDER TO REDUCE THE OPTIMUM OPERATING FREQUENCY

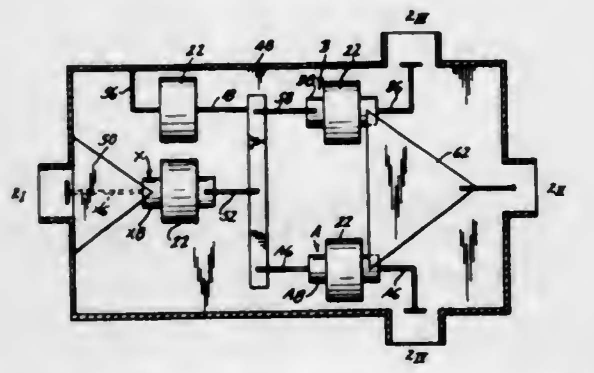
Hendrik Bosma, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 11, 1964, Ser. No. 417,586
Claims priority, application Netherlands, Dec. 31, 1963, 303,018
4 Claims. (Cl. 333—1.1)



1. A band line circulator comprising at least one disc of gyromagnetic material, a pair of conductive plates arranged parallel to one another, said disc being positioned between said plates, means for magnetically prepolarizing the disc in a direction normal to the plane of the plates, the outer edges of the plates having at least three connecting ports for the connection of transmission lines, said ports being equally spaced from one another, comprising equal capacitors shunting said ports, said capacitors having impedances less than the terminating impedance of said ports at the operating frequency at which optimum circulation occurs.

3,311,850
LOW LOSS HYBRID CONNECTOR UTILIZING HIGH PERMEABILITY MAGNETIC CORE MATERIAL

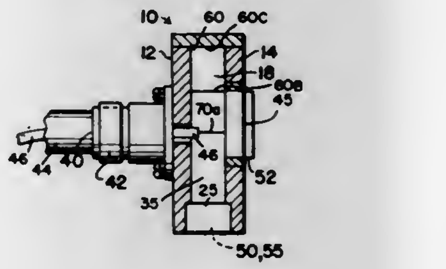
Allen F. Podell, Berkeley, Calif., assignor to Anzac Electronics, Inc., Norwalk, Conn., a corporation of Connecticut
Filed Jan. 31, 1964, Ser. No. 341,707
12 Claims. (Cl. 333—11)



1. In combination, a hybrid connector comprising first, second, third and fourth ports each having first and second terminals, first and second transmission lines connected between said first port and said third and fourth ports respectively and each comprising first and second wires, said first wires of said first and second lines being connected at one end to said first and second terminals of said first port respectively and at their other ends to said second terminals of said third and fourth ports respectively, said second wires of said first and second lines being connected at one end to said second and first terminals of said first port respectively and at their other ends to said second terminal of said second port, electrical connections between said first terminal of said second port and said first terminals of said third and fourth ports respectively, a balancing transformer having an input and an output, and means electrically connecting said balancing transformer output to said first port, said balancing transformer input being adapted to be connected to external circuitry, said balancing transformer comprising a transmission line comprising first and second wires, means active on said line for permitting it to float relative to a reference potential, an electrical connection between one of the wires of said line and said reference potential, and a high permeability magnetic core surrounding said electrical connection.

3,311,851
HYBRID JUNCTION FOR WAVEGUIDE AND CO-AXIAL CABLE

Irving Abrams, Glen Rock, N.J., assignor to Premier Microwave Corporation, Port Chester, N.Y., a corporation of New York
Filed June 5, 1964, Ser. No. 372,948
7 Claims. (Cl. 333—11)



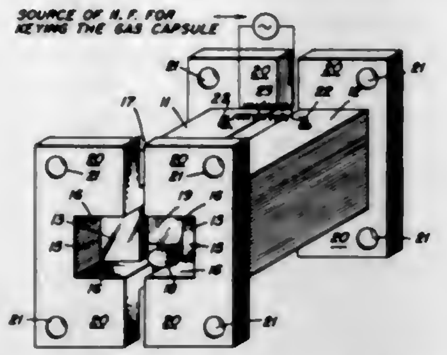
3. A hybrid junction for coupling an input waveguide and an input co-axial cable to a common load, and for preventing transfer of energy between the input waveguide and the co-axial cable, said junction comprising
- a hollow box enclosure having top and bottom plates;
- rear and side walls between said top and bottom plates;
- a partition to subdivide a portion of the space therein into two parallel waveguide passages;
- a circuit coupler on the top plate for coupling the center conductor of said co-axial cable into said enclosure with the microwave mode having its voltage mode form perpendicular to the bottom plate;
- and a circuit coupler on the bottom plate for coupling a waveguide thereto having form and dimension to transmit a microwave mode having voltage mode form parallel to said bottom plate.

3,311,852
HIGH FREQUENCY EXTERNALLY PULSED SWITCH TUBE

Morris Giller, Baltimore County, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 12, 1964, Ser. No. 410,818
9 Claims. (Cl. 333—13)

1. A microwave switch comprising
- a segment of waveguide, longitudinally split to provide symmetrical sections,
- window means within the waveguide defining a resonant cavity,
- retaining means within the cavity to retain an ionizable medium therein, through which microwave energy

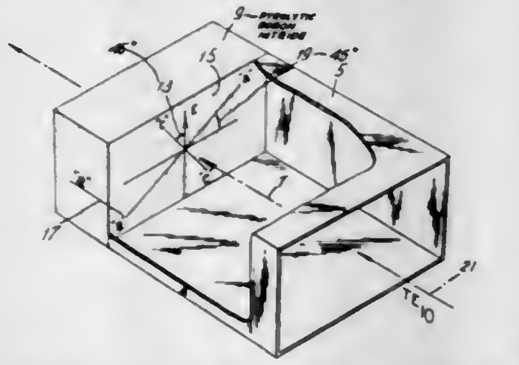
may pass when the medium is in its unionized state, and through which microwave energy may not pass when the medium is in its ionized state, and



terminal means connected to the two symmetrical waveguide sections to supply radio frequency energy thereto to initiate ionization of the medium within the retaining means.

3,311,853
BROAD BAND CIRCULAR POLARIZER UTILIZING A PLATE OF PYROLYTIC BORON NITRIDE

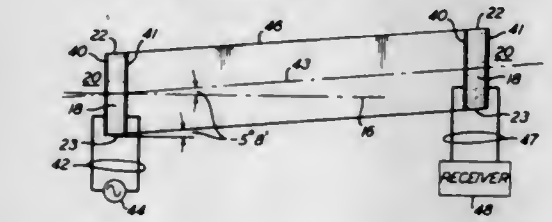
Daniel Schiff, Framingham, Mass., assignor to Union Carbide Corporation, a corporation of New York
Filed Oct. 7, 1965, Ser. No. 493,709
1 Claim. (Cl. 333—21)



In combination, a rectangular wave guide having a predetermined E-field direction and an input end and an output end, a plate of pyrolytic boron nitride substantially closing the output end thereof and arranged such that the *c* direction of the pyrolytic boron nitride plate is normal to the wave guide longitudinal axis and at an angle of 45 degrees to the predetermined E-field direction and such that the *a* plane direction of the pyrolytic boron nitride plate is at an angle of 45 degrees to the predetermined E-field direction, the longitudinal axis of the wave guide being parallel to the *a* plane direction.

3,311,854
SINGLE CRYSTAL QUARTZ FILTER ELEMENTS, TRANSDUCERS AND DELAY LINES

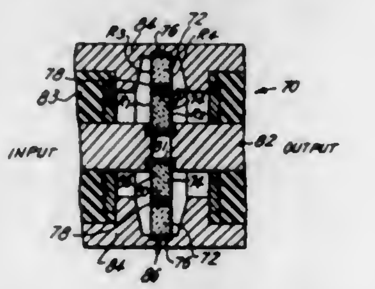
Warren P. Mason, West Orange, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 13, 1962, Ser. No. 202,258
12 Claims. (Cl. 333—30)



1. A member cut from a single crystal of quartz with two principal faces parallel to each other and to a specific plane, which plane has a particular orientation with respect to the crystallographic axes of the single crystal from which the member is cut such that if driven by an electrostatic force applied perpendicularly between said principal faces the member will generate acoustic energy directed at a specific acute angle of appreciable magnitude with respect to the normal to the principal faces, all of the side or edge surfaces of the member which extend between the principal faces of the member being parallel to the said direction of propagation.

3,311,855
BILATERAL COAXIAL RESISTIVE DEVICE

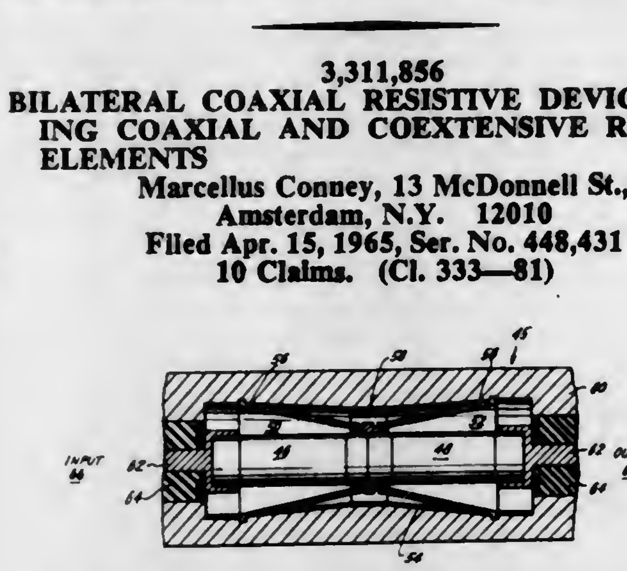
Marcellus Conney, 13 McDonnell St., Amsterdam, N.Y. 12010
Filed Apr. 15, 1965, Ser. No. 448,396
6 Claims. (Cl. 333—81)



1. A coaxial device comprising a structure having an input and output and adapted to be inserted into electrical circuit with a cable having an outer conductor and an inner conductor comprising a shunt resistive element, a resistive element which is adapted to be inserted into series arrangement with said conductor and which is physically disposed to be in substantially co-planar physical disposition with said shunt resistive element, and shunt resistive element comprising a first disc resistive element having a circular opening therethrough, an electrically conductive outer circumferential perimeter adapted to make electrical contact with said outer conductor and an electrically conductive inner circumferential perimeter, a second resistive disc element having an opening therethrough and an outer circumferential perimeter equal to the inner circumferential perimeter of said first disc and a width substantially equal to the width of said first disc, said second disc being disposed within the opening of said first disc with its sides substantially continuous with the sides of said first disc, and electrical contact areas on each side of said second disc along its outer and inner circumferences respectively which are adapted for making contact with said inner conductor.

3,311,856
BILATERAL COAXIAL RESISTIVE DEVICE HAVING COAXIAL AND COEXTENSIVE RESISTOR ELEMENTS

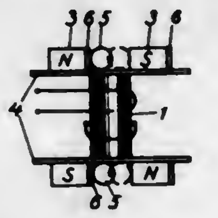
Marcellus Conney, 13 McDonnell St., Amsterdam, N.Y. 12010
Filed Apr. 15, 1965, Ser. No. 448,431
10 Claims. (Cl. 333—81)



1. A coaxial device comprising a structure adapted to be inserted into electrical circuit in alignment with a conductor, said structure including first resistance means disposed in said alignment and second resistance means coaxially disposed both with said first resistance means along a portion of the length of said first resistance means and with surrounding coaxial structure to provide a device having chosen characteristic impedances at each point along the length of said device.

3,311,857
RELAY MATRIX COMPRISING POLARIZED RELAYS

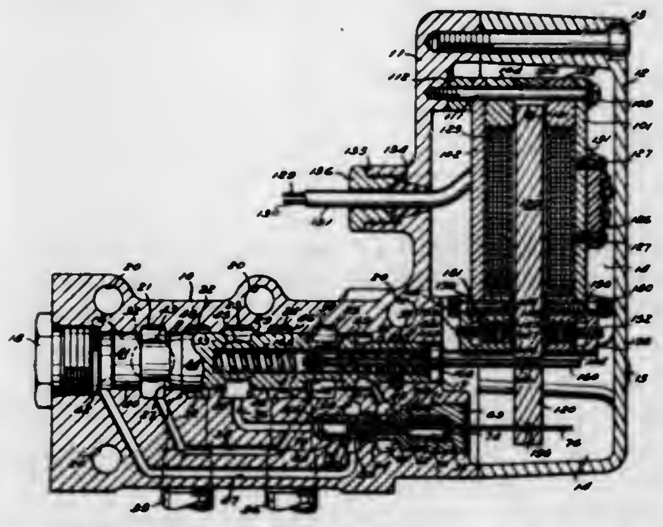
Harald Valdemar Alexandersson, Lidingo, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden
Filed Apr. 21, 1965, Ser. No. 449,740
Claims priority, application Sweden, July 14, 1964, 8,567/64, 8,568/64
13 Claims. (Cl. 335—107)



1. A relay switching device comprising a core of bistably remanent material, said core having at least a first end, a conductor member of electrically conductive material disposed near said first end of said core, a permanent magnet means including at least first and second oppositely polarized pole pieces straddling said first end of said core and adjacent said conductor member, a rollable member of electrically conductive ferromagnetic material disposed on said conductor member and rollable to selectively contact one of said pole pieces, and a winding inductively coupled to said core and adapted to receive a switching current for controllably establishing the polarity of the remanent magnetization in the core and thereby control the contacting of said rollable member with a selected one of said pole pieces so that an electrical path is established from said conductor member via said rollable member to the selected pole piece.

3,311,858
TORQUE MOTOR

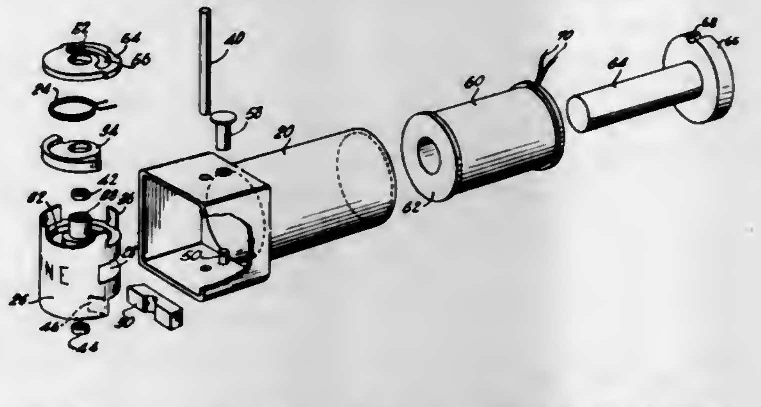
Eugene Bahniuk, Gates Mills, Ohio, assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Original application Mar. 15, 1965, Ser. No. 439,895. Divided and this application Dec. 1, 1965, Ser. No. 510,755
5 Claims. (Cl. 335—230)



1. A torque motor comprising a frame including a pair of spaced parallel side plates and a pair of spaced parallel permanent magnetic plates extending between said side plates to define therewith a generally rectangular hollow box, said magnetic plates being magnetized in a manner to magnetize said side plates with opposite polarity, a spacer block assembly between said side plates at one end of said frame arranged to define a first flux gap, a pole block on each of said side plates at the end away from said spacer block, said pole blocks defining a second flux gap therebetween, an elongated armature longitudinally disposed within said frame, a pivot pin carried by said spacer block assembly and pivotally mounting one end of said armature in said first flux gap, said armature extending generally parallel to said side plates and said magnetic plates through said frame and said second flux gap, a solenoid coil located within said frame surrounding said armature and arranged to provide a magnetic field extending longitudinally of said armature, whereby an electric signal applied to said solenoid will magnetize said armature to produce opposite polarity in the ends thereof whereby the end of said armature between said pole blocks will be attracted to the pole block having the opposite polarity and repelled from the pole block having the same polarity, a plunger mounted on each of said pole blocks and adapted to engage said armature, spring means carried by each of said pole blocks biasing the associated plunger against said armature, and adjustable means on said pole blocks to vary the biasing force of said springs to determine the neutral point of said armature between said pole blocks.

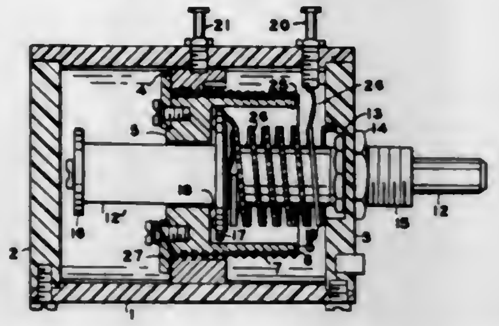
3,311,859
MAGNETIC DEVICE HAVING A PERMANENTLY MAGNETIZED ROTOR

Jacob J. Bleger, Queens Village, N.Y., and William Henninger, Paramus, N.J., assignors to Daco Instrument Company, Brooklyn, N.Y., a corporation of New York
Continuation of application Ser. No. 372,925, June 5, 1964. This application May 17, 1966, Ser. No. 550,872
5 Claims. (Cl. 335—230)



1. An electromagnetic device comprising housing means, a stationary electromagnet mounted in said housing means, said electromagnet including a core having a predetermined axis and made of a material having relatively poor retentivity characteristics, and an energizing coil concentrically mounted around said core for establishing magnetic flux in said core having a direction determined by the polarity of the energizing current applied to said coil, said core being magnetically polarized at its end sections in accordance with the direction of said flux, a rotor mounted for rotation in said housing means and being in an operable relationship with one of the poles of said electromagnet, said rotor having an axis of rotation perpendicular to the axis of said core, said rotor including a drum piece and permanent bar magnet, said bar magnet having poles at opposite ends thereof and being mounted in said drum piece transverse to the axis of rotation of said rotor and magnetically cooperating with the poles of said electromagnet, and spring biasing means cooperating with said rotor for rotatably positioning said rotor in said housing means so that the polar axis of said bar magnet is transverse to the axis of said core of said electromagnet when the electromagnet is not energized.

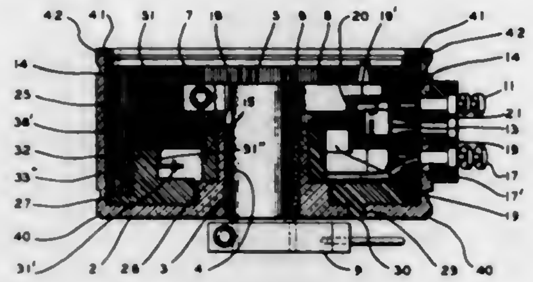
3,311,860
INFINITELY VARIABLE MULTI-TURN POTENTIOMETER
Karl F. Frank, Garden City, N.Y., assignor to Micro Balancing Incorporated, Garden City Park, N.Y.
Filed Jan. 9, 1964, Ser. No. 336,715
2 Claims. (Cl. 338—145)



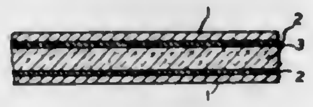
1. An infinitely variable potentiometer comprising:
a hollow case,
a conductive nut fixed inside said case, said nut having internal threads,
a partially hollow conductive mandrel with an insulated cover on its outer surface,
a coil of resistance wire mounted on said insulated surface of said mandrel, the turns of said coil having the same pitch as and riding in said threads of said nut,
one end of said coil being electrically connected to said mandrel,
a spring single point contact mounted in said nut, said single point contact riding on said wire,
means to rotate said mandrel relative to said nut and contact comprising,
a non-conductive shaft rotatably mounted in said case and extending through said mandrel and rotatably connected to said mandrel but permitting axial movement of said mandrel relative to said shaft,
a second sliding contact member mounted coaxially about said shaft and riding on an interior conductive surface on said mandrel,
a spring mounted coaxially about said shaft and bearing against said second contact member to hold said contact member in contact with said mandrel,
a woven copper cover on said spring,
a pair of external terminals on said case one of said terminals being connected to one end of said copper cover and the other of said terminals being connected to said fixed nut,
whereby a circuit is completed from said one terminal through said copper cover, said second sliding contact, said mandrel, a portion of said resistance coil, and said single point contact mounted on said nut to said other terminal.

3,311,861
POTENTIOMETER TAPPING ARRANGEMENT
Max Albertsman, Endicott, and Martin Dotsko, Binghamton, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Continuation of application Ser. No. 588,310, May 31, 1956. This application May 9, 1960, Ser. No. 27,976
4 Claims. (Cl. 338—137)

1. A potentiometer, comprising in combination; a cylindrical housing having an end wall, a rotatable shaft member extending through said end wall and carrying an electrical contact arm within said housing; an annular resistance element disposed within said cylindrical housing and concentrically located with respect to said central bearing; an insulating annular track concentrically located with respect to said bearing and said annular resistance element, said insulating annular track member being radially located between said central bearing and said annular resistance element and provided with a side recess extending at least part way around said track to provide an enlarged interlocking portion, said electrical contact arm having a wiping contact carried thereon and adapted to engage said resistance element; a slidably adjustable tap member including a contact point for conductivity engaging said annular resistance element, said adjustable tap member being substantially S-shaped and including upper, middle and lower bar members connected by upper and lower connecting members, said contact point being carried on said lower bar member of said tap member; said middle bar, said upper connecting member and said upper bar member forming a resilient U-shaped gripping member resiliently biased to grip said enlarged interlocking portion of said annular track member, said middle bar member including a protuberance adapted to engage said side recess of said annular track member but provide for sliding adjustment of said tap.



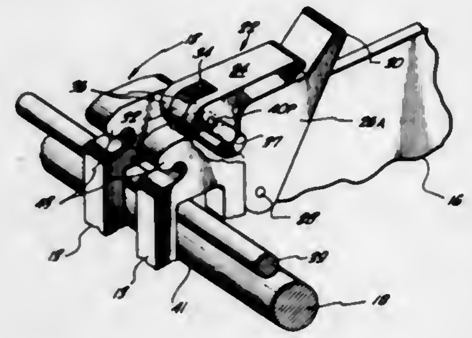
3,311,862
BONDED LOW-TEMPERATURE LAMINATED RESISTANCE HEATER
Herbert L. Rees, Lancaster County, Pa.
(1544 Lambeth Road, Lancaster, Pa. 17601)
Filed Sept. 9, 1964, Ser. No. 395,168
4 Claims. (Cl. 338—211)



1. A low-temperature laminated resistance heater comprising metallic foil electrodes separated by a semi-insulating layer, each electrode having an electrically conductive key coat on the face adjacent the semi-insulating layer, the key coat comprising an electrically conductive carbon, plasticizer, and a resinous binder containing 25–75% by weight of a polymeric vinyl chloride-vinyl acetate copolymer and 75–25% by weight of a polymeric vinyl chloride-vinyl alcohol copolymer, said semi-insulating layer comprising a plasticized poly(vinyl chloride) containing sufficient electrically conductive carbon to impart a resistivity in the range of about 4×10^3 to 4×10^7 ohm-inches.

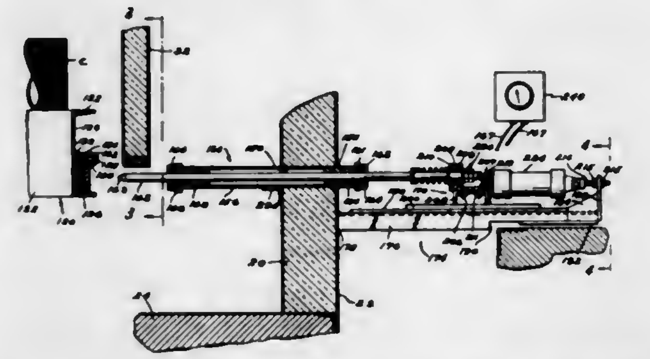
3,311,863
PRINTED CIRCUIT BOARD HARDWARE
Stanley E. Beale, Bradbury, Calif., assignor, by mesne assignments, to Scanbe Manufacturing Corporation
Filed May 25, 1964, Ser. No. 369,687
7 Claims. (Cl. 339—45)

1. Modular hardware for mounting circuit boards and the like comprising:
a pair of circuit board guiding and mounting elements each having a longitudinal track defined on one side thereof and mounted to slidably receive and secure a circuit board therein,
an electrical connector mounted to slidably receive and secure a circuit board from said mounting elements,
a circuit board mounted between said mounting elements and arranged in electrical engagement with the electrical connector,
said circuit board including a circuit board ejector pivotally mounted adjacent a corner of the board spaced opposite the end received by the electrical connector,
said ejector being defined with an outwardly extending protrusion,
said ejector including a latching element having a pair of latching ears defined to extend outwardly on opposite sides of the latching element and being pivotally mounted to said ejector protrusion to alternately lock the circuit board into the electrical connector and to swingably unlock the circuit board therefrom to allow the ejector to be swung about its pivot for ejecting the circuit board from the electrical connector, and



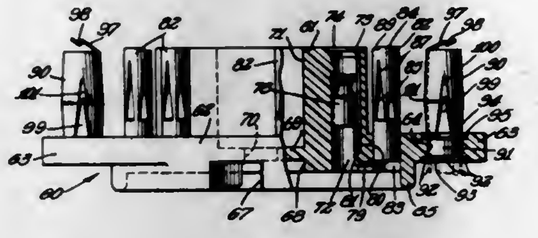
means mounted adjacent the mounting element adjacent said ejector for securing the latching ears to thereby maintain the latching element in a latching position and defined to be responsive to the swinging of the latching element to a non-latching position to release the latching ears.

3,311,864
THERMOCOUPLE PICKUP
Arthur Walker, Greenbrier, Ark., assignor to Holcroft & Company, Detroit, Mich., a corporation of Michigan
Original application Oct. 29, 1962, Ser. No. 233,545, now Patent No. 3,259,381, dated July 5, 1966. Divided and this application Oct. 19, 1965, Ser. No. 497,756
4 Claims. (Cl. 339—108)



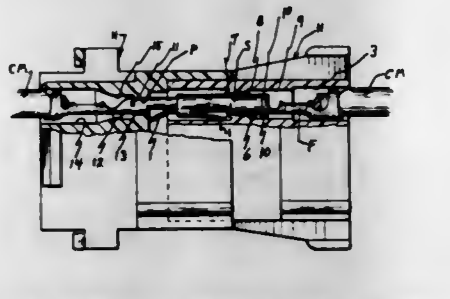
1. A contact probe assembly comprising an elongated tubular casing, an elongated, tubular bar disposed within said casing and projecting from at least one end of the latter, said bar being mounted for relative lengthwise movement in said casing and being supported for said movement in electrically insulated, radially spaced relation to the wall of said casing, said tubular bar being provided at a projecting end thereof with an electrically conductive contact piece of solid cross section mounted in fixed, coaxial relation to the bar, and an electrical conductor fixedly secured to said contact piece in electrically conducting engagement with the latter, said conductor extending through said tubular bar in radially spaced relation to the wall of the latter, said conductor extending through the opposite end of said bar and the corresponding end of said casing for electrical connection to an instrument or the like.

3,311,865
ELECTRICAL SOCKET
Albert P. Devito, Niles, Ill., assignor to Alcon Metal Products, Inc., Chicago, Ill., a corporation of Delaware
Filed May 27, 1965, Ser. No. 459,159
9 Claims. (Cl. 339—132)



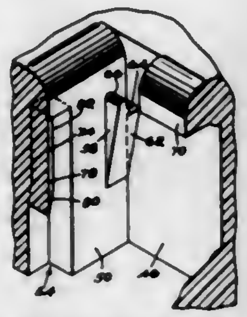
3. In combination,
a socket assembly comprising a dielectric body having front and back faces and provided with a lateral mounting flange on its back end portion including an axially extending centering flange projecting rearwardly therefrom,
a plurality of electrical receptacles mounted in said body and having pin-receiving mouth ends accessible from the front face of the body and provided with electrical terminals at least partially mounted in said mounting flange and having lead-receiving openings accessible from the back of the body,
a mounting panel having an aperture therethrough complementary to and receptive of said centering flange and about which said mounting flange seats,
said centering flange having a notch opening therethrough,
an integral projecting portion on said panel extending through said notch opening and into said aperture,
and means securing said projecting portion to said body.

3,311,866
ELECTRICAL CONNECTORS
Robert L. Williamson, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 17, 1964, Ser. No. 352,600
4 Claims. (Cl. 339—217)



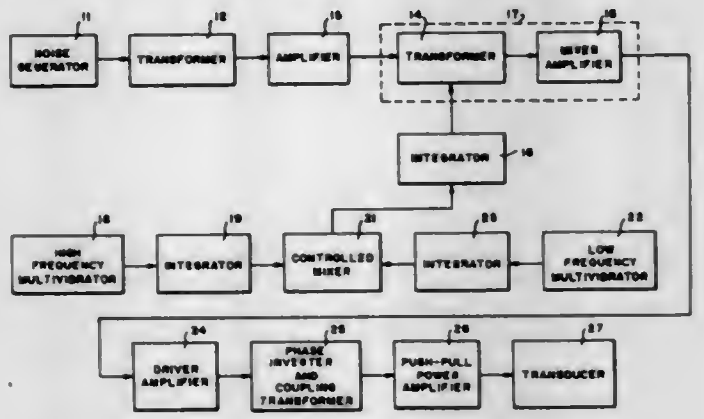
1. An electrical connector comprising a dielectric housing having mateable parts each provided with at least one passageway extending therethrough, a socket terminal and a pin terminal in the passageway of each part, said terminals having means at one end secured to conductor means and mateable body portions, the body portion of said socket terminal having substantially the same diameter therealong, the body portion of said pin terminal having substantially the same diameter therealong, said body portion of said pin terminal being electrically mateable with said body portion of said socket terminal when said parts of said housing are mated together, means on said body portions and in the passageways to secure the socket terminal and pin terminal within the passageways, and stabilizing projections located around said body portions to stabilize the socket and pin terminals within the passageways with some of said stabilizing projections being part of said securing means.

3,311,867
FEMALE ELECTRICAL CONNECTOR ASSEMBLY
Alvah D. Beauchaine, Lakeport, N.H., assignor to W. A. Beauchaine & Sons, Inc., Lakeport, N.H., a corporation of New Hampshire
Filed July 25, 1966, Ser. No. 567,474
6 Claims. (Cl. 339—217)



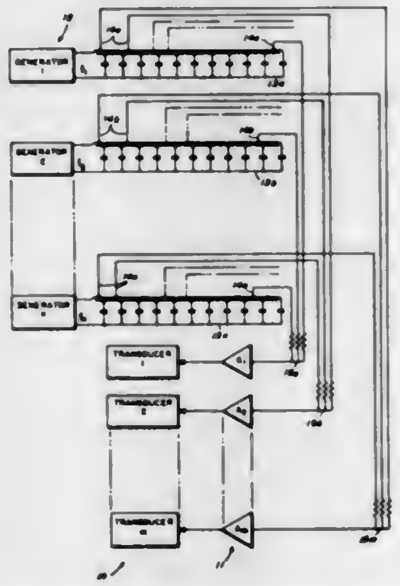
1. In an electrical connector, a female connector assembly comprising; a female contact member having a pair of upwardly diverging legs joined at the lower ends thereof and bent inwardly and downwardly at the upper ends thereof to form abutting spring arms; and a dielectric block housing having an open-ended receptacle formed therethrough adapted to accept and retainably mount said female contact member therein, said receptacle having vertical side and end walls and being substantially rectangular in horizontal cross-section, said receptacle having a pair of vertically extending recesses formed in said side walls adjacent diagonal corners of said receptacle, said recesses being smaller than said receptacle and extending beyond the periphery thereof when viewed in plan, said receptacle having a pair of cam members positioned on said side walls in facing relation to said recesses, said receptacle having a flange extending into said receptacle above said cam members, said receptacle having a pair of stop elements within said recesses, whereby bending the spring arms toward their respective legs permits the female contact member to be inserted upwardly without rotation into the receptacle, the arms and legs being initially cammed laterally by the cam members into the recesses and then recovering to their original configuration upon clearing the tops of the cam members, the female contact member being thereby retained against vertical disengagement from the receptacle by the cam members and the flange, the arms and legs being prevented from lateral re-entry into the recesses by the stop elements.

3,311,868
SONIC SIMULATOR
Frederick B. Cupp, Willoughby, and Carl W. Palley, Mentor, Ohio, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 13, 1964, Ser. No. 382,696
24 Claims. (Cl. 340—5)



1. A sonic simulator comprising in combination,
means for generating a white noise signal,
means for generating an integrated symmetrical square-wave signal,
means for generating an integrated asymmetrical rectangular wave signal,
means interconnecting each of the aforesaid generating means for mixing the respective signals generated thereby into a predetermined total signal.

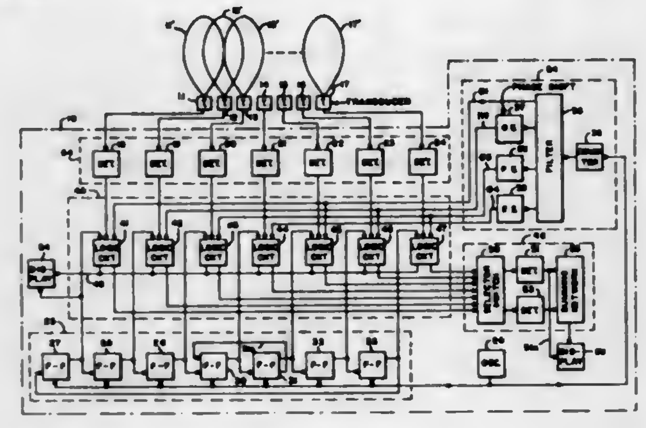
3,311,869
SIMULTANEOUS PREFORMED BEAM TRANSMITTING TRANSDUCER SYSTEM
William E. Klund, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 21, 1965, Ser. No. 449,903
7 Claims. (Cl. 340—5)



1. A transmitting transducer system for transmitting simultaneously a plurality of differently oriented directional beams, said system comprising;
an array of transducer elements,
a plurality of unique signal sources corresponding in number to the number of said directional beams to be radiated by said array,
a beam forming network coupled to each signal source, each network having a plurality of output terminals for producing a series of time shifted signal components of the connected signal source which when applied, respectively, to predetermined transducer elements will generate one of said beams, and
means for applying said series of time shifted signal components, respectively, to said transducer elements.

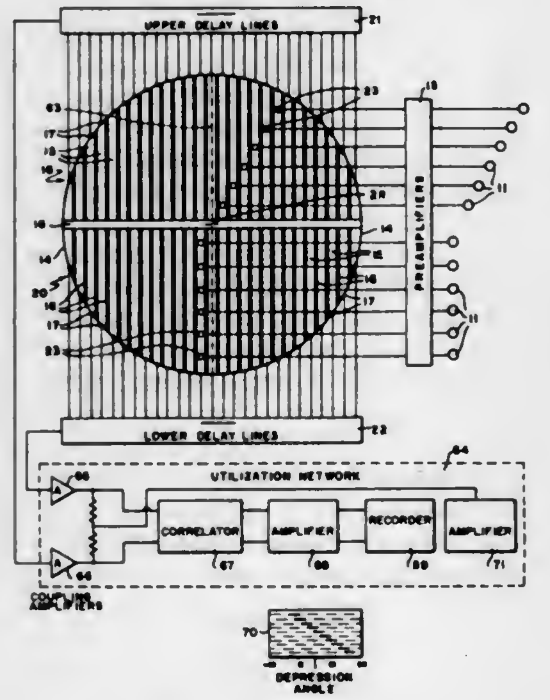
3,311,870
SOLID STATE PROPORTIONAL COMMUTATOR
Bruce H. Grohe, Holliston, Mass., and Charles E. Walker, Mason, Ohio, assignors to Hazeltine Research, Inc., a corporation of Illinois
Filed Dec. 30, 1964, Ser. No. 422,267
11 Claims. (Cl. 340—6)

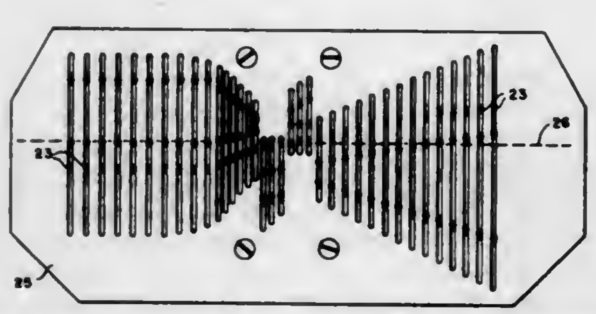
1. A signal processing apparatus for processing signals received by a plurality of sensors to permit determination of the bearings of the sources of said signals, comprising:
first means for supplying a plurality of information signals, each representative of the signals received by a corresponding sensor;
second means for supplying a sampling waveform providing a plurality of gating signals;
third means for supplying a plurality of sinusoidal waveforms whose frequency is substantially lower than the repetition rate of said gating signals;
and a plurality of logic circuits, each responsive to one of said information signals, one of said sinusoidal waveforms and a plurality of said gating signals selected by coupling each successive gating signal to a separate logic circuit in a sequential repetitive pattern, for producing an output signal corresponding to each sensor comprising said selected plurality of gating signals whose envelope represents said sinusoidal waveform amplitude modulated by said information signal;



and means for combining all the output signals to produce a resultant waveform which permits a simultaneous determination of which sensors have intercepted signals.

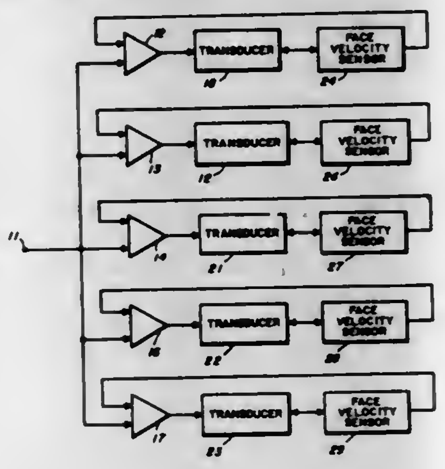
3,311,871
THREE-DIMENSIONAL COMPENSATOR FOR A TWO-DIMENSIONAL SONAR ARRAY
Sidney Baron, New London, Conn., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 15, 1965, Ser. No. 487,636
9 Claims. (Cl. 340—6)





1. In a two dimensional passive sonar compensator arrangement having a flat water plate, preamplifiers and delay lines associated therewith, a plurality of brush contacts conformally arranged in accordance with the planar hydrophone array to which they are electrically connected and means for simultaneous rotating commitantly all of said contacts on said plate about the point representing the arrival center of said hydrophone array in the plane of said array, whereby a beam may be steered in said array plane, that improvement for three dimensional scanning which comprises:
means for moving all of said contacts linearly along said water plate by an amount which is a cosine function of the angle between the plane of the array and direction of steering perpendicular thereto and proportional to the spacing between said hydrophones.

3,311,872
TRANSDUCER FACE-VELOCITY CONTROL SYSTEM
Daniel E. Andrews, Jr., and William E. Klund, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 29, 1963, Ser. No. 305,559
10 Claims. (Cl. 340—8)



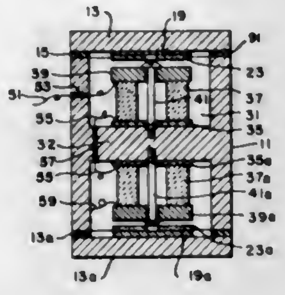
1. A transducer face-velocity control system comprising:
a plurality of first transducers with radiating faces spacially disposed in an array for converting an electrical wave into reciprocations of said faces;
a plurality of second transducers, each coupled mechanically to a different one of said first transducers for sensing said first transducers' face velocity and converting said face velocity into a corresponding electrical wave,
a plurality of amplifiers, each of said amplifiers having an output electrically coupled to a different one of said first transducers;
each of said second transducers having an output degeneratively coupled to the input of its respective one of said plurality of amplifiers;
whereby said amplifiers and first and second transducers form a plurality of channels of modular driven transducers each channel having denegerative feedback in proportion to the face velocity of the transducer in that channel.

3,311,873
INTENSITY METER, PARTICLE ACCELERATION TYPE
Fred Schloss, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 10, 1965, Ser. No. 507,255
10 Claims. (Cl. 340—10)

1. A hydrophone having substantially no response to transverse forces and substantially no acceleration sensitivity comprising:

a housing being provided with a first end cap and a second end cap;

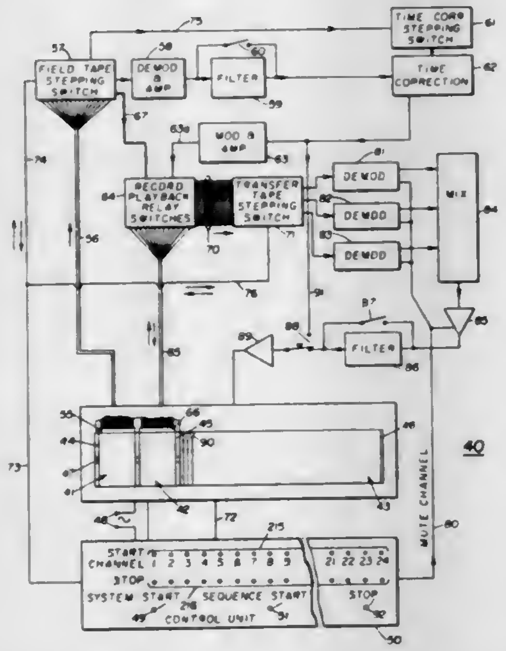
a first pair of piezoelectric crystals being electrically insulated from said first end cap and mounted on said end cap; and



a second pair of piezoelectric crystals being electrically insulated from said second end cap and mounted on said second end cap, said first pair of piezoelectric crystals and said second pair of piezoelectric crystals being connected in series whereby the sum of the signals generated in said piezoelectric crystals due to their acceleration is substantially zero.

3,311,874
METHODS AND APPARATUS FOR TRANSLATING SEISMIC FIELD DATA TO A SEISMIC SECTION

Donald H. Sheffield, Farmers Branch, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 29, 1964, Ser. No. 378,741
12 Claims. (Cl. 340—15.5)



1. A method of processing seismic data recorded as traces in phonographically reproducible form to produce a time-corrected representation thereof and a second representation differing in character from the time-corrected representation comprising the steps of

(a) sequentially and individually reproducing each seismic trace,

(b) time correcting each reproduced seismic trace for static and dynamic time errors,

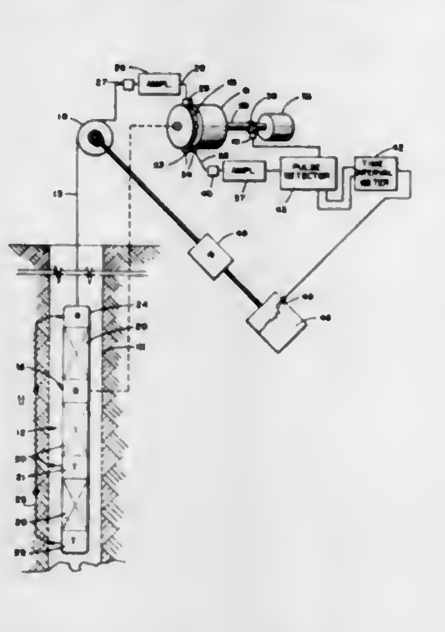
(c) re-recording on a recording medium sequentially each time corrected trace,

(d) while re-recording another time corrected trace on the same medium, sequentially and simultaneously reproducing from the medium at least one previously re-recorded trace and modifying the character of said trace, and

(e) recording on another medium the modified trace to produce a portion of a seismic section while continuing said re-recording.

3,311,875
ELASTIC WAVE WELL LOGGING

Robert L. Geyer and Ralph A. Landrum, Jr., Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,338
9 Claims. (Cl. 340—18)

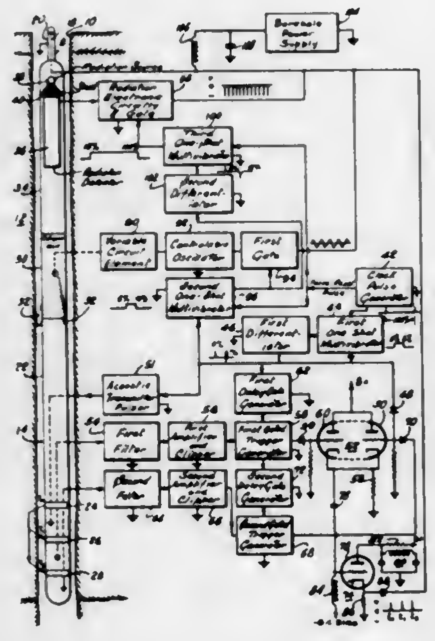


1. Acoustic well logging apparatus comprising an elongated tool adapted to be passed through a borehole; elastic wave signal transmitter means positioned on said tool; elastic wave signal receiver means on said tool spaced along the length thereof from said transmitter means for receiving elastic wave signals traveling through the surrounding media from said transmitter means and for producing an output signal in response to received elastic wave signals; signal generator means connected to said transmitter means for driving said transmitter means; correlator means connected to said receiver means for receiving the output therefrom and for correlating the transmitted signal with a signal emitted from said transmitter means; pulse detecting means connected to said correlator means for receiving the correlator output; time interval metering means connected to said pulse detecting means; and recorder means connected to said metering means for providing a record of the time interval between signal pulses transmitted to said receiver means.

3,311,876
WELL LOGGING

Burton D. Lee, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 28, 1959, Ser. No. 843,005
5 Claims. (Cl. 340—18)

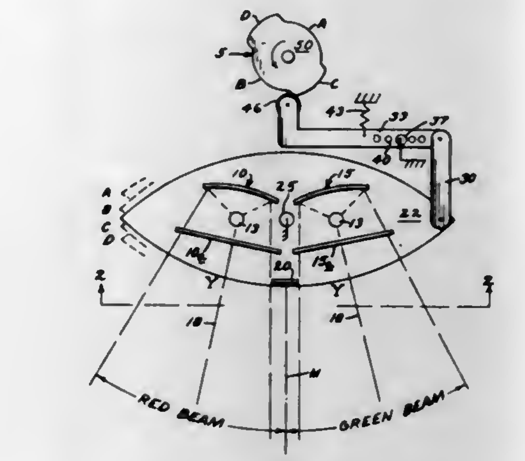
1. A well logging system comprising an elongated exploring unit adapted to be passed through the bore of a well, means for generating an electrical pulse at a constant repetition rate, a first one-shot multivibrator responsive to said electric pulse for producing a square wave, a first differentiator coupled to the output of said first one-shot multivibrator for producing a first pulse at the leading edge of said square wave and a second pulse at the trailing edge of said square wave, means responsive to the first pulse from said first differentiator for transmitting an acoustic pulse through a subsurface formation traversed by the well bore between two spaced apart points on said unit, the repetition rate of said electric pulse being such that the time interval between successive electric pulses representing the time of a cycle of operation is at least several times longer than the expected longest time interval required for the acoustic pulse to travel between said two points through the subsurface formation, means for producing signals in the exploring unit indicative of the velocity of said acoustic pulse in the formation between said two points, a single transmission line, means for applying said velocity signals to one end of said single transmission line, means for producing signals in said exploring unit indicative of the well bore diameter, a first gate disposed between said borehole diameter signal producing means and the one end of said single transmission line, a second one-shot multivibrator responsive to the second pulse from said first differentiator for producing a square wave at the output thereof to open said first gate, the time intervals of each of the square waves produced by said first and second one-shot multivibrators being a small portion of the cycle of operation, means including gating means for producing signals in said exploring unit indicative of scattered gamma rays in a subsurface formation opposite said exploring unit, a second differentiator coupled to the output of said second one-shot multivibrator for producing a first pulse at the leading edge and a second pulse at the trailing edge of the square wave produced by the second one-shot multivibrator, a third one-shot multivibrator responsive to the second pulse from the second differentiator for producing an output signal to open said gating means for a portion of time which is a substantial portion of the cycle of operation to apply said scattered gamma ray signals to the one end of said single transmission line, means coupled to the other end of said single transmission line for separating said velocity, borehole diameter and scattered gamma ray signals from each other and means for recording said separated signals.



3,311,877
SINGLE STATION RANGE LIGHT

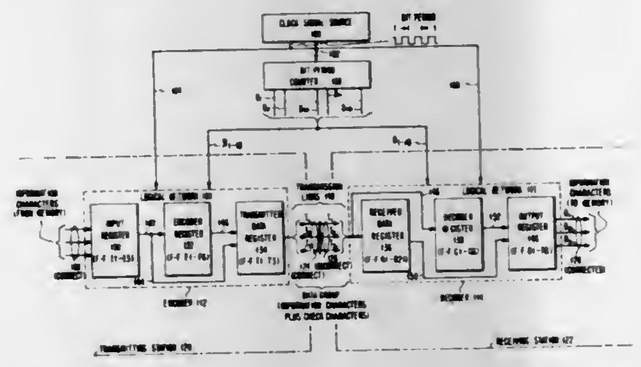
Theodore H. Projector, 3304 Edgwood Road, Kensington, Md. 20795, and Robert S. Rinkinen, 4708 Topping Road, Rockville, Md. 20853
Filed Feb. 28, 1963, Ser. No. 261,688
20 Claims. (Cl. 340—29)

19. A system for identifying a predetermined line of direction comprising means for effecting a pair of adjacent light beams of differing color, means for moving said pair synchronously with respect to said predetermined line of direction, means for effecting such movement so that said beams move back and forth across said line of direction between predetermined positions on each side thereof.



3,311,878
ERROR CHECKING SYSTEM FOR BINARY PARALLEL COMMUNICATIONS

Constantin Michael Melas, Antibes, France, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 14, 1963, Ser. No. 258,385
3 Claims. (Cl. 340—146.1)



1. In an error checking system for digital data consisting of a group of sequential characters, each comprising a set of bits simultaneously generated and positionally unique;

a first register having a stage corresponding to each bit position in the characters and capable of being set up with signals representing the characters;

a first sequencing register having a first set of stages each responsive to the signals in a stage of said first register, a second set of stages each responsive to the signals in a stage of the first set and feedback connections between the sets of stages as well as between the stages of the first set, and capable of generating in each of the sets of stages signals corresponding to a check character in accordance with the signals in said first register as well as the feedback connections;

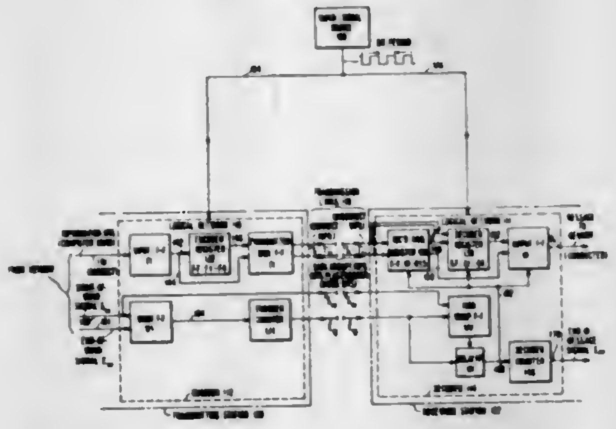
a second register having a stage corresponding to each bit position in the characters and responsive to the signals set up in said first register, then to the check character signals generated in the first set of stages of said first sequencing register and then to the check character signals generated in the second set of stages of said first sequencing register;

a set of channels for simultaneous communication, a channel corresponding to each bit position in the characters and responsive to the signals set up in said second register;

- a third register having a plurality of stages corresponding to each bit position in the characters and capable of being set up with signals representing all the characters of the group;
- a second sequencing register having a first set of stages each responsive to the signals in a channel of said set of channels, a second set of stages each responsive to the signals in a stage of the first set and feedback connections between the sets of stages as well as between the stages of said first set, and capable of generating in each of the sets of stages signals corresponding to a check character in accordance with the signals in said set of channels as well as the feedback connections; and
- a fourth register having a plurality of stages corresponding to each position in the characters and responsive to the signals in said third register simultaneously with the check character signals in said second sequencing register.

3,311,879
ERROR CHECKING SYSTEM FOR VARIABLE LENGTH DATA

Paul R. Daher, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 18, 1963, Ser. No. 274,035
11 Claims. (Cl. 340—146.1)

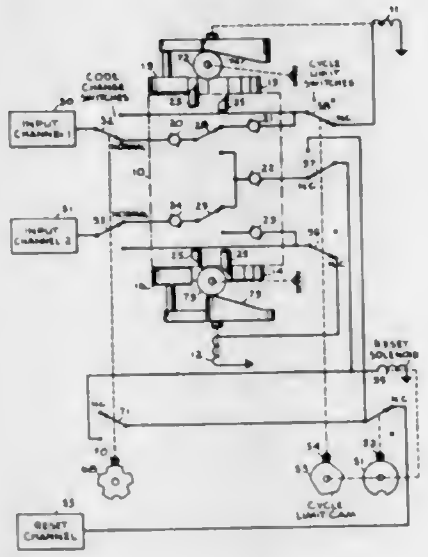


1. An error checking system for transmission of data arranged in variable length words, comprising:

- a first store capable of being sequentially set up with signals representing a word;
- first means for generating a signal identifying the presence of the word signals in said first store;
- a first register responsive to the signal of said first means and to the word signals in said first store to generate a signal unique to the word signals;
- a second store responsive to the signal of said first means to be set up with signals representing a data group consisting of the word signals of said first register followed by check signals derived from the unique signal of said first register;
- second means for generating a signal identifying the presence of the check signals in said second store;
- third means responsive to said first and second means for generating a signal identifying the presence of the date group signals in said second store;
- a third store responsive to the signal of said third means to be set up with the data group signals of said second store;
- a second register responsive to the signal of said third means and to the data group signals of said second store to generate a check signal; and
- a fourth store responsive to the data signals of said third store and the check signals of said second register to become set up with the data group signals if the check signal accords with a predetermined value or to become set up with complementary data group signals if the check signal does not accord with the predetermined value.

3,311,880
MECHANICAL DECODER

Robert Joseph Belanger, Los Angeles, Calif., assignor, by mesne assignments, to TRW Inc., a corporation of Ohio
Filed Apr. 11, 1963, Ser. No. 272,397
20 Claims. (Cl. 340—147)



1. In combination,

- a plurality of individually controlled switches in an ordered relationship,
- each of said switches being preset for establishing a plurality of paths of which only one is a preferred path,
- interrogating means for individual interrogating said preset paths, and
- switch selecting means responsive to said interrogating means selecting said preferred path for sequentially selecting the next of said switches in said ordered relationship to be interrogated.

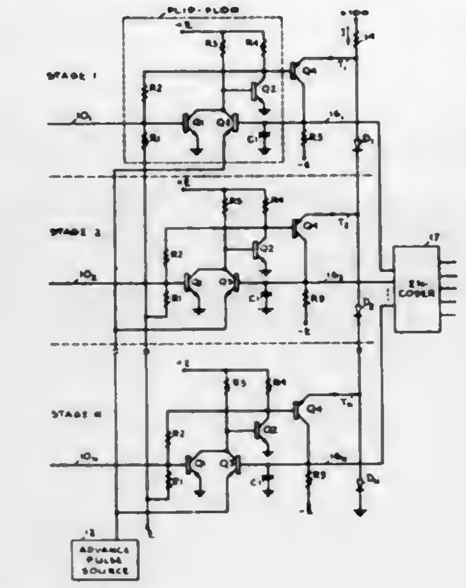
3,311,881
SELECTION CIRCUIT RESPONSIVE TO PLURAL INPUTS IN A PRIORITY SEQUENCE

Robert N. Mellott, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed July 18, 1963, Ser. No. 296,001
14 Claims. (Cl. 340—147)

1. In combination with a plurality of binary elements each capable of assuming either a first or second state and each respectively arbitrarily numbered 1, 2, 3 . . . N, each element having a different output circuit associated therewith, selection means for initiating current in the output circuit associated with the lowest numbered binary element assuming said first state, said selection means comprising:

- a series circuit including a plurality of similarly poled unidirectional current conducting elements respectively arbitrarily numbered 1, 2, 3 . . . N;
- a voltage source connected to said series circuit for driving a current therethrough;
- each of said output circuits including a tap each of which is connected to a corresponding terminal of a different one of said unidirectional elements;
- means connecting each of said binary elements to the tap connected to said corresponding terminal of a correspondingly numbered unidirectional element;

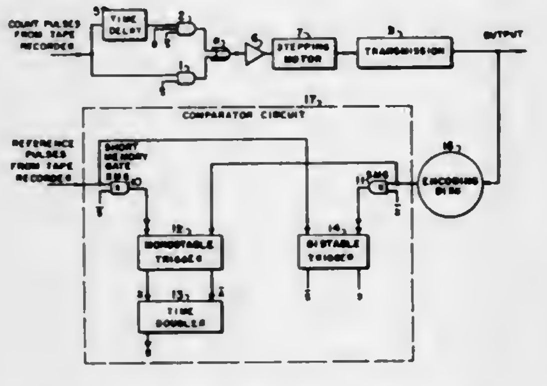
- means tending to divert current from said series circuit into said taps connected to binary elements in said first state; and



- means responsive to current diverted into any one of said taps for establishing a potential at that tap insufficient to forward bias the unidirectional element connected thereto.

3,311,882
APPARATUS FOR SYNCHRONIZING CYCLICALLY MOVING MEMBERS

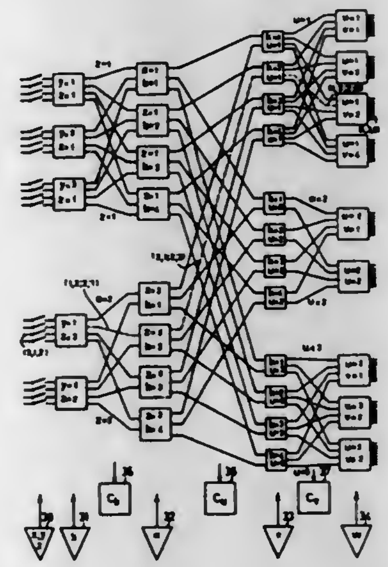
Gerardus L. Reijns, Voorburg, and Aage Telen, The Hague, Netherlands, assignors to the United States of America as represented by the Secretary of the Army
Filed Feb. 12, 1964, Ser. No. 344,515
Claims priority, application Netherlands, Feb. 14, 1963, 288,951
4 Claims. (Cl. 340—147)



1. Device for reproducing the movement of a body which repeatedly passes through the same series of positions, characterized in that the moving body is provided with two series of position marks by means of which two series of pulses can be excited, wherein the pulses of the first series serve the purpose of driving a second body, which is already provided with the second series of position marks and is already reproducing the movement of the first body, via a stepping motor and a transmission and the pulses of the second series, hereinafter called reference pulses coming from both bodies are separately supplied to a comparator circuit, which is arranged in such a way that, at the appearance of a reference pulse coming from the first body which is not immediately followed by a reference pulse from the reproducing body, extra driving pulses excited by means of the position marks of the first series of pulses, which are supplied to the stepping motor during a limited period of time and that at the appearance of a reference pulse coming from the body driven by the stepping motor, the supply of pulses is stopped until a reference pulse coming from the first body appears, wherein the position of the position marks of the second series are chosen in such a way that the analogous position marks of two identical bodies cover each other only in one single position of the bodies.

3,311,883
PLURAL CHANNEL SWITCHING NETWORK WITH CHECK OF MARKING OF CHANNEL LINK

Mattheus Jacobus Schmitz, Hilversum, and Anton Ferdinand van der Gaag, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 21, 1962, Ser. No. 246,495
Claims priority, application Netherlands, Dec. 29, 1961, 273,091
8 Claims. (Cl. 340—166)



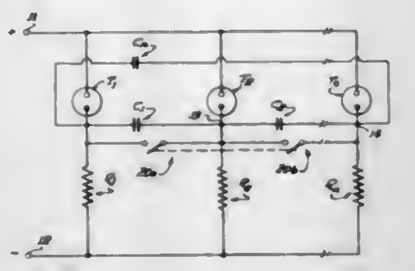
1. A switching network comprising a plurality of input terminals, a plurality of output terminals, a plurality of channels extending between each input terminal and each output terminal, each said channel comprising a plurality of switching stage means serially interconnected by a plurality of links between the respective input and output terminals, whereby the links of a channel have first, second and third potentials when said channel is free, being marked, and busy, respectively, means for checking the states of said links, and means connecting a plurality of said links to said checking means, said checking means comprising means responsive to the potentials on said links for separately indicating the absence of said second potential on all links connected thereto, the presence of said second potential on only one link connected thereto, and the presence of said second potential on more than one link connected thereto.

3,311,884
OSCILLATOR RING WITH RANDOM DIGIT SELECTION

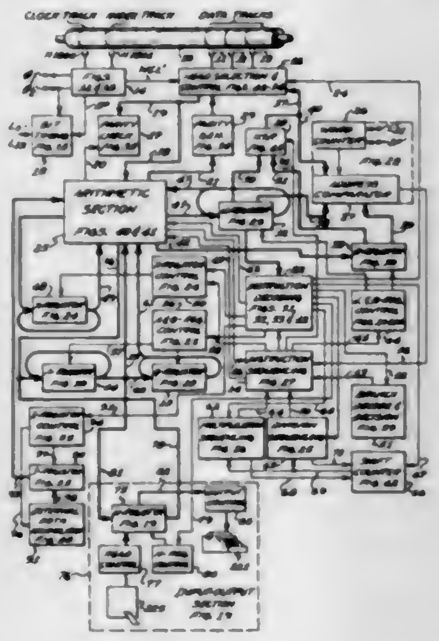
Arnold S. Mengel, 629 16th St., Santa Monica, Calif. 90402
Filed Sept. 30, 1963, Ser. No. 312,632
5 Claims. (Cl. 340—147)

1. Electrical apparatus for generating signals representative of digits selected randomly from a sampling size of *n* possible digits and a predetermined expected frequency distribution, said apparatus comprising, in combination: a multi-branch oscillator circuit consisting of *n* shunt-connected circuit branches which are adapted to

present first and second states, said circuit branches being intercoupled in a regenerative ring wherein each circuit branch is periodically operated from its first state to its second state for a predetermined time to provide the manifestation of a predetermined digit, said circuit branches being so periodically actuated in a continuous sequence with a predetermined relative frequency of occurrence; and, means for halting the repetitive cycle of sequential operation at an arbitrary instant of time, whereby the particular circuit branch then in said second state provides an indication of a randomly selected digit.



3,311,885
ELECTRONIC DATA PROCESSOR
Charles H. Propster, Jr., Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed Nov. 21, 1960, Ser. No. 70,549
46 Claims. (Cl. 340—172.5)



1. In a stored-program digital computer having a memory section with a plurality of accessible memory locations for storing groups of digital signals representing instructions and operands, a control section, at least one shifter register and an arithmetic section consisting of an adder and control circuits for allowing groups of digital signals to be transferred through said adder to said control section and to said shift register, the combination comprising:

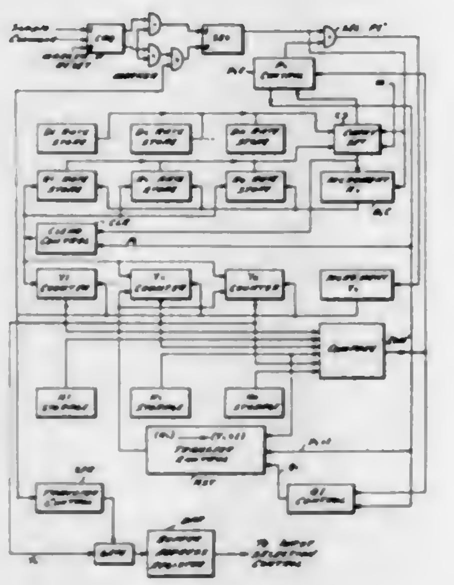
a first means responsive to said control section for transmitting control signals to said memory section for causing an instruction group of digital signals to be transferred from a first memory location to said control section directly through said adder;

an instruction register included in said control section for storing said instruction;

a second means responsive to said control section for transmitting control signals to said memory section for causing an operand group of digital signals to be transferred from a second memory location to said shift register directly through said adder;

and a third means responsive to said instruction stored in said instruction register for transmitting control signals from said control section to the control circuits of said arithmetic section for causing an operation specified by said instruction to be performed while said operand is being transferred to said shift register.

3,311,886
SAMPLING MULTIPLEXER WITH PROGRAM CONTROL
Robert W. Herman and Harry V. Hilker, Orange County, Calif., assignors to Decision Control, Inc., a corporation of California
Filed Sept. 18, 1962, Ser. No. 224,897
6 Claims. (Cl. 340—172.5)



5. In a system wherein a pulse source of frequency P is used to control the submultiple generation of subfrequencies determined from the series

$$P/R1\ P/R1.R2\ \ldots\ P/R1.R2\ \ldots\ Ri\ \ldots\ P/R1.R2\ \ldots\ Rn$$

said system including means for receiving sample signals at said frequency P and means for addressing up to P different sample locations equal to the sum of all locations for each sampling rate use from said series of submultiple frequencies; the improvement comprising: programmable first means for receiving and storing control signals specifying each of said subdividing numbers R1 . . . R*n* and the number of locations for each group of samples for each of the subfrequencies used for samples; and second means responsive to the control signals stored by said first means for generating a sample address for each sample signal, said sample addresses being generated so that the reciprocal of said R1 . . . R*n*, N1 . . . N*n*; and the starting addresses *a*1 . . . *an* of each sample for a different rate are so related that any two rates R*i* and R*j* and corresponding periods N*i* and N*j* satisfy the relationship:

$$mNi-nNj\neq aj-ai$$

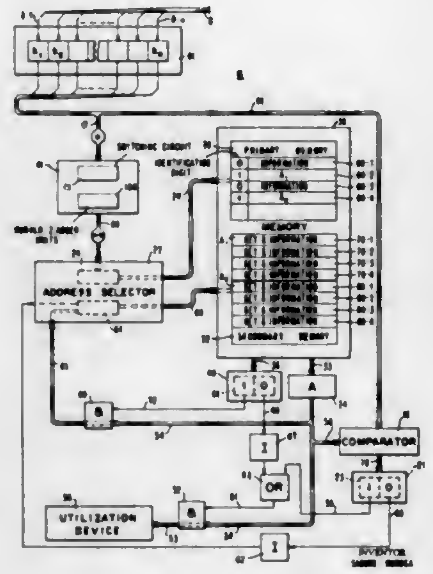
where *m* and *n* are integers.

3,311,887
FILE MEMORY SYSTEM WITH KEY TO ADDRESS TRANSFORMATION APPARATUS
Saburo Muroga, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 12, 1963, Ser. No. 272,707
18 Claims. (Cl. 340—172.5)

1. A file memory system operable in a key to address transformation mode comprising;

file memory means for storing information records at addresses therein;

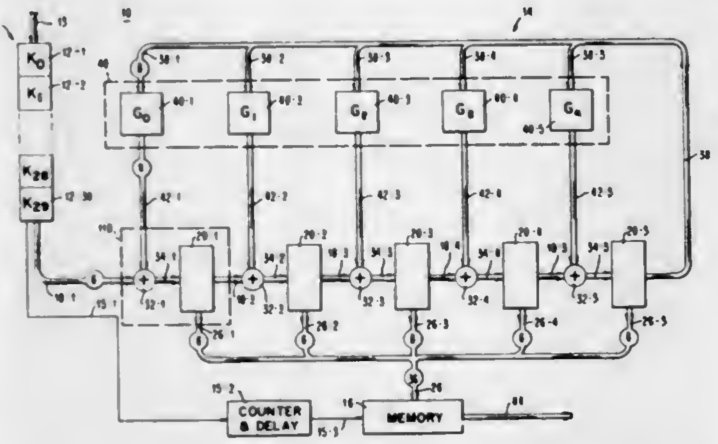
means for introducing keys characterized as binary codes in a group array to said system selectively;



means for transforming in accordance with said group array said codes to parity-check sequences thereof; and

means responsive to said parity-check sequences for addressing said file memory means.

3,311,888
METHOD AND APPARATUS FOR ADDRESSING A MEMORY
Maurice Hanan, Ossining, Frank P. Palermo and Norman Raver, Yorktown Heights, and Geza Schay, New York, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 12, 1963, Ser. No. 272,802
12 Claims. (Cl. 340—172.5)



1. Key to address transformation apparatus which provides different addresses for different keys satisfying given Hamming distance requirements comprising:

means for providing said keys, said keys being representable as code words of an algebraic code;

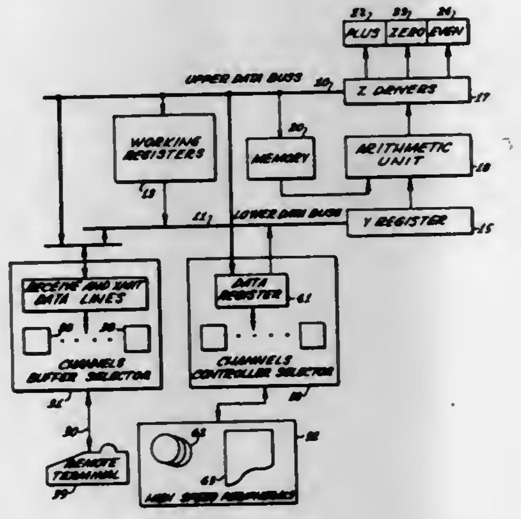
means for generating an address in accordance with a generator of said algebraic code by operating on one of said keys represented as a code word of said algebraic code to map said keys satisfying said Hamming distance requirements onto different addresses;

means for applying said key to said generating means;

a memory; and

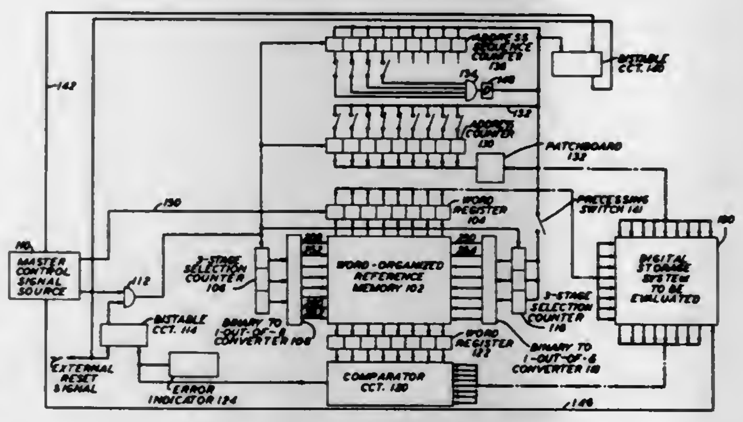
means for applying said generated address to said memory.

3,311,889
DATA COMMUNICATION PROCESSOR
Donald J. Birmingham, William C. Hill, Robert A. MacKenzie, Jr., and Buddie J. Pine, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed Aug. 13, 1963, Ser. No. 301,754
14 Claims. (Cl. 340—172.5)



1. A data communication processor comprising: memory means for receiving and storing instructions and data; means connected to said memory for supplying a program for storage therein; memory addressing means connected to said memory for addressing and retrieving information, including said program, stored therein; counting means responsive to said stored program for assuming a predetermined count and decrementing said count at a given rate; means responsive to a given count of said counting means lower than said predetermined count for interrupting the operation of said stored program by generating a program interrupt signal; and means responsive to the lowest possible count of said counting means for providing an alarm signal.

3,311,890
APPARATUS FOR TESTING A STORAGE SYSTEM
Sigurd G. Waaben, Princeton, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 20, 1963, Ser. No. 303,300
17 Claims. (Cl. 340—172.5)


PATCHBOARD
MASTER CONTROL SIGNAL SOURCE
WORD-ORGANIZED REFERENCE MEMORY 102
WORD REGISTER
COMPARATOR
DIGITAL STORAGE SYSTEM TO BE EVALUATED
EXTERNAL RESET SIGNAL
ERROR INDICATOR

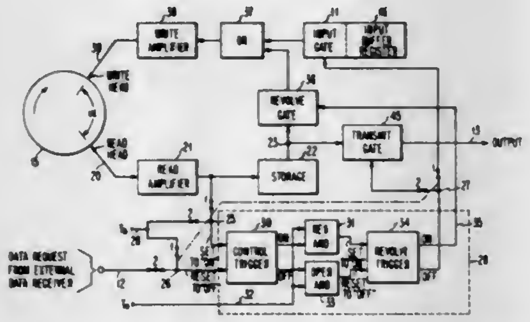
1. In combination, word-organized memory means for storing N reference words, where N is any positive integer greater than one, first and second word registers connected to said memory means, first stepping switch means

connected to said memory means and responsive to each occurrence of a control signal for routing a reference word to said first register, and second stepping switch means connected to said memory means and responsive to each occurrence of said control signal for routing a reference word to said second register.

3,311,891
RECIRCULATING MEMORY DEVICE WITH GATED INPUTS

Richard L. Brady and Bernard R. Gandler, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

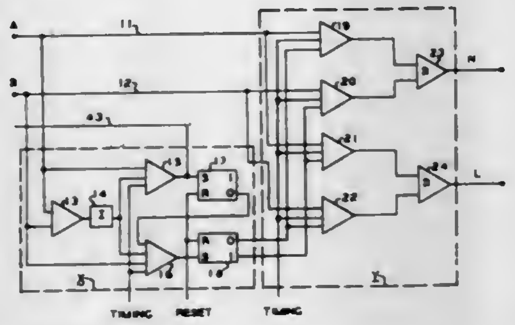
Filed Aug. 21, 1963, Ser. No. 303,963
11 Claims. (Cl. 340—172.5)



1. A data storage system for storing data received from an external data source, comprising:
- input means for receiving said data from said external data source;
- storage means capable of storing data;
- an input to said storage means; and
- means responsive to the presence of data in a specified time-sector of said storage means during a specified time period to gate, at the conclusion of said specified time period, said data in said specified time-sector of said storage means to said input of said storage means, said responsive means being responsive to an absence of data in said specified time-sector of said storage means during said specified time period to gate, at the conclusion of said specified time period, data appearing at said input means to said input of said storage means.

3,311,892
SORTING SYSTEM WITH TWO-LINE SORTING SWITCH

Daniel G. O'Connor, West Los Angeles, Calif., and Raymond J. Nelson, Cleveland Heights, Ohio, assignors to General Precision, Inc., a corporation of Delaware
Continuation of application Ser. No. 641,502, Feb. 21, 1957. This application Sept. 30, 1963, Ser. No. 313,147
14 Claims. (Cl. 340—172.5)

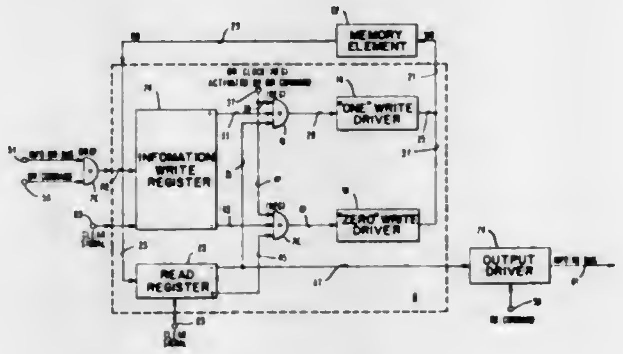


1. A sorting means for sorting randomly arranged records wherein a certain portion of such record may be characterized as a control field, comprising repetitive switching network means with first and second input terminals and first and second output terminals for simultaneously receiving two records, arranged in descending order of significance, said switching network means comprising decision making means coupled to receive both control fields of the records and being operable to determine which of the records appearing at said first and second input terminals has precedence over the other, gating means coupled between the input terminals and the output terminals for arbitrarily directing the records to the ouput terminals prior to the determination of precedence by the switching network, said gating means responsively coupled to said decision making means for directing the record which takes precedence to said first output terminal and the other record to said second output terminal subsequent to the determination of precedence.

3,311,893
MEMORY ORGANIZATION WHEREIN ONLY NEW DATA BITS WHICH ARE DIFFERENT FROM THE OLD ARE RECORDED

William F. Landell, Ardsley, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 29, 1963, Ser. No. 305,461
15 Claims. (Cl. 340—172.5)

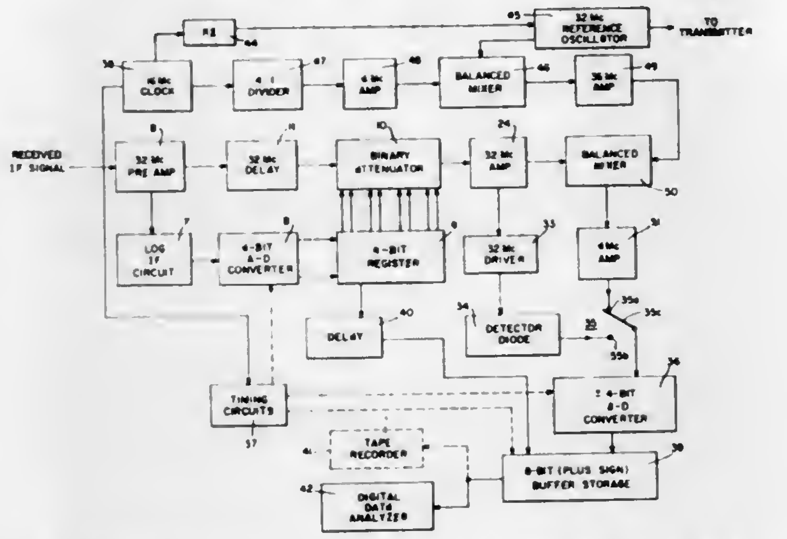


1. A memory organization comprising:
- (a) a plated magnetizable wire having a magnetic coating, said coating having the property of uniaxial anisotropy;
- (b) a conductive strap positioned substantially orthogonal to said wire, the intersection of said wire and said strap comprising a memory bit position;
- (c) means to energize said conductive strap during a memory read-out or record cycle;
- (d) means for providing current in a first, or in the alternative, in a second direction to said wire during a record cycle coincidentally with the energizing of said strap;
- (e) means to sense previously recorded binary information at said bit position when said strap is energized for a read cycle;
- (f) means to provide new binary information for recording at said bit position;
- (g) means for making a comparison between said new binary information to be recorded and said previously recorded binary information which has been sensed;
- (h) said comparison means applying a first signal to block said means for providing current in a first, or in the alternative, in a second direction when said binary information and said previously recorded binary information are the same;
- (i) said comparison means applying a second signal to said means for providing current in a first, or in the alternative, in a second direction when said new binary information and said previously recorded binary information are different.

3,311,894
SYSTEM FOR CONTROLLING AMPLITUDE OF AN ANALOG SIGNAL BY USE OF A DIGITAL SIGNAL DERIVED FROM SAID ANALOG SIGNAL

Walter H. Chudleigh, Jr., Norristown, Pa., assignor, by mesne assignments, to T.R.G. Inc., Rosemont, Pa.

Filed Dec. 10, 1963, Ser. No. 329,588
7 Claims. (Cl. 340—172.5)



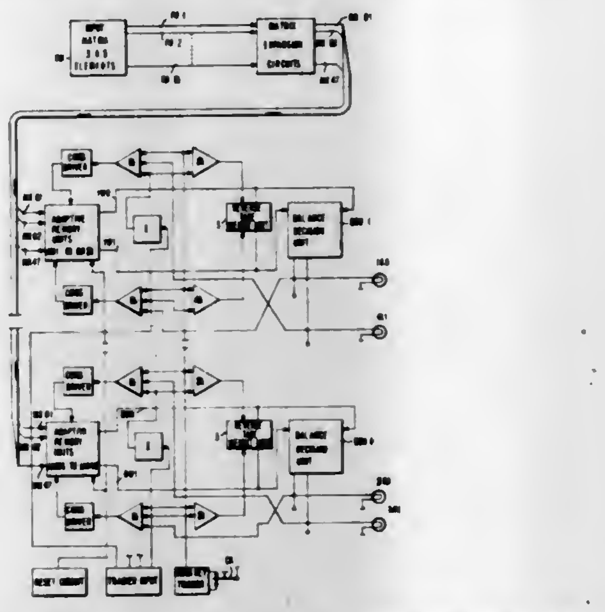
4. A system for processing wide amplitude range analog signals having a low duty cycle comprising:
- (a) means for amplifying said analog signals as an inverse function of the amplitude thereof, said means also demodulating said analog signals,
- (b) a first analog-to-digital converter responsive to said demodulated signals for deriving a first binary digital signal therefrom which represents the amplitude of said amplified analog signals,
- (c) a first storage means to which said first digital signal is applied,
- (d) attenuation means to which said analog signal and said stored first digital signal are applied, said attenuation means being constructed to limit said applied analog signals to a predetermined amplitude range as a function of the magnitude of said first digital signal,
- (e) means for demodulating said limited analog signals,
- (f) a second analog-to-digital converter for converting said demodulated signals to a second binary digital signal,
- (g) a second storage means to which said first and second digital signals are applied simultaneously, said first and second digital signals representing a digital number whose most significant figures are contained in said second digital signal and whose binary point is determined by said first digital signal, and
- (h) signal utilization means coupled to said second storage means.

3,311,895
ADAPTIVE LOGIC SYSTEM WITH ARTIFICIAL WEIGHTING OF OUTPUT SIGNALS FOR ENHANCED LEARNING

Genung L. Clapper, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 30, 1963, Ser. No. 334,240
8 Claims. (Cl. 340—172.5)

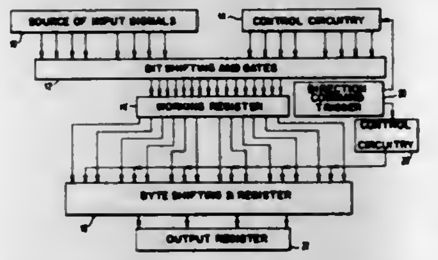
1. An adaptive logic system comprising, in combination,
- a plurality of adaptive memory units, each unit having a plurality of stable conditions to which the memory units may be set in response to input and conditioning signals supplied thereto,
- a source of input signals connected to said memory units,
- a source of conditioning signals connected to said memory units,
- a common output circuit connected to said memory units and having output signals thereon of different weights in accordance with the conditions of the memory units, and
- means for varying the weight of said output signals independently of said memory units.



3,311,896
DATA SHIFTING APPARATUS

James W. Delmege, Jr., Saugerties, and Ralph W. Pulver, Jr., Red Hook, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 3, 1964, Ser. No. 357,095
14 Claims. (Cl. 340—172.5)



1. Electronic data shifting apparatus for bidirectionally shifting data in bit and byte-size increments comprising in combination:
- a source of input data signals;
- means for providing control signals representing the amount and direction of data shift;
- means jointly responsive to said control signals and to said input data signals for shifting said input data signals in bit-size increments;
- means for accepting the shifted input data signals and for providing first output signals;
- means jointly responsive to said control signals and to said first output signals for shifting said first output signals in byte-size increments and for providing second output signals, said second output signals comprising a shifted representation of said input data signals.

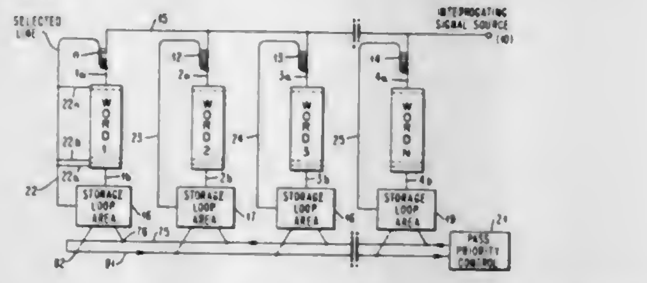
3,311,897
NEURISTOR ASSOCIATIVE MEMORY

Frederick L. Post, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 20, 1962, Ser. No. 246,203
8 Claims. (Cl. 340—173)

7. A memory system, comprising

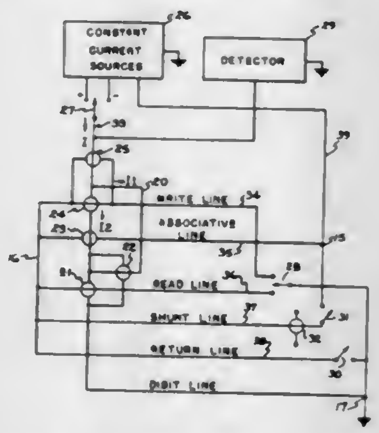
a plurality of registers each of which stores a plurality of bits of information organized in a word,
each of said registers including a plurality of storage circuits for storing individual bits of information,
each of said circuits in each register having an input and an output and all connected except the first and last so that the input of one circuit is connected to the output of the preceding circuit, the input of the first circuit of each register being connected to accept an interrogating signal,
means connected to said circuits for establishing a search specification of a binary value to store in or retrieve from the storage circuits, so that an indication is provided at the output of the last storage circuit of each register in response to the interrogating signal if the binary content of each bit position corresponds to the established specification, and
means responsive to the indication for accomplishing the storage and retrieval of the information from at least some of the storage circuits in each register, said last named means including storage means coupled to each register for receiving the indication and storing it, individual feedback means coupled to the indication receiving means and to the input of the first storage circuit in each register and to each of the storage circuits in each register and circuitry for controlling the storage and retrieval of information from the registers by propagating the stored indication through the individual feedback means according to a particular order.



3,311,898
CONTENT ADDRESSED MEMORY SYSTEM

John Wood Bremer, Sunnyvale, Dwight W. Doss, Santa Clara, and Bruce T. McKeever, Cupertino, Calif., assignors to General Electric Company, a corporation of New York

Filed Apr. 1, 1963, Ser. No. 269,371
18 Claims. (Cl. 340—173.1)

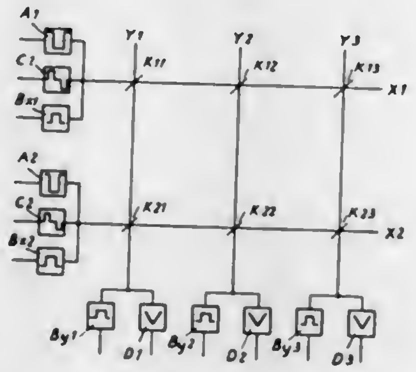


4. In a content addressed memory system, the combination of: a storage cell having a plurality of information representing states; a write line; means for selectively applying a current to said write line, said storage cell normally providing a plurality of current paths for the current applied to said write line whereby the portion of the current in a given one of said plurality of paths is insufficient to affect the information representing state of said storage cell; a digit line; means for selectively applying a current to said digit line; and means responsive to the current applied to said digit line for directing all of the current applied to said write line through said given one of said plurality of paths.

3,311,899
METHOD OF WRITING-IN AND NON-ERASING READING OF BINARY INFORMATION IN MAGNETIC RING CORES

Jöns Kurt Alvar Olsson, Tullinge, and Sven Arne Olsson, Ekholmen, Alvsjo, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Sept. 20, 1960, Ser. No. 57,175
Claims priority, application Sweden, Oct. 19, 1959, 9,685/59



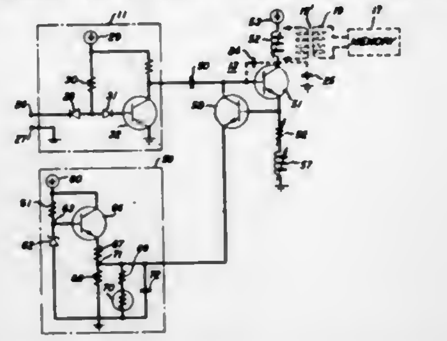
1. A method of writing-in and non-destructive reading binary information, said method comprising the steps of impressing upon each of several ring cores having high remanence and saturation characteristics a magnetizing pulse of a duration and amplitude effecting magnetization of said cores to a remanence value with high saturation characteristic, said pulse magnetizing the cores for zero setting and effecting writing-in of binary information of one kind, then impressing upon selected ones of said ring cores a magnetic pulse having a polarity opposite from that of the zero-setting pulse and an amplitude substantially lower than the amplitude of said zero-setting pulse, said second pulse magnetizing the selected cores to a remanence value lower than the remanence value caused by the first pulse and effecting writing-in of binary information of the other kind, and finally impressing upon said ring cores two magnetizing pulses in succession, the first one of said two pulses having the same polarity as the zero-setting pulse and an amplitude lower than the amplitudes of the zero-setting pulse and the second magnetizing pulse, and the second of said two pulses having a polarity opposite to that of the zero-setting pulse, said two successive pulses constituting read-out pulses.

3,311,900
CURRENT PULSE DRIVER WITH REGULATED RISE TIME AND AMPLITUDE

Wilmer B. Gaunt, Jr., Lincroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 14, 1963, Ser. No. 251,433
4 Claims. (Cl. 340—174)

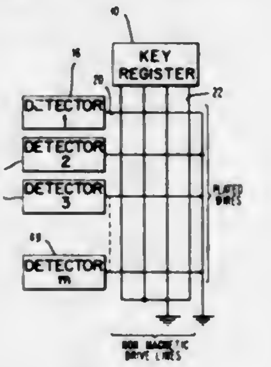
2. In a current pulse driver,
a source of control pulses,
a transistor having base, emitter, and collector electrodes, said base electrode being connected to the output of said control pulse source,
a variable impedance load connected to said collector electrode,
inductive means connected to said emitter electrode for controlling the base-emitter current rate of increase in response to said pulses, and
feedback means connected to said emitter electrode for shunting current away from said base electrode to hold the potential with respect to ground at said emitter electrode substantially constant.



3,311,901
PLATED WIRE CONTENT ADDRESSED MEMORY

George A. Fedde, Norristown, and Lester M. Spandorfer, Cheltenham, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 30, 1963, Ser. No. 334,114
8 Claims. (Cl. 340—174)



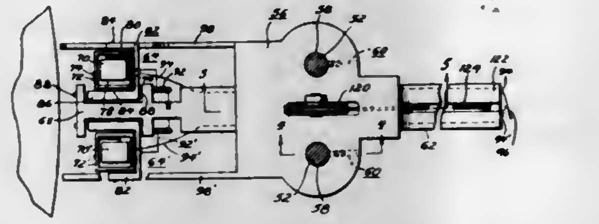
1. A search memory comprising:
(a) a reference magnetic memory cell producing a first signal for storing a magnetic flux in one direction;
(b) a plurality of magnetic memory cells each producing a second signal for each bit of binary data to be stored, at least one of said plurality of cells storing a magnetic flux in an opposite direction to said reference cell, the cell storing the opposite magnetic flux being indicative of the binary data being stored, said first and second signals being substantially equal in magnitude;
(c) a sense line linking all of said memory cells,
(d) means responsive to the binary information searched for to energize a particular one of said plurality of memory cells which store said binary data, and for simultaneously energizing said reference cell whereby the presence of a voltage or a no voltage in said sense line indicates a mis-match or a match condition, respectively, between the stored and the searched for information.

3,311,902
AIR BEARING MAGNETIC TRANSDUCER

Norman J. Appleton, Rockaway, N.J., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Original application Feb. 2, 1955, Ser. No. 485,746. Divided and this application Dec. 21, 1960, Ser. No. 77,434
7 Claims. (Cl. 340—174.1)

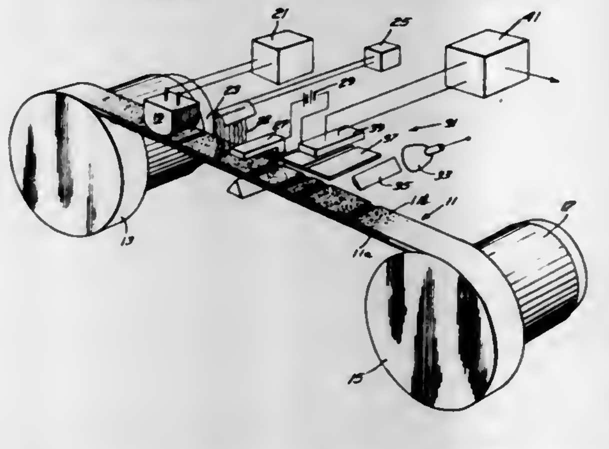
3. In a recording apparatus; a slider block head member with a leading edge and a trailing edge adapted for use with a body having a moving record surface carrying with it a layer of fluid; member positioning means comprising first, second and third frame elements, first pivot bearing means coupling said first frame element to said member on a pivot axis parallel with its leading and trailing edges for adjusting the inclination of said member with the record surface of said body in response to the force of said fluid on said member; said axis being positioned closer to the trailing edge than to the leading edge of said member; second pivot bearing means coupling said second frame element to the first frame element along an axis perpendicular to the pivotal axis of said member for adjusting the lateral inclination of said member; a third pivot bearing means coupling said third frame element to said second frame element along an axis perpendicular to the lateral pivot axis of said first frame element for adjusting the elevation of said member with the record surface of said body.



3,311,903
PROCESS FOR FORMATION OF DEFORMATION IMAGES IN A THERMOPLASTIC MAGNETIZABLE RECORD MEDIUM

Roger K. Lee, Jr., Watertown, Mass., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Mar. 7, 1962, Ser. No. 178,021
3 Claims. (Cl. 340—174.1)

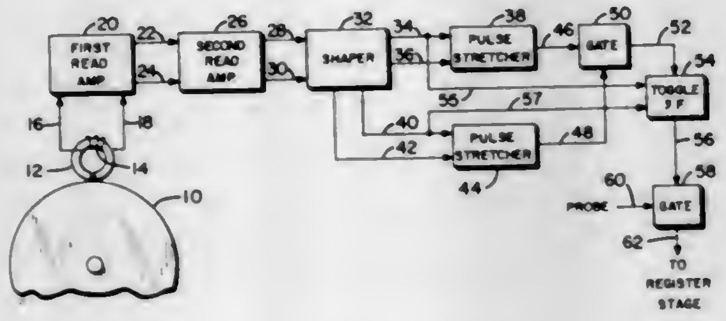


2. The method of processing data utilizing a magnetic storage medium having magnetizable elements dispersed in a thermoplastic base originally of substantially constant thickness, comprising the steps of:
(a) moving successive portions of the magnetic storage medium through a magnetic field which varies in accordance with the data being processed to magnetize the individual magnetizable elements in such successive portions;
(b) heating the successive portions of the magnetic storage medium to soften the thermoplastic base thereof to allow the individual magnetizable elements to align themselves across the thickness of the thermoplastic base in accordance with the magnetization of each such element;
(c) applying a steady magnetic field to the heated successive portions of the magnetic storage medium to vary the degree of alignment of the individual magnetizable elements therein in accordance with the direction of the field of the individual magnetizable elements with respect to the steady magnetic field and, consequently, to vary the thickness of the successive portions of the magnetic storage medium accordingly;

(d) fixing the shape of the magnetic storage medium by cooling the successive portions thereof; and,
(e) retrieving the information recorded in magnetic storage medium by observing the changes in shape of the successive portions thereof.

3,311,904
CONVERSION OF PULSE PHASE SIGNALS TO NRZ SIGNALS

Norman B. Talsoe, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 22, 1963, Ser. No. 303,791
7 Claims. (Cl. 340—174.1)



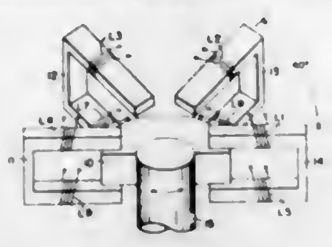
1. In a magnetic recording system for a digital data processor wherein binary digits are recorded on a movable magnetic medium in discrete cell areas by at least partially magnetizing said medium in a first direction to represent a first digital value and in a second direction to represent a second digital value, playback circuit for converting the signals read back from said medium from a pulse phase representation to a non-return to zero representation, comprising:

- transducing means positioned with respect to said medium to detect magnetic flux changes as said cell areas pass by for producing voltage signals, the phase of which in any cell period being indicative of the digital value recorded in the corresponding cell area;
- pulse shaping means having first and second output terminals, adapted to receive said voltage signals from said transducing means for transforming said voltage signals to rectangular waves, the rectangular waves on said first output terminal being substantially 180° out of phase with respect to the rectangular waves on said second output terminal;
- first and second pulse stretching circuits connected respectively to said first and second output terminals and adapted to be triggered by negative excursions of said rectangular waves for producing pulses, said pulses being of a duration greater than one-half but less than one cell period;
- a coincidence circuit connected to receive the output from said first and second pulse stretching circuits; and
- a bistable circuit adapted to be switched from one stable state to the opposite stable state upon the occurrence of an output from said coincidence circuit.

3,311,905
VARIABLE RELUCTANCE PICKUP DEVICE

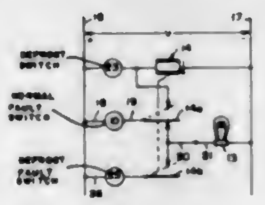
James V. Johnston, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 17, 1965, Ser. No. 433,525
4 Claims. (Cl. 340—195)

1. A variable reluctance magnetic pickup including a shaft rotatable about an axis, a semicircular slab shaped armature carried by said shaft and concentric with said axis, a plurality of U-shaped magnetic cores disposed radially about said axis with the armature between the legs of each of said cores, a magnetic winding on each of the legs of the cores, said windings being electrically connected in a bridge circuit, with opposite windings of each core being on opposite sides of said bridge.



3,311,906
REFRIGERATOR MONITORING SYSTEM

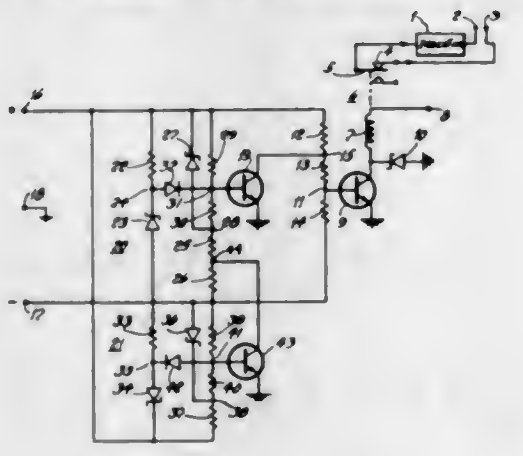
William E. Coffer, Robert L. Miller, and John Shewan, Valparaiso, Ind., assignors to Ref-Con Corporation, Valparaiso, Ind., a corporation of Indiana
Filed Aug. 17, 1964, Ser. No. 389,998
4 Claims. (Cl. 340—227)



1. In a monitoring system for a refrigerator equipped with defrosting means, a first circuit including a warning device for reporting a refrigerator interior temperature in excess of a predetermined value, a second circuit including a relay and means for operating said relay to render said warning device inoperative during defrosting, and a third circuit including means responsive to faulty operation of said refrigerator during defrosting for indicating said faulty operation, said second circuit relay including means for rendering said third circuit operative only during defrosting thereby precluding simultaneous operation of said first and third circuits in actuating said warning device.

3,311,907
SOLID STATE OVER-VOLTAGE AND UNDER-VOLTAGE DETECTOR

Hugh E. Teal, Niagara Falls, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 8, 1964, Ser. No. 373,593
3 Claims. (Cl. 340—248)

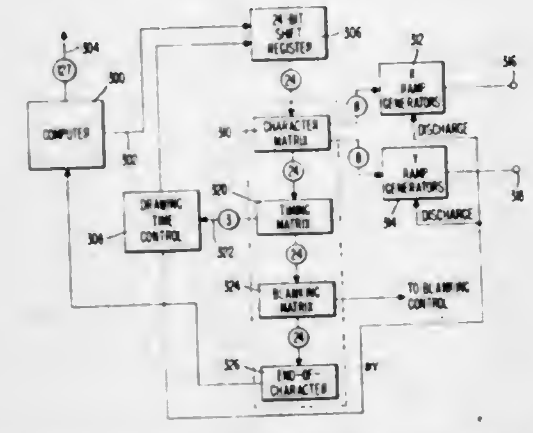


1. A circuit for monitoring a positive supply voltage for overvoltage and a negative supply voltage for undervoltage where the two supply voltages have a common reference potential comprising

(a) a terminal for the common reference potential and a terminal for each of the supply voltages,
(b) undervoltage responsive means for the supply voltage of negative polarity including a first resistance connected at one end to the positive terminal and a first zener diode connected between the other end of the resistance and the negative terminal for holding the injunction between the first resistance and the first zener diode at a constant potential lower than the supply voltage on the negative terminal,
(c) overvoltage responsive means for the supply voltage of positive polarity including a second resistance connected at one end to the negative terminal and a second zener diode connected between the other end of the second resistance and the positive terminal for holding the junction between the second resistance and second zener diode at a constant potential below the supply voltage on the positive terminal,
(d) a voltage divider connected across the second zener diode and having an output tap for providing a potential that is higher than the potential at the junction of the second zener diode and resistance by a small fraction of the potential across the second zener diode, and
(e) a diode between the output tap and the junction between the first resistance and the first zener diode for permitting current flow therethrough when there is predetermined undervoltage on the negative terminal,
(f) whereby predetermined overvoltage on the positive terminal and predetermined undervoltage on the negative terminal causes sufficient voltage rise at the output tap for the use in operating an indicator.

3,311,908
CATHODE RAY TUBE DISPLAY DEVICE EMPLOYING CONSTANT VELOCITY BEAM DEFLECTION

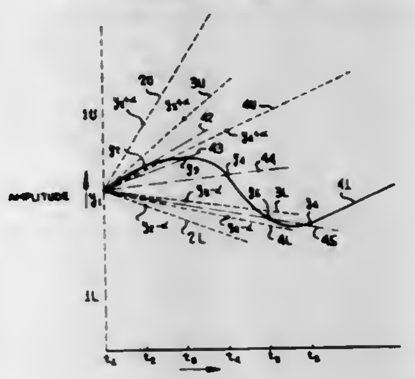
Charles P. Halsted, Oreland, Stanley J. Savinese, Ridley Park, and Gilbert Yanishevsky, Philadelphia, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 2, 1964, Ser. No. 400,981
11 Claims. (Cl. 340—324)



4. A character generator apparatus comprising a character storage matrix including a plurality of segment portions for storing polar angle and length data for a plurality of straight line segments which together constitute a desired character, a cathode ray tube, distributor means for sequentially selecting particular individual segment portions of said matrix for reading out said data to said cathode ray tube and for controlling the tracing of successive segments of said desired character, generator means connected to said distributor means and responsive to a predetermined function signal to provide a first frequency signal for periodically causing said distributor means to advance to a subsequent segment portion of said matrix, an analog function generator with selective control means, an adding means coupled between said analog function generator and said generator means for enabling said analog function generator to selectively control the frequency of said generator means to thereby cause the length of generated line segments and thus the size of a desired character to vary according to said function.

3,311,909
SIGNAL REDUNDANCY UTILIZING SLOPE LIMITING LINES

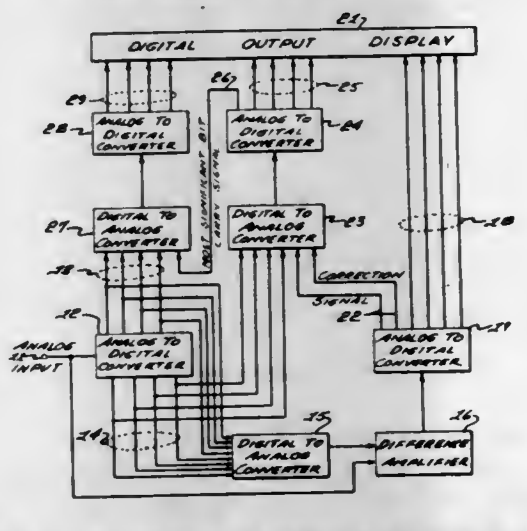
Edward B. Glover, Melbourne Beach, Fla., assignor to Radiation Incorporated, Melbourne, Fla., a corporation of Florida
Filed Aug. 5, 1964, Ser. No. 387,562
5 Claims. (Cl. 340—345)



1. In a telemetering system for transmitting data indicative of a monitored signal to a remote location comprising means responsive to said signal for establishing a function having a straight line law of variation, said function including a time, amplitude point on said signal and the values between a pair of successive upper and lower limiting lines including said point, and means responsive to said signal and said function for reading out another time, amplitude point on said signal only when the value of said function differs from the value of the signal by at least a predetermined amount.

3,311,910
ELECTRONIC QUANTIZER

James H. Doyle, Garden Grove, Calif.
(2003 Ivy Hill Lane, Orange, Calif. 92667)
Continuation of application Ser. No. 172,377, Feb. 5, 1962. This application Dec. 27, 1963, Ser. No. 333,972
38 Claims. (Cl. 340—347)


DIGITAL OUTPUT DISPLAY
ANALOG TO DIGITAL CONVERTER
ANALOG TO DIGITAL CONVERTER
DIGITAL TO ANALOG CONVERTER
DIGITAL TO ANALOG CONVERTER
ANALOG TO DIGITAL CONVERTER
ANALOG TO DIGITAL CONVERTER
DIGITAL TO ANALOG CONVERTER
DIFFERENCE AMPLIFIER
ANALOG INPUT
CORRECTION SIGNAL

1. In a signal converting system for converting an initial analog signal to a binary coded digital signal, the combination of:

- means including analog-to-digital converter circuitry responsive to said initial analog signal for producing a highest significant group of multibit digital signals;
- means, including digital-to-analog converter circuitry, responsive to said highest significant group of digital signals for producing analog signals;

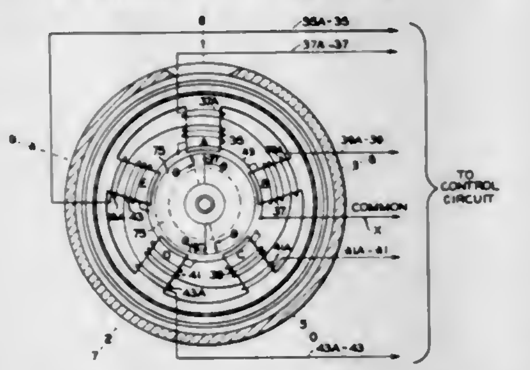
means for subtracting each of said analog signals from said initial analog signal to produce difference analog signals;

means, including analog-to-digital circuitry responsive to said difference analog signals for producing additional lower significant groups of multibit digital signals; and

means, including digital code translator circuitry, for combining said additional groups of multibit digital signals with said highest signal group of multibit digital signals to produce a digital signal representing said initial analog signal.

3,311,911
ELECTROMAGNETIC INDICATOR DEVICE

Leonard C. Pursiano, Ridgewood, and Arnold H. Cohen, Park Ridge, N.J., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Aug. 27, 1964, Ser. No. 392,430
6 Claims. (Cl. 340—378)

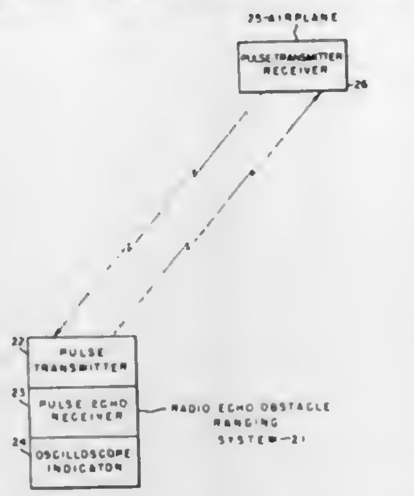


1. In an electromagnetic indicator device for displaying a plurality of discrete indicia in response to electrical energization, said indicator device being of a type including a permanent magnet rotor supported for deflection about an axis thereof to a plurality of discrete angularly spaced positions, at least one main electromagnetic coil, and the main coil being mounted at one side of said rotor axis with an axis of the coil extending radially in a direction substantially perpendicular to the axis of said rotor; the improvement comprising a secondary electromagnetic coil serially connected to the main coil and angularly spaced from the main coil by less than ninety degrees so that upon selective energization of said main coil with electrical signals of either of two opposed polarities angular movement of said permanent magnet rotor about the axis thereof may be effected from a first position to a second position, the main and secondary coils being so arranged as to produce through an interaction of magnetic fields resulting upon the energization thereof a turning moment to prevent a condition of unstable equilibrium in said rotor when it is desired to angularly position the rotor one hundred and eighty degrees, and the direction of angular movement of said permanent magnet rotor about the axis thereof being in a sense predetermined by the angular relation of the secondary coil to the main coil of less than ninety degrees.

3,311,912
RADAR RECOGNITION SYSTEM

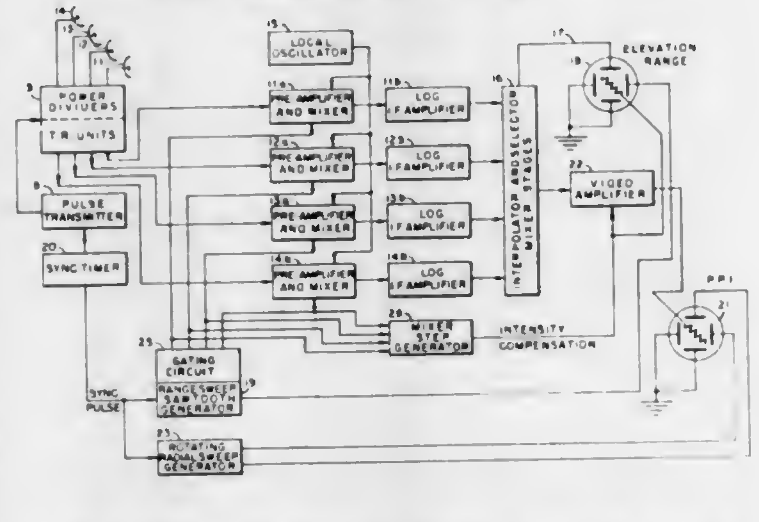
Robert M. Page, Washington, D.C., assignor, by direct and mesne assignments, of one-eighth to La Verne R. Philpott, three-eighths to Leo C. Young, one-eighth to John R. Page and two-eighths to Grace Gowens Leaf, trustee
Filed Dec. 11, 1942, Ser. No. 468,648
7 Claims. (Cl. 343—6)

7. A pulse echo recognition system for the air or surface craft including a station consisting of a pulse transmitter, and a pulse echo receiver, an indicator connected to said receiver for indicating the distances of pulse reflecting craft, means located on said craft for radiating from said craft pulse recognition signals in response to challenging signals from said station, means for receiving said pulse recognition signals, and means for applying said recognition signals to said indicator so that each of said distance indicating signals may be compared to each of said indicated recognition signals.



3,311,913
HEIGHT FINDING RADAR SYSTEM

Arthur A. Varela, Alexandria, Va. (Naval Research Laboratory, Anacostia Station, Washington, D.C. 20025)
Filed Oct. 21, 1952, Ser. No. 316,105
9 Claims. (Cl. 343—16)



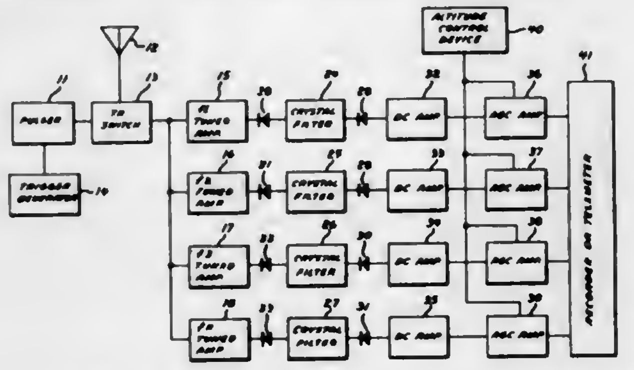
1. In a radio echo detection system, receiving apparatus which includes a plurality of directional receiving antennae having respective response patterns progressively displaced in elevation angle, respective detector and amplifying channels for said antennae, channel blocking means operative after a predetermined period following a pulse from the system transmitter to block sequentially said channels in order from the channel associated with most elevated pattern.

3,311,914
METHOD AND APPARATUS FOR INVESTIGATING STRUCTURAL GEOMETRY OF A REMOTE REFLECTING BODY

Anthony Rene Barringer, Willowdale, Ontario, Canada, assignor to Barringer Research Limited, Rexdale, Ontario, Canada, a corporation
Filed Mar. 12, 1965, Ser. No. 439,288
13 Claims. (Cl. 343—17.2)

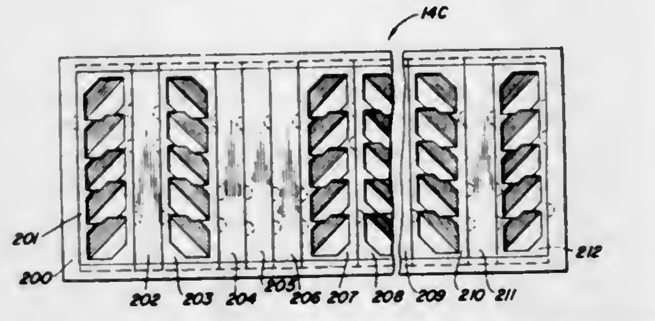
6. Apparatus for investigating structural geometry of a remote reflecting body, comprising:

(a) means for generating frequency modulated pulses of broad frequency dispersion at a uniform rate of repetition,
 (i) each of said pulses being of identical frequency composition and including frequencies that are respectively high enough and low enough to produce interference between waves reflecting from boundaries of said reflecting body.
(b) means for transmitting said pulses towards said reflecting body from a source remote from said reflecting body,
 (i) the duration of each of said pulses being less than the travel time of said pulses from said source to said reflecting body and back to said source,
(c) means for receiving said pulses after they have been reflected from said reflecting body, said pulses being received at a position constantly kept in close proximity with said source, each received pulse having a unique signature that is characteristic of said reflecting body,
 (i) the repetition rate of said pulses being such that any given reflected pulse is received before the next succeeding pulse is generated,
(d) means for amplifying the received pulses,
(e) means for separating the received pulses into a plurality of different components,
(f) means for measuring the amplitudes of each of said separated components,
(g) means for comparing the relative amplitudes of said separated components to determine the approximate frequencies at which interference has occurred.



3,311,915
MICROWAVE IDENTIFICATION SYSTEMS

Hideo Mori, Woodland Hills, Calif., assignor to Abex Corporation, a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,795
5 Claims. (Cl. 343—18)



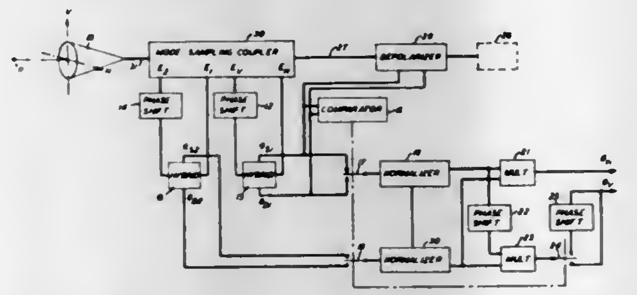
1. A coded identification member for use in an automatic object identifying system in which individual objects are identified at a scanning station including a source of radiant energy signals, radiating means for radiating said signals along a given reference path and polarized in a given initial direction, and receiving means for receiving such reflected radiant energy signals but limited to reception of signals polarized in a second and substantially different direction, said identification member comprising:

an elongated base adapted to be mounted on one of the objects to be identified; and

a plurality of code elements disposed at predetermined code positions along said base, said code elements comprising at least two distinct types as follows:
 Type A—code elements having a plurality of aligned similar corner reflectors having their apexial axes at an angle of 45° counter-clockwise relative to said initial direction of polarization and with said apexial axes on a convex surface approximately tangential to a plane normal to said reference path, and
 Type B—code elements substantially identical to the elements of type A except that the apexial axes of their corner reflectors are at an angle of 45° clockwise relative to said initial direction of polarization.

3,311,916
NONDEGENERATE MULTIMODE TRACKING SYSTEM

George N. Packard, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 20, 1964, Ser. No. 405,068
16 Claims. (Cl. 343—100)



1. A system for determining the position of the source of a signal of arbitrary polarization comprising, in combination;

a directional antenna system including a single electromagnetic wave element receptively excitable in at least two orthogonally polarized dominant modes of propagation and at least two secondary modes of propagation,

means for developing mode signals representative of the energy received in said wave element in each one of said modes of propagation,

means for shifting the phase, respectively, of one of said dominant mode signals and one of said secondary mode signals $\pi/2$ radians,

means for algebraically combining, respectively, said phase shifted signals with their dominant and secondary mode counterparts,

means for comparing the phase and amplitude of said combined secondary mode signal with the phase and amplitude of said combined dominant mode signal,

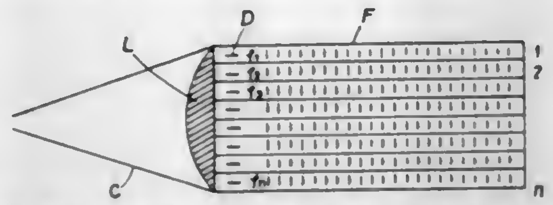
and means for utilizing signals developed by said comparison as an indication of the position of said source with respect to said antenna system.

3,311,917
STEPPED BEAM SLOT ANTENNA ARRAY

Leo Thourel, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed July 31, 1964, Ser. No. 386,553
Claims priority, application France, Aug. 6, 1963, 993,822, Patent 1,373,111
2 Claims. (Cl. 343—754)

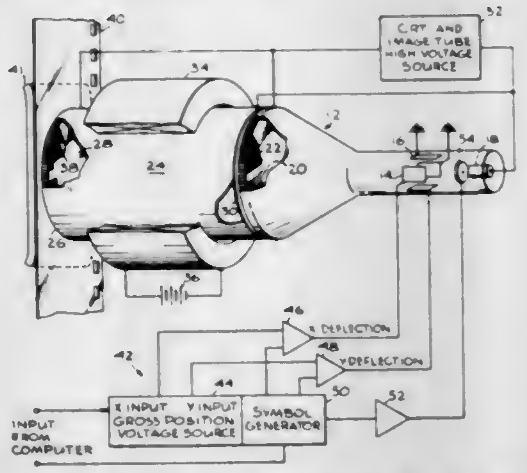
1. An antenna for radiating ultra-short electromagnetic waves comprising: a plurality of parallel and coplanar wave guides having radiating slots and respective inputs;

a lens for electromagnetic waves facing said inputs, said lens having a focal plane; in said plane a plurality of horns for feeding energy to said inputs with a plurality of respective identical phases; and controllable phase shifting means in said guides at said inputs.



3,311,918
METHOD FOR EXPOSING PHOTOSENSITIVE MATERIAL

Robert A. Koster, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Original application Nov. 5, 1962, Ser. No. 235,181, now Patent No. 3,184,753, dated May 18, 1965. Divided and this application Jan. 7, 1965, Ser. No. 424,144
6 Claims. (Cl. 346—1)

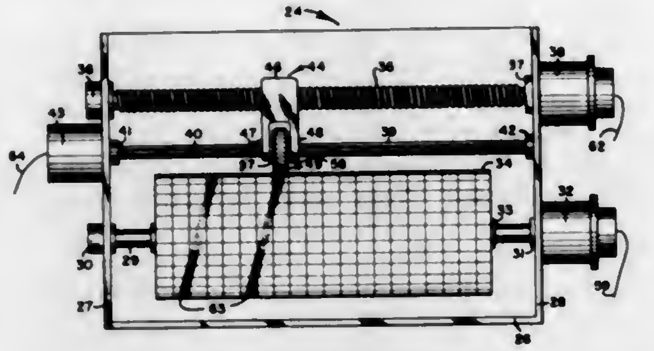

CRT AND IMAGE TUBE HIGH VOLTAGE SOURCE
X DEFLECTION
Y DEFLECTION
X INPUT Y INPUT GROSS POSITION VOLTAGE SOURCE
SYMBOL GENERATOR
INPUT FROM COMPUTER

1. A method of exposing a relatively slow speed photosensitive material by means of light emitted from a short persistence phosphor, which method comprises;
exciting a relatively long persistence phosphor in accordance with information to be recorded on said material to provide a first light image substantially continuously,
converting said first light image into a similar electron image,
exciting said short persistence phosphor from said electron image to provide a second light image substantially continuously, and
exposing said film to said second light image.

3,311,919
SYSTEM AND APPARATUS FOR OBTAINING AND CORRELATING SURFACE DATA MEASURMENTS

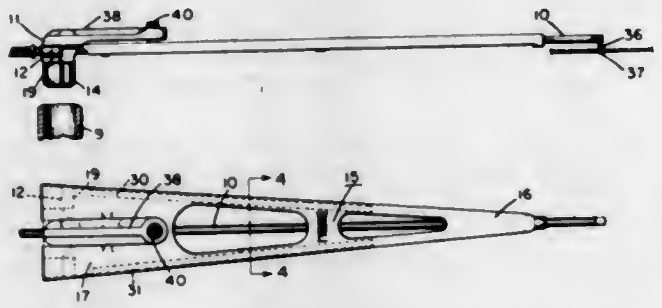
Jimmy C. St. Clair, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Feb. 11, 1965, Ser. No. 431,792
5 Claims. (Cl. 346—33)

1. A system and apparatus for obtaining surface data measurements comprising means for rotating an object to be measured, means for obtaining such measurements, means for moving said last said means along the longitudinal axis of said object, a rotary drum, a trace shading disc shaped stylus for implementing a color trace on a graph chart positioned on said rotary drum for recording the measurements obtained by the means for measuring said object, said stylus comprising a reel having a pair of circular side panels, a plurality of dividers extending between said side panels in spaced relation thereto and a plurality of ink pads positioned between said dividers and having contact with said chart.



3,311,920
DIRECT WRITING INSTRUMENT

Allan R. Thompson, Westlake, Ohio, assignor to Clevite Corporation, a corporation of Ohio
Filed May 6, 1965, Ser. No. 453,796
9 Claims. (Cl. 346—140)



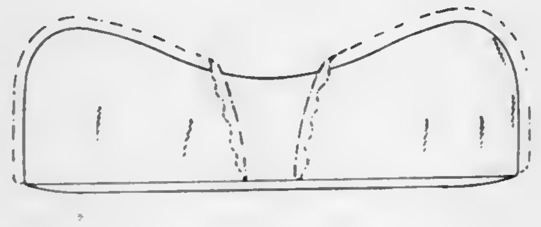
1. A direct writing instrument of the type adapted to be swung from side to side while writing on a moving record chart, comprising in combination; a supporting member extending axially lengthwise of said writing instrument terminating at its front end in a writing tip and at its rear end being adapted to be connected to an external source of writing energy, a hub member connected to said supporting member adjacent its rear end and having a web securing portion extending transverse to said supporting member terminating in outer ends and having a shaft portion adapted to be connected to driving means for rotating or swinging said instrument, a sheet-like web member narrow at said writing tip end and broader at said rear end secured to said supporting member adjacent said writing tip end thereof and secured to said web securing portion of said hub member at its rear end, and stiffening members connected to the edges of the said web member and tapering from adjacent the said outer ends of said hub member inwardly toward said writing tip for stiffening said web member.

DESIGNS

MARCH 28, 1967

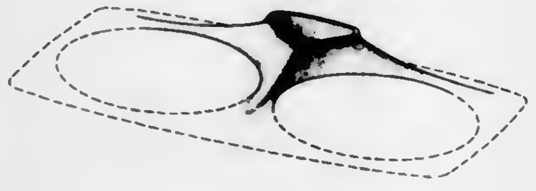
207,248
PILLOW

Wanda Chandler Morse and Wayne T. Morse, both of 515 S. 13th, Apt. 13B, Las Vegas, Nev. 89104
Filed July 27, 1965, Ser. No. 86,312
Term of patent 14 years
(Cl. D3—9)



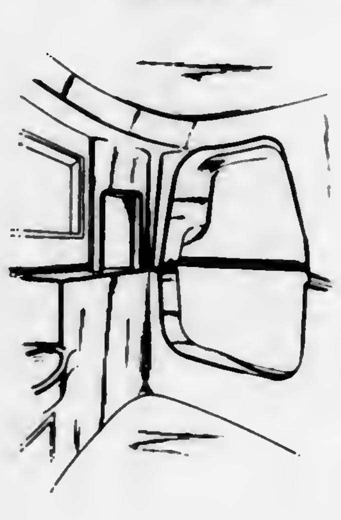
207,249
SINK

Jack N. Kaiser, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 87,833
Term of patent 14 years
(Cl. D4—2)



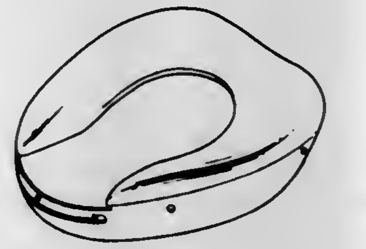
207,250
BATHROOM UNIT

David C. Kirby, 28 Warren Way, Digswell, Welwyn, England
Filed Feb. 16, 1966, Ser. No. 1,877
Claims priority, application Great Britain June 1, 1964
Term of patent 14 years
(Cl. D4—4)



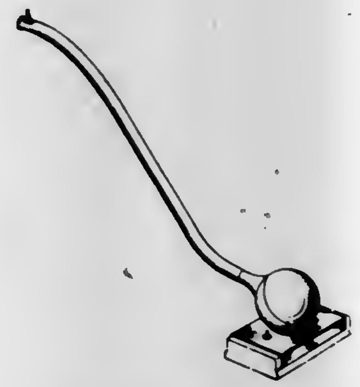
207,251
BED PAN

Elsie Mary Grant, Farley Green Cottage, Albury, Guildford, Surrey, England
Filed Sept. 13, 1965, Ser. No. 86,964
Claims priority, application Great Britain Aug. 13, 1965
Term of patent 14 years
(Cl. D4—5)



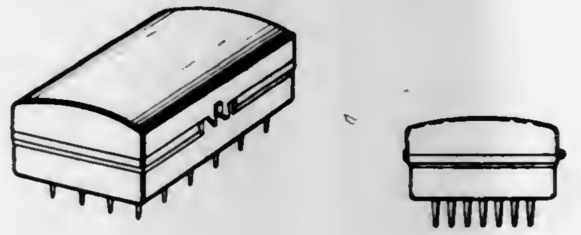
207,252
TREATING MACHINE FOR FLOOR, WALL AND CEILING SURFACES OR THE LIKE

Harold T. Sawyer, Los Angeles, Calif., assignor of seventeen and one-half percent to Vernon D. Beehler, Los Angeles, Calif.
Filed Jan. 25, 1966, Ser. No. 766
Term of patent 14 years
(Cl. D9—2)



207,253
COMBINATION SOAP HOLDER AND SCRUB BRUSH

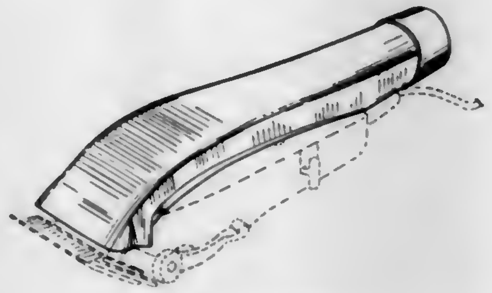
Stanley James Tucker, Elkins Park, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 7, 1966, Ser. No. 1,329
Term of patent 14 years
(Cl. D9—2)



207,254

VACUUM ATTACHMENT FOR ELECTRIC HAIR CLIPPER

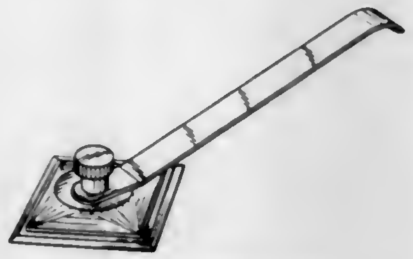
Clifford H. Jording and John F. Wahl, Sterling, Ill., assignors to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois
Filed Mar. 7, 1966, Ser. No. 1,332
Term of patent 14 years
(Cl. D9—2)



207,255

PORTABLE MANUALLY-OPERATED SCRAPER

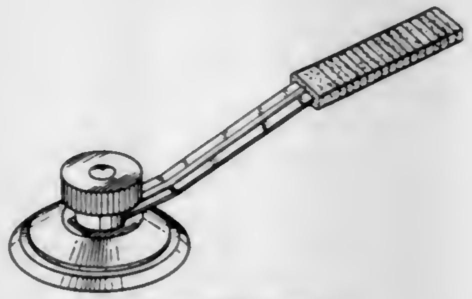
Harold A. Rippl, 223 Westbridge Drive,
Berea, Ohio 44017
Filed May 3, 1966, Ser. No. 2,132
Term of patent 7 years
(Cl. D9—6)



207,256

PORTABLE MANUALLY-OPERATED SCRAPER

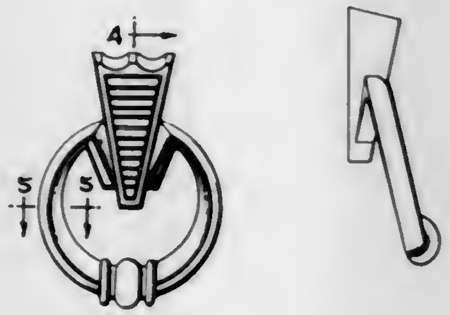
Harold A. Rippl, 223 Westbridge Drive,
Berea, Ohio 44017
Filed May 3, 1966, Ser. No. 2,133
Term of patent 7 years
(Cl. D9—6)



207,257

PULL

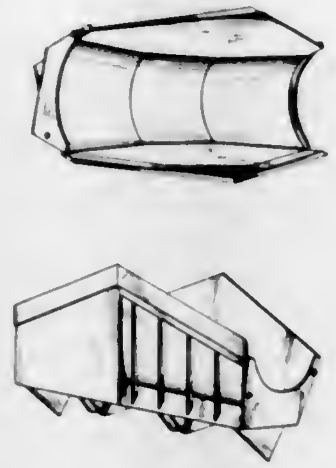
John R. Morgan, Wheeling, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed Apr. 25, 1966, Ser. No. 2,000
Term of patent 14 years
(Cl. D10—8)



207,258

BUCKET FOR EXCAVATING EQUIPMENT

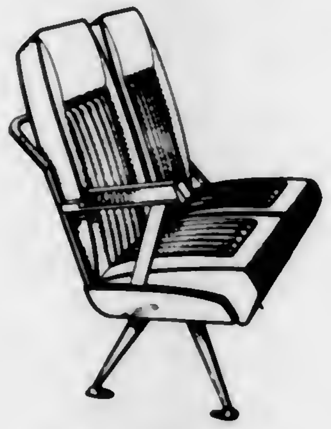
Tage Nils Wilhelm Leijon, Stocksund, Sweden
Filed Dec. 22, 1965, Ser. No. 288
Claims priority, application Sweden June 24, 1965
Term of patent 14 years
(Cl. D14—3)



207,259

VEHICLE CHAIR

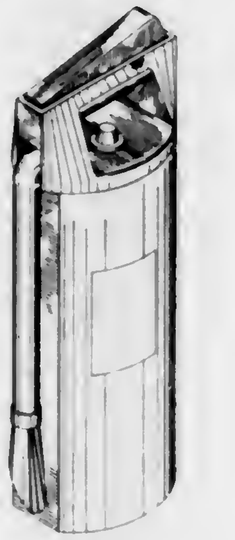
Chester J. Barecki, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed Jan. 14, 1966, Ser. No. 605
Term of patent 14 years
(Cl. D15—8)



207,260

FIRE EXTINGUISHER

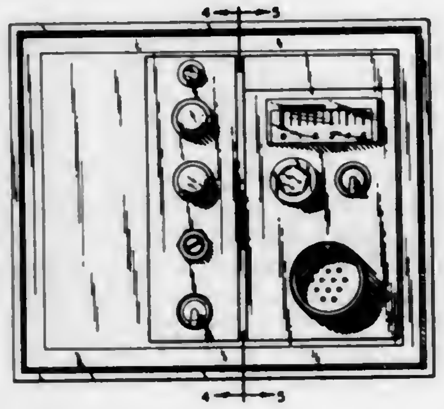
Jakob Jensen, Roskilde, Denmark, assignor to The Ansul Company, Marinette, Wis., a corporation of Wisconsin
Filed May 17, 1966, Ser. No. 2,330
Term of patent 14 years
(Cl. D16—2)



207,261

DESIGN FOR LOOP DETECTOR CONTROL UNIT

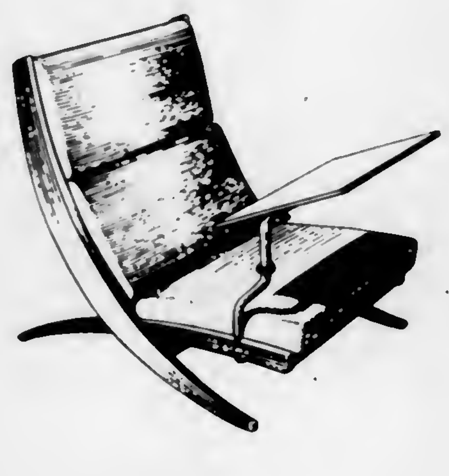
Bjarne Netland, Liverpool, N.Y., assignor to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
Filed Sept. 30, 1965, Ser. No. 87,235
Term of patent 7 years
(Cl. D26—1)



207,262

STUDENT'S CHAIR AND DESK

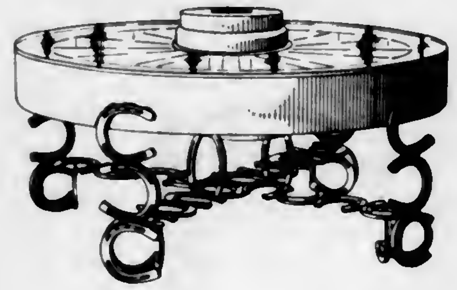
Robert A. Maurer and Leslie R. Maurer, East Palestine, Ohio, assignors to The Kenmar Manufacturing Company, East Palestine, Ohio, a corporation of Ohio
Filed Jan. 24, 1966, Ser. No. 728
Term of patent 14 years
(Cl. D33—11)



207,263

COFFEE TABLE

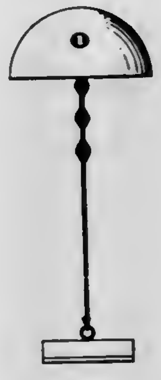
Robert E. Bowers, 4875 E. Home,
Fresno, Calif. 93702
Filed Dec. 13, 1965, Ser. No. 160
Term of patent 14 years
(Cl. D33—14)



207,264

ISOMETRIC EXERCISER FOR BOWLING

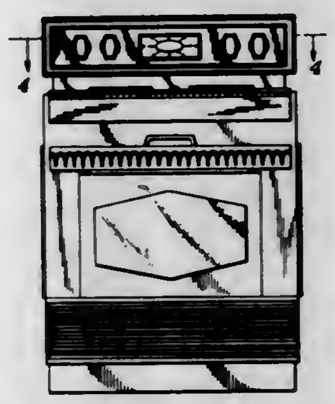
Dino Germani, 17 Chaucer St.,
Providence, R.I. 02908
Filed Feb. 1, 1966, Ser. No. 878
Term of patent 14 years
(Cl. D34—5)



207,265

TOY STOVE

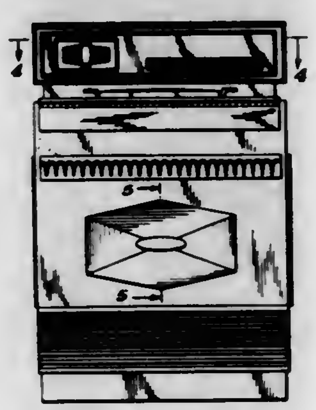
Martin L. Blumenthal, Summit, N.J., assignor to De Luxe Reading Corporation, a corporation of New Jersey
Filed Mar. 7, 1966, Ser. No. 1,324
Term of patent 7 years
(Cl. D34—15)



207,266

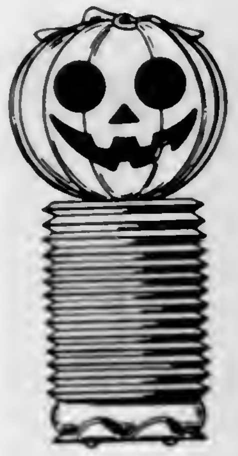
TOY WASHING MACHINE

Martin L. Blumenthal, Summit, N.J., assignor to De Luxe Reading Corporation, a corporation of New Jersey
Filed Mar. 7, 1966, Ser. No. 1,325
Term of patent 7 years
(Cl. D34—15)



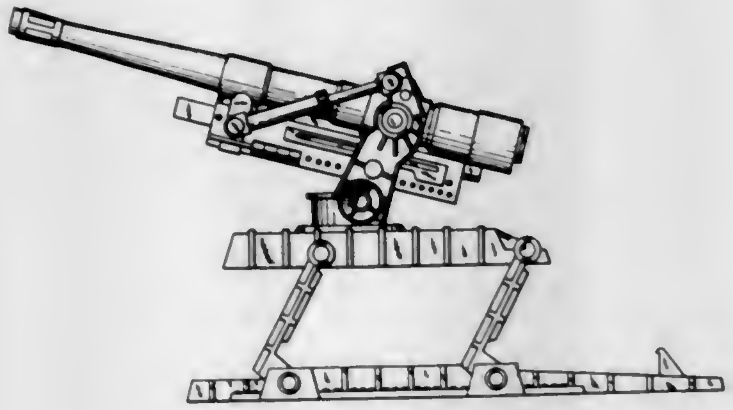
207,267
COMBINED TOY AND NOISE-MAKER

Sidney A. Tarrson, 777 S. Tripp, Chicago, Ill. 60624
Filed Apr. 8, 1966, Ser. No. 1,818
Term of patent 3½ years
(Cl. D34—15)



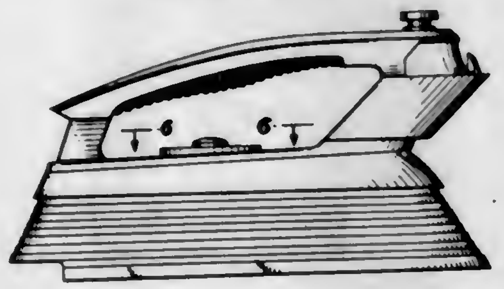
207,268
TOY CANNON

Maurice Rosenbloom, Fort Lee, N.J., assignor to De Luxe Reading Corporation, a corporation of New Jersey
Filed Apr. 19, 1966, Ser. No. 1,935
Term of patent 3½ years
(Cl. D34—15)



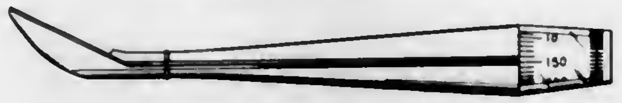
207,269
TOY IRON

Martin L. Blumenthal, Summit, N.J., assignor to De Luxe Reading Corporation, a corporation of New Jersey
Filed May 17, 1966, Ser. No. 2,331
Term of patent 7 years
(Cl. D34—15)



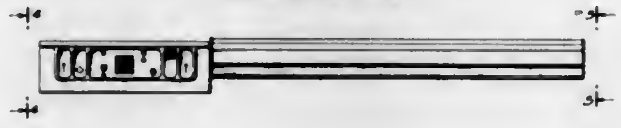
207,270
SPOON

Luigi Di Benedetto, Inglewood, Calif., assignor to Gaydell, Inc., Santa Monica, Calif., a corporation of California
Filed Apr. 4, 1966, Ser. No. 1,754
Term of patent 14 years
(Cl. D44—29)



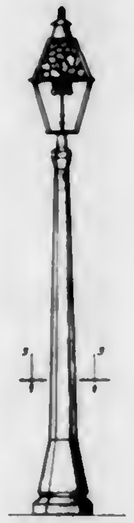
207,271
HOSPITAL BED LIGHT FIXTURE AND SERVICE CONSOLE

Marcus Bodian, Los Angeles, Calif., assignor to Sunbeam Lighting Co., Inc., a corporation of California
Filed Dec. 6, 1965, Ser. No. 89
Term of patent 14 years
(Cl. D48—20)



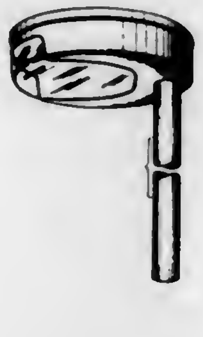
207,272
COMBINED LUMINAIRE AND POST

Harold E. Seals, Jr., Denver, Colo., assignor to Seals Enterprises Inc., Denver, Colo., a corporation of Colorado
Filed June 9, 1966, Ser. No. 2,617
Term of patent 14 years
(Cl. D48—31)



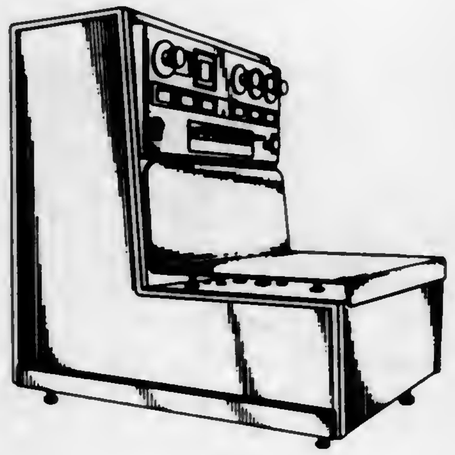
207,273
MAST MOUNTED LAMP HOUSING

Josef Müller, Neheim-Husten, Germany, assignor to Trilux-Lenze KG, Neheim-Husten, Germany
Filed Mar. 18, 1965, Ser. No. 84,344
Term of patent 14 years
(Cl. D48—31)



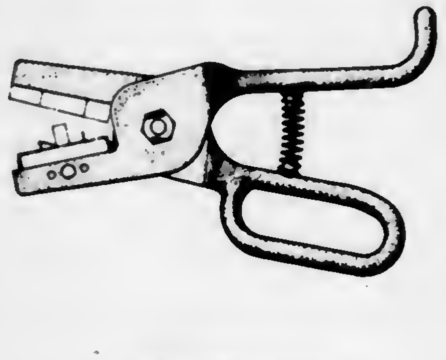
207,274
WEIGHING SCALE

John R. Ewart, Akron, Ohio, assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Apr. 18, 1966, Ser. No. 1,928
Term of patent 14 years
(Cl. D52—10)



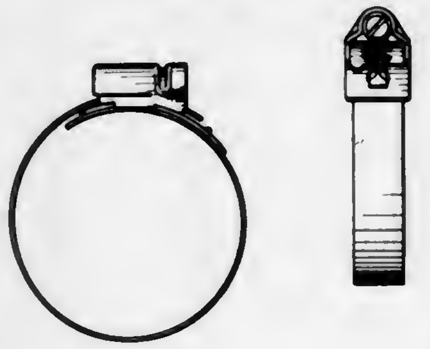
207,275
HAND TOOL FOR CUTTING OR PUNCHING OR THE LIKE

Hans K. Lorentzen, Brick Township, Ocean County, N.J., assignor to Levolor Lorentzen, Inc., Hoboken, N.J., a corporation of New Jersey
Filed May 12, 1966, Ser. No. 2,279
Term of patent 14 years
(Cl. D54—13)



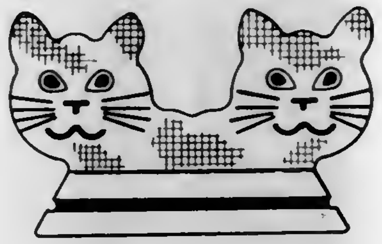
207,276
CLAMP FOR A HOSE OR THE LIKE

George Louis Nigon, 10 Rue Papillon, Paris 9, Seine, France
Filed Sept. 22, 1965, Ser. No. 87,118
Claims priority, application France Mar. 25, 1965
Term of patent 14 years
(Cl. D54—13)



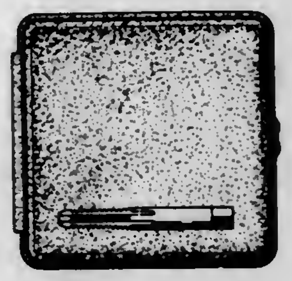
207,277
EYEGLASS HOLDER

Everett R. Winters, 264 Foote Ave., San Francisco, Calif. 94112
Filed Mar. 14, 1966, Ser. No. 1,445
Term of patent 14 years
(Cl. D57—1)



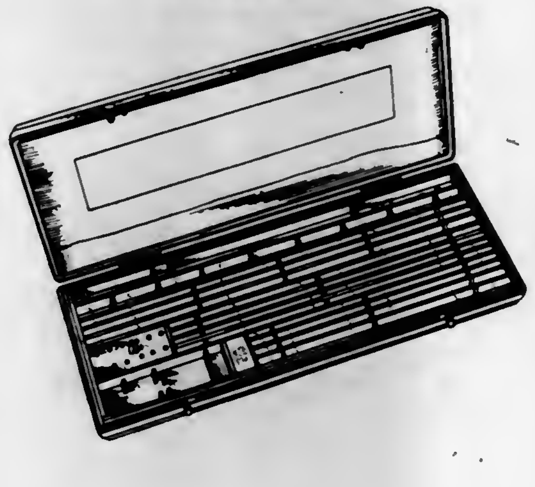
207,278
TAP HOLDER

Robert E. Neeley, 1139 Mayfair Ave., Anaheim, Calif. 96007
Filed Nov. 22, 1965, Ser. No. 88,191
Term of patent 14 years
(Cl. D58—12.6)

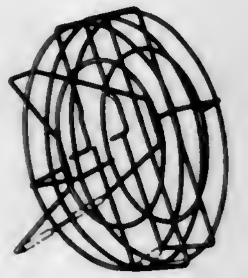


207,279
BOX FOR A LETTERING SET

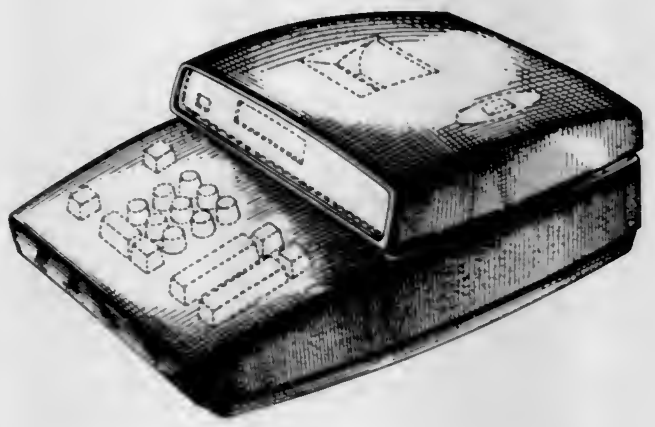
Carl R. Sellen, 594 Freeland Ave., Paramus, N.J. 07652; William A. Neithardt, 158 Huber St., Secaucus, N.J. 07094; William J. Drexler, 380 Walnut St., Ridgefield, N.J. 07657; and Francesco Collura, 425 E. 51st St., New York, N.Y. 10022
Filed Oct. 24, 1965, Ser. No. 87,903
Term of patent 14 years
(Cl. D58—13)



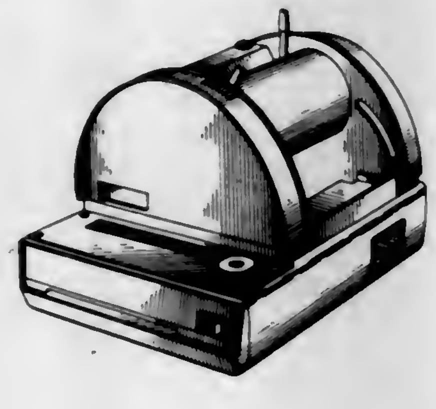
207,280
COMBINED BLADE GUARD AND SUPPORT FOR A FAN OR THE LIKE
Louis J. De La Marter, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Jan. 14, 1966, Ser. No. 604
Term of patent 14 years
(Cl. D62—4)



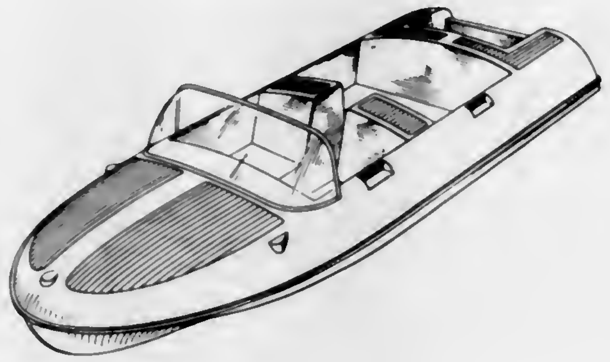
207,281
CALCULATING MACHINE
Karl T. Baughman, Evanston, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed Sept. 13, 1965, Ser. No. 86,968
Term of patent 14 years
(Cl. D64—11)



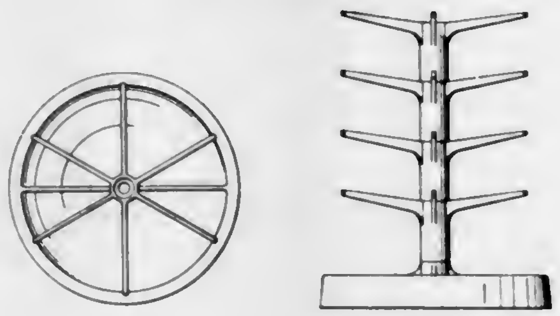
207,282
COMBINED DUPLICATOR AND THERMOGRAPHIC MASTER-MAKER
Courtney A. Leubner, Oakbrook, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 22, 1965, Ser. No. 87,105
Term of patent 14 years
(Cl. D64—11)



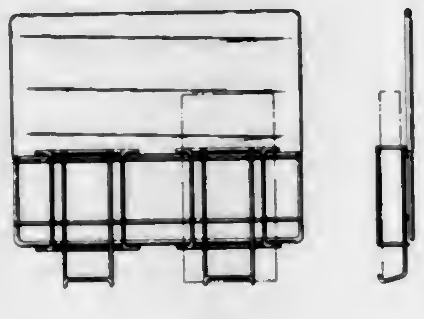
207,283
BOAT
Claude Keith Metcalf, Weston, Ontario, Canada, assignor to Yvonne D. McGilly, Weston, Ontario, Canada
Filed Jan. 14, 1966, Ser. No. 603
Claims priority, application Canada Dec. 15, 1965
Term of patent 14 years
(Cl. D71—1)



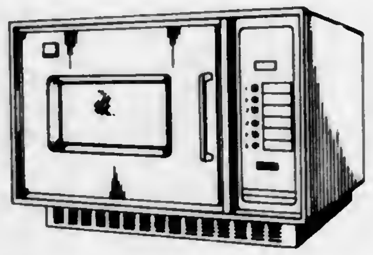
207,284
DISPLAY STAND
Joseph J. Trogan, 904 S. Michigan, Saginaw, Mich. 48602
Filed Oct. 23, 1965, Ser. No. 87,844
Term of patent 14 years
(Cl. D80—9)



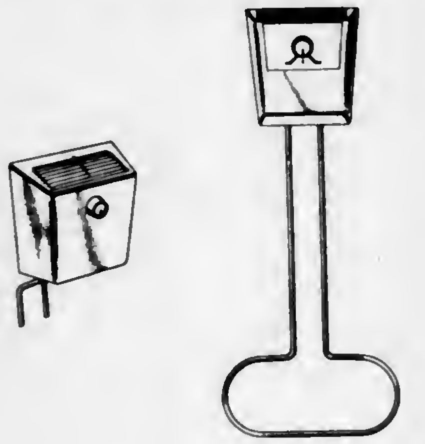
207,285
COMBINED DISPLAY AND DISPENSING RACK
Mitchell Silverstein, 1452 Keystone, River Forest, Ill. 60305
Filed Mar. 11, 1966, Ser. No. 1,416
Term of patent 14 years
(Cl. D80—10)



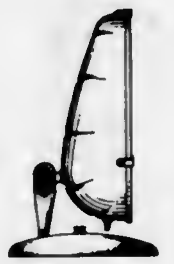
207,286
MICROWAVE OVEN
Robert I. Bruder, Shaker Heights, Ohio, assignor to Litton Precision Products, Inc., Palo Alto, Calif., a corporation of Delaware
Filed Aug. 25, 1966, Ser. No. 3,582
Term of patent 14 years
(Cl. D81—26)



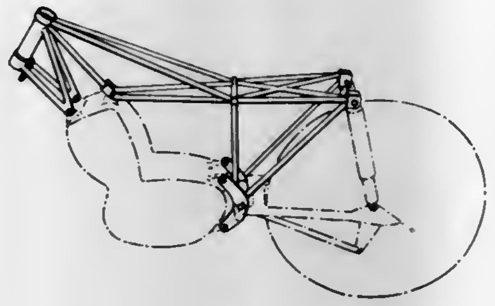
207,287
ELECTRIC PORTABLE MASSAGER
Clifford Edward Grube, 8816 Merrill Ave., Niles, Ill. 60648
Filed Feb. 14, 1966, Ser. No. 1,034
Term of patent 14 years
(Cl. D83—1)



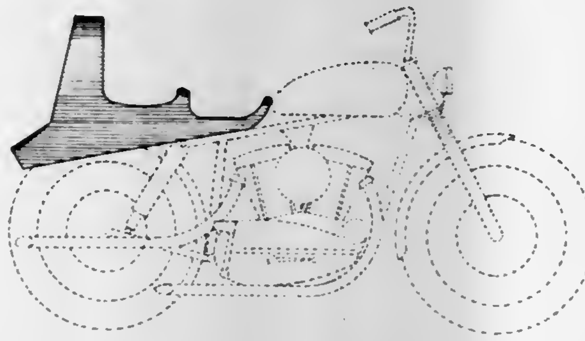
207,288
VANITY MIRROR
Laurice D. Ely, Los Angeles, Calif., assignor to Elco Products Corp., Santa Monica, Calif., a corporation of California
Filed Mar. 14, 1966, Ser. No. 1,459
Term of patent 14 years
(Cl. D86—10)



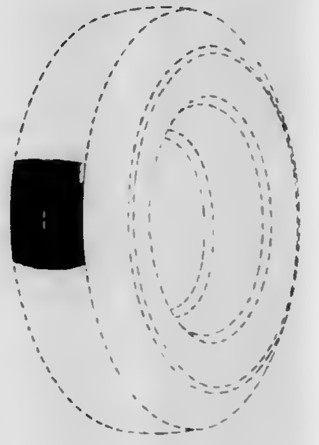
207,289
MOTORCYCLE FRAME
David S. Yetman, Marblehead, Mass., assignor to The Yetman Corporation, Beverly, Mass., a corporation of Massachusetts
Filed Jan. 7, 1966, Ser. No. 535
Term of patent 14 years
(Cl. D90—8)



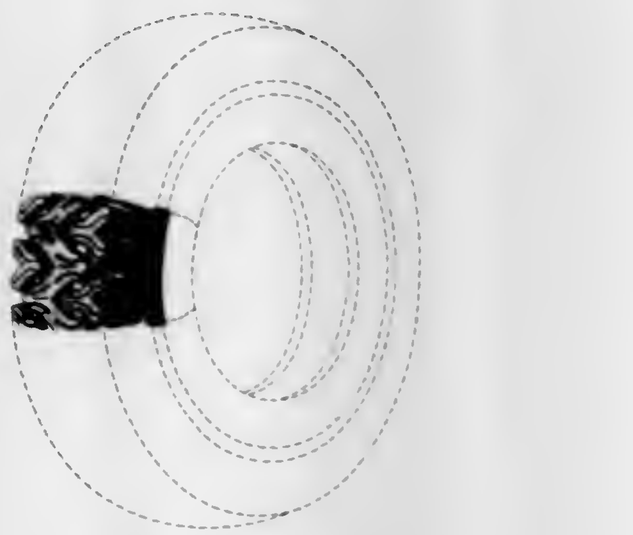
207,290
CYCLE SEAT
Pete O'Connor, 2561 Metairie Road, Metairie, La. 70129
Filed May 13, 1966, Ser. No. 2,289
Term of patent 14 years
(Cl. D90—16)



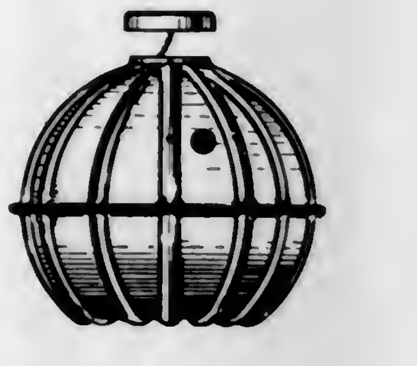
207,291
TIRE
Marco Maxemovich, Warren, Mich., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 29, 1966, Ser. No. 2,063
Term of patent 14 years
(Cl. D90—20)



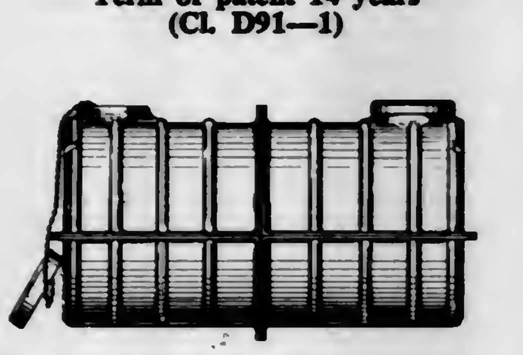
207,292
PNEUMATIC TIRE
Charles M. Chupa, Dearborn Heights, Mich., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 1, 1966, Ser. No. 3,679
Term of patent 14 years
(Cl. D90—20)



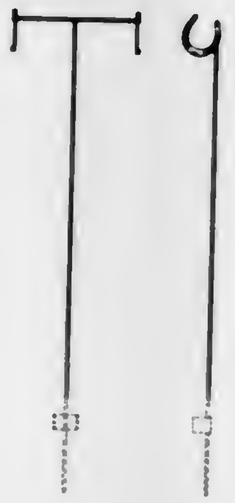
207,293
SEWAGE SEPTIC TANK
Carl W. Ferm, 950 Main St., South Williamsport, Pa. 17701
Filed May 5, 1966, Ser. No. 2,184
Term of patent 14 years
(Cl. D91—1)



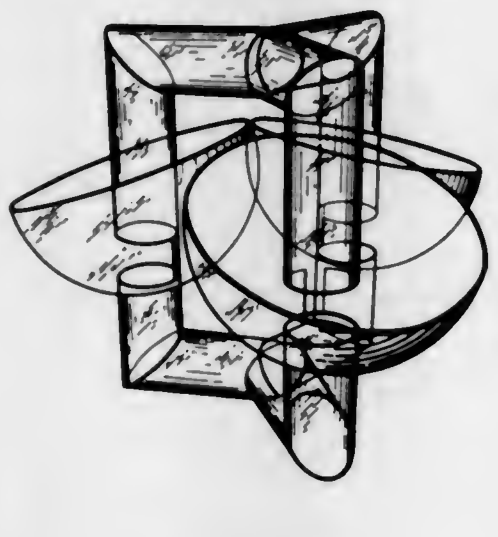
207,294
SEWAGE SEPTIC TANK
Carl W. Ferm, 950 Main St., South Williamsport, Pa. 17701
Filed May 5, 1966, Ser. No. 2,185
Term of patent 14 years
(Cl. D91—1)



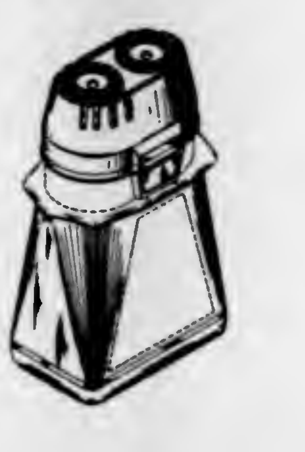
207,295
HOSE COIL HOLDER
David E. Bradley, Rte. 1, Box 366, Morgan Hill, Calif. 95037
Filed Oct. 18, 1965, Ser. No. 87,577
Term of patent 7 years
(Cl. D91—1)



207,296
AQUARIUM
Allan E. Bartholomew, Box 88, 1915 State Rte., Kent, Ohio 44240
Filed Oct. 5, 1965, Ser. No. 87,322
Term of patent 14 years
(Cl. D91—2)



207,297
SHAVER
Harmon L. Shaw and John G. Williamson, Charlotte, N.C., assignors to Timac, Inc., Charlotte, N.C., a corporation of North Carolina
Filed Feb. 21, 1966, Ser. No. 1,128
Term of patent 14 years
(Cl. D95—3)



LIST OF DESIGN PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 28TH DAY OF MARCH, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- American Radiator & Standard Sanitary Corp.: *See*—
  - Kaiser, Jack N. 207,249.
- American Seating Co.: *See*—
  - Barecki, Chester J. 207,259.
- Amerock Corp.: *See*—
  - Morgan, John R. 207,257.
- Ansul Co., The: *See*—
  - Jensen, Jakob. 207,260.
- Barecki, Chester J., to American Seating Co. Vehicle chair. 207,259, 3–28–67, Cl. D15—8.
- Bartholomew, Allan E. Aquarium. 207,296, 3–28–67, Cl. D91—2.
- Baughman, Karl T., to Sears, Roebuck and Co. Calculating machine. 207,281, 3–28–67, Cl. D64—11.
- Beehler, Vernon D.: *See*—
  - Sawyer, Harold T. 207,252.
- Bell & Howell Co.: *See*—
  - Leubner, Courtney A. 207,282.
- Blumenthal, Martin L., to Deluxe Reading Corp. Toy stove. 207,265, 3–28–67, Cl. D34—15.
- Blumenthal, Martin L., to Deluxe Reading Corp. Toy washing machine. 207,266, 3–28–67, Cl. D34—15.
- Blumenthal, Martin L., to Deluxe Reading Corp. Toy iron. 207,269, 3–28–67, Cl. D34—15.
- Bodian, Marcus, to Sunbeam Lighting Co. Inc. Hospital bed light fixture and service console. 207,271, 3–28–67, Cl. D48—20.
- Bowers, Robert E. Coffee table. 207,263, 3–28–67, Cl. D33—14.
- Bradley, David E. Hose coil holder. 207,295, 3–28–67, Cl. D91—1.
- Bruder, Robert I., to Litton Precision Products, Inc. Microwave oven. 207,286, 3–28–67, Cl. D81—26.
- Chupa, Charles M., to United States Rubber Co. Pneumatic tire. 207,292, 3–28–67, Cl. D90—20.
- Collura, Francesco: *See*—
  - Sellen, Carl R., Neithardt, Drexler, and Collura. 207,279.
- Crouse-Hinds Co.: *See*—
  - Netland, Bjarne. 207,261.
- De La Marter, Louis J., to Westinghouse Electric Corp. Combined blade guard and support for a fan or the like. 207,280, 3–28–67, Cl. D62—4.
- Deluxe Reading Corp.: *See*—
  - Blumenthal, Martin L. 207,265.
  - Blumenthal, Martin L. 207,266.
  - Blumenthal, Martin L. 207,269.
  - Rosenbloom, Maurice. 207,268.
- Di Benedetto, Luigi, to Gaydell, Inc. Spoon. 207,270, 3–28–67, Cl. D44—29.
- Drexler, William J.: *See*—
  - Sellen, Carl R., Neithardt, Drexler, and Collura. 207,279.
- Elco Products Corp.: *See*—
  - Ely, Laurice D. 207,288.
- Ely, Laurice D., to Elco Products Corp. Vanity mirror. 207,288, 3–28–67, Cl. D86—10.
- Ewart, John R., to Toledo Scale Corp. Weighing scale. 207,274, 3–28–67, Cl. D52—10.
- Ferm, Carl W. Sewage septic tank. 207,293, 3–28–67, Cl. D91—1.
- Ferm, Carl W. Sewage septic tank. 207,294, 3–28–67, Cl. D91—1.
- Gaydell, Inc.: *See*—
  - Di Benedetto, Luigi. 207,270.
- Germani, Dino. Isometric exerciser for bowling. 207,264, 3–28–67, Cl. D34—5.
- Grant, Elsie M. Bed pan. 207,251, 3–28–67, Cl. D4—5.
- Grube, Clifford E. Electric portable massager. 207,287, 3–28–67, Cl. D83—1.
- Jensen, Jakob, to The Ansul Co. Fire extinguisher. 207,260, 3–28–67, Cl. D16—2.
- Jording, Clifford H., and J. F. Wahl, to Wahl Clipper Corp. Vacuum attachment for electric hair clipper. 207,254, 3–28–67, Cl. D9—2.
- Kaiser, Jack N., to American Radiator & Standard Sanitary Corp. Sink. 207,249, 3–28–67, Cl. D4—2.
- Kenmar Mfg. Co., The: *See*—
  - Maurer, Robert A. and L. R. 207,262.
- Kirby, David C. Bathroom unit. 207,250, 3–28–67, Cl. D4—4.
- Leijon, Tage N. W. Bucket for excavating equipment. 207,258, 3–28–67, Cl. D14—3.
- Leubner, Courtney A., to Bell & Howell Co. Combined duplicator and thermographic master-maker. 207,282, 3–28–67, Cl. D64—11.
- Levolor Lorentzen, Inc.: *See*—
  - Lorentzen, Hans K. 207,275.
- Litton Precision Products, Inc.: *See*—
  - Bruder, Robert I. 207,286.
- Lorentzen, Hans K., to Levolor Lorentzen, Inc. Hand tool for cutting or punching or the like. 207,275, 3–28–67, Cl. D54—13.
- Maurer, Leslie R.: *See*—
  - Maurer, Robert A. and L. R.
- Maurer, Robert A. and Leslie R., to The Kenmar Mfg. Co. Student's chair and desk. 207,262, 3–28–67, Cl. D33—11.
- Maxemovich, Marco, to United States Rubber Co. Tire. 207,291, 3–28–67, Cl. D90—20.
- McGilly, Yvonne D.: *See*—
  - Metcalf, Claude K. 207,283.
- Metcalf, Claude K., to Y. D. McGilly. Boat. 207,283, 3–28–67, Cl. D71—1.
- Morgan, John R., to Amerock Corp. Pull. 207,257, 3–28–67, Cl. D10—8.
- Morse, Wanda C. and Wayne T. Pillow. 207,248, 3–28–67, Cl. D3—9.
- Morse, Wayne T.: *See*—
  - Morse, Wanda C. and Wayne T. 207,248.
- Müller, Josef, to Trilux-Lenze KG. Mast mounted lamp housing. 207,273, 3–28–67, Cl. D48—31.
- Neeley, Robert E. Tap holder. 207,278, 3–28–67, Cl. D58—12.6.
- Neithardt, William A.: *See*—
  - Sellen, Carl R., Neithardt, Drexler, and Collura. 207,279.
- Netland, Bjarne, to Crouse-Hinds Co. Design for loop detector control unit. 207,261, 3–28–67, Cl. D26—1.
- Nigon, Georges L. Clamp for a hose or the like. 207,276, 3–28–67, Cl. D54—13.
- O'Connor, Pete. Cycle seat. 207,290, 3–28–67, Cl. D90—16.
- Rippl, Harold A. Portable manually-operated scraper. 207,255, 3–28–67, Cl. D9—6.
- Rippl, Harold A. Portable manually-operated scraper. 207,256, 3–28–67, Cl. D9—6.
- Rosenbloom, Maurice, to Deluxe Reading Corp. Toy cannon. 207,268, 3–28–67, Cl. D34—15.
- Sawyer, Harold T., 17½% to V. D. Beehler. Treating machine for floor, wall and ceiling surfaces or the like. 207,252, 3–28–67, Cl. D9—2.
- Seals Enterprises Inc.: *See*—
  - Seals, Harold E., Jr. 207,272.
- Seals, Harold E., Jr., to Seals Enterprises Inc. Combined luminaire and post. 207,272, 3–28–67, Cl. D48—31.
- Sears, Roebuck and Co.: *See*—
  - Baughman, Karl T. 207,281.
- Sellen, Carl R., W. A. Neithardt, W. J. Drexler, and F. Collura. Box for a lettering set. 207,279, 3–28–67, Cl. D58—13.
- Shaw, Harmon L., and J. G. Williamson, to Timac, Inc. Shaver. 207,297, 3–28–67, Cl. D95—3.
- Silverstein, Mitchell. Combined display and dispensing rack. 207,285, 3–28–67, Cl. D80—10.
- Smith Kline & French Laboratories: *See*—
  - Tucker, Stanley J. 207,253.
- Sunbeam Lighting Co. Inc.: *See*—
  - Bodian, Marcus. 207,271.
- Tarrson, Sidney A. Combined toy and noise-maker. 207,267, 3–28–67, Cl. D34—15.
- Timac, Inc.: *See*—
  - Shaw, Harmon L., and Williamson. 207,297.
- Toledo Scale Corp.: *See*—
  - Ewart, John R. 207,274.
- Trilux-Lenze KG: *See*—
  - Müller, Josef. 207,273.
- Trogan, Joseph J. Display stand. 207,284, 3–28–67, Cl. D80—9.
- Tucker, Stanley J., to Smith Kline & French Laboratories. Combination soap holder and scrub brush. 207,253, 3–28–67, Cl. D9—2.
- United States Rubber Co.: *See*—
  - Maxemovich, Marco. 207,291.
  - Chupa, Charles M. 207,292.
- Wahl Clipper Corp.: *See*—
  - Jording, Clifford H., and Wahl. 207,254.
- Wahl, John F.: *See*—
  - Jording, Clifford H., and Wahl. 207,254.
- Westinghouse Electric Corp.: *See*—
  - De La Marter, Louis J. 207,280.
- Williamson, John G.: *See*—
  - Shaw, Harmon L., and Williamson. 207,297.
- Winters, Everett R. Eyeglass holder. 207,277, 3–28–67, Cl. D57—1.
- Yetman Corp., The: *See*—
  - Yetman, David S. 207,289.
- Yetman, David S., to The Yetman Corp. Motorcycle frame. 207,289, 3–28–67, Cl. D90—8.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 28TH DAY OF MARCH, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- AMP Inc.: *See*—
  - Williamson, Robert. 3,311,866.
- A P Parts Corp.: *See*—
  - Dolhun, Leonard N. 3,311,382.
- API Instruments Co.: *See*—
  - Quittner, George F. 3,311,818.
- Abex Corp.: *See*—
  - Beetle, Robert H., and Farrell. 3,311,403.
  - Mori, Hideo. 3,311,915.
- Abrams, Irving, to Premier Microwave Corp. Hybrid junction for waveguide and co-axial cable. 3,311,851, 3–28–67, Cl. 333—11.
- Aden Supplies, Inc.: *See*—
  - Wagner, Albert E. 3,311,358.
  - Wagner, Albert E., and Adkins. 3,311,359.
- Adkins, John S.: *See*—
  - Wagner, Albert E., and Adkins. 3,311,359.
- Admiral Corp.: *See*—
  - Hammerand, Donald J., and Bury. 3,311,380.
- Aerojet-General Corp.: *See*—
  - Phipps, Arthur L. 3,311,013.
- Agfa Aktiengesellschaft: *See*—
  - Winkler, Alfred, Engelsmann, and Zobel. 3,311,037.
- Ahlen, Karl G., to S. R. M. Hydromekanik Aktiebolag. Transmission, preferably for vehicles. 3,311.000, 3–28–67, Cl. 74—763.
- Ahlfors, Sten E. E., and B. O. Lundh. Mechanical strainers. 3,311,235, 3–28–67, Cl. 209—270.
- Ahrens, Hermann H., to Daimler-Benz Aktiengesellschaft. Ventilating arrangement for multi-passenger vehicle. 3,311,041, 3–28–67, Cl. 98—2.
- Aiken, Lawrence W., and A. Schiff, to International Business Machines Corp. Accumulative multiplier. 3,311,739, 3–28–67, Cl. 235—164.
- Aircraft Radio Corp.: *See*—
  - Foppes, Lukas M. 3,311,752.
- Air Enterprises, Inc.: *See*—
  - Brandreth, Franklin B., and Moles. 3,310,926.
- Air Inflatable Products Corp.: *See*—
  - Fischer, William H. 3,310,818.
- Air-O-Fan Products Corp.: *See*—
  - Duncan, James H., and Kraus. 3,311,185.
- Air Reduction Co., Inc.: *See*—
  - Sneden, George K., Jr., Rowe, and Holm. 3,310,955.
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  - Kollerup, Vagn. 3,311,091.
- Alaskaug Inc.: *See*—
  - Miller, Robert W. 3,311,415.
- Albertsman, Max, and M. Dotsko, to General Precision, Inc. Potentiometer tapping arrangement. 3,311,861, 3–28–67, Cl. 338—137.
- Alburger, James R. Penetrant inspection process and compositions. 3,311,479, 3–28–67, Cl. 106—19.
- Alcon Metal Products, Inc.: *See*—
  - Devito, Albert P. 3,311,865.
- Alderson, Samuel W. Radio-therapy phantom. 3,310,885, 3–28–67, Cl. 35—17.
- Alesi, John A.: *See*—
  - Alesi, John, Jr., and J. A. 3,311,683.
- Alesi, John, Jr., and J. A., to Formex Mfg., Inc. Vacuum forming method. 3,311,683, 3–28–67, Cl. 264—92.
- Alexandersson, Harald V., to Telefonaktiebolaget L M Ericsson. Relay matrix comprising polarized relays. 3,311,857, 3–28–67, Cl. 335—107.
- Allen, Alan A.: *See*—
  - Cain, John F. 3,311,712.
- Allen, Edward L., to Ingersoll-Rand Co. Hand tool wire wrappers. 3,311,139, 3–28–67, Cl. 140—115.
- Allen, Lloyd R., to National Research Corp. Process for forming niobium-stannide superconductors. 3,310,862, 3–28–67, Cl. 29—155.5.
- Allen, R. C., Business Machines, Inc.: *See*—
  - Huizinga, Martin, Verduin, and Kuiper. 3,310,987.
- Allis-Chalmers Mfg. Co.: *See*—
  - Cleland, Donald E. 3,311,176.
- Allison, Kenneth C., and T. R. Beaver, to CTS Corp. Rotary electric switch with improved internal actuating and contact structure including tolerance compensator means. 3,311,718, 3–28–67, Cl. 200—11.
- Almond, Lathan C., Jr. Staple extractor. 3,311,346, 3–28–67, Cl. 254—28.
- Alon, Alexander, R. Blumberg, and A. M. Baniel. Process for the manufacture of phosphoric acid. 3,311,450, 3–28–67, Cl. 23—165.
- Alps, Hugo A.: *See*—
  - Sparks, Peter G., and Alps. 3,311,582.
- Aluminium Laboratories Ltd.: *See*—
  - Phillips, Norman W. F., Rapson, and Southam. 3,311,363.
  - Rapson, Bryan, and Southam. 3,311,362.
- Ambos, Henry F., and H. R. Letchworth, to Seafoods Automation Corp. Apparatus for processing shrimp. 3,310,832, 3–28–67, Cl. 17—2.
- American Air Filter Co., Inc.: *See*—
  - Revell, Alan E. 3,310,931.
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  - Gibbs, Leslie E., and Warner. 3,311,783.
  - Huse, Arthur E. 3,311,101.
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  - Voigt, Max H. 3,311,102.
- American Can Co.: *See*—
  - Kinney, Alfred W. 3,311,260.
- American Cyanamid Co.: *See*—
  - Kulick, Russell J., Strazdins, and Savina. 3,311,532.
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  - Van Loo, William J., Jr. 3,311,496.
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  - Sulkowski, Theodore S. 3,311,629.
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  - Wendt, Gerhard R., and Ledig. 3,311,627.
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  - Chambers, Jerome B., and Dellaquila. 3,311,419.
- American Maize-Products Co.: *See*—
  - Rusnack, Michael E., and Kulesa. 3,311,182.
- American Optical Co.: *See*—
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- American Telephone and Telegraph Co.: *See*—
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- Amos, Alfred E., to Sperry Rand Corp. Latch devices. 3,311,213, 3–28–67, Cl. 197—186.
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- Anderson Co., The: *See*—
  - Martens, Jack E. 3,311,413.
- Anderson, Douglas G. Apparatus for generating a function by cubic interpolation. 3,311,742, 3–28–67, Cl. 235—197.
- Anderson, Frank E., R. H. Campbell, and S. E. Jolly, to Sun Oil Co. Water-in-oil emulsions. 3,311,561, 3–28–67, Cl. 252—75.
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  - Chafetz, Harry, and Anderson. 3,311,631.
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  Krebs, Hans. 3,311,345.
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Daugherty, Jesse, to Giddings & Lewis Machine Tool Co. Rotary actuator power drawbolt for machine tool spindles. 3,311,024, 3–28–67, Cl. 90—11.
David, Paul A., and H. L. Lenz. Unitized stamp set. 3,311,227, 3–28–67, Cl. 206—47.
Davidoff, Charles. Silver recovery process. 3,311,468, 3–28–67, Cl. 75—108.
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Davis, John V., G. A. Cummings, Jr., R. C. Kayser, and G. R. Zambon, to The Udylite Corp. Conveying machine. 3,311,214, 3–28–67, Cl. 198—19.
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- Doak, Kenneth W., M. Erchak, Jr., and B. Toekes, to Rexall Drug and Chemical Co. Bulk solvent polymerization process. 3,311,675, 3–28–67, Cl. 260—880.
- Dobbins, Richard A., to United States of America, Navy. Method for minimizing combustion instability. 3,310,948, 3–28–67, Cl. 60—219.
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  - Reifschneider, Walter. 3,311,664.
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- Dowling, Danel J., and B. L. Gamble, to Continental Can Co., Inc. Sealing lap on taped sealed cans. 3,311,256, 3–28–67, Cl. 220—53.
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- Doyle, James H. Electronic quantizer. 3,311,910, 3–28–67, Cl. 340—347.
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- Dudley, William A., to Merla Tool Corp. Gas lift valve. 3,311,126, 3–28–67, Cl. 137—155.
- Dudley, William A., to Merla Tool Corp. Gas lift valve having particular piston seal. 3,311,127, 3–28–67, Cl. 137—155.
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- Duinker, Simon, E. F. de Haan, G. Diemer, and J. G. van Santen, to North American Philips Co., Inc. Circuit comprising writing and reproducing circuits using electroluminescent and ferroelectric cells. 3,311,781, 3–28–67, Cl. 315—173.
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- Duncan, James H., and C. J. Kraus, to Air-O-Fan Products Corp. Symmetrizing bipivotal coupling device. 3,311,185, 3–28–67, Cl. 180—14.
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  - Good, Alfred N. 3,311,691.
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  - Noddin, George A. 3,311,056.
  - Seufert, Ludwig E., and Talsma. 3,311,488.
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- Durgin, Charles B., J. H. Thompson, and R. H. Whittaker, to Westinghouse Electric Corp. High Q resonator. 3,311,760, 3–28–67, Cl. 310—8.
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  - Heseltine, Donald W., and Lincoln. 3,311,618.
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- Eckert, John S., to U.S. Stoneware, Inc. Tower packing. 3,311,356, 3–28–67, Cl. 261—94.
- Eckholm, Robert J. Projection-screen system. 3,311,017, 3–28–67, Cl. 88—24.
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- Ellis, Rex M. Cleaning tool. 3,310,826, 3–28–67, Cl. 15—105.
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- Faige, Milton D. System for firing series-circuit blasting caps. 3,311,788, 3–28–67, Cl. 317—80.
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- Fanuzzi, James J., and W. L. Calvert, to Union Carbide Corp. Heat sealing apparatus, including a porous member and fluid pressure. 3,311,525, 3–28–67, Cl. 156—497.
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- Fauser, Donald L., and E. R. Kolb, to Harris Intertype Corp. Developing electrostatic charge image with a liquid developer of two immiscible phases. 3,311,490, 3–28–67, Cl. 117—37.
- Fawcett, Frank S., to E. I. du Pont de Nemours and Co. Selected N,N-bis(perfluoroalkyl)aminoethylenes and polymers thereof. 3,311,599, 3–82–67, Cl. 260—87.5.
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- Felton, Joseph B., Jr., J. F. Turner, A. D. Duncan, Jr., W. J. Funderburk, and R. Bart, to West Virginia Pulp and Paper Co. Cellulose fiber cans. 3,311,033, 3–28–67, Cl. 93—39.1.
- Ferguson, George N.: *See*—
  - Mueller, William A., Maskey, and Ferguson. 3,311,115.
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  - Jones, Burton A., and Fidler. 3,311,306.
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- Fields, Mack R., to Roehr Products Co., Inc. Intravenous feed bottle. 3,311,208, 3–28–67, Cl. 222—159.
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  - Weller, Ernest E., and Kleinhans. 3,311,515.
- Files, William C., to McGraw-Edison Co. Side door for the rotary cylinder of a washer-extractor. 3,311,241, 3–28–67, Cl. 210—360.
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  - Cook, Wendell S. 3,311,588.
  - Hall, George L. 3,310,979.
  - Willis, James M., and Denecour. 3,311,151.
- Firma Rheinmetall G.m.b.H.: *See*—
  - Berger, Fritz. 3,311,059.
- Fischbach, Alfred. Injection moulding apparatus locking device. 3,310,842, 3–28–67, Cl. 18—30.
- Fischer, William H., to Air Inflatable Products Corp. Shock absorbing apparatus. 3,310,818, 3–28–67, Cl. 5—348.
- Fischer, William H., to Continuous Molding Corp. Injection molding method for encapsulating metal objects. 3,311,690, 3–28–67, Cl. 264—278.
- Fish, William A., Jr., to Westinghouse Electric Corp. Puffer-type fluid-blast circuit interrupter with pressurized casing for actuating driving piston. 3,311,726, 3–28–67, Cl. 200—148.
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  - Anderson, Victor C., and Fisher. 3,311,080.
- Fisher, John G., and J. M. Straley, to Eastman Kodak Co. Methine dyes for acrylic fibers. 3,311,619, 3–28–67, Cl. 260—240.8.
- Fisher, Robert C. Seat belt retractor. 3,311,409, 3–28–67, Cl. 297—388.
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  - Wurzburg, Otto B., Olsen, and Fitzgerald. 3,310,935.
- Flanders, George W. Log bundling cable apparatus. 3,310,852, 3–28–67, Cl. 24—123.
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  - Reinert, Raymond L., and Fliss. 3,311,494.
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  - Cockroft, John J., Scarlett, Flower, and Buchanan. 3,311,698.
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- Fontaine, Robert R., and W. H. Sturdevant, to General Precision, Inc. Circuit for computing simulated range. 3,311,741, 3–28–67, Cl. 235—184.
- Foppes, Lukas M., to Aircraft Radio Corp. Square wave generator circuit. 3,311,752, 3–28–67, Cl. 307—88.5.
- Forcadell, Agustin P. Glass tile system. 3,310,921, 3–28–67, Cl. 52—391.
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  - Griffith, Bain. 3,310,999.
  - Leonard, Richard L. 3,310,991.
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  - Alesi, John, Jr., and J. A. 3,311,683.
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- Forrest, Charles D., to E. I. du Pont de Nemours and Co. Nitramine, nitrocellulose explosive with ester plasticizer. 3,311,513, 3–28–67, Cl. 149—2.
- Forte Engineering Corp.: *See*—
  - Benson, Warren E., Jr. 3,311,823.
- Foster, Charles N.: *See*—
  - Lodding, William F., Klygis, and Foster. 3,311,250.
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- Foster, John E., and M. G. Angelos, to United States of America, Army. Smoke marker arrangement. 3,311,054, 3–28–67, Cl. 102—6.
- Foster, Talmadge E. Dental floss holder and dispenser. 3,311,116, 3–28–67, Cl. 132—92.
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- Fowler, John B. Bi-metal drilling tooth. 3,311,181, 3–28–67, Cl. 175—410.
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  - Glukes, Bernard R. 3,310,906.
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  - Hauri, Tobias. 3,311,312.
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  - Belsterling, Charles A., and Colcord. 3,310,985.
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- Freeland, Royden R., to International Crystal Mfg. Co. Transistor crystal oscillator with PI filter feedback. 3,311,848, 3–28–67, Cl. 331—116.
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  - Storey, Bayard T., Miller, and Fries. 3,311,572.
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  - Fritsch, Erich. 3,311,406.
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- Gallagher, Warren L., and R. B. Gunyan. Wire stripper. 3,311,001, 3-28-67, Cl. 81—9.5.
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  - Brady, Richard L., and Gandler. 3,311,891.
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- Gattone, Daniel H. Self-contained applicator for use with pressurized containers. 3,310,830, 3-28-67, Cl. 15—552.
- Gault, Robert H., to Bethlehem Steel Corp. Pumping unit design. 3,310,988, 3-28-67, Cl. 74—41.
- Gaunt, Wilmer B., Jr., to Bell Telephone Laboratories, Inc. Current pulse driver with regulated rise time and amplitude. 3,311,900, 3-28-67, Cl. 340—174.
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- Gill, Edwin R., Jr. Reflector. 3,311,441, 3-28-67, Cl. 350—105.
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- Giller, Morris, to United States of America, Navy. High frequency externally pulsed switch tube. 3,311,852, 3-28-67, Cl. 333—13.
- Gillett, Glenn D., to United States of America, Navy. Circular polarization diversity data transmission system. 3,311,829, 3-28-67, Cl. 325—56.
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- Gilreath, Lafayette E., and E. C. McGarrahan, to Houston Oil Field Material Co., Inc. Hydrostatically balanced bumper sub. 3,311,180, 3-28-67, Cl. 175—293.
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- Glover, Edward B., to Radiation Inc. Signal redundancy utilizing slope limiting lines. 3,311,909, 3-28-67, Cl. 340—345.
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- Godby, John H. Sonic fishing lure. 3,310,902, 3-28-67, Cl. 43—17.1.
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- Goldberg, Regina H.: *See—*
  - Goldberg, Moses W., Jampolsky, and Kiersted. 3,311,661.
- Goller, George N., to Armco Steel Corp. Alloy steel and method. 3,311,511, 3-28-67, Cl. 148—12.
- Good, Alfred N., to E. I. du Pont de Nemours and Co. Process for drawing a polyamide yarn. 3,311,691, 3-28-67, Cl. 264—290.
- Goodgame, Thomas H., R. Antonsen, and T. D. Trowbridge, to Cabot Corp. Production of pyrogenic pigments. 3,311,452, 3-28-67, Cl. 23—202.
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- Gossner, Elwin. Controlled beam headlamp and the like. 3,311,745, 3-28-67, Cl. 240—41.1.
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- Graham, James W., and G. E. Sgourakes, to The Foxboro Co. Rotary thrust bearing. 3,311,433, 3-28-67, Cl. 208—230.
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- Graves, Jewel, to Big Dutchman, Inc. Poultry cage row support system. 3,311,087, 3-28-67, Cl. 119—18.
- Gray, Billy D., to TRW Semiconductors, Inc. Component package 3,311,798, 3-28-67, Cl. 317—234.
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- Gunderman, Tracey B., to United States of America, Navy. Transistorized circuit breaker. 3,311,787, 3-28-67, Cl. 317—33.
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- Gutner, Kenneth H. Knock-down canopy support for beds. 3,311,118, 3-28-67, Cl. 135—5.2.
- Gutshall, James G. Automatic opening seat belt fastener. 3,311,188, 3-28-67, Cl. 180—82.
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- Hager, Robert E., to Plastering Development Center, Inc. Pumping apparatus. 3,311,065, 3-28-67, Cl. 103—167.
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- Haggard, William R., Jr. Driver capability tester and vehicle anti-theft device. 3,311,187, 3-28-67, Cl. 180—82.
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- Hall, Gardner V., to Pace Mfg. Co. Sheet material handling apparatus. 3,311,372, 3-28-67, Cl. 271—74.
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- Hall, Lewis W., Jr., and W. E. McCorquodale, Jr., to Sun Oil Co. Preparation of 4-methylpentene-1. 3,311,673, 3-28-67, Cl. 260—683.15.
- Halliday, Vernon D.: *See—*
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- Halstead, Fred E., to Halstead Metal Products, Inc. Self-aligning packing gland arrangements. 3,311,030, 3-28-67, Cl. 92—118.
- Halstead, Fred E., to Halstead Metal Products, Inc. Vacuum cleaning apparatus for particulate materials. 3,311,420, 3-28-67, Cl. 302—49.
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  - Halstead, Fred E. 3,311,030.
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- Halter, Joseph R., to The Canton Drop Forging & Mfg. Co. Skid pipe for use in furnaces. 3,311,357, 3-28-67, Cl. 263—6.
- Hamel, Raymond R., to Westinghouse Electric Corp. Vending machine and check control apparatus therefor. 3,311,206, 3-28-67, Cl. 194—2.
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- Hanneman, William E.: *See—*
  - Lewis, William R., Hanneman, and Woster. 3,311,838.
- Harapat, Joseph J.: *See—*
  - Barzee, Verl N., and Harapat. 3,311,070.
- Harding, Dale A. Invalid aid stand. 3,310,817, 3-28-67, Cl. 5—92.
- Harmening, Wayne A., to United States of America, Navy. Scheme for preloading power gear trains. 3,310,998, 3-28-67, Cl 74—661.
- Harmon, James V., to The Pillsbury Co. Method and apparatus for striping and coloring extruded materials. 3,311,263, 3-28-67, Cl. 222—1.
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  - Kasper, Robert J. 3,311,695.
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  - Wurzburg, Otto B., Olsen, and Fitzgerald. 3,310,935.
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  - Olsson, Jons K. A., and Olsson. 3,311,899.
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  - Nagata, Minoru, and Ono. 3,311,736.
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  - Francis, Thomas, and Jones. 3,311,459.
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  - Gronholz, LeRoy F., Owens, and Price. 3,310,860.
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  - Heider, James E. 3,311,684.
  - Howell, John R. 3,311,232.
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  - Barbour, Marshall S. 3,311,489.
  - Hart, Robert T. 3,311,492.
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  - Huff, Major W. 3,311,238.
- Packard, George N., to Bell Telephone Laboratories, Inc. Nondegenerate multimode tracking system. 3,311,916, 3–28–67, Cl. 343—100.
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  - Page, Robert M. 3,311,912.
- Page, Leo W.: *See*—
  - Murphy, Charles F., and Page. 3,311,710.
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  - Capps, David B. 3,311,614.
  - Wittle, Eugene L. 3,311,645.
- Parker, Wilfred S., ½ to Edge and Sons Ltd. Dock and like fenders. 3,311,081, 3–28–67, Cl. 114—220.
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  - Rankin, Billy F. 3,311,577.
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  - Ladd, LeRoy S., Parsons, and Weagley. 3,311,522.
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  - Robarge, Claude W. 3,311,478.
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- Pearne, Frank S., to Pearne and Lacey Machine Co., Inc. Hydraulic jack means. 3,310,941, 3–28–67, Cl. 60—52.
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  - Carpenter, Lester E., Pelley, and Hall. 3,311,523.
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  - Hauptschein, Murray, and Miville. 3,311,566.
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  - Hayward, William J. 3,311,200.
- Peroni, Peter A., to Navigation Computer Corp. Sloping panel keyboard mount. 3,311,210, 3–28–67, Cl. 197—98.
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  - Cheney, Lee C., and Perron. 3,311,609.
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- Perry, Elbert W.: *See*—
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- Peterson, Herbert E. Electrical resistance heating apparatus. 3,311,734, 3–28–67, Cl. 219—50.
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  - Severson. Sylvester B. 3,311,042.
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- Phillips, Harold J., to Massey-Ferguson Inc. Tractor having saddle gas tanks. 3,311,183, 3–28–67, Cl. 180—1.
- Phillips, Norman W. F., B. Rapson, and F. W. Southam, to Aluminium Laboratories Ltd. Gas-liquid contact apparatus for aluminum refining by the subhalide distillation process. 3,311,363, 3–28–67, Cl. 266—34.
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  - Cabbage, John T. 3,311,667.
  - Dunn, Robert O. 3,311,666.
  - Van Pool, Joe. 3,311,551.
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- Phipps, Arthur L., to Aerojet-General Corp. Propellant liner. 3,311,013, 3–28–67, Cl. 86—20.
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  - Cummins, James B. 3,311,038.
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- Pickard, Edgar C. Dust seals for trunks. 3,311,203, 6–28–67, Cl. 190—19.
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  - Harmon, James V. 3,311,263.
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- Pine, Buddie J.: *See*—
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- Pitt, Solomon H., to Sperry Rand Corp. Record transport system. 3,311.369, 3–28–67, Cl. 271—45.
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  - Brennan, William E., Halliday, and Pitts. 3,311,405.
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  - Heinemann, Otto. 3.311,421.
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- Rees, Herbert L. Bonded low-temperature laminated resistance heater. 3,311,862, 3–28–67, Cl. 338—211.
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  - Peras, Lucien. 3,311,786.
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  - Toekes, Barna. 3,311,676.
- Reynders, Anton. Apparatus relating to evacuating and filling gas discharge lamps and the like. 3,311,440, 3–28–67, Cl. 316—30.
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- Ristau, Theodore F., to General Motors Corp. Constant velocity universal joint. 3,310,961, 3–28–67, Cl. 64—21.
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- Robbins, Davis B. Material handling apparatus. 3,311,223, 3–28–67, Cl. 198—220.
- Robbins, Saul. Figurine having improved inertia characteristics. 3,310,907, 3–28–67, Cl. 46—156.
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- Robinson, Myron L., to Barton Instrument Corp. Detector for combustible gas. 3,311,455, 3–28–67, Cl. 23—255.
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DESIGN PATENTS

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
March 28, 1967 Volume 836 Number 4

TRADEMARKS

NOTICES

Recording of Instruments

Effective April 1, 1967, the Patent Office will accept and record legible certified copies of original assignments or other instruments.

The certified copy, if not in the English language, will not be recorded unless accompanied by a translation signed by the translator.

Certification shall be to the fact that the instrument submitted is a true copy of the original and shall be made by a notary public or, if in a foreign country, by a consular officer of the United States or an officer authorized to administer oaths and authenticated by a consular officer of the United States.

RICHARD A. WAHL,
Assistant Commissioner.

Mar. 3, 1967.

CONDITION OF TRADEMARK APPLICATIONS AS OF FEBRUARY 28, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17, 447
Date of oldest new application	Jan. 13, 1966
Date of oldest amended application (filing date)	May 13, 1963

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF. Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	1-21-66	7-30-64
(II) F. H. WETHERBEE, Classes 1, 3, 6, 7, 9, 10, 18, 22, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	1-13-66	5-13-63
Renewals (All Classes)	1-24-67	--------
Sec. 12 (c) Publications (All Classes)	1-31-67	--------

Applications filed during the month of February 1967—2,064

Registration Issued ------------------------325—No. 826,287 to No. 826,611
Renewals Issued -------------------------- 80

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

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MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.**]**

SN 216,355. Symington Wayne Corporation, Salisbury, Md. Filed Apr. 12, 1965.

NYE WAYNE

Owner of Reg. Nos. 80,295, 575,135, and others.

Class 2—Receptacles

For Carrying Boxes.
First use prior to Feb. 1, 1965.

Class 15—Oils and Greases

For Cutting Oil.
First use prior to Apr. 1, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pipe Tools—Namely, Pipe Cutters; Pipe Cutter Wheels; Pipe Vises; Vise Stands; Threading Dies (Pipe and Conduit); Threading Dies (Bolt); Die Heads; Tube Cutters; Tube Cutter Wheels; Power Drives and Accessories—Namely, Stands, Die Heads, Cutters, Saddles, Yokes and Brushes; Universal Drive Shafts; Flaring Tools; Manual and Hydraulic Knock-Out Punches; Pipe Taps; Reamers; Wrenches (Pipe, Spud, Adjustable, Closet, Nipple, Ratcheting Chain); and Sets, Parts, and Accessories Therefor.
First use Sept. 7, 1964.

SN 226,462. Panelgraphic Corporation, Caldwell, N.J. Filed Aug. 25, 1965.

87-D

Class 26—Measuring and Scientific Appliances

For Scientific Equipment—Namely, Instrument and Console Panels, Dials and Calibrated Scales.

Class 50—Merchandise Not Otherwise Classified

For Name Plates.

First use Aug. 5, 1965.

SN 230,303. Steadman Industries Limited, Cooksville, Ontario, Canada. Filed Oct. 15, 1965.

RAIL-TAINER

Applicant disclaims the right to the exclusive use of the word "Rail" apart from the mark. Owner of Canadian Reg. No. 135,948, dated May 22, 1964.

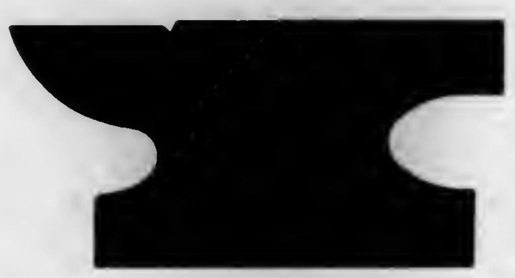
Class 19—Vehicles

For Freight Containers for Railroad and Highway Vehicles.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Portable and Stationary Conveyors, Cranes, Load Lifting and Handling Equipment, for Loading, Off-Loading, and Transferring Freight Containers Between Vehicles.

SN 234,106. Anvil Mineral Products Corporation, Bay Springs, Miss. Filed Dec. 7, 1965.



Class 10—Fertilizers

For Combination Soil Conditioner and Fertilizer.
First use November 1962.

Class 18—Medicines and Pharmaceutical Preparations

For Mineral and Vitamin Additive for Livestock and Poultry feed and Feed Supplement for Livestock and Poultry.
First use November 1962.

Class 46—Foods and Ingredients of Foods

For Preparation for Treating Silage, e.g., To Prevent Heating, To Retard Spoilage, To Preserve Food Value, and To Keep It Fresh.
First use May 1963.

SN 234,962. Union Tank Car Company, Chicago, Ill. Filed Dec. 20, 1965.

GRAVER

Owner of Reg. Nos. 623,294, 791,993, and others.

Class 6—Chemicals and Chemical Compositions

For Chemicals (Resins).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Valves.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Degasifiers, Clarifiers, Apparatus for Chemically Treating Water by Precipitation, and Apparatus for Absorbing Impurities.

Class 26—Measuring and Scientific Appliances

For Content Analyzers.

Class 31—Filters and Refrigerators

For Filters, Ion Exchangers, and Dialyzers.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Deaerating Heaters and Boiler Blowoff Heat Recovery Units.

First use at least as early as 1938.

SN 238,144. Welsh Sporting Goods Corp., Iowa Falls, Iowa. Filed Feb. 7, 1966.

BOYT

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Animal Equipment—Namely, Bridles, Reins, Bits, Tailsets, Leadstraps, Halters, Saddle Covers, Stable Sheets, and Blankets.

Class 9—Explosives, Firearms, Equipments, and Projectiles

For Gun Cases, Shell, Cartridge, Game and Gun Carriers, Gun Slings and Straps, and Scabbards.

Class 22—Games, Toys, and Sporting Goods

For Sporting Goods—Namely, Fishing Rod, Billiard Cue and Bow Cases, Reel and Tackle Bags, Ski Cases and Ski Bags.

First use at least as early as Jan. 1, 1900.

SN 242,778. Gleamlight Inc., Mount Vernon, N.Y. Filed Apr. 6, 1966.

GLEAMLIGHT

Class 27—Horological Instruments

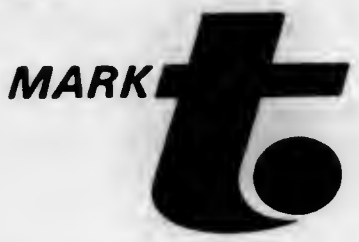
For Watches.

Class 28—Jewelry and Precious-Metal Ware

For Jewelry.

First use in about August 1953.

SN 244,447. Southwestern Drug Corporation, Dallas, Tex. Filed Apr. 28, 1966.



Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Leather and Plastic Goods—Namely, Billfolds, Purses, and Key Cases.
First use Feb. 25, 1965.

Class 26—Measuring and Scientific Appliances

For Baggage, Animal Equipment, Portfolios, and Pocketbooks; and Sunglasses.
First use May 26, 1965, on sunglasses.

SN 244,637. Valco, Inc., Cincinnati, Ohio. Filed May 2, 1966.

VALCO

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Valves for the Control of Gases and Liquids for Fire Prevention.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pressurized Glue Applying Equipment.

First use February 1952.

SN 246,370. Robert B. Salz, San Francisco, Calif. Filed May 23, 1966.

N-DRIV

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Threaded Bolts With Tool Engagement on Leading Edge.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Fastener Tool Therefor such as Power Tool Adaptors, Hand Tools, Ratchet Wrenches, Impact Wrenches, and Nut Runners.

First use May 3, 1965.

SN 246,834. Republic Molding Corporation, Chicago, Ill. Filed May 31, 1966.

POLLY FLEX

Owner of Reg. No. 554,945.

Class 2—Receptacles

For Dish Pans, Salt, Pepper and Spice Containers, Decanters, Basins, Hampers, Garbage Receptacles, Utility Bins, With and Without Covers, Baskets, Cutlery Trays, Dust Pans, and Pails.
First use January 1950.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Drainboards, Drainers, Sink Mats, Sink Saddles, and Colanders.
First use May 1956.

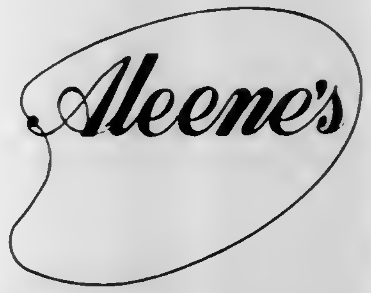
Class 26—Measuring and Scientific Appliances

For Measuring Pitchers and Caps.
First use January 1955.

Class 50—Merchandise Not Otherwise Classified

For Bath Mats and Boot Mats.
First use May 1956.

SN 262,376. Aleene's Fibre & Floral Supply Company, d.b.a. Aleene's Inc., Aleene's, and Aleene, Temple City, Calif. Filed Jan. 12, 1967.



Class 1—Raw or Partly Prepared Materials

For Feather Fluff.
First use Mar. 15, 1966.

Class 16—Protective and Decorative Coatings

For Spray Paint.
First use July 24, 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Felt.
First use July 15, 1966.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1 — Raw or Partly Prepared Materials

SN 230,217. Herman B. Wagner, d.b.a. Wagner Scientific Products, Perkasie, Pa. Filed Oct. 13, 1965.

REPLICA GEL

The word "Gel" is disclaimed except for the mark shown.
For Solid-State Polymeric Material With Absorptive Properties for General Use in the Industrial Arts.
First use Oct. 7, 1965.

SN 240,018. Montecatini, Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy. Filed Mar. 2, 1966.

ELAPRIM

Owner of Italian Reg. No. 152,624, dated July 8, 1960.
For Synthetic Rubber for Use in Manufacture.

SN 245,246. The Sexauer Company, Brookings, S. Dak. Filed May 9, 1966.

BIG RED

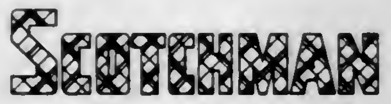
For Sorghum Sudan Grass Hybrid Seeds and Other Legume Field Seeds.
First use on or about Apr. 1, 1966.

SN 248,695. G and A Laboratories, Inc., Savannah, Ga. Filed June 22, 1966.

GATAK

For Liquid and Solid Resins Used as Tackifiers, Plasticizers, and Processing Aids for Elastomeric and Plastic Materials.
First use May 26, 1966.

SN 248,989. Excel Sorghum Company, Plainview, Tex. Filed June 27, 1966.



For Hybrid Sorghum-Sudangrass Seed.
First use Jan. 31, 1966.

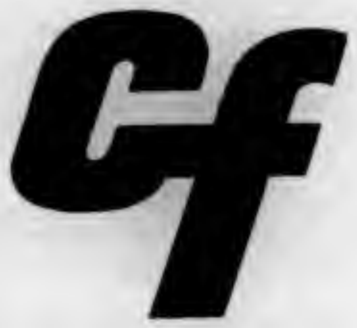
SN 253,144. The B. F. Goodrich Company, Akron, Ohio. Filed Aug. 25, 1966.

AZTRAN

For Poromeric Sheet Material, Composed Principally of Fabric and Synthetic Rubber-Like Material.
First use Aug. 17, 1966.

Class 2 — Receptacles

SN 238,274. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Feb. 7, 1966.



For Paper Bags and Paperboard Containers.
First use Sept. 24, 1965.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 217,987. John P. Clasby, d.b.a. J & J Upholstering Company, Brockton, Mass. Filed May 4, 1965.

CAPE CADDY

Applicant disclaims exclusive rights to the word "Caddy" apart from the mark as shown.
For Beach Bags, Traveling Kits, and Shaving Bags.
First use on or about Apr. 19, 1965.

SN 253,535. Virginia King, d.b.a. King's Key Finder., Los Angeles, Calif. Filed Aug. 31, 1966.

KEY FINDER

The word "Key" is disclaimed apart from the mark as shown.
For Key Holder.
First use Nov. 27, 1959.

SN 256,185. Norma E. Updyke, Hastings-on-Hudson, N.Y. Filed Oct. 11, 1966.

KAT-TRENE

For Box-Like Enclosure for a Cat Litter Tray.
First use Sept. 26, 1966.

SN 259,996. Standard Cigar Company, Inc., d.b.a. J. E. Seeman Company, Los Angeles, Calif. Filed Dec. 5, 1966.

LA SALLE

For Leather Billfolds, Leather Wallets, and Leather Key Cases.
First use May 7, 1951.

SN 261,564. A. J. Siris Products Corp., New York, N.Y. Filed Dec. 28, 1966.

SLICKITS

For Cosmetic Bags.
First use Nov. 17, 1966.

Class 5 — Adhesives

SN 237,192. Alamac Knitting Mills, Inc., New York, N.Y. Filed Jan. 25, 1966.

ALABOND

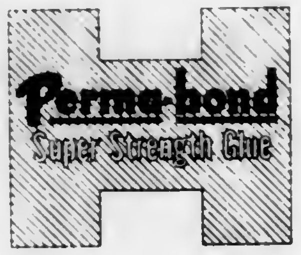
For Fabric Bonding Adhesive Compounds and Compositions.
First use December 1965.

SN 237,245. National Starch and Chemical Corporation, New York, N.Y. Filed Jan. 25, 1966.

VY-LOK

For Adhesive for Use on Vinyl and Other Surfaces.
First use Dec. 17, 1965.

SN 261,958. Hercules Glue Company, Inc., North Miami, Fla. Filed Jan. 5, 1967.



The drawing is lined for the color green. The words "Super Strength Glue" are disclaimed apart from the mark.
For Glue.
First use Dec. 21, 1966.

Class 6 — Chemicals and Chemical Compositions

SN 223,623. B-D Laboratories, Inc., East Rutherford, N.J. Filed July 19, 1965.

RIMSEAL

For Sterile Disposable Plated Media for Laboratory Use.
First use on or about June 1, 1960.

SN 236,559. Fred H. Buck, Boonton, N.J. Filed Jan. 17, 1966.

U-TABS

For Deodorant Tablets for Urinals.
First use Jan. 7, 1966.

SN 237,062. Wood Ridge Chemical Corporation, Wood-Ridge, N.J. Filed Jan. 21, 1966.

MERSOLITE

For Phenyl Mercury Salts of Organic Acids, Imides—Namely, Phenyl Mercuric Salicylate, Phenyl Mercuric Phthalate, Phenyl Mercuric Borate, Phenyl Mercuric Oleate, Phenyl Mercuric Benzoate, Phenyl Mercuric Chloride, Phenyl Mercuric Dimethyldithiocarbamate, Phenyl Mercuric Hydroxide, Phenyl Mercuric Lactate, Phenyl Mercuric Nitrate and Phenyl Mercuric Acetate, for Use as an Ingredient in Bactericides and Fungicides.
First use June 11, 1941.

SN 237,244. Nalco Chemical Company, Chicago, Ill. Filed Jan. 25, 1966.

ENDRIFT

For Antimist Ingredient Incorporated in a Herbicide.
First use Jan. 5, 1966.

SN 239,860. American Cyanamid Company, Wayne, N.J. Filed Mar. 1, 1966.

GELAMIDE

For Thickening Agent for Use in Cosmetic and Pharmaceutical Preparations.
First use Jan. 24, 1966.

SN 239,980. Domtar Limited, Montreal, Quebec, Canada. Filed Mar. 2, 1966.

FLAIR

For Liquid Starches and Laundry Rinses for Commercial Use.
First use Jan. 31, 1966; in commerce Jan. 31, 1966.

SN 240,895. General Aniline & Film Corporation, New York, N.Y. Filed Mar. 14, 1966.

HYSCAN

Owner of Reg. No. 661,908.
For Photographic Chemicals for Use in Processing Exposed Photosensitive Film and Paper.
First use Dec. 31, 1965.

SN 246,973. Utah Cooperative Association, Salt Lake City, Utah. Filed May 31, 1966.

PAX

Owner of Reg. Nos. 232,417, 412,410, and 417,314.
For Herbicide-Insecticide.
First use 1939.

SN 247,733. Stauffer Chemical Company, New York, N.Y. Filed June 9, 1966.

SI-O-DRI

For Masonry Water Repellents.
First use Mar. 11, 1966.

SN 249,471. Transene Company, Inc., Danvers, Mass. Filed July 5, 1966.

MOLYTITE

For Chemical Suspension of Molybdenum Powder in a Suitable Vehicle for Metallizing Alumina and Other Ceramics.
First use May 27, 1966.

SN 250,253. Del Chemical Corporation, Menomonee Falls, Wis. Filed July 14, 1966.

BAC-OFF

For Germicidal Disinfectant-Deodorant Preparation.
First use Jan. 1, 1962.

SN 250,569. FMC Corporation, New York, N.Y. Filed July 19, 1966.

MOLY-F

For Flotation Reagent.
First use June 17, 1966.

SN 252,189. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Aug. 11, 1966.

ALUMINAR

Owner of Reg. Nos. 594,036, 802,526, and others.
For Sorbents for Chromatography.
First use July 26, 1966.

SN 252,266. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Aug. 12, 1966.

CHROMAR

Owner of Reg. Nos. 644,347, 802,526, and others.
For Kits for Thin Layer Chromatography Analysis, Components Thereof, and Sheets for Chromatography.
First use May 27, 1966, on the component coated glass plates.

SN 252,497. Technic, Inc., Cranston, R.I. Filed Aug. 16, 1966.

TECHNIPLATINUM

For Platinum and Platinum Plating Solutions.
First use Aug. 12, 1966.

SN 252,846. W. R. Grace & Co., New York, N.Y. Filed Aug. 22, 1966.

POLYTROL

For Chemical Used for Boiler Water Treatment.
First use July 28, 1966.

SN 252,872. Mona Industries, Inc., Paterson, N.J. Filed Aug. 22, 1966.

VUE TOP

For Photo Resist for Printing Plates Which Makes Picture Visible When Developed.
First use Aug. 25, 1965.

SN 252,875. Monsanto Company, St. Louis, Mo. Filed Aug. 22, 1966.

SANTOTHERM

For Heat Transfer Media.
First use Mar. 15, 1966.

SN 253,125. Deady Chemical Company, Kansas City, Kans. Filed Aug. 25, 1966.

DECHEL

For Scale and Corrosion Inhibitors for Use in Boiler Water Systems.
First use Apr. 7, 1966.

SN 253,126. Deady Chemical Company, Kansas City, Kans. Filed Aug. 25, 1966.

DIMET

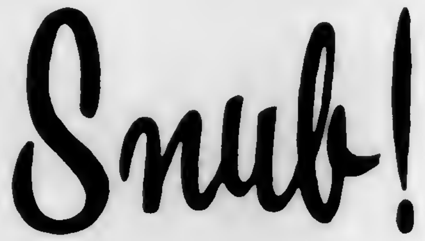
For Scale and Corrosion Inhibitors for Use in Cooling Water Systems.
First use Apr. 13, 1966.

SN 253,160. Monsanto Company, St. Louis, Mo. Filed Aug. 25, 1966.

SANTOVAC

For High Boiling Chemical Compounds for Use as Vacuum Pump Fluids.
First use Feb. 23, 1966.

SN 253,244. Rhodia Inc., New York, N.Y. Filed Aug. 26, 1966.



For Canine Mating Repellent.
First use Aug. 15, 1966.

SN 255,178. Salt Service, Incorporated, Philadelphia, Pa. Filed Sept. 27, 1966.

ICE-A-WAY

For Chemical Preparation for Melting Ice and Snow.
First use at least as early as November 1963.

SN 255,262. Masury-Young Company, Melrose Park, Ill. Filed Sept. 28, 1966.

TRILICON

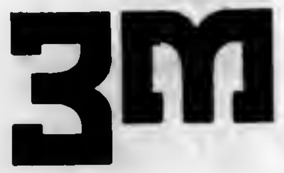
For Concrete Curing Agent.
First use Feb. 4, 1966.

SN 261,179. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 21, 1966.

HYVAR

Owner of Reg. No. 742,838.
For Brush Killer.
First use Oct. 26, 1966.

SN 261,266. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Dec. 22, 1966.



For Liquid Chemical Composition Useful for Protecting a Photographic Print.
First use June 22, 1966.

SN 261,267. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Dec. 22, 1966.

ELECTROCOLOR

For Liquid Chemical Composition Useful for Protecting a Photographic Print.
First use June 22, 1966.

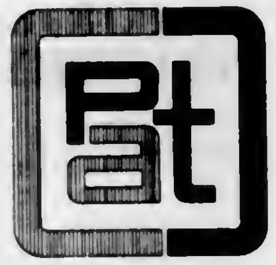
SN 262,096. Allied Chemical Corporation, New York, N.Y. Filed Jan. 9, 1967.

KEPONE

For Acaricides; Toxic Composition for Insecticides and Acaricides.
First use May 13, 1958.

Class 7 — Cordage

SN 220,661. International Harvester Company (Delaware corporation), Chicago, Ill., assignee of International Harvester Company (New Jersey corporation), Chicago, Ill. Filed June 8, 1965.



The drawing is lined for the color red.
For Twine.
First use May 19, 1965.

SN 242,276. Package Containers, Inc., Portland, Oreg. Filed Mar. 30, 1966.

NEK TIE

No claim is made to the word "Tie" apart from the mark as shown.
For Paper Tape With a Wire Core Which Is Used in Tying Polyethylene Bags, Plants, Vegetables, Flowers, Packages, Hose, Ropes, Wires, and Similar Material.
First use Mar. 23, 1966.

SN 252,151. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Aug. 11, 1966.

CORDURA

Owner of Reg. Nos. 326,327, 596,842, and 598,346.
For Twine.
First use July 8, 1966.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 247,607. Lane Limited, New York, N.Y. Filed June 8, 1966.

TOWNSMAN

For Pipes.
First use April 1966.

Class 10 — Fertilizers

SN 216,266. Chevron Chemical Company, San Francisco, Calif., by change of name from California Chemical Company, San Francisco, Calif. Filed Apr. 12, 1965.

LAWN GROOM

Applicant disclaims the word "Lawn" apart from the mark as shown. Owner of Reg. Nos. 533,271 and 540,937.
For Combination Fertilizer, Herbicide, and Insecticide.
First use Jan. 27, 1949.

SN 235,135. The Terre Co. of New Jersey, Inc., Saddle Brook, N.J. Filed Dec. 22, 1965.

LAWN-SPUR

For Fertilizer.
First use on or about Mar. 15, 1929.

SN 235,136. The Terre Co. of New Jersey, Inc., Saddle Brook, N.J. Filed Dec. 22, 1965.

GARDEN-SPUR

For Fertilizer.
First use on or about Feb. 25, 1940.

SN 235,438. The Terre Co. of New Jersey, Inc., Saddle Brook, N.J. Filed Dec. 28, 1965.

TURF-SPUR

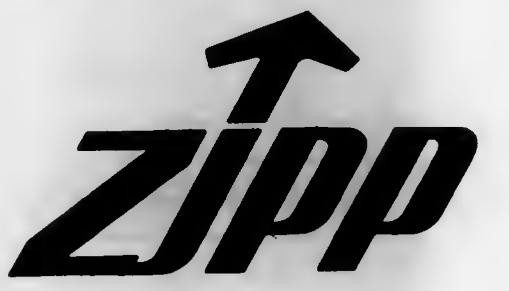
For Fertilizer.
First use Feb. 25, 1955.

SN 235,870. Southern Nitrogen Company, Inc., Savannah, Ga. Filed Jan. 5, 1966.

FUN

For Fertilizer.
First use June 12, 1961.

SN 244,238. Occidental Petroleum Corporation, Los Angeles, Calif. Filed Apr. 25, 1966.



For Fertilizers.
First use Jan. 7, 1966.

SN 246,182. Edmond J. Lang, New Rochelle, N.Y. Filed May 20, 1966.

HYDE PARK

For Peat Moss To Be Used as a Soil Conditioner.
First use Jan. 5, 1949.

SN 247,165. Texaco Inc., New York, N.Y. Filed June 2, 1966.

GREEN CHIEF

For Fertilizer.
First use Mar. 8, 1966.

SN 247,474. Armour and Company, Chicago, Ill. Filed June 7, 1966.

ARMOUR

Owner of Reg. No. 546,827.
For Fertilizers.
First use on or prior to Mar. 10, 1965.

SN 248,273. Wisconsin Ice & Coal Co., Milwaukee, Wis. Filed June 16, 1966.

FOUNTAIN GREEN

For Fertilizers.
First use Mar. 19, 1966.

Class 11 — Inks and Inking Materials

SN 241,538. Sun Chemical Corporation, New York, N.Y. Filed Mar. 21, 1966.

SUN SHEEN

Owner of Reg. Nos. 621,578 and 753,172.
For Printing Inks.
First use July 15, 1965.

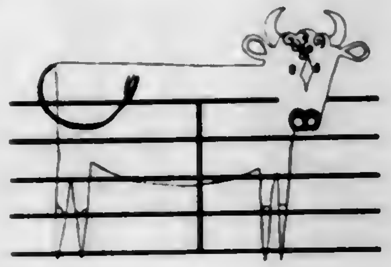
Class 12 — Construction Materials

SN 239,850. Neuendorf & Co., Hamburg, Germany. Filed Oct. 27, 1965.

POLYCELLA

Owner of German Reg. No. 787,634, dated Apr. 24, 1964.
For Al Plastic Window Frame Construction.

SN 251,427. Hold 'Em Gate Company, Inc., Oneonta, Ala. Filed Aug. 1, 1966.



For Livestock Gates and Pens.
First use Mar. 25, 1966.

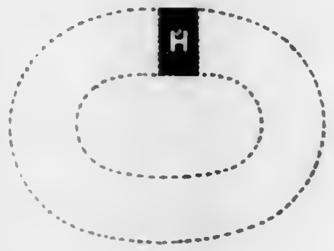
Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 223,325. L. D. McCauley, Inc., Buffalo, N.Y. Filed July 14, 1965.

MCGARD

For Nuts and Screws Used Mainly for Mounting Vehicle Wheel Rims.
First use Mar. 1, 1964.

SN 237,146. The National Screw & Manufacturing Company, Cleveland, Ohio. Filed Jan. 24, 1966.



No registration rights are claimed for the letter "H" apart from the mark shown, but the applicant waives none of its common law rights in the mark shown or any feature thereof.
Owner of Reg. No. 801,652.
For Chain.
First use Jan. 5, 1962.

SN 238,448. Republic Manufacturing Company, Cleveland, Ohio. Filed Feb. 9, 1966.

VALVES FOR EVERY INDUSTRY

For Valves and Valve Accessories.
First use 1954.

SN 239,735. Continental Oil Company, Ponca City, Okla. Filed Feb. 28, 1966.

H-WELL

For Plastic Pipe.
First use February 1962.

SN 255,752. Ocor Products Corporation, New York, N.Y. Filed Oct. 5, 1966.

"IT"

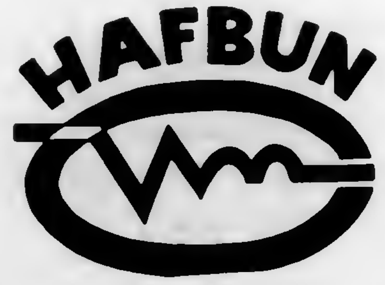
For Brackets, Clips, and Hangers.
First use January 1962.

SN 261,180. Western Irrigation Valve Corporation, Des Moines, Iowa. Filed Dec. 21, 1966.

WIVCO

For Valves.
First use Aug. 26, 1966.

SN 261,841. Half-Bun Baking Pan Corporation, Oklahoma City, Okla. Filed Jan. 3, 1967.



For Baking Pans.
First use Oct. 15, 1966.

Class 14 — Metals and Metal Castings and Forgings

SN 249,903. Union Carbide Corporation, New York, N.Y. Filed July 7, 1966.

KEMET

Owner of Reg. Nos. 285,561, 684,363, and others.
For Tantalum Powder.
First use May 26, 1961.

Class 15 — Oils and Greases

SN 245,871. Westland Oil Company, Minot, N. Dak. Filed May 17, 1966.

DURAMATIC

Owner of Reg. No. 174,764.
For Automatic Transmission Fluid.
First use Nov. 15, 1952.

SN 247,527. Signal Oil and Gas Company, Los Angeles, Calif. Filed June 7, 1966.

HANCOCK 535

Owner of Reg. Nos. 213,522, 276,862, and 303,972.
For Gasoline.
First use Aug. 18, 1965.

SN 247,528. Signal Oil and Gas Company, Los Angeles, Calif. Filed June 8, 1966.

HANCOCK 540

Owner of Reg. Nos. 213,522, 276,862, and 303,972.
For Gasoline.
First use Aug. 18, 1965.

SN 247,529. Signal Oil and Gas Company, Los Angeles, Calif. Filed June 7, 1966.

HANCOCK 520

Owner of Reg. Nos. 213,522, 276,862, and 303,972.
For Gasoline.
First use Aug. 18, 1965.

SN 247,633. Signal Oil and Gas Company, Los Angeles, Calif. Filed June 7, 1966.

HANCOCK 515

Owner of Reg. Nos. 213,522, 276,862, and 303,972.
For Gasoline.
First use Aug. 18, 1965.

SN 247,634. Signal Oil and Gas Company, Los Angeles, Calif. Filed June 8, 1966.

HANCOCK 525

Owner of Reg. Nos. 213,522, 276,862, and 303,972.
For Gasoline.
First use Aug. 18, 1965.

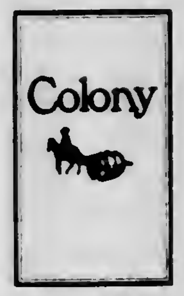
Class 17 — Tobacco Products

SN 241,235. Camacho Cigars, Inc., Miami, Fla. Filed Mar. 17, 1966.

RAMONES

For Cigars.
First use Aug. 4, 1965.

SN 247,185. The American Tobacco Company, New York, N.Y. Filed June 3, 1966.



Owner of Reg. No. 791,688.
For Cigarettes.
First use May 17, 1966.

SN 247,378. M & N Cigar Manufacturers, Inc., Tampa, Fla. Filed June 6, 1966.

RIGOLETTO BLACK JACK

Owner of Reg. No. 641,803.
For Cigars.
First use March 1966.

SN 248,238. Lane Limited, New York, N.Y. Filed June 16, 1966.

LANETTE

For Smoking Tobacco.
First use March 1966.

SN 262,103. Sutliff Tobacco Company, Richmond, Va. Filed Jan. 9, 1967.

H.SUTLIFF

The mark is the name of the founder of the business, now deceased.
For Smoking Tobacco.
First use 1849.

Class 18 — Medicines and Pharmaceutical Preparations

SN 241,556. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Mar. 21, 1966.

REACH

For Mouthwash and Gargle.
First use Mar. 10, 1966.

SN 241,921. Miles Laboratories, Inc., Elkhart, Ind. Filed Mar. 25, 1966.

AQUA BLUE

For Douche Preparation.
First use on or before Nov. 11, 1964.

SN 246,032. Behringwerke Aktiengesellschaft, Marburg/Lahn, Germany. Filed May 19, 1966.

GAMMA-VEININE

Owner of German Reg. No. 773,255, dated May 8, 1963; and U.S. Reg. No. 785,491.
For Intravenously Administrable Preparations of Gamma-Globulin.

SN 248,510. The National Laboratories Corporation, Kansas City, Mo. Filed June 20, 1966.

NEOLASE

For Veterinary Product for Intrauterine Disinfection.
First use March 1965.

SN 248,512. The National Laboratories Corporation, Kansas City, Mo. Filed June 20, 1966.

AMINOCID

For Injectable Preparation Containing Protein and Vitamins for Veterinary Use.
First use April 1965.

SN 253,409. Alcon Laboratories, Inc., Fort Worth, Tex. Filed Aug. 30, 1966.

STEROFRIN

For Ophthalmic Preparation.
First use July 20, 1966.

SN 253,446. Luke Pharmaceutical, Inc., Fair Winds, Bear, Del. Filed Aug. 30, 1966.

LUKORT

For Pharmaceutical Preparation in the Treatment of Collagen Diseases.
First use Feb. 8, 1966.

SN 253,648. Hoffman-La Roche Inc., Nutley, N.J. Filed Sept. 1, 1966.

ANCOBON

For Antiemetic Preparation.
First use Aug. 24, 1966.

SN 253,661. Luitpold-Werk Chemisch-Pharmazeutische Fabrik, Munich, Germany. Filed Sept. 1, 1966.

CLAUDEN

Owner of German Reg. No. 213,816, dated Nov. 10, 1916.
For Pharmaceutical Products—Namely, a Hemostatic Preparation.

SN 253,722. Bristol-Myers Company, New York, N.Y. Filed Sept. 2, 1966.

CURTAIL

For Medicines and Pharmaceutical Preparations—Namely, an Anti-Acne Cream.
First use Aug. 8, 1966.

SN 257,766. Chesebrough-Pond's Inc., New York, N.Y. Filed Nov. 2, 1966.

Q-TIPS

Owner of Reg. Nos. 309,256, 591,736, and 647,549.
For Cough Syrup.
First use Aug. 26, 1966.

SN 260,494. American Home Products Corporation, New York, N.Y. Filed Dec. 12, 1966.

CUMULIN

For Analgesic Preparation.
First use Nov. 23, 1966.

SN 262,092. Parke, Davis & Company, Detroit, Mich. Filed Jan. 9, 1967.

NATABEC-F. A.

Owner of Reg. No. 568,927.
For Vitamin-Mineral Preparation.
First use on or before Jan. 3, 1967.

SN 262,245. American Home Products Corporation, New York, N.Y. Filed Jan. 10, 1967.

ANCEPT

Owner of Reg. No. 810,959.
For Progestational Agent.
First use Dec. 21, 1966.

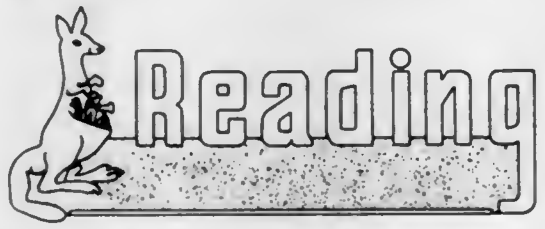
Class 19 — Vehides

SN 226,773. Permanyer, S.A., Barcelona, Spain. Filed Aug. 30, 1965.

MONTESA

For Automobiles, Motorcycles, and Bicycles.
First use February 1958; in commerce Apr. 1958.

SN 228,401. Reading Body Works, Inc., Reading, Pa. Filed Sept. 22, 1965.



For Utility Bodies for Trucks.
First use Sept. 9, 1965.

SN 240,722. Ford Motor Company, Dearborn, Mich. Filed Mar. 11, 1966.

LANCELOT

For Automobiles.
First use Jan. 11, 1966.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 230,518. Data Device Corporation, Hicksville, N.Y. Filed Oct. 19, 1965.

DDC

For Electronic Amplifiers, Comparators, Relays, and Power Supplies.
First use Apr. 16, 1964.

SN 233,587. Electrosonics International, Inc., Philadelphia, Pa. Filed Dec. 1, 1965.

CAR-CALL II

For AM-FM Converters for Vehicle Radios.
First use June 30, 1965; Sept. 22, 1962, as to "Car-Call."

SN 234,960. Union Carbide Corporation, New York, N.Y. Filed Dec. 20, 1965.

POWER TO SPARE

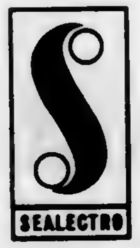
For Electric Batteries.
First use in or about March 1962.

SN 237,025. Red Jacket Manufacturing Company, Davenport, Iowa. Filed Jan. 21, 1966.

RED JACKET

For Electric Motors, Magnetic Starters, Magnetic Contractors, Electric Cables for Submersible Pumps, Pressure Switches, Float Switches, and Motor Controls for Pump Motors.
First use at least as early as February 1932, on electric motors, pressure switches, and float switches.

SN 241,186. Sealectro Corporation, Mamaroneck, N.Y. Filed Mar. 16, 1966.



Owner of Reg. Nos. 750,059 and 750,060.
For Electronic Components—Namely, Stand-Off and Feed-through Terminals, Connectors, Test Point Jacks, Taper Pin Receptacles, Probes and Plugs for Test Jacks, Printed Wiring Board Receptacles, Cable Feed-Throughs, Bulkhead Receptacles and Switches, Switches for Programming Devices, and Static Card Readers.
First use March 1952.

SN 241,196. Straba Handels-Aktiengesellschaft, Zug, Switzerland. Filed Mar. 16, 1966.

BITUCONVERT

Owner of Swiss Reg. No. 211,884, dated Aug. 6, 1965.
For Electrodes for Producing Aluminum.

SN 241,419. Barbecue King, Inc., Greenville, S.C. Filed Mar. 21, 1966.

BARBECUE KING

Applicant disclaims the word "Barbecue" apart from the mark as shown. Owner of Reg. Nos. 622,983 and 714,658.
For Electric Barbecue Machines and Food Warmers.
First use Oct. 1, 1954.

SN 260,702. International Vacuum Cleaner Co., Inc., Garfield, N.J. Filed Dec. 14, 1966.

IVC

For Industrial and Domestic Vacuum Cleaners, Parts Thereof, and Filter Paper Bags for Vacuum Cleaners.
First use Apr. 1, 1966.

SN 261,263. Inter-State Auto Parts Co. Inc., New York, N.Y. Filed Dec. 22, 1966.

INTER-STATE

Owner of Reg. No. 247,355.
For Automobile Storage Batteries.
First use Apr. 6, 1966.

Class 22 — Games, Toys, and Sporting Goods

SN 234,466. Robert L. Reichert, d.b.a. R. G. B. Reichert Mfg. Co., Spokane, Wash. Filed Dec. 13, 1965.

G
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SKI

Applicant disclaims the word "Ski" apart from the mark as shown.
For Ski Mounted Vehicle Similar to a Bicycle.
First use Dec. 8, 1965.

SN 235,580. Old Pal Inc., Lititz, Pa. Filed Dec. 30, 1965.
For Tackle Boxes.

FAMOUS LURE

First use Aug. 4, 1965.

SN 236,839. Parkway Fabricators, South Amboy, N.J. Filed Jan. 19, 1966.

SHARK-SKIN TWO

For Protective Apparel for Skindiving—Namely, Suits, Jackets, Pants, Socks, Gloves, Mitts, Hood, and Boots.
First use August 1965.

SN 238,968. Princess Grace Doll Inc., New York, N.Y. Filed Feb. 16, 1966.

FIGHTING YANK

No claim is made to the exclusive use of the word "Yank" apart from the mark as shown, reserving, however, the common law rights of applicant therein.

For Dolls and Dolls' Clothing.

First use Feb. 8, 1966.

SN 241,545. Margaret Lucile Thomas, d.b.a. King Karmel Products, Broderick, Calif. Filed Mar. 21, 1966.

KING KARMEL

Reserving all common law and statutory rights, the word "King" is disclaimed apart from the mark as shown.

For Dolls and Accessories.

First use Mar. 1, 1966.

SN 241,546. Margaret Lucile Thomas, d.b.a. Janitor Jellybean Products, Broderick, Calif. Filed Mar. 21, 1966.

JANITOR JELLYBEAN

Reserving all common law and statutory rights, the word "Janitor" is disclaimed apart from the mark as shown.

For Dolls and Accessories.

First use Mar. 1, 1966.

SN 242,335. Colt's Inc., Hartford, Conn. Filed Mar. 31, 1966.

SUPER HILBRE

The word "Hilbre" is a fanciful term.

For Arrowheads.

First use Mar. 25, 1966.

SN 244,166. Lloyd L. Young, d.b.a. Lee's Archery Shop, Sedalia, Mo. Filed Apr. 22, 1966.

NEET

For Archery Equipment—Namely, Arrow Rests, Peg Rests, Feather Rests, Bow Slings, Bow Saddles, String Keepers, Nocking Points, Finger Protectors, String Pouches, Arm Guards, Finger Tabs, Pocket Quivers, and Side Quivers.

First use January 1960 on arrow rests.

SN 244,197. Delta Wing Ski Board, Inc., South Bend, Ind. Filed Apr. 25, 1966.

DELTA WING

For Water Ski Board or Planing Board.

First use Apr. 6, 1966.

SN 244,610. The Ohio Art Company, Bryan, Ohio. Filed Apr. 29, 1966.

KALEIDOCOLOR

For Toy Viewers—Namely, Kaleidoscopic Type Viewers for Series of Pictures in Strip Form.

First use Feb. 15, 1966.

SN 244,613. The Ohio Art Company, Bryan, Ohio. Filed Apr. 29, 1966.

TALK 'N SEE

For Toy Music Boxes—Namely, a Simulated "Phonovision" in Which a Sound-Emitting Device Is Actuated by Dialing a Picture.

First use Feb. 15, 1966.

SN 244,633. Vexilar Engineering, Inc. Minneapolis, Minn. Filed Apr. 29, 1966.

VEXILAR

For Devices Used by Sportsmen To Measure Distance, Water Depth, Water Temperature, Water Oxygen Content, and Gravity Force.

First use Oct. 1, 1960.

SN 244,658. Milton Bradley Company, Springfield, Mass. Filed May 2, 1966.

SUSSEX

For Jigsaw Puzzles With an Enclosure of a Framed Picture of the Subject Matter.

First use Jan. 1, 1966.

SN 244,661. Milton Bradley Company, Springfield, Mass. Filed May 2, 1966.

SUB ATTACK

For Apparatus Sold as a Unit for Playing a Board Game.

First use Nov. 1, 1965.

SN 244,664. Milton Bradley Company, Springfield, Mass. Filed May 2, 1966.

Skill-it

For Three-Dimensional Puzzle Including a Two-Part Circular Disc Maze and a Top Part Which Rotates To Change the Openings as a Marble Is Guided Therethrough From a Starting Point to a Finish Point.

First use Jan. 1, 1966.

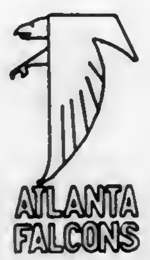
SN 244,716. Masco Corporation, Detroit, Mich. Filed May 2, 1966.

Talk n Tell

For Toy Telephones.

First use Aug. 24, 1962.

SN 251,415. The Five Smiths, Inc., Atlanta, Ga. Filed Aug. 1, 1966.



Applicant disclaims the word "Atlanta" apart from the mark as shown.

For Toys and Sporting Goods, Specifically Miniature Footballs.

First use Apr. 4, 1966.

SN 260,209. Mattel, Inc., Hawthorne, Calif. Filed Dec. 7, 1966.

FUDGIE FRIDDLE

For Dolls, Doll Clothing, and Doll Accessories.

First use Nov. 14, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 229,873. Research Incorporated, Minneapolis, Minn. Filed Oct. 11, 1965.

LINE TAMER

For Hydraulic Service Manifolds Useful for Filtration and Line Pressure Fluctuation Suppression Functions in Hydraulic Systems.

First use Sept. 29, 1964.

SN 230,813. Fitchburg Paper Company, Fitchburg, Mass. Filed Oct. 21, 1965.

VAPOVAC

For Fluid Handling Pumps, and Fluid Handling Pumps and Conduits Therefor, Sold as a Unit.

First use not later than Sept. 23, 1965.

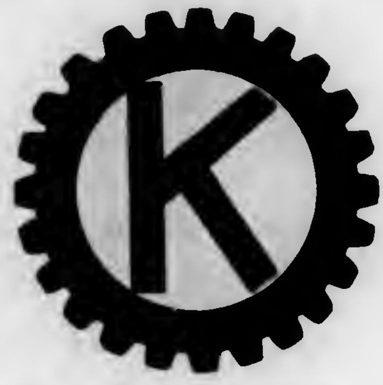
SN 232,237. Rex Chainbelt Inc., Milwaukee, Wis. Filed Nov. 5, 1965.

NU-TREAT

For Water and Waste Treatment Equipment—Namely, Mixing Apparatus for Flocculating Tanks; Mixing and Sediment Removal Apparatus for Flocculating and Clarification Tanks.

First use Aug. 6, 1965.

SN 235,300. Heimlich Brothers, Inc., New York, N.Y. Filed Dec. 27, 1965.



For Sewing Machines and Parts Thereof.

First use November 1964.

SN 236,058. Control Devices, Incorporated, High Ridge, Mo. Filed Jan. 10, 1966.

LOAD GENIE

For Combination Unloader and Check Valve.

First use Oct. 25, 1964.

SN 236,343. Allis-Chalmers Manufacturing Company, Milwaukee, Wis. Filed Jan. 13, 1966.

TUBE

For Rotary Engines Actuated by Reaction or Impulse to a Fluid Current.

First use Aug. 21, 1964.

SN 238,897. Tavaro S.A., Geneva, Switzerland. Filed Feb. 15, 1966.

elnastar *

Priority claimed under Sec. 44(d) on Swiss Reg. No. 214,456, dated Oct. 14, 1965. Without prejudice to any of its common law rights, applicant disclaims the representation of an asterisk apart from the mark as shown. Owner of U.S. Reg. Nos. 356,537 and 785,555.

For Sewing Machines and Parts Thereof, and Containers and Articles of Furniture Forming Receptacles for and Parts of Sewing Machines.

SN 239,875. Bennett Company, Warrensville Heights, Ohio. Filed Mar. 1, 1966.

MINI-MUFF

For Mufflers or Silencers for Fluid Exhaust Systems Such as the Exhaust Systems of Air Motors, Compressors, Pneumatic Tools, Vacuum Pumps, and Steam Engines.

First use Jan. 10, 1966.

SN 240,094. Greenleaf Corporation, Pittsburgh, Pa. Filed Mar. 3, 1966.

GREENLEAF CORP.

For Metal Cutting Tools—Namely, Milling Cutters, Lathe Tools, and Boring Tools.

First use Jan. 7, 1960.

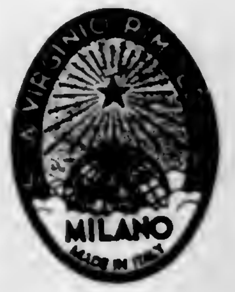
SN 241,351. Lockwood Manufacturing Company, Cincinnati, Ohio. Filed Mar. 18, 1966.

ROTO-CAKE-RELEASER

For Air Operated Cake Depanning Device in the Bakery Industry.

First use Mar. 3, 1966.

SN 241,554. Virginio Rimoldi & C., S.p.A., Milan, Italy. Filed Mar. 21, 1966.



Priority claimed under Section 44(d) on Italian application filed Jan. 31, 1966; Reg. No. 177,317, dated Apr. 18, 1966. The drawing is lined for gold, red, black and green. Owner of U.S. Reg. No. 731,128.
For Sewing Machines for Industrial and Domestic Use.

SN 244,728. Nuclear Data, Inc., Palatine, Ill. Filed May 2, 1966.

AUTOFINGER

For Automatic Typewriter Control Equipment.
First use Mar. 24, 1966.

SN 244,743. Safe-Cut, Inc., San Francisco, Calif. Filed May 2, 1966.

SAFE-CUT

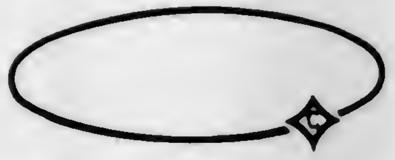
For Steel Band Cutting Tool.
First use in or about January 1962.

SN 246,830. Woric Corp., Shortsville, N.Y. Filed May 27, 1966.

AQUA-PAL

For Artists' Watercolor Palette.
First use Oct. 8, 1965.

SN 255,599. The Cleveland Twist Drill Company, Cleveland, Ohio. Filed Oct. 3, 1966.



Owner of Reg. Nos. 169,822, 373,888, and others.
For Tools and Tool Sets—Namely, Screw Plates, Die Holders, Dies, Caps, Guides, Chasers, Taps, Tap Holders, Tap Drivers, Tap Wrenches, Screw Wrenches, Adjusting Wrenches, Lathe Die Holders, Lathe Centers, Pilots, Mandrels, Arbors. Sleeves, Sockets, Collets, Adapters, Drifts, Inserts, Tool Bits, Blades, Gages, Measuring Wires, Sizing Blanks, Drill Blanks, Drills, Drill Stands, Reamers, Milling Cutters, Mills, Mill Holders, Counterbores, Countersinks, Screw Extractors, Slitters, Slotters, Seat Cutters and Spot Facers.
First use Dec. 2, 1964.

SN 258,014. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Nov. 7, 1966.

DOUBLE DIAMOND

Owner of Reg. No. 217,227.
For Gears—Namely, Automobile Gears and Shafting, Transmission Gears, Differential Gears, Pinions, Rear-Axle Gears, and Shafts.
First use on or about Apr. 7, 1966.

SN 262,367. Wysong & Miles Company, Greensboro, N.C. Filed Jan. 11, 1967.

WYSONG

For Metalworking and Woodworking Machinery, and Parts and Accessories Thereof.
First use Apr. 1, 1952.

SN 262,458. Lithographers Machinery, Inc., Brooklyn, N.Y. Filed Jan. 13, 1967.

DAMPATROL

For Dampening Roller Assembly for Offset Printing Presses.
First use Aug. 8, 1966.

Class 26—Measuring and Scientific Appliances

SN 238,775. Obrig Laboratories, Inc., Sarasota, Fla. Filed Feb. 14, 1966.

HYDROFLEX

For Contact Lenses.
First use Dec. 15, 1965.

SN 238,878. E. J. Korvette, Inc., New York, N.Y. Filed Feb. 15, 1966.

KORV-AIR

For Photographic Equipment—Namely, Movie Projectors, Movie Lights or Lamps, and Movie or Projection Screens.
First use September 1964.

SN 239,892. Fisher Scientific Company, Pittsburgh, Pa. Filed Mar. 1, 1966.

ROTO-RACK

For Rotating Mixer for Test Tube Size Samples.
First use November 1965.

SN 240,037. Carl Zeiss-Stiftung, d.b.a. Carl Zeiss, Heidenheim (Brenz), Wurttemberg, Germany. Filed Mar. 2, 1966.

Softar

Owner of German Reg. No. 807,171, dated May 21, 1965.
For Photographic Objectives and Attachment Lenses.

SN 240,262. Control Data Corporation, Minneapolis, Minn. Filed Mar. 7, 1966.

INTEBRID

For Electronic Circuit Modules.
First use June 1965.

SN 240,717. Digital Electronics Inc., Westbury, N.Y. Filed Mar. 11, 1966.

DIGIAC

For Digital Computer Trainers and Transistor Circuit Trainers.
First use Mar. 5, 1962.

SN 240,777. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Mar. 11, 1966.

SOLARGRAY

Owner of Reg. No. 657,783.
For Optical and Ophthalmic Glasses.
First use at least as early as Nov. 3, 1965.

SN 240,807. Triarch Incorporated, Ripon, Wis. Filed Mar. 11, 1966.

TRIARCH

For Prepared Botanical and Zoological Microscope Slides.
First use Jan. 1, 1927.

SN 240,869. Eastman Kodak Company, Rochester, N.Y. Filed Mar. 14, 1966.

ROYALCHROME-X

Owner of Reg. No. 755,015.
For Sensitized Photographic Film.
First use Mar. 9, 1966.

SN 241,002. Xerox Corporation, Rochester, N.Y. Filed Mar. 14, 1966.

XEROX

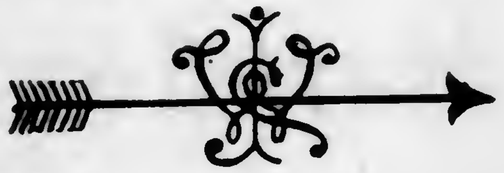
Owner of Reg. Nos. 525,717, 596,380, and others.
For Photocopy Paper.
First use Sept. 1, 1961.

SN 242,339. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Mar. 31, 1966.

DU PONT

Owner of Reg. Nos. 413,806 and 769,912.
For Instrument Used in Measuring Octane Rating of a Gasoline Blend.
First use Sept. 23, 1965.

SN 255,580. The Acme Shear Company, Bridgeport, Conn. Filed Oct. 3, 1966.

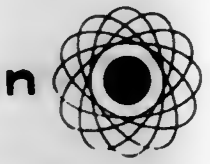


For Rulers.
First use Dec. 31, 1910.

Class 27—Horological Instruments

SN 242,866. Joseph Waldman & Sons, Irvington, N.J. Filed Apr. 6, 1966.

waldman



For Watch Crowns.
First use March 1961.

SN 243,183. Sheffield Watch, Inc., New York, N.Y. Filed Apr. 11, 1966.

Trafalgar

For Watches and Clocks.
First use Mar. 10, 1966.

Class 28—Jewelry and Precious-Metal Ware

SN 242,821. House of Bangles, Inc., New York, N.Y. Filed Apr. 6, 1966.

HOB

For Jewelry for Personal Wear or Adornment.
First use Nov. 16, 1964.

Class 32—Furniture and Upholstery

SN 245,316. Jackson Mattress Company, Inc., Fayetteville, N.C. Filed May 10, 1966.

POSTURE EASE

For Mattresses and Box Springs.
First use May 8, 1959.

SN 247,160. C. D. Stewart Co., Inc., Boston, Mass. Filed June 2, 1966.

MUGTREE

For Ornamental Display Rack for Mugs.
First use Apr. 19, 1966.

SN 247,366. Max Klein, Inc., Ferndale, Mich. Filed June 6, 1966.

match mates

For Picture Frames.
First use Apr. 27, 1966.

Class 33—Glassware

SN 238,195. Alfred Dunhill Limited, London, England. Filed Feb. 7, 1966.

DUNHILL

Owner of U.S. Reg. Nos. 155,951, 634,071, and others.
For Glasses, Cocktail Mixers and Shakers, Decanters, Flasks, and Pitchers, All Made of Glass.
First use 1923; in commerce 1923.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 239,412. Gulf Oil Corporation, Pittsburgh, Pa. Filed Feb. 23, 1966.

gran sport

For Pneumatic Tires for Automobiles.
First use at least as early as Jan. 28, 1966.

Class 36 — Musical Instruments and Supplies

SN 237,250. Ross Electronics Corporation, Chicago, Ill. Filed Jan. 25, 1966.

RECORD-O-MATIC

For Tape Recorders.
First use Dec. 22, 1965.

Class 37 — Paper and Stationery

SN 254,561. Service Composition Company, Camden, N.J. Filed Sept. 15, 1966.

SUPER-TOOTH

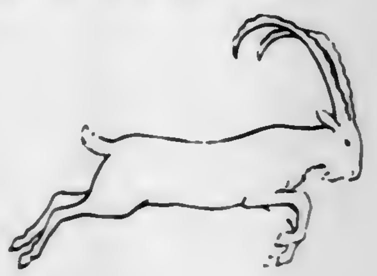
For Adhesively Backed Drafting Sheets for Applying Preprinted Symbols to Drawings.
First use Mar. 18, 1963.

SN 255,222. Montblanc-Simplo GmbH., Hamburg, Germany. Filed Sept. 27, 1966.

MONTE ROSA

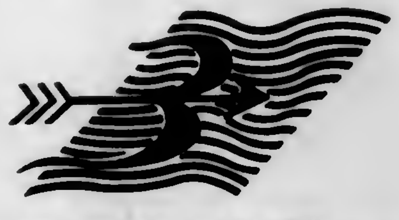
For Fountain Pens.
First use 1952; in commerce 1954.

SN 255,435. Albin B. Hammond, d.b.a. Hammond Business Forms, Roanoke, Va. Filed Sept. 29, 1966.



For Business Forms.
First use Sept. 6, 1966.

SN 255,869. The Bowater Paper Company, Inc., New York, N.Y. Filed Oct. 6, 1966.



Owner of Reg. Nos. 581,221 and 715,596.
For Lightweight Catalog Paper, Roto Newsprint, Blade Coated Paper, Paper for Business Forms and Computers, and Colored Paper for Newsprint and Pencil Tablets.
First use early in 1958.

SN 256,086. Globe-Wernicke Industries, Inc., Toledo, Ohio. Filed Oct. 10, 1966.

VERTI-SWING

For Hanging File Folders.
First use in or about October 1954.

Class 38 — Prints and Publications

SN 233,835. Scranton Publishing Co., Inc., Chicago, Ill. Filed Dec. 2, 1965.

WATER AND WASTES DIGEST

Applicant disclaims the word "Digest" apart from the mark as shown.
For Periodical Trade Newspaper.
First use August 1961.

SN 234,257. United Business Service Company, Boston, Mass. Filed Dec. 8, 1965.

UNITED GRAPHIC GUIDE

The words "Graphic Guide" are disclaimed apart from the mark as shown.
For Economic Service Publication Published Quarterly.
First use Nov. 19, 1965.

SN 236,356. The Christian Science Publishing Society, Boston, Mass. Filed Jan. 13, 1966.

LIBRETTO TRIMESTRALE
DELLA
SCIENZA CRISTIANA

The Translation of the mark into English is "Christian Science Quarterly." Owner of Reg. Nos. 413,114, 664,442, and others.
For Magazine of Bible Lessons Published Every Three Months in English and Italian.
First use Feb. 25, 1963.

SN 236,390. Kinorello Verlag GmbH., Groshesselohe/Isar, Germany. Filed Jan. 13, 1966.

KINORELLO

Priority Claimed under Sec. 44(d) on German application filed Aug. 7, 1965; Reg. No. 810,120, dated Sept. 24, 1965.
For Printed or Photographically Reproduced Storybook Cards.

SN 237,611. The Welch Scientific Company, Skokie, Ill. Filed Jan. 28, 1966.

MathSet

For Instruction Manuals and Sheets.
First use Jan. 17, 1966.

SN 237,612. The Welch Scientific Company, Skokie, Ill. Filed Jan. 28, 1966.

ScienSet

For Instruction Manuals and Sheets.
First use Jan. 4, 1966.

SN 237,934. The Christian Science Publishing Society, Boston, Mass. Filed Feb. 3, 1966.

De Heraut van de
Christelijke
Wetenschap

The translation of the mark, "De Heraut van de Christelijke Wetenschap" is "The Herald of Christian Science." Owner of Reg. Nos. 408,862, 796,414, and others.
For Magazine Published Every Three Months in English and Dutch.
First use June 10, 1963.

SN 237,935. The Christian Science Publishing Society, Boston, Mass. Filed Feb. 3, 1966.

Kristen
Vetenskaps
Härold

The Translation of the mark, "Kristen Vetenskaps Harold," is "The Herald of Christian Science." Owner of Reg. Nos. 408,862, 796,414, and others.
For Magazine Published Every Three Months in English and Swedish.
First use June 10, 1963.

SN 238,168. The Christian Science Publishing Society, Boston, Mass. Filed Feb. 7, 1966.

Kristen
Videnskaps
Herold

The translation of the mark "Kristen Videnskaps Harold," into English is "The Herald of Christian Science." Owner of Reg. Nos. 415,009, 796,414, and others.
For Magazine Published Every Three Months in English and Norwegian.
First use June 10, 1963.

SN 238,401. The Christian Science Publishing Society, Boston, Mass. Filed Feb. 9, 1966.

KRISTEN VIDENSKABS
KVARTALSHÆFTE

The translation of the mark into English is "Christian Science Quarterly." Owner of Reg. Nos. 413,114, 664,442, and others.
For Magazine of Bible Lessons Published Every Three Months in English and Danish.
First use Feb. 25, 1963.

SN 238,402. The Christian Science Publishing Society, Boston, Mass. Filed Feb. 9, 1966.

KRISTEN VIDENSKAPS
KVARTALSHEFTE

The translation of the mark into English is "Christian Science Quarterly." Owner of Reg. Nos. 413,114, 664,442, and others.
For Magazine of Bible Lessons Published Every Three Months in English and Norwegian.
First use Feb. 25, 1963.

SN 238,403. The Christian Science Publishing Society, Boston, Mass. Filed Feb. 9, 1966.

KRISTEN VETENSKAPS
KVARTALSHÄFTE

The translation of the mark into English is "Christian Science Quarterly." Owner of Reg. Nos. 413,114, 664,442, and others.
For Magazine of Bible Lessons Published Every Three Months in English and Swedish..
First use Feb. 25, 1963.

SN 239,230. The Christian Science Publishing Society, Boston, Mass. Filed Feb. 21, 1966.

DER HEROLD
DER
CHRISTLICHEN WISSENSCHAFT

The translation of the mark into English is "The Herald of Christian Science." Owner of Reg. Nos. 415,009, 796,414, and others.
For Magazine Published Every Three Months in English and German.
First use Dec. 2, 1947.

SN 239,725. The Christian Science Publishing Society, Boston, Mass. Filed Feb. 28, 1966.

VIERTELJAHRSHEFT
DER
CHRISTLICHEN WISSENSCHAFT

The translation of the mark into English is "Christian Science Quarterly." Owner of Reg. Nos. 413,114, 664,442, and others.
For Magazine of Bible Lessons Published Every Three Months in English and German.
First use Aug. 25, 1958.

SN 239,726. The Christian Science Publishing Society, Boston, Mass. Filed Feb. 28, 1966.

LIVRET TRIMESTRIEL
DE LA
SCIENCE CHRÉTIENNE

The translation of the mark into English is "Christian Science Quarterly." Owner of Reg. Nos. 413,114, 664,442, and others.

For Magazine of Bible Lessons Published Every Three Months in English and French.

First use Dec. 26, 1934.

SN 239,727. The Christian Science Publishing Society, Boston, Mass. Filed Feb. 28, 1966.

KWARTAALBOEKJE
VAN DE
CHRISTELIJKE WETENSCHAP

The translation of the mark into English is "Christian Science Quarterly." Owner of Reg. Nos. 413,114, 664,442, and others.

For Magazine of Bible Lessons Published Every Three Months in English and Dutch.

First use Feb. 25, 1963.

SN 243,077. Belmont Productions, Inc., New York, N.Y. Filed Apr. 11, 1966.

HIGH CAMP

For Paperback Comic Books.

First use Mar. 21, 1966.

SN 243,098. Commac, Inc., El Segundo, Calif. Filed Apr. 11, 1966.

TELETIMER

Owner of Reg. No. 788,981.

For Computation Slip for Computing Elapsed Time of Long Distance Telephone Call.

First use Sept. 26, 1963.

SN 243,734. U-Neek Cards, Verona, N.J. Filed Apr. 18, 1966.

U-neek

For Greeting Cards.

First use Feb. 1, 1966.

SN 243,970. Robert William Duncan, Deerfield, Ill. Filed Apr. 21, 1966.

HOSTILE SLOTH

For Cartoon Strip.

First use Sept. 24, 1965.

SN 245,494. Kentucky Motor Transport Association, Inc., Louisville, Ky. Filed May 12, 1966.

THE KENTUCKY TRUCKER

For Trade Magazine.

First use Apr. 10, 1965.

SN 245,551. Association of Diesel Specialists, Inc., Kansas City, Mo. Filed May 13, 1966.

NOZZLE CHATTER

For Newsletter Published Bi-Monthly.

First use September 1959.

SN 245,554. John Baumgarth Co., Melrose Park, Ill. Filed May 13, 1966.

CHRISTMAS ENCHANTMENT

For Greeting Cards.

First use Apr. 27, 1966.

SN 245,853. Queensmith Associates, Inc., Washington, D.C. Filed May 17, 1966.

HOVERGRAM

For Twice-Monthly Newsletter.

First use Mar. 18, 1966.

SN 250,723. Marriott-Hot Shoppes, Inc., Washington, D.C. Filed July 21, 1966.

TABLE TALK

For Periodical—Namely, a Newsletter.

First use at least as early as Nov. 1, 1954.

SN 258,976. Bodybuilder Publications, Inc., Union City, N.J. Filed Nov. 18, 1966.

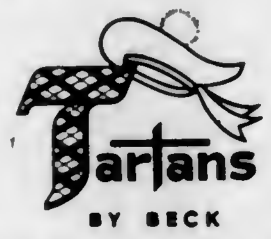
MUSCLE BUILDER

For Magazine.

First use January 1956.

Class 39 — Clothing

SN 227,817. A. S. Beck Shoe Corporation, New York, N.Y. Filed Sept. 15, 1965.



Owner of Reg. Nos. 365,306, 693,556, and others.

For Men's Shoes.

First use Apr. 28, 1965.

SN 232,250. Venice Knitting Mills, Inc., New York, N Y Filed Nov. 5, 1965.

"STAGE 7"

For Ladies' Knitted Suits and Sweaters.

First use Feb. 1, 1965.

SN 233,097. Joseph Gold (Pall Mall) Limited, London, England. Filed Nov. 22, 1965.

LORD JOHN

The name "Lord John" is fanciful. Owner of British Reg. No. B871,923, dated Nov. 17, 1964.

For Articles of Men's Wear, With the Exception of Headwear and Footwear—Namely, Men's Suits, Jackets, Trousers, Shirts, Underwear, Overcoats, Collars, Ties, and Scarves.

SN 233,530. S.D.S., Inc., d.b.a. Renee of Hollywood, Los Angeles, Calif. Filed Nov. 29, 1965.

STRAP HAPPY

For Women's Foundation Garments.

First use Oct. 11, 1965.

SN 237,569. Keynote Fashions, Inc., New York, N.Y. Filed Jan. 28, 1966.

The name "Ann Stacey" is fanciful.

For Women's, Misses', and Juniors' Dresses.

First use Dec. 29, 1965.

SN 237,732. Newman Cloak & Suit Company, St. Paul, Minn. Filed Feb. 1, 1966.

JON COULTER

The name "Jon Coulter" is fanciful.

For Women's Clothing, e.g., Women's Coats.

First use at least as early as 1945.

SN 240,067. Rapid-American Corporation, New York, N.Y. Filed Mar. 3, 1966.

HARBOR LITES

For Men's and Boys' Outer Garments—Namely, Coats, Suits, Sport Coats, Jackets, Top Coats, Overcoats, Slacks, Trousers and Vests.

First use July 15, 1958.

SN 241,664. Johnson, Stephens and Shinkle Shoe Company, St. Louis, Mo. Filed Mar. 23, 1966.

Gallery
Collection

For Women's and Girls' Shoes.

First use on or about June 1, 1965.

SN 244,733. J. C. Penney Company, New York, N.Y. Filed May 2, 1966.

SANTA MOUSE

For Children's and Infants' Robes, Sleepers, Sleeper Sets, Two-Piece Diaper Sets, and Play Suits.

First use Oct. 14, 1965.

SN 248,566. Murray Salk, Inc., Brighton, Mass. Filed June 16, 1966.

SANI-PANT

Owner of Reg. Nos. 699,872 and 701,430.

For Garments for Incontinent Adults and Children.

First use March 1965.

SN 251,522. Edison Brothers Stores, Inc., St. Louis, Mo. Filed August 2, 1966.

HAPPY TIMERS

For Children's Shoes.

First use July 19, 1966.

SN 251,715. The Enro Shirt Company, Inc., Louisville, Ky. Filed Aug. 4, 1966.

OLDE PARCHMENT

For Shirts.

First use June 25, 1966.

SN 251,719. Genesco Inc., Nashville, Tenn. Filed Aug. 4, 1966.

HIGH ROAD

For Men's Suits.

First use July 1, 1966.

SN 251,720. Genesco Inc., Nashville, Tenn. Filed Aug. 4, 1966.

NOTHING MORE FITTING

For Men's Suits.

First use June 23, 1966.

SN 256,501. Haggar Company, Dallas, Tex. Filed Oct. 17, 1966.

ELECTROMATIC PREST

Without waiver of common law rights, applicant disclaims the word "Prest" apart from the mark shown.

For Men's and Boys' Clothing—Namely, Slacks.

First use on or about Aug. 22, 1966.

SN 258,866. Johnson & Johnson, New Brunswick, N.J. Filed Nov. 17, 1966.

DIAPEREZE

For Diapers.

First use Aug. 4, 1966.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 261,208. Fashion Tress, Inc., Miami Beach, Fla. Filed Dec. 21, 1966.

MINI-WIG

For Ladies' Wigs and Hair Pieces.
First use on or about Nov. 1, 1966.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 235,615. Allen Knitting Mills, Inc., New York, N.Y. Filed Jan. 3, 1966.

ALLEN-PRESS

Owner of Reg. No. 704,025.
For Knitted Fabrics of Cotton and Synthetic Fibers.
First use March 1965.

SN 235,962. Croscill Curtain Company, Inc., New York, N.Y. Filed Jan. 7, 1966.

CROS-SET

Owner of Reg. Nos. 380,816 and 502,757.
For Fabric Having a Durable Press Finish and Curtains Made Therefrom.
First use December 1965.

SN 243,102. Deering Milliken, Inc., New York, N.Y. Filed Apr. 11, 1966.

AQUAMATIC

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers and Combinations Thereof for Use in the Manufacture of Clothing.
First use on or about Apr. 4, 1966.

SN 251,180. Avondale Mills, Sylacauga, Ala. Filed July 28, 1966.

PERMA-PREST

Owner of Reg. No. 565,339.
For Bedspreads, Curtains, Canopy Covers, Pillow Covers, Sheets, Pillowcases, Tablecloths and Yard Goods.
First use Dec. 1, 1965.

SN 252,163. Cannon Mills Company, Kannapolis, N.C. Filed Aug. 11, 1966.

SPRING BOUQUET

For Bath Towels, Wash Cloths, and Dish Towels.
First use July 19, 1966.

SN 252,426. J. P. Stevens & Co., Inc., New York, N.Y. Filed Aug. 15, 1966.

SPREE

Owner of Reg. No. 426,833.
For Piece Goods of One or More Natural Fibers Including Wool and Cotton, or of Synthetic Fibers or Cellulosic Fibers, or of Blends of the Foregoing.
First use January 1946.

SN 252,461. Joseph Bancroft & Sons Co., Wilmington, Del. Filed Aug. 16, 1966.

BANESTA

Owner of Reg. No. 772,420.
For Fabric Containing Polyester Fiber.
First use on or about Apr. 1, 1966.

SN 252,469. Dan River Mills, Incorporated, Danvile, Va. Filed Aug. 16, 1966.

BALLAST

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use June 2, 1966.

SN 252,470. Dan River Mills, Incorporated, Danville, Va. Filed Aug. 16, 1966.

SEENA

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use June 2, 1966.

SN 258,035. Beaunit Corporation, New York, N.Y. Filed Nov. 7, 1966.

BEAUNIT

Owner of Reg. Nos. 597,665, 812,342, and others.
For Woven and Knitted Fabrics for Use in Outerwear, Sportswear, Loungewear, Underwear, and Sleepwear, for Men, Women and Children.
First use on or about June 7, 1951.

SN 261,697. Harte & Company, Inc., New York, N.Y. Filed Dec. 30, 1966.

VISTA-KNIT

Owner of Reg. No. 715,240.
For Knitted Vinyl Fabric.
First use Aug. 19, 1966.

Class 43 — Thread and Yarn

SN 233,172. Emile Bernat & Sons Co., Uxbridge, Mass. Filed Nov. 23, 1965.

MIGNONETTE

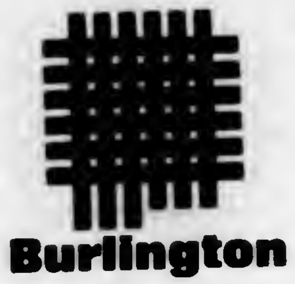
For Ribbons Used in Knitting.
First use at least as early as Oct. 29, 1965.

SN 235,906. Filatures Prouvost & Cie La Lainiere de Roubaix, Roubaix (Nord), France. Filed Jan. 6, 1966.

PASQUINADE

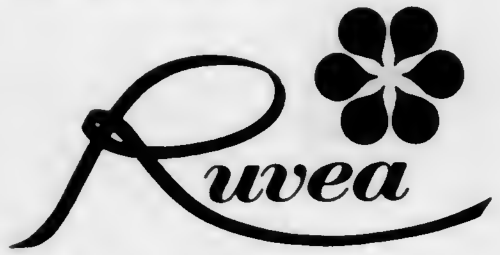
The mark "Pasquinade" is a French word meaning "lampoon." Owner of French Reg. No. 6,438, dated Jan. 25, 1951 (Roubaix); Natl. Inst. No. 488,326.
For Yarns and Threads Made of Wool, Cotton, Linen, Silk, Rayon, Hemp, Flax and Synthetic and Artificial Fibers.

SN 248,888. Burlington Industries, Inc., New York, N.Y. Filed June 24, 1966.



Owner of Reg. Nos. 138,483, 504,523, and 740,085.
For Yarns.
First use April 29, 1966.

SN 262,015. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Jan. 6, 1967.



Owner of Reg. No. 809,611.
For Synthetic Monofilaments in the Nature of Yarn for Use in Fabrics.
First use Nov. 23, 1966.

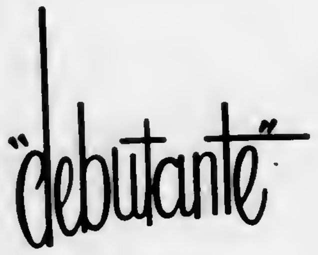
Class 44 — Dental, Medical, and Surgical Appliances

SN 239,490. Brother International Corporation, New York, N.Y. Filed Feb. 24, 1966.

ACTIVATOR

For Hair Dryers.
First use June 1, 1965.

SN 247,310. Beco Products Corporation, Chicago, Ill. Filed June 6, 1966.



For Portable Electrically Operated Hair Dryer.
First use May 11, 1966.

SN 247,336. Cook, Inc., Bloomington, Ind. Filed June 6, 1966.

ANGIORAD

For Medical Cardiovascular Instruments Such as Disposable Hypodermic Needles, Disposable and Re-Usable Radiopaque Tubing, Cardiovascular Wire Guides and Electromechanical Instruments for Cardiovascular Diagnosis.
First use May 27, 1966.

SN 247,424. Unitek Corporation, Monrovia, Calif. Filed June 6, 1966.

UNIPOINT

For Dental Apparatus—Namely, Orthodontic Brackets.
First use May 5, 1966.

Class 45 — Soft Drinks and Carbonated Waters

SN 241,082. W. Clinton Rucker, d.b.a. Champagne Mist Company, Shelbyville, Tenn. Filed Mar. 15, 1966.

CHAMPAGNE MIST

Applicant disclaims the word "Champagne" apart from the mark as shown.
For Ginger and Champagne-Flavored Soft Drinks.
First use Nov. 15, 1965.

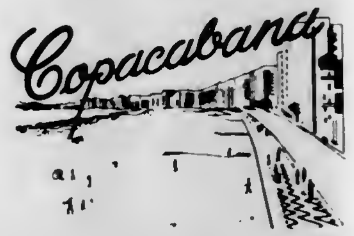
SN 246,900. Florida Food Products, Inc., Orlando, Fla. Filed May 31, 1966.

FROLIC

For Soft Drinks Sold in Cans.
First use Feb. 11, 1966.

Class 46 — Foods and Ingredients of Foods

SN 144,527. Palheta Cafes Finos S.A., Rio de Janeiro, Brazil. Filed May 14, 1962.



Priority claimed under Sec. 44(d) on Brazilian application filed Nov. 14, 1961; Reg. No. 326,465, dated Mar. 2, 1966.
For Coffee in the Form of Coffee Beans, Roasted, Ground, and Soluble.

SN 194,096. James Cordon Davis, d.b.a. Davis Packing Co., Wilson, N.C. Filed May 15, 1964.

TODDY-TYME

For Pickled Artichokes.
First use Dec. 11, 1962.

SN 209,703. Locatelli S.p.A., Milan, Italy. Filed Jan. 11, 1965.

Locatelli

Owner of U.S. Reg. Nos. 518,138, 645,173, and 690,618.

For Meat in the Form of Carcasses and Fresh Cuts and Frozen and Canned; Fish in the Form of Carcasses and Fresh Cuts and Frozen, Canned and Smoked; Chickens in the Form of Carcasses and Fresh Cuts and Frozen and Canned; Hunting Meat in the Form of Carcasses and Fresh Cuts and Frozen and Canned; Fresh and Powdered Eggs; Fluid, Condensed, and Powdered Milk; Cheese, Butter, Cream, Yogurt, Curdled Milk and Milk Whey; Edible Oils and Fats of Vegetal and Animal Origin; Vegetal Extracts and Meat Extracts; Vegetal Preserves; Preserved, Dried and Cooked Fruit and Vegetables; Fresh Fruit and Vegetables; Jellies, Jam and Marmalade; Foods for Swine, Cattle, Sheep, Birds and Poultry; Preparations for Making Soups Containing Meat, Vegetables, Cereals and Eggs; Preparations for Making Beverages Containing Milk, Eggs, Fruits, Vegetables and Cereals; Meatless and Meat-Containing Sauces; Pickles; and Prepared Meat Products Including Sausages.

First use 1901; in commerce on or about Oct. 11, 1959.

SN 210,946. Gallina Blanca, S.A., Barcelona, Spain. Filed Jan. 29, 1965.

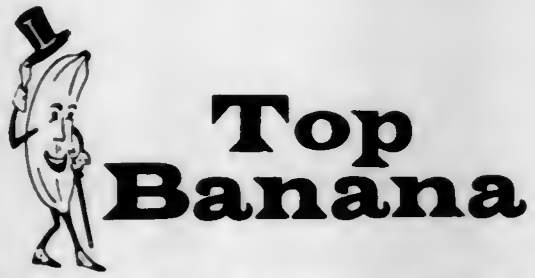
GALLINA BLANCA

The English translation of "Gallina Blanca" is "White Chicken."

For Dehydrated Preparations for Making Soups, Broths and Purees.

First use October 1938; in commerce January 1962.

SN 216,764. West Indies Fruit Company, Miami, Fla. Filed Apr. 16, 1965.



No claim is made to the word "Banana" as the name of the goods.

For Fresh Bananas.

First use on or about Nov. 1, 1963.

SN 222,640. Big Drum, Inc., Columbus, Ohio. Filed July 6, 1965.

Sundae SABER

Frozen Confection—Namely, Ice Cream and Chocolate Syrup in a Tube of the Push-Up Type With a Heat Sealed Cover on Top Thereof.

First use on or about Apr. 1, 1965.

SN 222,684. Fluffy Fresh Prepared Mix Company, Inc., Kansas City, Mo. Filed July 6, 1965.

FLUFFY FRESH

Owner of Reg. No. 819,292.

For Prepared Doughnut Mix.

First use during June 1953.

SN 223,341. Philadelphia Chewing Gum Corporation, Havertown, Pa. Filed July 14, 1965.

CHERRY BOMB

The word "Cherry" is disclaimed apart from the mark as shown. Owner of Reg. No. 571,406 and others.

For Chewing Gum.

First use June 8, 1965.

SN 230,223. Raffaele Allibrandi, Rome, Italy. Filed Oct. 15, 1965.

RUGANTINO

Priority claimed under Sec. 44(d) on Italian application filed July 8, 1965; Reg. No. 172,537, dated Oct. 29, 1965.

For Cheese—Namely, Goat's Milk Cheese.

SN 230,954. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Oct. 21, 1965.

BUBBLE GUM SHAKE

The words "Bubble Gum" are disclaimed apart from the mark as shown, without disclaiming any common law rights therein. Owner of Reg. No. 798,871.

For Chewing Gum—Namely, Bubble Gum.

First use Apr. 30, 1965.

SN 231,135. Instant-Lebensmittel G.m.b.H. & Co. KG, Neider-Olm B. Mainz, Germany. Filed Oct. 22, 1965.

SPREDA

Priority claimed under Sec. 44(d) on German application filed Apr. 12, 1965; Reg. No. 807,804, dated Aug. 4, 1965.

For Vegetables, Fruit, Fruit Juices, Vegetable Juices for Human Nutrition; Dried Vegetables, Dried Fruits, Concentrates, Powders and Extracts of Vegetables, Fruit or Fruit Juices, Nuts, Tinned Vegetables and Fruit, Fruit and Vegetable Jellies, Jam, Tomato Puree, Tomato Extracts, Tomato Powder, Fresh, Frozen, Canned and Dried Meat, Fish and Poultry, Meat Extracts, Powders Consisting of Dried Potatoes, Flour of Cereals or Other Binding Agents and Ingredients for Preparing Potato Dumplings, Potato Balls, Potato Purees and Potato Pancakes, Potato Flour, Soup Powder, Tinned Soups, Bouillon Extracts, Broth, Pre-Cooked Meals—Also Dried—Consisting of Vegetables, Meat or Fish, Potatoes, Rice, Farinaceous Pastes or Pulses; Milk, Dried Milk, Butter, Dried Butter, Cheese, Cottage Cheese, Dried Cheese, Dried Cottage Cheese, Yogurt, Dried Yogurt, Cream, Dried Cream, Eggs, Dried Egg, Dried White of Chicken Eggs, Dried Yolk, Tea, Tea Extracts, Tea Powder, Herb Teas for Drinking Purposes, Coffee Also Powdered Coffee, Coffee Extracts for Drinking Purposes, Coffee Substitutes, Also Extracts Thereof and Powdered Coffee Substitutes, Honey, Milling Products of cereals Including Oats and Indian Corn for Human Nutrition, Starch and Starch Products for Human Nutrition, Farinaceous Pastes, Sugar, Spices, Gravies and Gravy Powder; Mustard; Common Salt; Essences for Improving the Taste and Flavor of Nourishing and Luxury Foods; Ice Cream; Ice Cream Powder, Cocoa, Cocoa With Admixtures of Powdered Milk and Sugar, Chocolate; Bakery and Pastry Products and Candies, Ready Mixtures of Flour and Ingredients for Preparing Baker's Ware, Pudding Powder, Dried Yeast, Baking Powder; Fruit Juice Food Beverages, Coffee Milk Drinks and Chocolate Milk Drinks; Chocolate and Candies With Liquid Fillings of Spirits and Wines.

SN 231,410. Frema-Nährmittel-Gesellschaft m.b.H., Gersheim/Saar, Germany. Filed Oct. 23, 1965.

STANT

Owner of German Reg. No. 775,597, dated June 1, 1962.

For Cocoa Milk, With or Without Food Additives, in Fluid Form in Cans or in Dried Form, Non-Alcoholic Canned Cocoa Malt Beverages, Non-Alcoholic Canned Milk Mix Beverages With Added Malt and Fruits or Fruit Juices, Canned Fluid Milk for Dietary Purposes, Dry Whole Milk, Evaporated Milk, Babies' Milk Formula Preparations, Sterilized Milk, Dried Skim Milk, and Cocoa Dry Paste.

SN 231,618. Big Sister Foods Limited, Balmain, New South Wales, Australia. Filed Oct. 25, 1965.

BIG SISTER

For Fruit Cake, Plum Puddings and Canned Rolls.

First use Jan. 19, 1945; in commerce Sept. 1, 1965.

SN 233,560. A/S Kobenhavns Pektinfabrik, Lille Skensved, Denmark. Filed Nov. 26, 1965.

GENU

Owner of Danish Reg. No. 320/1946, dated Mar. 2, 1946.

For Ingredients of Foods—Namely, Pectin.

SN 234,583. Shenandoah Valley Apple Corporation, Winchester, Va. Filed Dec. 14, 1965.

SHENANDOAH

For Apple Juice and Apple Products Comprising Sliced Apples, Apple Chips, Apple Sauce and Vinegar.

First use 1910.

SN 234,608. The Nedlog Company, Chicago, Ill. Filed Dec. 13, 1965.

COCOA COW

Applicant makes no claim to the word "Cocoa" other than its use descriptively in the term "Cocoa Cow."

For Cocoa Compound for the Preparation of Hot or Cold Food Drinks.

First use on or about Sept. 1, 1965.

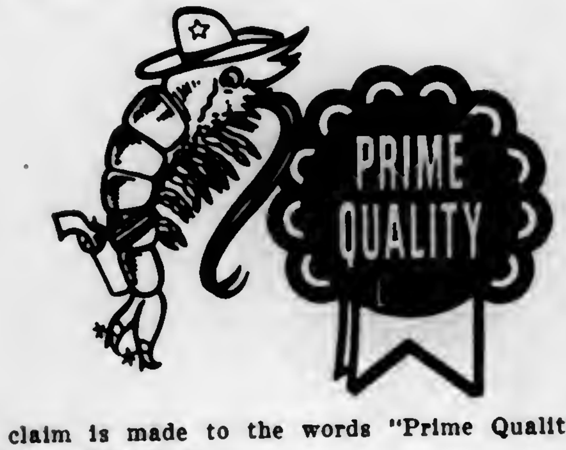
SN 235,039. Food Industries Corporation, Dallas, Tex. Filed Dec. 15, 1965.

PROFLEX

For Fungal Protease Tablets Used in the Making of Bread.

First use on or about Nov. 5, 1965.

SN 236,197. Prime Quality Foods, Inc., Harlingen, Tex. Filed Jan. 11, 1966.



No claim is made to the words "Prime Quality" apart from the mark as shown.

For Frozen Shrimp.

First use Oct. 26, 1965.

SN 238,073. General Foods Corporation, White Plains, N.Y. Filed Feb. 4, 1966.

GAINES-CHOICE

The word "Choice" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 342,441, 732,817, and others.

For Dog Food.

First use Dec. 6, 1965.

SN 238,522. Gold Medal Candy Corporation, Brooklyn, N.Y. Filed Feb. 10, 1966.

NIBBLES

Owner of Reg. No. 193,951.

For Chocolate Covered Candy Balls.

First use Dec. 10, 1965.

SN 239,147. Hygrade Food Products Corporation, Detroit, Mich. Filed Feb. 18, 1966.

MARJORIE DAW

The name "Marjorie Daw" is fanciful.

For Spaghetti, Macaroni and Noodles.

First use on or about Aug. 25, 1941.

SN 239,339. Takeda Chemical Industries, Ltd., Higashi-ku, Osaka, Japan. Filed Feb. 21, 1966.

RIBOMATE

Owner of Japanese Reg. No. 695,541, dated Jan. 20, 1966; and U.S. Reg. No. 818,380.

For Food Seasonings Containing as Main Ingredients Either Monosodium Glutamate or 5′-Nucleotides, or a Mixture of These Ingredients.

SN 239,527. S. N. Lee Co. Ltd., Penang, Malaysia. Filed Feb. 24, 1966.

Lekari

For Instant Curry.

First use July 30, 1951.

SN 239,981. Albert Ehlers, Inc., Brooklyn, N.Y. Filed Mar. 2, 1966.

KITCHEN DREAM

For Seasoning Containing Salt, Spices, Dextrose, Vegetable and Flavoring Material.

First use Feb. 10, 1966.

SN 240,680. Thomas Foods, Inc., Cincinnati, Ohio. Filed Mar. 10, 1966.

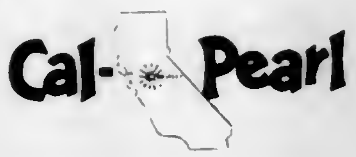
Justrite

Owner of Reg. No. 646,940.

For Frozen Meats—Namely, Frozen Pork Fritters, Beef Steaks, Mushroom Beef Steaks and Ham Loaf.

First use June 4, 1961.

SN 241,179. Patterson Farms, Inc., Westley, Calif. Filed Mar. 16, 1966.



No claim is made to the word "Westley" or the representation of the State of California, apart from the mark as shown.
For Fresh Melons.
First use August 1965.

SN 241,189. Societá Generale del Caffé S.p.A., Milan, Italy. Filed Mar. 16, 1966.

CARAMBA

Owner of Italian Reg. No. 166,481, dated July 20, 1962.
For Coffee, Tea, Cocoa, Candies, Coffee Substitutes, Jams, and Pastry.

SN 243,099. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, Englewood, N.J. Filed Apr. 11, 1966.

SUPER-COTE

Owner of Reg. Nos. 712,211, 729,248, and 731,620.
For Liquid Sweet Chocolate Coating for Use on Frozen Confections With or Without Sticks.
First use prior to 1951.

SN 243,394. Beatrice Foods Co., d.b.a. Mrs. Leland's Kitchens, Chicago, Ill. Filed Apr. 14, 1966.

TYROLEAN

For Candy.
First use Feb. 14, 1966.

SN 243,426. Dunkirk Ice Cream Co., Inc., Dunkirk, N.Y. Filed Apr. 14, 1966.

PARTY TREAT

For Ice Cream Sandwiches.
First use on or about Apr. 1, 1960.

SN 246,436. Beatrice Foods Co., Chicago, Ill. Filed May 24, 1966.

SWIRLS

For Candy.
First use Apr. 12, 1966.

SN 246,437. Beatrice Foods Co., Chicago, Ill. Filed May 24, 1966.

SUNBURSTS

For Candy.
First use Apr. 12, 1966.

SN 247,917. Growers Exchange, Inc., Glendale, Ariz. Filed June 13, 1966.

Gringo

For Fresh Vegetables.
First use June 1, 1966.

SN 248,260. Sun Valley Foods Company, Inc., d.b.a. Sun Valley Foods, Washington, D.C. Filed June 16, 1966.

TROPICAL SUN

For Fresh and Canned Fruit.
First use May 9, 1966.

SN 248,261. Sun Valley Foods Company, Inc., d.b.a. Sun Valley Foods, Washington, D.C. Filed June 16, 1966.

SEA OF PLENTY

For Fresh and Frozen Seafood.
First use May 11, 1966.

SN 248,816. Krey Packing Company, St. Louis, Mo. Filed June 23, 1966.

BALL GAME

For Wieners.
First use June 6, 1966.

SN 257,230. Mead Johnson & Company, Evansville, Ind. Filed Oct. 26, 1966.

PORTAGEN

Owner of Reg. Nos. 588,670, 733,296, and others.
For Nutritionally Complete Dietary Food Containing Medium Chain Triglycerides.
First use on or prior to Oct. 13, 1966.

SN 259,208. Golden Grain Macaroni Co., San Leandro, Calif. Filed Nov. 22, 1966.

STIR-N-SERV

For Partly Prepared Packaged Macaroni and Cheese.
First use July 27, 1966.

SN 261,617. Rock Lobster Tail Packaging Corp., New York, N.Y. Filed Dec. 29, 1966.

OCEAN PRINCE

For Frozen Lobster Tails and Lobster Tail Meat.
First use Sept. 1, 1966.

SN 261,776. Mike Hure & Sons, d.b.a. M. Hure & Sons, Dinuba, Calif. Filed Jan. 3, 1967.

CHALET

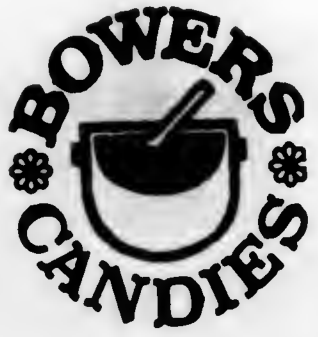
For Fresh Grapes.
First use Sept. 9, 1966.

SN 261,777. Mike Hure & Sons, d.b.a. M. Hure & Sons, Dinuba, Calif. Filed Jan. 3, 1967.

King's Table

For Fresh Grapes.
First use Nov. 19, 1966.

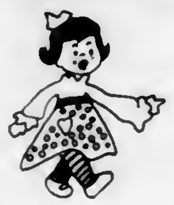
SN 262,097. C. J. Webb, Inc., d.b.a. Bowers Candies, Moorestown, N.J. Filed Jan. 9, 1967.



"Candies" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 530,035, 733,861, and others.
For Candies.
First use Oct. 4, 1966.

SN 262,243. Charles Baloian Co., Inc., Fresno, Calif. Filed Jan. 10, 1967.

PAMELA



Owner of Reg. No. 425,581.
For Fresh Vegetables.
First use July 22, 1966.

Class 47 — Wines

SN 235,403. Safeway Stores, Incorporated, Oakland, Calif., assignee of Franzia Brothers Winery, d.b.a. Old Chateau Wine Co., Ripon, Calif. Filed Dec. 28, 1965.

Grand Mountain

For Champagne.
First use Dec. 10, 1965.

SN 245,211. Charles N. May and Company, Chicago, Ill. Filed May 9, 1966.

CHARMAY

For Champagne.
First use Sept. 3, 1957.

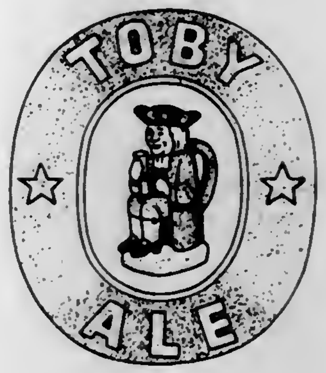
SN 245,212. Charles N. May and Company, Chicago, Ill. Filed May 9, 1966.

Charmé

The word "Charmé" translated from the French, means "charm, spell, enchantment, attraction."
For Champagne.
First use Aug. 21, 1957.

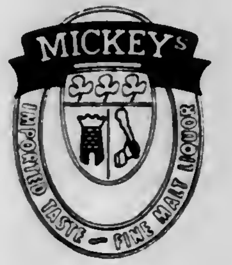
Class 48 — Malt Beverages and Liquors

SN 232,387. Charrington & Co. Limited, London, England. Filed Nov. 9, 1965.



Applicant disclaims the word "Ale" from the mark as shown. Owner of British Reg. No. 772,588, dated Dec. 30, 1957.
For Ale.

SN 236,527. Sterling Breweries, Inc., Evansville, Ind. Filed Jan. 13, 1966.


MICKEYS
IMPORTED TASTE — FINE MALT LIQUOR

No registration rights are claimed in the words "Imported Tasti-Fine Malt Liquor" apart from the mark as shown. Owner of Reg. No. 784,925.
For Malt Liquor.
First use Dec. 7, 1965.

Class 49 — Distilled Alcoholic Liquors

SN 233,721. Charles N. May & Company, Chicago, Ill. Filed Dec. 1, 1965.

CHARMAY

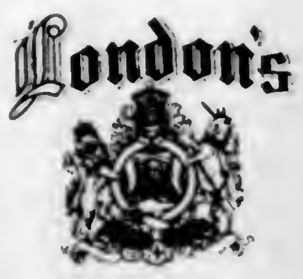
For Brandy.
First use Feb. 1956.

SN 241,463. Heaven Hill Distilleries, Inc., d.b.a. Bourbon Royal Distilling Co., Bardstown, Ky. Filed Mar. 21, 1966.

BOURBON ROYAL

The exclusive use of the word "Bourbon," apart from the mark as shown, is disclaimed.
For Bottled Whiskey.
First use Apr. 12, 1956.

SN 246,475. London & Company, Inc., Elizabeth, N.J. Filed May 24, 1966.



The drawing is lined to indicate contrast and not any particular color. Owner of Reg. Nos. 315,454, 601,161, and others.
For Whiskey, Gin, Brandy, Rum, and Prepared Alcoholic Mixes for Use in Making Alcoholic Drinks.
First use Aug. 23, 1944.

SN 246,807. National Distillers and Chemical Corporation, d.b.a. National Distillers Products Co., New York, N.Y. Filed May 27, 1966.

SOUTHERN MIST

Applicant does not claim the exclusive right to use the word "Mist" apart from the mark shown.
For Liqueur.
First use May 13, 1966.

SN 249,678. Schenley Distillers, Inc., New York, N.Y. Filed July 6, 1966.

PEACOCK

For Blended Whiskey.
First use May 13, 1966.

SN 249,679. Schenley Distillers, Inc., New York, N.Y. Filed July 6, 1966.

Always
Be Certain:
Dant!

Owner of Reg. Nos. 320,981, 758,535, and others.
For Blended Whiskey.
First use Feb. 17, 1966.

Class 50—Merchandise Not Otherwise Classified

SN 220,894. American Velcro, Inc., Manchester, N.H. Filed June 11, 1965.

PAPER BUOY

For Shaped Coverings of Pile Fabrics for Use on the Rollers of Paper Processing Machinery.
First use May 28, 1965.

SN 242,371. Mark Tool Company, Inc., Lafayette, La. Filed Mar. 31, 1966.

The drawing is lined for the color blue. The design element which constitutes a representation of the goods is disclaimed apart from the mark as shown.
For Synthetic Rubber Elements and Segments Used and Incorporated in a Permanent Marine Bumper or Fender System.
First use on or about Sept. 2, 1965.

SN 248,403. Allen Industries, Inc., Detroit, Mich. Filed June 20, 1966.

LORALL

For Cushioning Material in Sheet Form for Use in Footwear, and Sock Linings.
First use Sept. 28, 1965.

SN 249,823. Allied Container Corporation of N.J., Paterson, N.J. Filed July 8, 1966.

CORRO-LITE

For Pallets and Skids.
First use July 30, 1965.

SN 250,104. R. J. Reynolds Tobacco Company (Archer Aluminum Division), Winston-Salem, N.C. Filed July 12, 1966.

ACCULITH

For Aluminum Lithographic Plate.
First use Jan. 28, 1966.

SN 252,970. Sun Chemical Corporation, New York, N.Y. Filed Aug. 23, 1966.

SUNCHEM

For Reflective Sheeting for Signs, Displays, Decorations, and Safety.
First use June 30, 1966.

SN 254,579. Automatic Displays Inc., Fort Lauderdale, Fla. Filed Sept. 16, 1966.

AD EYE MATIC

For Changeable Exhibitor for Use in Connection With Advertisement and Display Panels.
First use Mar. 15, 1966.

SN 259,058. Lapine Scientific Company, Chicago, Ill. Filed Nov. 21, 1966.

SAGE KIT

No claim is made to the exclusive right to use the term "Kit" apart from the mark.
For Kits Comprising Disassembled Parts of Geometric Models.
First use Oct. 26, 1966.

Class 51—Cosmetics and Toilet Preparations

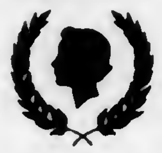
SN 167,453. Colgate Palmolive Company, New York, N.Y. Filed Apr. 24, 1963.

LUSTRE-CREME

Owner of Reg. Nos. 415,476, 808,949, and others.
For Hair Spray and Wave Set.
First use Sept. 1, 1958.

SN 218,981. Fore Co., Palisades Park, N.J. Filed May 17, 1965.

Feminaire



For Dual Purpose Aerosol Spray Deodorant for Personal and Sanitary Napkin Use.
First use Apr. 27, 1965.

SN 230,734. Woltz-Prodotti di Bellezza, Milan, Italy. Filed Oct. 20, 1965.

REGINETTA D'ITALIA

The English translation of the mark is "little queen of Italy." Owner of Italian Reg. No. 179,577, dated July 19, 1966.
For Enamel for Nails, Lipsticks, Face and Body Powders, Skin Creams, Facial Make-Ups, Lotions for the Hair.

SN 235,492. Cosmetics Manufacturing Company, Long Beach, Calif. Filed Dec. 29, 1965.

Care and Comfort

For Liquid Preparation To Be Added to Hair Coloring or Permanent Waving Neutralizers To Protect the Scalp and To Insure Uniformity of Coverage.
First use Nov. 11, 1965.

SN 238,140. Bristol-Myers Company, New York, N.Y. Filed Feb. 1, 1966.

SCORE

Owner of Reg. Nos. 426,365, 757,490, and 798,913.
For Cosmetics and Toilet Preparations for an After-Shave Lotion.
First use Dec. 23, 1965.

SN 238,260. The Mennen Company, Morristown, N.J. Filed Feb. 7, 1966.

KANØN

The word "Kanon" is the Swedish term for "cannon" or "gun."
For After Shave Lotion.
First use July 16, 1965.

SN 239,806. Roesbery Laboratories, Inc., Melba, Idaho. Filed Feb. 28, 1966.

Hats Off

For Hair and Scalp Conditioner.
First use at least as early as Jan. 12, 1966.

SN 240,673. Studio Girl—Hollywood, Inc., d.b.a. Studio Girl, North Holloywood, Calif. Filed Mar. 10, 1966.

FAMILY LOTION

Applicant disclaims the word "Lotion" apart from the mark as shown, without waiving common law rights.
For Hand Lotion.
First use on or about Oct. 8, 1956.

SN 241,047. Jean Eymond, Inc., Miami, Fla. Filed Mar. 15, 1966.

JEAN EYMOND

The name "Jean Eymond" is that of a deceased person.
For Perfume.
First use May 5, 1965.

SN 242,734. Les Parfums de Dana, Inc., d.b.a. Dana, New York, N.Y. Filed Apr. 5, 1966.

SEA CHEST

Owner of Reg. No. 807,367.
For Toilet Sets Containing Cologne, Talc, Spray Deodorant, and Toilet Soaps.
First use Feb. 17, 1966.

SN 243,901. Sabern Products Co., Cleveland Ohio. Filed Apr. 20, 1966.

Man-O

For Chemical Preparation Used on Skin as a Protection Against Skin Irritations From Cutting Oils, Solvents, Paints, Resin, Dyes, etc.
First use Feb. 1, 1942.

SN 245,914. Helene Curtis Industries, Inc., Chicago, Ill. Filed May 18, 1966.

RANSOM

Owner of Reg. No. 408,102.
For After Shave Preparation.
First use on or about Apr. 20, 1966.

SN 250,293. Nassour Studios, Inc., d.b.a. Royalty Cie, Los Angeles, Calif. Filed July 14, 1966.

WHITE HUNTER

For Cologne and Shaving Lotions.
First use May 26, 1966.

SN 253,723. Bristol-Myers Company, New York, N.Y. Filed Sept. 2, 1966.

CURTAIL

For Cosmetics and Toilet Preparations—Namely, a Hand, Body, and Baby Lotion.
First use Aug. 8, 1966.

SN 254,646. Alberto-Culver Company, Melrose Park, Ill. Filed Sept. 19, 1966.

REACT

For Hair Spray.
First use Jan. 17, 1966.

SN 254,647. Alberto-Culver Company, Melrose Park, Ill. Filed Sept. 19, 1966.

MOONSUN MANOR

For Hair Spray and Conditioner Preparation.
First use Aug. 24, 1966.

SN 254,832. Eversharp, Inc., Milford, Conn. Filed Sept. 21, 1966.

COVE

For Hair Preparations—Namely, Hair Dressing.
First use Aug. 16, 1966.

SN 254,835. Eversharp, Inc., Milford, Conn. Filed Sept. 21, 1966.

FATHOM

For Hair Preparations—Namely, Hair Dressing.
First use Aug. 16, 1966.

SN 254,837. Eversharp, Inc., Milford, Conn. Filed Sept. 21, 1966.

LAIRD

For Hair Preparations—Namely, Hair Dressing.
First use Aug. 16, 1966.

SN 254,838. Eversharp, Inc., Milford, Conn. Filed Sept. 21, 1966.

MARKSMAN

For Hair Preparations—Namely, Hair Dressing.
First use Aug. 16, 1966.

SN 254,841. Eversharp, Inc., Milford, Conn. Filed Sept. 21, 1966.

TOGA

For Hair Preparations—Namely, Hair Dressing.
First use Aug. 16, 1966.

SN 254,842. Eversharp, Inc., Milford, Conn. Filed Sept. 21, 1966.

TOP-SHAPE

For Hair Preparations—Namely, Hair Dressing.
First use Aug. 16, 1966.

SN 254,843. Eversharp, Inc., Milford, Conn. Filed Sept. 21, 1966.

WARWICK

For Hair Preparations—Namely, Hair Dressing.
First use Aug. 16, 1966.

SN 254,844. Eversharp, Inc., Milford, Conn. Filed Sept. 21, 1966.

WATERLOO

For Hair Preparations—Namely, Hair Dressing.
First use Aug. 16, 1966.

SN 260,905. Safeway Stores, Incorporated, Oakland, Calif. Filed Dec. 16, 1966.

SAFEWAY

Owner of Reg. Nos. 206,116, 763,794, and others.
For Mouthwash.
First use Nov. 29, 1966.

SN 261,011. Daggett and Ramsdell International Corporation, New York, N.Y. Filed Dec. 19, 1966.

MYSTIC MOMENT

For Cosmetic Powder.
First use November 1965.

SN 261,774. Mead Johnson & Company, Evansville, Ind. Filed Jan. 3, 1967.

ASEPTYL

Owner of Reg. Nos. 688,630, 711,747, and 808,207.
For Baby Oil, Baby Lotion, Baby Powder, and Baby Cream.
First use on or prior to Dec. 20, 1966.

Class 52 — Detergents and Soaps

SN 225,955. Joseph Horchak, d.b.a. Organo Home Necessities (OHNCO), Madison Heights, Mich. Filed Aug. 18, 1965.

ORGANO

For Liquid Organic Cleaning Concentrate for Household, Institutional and Commercial Use.
First use Aug. 31, 1962.

SN 235,639. Empro Intangibles, Inc., Chicago, Ill. Filed Jan. 3, 1966.

KINGS MEN

Owner of Reg. Nos. 412,107 and 414,211.
For Toilet Soap.
First use on or before Mar. 1, 1944.

SN 235,904. Mary Ann Elfering, d.b.a. Bio Chem Laboratories, Minneapolis, Minn. Filed Jan. 6, 1966.

BIO Chem

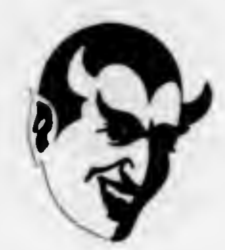
For Soaps and Detergents for General Household, Laundry, and Dishwashing Use.
First use May 24, 1965.

SN 238,259. The Mennen Company, Morristown, N.J. Filed Feb. 7, 1966.

KANØN

The word "Kanon" is the Swedish term for "cannon" or "gun."
For Men's Soap.
First use July 16, 1965.

SN 238,333. Pennsalt Chemicals Corporation, Philadelphia, Pa., assignee of B. T. Babbitt, Inc., Albany, N.Y. Filed Feb. 8, 1966.



Owner of Reg. No. 243,369.
For Sodium Hydroxide Cleaning Compound for Clogged Drains.
First use since at least Jan. 1, 1962.

SN 239,397. Fisher Scientific Company, Pittsburgh, Pa. Filed Feb. 23, 1966.

FL-70

For Concentrated Biodegradable Detergent for Washing Laboratory Equipment.
First use April 1965.

SN 239,828. Thompson & Capper Limited, Liverpool, Lancashire, England. Filed Feb. 28, 1966.

AQUASAN

Owner of British Reg. Nos. 840,316 and 851,787, dated Oct. 11, 1962 and July 19, 1963, respectively.
For Cleanser-Disinfectant-Deodorant Preparation.

SN 247,186. Armour and Company, Chicago, Ill. Filed June 3, 1966.

LAUNDER KING

The word "Launder" is disclaimed apart from the mark as shown.
For All Purpose Detergent for Household Use.
First use on or prior to June 26, 1964.

SN 248,007. Armour and Company, Chicago, Ill. Filed June 14, 1966.

BLUE BRITE

For All Purpose Detergent for Household Use.
First use on or prior to Apr. 2, 1964.

SN 248,312. De Soto Chemical Coatings, Inc., Des Plaines, Ill. Filed June 17, 1966.

POWER PLUS

For Powdered Detergent, Designed for Use in Home Laundry Equipment.
First use on or about Apr. 26, 1966.

SN 248,467. W. R. Grace & Co., New York, N.Y. Filed June 20, 1966.

WHOOPS!

For Spot Remover.
First use Apr. 15, 1966.

SN 248,789. The Drackett Company, Cincinnati, Ohio. Filed June 23, 1966.

ROUT

For Preparations for Cleaning and Disinfecting Drains and for Removing Obstructions in Drain Pipes.
First use May 9, 1966.

SN 249,519. The Fleming Co. Incorporated, Topeka, Kans. Filed July 5, 1966.

PLUSH

For Household Detergent for Laundry and Dishes.
First use Oct. 15, 1965.

SN 250,298. The Rooto Corporation, Detroit, Mich. Filed July 14, 1966.

ROOTO

For Chemicals Used for Cleaning Sewers, Drains, Plumbing Fixtures, Septic Tanks, Oven and Barbecue Grills and for Cleaning Concrete and Asphalt Surfaces.
First use on or about Nov. 2, 1942.

SN 251,991. Atlas Supply Company, Springfield, N.J. Filed Aug. 9, 1966.

ATLAS

Owner of Reg. Nos. 328,307, 773,356, and others.
For Automatic Choke and Carburetor Cleaner for Use on Internal Combustion Engines.
First use June 27, 1966.

SN 253,724. Bristol-Myers Company, New York, N.Y. Filed Sept. 2, 1966.

CURTAIL

For Detergents and Soaps—Namely, a Hair Shampoo.
First use Aug. 8, 1966.

SN 258,022. The Procter & Gamble Company, Cincinnati, Ohio. Filed Nov. 7, 1966.

GLYCERONE

For Special Combination of Cleaning Agents and Glycerine Incorporated in a Dishwashing Detergent.
First use July 1, 1966.

SN 259,375. Premier Industrial Corporation, Cleveland, Ohio. Filed Nov. 25, 1966.

TIME OUT

For Wood Floor Seal Remover.
First use Nov. 3, 1966.

SN 259,382. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed Nov. 25, 1966.

FLUFT-BORAX

The word "Borax" is disclaimed apart from the mark as shown.
For Preparation for Cleaning Walls, Porcelain, Enamel and Other Hard Surfaces, and for Use as a Laundry Additive for Soaking and Whitening Purposes.
First use Oct. 26, 1966.

SN 260,502. C. J. Webb, Inc., Jenkintown, Pa. Filed Dec. 12, 1966.

CRC

5-56

Owner of Reg. Nos. 696,251, 823,091, and others.
For Preparation for Cleaning, Lubricating, Inhibiting Corrosion, and Starting Wet Engines.
First use Nov. 3, 1966.

SN 261,131. C. J. Webb, Inc., Jenkintown, Pa. Filed Dec. 20, 1966.

THE MECHANIC'S HELPER

For Preparation for Cleaning, Lubricating, Inhibiting Corrosion, and Starting Wet Engines.
First use Nov. 3, 1966.

SN 261,773. Mead Johnson & Company, Evansville, Ind. Filed Jan. 3, 1967.

ASEPTYL

Owner of Reg. Nos. 688,630, 711,747, and 808,207.
For Baby Shampoo.
First use on or prior to Dec. 20, 1966.

SN 262,101. Lever Brothers Company, New York, N.Y. Filed Jan. 9, 1967.

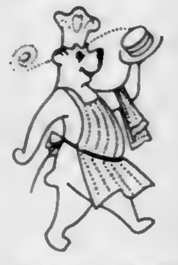
BLESS

Owner of Reg. No. 662,914.
For Detergent Toilet Bar.
First use Dec. 9, 1966.

SERVICE MARKS

Class 100 — Miscellaneous

SN 228,363. Golden Bear Pancake House, Inc., Elmwood Park, Ill. Filed Sept. 22, 1965.



For Restaurant, Catering and Carry-Out Services.
First use in or about October 1960.

SN 228,364. Golden Bear Pancake House, Inc., Elmwood Park, Ill. Filed Sept. 22, 1965.

ANYTIME IS PANCAKE TIME

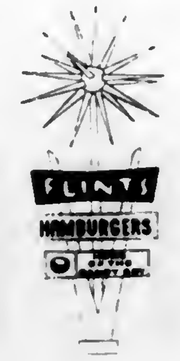
For Restaurant, Catering and Carry-Out Services.
First use in or about Oct. 1960.

SN 231,155. The Little Mint, Incorporated, Greenville, N.C. Filed Oct. 22, 1965.

LITTLE MINT

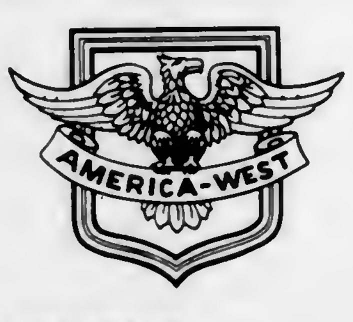
For Services Incident to the Operation of Drive-In Restaurants.
First use Jan. 4, 1964.

SN 231,413. Flint's Incorporated, Englewood, Ohio. Filed Oct. 23, 1965.



The word "Hamburgers" and the representation of the hamburger are disclaimed apart from the mark as shown.
For Restaurant and Catering Services.
First use Sept. 1, 1964.

SN 241,846. America-West Motor Hotels, Inc., Seattle, Wash.. Filed Mar. 25, 1966.



For Motel and Hotel Services.
First use Mar. 5, 1966.

SN 244,049. Woolens and Worsteds of America, Inc., New York, N.Y. Filed Apr. 21, 1966.

AMERICAN WAY WITH WOOL BLENDS

Owner of Reg. No. 704,766.
For Promotion of the Interests of the Woolen and Worsted Industry in the United States, by Providing Publicity and Sales Promotion Services and Disseminating Information Concerning the Same.
First use Nov. 22, 1965.

SN 261,001. Quality Courts Motels, Inc., Daytona Beach, Fla. Filed Dec. 19, 1966. COLLECTIVE MARK.

QUALIMAX

For Motel Reservation Services.
First use Nov. 28, 1966.

Class 101 — Advertising and Business

SN 226,531. James Gray, d.b.a. Tube Sales and Services, Toronto, Ontario, Canada. Filed Aug. 26, 1965.

TUPAK

For Direct Mail Advertising Services, Utilizing Shipping Tubes in the Process of Packaging, Storing, Addressing and Mailing.
First use May 25, 1965; in commerce June 15, 1965.

SN 226,533. James Gray, d.b.a. Tube Sales and Services, Toronto, Ontario, Canada. Filed Aug. 26, 1965.

TUPAK

For Direct Mail Advertising Services, Utilizing Shipping Tubes in the Process of Packaging, Storing, Addressing and Mailing.
First use May 25, 1965; in commerce June 15, 1965.

SN 227,966. Skilstaff, Inc., Cleveland, Ohio. Filed Sept. 16, 1965.

SKILSTAFF

For Supplying Temporary Employees.
First use on or about Aug. 5, 1965.

SN 231,556. Federal Savings Stamps Corporation, Fort Lauderdale, Fla. Filed Oct. 24, 1965.

FEDERAL

For Promoting the Sale of Goods of Others Through the Use of Trading Stamps Which Are Redeemed for Certificates for United States Currency.
First use July 2, 1965.

SN 236,269. Juliet Gibson Corporation, Houston, Tex. Filed Jan. 12, 1966.

GIBSON GIRL

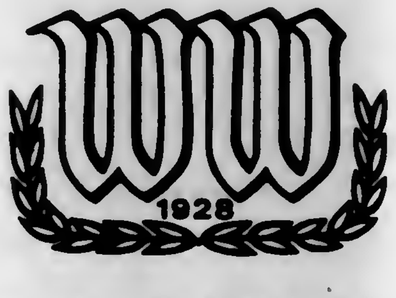
Without waiving any common law rights, the word "Girl" is disclaimed apart from the mark as shown.
For Providing Temporary Personnel and Employment Agency Services.
First use Dec. 7, 1965.

SN 238,007. Professional Disposable Products, Inc., Mount Vernon, N.Y. Filed Feb. 3, 1966.

THE STORE AT YOUR DESK

For Mail Order Services in the Field of Medical, Dental, Surgical and Pharmaceutical Supplies.
First use Nov. 20, 1964.

SN 240,686. Welcome Wagon International, Inc., Memphis, Tenn. Filed Mar. 10, 1966.



For Community Services in Bringing Civic, Religious, Social and Commercial Information to the Public, Through Individual Home Visits Made in Person by Its Representatives, as a Public Service and in Behalf of Interested Sponsors.
First use June 1964.

SN 241,958. Mrs. America, Inc., Chicago, Ill. Filed Mar. 28, 1966.

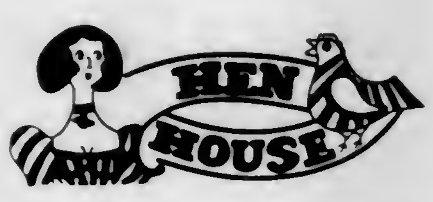
MRS. AMERICA

The word "America" is disclaimed apart from the mark as shown. Owner of Reg. No. 575,274.

For Sales Promotion of Goods and Services of Subscribers to Proprietor's Services, and of Others for Whom Subscribers Are Promoters, Through the Medium of Regional and National Contest Based on Beauty and Home-Making Ability in Which Married Women Are the Participants.

First use on or about Sept. 1, 1945.

SN 258,346. Roger M. Levin, d.b.a. Chief Levin's, Easton, Pa. Filed Nov. 10, 1966.

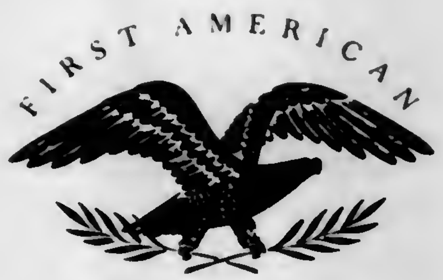


For Retail Women's Wear Clothing Store Services.

First use July 5, 1965.

Class 102 — Insurance and Financial

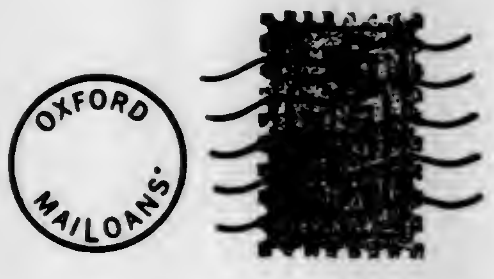
SN 243,976. First American Title Insurance & Trust Company, Santa Ana, Calif. Filed Apr. 21, 1966.



For Title Insurance and Trust Services.

First use December 1959.

SN 246,231. Oxford Mailoan Consumer Discount Company, Inc., Philadelphia, Pa. Filed May 23, 1966.



No registration rights are claimed in the words "U.S. Mail" or "Mailoans," apart from the mark as shown.

For Consumer and Personal Loan Services.

First use Apr. 29, 1966.

SN 251,095. Continental Casualty Company, Chicago, Ill. Filed July 27, 1966.

GOLDEN 65

No claim is made to the exclusive rights to the numerals 65. Owner of Reg. No. 687,002.

For Underwriting Health Insurance.

First use May 1962.

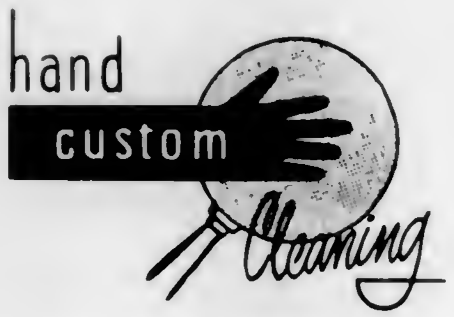
Class 103 — Construction and Repair

SN 226,752. Lear Siegler, Inc., Santa Monica, Calif. Filed Aug. 30, 1965.

For Maintaining, Modifying and Repairing Missiles; Aircraft and Weapon Structures and Operating Components Thereof; Electro-Mechanical Motors; Starters; Generators; Servos; Photographic Equipment; Pneumatic and Hydraulic Systems and Components Thereof; Gauges; Meters; and Communication and Video Systems and Components Thereof.

First use at least as early as 1962.

SN 229,034. Rex Sollenberger, Dayton, Ohio. Filed Sept. 30, 1965.



The words "Hand Custom Cleaning" are disclaimed apart from the mark as shown.

For Custom Cleaning of Fabrics and Clothing.

First use September 1953.

SN 246,811. Rice Engineering & Operating, Inc., Great Bend, Kans. Filed May 27, 1966.

DUOLINE

For Pipe Lining Services.

First use Dec. 1, 1965.

Class 105 — Transportation and Storage

SN 231,073. Eastern Air Lines, Inc., New York, N.Y. Filed Oct. 22, 1965.

HAPPY HOLIDAYS

For Arranging All-Expense Vacation Tours.

First use Apr. 6, 1952.

SN 241,570. Alcoa Steamship Company, Inc., New York, N.Y. Filed Mar. 22, 1966.

ALCOA LINE

The word "Line" is disclaimed apart from the mark.

For Transportation of Persons and Property by Ship.

First use Feb. 15, 1966.

Class 107 — Education and Entertainment

SN 236,270. Juliet Gibson Corporation, Houston, Tex. Filed Jan. 12, 1966.

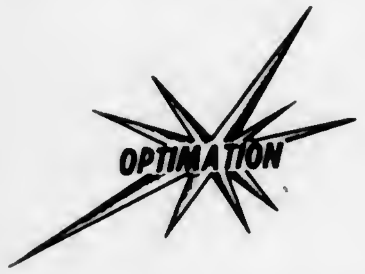
JULIET GIBSON

The name "Juliet Gibson" is fictitious.

For Career and Finishing School Services.

First use Dec. 7, 1965.

SN 236,771. Optimation, Inc., San Antonio, Tex. Filed Jan. 18, 1966.



For Educational Services—Namely, Speed Reading Instructions and Courses.

First use 1961.

SN 238,012. Robert F. Slatzer, d.b.a. Robert F. Slatzer Television Productions, Columbus, Ohio. Filed Feb. 3, 1966.

THE GREAT OUTDOORS

For Television Show.

First use Sept. 27, 1960.

SN 241,759. Chicago Federation of Labor and Industrial Union Council, Chicago, Ill. Filed Mar. 24, 1966.

CHICKENMAN

For Radio Entertainment Services in the Form of Comedy-Drama.

First use Feb. 1, 1966.

SN 250,353. Peter H. Casperson, d.b.a. The Orphans, Boston, Mass. Filed July 15, 1966.

THE ORPHANS

For Entertainment Services—Namely, an Instrumental and Vocal Combo.

First use in or about June 1964.

SN 254,571. Show Biz, Inc., Nashville, Tenn. Filed Sept. 16, 1966.

NASHVILLE IN THE ROUND

Without relinquishing any common law rights, applicant disclaims exclusive right to "Nashville" apart from the mark as shown. Owner of Reg. No. 817,169.

For Title of a Television Program—Namely, a Musical Variety Show.

First use July 30, 1966.

SN 255,798. Gotham Football Club, Inc., New York, N.Y. Filed Oct. 5, 1966.

NEW YORK JETS

Without waiving its common law rights herein, no claim is made to the words "New York" apart from the mark as shown.

For Entertainment Service in the Nature of Football Exhibitions, Some of Which Are Rendered Through the Medium of Radio and Television Broadcasts.

First use at least as early as May 1963.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 238,955. Keramos, National Professional Ceramic Engineering Fraternity, Seattle, Wash. Filed Feb. 16, 1966.

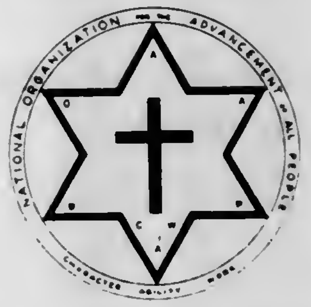
Keramos

The term "Keramos" is a Greek term meaning "potter's clay, pottery."

For Indicating Membership in the Keramos, National Professional Ceramic Engineering Fraternity.

First use 1902.

SN 240,532. National Organization for the Advancement of All People, San Antonio, Tex. Filed Mar. 9, 1966.


NATIONAL ORGANIZATION FOR ADVANCEMENT OF ALL PEOPLE

For Indicating Membership in Applicant Association.

First use June 3, 1963.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

826,287. LEISURE LAWNS AND DESIGN. Colored Lawn Stone, Inc. SN 212,862. Pub. 1–10–67. Filed 2–26–65.

826,288. COOK'S CORO-FOAM AND DESIGN. Cook Paint & Varnish Company. SN 220,639. Pub. 1–10–67. Filed 6–8–65.

826,289. DALTOFLEX. Imperial Chemical Industries Limited. SN 225,424. Pub. 1–10–67. Filed 8–10–65.

826,290. MIRALON. Fields Plastics & Chemicals, Inc. SN 234,554. Pub. 1–10–67. Filed 12–14–65.

826,291. NYLE MID. Polymers, Inc. SN 245,948. Pub. 1–10–67. Filed 5–18–66.

826,292. CROWN JEWELS. Tomco Genetic Giant, Inc. SN 245,999. Pub. 1–10–67. Filed 5–18–66.

826,293. NYPELUBE. Nypel of Delaware, Inc. SN 255,395. Pub. 1–10–67. Filed 9–29–66.

826,294. CARICATURE OF A BRINE SHRIMP (DESIGN). San Francisco Fish Farms, Inc. MULTIPLE CLASS (Classes 1 and 46). SN 256,496. Pub. 1–10–67. Filed 10–17–66.

Class 2 — Receptacles

826,295. ECONOPAK. Japan Air Lines Company, Ltd. SN 220,944. Pub. 1–10–67. Filed 6–11–65.

826,296. PET SET. Fabri-Kal Corporation. MULTIPLE CLASS (Classes 2 and 3). SN 221,918. Pub. 1–10–67. Filed 6–24–65.

826,297. ONIONMASTER. Wilbert James. SN 226,644. Pub. 1–10–67. Filed 8–27–65.

826,298. INPAKIT. American Bag & Paper Corporation. SN 227,738. Pub. 1–10–67. Filed 9–14–65.

826,299. HARVEST-TAINER. Nosco Plastics, Incorporated. SN 230,182. Pub. 1–10–67. Filed 10–14–65.

826,300. UNO-VAC. Union Manufacturing Company. SN 234,090. Pub. 1–10–67. Filed 12–6–65.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

826,296. (See Class 2 for this trademark.)

826,301. BOSS REIN AND DESIGN. Richard E. Ackerson. SN 218,938. Pub. 1–10–67. Filed 5–17–65.

826,302. BRI SON AND DESIGN. Bri-Son Company, Inc. SN 241,633. Pub. 1–10–67. Filed 3–23–66.

Class 4 — Abrasives and Polishing Materials

826,303. SPRING & FALL. S. C. Johnson & Son, Inc. SN 236,517. Pub. 1–10–67. Filed 1–14–66.

Class 5 — Adhesives

826,304. MISCELLANEOUS DESIGN. Morton International, Inc. SN 231,458. Pub. 1–10–67. Filed 10–23–65.

Class 6 — Chemicals and Chemical Compositions

826,305. ORBIT BATH AND DESIGN. TKO Chemical Company. SN 207,671. Pub. 1–10–67. Filed 12–7–64.

826,306. ORBIT BATH. TKO Chemical Company. SN 207,672. Pub. 1–10–67. Filed 12–7–64.

826,307. TOP O GEL. Moser Paper Company. SN 231,177. Pub. 1–10–67. Filed 10–22–65.

826,308. SNSR. Allied Research Products, Inc., assignee of Allied Research Products, Inc. (Barrett Chemical Products Division). SN 236,217. Pub. 1–10–67. Filed 1–12–66.

826,309. SNAP. Allied Research Products, Inc., assignee of Allied Research Products, Inc. (Barrett Chemical Products Division). SN 236,218. Pub. 1–10–67. Filed 1–12–66.

826,310. SNAC. Allied Research Products, Inc., assignee of Allied Research Products, Inc. (Barrett Chemical Products Division). SN 236,219. Pub. 1–10–67. Filed 1–12–66.

826,311. SNH. Allied Research Products, Inc., assignee of Allied Research Products, Inc. (Barrett Chemical Products Division). SN 236,221. Pub. 1–10–67. Filed 1–12–66.

826,312. SNB. Allied Research Products, Inc., assignee of Allied Research Products, Inc. (Barrett Chemical Products Division). SN 236,222. Pub. 1–10–67. Filed 1–12–66.

826,313. HEPTA-THION. National Chemsearch Corporation. SN 236,328. Pub. 1–10–67. Filed 1–11–66.

826,314. SN. Allied Research Products, Inc., assignee of Allied Research Products, Inc. (Barrett Chemical Products Division). SN 236,871. Pub. 1–10–67. Filed 1–20–66.

826,315. SNAP-L. Allied Research Products, Inc., assignee of Allied Research Products, Inc. (Barrett Chemical Products Division). SN 237,911. Pub. 1–10–67. Filed 2–3–66.

826,316. PREMIERZYME. Premier Malt Products, Inc. MULTIPLE CLASS (Classes 6 and 46). SN 244,286. Pub. 1–10–67. Filed 4–26–66.

826,317. 23A. National Lead Company. SN 247,716. Pub. 1–10–67. Filed 6–9–66.

826,318. RETILOX. Montecatini, Società Generale per l'Industria Mineraria e Chimica. SN 248,049. Pub. 1–10–67. Filed 6–14–66.

826,319. REZ-N-DYE. Schwartz Chemical Co., Inc. SN 248,055. Pub. 1–10–67. Filed 6–14–66.

826,320. SECURE. William S. Zierler, Inc. SN 248,076. Pub. 1–10–67. Filed 6–14–66.

826,321. KODAFLEX. Eastman Kodak Company. SN 248,220. Pub. 1–10–67. Filed 6–16–66.

826,322. SEEK. Clarence Boord & Sons, Inc. SN 248,415. Pub. 1–10–67. Filed 6–20–66.

826,323. CO-MO-BLAK. Frank D. Davis Company. SN 248,435. Pub. 1–10–67. Filed 6–20–66.

826,324. OMNISPERSE. Frank D. Davis Company. SN 248,437. Pub. 1–10–67. Filed 6–20–66.

826,325. LITE. Stauffer Chemical Company. SN 254,947. Pub. 1–10–67. Filed 9–22–66.

Class 7 — Cordage

826,326. L & CN. Linificio & Canapificio Nazionale S.p.A. MULTIPLE CLASS (Classes 7 and 43). SN 230,669. Pub. 1–10–67. Filed 10–20–65.

826,327. SAFEMARK. American Farm Bureau Service Company. SN 233,301. Pub. 1–10–67. Filed 11–26–65.

826,328. HARVEST SUPREME. Big Bear, Inc. SN 233,315. Pub. 1–10–67. Filed 11–26–65.

826,329. WHALE AND DESIGN. Indian Head Inc., assignee of Indian Head Mills, Inc. SN 233,713. Pub. 1–10–67. Filed 12–1–65.

826,330. BONNIE TIE. Berwick Textile Products Co., Inc., d.b.a. Berwick. SN 237,927. Pub. 1–10–67. Filed 2–3–66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

826,331. GHOSTMASTER. Atlas Chemical Industries, Inc. SN 241,734. Pub. 1–10–67. Filed 3–24–66.

826,332. 4831. B. E. Hodgdon, Inc. SN 241,895. Pub. 1–10–67. Filed 3–25–66.

Class 10 — Fertilizers

826,333. MICRO NUTRO. Moyer Chemical Company. SN 233,187. Pub. 1–10–67. Filed 11–23–65.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

826,334. DRY-BREAK. Emco-Wheaton, Inc., assignee of Buckeye Iron & Brass Works. SN 204,128. Pub. 5–4–65. Filed 10–16–64.

826,335. PORTER TUBE AND DESIGN. H. K. Porter Company, Inc. SN 224,964. Pub. 1–10–67. Filed 8–4–65.

826,336. V-WELL. Continental Oil Company. SN 231,543. Pub. 1–10–67. Filed 10–24–65.

826,337. TEK-LOK. Teklon Corporation. SN 232,366. Pub. 1–10–67. Filed 11–8–65.

826,338. SELANDIA. Walter Fleisher Company, Inc. MULTIPLE CLASS (Classes 13 and 23.) SN 234,340. Pub. 1–10–67. Filed 12–10–65.

826,339. NO. 888. Swingline, Inc. SN 235,355. Pub. 1–10–67. Filed 12–27–65.

826,340. BUNDT. Northland Aluminum Products, Inc. SN 241,796. Pub. 1–10–67. Filed 3–24–66.

826,341. SPEED MATE. The Gates Rubber Company. SN 243,438. Pub. 1–10–67. Filed 4–14–66.

826,342. AMPLITORQUE. M & J Valve Company. SN 244,940. Pub. 1–10–67. Filed 5–4–66.

Class 14 — Metals and Metal Castings and Forgings

826,343. SD (DESIGN). The S.D. Syndicate Limited. SN 239,448. Pub. 1–10–67. Filed 2–23–66.

826,344. S SUPER VALU. Super Valu Stores, Inc. MULTIPLE CLASS (Classes 14, 37, and 52). SN 239,688. Pub. 1–10–67. Filed 2–28–66.

Class 15 — Oils and Greases

826,345. AID AND DESIGN. Aid Stores, Inc. SN 214,314. Pub. 1–10–67. Filed 3–17–65.

826,346. FARM RATED. Fleet Wholesale Supply Co., Inc. SN 229,970. Pub. 1–10–67. Filed 10–12–65.

826,347. BROSE LIFE LONG AND DESIGN. Horace B. Brose, d.b.a. Heide Babe Products. SN 240,577. Pub. 1–10–67. Filed 3–10–66.

826,348. LIQUID-LITE. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers. SN 243,837. Pub. 1–10–67. Filed 4–20–66.

Class 16 — Protective and Decorative Coatings

826,349. KURUST. A. Sanderson & Co., Ltd., assignee of De Jersey & Co. AG. Zug. SN 193,860. Pub. 1–10–67. Filed 5–20–64.

826,350. ANISCOL. Foseco International Limited. SN 242,354. Pub. 1–10–67. Filed 3–31–66.

Class 17 — Tobacco Products

826,351. SCOTCH CUT. P. Lorillard Company. SN 228,471. Pub. 1–10–67. Filed 9–23–65.

826,352. NARVAL. Service d'Exploitation Industrielle des Tabacs et Allumettes. SN 238,118. Pub. 1–10–67. Filed 2–4–66.

826,353. NARVAL AND DESIGN. Service d'Exploitation Industrielle des Tabacs et Allumettes. SN 238,119. Pub. 1–10–67. Filed 2–4–66.

Class 18 — Medicines and Pharmaceutical Preparations

826,354. DEVINE'S. Devine's Remedies, Inc. MULTIPLE CLASS (Classes 18, 44, and 52). SN 206,704. Pub. 1–10–67. Filed 11–23–64.

826,355. COCILANA COUGH-NIPS. Gold Medal Candy Corporation. SN 234,637. Pub. 1–10–67. Filed 12–15–65.

826,356. STYP-ROLL. Levine and Associates. SN 239,634. Pub. 1–10–67. Filed 2–25–66.

826,357. ANDREA DUMON. Andréa Dúmon, Incorporated, d.b.a. Andrea Dumon Laboratories. SN 242,890. Pub. 1–10–67. Filed 4–7–66.

826,358. NOX-ICK. Vincent I. Mason, d.b.a. New England Aquarium Supply. SN 244,997. Pub. 1–10–67. Filed 5–5–66.

826,359. ILDAMEN. Chemiewerk Homburg, a Division of Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. SN 246,653. Pub. 1–10–67. Filed 5–26–66.

826,360. DYNA-K. International Minerals & Chemical Corporation. SN 246,836. Pub. 1–10–67. Filed 5–31–66.

826,361. NK-BLEN. Abbott Laboratories. SN 247,298. Pub. 1–10–67. Filed 6–6–66.

826,362. EMPRAFED. Burroughs Wellcome & Co. (U.S.A.) Inc. SN 247,769. Pub. 1–10–67. Filed 6–10–66.

826,363. OWLIVER. Brunswig Drug Company. SN 247,967. Pub. 1–10–67. Filed 6–13–66.

826,364. VIOBIN. Viobin Corporation. MULTIPLE CLASS (Classes 18 and 46). SN 248,649. Pub. 1–10–67. Filed 6–22–66.

826,365. NEOPAP. The William A. Webster Co. SN 248,935. Pub. 1–10–67. Filed 6–24–66.

826,366. WINDYNE. Sterling Drug Inc. SN 249,258. Pub. 1–10–67. Filed 6–29–66.

826,367. CUTOID. American Home Products Corporation. SN 251,765. Pub. 1–10–67. Filed 8–5–66.

826,368. PEN-VEE. American Home Products Corporation. SN 256,032. Pub. 1–10–67. Filed 10–10–66.

826,369. FI-CID. Fidelity Pharmaceuticals, Inc. SN 256,180. Pub. 1–10–67. Filed 10–11–66.

826,370. MITA-PAIN. American Home Products Corporation. SN 256,183. Pub. 1–10–67. Filed 10–11–66.

826,371. PRISTEEN. Warner-Lambert Pharmaceutical Company. SN 256,700. Pub. 1–10–67. Filed 10–19–66.

Class 19—Vehicles

826,372. MISCELLANEOUS DESIGN. Dayco Corporation (Delaware corporation), by merger from Dayco Corporation (Ohio corporation). MULTIPLE CLASS (Classes 19, 23, 32, and 35). SN 229,928. Pub. 8-2-66. Filed 10-12-65.

Class 21—Electrical Apparatus, Machines, and Supplies

826,373. PULSE SYN AND DESIGN. Westinghouse Electric Corporation. SN 226,107. Pub. 1-10-67. Filed 8-19-65.

826,374. APPLETON "U-LINE." Appleton Electric Company. SN 228,603. Pub. 1-10-67. Filed 9-27-65.

826,375. BY AZTEC AND DESIGN. Reynolds Electrical & Engineering Co., Inc. SN 238,450. Pub. 1-10-67. Filed 2-9-66.

826,376. SAPPHIRE III. World-Wide Volkswagen Corp. SN 239,097. Pub. 1-10-67. Filed 2-17-66.

826,377. SAPPHIRE IV. World-Wide Volkswagen Corp. SN 239,098. Pub. 1-10-67. Filed 2-17-66.

826,378. TOWN AND COUNTRY. Lighting Corporation of America. SN 247,758. Pub. 1-10-67. Filed 6-10-66.

Class 22—Games, Toys, and Sporting Goods

826,379. WHIMSIQUE. On the Left Bank, Inc. MULTIPLE CLASS (Classes 22 and 39). SN 248,386. Pub. 1-10-67. Filed 6-20-66.

826,380. BUDDY L AND DESIGN. Buddy L Corporation. SN 253,946. Pub. 1-10-67. Filed 9-7-66.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

826,338. (See Class 13 for this trademark.)

826,372. (See Class 19 for this trademark.)

826,381. KLEAN KWICK KLEANER. James P. Phillips, d.b.a. The J.P. Company. SN 192,426. Pub. 10-20-64. Filed 4-30-64.

826,382. DYNA TROL AND DESIGN. Dyna-Nuclear Corporation. SN 216,948. Pub. 1-10-67. Filed 4-20-65.

826,383. WITHERBY FLARE WRENCH AND DESIGN. John H. Graham & Co., Inc. SN 228,148. Pub. 1-10-67. Filed 9-20-65.

826,384. SPREAD-O-MATIC AND DESIGN. Tubular Textile Machinery Corporation. SN 231,312. Pub. 1-10-67. Filed 10-22-65.

826,385. SCOTCH-LANE. Minnesota Mining and Manufacturing Company. SN 234,051. Pub. 1-10-67. Filed 12-6-65.

826,386. BREWSTER ROSE. Imperial Knife Associated Companies, Inc. SN 235,191. Pub. 1-10-67. Filed 12-23-65.

826,387. METER-MISER. Amchem Products, Inc. SN 238,912. Pub. 1-10-67. Filed 2-16-66.

826,388. NC AND DESIGN. Borg-Warner Corporation. SN 239,215. Pub. 1-10-67. Filed 2-21-66.

826,389. MAJESTIC. Brother International Corporation. SN 239,491. Pub. 1-10-67. Filed 2-24-66.

826,390. DOLLY-HO. Portable Elevator Manufacturing Company. SN 244,353. Pub. 1-10-67. Filed 4-26-66.

826,391. MILBAR. Milbar Corporation. SN 255,264. Pub. 1-10-67. Filed 9-28-66.

826,392. TRUFAST. Trufast Corporation. SN 256,702. Pub. 1-10-67. Filed 10-19-66.

Class 24—Laundry Appliances and Machines

826,393. WONDERLOC. Southern Mills, Inc. SN 239,816. Pub. 1-10-67. Filed 2-28-66.

Class 25—Locks and Safes

826,394. ECONOLINE. National Hardware Company, Inc. SN 256,333. Pub. 1-10-67. Filed 10-13-66.

Class 26—Measuring and Scientific Appliances

826,395. PLIO-MAGIC. Plastic Reel & Core Company, Incorporated. SN 225,810. Pub. 1-10-67. Filed 8-16-65.

826,396. INSTA-VUE. Realist Inc. SN 230,003. Pub. 1-10-67. Filed 10-12-65.

826,397. FEEDOSTAT. Peerless Equipment Co., Inc. SN 237,409. Pub. 1-10-67. Filed 1-26-66.

826,398. UBIQUITOUS. Federal Scientific Corporation. SN 238,729. Pub. 1-10-67. Filed 2-14-66.

Class 28—Jewelry and Precious-Metal Ware

826,399. RAP-A-RON. Arts Industries, Inc. SN 241,303. Pub. 1-10-67. Filed 3-18-66.

Class 31—Filters and Refrigerators

826,400. SPIRA MITE. CHD Pool Equipment, Inc. SN 229,753. Pub. 1-10-67. Filed 10-11-65.

Class 32—Furniture and Upholstery

826,372. (See Class 19 for this trademark.)

826,401. YOUNG IDEAS. P. J. Nee Company. SN 239,071. Pub. 1-10-67. Filed 2-17-66.

826,402. ARTLINE AND DESIGN. Art Furniture Manufacturing Company, Inc. SN 242,100. Pub. 1-10-67. Filed 3-29-66.

826,403. FEED-N-PLAY. Rose-Derry Company. SN 244,140. Pub. 1-10-67. Filed 4-22-66.

826,404. STRATO-FLOATER. International Foam Corporation. SN 244,496. Pub. 1-10-67. Filed 4-28-66.

826,405. MEDI-REST. Bedding Manufacturers Associates, Inc. SN 244,561. Pub. 1-10-67. Filed 4-29-66.

Class 34—Heating, Lighting, and Ventilating Apparatus

826,406. CONTROLLED CIRCULATION. Combustion Engineering, Inc. SN 183,738. Pub. 1-10-67. Filed 12-30-63.

826,407. ACRYCEL. Wilson Research Corp. SN 229,322. Pub. 1-10-67. Filed 10-4-65.

826,408. KWIKHEAT. Sound Equipment Corporation of California, d.b.a. Kwikheat Manufacturing Company. SN 239,814. Pub. 1-10-67. Filed 2-28-66.

826,409. GORDON-RAY. Roberts-Gordon Appliance Corp. SN 252,067. Pub. 1-10-67. Filed 8-23-66.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

826,372. (See Class 19 for this trademark.)

826,410. COG-BELT AND DESIGN. Dayco Corporation (Delaware corporation), by merger from Dayco Corporation (Ohio corporation). SN 221,900. Pub. 7-12-66. Filed 6-24-65.

826,411. SPEEDLINER. The B. F. Goodrich Company. SN 232,545. Pub. 1-10-67. Filed 11-12-65.

826,412. GPL. Dayco Corporation (Delaware corporation), by merger from Dayco Corporation (Ohio corporation). SN 234,007. Pub. 7-5-66. Filed 12-6-65.

826,413. SIMPLIFLEX. Dayco Corporation (Delaware corporation), by merger from Dayco Corporation (Ohio corporation). SN 239,237. Pub. 7-5-66. Filed 2-21-66.

Class 36—Musical Instruments and Supplies

826,414. DESIGN OF MUSICAL STAFF WITH SUPERIMPOSED LETTER P. Chas. Pfriemer, Inc. SN 220,547. Pub. 1-10-67. Filed 6-7-65.

826,415. PJ PACIFIC JAZZ WITH DESIGN. Liberty Records, Inc. SN 228,051. Pub. 1-10-67. Filed 9-17-65.

Class 37—Paper and Stationery

826,344. (See Class 14 for this trademark.)

826,416. SIMON. Fitchburg Coated Products, Inc., by merger from Simon Adhesive Products Corp. SN 193,412. Pub. 1-3-67. Filed 5-13-64.

826,417. HULLA-BALOO. Hammermill Paper Company. SN 244,974. Pub. 1-10-67. Filed 5-5-66.

Class 38—Prints and Publications

826,418. SELECT-O-TAB. Cutter Laboratories, Inc. SN 228,651. Pub. 1-10-67. Filed 9-27-65.

826,419. WALT DISNEY PRESENTS. Walt Disney Productions. SN 237,523. Pub. 1-10-67. Filed 2-2-66.

826,420. TRAVELLER'S COMPANION SERIES AND DESIGN. The Olympia Press. SN 250,432. Pub. 1-10-67. Filed 7-18-66.

826,421. INDEX CHEMICUS. Institute for Scientific Information, Inc. SN 251,098. Pub. 1-10-67. Filed 7-27-66.

826,422. C. C. Institute for Scientific Information, Inc. SN 253,256. Pub. 1-10-67. Filed 8-29-66.

Class 39—Clothing

826,379. (See Class 22 for this trademark.)

826,423. POWER MIST. Vanity Fair Mills, Inc. SN 228,960. Pub. 1-10-67. Filed 9-29-65.

826,424. J. MARIE HORNSBY'S ORIGINALS. J. Marie Hornsby, d.b.a. J. Marie Hornsby's Originals. SN 234,424. Pub. 1-10-67. Filed 12-13-65.

826,425. DAO. Johnson, Stephens and Shinkle Shoe Company. SN 241,665. Pub. 1-10-67. Filed 3-23-66.

Class 40—Fancy Goods, Furnishings, and Notions

826,426. FASTAC. Earl A. Fast. SN 209,687. Pub. 1-10-67. Filed 1-11-65.

826,427. EMBASSY. The British Needle Company Limited. SN 219,667. Pub. 1-10-67. Filed 5-25-65.

826,428. SOMETHING NICE. Patti Products Corporation. SN 233,383. Pub. 1-10-67. Filed 11-26-65.

826,429. SHYLASH. Shy Beauty Products, Inc. SN 234,472. Pub. 1-10-67. Filed 12-13-65.

826,430. PRIMSTYLE ETC. AND DESIGN. F. W. Woolworth Co. SN 236,861. Pub. 1-10-67. Filed 1-19-66.

826,431. SEE AND SEW. Original Toy Corporation. SN 242,041. Pub. 1-10-67. Filed 3-28-66.

826,432. ALURA HOME PRODUCTS AND DESIGN. Novelty Cord & Tassel Co., Inc. SN 242,640. Pub. 1-10-67. Filed 4-4-66.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

826,433. BENGALI. Pande, Cameron & Co. of New York, Inc., assignee of Pande, Cameron & Company. SN 223,155. Pub. 1-10-67. Filed 7-12-65.

826,434. CUSHLON. Thomas Wilson & Co. Inc. SN 235,025. Pub. 1-10-67. Filed 12-21-65.

826,435. RIPPLEINE. Rubin Levine & Company, Inc. SN 241,153. Pub. 1-10-67. Filed 3-16-66.

826,436. COTMESH. Asten-Hill Mfg. Company. SN 241,961. Pub. 1-10-67. Filed 3-28-66.

826,437. TEXSTRAW. Wiener Laces, Inc. SN 245,872. Pub. 1-10-67. Filed 5-17-66.

826,438. SMOKEY FLEECE. Fair-Tex Mills, Inc. SN 246,764. Pub. 1-10-67. Filed 5-27-66.

826,439. TOP SECRET. Howse, Mead & Sons, Inc. SN 246,906. Pub. 1-10-67. Filed 5-31-66.

826,440. DUPREME. Klopman Mills, Inc. SN 248,195. Pub. 1-10-67. Filed 6-16-66.

826,441. FLOUNCE. Klopman Mills, Inc. SN 248,196. Pub. 1-10-67. Filed 6-16-66.

826,442. DANSAN. Dan River Mills, Incorporated. SN 248,217. Pub. 1-10-67. Filed 6-16-66.

826,443. DANSANT. Dan River Mills, Incorporated. SN 248,218. Pub. 1-10-67. Filed 6-16-66.

826,444. BCI ETC. AND DESIGN. Buck Creek Industries, Inc. SN 248,418. Pub. 1-10-67. Filed 6-20-66.

826,445. PETER PAN AND DESIGN. Henry Glass & Co. SN 248,697. Pub. 1-10-67. Filed 6-22-66.

826,446. POLYPOO AND DESIGN. Originit Fabrics, Inc. SN 248,731. Pub. 1-10-67. Filed 6-22-66.

Class 43—Thread and Yarn

826,326. (See Class 7 for this trademark.)

826,447. FLARON. American Enka Corporation. SN 245,143. Pub. 1-10-67. Filed 5-9-66.

826,448. NORDIA. Spinnerin Yarn Co., Inc. SN 247,075. Pub. 1-10-67. Filed 6-1-66.

826,449. THORNEL. Union Carbide Corporation. SN 248,183. Pub. 1-10-67. Filed 6-15-66.

Class 44 — Dental, Medical, and Surgical Appliances

826,354. (See Class 18 for this trademark.)

826,450. CARMEN AND ROSE DESIGN. Arne Bybjerg Pedersen, d.b.a. Carmen Curlers. SN 225,536. Pub. 1-10-67. Filed 8-12-65.

826,451. JENERIC AND DESIGN. Leon L. Cohen, d.b.a. Jeneric Gold Co. SN 238,611. Pub. 1-10-67. Filed 2-11-66.

826,452. ANGIOCATH/SY. Deseret Pharmaceutical Company, Inc. SN 239,241. Pub. 1-10-67. Filed 2-21-66.

826,453. PRIVATE DUTY. Johnson & Johnson. SN 244,120. Pub. 1-10-67. Filed 4-22-66.

826,454. ST. MORITZ. Helene Curtis Industries, Inc. SN 244,310. Pub. 1-10-67. Filed 4-26-66.

826,455. SORRENTO. Helene Curtis Industries, Inc. SN 244,311. Pub. 1-10-67. Filed 4-26-66.

826,456. DUO-DRIV. Howmet Corporation. SN 246,788. Pub. 1-10-67. Filed 5-27-66.

826,457. PHYSIOGRAPH. E & M Instrument Company, Inc. SN 248,903. Pub. 1-10-67. Filed 6-24-66.

826,458. CONTRA-W. D. Kaltman & Co., Inc. SN 257,129. Pub. 1-10-67. Filed 10-25-66.

826,459. CONTRA-M. D. Kaltman & Co., Inc. SN 257,130. Pub. 1-10-67. Filed 10-25-66.

826,460. CONTRASEP. D. Kaltman & Co., Inc. SN 257,131. Pub. 1-10-67. Filed 10-25-66.

826,461. CONTRALOOP. D. Kaltman & Co., Inc. SN 257,132. Pub. 1-10-67. Filed 10-25-66.

826,462. CONTRAGON. D. Kaltman & Co., Inc. SN 257,133. Pub. 1-10-67. Filed 10-25-66.

826,463. CONTRARING. D. Kaltman & Co., Inc. SN 257,135. Pub. 1-10-67. Filed 10-25-66.

Class 45 — Soft Drinks and Carbonated Waters

826,464. MISTER LEMON KING AND DESIGN. Mister Lemon King and Allied Products Co. SN 225,304. Pub. 1-10-67. Filed 8-9-65.

826,465. SIP'N SLIM. Holland House Brands, Inc. SN 243,990. Pub. 1-10-67. Filed 4-21-66.

826,466. JEL SERT AND DESIGN. The Jel Sert Company. SN 254,426. Pub. 1-10-67. Filed 9-14-66.

Class 46 — Foods and Ingredients of Foods

826,294. (See Class 1 for this trademark.)

826,316. (See Class 6 for this trademark.)

826,364. (See Class 18 for this trademark.)

826,467. CHIVERS OLDE ENGLISH MARMALADE. Chivers-Hartley Limited, assignee of Connaught Food Products Limited. SN 176,859. Pub. 1-10-67. Filed 9-11-63.

826,468. TINGLES. F & F Laboratories, Inc., assignee of Ernest E. Johnson Co., Inc. SN 208,364. Pub. 11-8-66. Filed 12-17-64.

826,469. BEETLES. Fairmont Foods Company. SN 218,630. Pub. 1-10-67. Filed 5-12-65.

826,470. SNAILS. Fairmont Foods Company. SN 218,631. Pub. 1-10-67. Filed 5-12-65.

826,471. GOOD TO THE LAST DROP. Peter Hand Foundation, Inc., by change of name from Blatchford Calf Meal Company. SN 234,171. Pub. 1-10-67. Filed 12-8-65.

826,472. CATER-S FLAVOR. R.G.B. Laboratories, Inc. SN 234,461. Pub. 1-10-67. Filed 12-13-65.

826,473. CATER TOPPING. R.G.B. Laboratories, Inc. SN 234,462. Pub. 1-10-67. Filed 12-13-65.

826,474. CATERTOP. R.G.B. Laboratories, Inc. SN 234,463. Pub. 1-10-67. Filed 12-13-65.

826,475. CATER-S. R.G.B. Laboratories, Inc. SN 234,464. Pub. 1-10-67. Filed 12-13-65.

826,476. CATERWHIP. R.G.B. Laboratories, Inc. SN 234,465. Pub. 1-10-67. Filed 12-13-65.

826,477. WHEANUTS. Wheat Enterprises, Inc. SN 234,857. Pub. 1-10-67. Filed 12-17-65.

826,478. ROCKY MOUNTAIN. Cache Valley Dairy Association. SN 236,539. Pub. 1-10-67. Filed 1-10-66.

826,479. CARROLETS. Robert Alameda. SN 237,067. Pub. 1-10-67. Filed 1-24-66.

826,480. LBS.DOWN AND DESIGN. Heggblade-Marguleas Co., d.b.a. Co-River Citrus Company. SN 239,623. Pub. 1-10-67. Filed 2-25-66.

826,481. BRIT-L-NUT. McGarry Nut Products Co. SN 244,604. Pub. 1-10-67. Filed 4-29-66.

826,482. LOVE. Wolch's Nut & Candy Co., d.b.a. Terrybrooke Nut & Candy Co. SN 247,999. Pub. 1-10-67. Filed 6-14-66.

826,483. WOLF BRAND AND DESIGN. Wolf Brand Products. SN 249,818. Pub. 1-10-67. Filed 7-7-66.

826,484. GRAND PRIZE. Allied Mills, Inc. SN 251,579. Pub. 1-10-67. Filed 8-3-66.

826,485. JEL SERT AND DESIGN. The Jel Sert Company. SN 254,425. Pub. 1-10-67. Filed 9-14-66.

826,486. HIGH CHIEF AND DESIGN. King Kullen Grocery Co., Inc. SN 256,036. Pub. 1-10-67. Filed 10-10-66.

Class 49 — Distilled Alcoholic Liquors

826,487. DESIGN OF A TOP HAT AND MUSTACHE. Barton Distilling Company. SN 215,166. Pub. 1-10-67. Filed 3-29-65.

826,488. ROYAL MARINE. National Distillers and Chemical Corporation, d.b.a. National Distillers Products Co. SN 233,374. Pub. 1-10-67. Filed 11-26-65.

826,489. TOUCH NOT THE CAT BOT A GLOVE AND DESIGN. John E. McPherson & Sons Limited. SN 237,635. Pub. 1-10-67. Filed 12-6-65.

826,490. TALL TIMBER. T. W. Samuels Distillery, Inc., d.b.a. T. W. Samuels Distillery. SN 241,083. Pub. 1-10-67. Filed 3-15-66.

826,491. BLACK RAM. John Gross & Co. SN 243,319. Pub. 1-10-67. Filed 4-13-66.

826,492. LA LLAVE DE LA ALEGRIA. Puerto Rico Distillers, Inc., d.b.a. Compania Ron Llave. SN 249,794. Pub. 1-10-67. Filed 7-7-66.

Class 50 — Merchandise Not Otherwise Classified

826,493. PORK-O-MATIC AND DESIGN. Demma, Incorporated. SN 242,338. Pub. 1-10-67. Filed 3-31-66.

826,494. QUIK-ALIGN. W. H. Brady Co. SN 243,951. Pub. 1-10-67. Filed 4-21-66.

826,495. VACATION PAK. Robert McMichael, Inc. SN 244,721. Pub. 1-10-67. Filed 5-2-66.

826,496. "SCREWY LEWY." Menda Company. SN 245,216. Pub. 1-10-67. Filed 5-9-66.

826,497. FLAN'L GARD. Clopay Corporation. SN 246,269. Pub. 1-10-67. Filed 5-23-66.

826,498. BEACON. Beacon Steel Products Co., Inc. SN 249,110. Pub. 1-10-67. Filed 6-28-66.

826,499. DUNK-A-BUG. William S. Crombie, Jr., d.b.a. The Crombie Manufacturing Co. SN 249,141. Pub. 1-10-67. Filed 6-28-66.

826,500. PLASTRON. Arnel-Plastron, Inc. SN 255,681. Pub. 1-10-67. Filed 10-4-66.

Class 51 — Cosmetics and Toilet Preparations

826,501. VENTURE. Beecham Products Inc. SN 207,472. Pub. 1-10-67. Filed 12-4-64.

826,502. OH! DE PARIS. Yardley of London, Inc. SN 216,914. Pub. 1-10-67. Filed 4-19-65.

826,503. OH! DE ROME. Yardley of London, Inc. SN 216,915. Pub. 1-10-67. Filed 4-19-65.

826,504. LIPLIGHTER. Yardley of London, Inc. SN 219,093. Pub. 1-10-67. Filed 5-17-65.

826,505. KENT OF LONDON. G. B. Kent & Sons, Ltd. SN 225,959. Pub. 1-10-67. Filed 8-18-65.

826,506. MISCELLANEOUS DESIGN. Kelly-Kehoe, Inc. SN 227,425. Pub. 1-10-67. Filed 9-8-65.

826,507. MAN IN MOTION. Merchandising Corporation of America. SN 229,848. Pub. 1-10-67. Filed 10-11-65.

826,508. VERONICA BOHME. Pierre Bohme, d.b.a. Pierre Bohme Veronica Bohme Beauty Preparations and Simone Cochard Beauty Preparations. SN 229,942. Pub. 1-10-67. Filed 10-12-65.

826,509. IN PLACE. Eversharp, Inc. SN 230,807. Pub. 1-10-67. 10-21-65.

826,510. TRU-CLEAN. Southwestern Drug Corporation, d.b.a. Tru-Lab Products. SN 231,308. Pub. 1-10-67. Filed 10-22-65.

826,511. GLO-AHEAD. Steiner Products Limited. SN 232,427. Pub. 1-10-67. Filed 11-9-65.

826,512. FAST 'N LIGHT. Helene Curtis Industries, Inc. SN 234,728. Pub. 1-10-67. Filed 12-16-65.

826,513. TAN & CLEAR. Sea & Ski Corporation. SN 235,720. Pub. 1-10-67. Filed 1-3-66.

826,514. RESPITE. John D. Arias, d.b.a. Artz Laboratories. SN 236,953. Pub. 1-10-67. Filed 1-21-66.

826,515. COI-FAIT AND DESIGN. Riverton Laboratories Incorporated, d.b.a. Riverton Cosmetic Laboratories. SN 238,569. Pub. 1-10-67. Filed 2-10-66.

826,516. ENGLISH LOOK. Yardley of London, Inc. SN 239,564. Pub. 1-10-67. Filed 2-24-66.

826,517. TUCKABLES. Yardley of London, Inc. SN 239,565. Pub. 1-10-67. Filed 2-24-66.

826,518. SHANDOAH. Jacques Heim, Societe Anonyme. MULTIPLE CLASS (Classes 51 and 52). SN 240,566. Pub. 1-10-67. Filed 3-10-66.

826,519. ENGLISH TOUCH. Yardley of London, Inc. SN 241,112. Pub. 1-10-67. Filed 3-15-66.

826,520. IMPERIAL SILVER. Cosmetics Manufacturing Company, d.b.a. Cosmetco. SN 241,641. Pub. 1-10-67. Filed 3-23-66.

826,521. LEMON TWIST. The House of Wrisley, Inc. SN 242,245. Pub. 1-10-67. Filed 3-30-66.

826,522. SWASHBUCKLER. Avon Products, Inc. SN 242,544. Pub. 1-10-67. Filed 4-4-66.

826,523. EMBLEM. Avon Products, Inc. SN 242,545. Pub. 1-10-67. Filed 4-4-66.

826,524. TIMELY TOUCH. The Procter & Gamble Company. SN 246,360. Pub. 1-10-67. Filed 5-23-66.

826,525. GOLDEN EARRINGS. Creative Perfumers & Flavorists, Inc. SN 246,446. Pub. 1-10-67. Filed 5-24-66.

826,526. NICE 'N SUNNY. Clairol Incorporated. SN 248,307. Pub. 1-10-67. Filed 6-17-66.

826,527. SOFT 'N SUNNY. Clairol Incorporated. SN 248,678. Pub. 1-10-67. Filed 6-22-66.

826,528. KONA KAI. Brigitte Deutsch, d.b.a. Perfumes by Brigitte. SN 252,233. Pub. 1-10-67. Filed 8-12-66.

826,529. MISCELLANEOUS DESIGN. Adams National Industries (Pty.) Ltd. SN 254,964. Pub. 1-10-67. Filed 9-23-66.

826,530. REJOICE. The Procter & Gamble Company. MULTIPLE CLASS (Classes 51 and 52). SN 256,179. Pub. 1-10-67. Filed 10-11-66.

826,531. SECRET CHANGE. The Andrew Jergens Company. SN 256,189. Pub. 1-10-67. Filed 10-11-66.

Class 52 — Detergents and Soaps

826,344. (See Class 14 for this trademark.)

826,354. (See Class 18 for this trademark.)

826,518. (See Class 51 for this trademark.)

826,530. (See Class 51 for this trademark.)

826,532. 3-DDD. Grace-Lee Products Inc. SN 223,120. Pub. 1-10-67. Filed 7-12-65.

826,533. BLU-BOY. C. L. Williamson, d.b.a. Northwest Sanitation Products. SN 233,031. Pub. 1-10-67. Filed 11-19-65.

826,534. PAN-INSTANT. Lovida AG. SN 233,364. Pub. 1-10-67. Filed 11-26-65.

826,535. KENT OF LONDON. G. B. Kent & Sons, Ltd. SN 234,606. Pub. 1-10-67. Filed 12-13-65.

826,536. LEMON TWIST. The House of Wrisley, Inc. SN 242,246. Pub. 1-10-67. Filed 3-30-66.

826,537. SPRAY 'N SPARKLE. The Fuller Brush Company. SN 243,315. Pub. 1-10-67. Filed 4-13-66.

826.538. TIMELY TOUCH. The Procter & Gamble Company. SN 243,892. Pub. 1-10-67. Filed 4-20-66.

826,539. CONFIDE. The Procter & Gamble Company. SN 243,893. Pub. 1-10-67. Filed 4-20-66.

826,540. MYSTAIRE AND DESIGN. Swank, Inc. SN 244,536. Pub. 1-10-67. Filed 4-28-66.

826,541. INFINITE AND DESIGN. Infinite Cleaning Corporation. SN 244,827. Pub. 1-10-67. Filed 5-3-66.

826,542. PERMATEX AND DESIGN. Permatex Company, Inc. SN 250,805. Pub. 1-10-67. Filed 7-22-66.

Service Marks

Class 100 — Miscellaneous

826,543. ELC. Equitable Leasing Corporation. SN 201,830. Pub. 1-10-67. Filed 9-14-64.

826,544. NEBA ROAST BEEF SANDWICHES. Michael Davis Associates, Inc. SN 213,951. Pub. 5-31-66. Filed 3-12-65.

826,545. MISCELLANEOUS DESIGN. Ocean Science and Engineering, Inc. SN 233,935. Pub. 1-10-67. Filed 12-3-65.

826,546. JACK IN THE BOX AND DESIGN. Jack-In-The-Box, Inc. SN 235,988. Pub. 1-10-67. Filed 1-7-66.

826,547. CITGO AND DESIGN. Cities Service Oil Company. SN 241,011. Pub. 1-10-67. Filed 3-10-66.

Class 101 — Advertising and Business

826,548. LADY WASHINGTON AND DESIGN. Lady Baltimore Office Services, Inc. SN 234,439. Pub. 1-10-67. Filed 12-13-65.

826,549. WILLIAMS AND DESIGN. Williams Real Estate Co., Inc. SN 235,147. Pub. 1-10-67. Filed 12-16-65.

826,550. SHERLOCK HOMES LTD. AND DESIGN. Sherlock Homes, Ltd. SN 242,057. Pub. 1-10-67. Filed 3-28-66.

Class 102 — Insurance and Financial

826,551. TAXTRONICS. Taxtronics. SN 238,678. Pub. 1–10–67. Filed 2–11–66.

826,552. CRA. C.R.A. Corporation. SN 240,152. Pub. 1–10–67. Filed 3–4–66.

826,553. COORDINATED-CARE. National Association Plans, Inc. SN 241,674. Pub. 1–10–67. Filed 3–23–66.

Class 103 — Construction and Repair

826,554. DSCA DRAPERY SERVICE CORPORATION OF AMERICA AND DESIGN. Drapery Service Corporation of America. SN 235,172. Pub. 1–10–67. Filed 12–23–65.

Class 104 — Communication

826,555. ADT AND DESIGN. American District Telegraph Company. SN 236,040. Pub. 1–10–67. Filed 1–10–66.

Class 105 — Transportation and Storage

826,556. IBERIAN HOLIDAY. Melia Tours, Inc. SN 211,083. Pub. 1–10–67. Filed 2–1–65.

826,557. NATIONWIDE. Nationwide Trailer Rental System, Inc. SN 223,569. Pub. 1–10–67. Filed 7–16–65.

826,558. NATIONWIDE AND DESIGN. Nationwide Trailer Rental System, Inc. SN 223,570. Pub. 1–10–67. Filed 7–16–65.

826,559. INVITATION TRAVEL. Garber's Travel Service, Inc. SN 240,091. Pub. 1–10–67. Filed 3–3–66.

Class 106 — Material Treatment

826,560. PERF-O-DENT. Perf-O-Dent Company, Inc. SN 241,368. Pub. 1–10–67. Filed 3–18–66.

Class 107 — Education and Entertainment

826,561. WIMPEY. Bertram W. Hiles, d.b.a. Wimpey. SN 191,554. Pub. 1–10–67. Filed 4–20–64.

826,562. NIGHT CALL. The Television, Radio and Film Commission of the Methodist Church. SN 234,780. Pub. 1–10–67. Filed 12–16–65.

826,563. MAN WITH THE MIKE. The Television, Radio and Film Commission of the Methodist Church. SN 234,782. Pub. 1–10–67. Filed 12–16–65.

826,564. NY METS AND DESIGN. Metropolitan Baseball Club, Inc. SN 240,938. Pub. 1–10–67. Filed 3–14–66.

826,565. ATLANTA FALCONS. The Five Smiths, Inc. SN 241,134. Pub. 1–10–67. Filed 3–16–66.

826,566. ATLANTA FALCONS AND DESIGN. The Five Smiths, Inc. SN 243,116. Pub. 1–10–67. Filed 4–11–66.

826,567. THE TEDDY BEARS. The Teddy Bears. SN 250,117. Pub. 1–10–67. Filed 7–13–66.

Collective Membership Mark

Class 200

826,568. ADAPSO ETC. AND DESIGN. Association of Data Processing Service Organizations, Inc. SN 244,457. Pub. 1–10–67. Filed 4–28–66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

826,569. Zolkind & Son, Inc., Brooklyn, N.Y. SN 218,042. Filed P.R. 5–4–65; Am. S.R. 1–23–67.

LORD HAMILTON

For Wallets, Card Cases, Key Cases, Change Purses and Fitted Travel Cases.
First use Apr. 9, 1965.

Class 4 — Abrasives and Polishing Materials

826,570. Midwest Consultants, Inc., St. Louis, Mo. SN 218,458. Filed P.R. 5–10–65; Am. S.R. 1–26–67.

SHU-CARE

For Leather and Fabric Cleaning, Polishing and Preserving Composition.
First use August 1961.

Class 7 — Cordage

826,571. Davis Cordage Company, Portland, Oreg. SN 254,972. Filed P.R. 9–23–66; Am. S.R. 12–8–66.

SNUG TIE

The drawing is lined for blue, but color is not claimed as a feature of the mark.
For Baler Twine.
First use on or before Nov. 1, 1965.

Class 10 — Fertilizers

826,572. Harvest Brand, Inc., Pittsburg, Kans. SN 230,822. Filed P.R. 10–21–65; Am. S.R. 1–18–67.

PLANT-ADE

For Fertilizer.
First use Apr. 30, 1965.

Class 12 — Construction Materials

826,573. Homasote Company, Trenton, N.J. SN 237,699. Filed P.R. 2–1–66; Am. S.R. 1–30–67.

CUSH-N-BASE

For Combination Finish Flooring and Sub-Flooring in Laminate, Panel Form—In Particular, Pre-Finished Hardwood Flooring Preassembled With a Fiberboard Underlayment.
First use Jan. 18, 1966.

826,574. Royal Tile Manufacturing Company, Fort Worth, Tex. SN 239,545. Filed P.R. 2–24–66; Am. S.R. 1–30–67.

Frost-Tone

For Ceramic Wall and Floor Tile.
First use Apr. 22, 1964.

826,575. Royal Tile Manufacturing Company, Fort Worth, Tex. SN 239,546. Filed P.R. 2–24–66; Am. S.R. 1–30–67.

Gloss-Tone

For Ceramic Wall and Floor Tile.
First use October 1949.

826,576. American Chemco, Inc., Decatur, Ga. SN 240,237. Filed P.R. 3–7–66; Am. S.R. 10–19–66.

IT REALLY WORKS!

For Liquid Ceramic Tile Sealer.
First use in or about September 1964.

826,577. Cabot Corporation, d.b.a. Cabot Piping Systems, Boston, Mass. SN 247,000. Filed 6–1–66.

TITE-JOINT

For Tape Made of Unsintered Polytetrafluorethylene for Use in Sealing Threaded Joints of Plastic and Metal Pipe.
First use May 5, 1965.

Class 18 — Medicines and Pharmaceutical Preparations

826,578. Suram Corporation, New York, N.Y. SN 238,015. Filed P.R. 2–3–66; Am. S.R. 1–23–67.

WEISS

The German word "Weiss" in English is "white."
For Skin Stain and Callous and Corn Remover.
First use Oct. 22, 1965.

826,579. Garden Laboratories, Inc., Hackensack, N.J. SN 260,503. Filed 12–12–66.

SLOCAPS

For Timed Release Capsules Containing Medicaments.
First use Mar. 22, 1965.

Class 26 — Measuring and Scientific Appliances

826,580. R D A Corporation, Wichita, Kans. SN 204,289. Filed P.R. 10–19–64; Am. S.R. 11–28–66.

MONO-STAND

For Camera Mounting Stands.
First use on or about Aug. 6, 1964.

826,581. Russell B. Snyder, d.b.a. R. B. Snyder Company, Cicero, Ill. SN 251,473. Filed P.R. 8–1–66; Am. S.R. 1–19–67.

FOAM RISE RECORDER

For Instruments for Measuring and Recording the Rate of Expansion of Foaming Materials.
First use Feb. 9, 1965.

826,582. Standard Cigar Company, Inc., d.b.a. J. E. Seeman Company, Los Angeles, Calif. SN 259,994. Filed 12–5–66.

SEE-KLEER

For Sunglasses.
First use Apr. 8, 1963.

Class 37 — Paper and Stationery

826,583. Monofax Corporation, Evanston, Ill., assignee of Alberto Kahn, d.b.a. Sipi Segrate, Milan, Italy. SN 207,891. Filed P.R. 12–10–64; Am. S.R. 12–14–66.

SELF COPY

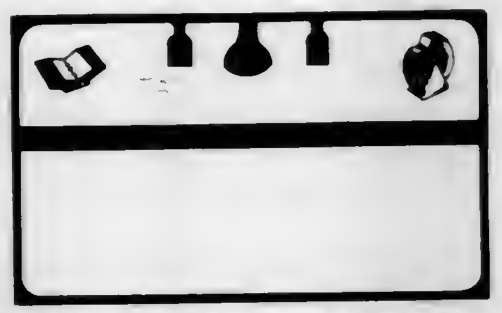
For Stationery for Making Multiple Copies Simultaneously When Impressed in Direct Contact by Hand or Machine Indicia.
First use July 6, 1964.

826,584. Edmund Scientific Co., Barrington, N.J. SN 219,868. Filed P.R. 5–27–65; Am. S.R. 1–23–67.

PIK-UP

For Adhesive Devices for Lifting Papers and Small Objects.
First use May 15, 1965.

826,585. Fitz-Al Card Corp., Croton-on-Hudson, N.Y. SN 220,291. Filed P.R. 6-3-65; Am. S.R. 6-3-66.



For Single and Double Multi-Purpose File Cards.
First use Apr. 21, 1965.

826,586. Robert A. Starkey, d.b.a. Starkey Business Services, Wichita, Kans. SN 227,884. Filed P.R. 9-15-65; Am. S.R. 1-31-67.

STARKEY

For Business Forms.
First use on or about Aug. 2, 1965.

Class 38 — Prints and Publications

826,587. Electrical Information Publications, Inc., Madison, Wis. SN 228,287. Filed P.R. 9-20-65; Am. S.R. 1-25-67.

RETAIL & BUSINESS REVIEW

For Trade Magazine.
First use Aug. 4, 1965.

826,588. Virginia Municipal League, Richmond, Va. SN 242,945. Filed P.R. 4-7-66; Am. S.R. 1-31-67.

For Magazine.
First use Jan. 3, 1966.

Class 39 — Clothing

826,589. Barrow Manufacturing Company, Winder, Ga. SN 200,539. Filed P.R. 8-25-64; Am. S.R. 11-12-65.

PREST-4-LIFE

For Permanent Press Pants for Men and Boys.
First use Aug. 24, 1964.

826,590. F & M Shoe Corp., New York, N.Y. SN 236,737. Filed P.R. 1-18-66; Am. S.R. 1-24-67.

Conover

For Men's Shoes.
First use Jan. 23, 1965.

826,591. Slack Fashions Incorporated, New York, N.Y. SN 241,602. Filed P.R. 3-22-66; Am. S.R. 1-20-67.

Slack Mate

For Men's Slacks and Sport Jackets.
First use Nov. 29, 1965.

826,592. Dri-Zit Corporation, d.b.a. Rite Products, San Jose, Calif. SN 244,093. Filed P.R. 4-22-66; Am. S.R. 1-17-67.

SAFETPAD

For Textured Vinyl, Leak-Proof Garment and a Quilted, Multi-Layered Disposable Incontinent Pad.
First use July 24, 1959.

Class 44 — Dental, Medical, and Surgical Appliances

826,593. Health-O-Swim Products, Inc., New York, N.Y. SN 207,716. Filed 12-8-64; Am. S.R. 1-23-67.

NOIZ-PRUF

For Disposable Ear Plugs.
First use Nov. 5, 1964.

Class 46 — Foods and Ingredients of Foods

826,594. P & C Food Markets, Inc., Syracuse, N.Y. SN 200,280. Filed P.R. 8-20-64; Am. S.R. 5-10-66.

PRAISE-WINNER

For Sugar Cured Sliced Bacon and Fresh Meats.
First use at least as early as January 1951.

826,595. Cork 'N Cleaver, Inc., Scottsdale, Ariz. SN 225,283. Filed P.R. 8-9-65; Am. S.R. 6-6-66.

BEEF & BOOZE

For Foods and Ingredients of Foods Consisting of Fresh and Frozen Beef Steak of Various Cuts, and Fresh Cheese Cake.
First use Jan. 16, 1964.

826,596. National Sea Products Limited, Halifax, Nova Scotia, Canada, assignee of E. Paturel Limited, Shediac, New Brunswick, Canada. SN 225,665. Filed P.R. 8-13-65; Am. S.R. 11-29-66.

PATUREL'S

For Fresh, Frozen and Canned Fish and Shellfish, and Fresh and Frozen Fruit and Berries.
First use 1950; in commerce 1950.

826,597. Fromagerie Boursin, Societe Anonyme, Pacy-Sur-Eure (Eure), France. SN 228,255. Filed P.R. 9-21-65; Am. S.R. 2-3-67.

BOURSIN

Owner of French Reg. No. 1,302, dated Mar. 20, 1965 (Evreux): Natl. Inst. No. 245,771.
For Dairy Products, Namely, Cheeses.
First use on or about Aug. 1, 1961; in commerce on or about Aug. 1, 1961.

826,598. General Foods Corporation, White Plains, N.Y. SN 232,204. Filed P.R. 11-5-65; Am. S.R. 2-1-67.

ORANGE PLUS

For Frozen Concentrate for Orange Juice Drink.
First use June 14, 1965.

Class 51 — Cosmetics and Toilet Preparations

826,599. Charles V. Perfumers, Inc., New York, N.Y. SN 216,801. Filed P.R. 4-19-65; Am. S.R. 1-25-67.

PSEUDO SHAVE

For Cosmetic Cream for Application to a Man's Face To at Least Partially Cover Beard Growth.
First use Mar. 4, 1965.

826,600. John H. Breck, Inc., Springfield, Mass. SN 223,771. Filed P.R. 7-20-65; Am. S.R. 7-22-66.

GO LIGHT

For Hair Coloring Preparation.
First use June 28, 1965.

826,601. John H. Breck, Inc., Springfield, Mass. SN 224,062. Filed P.R. 7-23-65; Am. S.R. 1-30-67.

GO BLONDE

For Hair Coloring Preparation.
First use June 28, 1965.

826,602. John H. Breck, Inc., Springfield, Mass. SN 224,063. Filed P.R. 7-23-65; Am. S.R. 1-30-67.

GO GO BLONDE

For Hair Coloring Preparation.
First use June 28, 1965.

826,603. Chas. Pfizer & Co., Inc., New York, N.Y. SN 228,486. Filed P.R. 9-23-65; Am. S.R. 1-18-67.

VIOLET VAMP

For Lipsticks.
First use Apr. 29, 1965.

826,604. Howard L. Scott, Chester, Pa. SN 236,331. Filed P.R. 1-11-66; Am. S.R. 12-28-66.

COATING

For Hair Preparation—Namely, Hair Conditioner.
First use Dec. 1, 1965.

826,605. Bristol-Myers Company, New York, N.Y. SN 237,803. Filed P.R. 2-2-66; Am. S.R. 1-26-67.

KEEP HAIR WELL GROOMED THROUGH ALL THE ACTION

For Cosmetics and Toilet Preparations—Namely, a Hair Groom.
First use Dec. 10, 1965.

826,606. Bristol-Myers Company, New York, N.Y. SN 237,804. Filed P.R. 2-2-66; Am. S.R. 1-26-67.

THE HAIR GROOM FOR MEN WHO ARE GOING PLACES

For Cosmetics and Toilet Preparations—Namely, a Hair Groom.
First use Dec. 10, 1965.

826,607. Richard Hudnut, Morris Plains, N.J. SN 242,603. Filed P.R. 4-4-66; Am. S.R. 1-25-67.

SMOKY SABLE

For Hair Coloring Preparation.
First use October 1964.

826,608. Richard Hudnut, Morris Plains, N.J. SN 242,604. Filed P.R. 4-4-66; Am. S.R. 1-25-67.

CHARCOAL SILVER

For Hair Coloring Preparation.
First use October 1964.

826,609. Richard Hudnut, Morris Plains, N.J. SN 242,605. Filed P.R. 4-4-66; Am. S.R. 1-25-67.

SILVER MAUVE

For Hair Coloring Preparation.
First use October 1964.

826,610. Richard Hudnut, Morris Plains, N.J. SN 242,606. Filed P.R. 4-4-66; Am. S.R. 1-25-67.

SATIN SILVER

For Hair Coloring Preparation.
First use October 1964.

Service Mark

Class 101 — Advertising and Business

826,611. Photo/File Surveys Inc., Philadelphia, Pa. SN 220,788. Filed P.R. 6-9-65; Am. S.R. 2-2-67.

PHOTO/FILE

For Recording and Supplying Photographs Taken in Sequence From a Moving Vehicle of the Roadway Area Traveled by the Vehicle.
First use Jan. 10, 1960.

TRADEMARK REGISTRATIONS RENEWED

55,232. OLD CONTINENTAL. Cl. 49. 8-7-06.
56,411. NAP-A-TAN AND DESIGN. Cl. 39. 9-25-06.
59,728. PUREOXIA. Cl. 45. 1-15-07.
59,906. CHATEAU CHOCOLATS. Cl. 46. 1-22-07.
59,987. STAR. Cl. 23. 1-22-07.
60,252. KYANIZE. Cl. 16. 2-5-07.
60,995. XLNT AND DESIGN. Cl. 23. 2-26-07.
61,627. SPECIFICATION. Cl. 12. 4-2-07.
61,674, ROYAL. Cl. 23. 4-2-07.
62,608. SPECIFICATION. Cl. 6. 5-14-07.
63,506. OK. Cl. 12. 6-25-07.
209,385. K. L. AND DESIGN (IN CIRCLE). Cl. 39. 2-23-26.
210,070. SOLID KUMFORT AND DESIGN. Cl. 32. 3-9-26.
225,245. CRYTAL BAY. Cl. 46. 6-8-26.
220,317. L. C. N. AND DESIGN. Cl. 13. 11-9-26.
220,760. COLUMBO AND DESIGN. Cl. 18. 11-16-26.
220,881. ASCO. Cl. 2. 11-16-26.
221,681. STAR CROSS AND DESIGN. Cl. 46. 12-7-26.
222,035. STERLING. Cl. 14. 12-21-26.
222,482. TANGS. Cl. 46. 1-4-27.
222,959. PILGRIM. Cl. 46. 1-11-27.
223,177. ARIEL. Cl. 52. 1-18-27.
223,324. INSIGNIA (DESIGN). Cl. 36. 2-1-27.
223,356. SEAL (DESIGN). Cl. 12. 2-1-27.
223,399. FLORIDIAN BRAND AND DESIGN. Cl. 46. 2-1-27.
223,652. FLASHMERE. Cl. 42. 2-8-27.
223,784. SAND-SPUN AND DESIGN. Cl. 13. 2-8-27.
223,850. NUTRENA. Cl. 46. 2-15-27.
224,276. GREENLAND KRYOLITH. Cl. 1. 2-22-27.
224,446. RED BALL PASTE AND DESIGN. Cl. 5. 3-1-27.
224,696. DROMEDARY. Cl. 46. 3-1-27.
225,545. LYSOL. Cl. 52. 3-22-27.
225,684. PADDOCK. Cl. 39. 3-22-27.
225,780. BLOSSOM. Cl. 39. 3-22-27.
225,997. MISCELLANEOUS DESIGN. Cl. 46. 3-29-27.
226,086. BLUBAG. Cl. 12. 3-29-27.
226,492. INDO-CARBON. Cl. 6. 4-12-27.
226,621. CREAM OF WHEAT. Cl. 46. 4-12-27.
226,846. LITTLE FENDRICH AND DESIGN. Cl. 17. 4-19-27.
226,847. LA FENDRICH AND DESIGN. Cl. 17. 4-19-27.
227,233. O.T. OZARK TRAIL AND DESIGN. Cl. 46. 5-3-27.
227,300. CELLITAZOL. Cl. 6. 5-3-27.
227,413. CELLITON. Cl. 6. 5-3-27.
227,912. LILY AND DESIGN. Cl. 12. 5-17-27.
230,035. GREEN GIANT GREAT BIG TENDER PEAS AND DESIGN. Cl. 46. 7-12-27.
423,426. TILLY-TOY. Cl. 22. 9-3-46.
423,992. MUCO-SEAL. Cl. 44. 9-17-46.
424,921. GEORGIE PORGIE. Cl. 46. 10-29-46.
424,993. KEN. Cl. 3. 10-29-46.
426,019. GOLD MEDAL. Cl. 23. 12-10-46.
426,369. ENVOYS IN ENVELOPES. Cl. 38. 12-24-46.
426,402. KENWAX. Cl. 16. 12-24-46.
426,826. KEN-CLEANSER. Cl. 52. 1-14-47.
426,941. DIALCO AND DESIGN. Cl. 21. 1-21-47.
427,062. STYLIS. Cl. 52. 1-28-47.
427,106. AJAX. Cl. 52. 1-28-47.
427,115. PREEN. Cl. 16. 1-28-47.
427,178. SUPER CHIEF. Cl. 35. 1-28-47.
427,242. BLACK TOP AND DESIGN. Cl. 46. 2-4-47.
427,255. FERROLITE. Cl. 1. 2-4-47.
427,377. CIBA AND DESIGN. Cl. 6. 2-11-47.
427,713. CONGOFLOR. Cl. 20. 2-18-47.
427,714. CONGOTREAD. Cl. 20. 2-18-47.
427,831. DEOXO. Cl. 26. 2-25-47.
427,998. CHEMCLAD. Cl. 7. 3-4-47.
428,008. STANDRITE. Cl. 2. 3-4-47.
428,522. NAIRN. Cl. 50. 3-25-47.
428,543. DAY & NIGHT. Cl. 26. 3-25-47.
428,544. NIGHT & DAY. Cl. 26. 3-25-47.
429,034. HUMDINGER. Cl. 4. 4-15-47.
429,183. ARROW AND DESIGN. Cl. 42. 4-22-47.
429,276. TRANSPULMIN. Cl. 18. 4-29-47.
429,604. ORTHO. Cl. 38. 5-6-47.
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- Deseret Pharmaceutical Co., Inc., Salt Lake City, Utah. 826,452, pub. 1–10–67. Cl. 44.
- Deutsch, Brigitte, d.b.a. Perfumes By Brigitte, Beverly Hills, Calif. 826,528, pub. 1–10–67. Cl. 51.
- Devine's Remedies, Inc., Chicago, Ill. 826,354, pub. 1–10–67. Multiple Class (Classes 18, 44, and 52).
- Dial Light Co. of America, Inc., New York, to Dialight Corp., Brooklyn, N.Y. 426,941, ren. 3–28–67. Cl. 21.
- Dialight Corp.: *See*—
  - Dial Light Co. of America, Inc.
- Dillingham Mfg. Co., Sheboygan, Wis. 710,894, canc. Cl. 32.
- Disney, Walt, Productions, Burbank, Calif. 826,419, pub. 1–10–67. Cl. 38.
- Disston, Henry, & Sons, Inc., Philadelphia, to H. K. Porter Co., Inc., Pittsburgh, Pa. 426,019, ren. 3–28–67. Cl. 23.
- Dobeckmun Co., The, Cleveland, Ohio, to The Dow Chemical Co., Midland, Mich. 428,008, ren. 3–28–67. Cl. 2.
- Domestic and Foreign Missionary Society of the Protestant Episcopal Church in the United States of America, The, New York, N.Y. 711,029, canc. Cl. 107.
- Dorr, Raymond C., d.b.a. Air Puffs Co., Indianapolis, Ind. 710,970, canc. Cl. 40.
- Dow Chemical Co., The: *See*—
  - Dobeckmun Co., The.
- Drapery Service Corp. of America, Plainview, N.Y. 826,554, pub. 1–10–67. Cl. 103.
- Drew, Horace R., d.b.a. Drew Orange and Fruit Co., to H. R. Drew, Jr., d.b.a. Drew Orange and Fruit Co., Island Grove, Fla. 223,399, ren. 3–28–67. Cl. 46.
- Drew, Horace R., Jr.: *See*—
  - Drew, Horace R.
- Drew Orange and Fruit Co.: *See*—
  - Drew, Horace R.
- Dri-Zit Corp., d.b.a. Rite Products, San Jose, Calif. 826,592. Cl. 39.
- Drug Co., El Segundo, Calif. 826,363, pub. 1–10–67. Cl. 18.
- Dumon, Andrea, Inc., d.b.a. Andrea Dumon Laboratories, Chicago, Ill. 826,357, pub. 1–10–67. Cl. 18.
- Dumon, Andrea, Laboratories: *See*—
  - Dumon, Andrea, Inc.
- Dyna-Nuclear Corp., Atlantic Highlands, N.J. 826,382, pub. 1–10–67. Cl. 23.
- E & M Instrument Co., Inc., Houston, Tex. 826,457, pub. 1–10–67. Cl. 44.
- Eastman Kodak Co., Rochester, N.Y. 826,321, pub. 1–10–67. Cl. 6.
- Edmund Scientific Co., Barrington, N.J. 826,584. Cl. 37.
- Electrical Information Publications, Inc., Madison, Wis. 826,587. Cl. 38.
- Electro Lighting Corp., Chicago, Ill. 691,598, canc. Cl. 21.
- Emco-Wheaton, Inc., from Buckeye Iron & Brass Works, Dayton, Ohio. 826,334, pub. 5–4–65. Cl. 13.
- Engelhard Industries, Inc.: *See*—
  - Baker & Co., Inc.
- Envoys, Inc.: *See*—
  - Bourke, Holland & Miller, Inc.
- Equitable Leasing Corp., Asheville, N.C. 826,543, pub. 1–10–67. Cl. 100.
- Essex Wire Corp.: *See*—
  - Carolina Industrial Plastics Corp.
- Evans Milling Co., Inc.: *See*—
  - Knefler-Bates Mfg. Co.
- Evans Shoe Co., The, East Napa, to Solnit Shoe Co., Los Angeles, Calif. 56,411, ren. 3–28–67. Cl. 39.
- Eversharp, Inc., New York, N.Y. 710 860, canc. Cl. 23.
- Eversharp, Inc., Milford, Conn. 826,509, pub. 1–10–67. Cl. 51.
- F & F Laboratories, Inc., from Ernest E. Johnson Co., Inc., Chicago, Ill. 826,468, pub. 11–8–66. Cl. 46.
- F & M Shoe Corp., New York, N.Y. 826,590. Cl. 39.
- Fabri-Kal Corp., Kalamazoo, Mich. 826,296, pub. 1–10–67. Multiple Class (Classes 2 and 3).
- Fairmont Foods Co., Omaha, Nebr. 826,469–70, pub. 1–10–67. Cl. 46.
- Fair-Tex Mills, Inc., New York, N.Y. 826,438, pub. 1–10–67. Cl. 42.
- Fant Milling Co., d.b.a. Gladiola Biscuit Co., Sherman, Tex. 727,296, canc. Cl. 46.
- Fant Milling Co., d.b.a. Gladiola Biscuit Co., Sherman, Tex. 738,751, canc. Cl. 46.
- Fant Milling Co., d.b.a. Gladiola Biscuit Co., Sherman, Tex. 738,766, canc. Cl. 46.
- Fast, Earl A., Long Beach, Calif. 826,426, pub. 1–10–67. Cl. 40.
- Federal Scientific Corp., New York, N.Y. 826,398, pub. 1–10–67. Cl. 26.
- Fendrich H., Inc., Evansville, Ind. 226,846–7, ren. 3–28–67. Cl. 17.
- Fenestra Inc., Detroit, Mich. 710,776, canc. Cl. 12.
- Fidelity Pharmaceuticals, Inc., Philadelphia, Pa. 826,369, pub. 1–10–67. Cl. 18.
- Fields Plastics & Chemicals, Inc., New York, N.Y. 826,290, pub. 1–10–67. Cl. 1.
- First Container Corp., Fort Worth, Tex. 710,773, canc. Cl. 12.
- Firth Sterling Inc.: *See*—
  - Firth-Sterling Steel Co.

- Firth-Sterling Steel Co., McKeesport, to Firth Sterling Inc., Pittsburgh, Pa. 222,035, ren. 3–28–67. Cl. 14.
- Fitchburg Coated Products, Inc., Moosie, Pa., from Simon Adhesive Products Corp., Long Island City, N.Y. 826,416, pub. 1–3–67. Cl. 37.
- Fitz-Al Card Corp., Croton-on-Hudson, N.Y. 826,585. Cl. 37.
- Five Smiths, Inc., The, Atlanta, Ga. 826,565–6, pub. 1–10–67. Cl. 107.
- Fleet Wholesale Supply Co., Inc., Brainerd, Minn. 826,346, pub. 1–10–67. Cl. 15.
- Fleisher, Walter, Co., Inc., Los Angeles, Calif. 826,338, pub. 1–10–67. Multiple Class (Classes 13 and 23).
- Florence Pipe Foundry & Machine Co., Florence, N.J., and Philadelphia, Pa., to Amsted Industries Inc., Chicago, Ill. 223,784, ren. 3–28–67. Cl. 13.
- Foseco International Ltd., Birmingham, England. 826,350, pub. 1–10–67. Cl. 16.
- Fratelli Borletti S.p.A., Milan, Italy. 681,773, canc. Cl. 23.
- Fromagerie Boursin, Societe Anonyme, Pacy-Sur-Eure (Eure), France. 826,597. Cl. 46.
- Fuller Brush Co., The, East Hartford, Conn. 826,537, pub. 1–10–67. Cl. 52.
- Futorian-Stratford Furniture Co., Chicago, Ill. 710,895, canc. Cl. 32.
- Garber's Travel Service, Inc., Brookline, Mass. 826,559, pub. 1–10–67. Cl. 105.
- Garden Laboratories Inc., Hackensack, N.J. 826,570. Cl. 18.
- Garfinkel & Ritter, from The Barbizon Corp., New York, N.Y. 371,433, canc. Cl. 39.
- Gates Rubber Co., The, Denver, Colo. 826,341, pub. 1–10–67. Cl. 13.
- General Aniline & Film Corp.: *See*—
  - General Dyestuff Corp.
  - I.G. Farbenindustrie Aktiengesellschaft.
- General Dyestuff Corp., to General Aniline & Film Corp., New York, N.Y. 226,492, ren. 3–28–67. Cl. 6.
- General Dynamics Corp.: *See*—
  - Stromberg-Carlson Telephone Mfg. Co.
- General Foods Corp., White Plains, N.Y. 826,598. Cl. 46.
- General Motors Corp., Detroit, Mich. 710,842–3, canc. Cl. 21.
- George, Garland M., d.b.a. Bellwood Plastic Products, Bellflower, Calif. 710,729, canc. Cl. 2.
- Georgie Porgie Co.: *See*—
  - Willey, R. F.
- Gilbert Shoe Co., The, Thiensville, Wis. 430,614, ren. 3–28–67. Cl. 39.
- Ginsburg and Abelson, Inc., New York, N.Y. 710,961, canc. Cl. 39
- Gladiola Biscuit Co.: *See*—
  - Fant Milling Co.
- Glass, Henry, & Co., New York, N.Y. 826,445, pub. 1–10–67. Cl. 42
- Gold Medal Candy Corp., Brooklyn, N.Y. 826,355, pub. 1–10–67. Cl. 18.
- Gold, William, Refining Co. Inc.: *See*—
  - Justi H. D., & Son Inc.
- Golden Chip Potato Co., Portland, Oreg. 688,429, canc. Cl. 46.
- Goodrich, B. F., Co., The, Akron, Ohio. 431,273, ren. 3–28–67. Cl. 21.
- Goodrich, B. F., Co., The, Akron, Ohio. 826,411, pub. 1–10–67. Cl. 35.
- Goodyear Tire & Rubber Co., The, Akron, Ohio. 710,823, canc. Cl. 19.
- Gordon Baking Co., Detroit, Mich. 710,993, canc. Cl. 46.
- Grace-Lee Products Inc., Minneapolis, Minn. 826,532, pub. 1–10–67. Cl. 52.
- Graham, John H., & Co., Inc., New York, N.Y. 826,383, pub. 1–10–67. Cl. 23.
- Graphic Supply Co., Inc., New York, N.Y. 710,861, canc. Cl. 23.
- Green Giant Co.: *See*—
  - Minnesota Valley Canning Co.
- Gremse, Edward S., d.b.a. Atlantic Ultraviolet Co., Long Island City, N.Y. 682,478, canc. Cl. 21.
- Gross, Benjamin & Edward J., Co., Inc., New York, N.Y. 710,882 canc. Cl. 27.
- Gross, John, & Co., Baltimore, Md. 826,491, pub. 1–10–67. Cl. 49.
- Habersham House, Inc.: *See*—
  - Shelmore Oyster Products Co.
- Hall, Robert, Clothes, Inc., New York, N.Y. 710,934, canc. Cl. 39
- Hammermill Paper Co., Erie, Pa. 826,417, pub. 1–10–67. Cl. 37.
- Hammond, John E., Syracuse, N.Y. 710,730, canc. Cl. 2.
- Hampton Shirt Co., Inc., New York, N.Y. 710,935, canc. Cl. 39
- Hanes Corp.: *See*—
  - Hanes Hosiery Mills Co.
- Hanes Hosiery Mills Co., to Hanes Corp., Winston-Salem, N.C. 225,780, ren. 3–28–67. Cl. 39.
- Harding, H. C., Inc., Philadelphia, Pa. 429,034, ren. 3–28–67. Cl. 4.
- Harrison, A. S., Co., The, New York, N.Y., to American Cyanamid Co., Wayne, N.J. 427,115, ren. 3–28–67. Cl. 16.
- Harvest Brand, Inc., Pittsburg, Kans. 826,572. Cl. 10.
- Haskel Engineering & Supply Co., Glendale, Calif. 710,873–4, canc. Cl. 23.
- Health Knowledge, Inc., New York, N.Y. 710,924, canc. Cl. 38.
- Health-o-Smim Products, Inc., New York, N.Y. 826,593. Cl. 44.
- Heckman, Charles R., d.b.a. C. H. Die Co., El Monte, Calif. 710,770–1, canc. Cl. 9.
- Heggblade-Marguleas Co., d.b.a. Co-River Citrus Co., San Francisco, Calif. 826,480, pub. 1–10–67. Cl. 46.
- Heide Base Products: *See*—
  - Brose, Horace B.
- Heim, Jacques, Societe Anonyme, Paris, France. 826,518, pub. 1–10–67. Multiple Class (Classes 51 and 52).
- Hewitt Soap Co., Inc., The: *See*—
  - Procter & Gamble Co., The.
- Hiles, Bertram W., d.b.a. Wimpey, Chicago, Ill. 826,561, pub. 1–10–67. Cl. 107.
- Hills Brothers Co., The, to National Biscuit Co., New York, N.Y. 224,696, ren. 3–28–67. Cl. 46.
- Hirzel Canning Co.: *See*—
  - Hirzel, Carl R.
- Hirzel, Carl R., to Hirzel Canning Co., Toledo, Ohio. 221,681, ren. 3–28–67. Cl. 46.
- Hodgdon, B. E., Inc., Shawnee Mission, Kans. 826,332, pub. 1–10–67. Cl. 9.
- Holland House Brands, Inc., Woodside, N.Y. 826,465, pub. 1–10–67. Cl. 45.
- Hollandisch-Deutsche Santaflor Comp. Heinz Petersen K.G., Hamburg, Germany. 710,719, canc. Cl. 1.
- Holloway, M. J., & Co., to Beatrice Foods Co., Chicago, Ill. 430,382, ren. 3–28–67. Cl. 46.
- Homasote Co., Trenton, N.J. 826,573. Cl. 12.
- Hornsby, J. Marie, d.b.a. J. Marie Hornsby's Originals, Gulfport, Miss. 826,424, pub. 1–10–67. Cl. 39.
- Hornsby's, J. Marie, Originals: *See*—
  - Hornsby, J. Marie.
- House of Wrisley, Inc., The, Paris, Tenn. 826,521, pub. 1–10–67. Cl. 51.
- House of Wrisley, Inc., The, Paris, Tenn. 826,536, pub. 1–10–67. Cl. 52.
- Howmet Corp., New York, N.Y. 826,456, pub. 1–10–67. Cl. 44.
- Howse, Mead & Sons, Inc., New York, N.Y. 826,439, pub. 1–10–67. Cl. 42.
- Hudnut, Richard, Morris Plains, N.J. 826,607–10. Cl. 51.
- Hulett, Daniel H., d.b.a. Stero-Parti, Inglewood, Calif. 711,025, canc. Cl. 107.
- I.G. Farbenindustrie Aktiengesellschaft, Leverkusen, near Cologne-On-The-Rhine, Germany, to General Aniline & Film Corp., New York, N.Y. 227,300, ren. 3–28–67. Cl. 6.
- I.G. Farbenindustrie Aktiengesellschaft, Leverkusen, near Cologne-On-The-Rhine, Germany, to General Aniline & Film Corp., New York, N.Y. 227,413, ren. 3–28–67. Cl. 6.
- I-T-E Circuit Breaker Co., Philadelphia, Pa., from Walker Electrical Co., Inc., Atlanta, Ga. 698,904, canc. Cl. 21.
- Ideal Cement Co.: *See*—
  - Oklahoma Portland Cement Co.
- Illinos Canning Co., The, Hoopeston, Ill. 177,162, canc. Cl. 46.
- Imperial Chemical Industries Ltd., London, England. 826,289, pub. 1–10–67. Cl. 1.
- Imperial House, Inc., San Francisco, Calif. 710,958, canc. Cl. 39.
- Imperial Knife Associated Companies, Inc., Providence, R.I. 826,386, pub. 1–10–67. Cl. 23.
- Indian Head Inc., from Indian Head Mills, Inc., New York, N.Y. 826,329, pub. 1–10–67. Cl. 7.
- Indian Head Mills, Inc.: *See*—
  - Indian Head Inc.
- Infinite Cleaning Corp., Orlando, Fla. 826,541, pub. 1–10–67. Cl. 52.
- Institute For Scientific Information, Inc., Philadelphia, Pa. 826,421–2, pub. 1–10–67. Cl. 38.
- International Foam Corp., Chicago, Ill. 826,404, pub. 1–10–67. Cl. 32.
- International Minerals & Chemical Corp., Skokie, Ill. 826,360, pub. 1–10–67. Cl. 18.
- Investographs, Inc., from E. S. Quinn, Rochester, N.Y. 711,019, canc. Cl. 102.
- Irwin, Neisler, & Co., Decatur, Ill. 710,808, canc. Cl. 18.
- J.P. Co., The: *See*—
  - Phillips, James P.
- Jack-In-The Box, Inc., San Diego, Calif. 826,546, pub. 1–10–67. Cl. 100.
- James, Wilbert, New York, N.Y. 826,297, pub. 1–10–67. Cl. 2.
- Japan Air Lines Co., Ltd., Tokyo, Japan. 826,295, pub. 1–10–67. Cl. 2.
- Jel Sert Co., The, Bellwood, Ill. 826,466, pub. 1–10–67. Cl. 45.
- Jel Sert Co., The, Bellwood, Ill. 826,485, pub. 1–10–67. Cl. 46.
- Jeneric Gold Co.: *See*—
  - Cohen, Leon L.
- Jergens, Andrew, Co., The, Cincinnati, Ohio. 826,531, pub. 1–10–67. Cl. 51.
- Johnson, Ernest E., Co., Inc.: *See*—
  - F & F Laboratories, Inc.
- Johnson & Johnson, New Brunswick, N.J. 826,453, pub. 1–10–67. Cl. 44.
- Johnson, S. C., & Son, Inc., Racine, Wis. 826,303, pub. 1–10–67. Cl. 4.
- Johnson, Stephens and Shinkle Shoe Co., St. Louis, Mo. 826,425, pub. 1–10–67. Cl. 39.
- Jolly Rancher, Inc., The, Wheat Ridge, Colo. 679,706, canc. Cl. 46.
- Jung, L. E., & Wulff Co., Inc.: *See*—
  - Estate of Louis E. Jung, The, Marie Sebourin Jung, executrix, and Canal Bank & Trust Co., Executor.
- Jung, Louis E., Estate of, The, Marie Sabourin Jung, executrix, and Canal Bank & Trust Co., Executor, New Orleans, La., to J. E. Jung & Wulff Co., Inc., New York, N.Y. 220,760, ren. 3–28–67. Cl. 18.

- Justi, H. D., & Son, Inc., Philadelphia, Pa., to William Gold Refining Co., Inc., Buffalo, N.Y. 423,992, ren. 3-28-67. Cl. 44.
- Kaltman, D., & Co., Inc., New York, N.Y. 826,458-63, pub. 1-10-67. Cl. 44.
- Kahn, Alberto: *See*—
  - Monofax Corp.
- Kastor, Adolph, & Bros., New York, to Camillus Cutlery Co., Camillus, N.Y. 60,995, ren. 3-28-67. Cl. 23.
- Katz Drug Co., d.b.a. Colonial Laboratories, Kansas City, Mo., to La Maur, Inc., Minneapolis, Minn. 427,062, ren. 3-28-67. Cl. 52.
- Kelley-Clarke Co., Seattle, Wash. 427,242, ren. 3-28-67. Cl. 46.
- Kelly-Kehoe, Inc., New York, N.Y. 826,506, pub. 1-10-67. Cl. 51.
- Ken Products, Inc.: *See*—
  - Rosenberg Brothers.
- Kennedy, David E., Inc., to Kentile Floors Inc., Brooklyn, N.Y. 426,402, ren. 3-28-67. Cl. 16.
- Kennedy, David E., Inc., to Kentile Floors Inc., Brooklyn, N.Y. 426,826, ren. 3-28-67. Cl. 52.
- Kent, G. B., & Sons, Ltd., London, England. 826,505, pub. 1-10-67. Cl. 51.
- Kent, G. B., & Sons, Ltd., London, England. 826,535, pub. 1-10-67. Cl. 52.
- Kentile Floors Inc.: *See*—
  - Kennedy, David E., Inc.
- Kerr Dental Mfg. Co., now by change of name to Kerr Mfg. Co., to Kerr Mfg. Co., Detroit, Mich. 427,255, ren. 3-28-67. Cl. 1.
- Kerr Mfg. Co.: *See*—
  - Kerr Dental Mfg. Co.
- Kistler Leather Co., South Boston, Mass., to Penn Leather Co., Philadelphia, Pa. 209,385, ren. 3-28-67. Cl. 39.
- Klopman Mills, Inc., Rockleigh, N.J. 826,440-1, pub. 1-10-67. Cl. 42.
- Knefler-Bates Mfg. Co., to Evans Milling Co., Inc., Indianapolis, Ind. 224,446, ren. 3-28-67. Cl. 5.
- Kresge-Newark, Inc., Newark, N.J. 710,978, canc. Cl. 42.
- Kullen, King, Grocery Co., Inc., Westbury, N.Y. 826,486, pub. 1-10-67. Cl. 46.
- Kyanize Paints, Inc.: *See*—
  - Boston Varnish Co.
- La Fred Plastic Mfg. Co., Inc., New York, N.Y. 710,745, canc. Cl. 3.
- La Maur Inc.: *See*—
  - Katz Drug Co.
- Lady Baltimore Office Services, Inc., Baltimore, Md. 826,548, pub. 1-10-67. Cl. 101.
- Lederle Laboratories, Inc., assor. to American Cyanamid Co., New York, N.Y., to American Cyanamid Co., Wayne, N.J. 430,268, ren. 3-28-67. Cl. 6.
- Les Parfums Pierre Balmain S.A., from Pierre Balmain, Paris, France. 711,010, canc. Cl. 51.
- Levine and Associates, Los Angeles, Calif. 826,356, pub. 1-10-67. Cl. 18.
- Levine, Bernard, d.b.a. Santa Cruz Sportswear, Santa Cruz, Calif. 710,941, canc. Cl. 39.
- Levine, Rubin, & Co., Inc., New York, N.Y. 826,435, pub. 1-10-67. Cl. 42.
- Liberty Records, Inc., Los Angeles, Calif. 826,415, pub. 1-10-67. Cl. 36.
- Lighting Corp. of America, Philadelphia, Pa. 826,378, pub. 1-10-67. Cl. 21.
- Linificio & Canapificio Nazionale S.p.A., Milan, Italy. 826,326, pub. 1-10-67. Multiple Class (Classes 7 and 43).
- Lorillard, P., Co., New York, N.Y. 826,351, pub. 1-10-67. Cl. 17.
- Lovida Ag., Chur, Switzerland. 826,534, pub. 1-10-67. Cl. 52.
- Luck Wish Products, Inc., New York, N.Y. 710,731, canc. Cl. 2.
- Lykens Hosiery Mills, Inc., Marion, N.C. 710,926, canc. Cl. 39.
- Lysol, Inc., Bloomfield, N.J., to Sterling Drug Inc., New York, N.Y. 225,545, ren. 3-28-67. Cl. 52.
- M & J Valve Co., Houston, Tex. 826,342, pub. 1-10-67. Cl. 13.
- Machine Products Corp., Detroit, Mich. 429,757, ren. 3-28-67. Cl. 26.
- Mallinckrodt Chemical Works, St. Louis, Mo. 431,168, ren. 3-28-67. Cl. 46.
- Mfg., del Vestiod S.A., Madrid, Spain. 710,930, canc. Cl. 39.
- Mason, Vincent I., d.b.a. New England Aquarium Supply, Newtonville, Mass. 826,358, pub. 1-10-67. Cl. 18.
- Mayer, Oscar, & Co., from Oscar Mayer & Co., Inc., Chicago, Ill. 385,549, canc Cl. 46.
- Mayer, Oscar, & Co., Inc.: *See*—
  - Mayer, Oscar, & Co.
- McGarry Nut Products Co., Chicago, Ill. 826,481, pub. 1-10-67. Cl. 46.
- McMichael, Robert, Inc., New York, N.Y. 826,495, pub. 1-10-67. Cl. 50.
- McPherson, John E., & Sons Ltd., Edinburgh, Scotland. 826,489, pub. 1-10-67. Cl. 49.
- Menda Co., City of Industry, Calif. 826,496, pub. 1-10-67. Cl. 50.
- Merchandising Corp. of America, Universal City, Calif. 826,507, pub. 1-10-67. Cl. 51.
- Metropolitan Baseball Club, Inc., Flushing, N.Y. 826,564, pub. 1-10-67. Cl. 107.
- Midwest Consultants, Inc., St. Louis, Mo. 826,570. Cl. 4.
- Milbar Corp., Cleveland, Ohio. 826,391, pub. 1-10-67. Cl. 23.
- Minnesota Mining and Mfg. Co., St. Paul, Minn. 826,385, pub. 1-10-67 Cl. 23.
- Minnesota Valley Canning Co., to Green Giant Co., Le Sueur, Minn. 230,035, ren. 3-28-67. Cl. 46.
- Mister Lemon King and Allied Products Co., Corona, N.Y. 826,464, pub. 1-10-67. Cl. 45.
- Mohawk Rubber Co., The, Akron, Ohio. 427,178, ren. 3-28-67. Cl. 35.
- Monofax Corp., Evanston, Ill., from A. Kahn, d.b.a. Sipi Segrate, Milano, Italy. 826,583. Cl. 37.
- Montalvo Farms, Montalvo, Calif. 710,998, canc. Cl. 46.
- Montecatini, Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy. 826,318, pub. 1-10-67. Cl. 6.
- Moore, Samuel D., d.b.a. Sam Moore & Co., to Sam Moore & Co., Cleveland, from Samuel Moore & Co., Mantug, Ohio. 381,780, canc. Cl. 5.
- Morton International, Inc., Chicago, Ill. 826,304, pub. 1-10-67. Cl. 5.
- Moser Paper Co., Chicago, Ill. 826,307, pub. 1-10-67. Cl. 6.
- Moxie Co., The: *See*—
  - Pureoxia Co.
- Moyer Chemical Co., San Jose, Calif. 826,333, pub. 1-10-67. Cl. 10.
- Mueller, Robert L., Fort Washington, Pa. 710,833, canc. Cl. 21.
- Mutual Buying Syndicate, Inc., New York, N.Y. 710,942, canc. Cl. 39.
- N'-V Products Co.: *See*—
  - Remington, Henry F.
- National Association Plans, Inc., New York, N.Y. 826,553, pub 1-10-67. Cl. 102.
- National Biscuit Co.: *See*—
  - Cream of Wheat Co.
  - Hills Brothers Co., The.
- National Biscuit Co., New York, N.Y. 222,482, ren. 3-28-67. Cl. 46.
- National Biscuit Co., New York, N.Y. 225,997, ren. 3-28-67. Cl. 46.
- National Candy Co., Jersey City, N.J., and St. Louis, Mo., to New England Confectionery Co., Cambridge, Mass. 59,906, ren. 3-28-67. Cl. 46.
- National Chemsearch Corp., Irving, Tex. 826,313, pub. 1-10-67. Cl. 6.
- National Dairy Products Corp.: *See*—
  - Phenix Cheese Corp.
- National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., New York, N.Y. 826,488, pub. 1-10-67. Cl. 49.
- National Distillers Products Co.: *See*—
  - National Distillers and Chemical Corp.
- National Glove, Inc., Coshocton, Ohio. 710.954, canc. Cl. 39.
- National Hardware Co., Inc., Ozone Park, N.Y. 826,394, pub. 1-10-67. Cl. 25.
- National Lead Co., New York, N.Y. 826,317, pub. 1-10-67. Cl. 6.
- National Marking Machine Co., The, Cincinnati, Ohio. 710,878, canc. Cl. 24.
- National Remedy Products Co., Inc., Springfield, Mo. 710,819, canc. Cl. 18.
- National Sea Products Ltd., Halifax, Nova Scotia, from E. Paturel Ltd., Shediac, New Brunswick, Canada. 826,596. Cl. 46.
- Nationwide Trailer Rental System, Inc., Wichita, Kans. 826,557-8, pub. 1-10-67. Cl. 105.
- Nee, P. J., Co., Rockville, Md. 826,401, pub. 1-10-67. Cl. 32.
- New England Aquarium Supply: *See*—
  - Mason, Vincent I.
- New England Confectionery Co.: *See*—
  - National Candy Co.
- New Method Fur Dressing Co., South San Francisco, Calif. 711.024. canc. Cl. 106.
- North American Aluminum Corp., College Point, N.Y. 710,893. canc. Cl. 32.
- North American Provision Co., The: *See*—
  - Armour and Co.
- Northland Aluminum Products, Inc., Minneapolis, Minn. 826,340, pub. 1-10-67. Cl. 13.
- Northwest: *See*—
  - Williamson, C. L.
- Norton Lasier Co., Chicago, Ill., to Schlage Lock Co., San Francisco, Calif. 220,317, ren. 3-28-67. Cl. 13.
- Nosco Plastics, Inc., Erie, Pa. 826,299, pub. 1-10-67. Cl. 2.
- Novelty Cord & Tassel Co., Inc., Broklyn, N.Y. 826,432, pub. 1-10-67. Cl. 40.
- Nutone, Inc., Cincinnati, Ohio. 710,887, canc. Cl. 31.
- Nutrena Feed Mills, Inc., Kansas City, Kans., to Cargill, Inc., Minneapolis, Minn. 223,850, ren. 3-28-67. Cl. 46.
- Nypel of Delaware, Inc., Wilmington, Del. 826,293, pub. 1-10-67. Cl. 1.
- Ocean Science and Engineering, Inc., Washington, D.C. 826,545, pub. 1-10-67. Cl. 100.
- Oklahoma Portland Cement Co., Ada, Indian Territory, to Ideal Cement Co., Denver, Colo. 63,506, ren. 3-28-67. Cl. 12.
- Olympia Press, The, Paris, France. 826,420, pub. 1-10-67. Cl. 38.
- Olympic Plastics Co., Inc., Los Angeles, Calif. 710,742, canc. Cl. 2.
- On The Left Bank, Inc., Potomac, Md. 826,379, pub. 1-10-67. Multiple Class (Classes 22 and 39).
- Or. Fe. Vi.-S.p.A. Organizzazione Federconsorzi Vini, Rome, Italy. 691,024, canc. Cl. 47.
- Orchard Industries, Inc., Hastings, Mich. 710,851, canc. Cl. 22.
- Original Toy Corp., Brooklyn, N.Y. 826,431, pub. 1-10-67. Cl. 40.
- Originit Fabrics, Inc., New York, N.Y. 826,446, pub. 1-10-67. Cl. 42.
- P & C Food Markets, Inc., Syracuse, N.Y. 826,594. Cl. 46.
- P & V Specialty Co., Inc., Cleveland, Ohio. 710,746, canc. Cl. 4.

- Pande, Cameron & Co.: *See*—
  - Pande, Cameron & Co. of N.Y., Inc.
- Pande, Cameron & Co. of N.Y., Inc., from Pande, Cameron & Co., New York, N.Y. 826,433, pub. 1-10-67. Cl. 42.
- Patti Products Corp., Mount Vernon, N.Y. 826,428, pub. 1-10-67. Cl. 40.
- Paturel, E., Ltd.: *See*—
  - National Sea Products Ltd.
- Pedersen, Arne B., d.b.a. Carmen Curles, Kalundborg, Denmark. 826,450, pub. 1-10-67. Cl. 44.
- Peerless Equipment Co. Inc., Joplin, Mo. 826,397, pub. 1-10-67. Cl. 26.
- Penn Leather Co.: *See*—
  - Kistler Leather Co.
- Pennsalt Chemicals Corp.: *See*—
  - Pennsylvania Salt Mfg. Co.
- Pennsylvania Salt Mfg. Co. to Pennsalt Chemicals Corp., Philadelphia, Pa. 224,276, ren. 3-28-67. Cl. 1.
- Perf-O-Dent Co., Inc., Chicago, Ill. 826,560, pub. 1-10-67. Cl. 106.
- Perfumers, Charles V., Inc., New York, N.Y. 826,599. Cl. 51.
- Perfumes By Brigitte: *See*—
  - Brigitte Deutsch.
- Perkins Glue Co., from Perkins Glue Co., Lansdale, Pa. 129,200, canc. Cl. 5.
- Perkins Glue Co., from Perkins Glue Co., Lansdale, Pa. 139,865, canc. Cl. 5.
- Permatex Co., Inc., Brooklyn, N.Y. 826,542, pub. 1-10-67. Cl. 52.
- Peter Hand Foundation, Inc., from Blatchford Calf Meal Co., Waukegan, Ill. 826,471, pub. 1-10-67. Cl. 46.
- Pettibone, Mulliken & Co., to Pettibone Mulliken Corp., Chicago, Ill. 59,987, ren. 3-28-67. Cl. 23.
- Pettibone, Mulliken Corp.: *See*—
  - Pettibone, Mulliken, & Co.
- Pfizer, Chas., & Co., Inc.: *See*—
  - Woodville Lime Products Co., The.
- Pfizer, Chas., & Co., Inc., New York, N.Y. 826,603. Cl. 51.
- Pfriemer, Chas., Inc., Easton, Pa. 826,414, pub. 1-10-67. Cl. 36.
- Phenix Cheese Corp., New York, N.Y., to National Dairy Products Corp., Chicago, Ill. 222,959, ren. 3-28-67. Cl. 46.
- Phillips, James P., d.b.a. The J.P. Co., Marshalltown, Iowa. 826,381, pub. 10-20-64. Cl. 23.
- Photo/File Surveys Inc., Philadelphia, Pa. 826,611. Cl. 101.
- Pierre Bohme Veronica Bohme Beauty Preparations and Pierre Bohme, d.b.a. Simone Cochard Beauty Preparations, Montevideo, Uruguay. 826,508, pub. 1-10-67. Cl. 51.
- Pioneer Rubber Co., The, Willard, Ohio. 710,852, canc. Cl. 22.
- Plastic Reel & Core Co., Inc., Weehawken, N.J. 826,395, pub. 1-10-67. Cl. 26.
- Portable Elevator Mfg. Co., Bloomington, Ill. 826,390, pub. 1-10-67. Cl. 23.
- Porter, H. K., Co., Inc.: *See*—
  - Disston, Henry, & Sons, Inc.
- Porter, H. K., Co., Inc., Pittsburgh, Pa. 826,335, pub. 1-10-67. Cl. 13.
- Polymers, Inc., Middlebury, Vt. 826,291, pub. 1-10-67. Cl. 1.
- Powell Pressed Steel Co., The, Hubbard, Ohio. 710,724, canc. Cl. 2.
- Premier Malt Products, Inc., Milwaukee, Wis. 826,316, pub. 1-10-67. Multiple Class (Classes 6 and 46).
- Procter & Gamble Co., The, Cincinnati, Ohio, to The Hewitt Soap Co., Inc., Dayton, Ohio. 223,177, ren. 3-28-67. Cl. 52.
- Procter & Gamble Co., The, Cincinnati, Ohio. 711,012, canc. Cl. 51.
- Procter & Gamble Co., The, Cincinnati, Ohio. 711,014-5, canc. Cl. 52.
- Procter & Gamble Co., The, Cincinnati, Ohio. 826,524, pub. 1-10-67. Cl. 51.
- Procter & Gamble Co., The, Cincinnati, Ohio. 826,530, pub. 1-10-67. Multiple Class (Classes 51 and 52).
- Procter & Gamble Co., The, Cincinnati, Ohio. 826,538-9, pub. 1-10-67. Cl. 52.
- Puerto Rico Distillers, Inc., d.b.a. Compania Ron Llave, Arecibo, Puerto Rico. 826 492. pub. 1-10-67. Cl. 49.
- Pureoxia Co., Boston, to The Moxie Co., Needham Heights, Mass. 59,728, ren. 3-28-67. Cl. 45.
- Quinn, Edwin S.: *See*—
  - Investographs, Inc.
- RDA Corp., Wichita, Kans. 826,580. Cl. 26.
- R.G.B. Laboratories, Inc., Kansas City, Mo. 826,472-6, pub. 1-10-67. Cl. 46
- Radio Frequency Laboratories, Inc., Boonton, N.J. 710,845, canc. Cl. 21.
- Rastetter, Louis, & Sons, to Solid Kumfort Corp., Fort Wayne, Ind. 210,070, ren. 3-28-67. Cl. 32.
- Realist Inc., Menomonee Falls, Wis. 826,396, pub. 1-10-67. Cl. 26.
- Reece, Edward M., d.b.a. Calree Co., Baldwin, N.Y. 710,967, canc. Cl. 29.
- Regal Industries, Inc., Minneapolis, Minn. 711,003, canc. Cl. 50.
- Regal Mfg. Co: *See*—
  - Regal Mfg. Co., Inc.
- Regal Mfg. Co., Inc., d.b.a. Regal Mfg. Co., Chicago, Ill. 710,929, canc. Cl. 39.
- Reiss, Meyer M., d.b.a. Atomlab Products Co., Long Island City, N.Y. 690 006, canc. Cl. 52.
- Relco Sales, Lawrence, Mass. 710,973, canc. Cl. 40.
- Remington, Henry F., d.b.a. The N'-V Products Co., Nashville, Mich., from Approved Products, Inc., Philadelphia, Pa. 207,493, canc. Cl. 51.
- Reynolds Electrical & Engineering Co., Inc., Santa Fe, N. Mex. 826,375, pub. 1-10-67. Cl. 21.
- Rite Products: *See*—
  - Dri-Zit Corp.
- Riverton Cosmetic Laboratories: *See*—
  - Riverton Laboratories Inc.
- Riverton Laboratories Inc., d.b.a. Riverton Cosmetic Laboratories, Newark, N.J. 826,515, pub. 1-10-67. Cl. 51.
- Roberts-Gordon Appliance Corp., Buffalo, N.Y. 826,409, pub. 1-10-67. Cl. 34.
- Roken Inc., Fredonia, Wis. 710,732, canc. Cl. 2.
- Rose-Derry Co., Newton, Mass. 826,403, pub. 1-10-67. Cl. 32.
- Rosenberg Bros., d.b.a. Ken Products, to Ken Products, Inc., Boston, Mass. 424,993, ren. 3-28-67. Cl. 3.
- Rosenberg's Inc., Washington, D.C. 710,981, canc. Cl. 42.
- Royal Tile Mfg. Co., Fort Worth, Tex. 826,574-5. Cl. 12.
- Royal Typewriter Co., Hoboken, N.J., to Royal Typewriter Co., Inc., New York, N.Y. 61,674, ren. 3-28-67. Cl. 23.
- Royal Typewriter Co., Inc.: *See*—
  - Royal Typewriter Co.
- S.D. Syndicate Ltd., The, London, England. 826,343, pub. 1-10-67. Cl. 14.
- S.M.W. Buying Syndicate, Inc., New York, N.Y. 710,753, canc. Cl. 6.
- Samuels, T. W., Distillery: *See*—
  - Samuels, T. W., Distillery, Inc.
- Samuels, T. W., Distillery, Inc., d.b.a. T. W. Samuels Distillery, Deatsville, Ky. 826,490, pub. 1-10-67. Cl. 49.
- Sanderson, A., & Co., Ltd., Hull, England, from De Jersey & Co. AG. Zug, San Francisco, Calif. 826,349, pub. 1-10-67. Cl. 16.
- Sandura Co., Jenkintown, Pa. 710,825, canc. Cl. 20.
- San Francisco Fish Farms, Inc., Menlo Park, Calif. 826,294, pub. 1-10-67. Multiple Class (Classes 1 and 46).
- Santa Cruz Sportswear: *See*—
  - Levine, Bernard.
- Saville Perfumery Ltd., Watford, England. 381,894, canc. Cl. 51.
- Schenley Industries, Inc.: *See*—
  - Bernheim Distilling Co., Inc.
- Schering Corp., Bloomfield, N.J. 710,812, canc. Cl. 18.
- Schlage Lock Co.: *See*—
  - Norton Lasier Co.
- Schwarz Chemical Co., Inc., Long Island City, N.Y. 826,319, pub. 1-10-67. Cl 6
- Scott, Howard L., Chester, Pa. 826,604. Cl. 51.
- Sea & Ski Corp., Millbrae, Calif. 826,513, pub. 1-10-67. Cl. 51
- Seaporcel Metals, Inc., Long Island City, N.Y. 710,779, canc. Cl. 12.
- Seeman, J. E., Co.: *See*—
  - Standard Cigar Co., Inc.
- Selectra Industries Ltd., Toronto, Ontario, Canada. 710,891, canc. Cl. 31.
- Selectrus Ltd., Biddulph, Stoke-On-Trent, England. 710,972, canc. Cl. 40.
- Sellers Mfg. Co., Inc., Saxapahaw, N.C. 686,955, canc. Cl. 43.
- Service d'Exploitation Industrielle des Tabacs et Allumettes, Baltimore, Md. 826,352-3, pub. 1-10-67. Cl. 17.
- Sheffield Auto Parts: *See* —
  - Consolidated Waste Materials Co., Inc.
- Shelmore Oyster Products Co., Charleston, S.C., to Habersham House, Inc., Savannah, Ga. 225,245, ren. 3-28-67. Cl. 46.
- Sherlock Homes, Ltd., Arlington, Va. 826,550, pub. 1-10-67. Cl. 101.
- Sherwin-Williams Co., The, Cleveland, Ohio. 710,876, canc. Cl. 23.
- Shulton, Inc., Clifton, N.J 710,754, canc. Cl. 6.
- Shy Beauty Products, Inc., Los Angeles, Calif. 826,429, pub. 1-10-67. Cl. 40.
- Sipi Segrate. *See*—
  - Kahn, Alberto.
- Skinner, William, & Sons, New York, N.Y. 710,977, canc. Cl. 42.
- Slack Fashions Inc., New York, N.Y. 826,591. Cl. 39.
- Snyder, R. B., Co.: *See*—
  - Snyder, Russell B.
- Snyder, Russell B., d.b.a. Snyder Co., Cicero, Ill. 826,581. Cl. 26
- Societe Anonyme des Usines Remy, Wijgmael, Belgium. 86,947, canc. Cl. 6.
- Society of Chemical Industry in Basel, to Ciba Ltd., Basel, Switzerland. 427,377, ren. 3-28-67. Cl. 6.
- Solid Kumfort Corp.: *See*—
  - Rastetter, Louis, & Sons.
- Solnit Shoe Co.: *See*—
  - Evans Shoe Co., The.
- Sound Equipment Corp. of California, d.b.a. Kwikheat Mfg. Co., Santa Fe Springs, Calif. 826,408, pub. 1-10-67. Cl. 34.
- Southern Mills, Inc., Atlanta, Ga. 826,393, pub. 1-10-67. Cl. 24.
- Southwestern Drug Corp., d.b.a. Tru-Lab Products, Dallas, Tex. 826,510, pub. 1-10-67. Cl. 51.
- Spinnerin Yarn Co., Inc., South Hackensack, N.J. 826,448, pub. 1-10-67. Cl. 43.
- Springfield Grocer Co., Springfield, Mo. 227,233, ren. 3-28-67. Cl. 46.
- Standard Cigar Co., Inc., d.b.a. J. E. Seeman Co., Los Angeles, Calif. 826,582. Cl. 26.
- Standard Pharmaceutical Co.: *See*—
  - Berger, Herman.
- Standard Pharmaceutical Co., Inc.: *See*—
  - Berger, Herman.
- Standard Tile Co., Inc., Brooklyn, N.Y. 682,358, canc. Cl. 5.
- Starkey Business Services: *See*—
  - Starkey, Robert A.
- Starkey, Robert A., d.b.a. Starkey Business Services, Wichita, Kans. 826,586. Cl. 37.

Stauffer Chemical Co., New York, N.Y. 826,325, pub. 1–10–67. Cl. 6.
Steffen Dairy Foods Co., Inc., Wichita, Kans. 710,992, canc. Cl. 46.
Steiner Products Ltd., London, England. 826,511, pub. 1–10–67. Cl. 51.
Sterling Drug Inc.: *See—*
  Lysol, Inc.
Sterling Drug Inc., New York, N.Y. 826,366, pub. 1–10–67. Cl. 18.
Stero-Parti: *See—*
  Hulett, Daniel H.
Stevens Band, Inc., New Orleans, La. 710,919, canc. Cl. 37.
Stevens, J. P., & Co., Inc., New York, N.Y. 710,985–7, canc. Cl. 42.
Stoffel & Co., Inc., New York, N.Y. 385,402, canc. Cl. 42.
Stromberg-Carlson Telephone Mfg. Co., from General Dynamics Corp., Rochester, N.Y. 329,319, canc. Cl. 21.
Super Valu Stores, Inc., Hopkins, Minn. 826,344, pub. 1–10–67. Multiple Class (Classes 14, 37, and 52).
Suram Corp., New York, N.Y. 826,578. Cl. 18.
Swank, Inc., Attleboro, Mass. 826,540, pub. 1–10–67. Cl. 52.
Swingline, Inc., Long Island City, N.Y. 826,339, pub. 1–10–67. Cl. 13.
TKO Chemical Co., St. Joseph, Mo. 826,305–6, pub. 1–10–67. Cl. 6.
Taxtronics, San Francisco, Calif. 826,551, pub. 1–10–67. Cl. 102.
Teddy Bears, The, Jacksonville, Fla. 826,567, pub. 1–10–67. Cl. 107.
Tekson Corp., Gardena, Calif. 826,337, pub. 1–10–67. Cl. 13.
Telautograph Corp., Los Angeles, Calif. 710,838, canc. Cl. 21.
Telefonaktiebolaget L M Ericsson, Stockholm, Sweden. 710,844, canc. Cl. 21.
Television, Radio and Film Commission of the Methodist Church, The, Nashville, Tenn. 826,562–3, pub. 1–10–67. Cl. 107.
Thomae, Dr. Karl, G.m.b.H., Biberach An Der Riss, Germany. 674,865, canc. Cl. 18.
Tillotson Corp.: *See—*
  Tillotson Rubber Co., Inc.
Tillotson Rubber Co., Inc., to Tillotson Corp., Needham Heights, Mass. 423,426, ren. 3–28–67. Cl. 22.
Tomco Genetic Giant, Inc., Belmond, Iowa. 826,292, pub. 1–10–67. Cl. 1.
Torus, Melia, Inc., New York, N.Y. 826,556, pub. 1–10–67. Cl. 105.
Trimount Clothing Co., Inc., Boston, Mass. 710,945, canc. Cl. 39.
Trufast Corp., New York, N.Y. 826,392, pub. 1–10–67. Cl. 23.
Tru-Lab Products: *See—*
  Drug Corp.
Tubular Textile Machinery Corp., Woodside, N.Y. 826,384, pub. 1–10–67. Cl. 23.
Tufflite Plastics, Inc., Ballston Spa, N.Y. 710,720, canc. Cl. 1.
Union Carbide Corp., New York, N.Y. 826,449, pub. 1–10–67. Cl. 43.
Union Mfg. Co., New Britain, Conn. 826,300, pub. 1–10–67. Cl. 2.
United Merchants and Manufacturers, Inc.: *See—*
  Atlantic Mills, The.
United States Rubber Co., New York, N.Y. 384,961, canc. Cl. 5.
United States Rubber Co., New York, N.Y. 386,144–5, canc. Cl. 35.
Universal Producting Co., Fairfield, Iowa. 710,738, canc. Cl. 2.
Vanity Fair Mills, Inc., Reading, Pa. 826,423, pub. 1–10–67. Cl. 39.
Vapor Heating Corp., Chicago, Ill. 710,784, canc. Cl. 13.
Vari-Krom, Inc., Hoboken, N.J. 696,212, canc. Cl. 16.
Veluoré Co., Houston, Tex. 673,329, canc. Cl. 3.
Viobin Corp., Monticello, Ill. 826,364, pub. 1–10–67. Multiple Class (Classes 18 and 46).
Virginia Municipal League, Richmond, Va. 826,588. Cl. 38.
Volz Concrete Materials Co., St. Louis, Mo. 682,405, canc. Cl. 12.
Walker Electrical Co., Inc.: *See—*
  I-T-E Circuit Breaker Co.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 826,371, pub. 1–10–67. Cl. 18.
Webster, William A., Co., The, Memphis, Tenn. 826,365, pub. 1–10–67. Cl. 18.
Western Boiler Co., Los Angeles, Calif. 710,904, canc. Cl. 34.
Western Machinery Co., San Francisco, Calif. 710,862, canc. Cl. 23.
Westinghouse Electric Corp., East Pittsburgh, Pa. 826,373, pub. 1–10–67. Cl. 21.
West Virginia Pulp and Paper Co., New York, N.Y. 710,733, canc. Cl. 2.
Wheat Enterprises, Inc., Circle, Mont. 826,477, pub. 1–10–67. Cl. 46.
Whittaker Laboratories, Inc., Peekskill, N.Y. 385,965, canc. Cl. 18.
Wiener Laces, Inc., New York, N.Y. 826,437, pub. 1–10–67. Cl. 42.
Willey, R. F., d.b.a. Georgie Porgie Co., to C. H. Woodward, Jr., Council Bluffs, Iowa. 424,921, ren. 3–28–67. Cl. 46.
Williams Real Estate Co., Inc., New York, N.Y. 826,549, pub. 1–10–67. Cl. 101.
Williamson, C. L., d.b.a. Northwest Sanitation Products, Fort Bragg, Calif. 826,533, pub. 1–10–67. Cl. 52.
Wilson Research Corp., Erie, Pa. 826,407, pub. 1–10–67. Cl. 34.
Wilson, Thomas, & Co. Inc., New York, N.Y. 826,434, pub. 1–10–67. Cl. 42.
Wimpey: *See—*
  Hiles, Bertram W.
Wolch's Nut & Candy Co., d.b.a. Terry Brooke Nut & Candy Co., Chicago, Ill. 826,482, pub. 1–10–67. Cl. 46.
Wolf Brand Products, Corsicana, Tex. 826,483, pub. 1–10–67. Cl. 46.
Woodville Lime Products Co., The, Toledo, Ohio, to Chas. Pfizer & Co., Inc., New York, N.Y. 223,356, ren. 3–28–67. Cl. 12.
Woodville Lime Products Co., The, Toledo, Ohio, to Chas. Pfizer & Co., Inc., New York, N.Y. 226,086, ren. 3–28–67. Cl. 12.
Woodville Lime Products Co., The, Toledo, Ohio, to Chas. Pfizer & Co., Inc., New York, N.Y. 227,912, ren. 3–28–67. Cl. 12.
Woodward, Carleton H., Jr.: *See—*
  Willey, R. F.
Woolworth, F. W., Co., New York, N.Y. 826,430, pub. 1–10–67. Cl. 40.
World-Wide Volkswagen Corp., Orangeburg, N.Y. 826,376–7, pub. 1–10–67. Cl. 21.
Yardley of London, Inc., Totowa, N.J. 826,502–4, pub. 1–10–67. Cl. 51.
Yardley of London, Inc., Totowa, N.J. 826,516–17, pub. 1–10–67. Cl. 51.
Yardley of London, Inc., Totowa, N.J. 826,519, pub. 1–10–67. Cl. 51.
Zierler, William S., Inc., New York, N.Y. 826,320, pub. 1–10–67. Cl. 6.

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